



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Four Penn Center – 1600 John F Kennedy Blvd
Philadelphia, Pennsylvania 19103-2852

Report Title: Clean Air Act Inspection of National Chemical Company, Inc.
Inspection Date(s): June 7, 2022
Regulatory Program(s): SIP

Company Name: National Chemical Company, Inc.
Facility Name: National Chemical Company, Inc.
Facility Location: 401 N. 10th Street
Philadelphia, PA 19123
Latitude: 39.95914 **Longitude:** -75.15507
County/Parish: Philadelphia

AFS Number: NA
Permit Number: IP-13172 and IP-96034
NAICS Code: 325611 **SIC:** 2841
Unique Project #: 3E22CA032A

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EPA Lead Inspector

Signature

Erin Willard

Date

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Date

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I. Introduction

The United States Environmental Protection Agency (EPA) conducted a Clean Air Act (CAA) inspection at National Chemical Laboratories, Inc. (NCL or Facility) to verify compliance with applicable State and Federal regulations. The Philadelphia Air Management System (AMS) was notified of the inspection on May 12, 2022 via email. EPA did not notify the facility prior to the inspection.

A. Summary of the Facility

The Facility is located at 401 N. 10th Street, Philadelphia, PA 19123. AMS issued the Facility an annual “air pollution operating license” for the fire pump engine (#APL-113172), and the blending operations (APL-196034); these permits allow the Facility to operate under the conditions that are included in the installation permits, and renew once the facility has been inspected on an annual basis.

NCL is classified as minor source for HAPs and criteria pollutants. The Facility is subject to, or potentially subject to the following federal regulations:

- 40 CFR Part 63 Subpart ZZZZ National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

B. Inspection Opening Conference

At 9:45am on June 7, 2022, EPA inspectors arrived at the Facility for a CAA Inspection and conducted a brief opening conference. NCL was represented by Christina Voigt. EPA inspectors, Erin Willard and Parmatma Adhikari, presented their credentials and explained the purpose of the visit was to conduct a full compliance evaluation (FCE) to determine compliance with their permit and any applicable regulations. Additionally, EPA informed the facility representatives of their right to claim any confidential business information (CBI). At that time, Ms. Voigt did not claim any information CBI; however, information gathered during the records review portion of the inspection was claimed CBI.

II. Site Activity/Process Description

EPA requested a brief history and overview of the Facility’s operations. The company was founded by Alfred Pollack, in a home in South Philadelphia, with the manufacture of hair products for sale to local hairdressers. As the business grew, a building on Locust Street was acquired, with the operations moving to the current location in the 1960s. Prior to acquiring the site, the building complex was used as a brewery, and Ms. Voigt indicated that some of the original beer processing vats are still in use as holding tanks for various materials used in the process. The site encompasses a full city block, and there are 17 buildings, but not all are

currently in use. The front façade of the building on the corner of Callowhill and 10th Streets, which displays the brewery name Essinger's, is on a Register of Historical Places.

NCL also owns a distribution facility in the Bridesburg section of Philadelphia, where trucks are dispatched from. Additionally, some bathroom cleaning products are made by third party contractors and taken directly to the Bridesburg facility for distribution. Some trucks are loaded and sent from the Tenth St. location, but most high volume shipping occurs out of Bridesburg.

NCL's main business model is the manufacture of cleaning and disinfecting products, and floor care (finish, strippers and cleaners) for the hospital and institutional & industrial (I&I) market (schools, transit agencies etc.). The finished materials are not sold directly to end users, but rather to distribution companies who then provide to their customers. Nothing is sold in quantities greater than a 50-gallon drum, but most materials are sold pre-packaged in bottles, pails, etc.

In the past, NCL used solvents to mix its products; however, the company is moving towards water-based environmentally friendly formulations. Because the facility manufactures disinfectants, the business was extremely busy during the COVID pandemic, making non-alcohol based disinfectants. Those products are made with quaternary ammonia and are similar to household Lysol. Currently, this site has approximately 60 employees, who generally work 8:00am to 4:30pm.

A set of storage tanks located on the fourth to sixth floors is used to store raw materials for the blending operations. Ms. Voigt indicated she would need to check an internal list to identify the total number of storage tanks present. All bulk materials arrive by tanker truck, while some smaller quantities of materials are shipped to the site in drum, tote or as dry material in bags.

Each of the many products NCL manufactures has a formula that requires various additives being pumped into a tank, and subsequent mixing of those materials. There are no chemical reactions that take place in the various process vessels, just mixing and blending. Agitators are used to complete blending. There are a number of these vessels of different sizes, located across several floors of the main process building, the designations and number of vessels is in the facility's files, but Ms. Voigt was unsure of the exact number during the discussion.

Process vessels are fixed in place, and there are many individual piping sets that can go into each vessel from the multiple sets of storage tanks for the addition of liquid product components. Powders are weighed by hand into movable containers and are dumped by hand into each individual vessel. The facility no longer uses silica as an abrasive agent in its cleaners – there are no dust control hoods or pickup points in the facility. None of the process vessels or storage tanks vent to control devices used to reduce emissions.

None of the process vessels or tanks is considered a reactor, in the chemical manufacturing sense; however, some of the tanks are jacketed (steam comes from the City of Philadelphia central steam supply), or have electric heaters to facilitate mixing of thicker chemicals. The

facility's internal management system, called ERP, contains all the formulations for each material manufactured at the site. In order to complete a batch, an operator prints out a batch sheet, which includes the formulation, amounts and types of raw materials and mixing instructions. The operator uses this paper sheet to fill the mixing vessel and complete the mixing time as necessary. Once each batch is completed, QA/QC procedures are completed, and if a batch doesn't meet specifications, it can often be adjusted so that the material isn't wasted.

Finished materials can be stored in holding tanks for a few weeks if necessary, prior to packaging which is completed on site. Other products must be mixed, bottled and shipped immediately. The area where packaging takes place is called the "bottling floor".

In addition to the blending operations, NCL owns one diesel fueled fire pump engine that is used for fire prevention and was permitted by AMS. The unit is tested on a regular basis, and AMS inspects the engine on an annual basis.

EPA had obtained the facility's permits from AMS prior to the inspection, and asked if NCL still uses some of the chemicals listed in the permit: formaldehyde, alcohols, glycol ethers, TCE, methyl chloride and ammonia. Ms. Voigt indicated that NCL no longer uses formaldehyde, phthalates, TCE or methyl chloride, but that glycol ethers and ammonia are still used. The ammonia concentration is 19% or less, per EPCRA Tier 2 reporting requirements. The surfactants used in the various products no longer contain alcohol, but fragrances are added as needed for the formulary. Floor finishes are water based acrylics and do not contain any epoxies.

The opening conference concluded at 10:50am.

III. Observations

EPA inspectors were led on a walkthrough of the Facility at 11:00am by Ms. Voigt. EPA inspectors noted photos would be taken during the Facility walkthrough (Attachment 2). Each of the buildings in use at this facility is physically adjacent and connected to the next.

Ms. Voigt pointed out that the first area the inspection team viewed was in the "Bottle House" building, designated as "BH", and that the team entered on the second floor above grade, which is denoted as "C"; this area is called "BHC". BHC is a tank storage area, with numerous vertical and horizontal tanks located in a small fairly tightly packed area. Some of the tanks were fiberglass, while others were stainless steel. In addition to the tanks, raw material drums were located in the BHC area. When filling from tanker trucks, the tanks vent inside this room, which had windows open on the day of the inspection due to the temperature outside.

Ms. Voigt indicated that there are 100-150 different materials that NCL may use that are stored on site in drums. Drums are "quarantined" onsite until they are sampled for QA/QC purposes, and then they may be moved to various parts of the facility for mixing and blending. Dow is the main supplier for drummed materials, mostly polymers and glycol ethers.

Nine tanks in this area are used to store the floor finish materials, and each tank vents indoors. There are also many “floater” tanks in the BHC area, that are used to hold various materials at different times, depending on internal demand at the site.

The inspection team then walked to the “I Building”, and into the H Building Pump Room, where multiple piping headers are located that convey different materials into the mixing vessels. The piping headers each lead to a raw material storage tank. Each header is connected to a conveyance hose when a material is needed. The hoses are then directly connected to a mixing vessel for materials addition and disconnected once all materials have been added. The inspection team viewed several vertical mixing tanks, including Vessel R-4 which is jacketed and heated, if necessary, Vessel P-10, which is used for mixing floor strippers and cleaners, and Vessel P-6. The inspection team also viewed vessel FP-2 which is used for floor finish only. Mixing vessels vent to the room in which they are located during filling.

Water is an ingredient in virtually all NCL’s formulations, city water is used, but it must be treated with a softener first. Deionization is not necessary. On the way to the “G Building D Area – GD”, Ms. Voigt pointed out a liquid scale where materials are weighed in drums prior to being wheeled to one of the mixing vessels. The GD upper area is the floor that has the top of the former brewery vats. These vessels are several stories tall, and are bricked on the outside, with an internal stainless steel structure. Some of them have also been retrofitted with an internal fiberglass coating. Each vat has been divided inside into six discreet tanks for storage of products, including potassium hydroxide and sodium hydroxide, which are used in floor strippers and drain cleaners.

The team then walked to Area GE, which is the lower level of the former brewery vats. GF level, is another raw material storage tank room, where there are approximately 20 tanks, seven of which are small mixed glycol ether tanks. Ms. Voigt indicated that these chemicals are reported on a Form R annually for TRI/EPCRA. The inspection team then walked to area ID, where the drum scale was viewed, as was a batch sheet that was in use by one of the operators. The operator moves around the facility, gathering the materials by hand or via piping headers.

Many companies of this type utilize an automated system, where operators use computerized pumps and measurement systems to add batched materials to a vessel. At NCL, operators must manually “plug in” to a switchboard for each individual storage tank, manually enter in the amounts, allow the pump to complete the amount, and then “plug in” to the next pump. The filling system in use means that tracking material usage is done somewhat “by hand”, rather than having a computer track and log each batch and total raw materials utilized automatically. Mr. Voigt said that batches are tracked in an internal spreadsheet, with the data being input by operators and QA/QC staff. While discussing the pump system, Ms. Voigt indicated that NCL is using Tomadol as a replacement chemical for nonylphenol, which is found in many detergents as a nonionic surfactant. Tomadol is less damaging to aquatic systems.

The inspection team then proceeded to BH floor 1, where all the filling equipment is located. The filling lines are used to package materials for shipping to distribution companies. Piping brings product from holding tanks directly to one of five filling lines. Bottles, jugs, or pails are filled, and caps or lids are mechanically added to each container. As with many of the other processes at NCL, piping is dedicated to sets of materials. There is no screen printing on any containers at the site, everything is labeled with pre-manufactured adhesive labels. Bottles are put into cardboard boxes, taped, and shipped off.

The team broke for lunch from 12:30 to 1:30, and then came back to view the Bottlehouse Basement area, where the fire pump is located. The unit runs for 15 minutes every two weeks to ensure availability during emergencies, and EPA noted the unit has a non-resettable hour meter and a label that showed the date of each maintenance event. The unit is not permitted to operate during ozone action days in the city of Philadelphia, unless there is a true emergency. Since the unit is located in the basement, the exhaust goose-necks above ground onto the sidewalk on the 10th Street side of the building – EPA had noted the exhaust when it approached the building just before arrival.

The walkthrough concluded at 2:15pm.

IV. Records Review

The records discussion commenced immediately after the plant walkthrough at 2:15pm. As this was an unannounced inspection, NCL did not have the opportunity to compile its records prior to EPA's arrival. Further, as NCL does not hold a minor source permit, but rather a license to operate its facility, many of the requested documents were not readily available. NCL agreed to provide the records listed as Item 1 and 2 below by June 10, 2022.¹

1. A list of the raw material storage tanks, including the size in gallons, and the designation of the contents.
2. The total annual usage of raw materials that contain HAP and/or VOC for years 2019, 2020 and 2021, in order to capture pre-COVID and COVID throughputs. (Ms. Voigt indicated she maintains a spreadsheet with the deliveries of all materials and should be able to compile this information from that spreadsheet.)
3. A list of all raw or intermediate materials that contain VOCs and/or HAPs. CAA HAPs will include ethylene glycols, BTEX and others. For VOCs, the MSDSs should include the vapor pressures of each material that will indicate designation as a VOC.

Ms. Voigt provided the information below as paper copies, and each was marked CBI.

4. The number of mixing vessels present at the site, and their sizes

¹ Ms. Voigt emailed Erin Willard on June 10 to request an extension to June 13, due to staffing shortages at the Facility. The documents were submitted via email on June 13.

5. A list of products, the amounts produced in 2021, and the percent VOC and HAP present in each of those products.

V. Closing Conference

After the records review, EPA inspectors, Ms. Voigt and Mr. Pollack (NCL President) had a brief closing conference to ask additional questions and discuss observations. The EPA inspectors noted that the investigation is on-going, and any areas of concern identified in the final reports do not necessarily reflect a violation or deviation, rather, they are areas that will require further investigation. Mr. Pollack asked questions regarding the handling of the information gathered at the inspection, and that which would be provided later. Erin Willard explained the CBI substantiation process to him briefly and indicated that if any CBI materials were subject to a Freedom of Information Act Request (FOIA, EPA would request a substantiation of those materials prior to release. EPA also noted that they would issue an inspection report within in 60 days, with a copy to the State. Simultaneously, EPA will perform a detailed review of records and may have additional questions. The inspection concluded at 3:30pm.

The following have been identified as *potential* issues during the inspection. They are issues that require either further investigation by EPA or additional information or explanation by NCL.

- A review of 40 CFR Parts 60 and 63 related to chemical blending and mixing to identify any potentially applicable rules.
- A review of chemical throughputs to gauge potential VOC and HAP emissions from the facility.
- A review of the AMS permitting and licensing program as it pertains to this facility.

VI. List of Attachments

Attachment 1: Photo Log