



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

Date: *Dated as shown on electronic signature(s)*

Subj: Inspection Report
Clean Water Act
Brazonics, Inc.

From: John (Jack) Melcher, Environmental Engineer

JOHN MELCHER Digitally signed by JOHN MELCHER
Date: 2023.06.02 11:58:35 -04'00'

Thru: Shannon Shea, Inspector

SHANNON SHEA Digitally signed by SHANNON
SHEA
Date: 2023.05.30 08:52:07 -04'00'

To: File

Appendices: Appendix A - 1997 Request for Information
Appendix B - 2001 Request for Information Modification
Appendix C - Photographs
Appendix D - April 24 Sampling Results
Appendix E – Oil Spill Prevention, Control, and Countermeasures
Site Plan

I. Facility Information

- A. Facility Name:* Brazonics, Inc.
- B. Facility Location:* 94 Tide Mill Road
Hampton, NH 03842
- C. Facility Contacts:* Joseph Orazio, Environmental, Health & Safety Manager
603-738-9950, joseph.orazio@collins.com

Riaan Oosthuysen, Value Stream Leader
603-758-6239, riaan.oosthuysen@collins.com
- D. NPDES ID No(s):* NHPIU0006 (wastewater pretreatment)
NHNOEJ01S (stormwater)

II. Background Information

- A. Date(s) of inspection:* May 17, 2023
- B. Weather Conditions:* Clear, mild.
- C. US EPA Representative(s):*
John (Jack) Melcher, Enforcement and Compliance Assurance Division
("ECAD")
Grace Beery, ECAD
Shannon Shea, Laboratory Services and Applied Science Division ("LSASD")
Will Sommer, LSASD
Nafisa Ali, LSASD
- D. State/Local Representative(s):*
Michael Dube, Town of Hampton, Operations Manager
Michael Carle, Town of Hampton, Chief Operator
- E. Federally Enforceable Requirements Covered During the Inspection:*
40 C.F.R. Part 403 – General Pretreatment Regulations for Existing and New
Sources of Pollution
40 C.F.R. § 433.17 – Metal Finishing Point Source Category, Pretreatment
Standards for New Sources
40 C.F.R § 122.26 – National Pollutant Discharge Elimination System
("NPDES") regulation for the discharge of stormwater
- F. Previous Enforcement Actions:*
No Clean Water Act enforcement actions are in EPA's records since at least
August 15, 1997.

III. Type and Purpose of Inspection

EPA conducted a routine Industrial User ("IU") Evaluation Inspection to evaluate compliance with the General Pretreatment Regulations at 40 C.F.R. Part 403 and the Metal Finishing Point Source Category, Pretreatment Standards for New Sources at 40 C.F.R. § 433.17 ("Metal Finishing PSNSs").

EPA conducted a routine Compliance Evaluation Inspection to evaluate compliance with the NPDES regulation for the discharge of stormwater at 40 C.F.R § 122.26.

IV. Facility Description

Brazonics, Inc. ("Brazonics" or the "Facility") manufactures aluminum components for the aerospace and other high-tech industries.

EPA's Enforcement Compliance History Online ("ECHO") website provides general environmental compliance data for Brazonics.¹

EPA's previous on-site inspection to evaluate Clean Water Act compliance was on March 10, 2015.

A. Wastewater Pretreatment

Brazonics discharges to the Town of Hampton Publicly Owned Treatment Works ("POTW"; NPDES Permit No. NH0100625). The Town has an activated-sludge wastewater treatment facility with a design flow of 4.7 million gallons per day. The Town's NPDES Permit does not require the Town to implement a federally-approved industrial pretreatment program. Therefore, EPA Region 1 is the pretreatment "Control Authority" for Brazonics.

On August 15, 1997, EPA sent Brazonics a Request for Information Pursuant to Section 308 of the Clean Water Act (Docket No. 97-308P-087) stating that wastewaters discharged from Brazonics were subject to the Metal Finishing PSNSs. The monitoring and reporting requirements in this Request for Information were subsequently modified in a letter dated December 13, 2001. The 1997 Request for Information and the 2001 modification letter are attached in Appendix A and Appendix B of this report.

EPA's review of the Facility's Periodic Reports on Continued Compliance since January 1, 2018, found one instance of non-compliance with the Metal Finishing PSNSs. A total nickel concentration of 3.69 milligrams per liter ("mg/l") was found in a sample taken on January 18, 2018. Resampling was performed the following month and a concentration compliant with the average monthly standard of 2.38 mg/l was observed.

EPA's review of flow information from the Facility's Periodic Reports on Continued Compliance indicated an average daily flow of approximately 3,800 gallons per day during February 2018 through March 2019 and an average daily flow of approximately 2,300 gallons per day during June 2021 through February 2023.

The Facility has a two-stage neutralization system to provide wastewater treatment.

B. Stormwater

Brazonics submitted a No Exposure Certification for exclusion from EPA's Multi-Sector General Permit for stormwater discharges associated with industrial activity ("MSGP"), dated April 23, 2021, stating that the Facility's primary Standard Industrial Code ("SIC") Code is 3728 (Aircraft Parts and Auxiliary Equipment, Not Elsewhere Classified). The No Exposure Certification includes an exposure checklist, where the Facility stated that none of the listed materials or activities were exposed to precipitation. The No Exposure Certification expires on April 22, 2026.

¹ Available at: <https://echo.epa.gov/detailed-facility-report?fid=110030742766>

V. Inspection

I announced the inspection to the Facility on May 10, 2023.

Ms. Shea, Mr. Sommer, Ms. Ali, Ms. Beery, and I (the “EPA Inspectors”) arrived at approximately 09:00 on May 17, 2023.

Unless otherwise noted, this report describes conditions at the facility/property as observed by EPA inspector(s), and/or through records provided to and/or information reported to EPA inspector(s) by facility representatives and as understood by the inspector(s). This report may not capture all operations or activities ongoing at the time of the inspection. This report does not make final determinations on potential areas of concern. Nothing in this report affects EPA’s authorities under federal statutes and regulations to pursue further investigation or action.

A. Opening Conference

At approximately 09:00, an opening conference was held in 86 Tide Mill Road between the EPA Inspectors; Mr. Orazio; Mr. Oosthuysen; and Danielle Cobleigh, Environmental Health and Safety Generalist. Also in attendance were Mr. Dube and Mr. Carle from the Town of Hampton (“Town representatives”).

Ms. Shea, Mr. Sommer, and I presented our credentials and explained the purpose of the inspection.

Mr. Orazio provided a summary of the Brazonics facility. Brazonics is a division of Collins Aerospace, which is in turn a division of Raytheon Technologies. The Facility has approximately 120 employees on-site.

Mr. Orazio said that the Facility performs machining and brazing of aluminum. Mr. Oosthuysen said that brazing is the joining together of metals parts using a filler alloy. Brazing is distinguished from soldering by the higher temperatures used. Brazonics brazes aluminum parts using a silicon and aluminum filler alloy at approximately 1,105 degrees Fahrenheit.

Mr. Orazio said that brazing is performed either inside a vacuum chamber (“vacuum brazing”) or in a bath of molten salt (“dip brazing”).

Mr. Carle said that the Town had not experienced any known issues due to the Facility’s discharges. I said that EPA recently issued the Town an Administrative Order to address violations of its NPDES permit limit for copper. Mr. Carle said that the Facility did not use copper in their process; the source of copper is primarily drinking water service lines.

Mr. Orazio said that he joined Brazonics in September of 2019. Mr. Oosthuysen said that he joined in October of 2022, although he has worked for a different division of Raytheon Technologies. Ms. Cobleigh joined Brazonics in February 2020.

I said that it was my understanding that Brazonics was subject to Metal Finishing PSNSs because it discharges wastewaters from an anodizing operation to the Town of Hampton's POTW. Mr. Orazio said the Facility eliminated its anodizing operation in 2017.

I read aloud the six "core" metal finishing operations from 40 C.F.R. § 433.10(a) that make facilities applicable to the Metal Finishing Point Source Category: "Electroplating, Electroless Plating, Anodizing, Coating (chromating, phosphating, and coloring), Chemical Etching and Milling, and Printed Circuit Board Manufacture." I further read aloud from the Guidance Manual for Electroplating and Metal Finishing Pretreatment Standards, dated February 1984, Table 3.1, definitions of anodizing and coatings:

3. Anodizing

An electrochemical process which converts the metal surface to a coating of an insoluble oxide. Aluminum is the most frequently anodized material. The formation of the oxide occurs when the parts are made anionic in dilute sulfuric acid or chromic acid solutions. The oxide later begins formation at the extreme outer surface, and as the reaction proceeds, the oxide grows into the metal.

4. Coatings

Any operation that includes chromating, phosphating, metal coloring and passivating. In chromating, a portion of the base metal is converted to a component of the protective film formed by the coating solutions containing hexavalent chromium and active organic or inorganic compounds. Phosphate coatings are formed by the immersion of steel, iron, or zinc plated steel in a dilute solution of phosphoric acid plus other reagents to condition the surfaces for further processing. Metal coloring involves the chemical method of converting the metal surface into an oxide or similar metallic compound to produce a decorative finish. Passivating is the process of forming a protective film on metals by immersion in an acid solution, usually nitric acid or nitric acid with sodium dichromate.²

Brazonics representatives said that they did not believe that any of the six core metal finishing operations were performed at the Facility. I said that it appeared that the Metal Finishing Point Source Category was not applicable to the Facility. I said that EPA would not be performing sampling for compliance with the Metal Finishing PSNSs, as had been planned.

² Available at: <https://www.epa.gov/system/files/documents/2021-07/owm0022.pdf>

Facility representatives said that wastewater was generated from quenching certain parts in glycol and from cleaning salt from parts following dip brazing.

B. Indoor Facility Tour

At approximately 09:40, Mr. Orazio, the EPA Inspectors, and the Town representatives performed a tour of the interior of the Facility's production and wastewater treatment areas at 94 Tide Mill Road.

1. Production Areas

Mr. Orazio showed the group example parts that had been machined and either vacuum brazed or dip brazed. In general, heavier parts are vacuum brazed, while lighter parts are dip brazed.

Mr. Orazio said that machining is performed using non-petroleum cutting oils. Waste cutting oils generated are shipped off for recycling.

The group viewed the dip brazing operation. An approximately eight-foot-tall robotic arm was located next to an approximately six-foot-cube brazing tank. Mr. Orazio said that, in order to maintain uniformity of the salt bath inside the brazing tank, impurities have to occasionally be ladled off by operators, but the salt did not have to be regularly changed out in a wholesale fashion.

The group viewed two glycol quenching areas. In each area, an oven was used to reheat parts that had been previously brazed and, in the case of dip brazing, subsequently cleaned. In one area, parts are misted with deionized water prior to quenching; in the other, parts are not misted with water. Mr. Orazio said that small amounts of glycol are wasted as needed to maintain the quenching tanks; these wastewaters are shipped off as wastes.

Mr. Orazio said that, on one occasion, the entire contents of a glycol quenching tank had to be disposed of. On this occasion, the contents of the tank were shipped out as a waste.

The group viewed a sink adjacent to the glycol quenching tanks. Mr. Orazio said that parts and equipment are rinsed in the sink following quenching and wastewaters did not flow to the wastewater treatment system.

Mr. Orazio described the process by which the Facility cleans parts following dip brazing in molten salt. First, parts go to a citric acid cleaning room. In the citric acid cleaning room, parts are rinsed in a water bath and then in a citric acid bath. Second, parts go to the "acid room." The group viewed the acid room from the outside (see Photographs 1 through 3 in Appendix C of this report). In the acid room, parts are rinsed in a caustic sodium hydroxide bath, then in two water baths, then in a nitric acid bath, and then in two additional water rinses. Neither the caustic nor the acid baths have currents connected. Ventilation hoods are present above the caustic bath, the acid bath, and two of the water baths.

Mr. Orazio said that the purpose of the caustic and acid baths is to clean parts, not to change the surface finishing of the parts.

The group visited the vacuum braze assembly room. Mr. Orazio said that the room formerly was used for anodizing and, further back, for electroplating. A water softener was located in the room.

2. Wastewater Treatment Room

The group visited the wastewater treatment room. Large (approximately 1,000-gallon) tanks of sodium hydroxide and “spent nitric acid” for addition to neutralize wastewaters were present in concrete secondary containment walls. Mr. Orazio said that the spent nitric acid tank had been recently replaced, but never used. Mr. Orazio said that the treatment system was oversized due to the reduced amount of wastewaters being produced currently at the Facility.

Mr. Orazio said that the only wastewater from the acid room and from a sink in the wastewater treatment room flows to the wastewater treatment system. Both the caustic and acid rinse tanks in the acid room have two water tanks following them in the process. Fresh water is added to the second water bath (the “clean bath”) following the caustic and acid baths. Water flows from the clean bath into the first tank (the “dirty bath”) following the caustic and acid baths. Water flows from the dirty bath to the wastewater treatment system.

An operator of the wastewater treatment system joined the group and explained how the system functioned. The first neutralization tank brings the pH of wastewaters to within a coarse range and a second neutralization tank bring the pH of wastewaters to within a fine range. Neutralization chemistry is added automatically into each of the treatment tanks. The operator said that a chamber within the second tank was referred to as “Tank 3” where the pH was monitored for compliance before wastewaters flowed into a collection sump. Wastewater sampling is performed from the collection sump. Wastewater is pumped from the collection sump through a flow meter and to a manhole outside of the building, where it flows to the Town’s POTW.

An approximately 1-inch diameter flexible pipe labeled “wastewater” was observed flowing into the collection sump. Mr. Orazio said that this was reject water from the Facility’s water softener.

Flows and “Tank 3” pH are collected on a digital display and on a paper wheel chart.

The operator said that the wastewater treatment alarm system is connected to the acid room water supply; if wastewaters are out-of-specifications, water to the acid room is turned off.

C. Records Review

At approximately 10:30, Mr. Orazio, Mr. Oosthuysen, the EPA Inspectors, and the Town representatives met to review Facility records.

I asked for clarification of a note in the New Hampshire Department of Environmental Service's ("NH DES") August 24, 2021, inspection report that, "2-3x per year discharge of self-neutralized acid/caustic bath." Mr. Orazio said that the acid room caustic and acid baths are shipped off as wastes and not discharged to the POTW. Changing of the acid bath is performed two or three times per year, but the Facility has found that it did not need to change the caustic bath so frequently, and it has not been changed since at least September 2019.

I asked what the source of nickel in the Facility's discharges was. I said that, according to the Facility's Periodic Reports on Continued Compliance, a total nickel concentration of 3.69 mg/L was found in a sample taken on January 18, 2018, in excess of the average monthly Metal Finishing PSNS of 2.48 mg/L. I said that, in 2022, there were several results of greater than 1 mg/L of total nickel reported by the Facility.

Mr. Orazio said that one potential source of nickel could be silver nitrate testing. A few drops of reagent are added to test for the presence of chloride in rinse waters.

Mr. Orazio said that, on May 12, 2023, the Facility had received compliance sampling results from its consultant for samples collected on April 24, 2023. These results are attached in Appendix D of this report. The consultant noted exceedances of the Town's permit for total chromium, total copper, total nickel, and total zinc. The following table summarizes results for these parameters:

	Result (mg/L)	Town permit (mg/L)	Metal Finishing Average Monthly PSNSs (mg/L)
Chromium (T)	3.1	0.4	1.71
Copper (T)	0.99	0.2	2.07
Nickel (T)	20	2.38	2.38
Zinc (T)	0.34	0.3	1.48

The results for total chromium and total nickel were in excess of the Metal Finishing Average Monthly PSNSs.

Mr. Orazio said that, when the sample was taken, it was noted that sediment was present in the sample. Upon investigation, the Facility found that the discharge sump had a layer of four to twelve inches of sediment on the bottom. The Facility had this sediment analyzed and found high concentration of chromium and nickel, with copper and zinc present as well. Mr. Orazio said that the Facility believed that this sediment has been present in the sump for years, dating back to when the facility performed electroplating and that the sediment had been disturbed when a sample was collected in April. Mr. Orazio said that the sump had been cleaned out and resampling was scheduled for the following day, May 18, 2023.

Mr. Orazio said that the Facility had notified the Town of the non-compliance.

Mr. Orazio provided Ms. Shea with a copy of the Facility oil Spill Prevention, Control, and Countermeasure (“SPCC”) plan. The site plan from the SPCC plan is provided in Appendix E of this report.

Mr. Orazio said that the Facility had determined that air emissions permitting from NH DES of the vent stack from the acid room was not required. Mr. Orazio said that the sodium hydroxide tank is heated to 140 degrees Fahrenheit.

D. Outdoor Facility Tour

At approximately 10:50, Mr. Orazio and the EPA Inspectors performed a tour around the exterior of the Facility’s production and wastewater treatment areas at 94 Tide Mill Road.

Mr. Orazio said that accessing the roof to inspect vents would be difficult. The acid room is vented to a white stack visible from the ground on the southwest side of 94 Tide Mill Road. No discoloration of the stack was visible.

Mr. Orazio said that the building was heated by natural gas. The Facility’s 275-gallon fixed oil tank, located inside 94 Tide Mill Road, holds non-petroleum-based cutting oils.

Several vents were observed on the northeast side of 94 Tide Mill Road; Mr. Orazio said that the building is leased and some of the vents were used by a previous tenant and not by Brazonics.

The Facility’s hazardous waste storage area is located in a small building on the northwest side of 94 Tide Mill Road. The door to the building was locked and the floor of the building had built-in secondary containment pallets.

No industrial activities, materials storage, or particulate matter or visible deposits from roof stacks and/or vents potentially exposed to stormwater were observed.

E. Closing Conference

At approximately 11:15, Mr. Orazio, Mr. Oosthuysen, and the EPA Inspectors held a closing conference.

I said that it appeared that the Facility is no longer subject to the Metal Finishing PSNSs. I said that I would discuss this determination with my management.

I said that I would like to see the results of the follow-up sampling planned for the following day.

I said that I would write an inspection report and send the report to the Facility, likely with a cover letter requesting the May 18 sampling results.

The EPA Inspectors departed at approximately 11:30.