NPDES Inspection Report – Pretreatment Categorical Industrial User

National Database Information	
Inspection Entry Date/Time: February 27, 2025 / 0855	Inspection Type: **Pretreatment Categorical Industrial User (CIU)**
Inspection Closing Date/Time: February 27, 2025 / 0945	NPDES ID Number: MTPF00101
Inspection ID: 202502_MTPF00101	
Lead inspector and affiliation: Lisa-kay Prideaux / EPA Region 8 Montana Operations Office	

Facility Location Information	
Site/Facility Name & Location: **Shiloh Sharps, Inc.** **201 Centennial Drive** **Big Timber, Montana 59011** **45.837893°N; -109.940679°W**	Mail Report (Electronic Delivery) to: **Kirk Bryan, Owner** **Shiloh Sharps, Inc.** **Kirk@shilohrifle.com**

Contact Information	
	Name(s)/Title
Person/Company meeting definition of Owner/Operator	**Shiloh Sharps, Inc.**
Facility Contacts:	**Kirk Bryan / Shiloh Sharps, Inc. / Owner (present during inspection)**
	Robert Bryan / Shiloh Sharps, Inc. / Owner (not present)
	Phyllis Bryan / Shiloh Sharps, Inc. / Owner (not present)
	Lucinda Bryan / Shiloh Sharps, Inc. / Owner (not present)
Authorized Official(s)	**Kirk Bryan / Shiloh Sharps, Inc. / Owner**

Areas Evaluated During Inspection		
Permit	Effluent/Receiving Waters	Compliance Schedule
Records/Reports	Flow Measurement	**Pollution Prevention**
Facility Site Review	**Self-Monitoring Program**	Laboratory
Stormwater	**Operations and Maintenance**	**Pretreatment**

Report Review and Signature		
Drafter Name	Address/Phone Number	Date
LISA-KAY PRIDEAUX Digitally signed by LISA-KAY PRIDEAUX Date: 2025.04.01 13:42:58 -06'00'	**U.S. EPA Region 8, Montana Operations Office** **Prideaux.Lisakay@epa.gov** **406-457-5022**	**03.06.2025**
Reviewer Name	Address/Phone Number	Date
Stephanie Passarelli	**U.S. EPA Region 8** **Passarelli.stephanie@epa.gov** **303-312-6803**	**03.14.2025**
Management Reviewer Signature	Address/Phone Number	Date
EMILIO LLAMOZAS Digitally signed by EMILIO LLAMOZAS Date: 2025.04.01 12:36:47 -06'00'	**U.S. EPA Region 8** **NPDES & Wetlands Section Supervisor** **Llamozas.Emilio@epa.gov**	**03/31/2025**
Emilio Llamozas	**303-312-6407**	

Inspection Narrative and Site Description

Introduction

The U.S. Environmental Protection Agency (EPA) promulgated regulations at 40 C.F.R. Part 403 establishing the General Pretreatment Regulations and pretreatment standards for various point source categories at 40 C.F.R. Parts 405 – 471. These regulations are designed to regulate the introduction of pollutants into publicly owned treatment works (POTWs) that are determined not to be susceptible to treatment by such treatment works or which could interfere with the operation of such treatment works. The State of Montana has not sought authorization to administer the pretreatment component of the National Pollution Discharge Elimination System (NPDES) program, and the City of Big Timber has not developed an EPA-approved pretreatment program. EPA administers the pretreatment portion of the NPDES program in Montana and is the pretreatment "Control Authority," as defined by 40 C.F.R. Part 403.3(f), for industrial users that discharge to the Big Timber POTW. The Big Timber POTW discharges into the Boulder River.

Metal finishing facilities that discharge wastewater to a POTW are subject to the Metal Finishing Point Source Category Pretreatment Standards found at 40 C.F.R. Part 433. The applicability section of the Metal Finishing Point Source Category states at 40 C.F.R. Part 433.10(a), "the provisions of this subpart apply to plants which perform any of the following six metal finishing operations on any basis material: … If any of those six operations are present, then this part applies to discharges from those operations and to discharges from any of the following 40 process operations." Coating (chromating, phosphating, and coloring) is one of the six core metal finishing operations and is described in Table 3-1 on page 3-2 of EPA's 1984 *Guidance Manual for Electroplating and Metal Finishing Pretreatment Standards:* "Coatings – Any operation that includes chromating, phosphating, metal coloring and passivating… Metal coloring involves the chemical method of converting the metal surface into an oxide or similar metallic compound to produce a decorative finish."

On Thursday, February 27, 2025, at approximately 0855, EPA inspector Lisa-kay Prideaux (Inspector) conducted an announced pretreatment Significant Industrial User (SIU) inspection of Shiloh Sharps, Inc. (facility) located at 201 Centennial Drive in Big Timber, Montana. The purpose of the inspection was to evaluate the facility's compliance with the requirements in 40 C.F.R. Parts 403 and 433 for the General Pretreatment Regulations and Metal Finishing Point Source Category Pretreatment Standards (Subpart A), respectively. The inspector met with Mr. Kirk Bryan, one of four owners and presented her inspector credentials to Mr. Bryan. The inspector held an opening conference to explain the purpose of the inspection and discussed the role of the EPA regarding pretreatment regulations in Montana. The inspector asked a series of questions throughout the inspection; responses to the questions, observations, and photograph descriptions were documented in a bound checklist. All photographs taken during the inspection are included in the attached photo log and are maintained by EPA in accordance with the Quality Assurance Field Activities Procedure and Standard Operating Procedure.

Facility Description and Process Overview

Mr. Bryan provided an overview of the operations and processes at Shiloh Sharps, Inc. The company was started in New York in 1975 and moved to Big Timber, Montana, where this facility has been in operation since 1979, manufacturing replicas of the 1874 Sharps rifles through a combination of fabrication and assembly. Metal components of the rifles are colored through the application of a metal

salt coating during the bluing process. The bluing process includes cleaning, polishing, rinsing metal components, and immersing them in a solution of black oxide salt, to produce a decorative color finish. Metal components also go through a case hardening process where the metal is heat treated so the surface of the metal component is hardened, while keeping the underlying metal layer ductile. The facility operates four days a week and produces between 300-350 rifles per year.

The bluing process starts by taking various types of steel stock and creating the steel components needed to fabricate the Sharps rifle. The facility has four computer numerical control (CNC) machines that cut the steel stock to the desired specifications. Used oil from the CNC machines is collected and given to local shops to burn in oil heaters during the winter months. Some steel components undergo a bluing process (barrels, screws) while other components undergo a case hardening process (screws, fasteners, firing pins, bolts). For the bluing process, the steel components are first cleaned with acetone, then placed into a 70-gallon tank with a Du-Lite soap solution bath which is heated to 150 degrees Fahrenheit. Next, the steel components are rinsed with water in a different 70-gallon tank bath that is also heated to 150 degrees Fahrenheit. The hot rinse water overflows to a 40-gallon tank with a sump pump. After the steel components are cleaned and rinsed, the components are placed in a separate 70-gallon tank where they are soaked in a black oxide salt bath (which is composed of Du-Lite Steelkote) for up to 20 minutes; a separate 35-gallon tank is used for smaller steel components. This black oxide salt bath is continuously replenished with tap water to maintain a constant temperature, and the addition of black oxide salts when needed. The components are then rinsed with cold water in a 70-gallon non-heated rinse tank. The cold-water rinse overflows to the 40-gallon tank with a sump pump. Parts are transferred from one tank to the next via metal baskets; the tanks are close enough that there is little dripping between tanks. Any liquid hitting the floor would be contained in the area due to the floor drain being plugged. The bluing process line is operated approximately once every two weeks.

The metal components which undergo the case hardening process are first cleaned with acetone and then heat treated in an oven containing sodium cyanide. Sodium cyanide is heated in an oven until it turns to liquid, metal components are heated enough that they begin to absorb carbon from the sodium cyanide. The additional carbon enters the crystalline structure of the surface of the metal, and hardens when cooled, or quenched. This leaves the surface of the metal component hard, while the interior characteristics of the metal do not change. Depending on the length of time the metal component is exposed to the sodium cyanide, the process will prevent corrosion and provide a decorative finish. Once the oven cools, the sodium cyanide returns to solid form and is reused. Spent sodium cyanide, in ash form, is placed in a drum and is recycled when full. The drum is hauled offsite by a contractor, Safety Kleen as needed but approximately once annually. Once the metal components are removed from the oven, they are submerged in a quench tank containing water. The quench tank helps to rapidly cool the heat-treated steel components and develop the desired color.

When the process is complete, all rinse water/overflow collected in the 40-gallon tank with a sump pump, is pumped into a 750-gallon storage tank. The 40-gallon tank has a high and low float valve for activating pumping. The storage tank is gravity fed into a gas fired boil out tank with an automatic float valve that adds water as it boils into steam. All treated steel components are then assembled with wooden components to form the final product.

Records

After the facility representative provided a background description of the facility operations, the inspector asked to see records to include transfer logs for waste materials transferred off-site, standard operating procedures (SOP) for the bluing, case hardening, and boil out operations, and Material Safety Data Sheets for chemicals kept on-site. The facility has an SOP and has changed its process to eliminate the potential for a slug discharge through the addition of a boil out tank to convert all effluent water to steam. The facility is not required to maintain a Slug Discharge Control Plan with current operations. The facility is currently under an Administrative Order on Consent (CWA-08-2019-0009) which requires the issuance of a Notice of Discharge Requirements before the Administrative Order on Consent can be closed out. The facility was provided an application form on April 30, 2024, as part of the March 27, 2024, compliance evaluation inspection report. Mr. Bryan stated he has started the process of completing the application; however, has some questions and concerns with the information required. The inspector stated she would have EPA's pretreatment coordinator reach out and provide assistance.

Site visit

After facility representative interviews and records review, Mr. Bryan walked the inspector around each of the processes. We started in the manufacturing area, where there were multiple worktables, tools, CNC machines, barrel drilling machines, and other large pieces of equipment used to manufacture the various steel components used in the Sharps rifle. Mr. Bryan stated the raw materials used at the facility primarily include black walnut wood and various types of steel stock (e.g., barrel stock, screw stock). Next, we entered the east side of the building where the bluing and case hardening operations occur. The room is set up where the bluing process is on the east side of the room and the case hardening process is on the west side of the room. The bluing process includes a line of five tanks: a soap bath and hot water rinse (photo 167), two bluing tanks (one for larger parts and one for smaller parts) (photos 166 & 170), and a cold rinse water tank (photo 166). The soap tank and two bluing tanks are not drained between batches. The hot water rinse tank and the cold-water rinse tank have overflows on the back of the tanks that send overflow water during the process to the 40-gallon sump tank located behind the hot rinse tank (photos 168 & 169). The hot water rinse tank and cold-water rinse tank are drained after each batch; water is discharged into the 40-gallon sump tank and to the boiler tank (photo 173).

The case hardening operation includes an oven containing sodium cyanide (photo 171) and two cold-water quench tanks (photo 172). The quench tanks are continually replenished with water during the process. The quench tanks are discharged via a siphon hose across the room to the cold-water rinse tank in the bluing process, which then discharges into the sump tank, and ultimately to the boiler tank. There is a floor drain located in the center east of the bluing room which is connected to the City of Big Timber's POTW. However, the drain has a plug in it which is located under a plate (subsurface) and is screwed into the drain piping; the drain is constantly plugged. Facility staff would only unscrew the plug if the emergency eye wash and/or shower are used.

The sump tank (photos 168 & 169) is on a high-level float system to pump contents of the tank to a 750-gallon boiler storage tank in the evaporation room (photo 173). The storage tank has a shut-off valve, but when opened, water is fed via gravity into a gas fired boil out tank with an automatic float valve that adds water as it boils into steam (photo 174). The steam is released outside of the building.

The chemicals are stored in the evaporation room on the south side where there is no floor drain. All chemical drums are marked and are set on wooden pallets. Used oil from the CNC machines is collected and given to local shops to burn in oil heaters during the winter months to produce heat.

Closing and Follow-Up

A closing conference was held on-site with Mr. Bryan, during which the process for the inspection report was discussed. The inspection concluded at 0945.