NPDES Inspection Report – Pretreatment Categorical Industrial User

National Database Information	
Inspection Date: **02/21/2023**	Inspection Type: **Pretreatment Categorical Industrial User**
Entry/Exit Time: **9:00 am / 1:30 pm**	NPDES ID Number: **COPF00101**
Inspection ID: **202302_COPF00101**	
Lead inspector and affiliation: **Emilio Llamozas, EPA Region 8**	
Inspector and affiliation: **Akash Johnson, EPA Region 8**	
Inspector and affiliation: **Bolor Bertelmann, EPA Region 8**	

Facility Location Information (*Name/Location/ Mailing Address*)	
Site/Facility Name & Location: **Jabil, Incorporated** **1051 Synthes Ave.** **Monument, Colorado 80132**	Mail Report (Electronic Delivery) to: **Kevin White, Director of Operations** **kevin_white@jabil.com**

Contact Information		
	Name(s)/Title	
Person/Company meeting definition of Owner/Operator	**Jabil, Incorporated**	
Facility Contacts: *(indicate primary lead and present during inspection)*	**Kevin White / Director of Operations / Jabil, Incorporated (present)**	
	Jason Grunska / EHS Manager / Jabil, Incorporated (present)	
	Robert (Bob) Sievert / Facilities Maintenance Supervisor / Jabil, Incorporated (lead- present)	
	Tim Baskom / Maintenance Tech III and Wastewater / Jabil, Incorporated (present for part of inspection)	
Authorized Official(s)	**Kevin White / Director of Operations / Jabil, Incorporated (present)**	

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	Date	Address/Phone Number
EMILIO LLAMOZAS Digitally signed by EMILIO LLAMOZAS Date: 2023.04.06 08:56:31 -06'00' **Emilio Llamozas**	**04/04/2023**	**U.S. EPA Region 8** **1595 Wynkoop Street** **8ENF-W-NW** **Denver, Colorado 80202** **303-312-6407**
Reviewer Name	Date	Address/Phone Number
Akash Johnson	**04/06/2023**	**U.S. EPA Region 8** **1595 Wynkoop Street** **8ENF-W-NW** **Denver, Colorado 80202** **303-312-6067**
Management Reviewer Signature	Date	Address/Phone Number
EMILIO LLAMOZAS Digitally signed by EMILIO LLAMOZAS Date: 2023.04.06 08:58:05 -06'00'	**04/06/2023**	**U.S. EPA Region 8** **1595 Wynkoop Street** **8ENF-W-NW** **Denver, Colorado 80202** **303-312-6407**
Emilio Llamozas, Acting NPDES and Wetlands Enforcement Section Supervisor		

Inspection Narrative and Site Description

Introduction

On Tuesday, February 21, 2023, at approximately 9:00 am, the U.S. Environmental Protection Agency (EPA) inspectors Emilio Llamozas, Akash Johnson and Bolor Bertelmann (inspectors) conducted a pretreatment categorical industrial user (CIU) inspection of Jabil, Incorporated (Jabil; facility) located at 1051 Synthes Avenue, Monument, Colorado. The purpose of the inspection was to evaluate Jabil'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, respectively. The inspection consisted of an opening conference, industrial process and compliance questions, facility inspection and a closing conference. A records review was performed offsite after the onsite inspection. Throughout the inspection, the inspectors recorded their observations in bound checklists.

The inspectors held an opening conference with the facility representatives listed above to explain the purpose of the inspection and discussed the role of the EPA regarding pretreatment regulations in Colorado. Colorado Department of Public Health and Environment (CDPHE) had previously issued a permit to Jabil (COP900205), but the permit was terminated following the issuance of the May 26, 2020 EPA letter, Notification of Discharge Requirements, and Fact Sheet to Jabil (COPF00101).

Facility representatives provided an overview of the operations and processes at Jabil. Inspectors proceeded to ask a series of questions to help evaluate compliance with pretreatment regulations found in 40 C.F.R. Part 433 for the Metal Finishing Point Source Category. Dischargers subject to these regulations include facilities that perform any of the following six metal finishing operations: Electroplating, Electroless Plating, Anodizing, Coating (chromating, phosphating, and coloring), Chemical Etching and Milling, and Printed Circuit Board Manufacture. If any of those six operations are present, then the discharges from those operations and 40 ancillary process operations are subject to the metal finishing point source category. Based on discussions with facility representatives and information in the Fact Sheet, Jabil performs Anodizing and Coating processes (electropolishing and passivation); therefore, the facility operations are subject to the Metal Finishing Point Source Category regulations. The new source date for metal finishing indirect dischargers was August 31, 1982. Because the facility began metal finishing operations in 1992, the facility is classified as a new source.

Facility Description and Process Overview

Jabil manufactures titanium and stainless-steel screws and nails used in orthopedic implants for trauma surgery. The facility manufactures approximately 9 million screws and 250,000 nails each year. The facility is owned and operated by Jabil since April 2019. Prior to Jabil, the facility was operated by Johnson & Johnson dba Depuy Synthes LLC from 2013 to April 2019. The operations began at the facility in 1979 under Synthes, with metal finishing processes beginning in 1992. Jabil discharges to the Monument Sanitation District and Tri-Lakes' publicly owned treatment works (POTW) which in turn discharges to Monument Creek.

Jabil operates 24-hours per day, Monday through Friday, with weekend overtime on Saturday and Sunday. Jabil is currently supported by approximately 705 employees, and there are three 8-hour shifts per day. The shift are from 6 am to 2 pm, 2 pm to 10 pm and 10 pm to 6 am. The 6 am to 2 pm shift has approximately 390 employees. The 2 pm to 10 pm shift has approximately 188 employees. The 10 pm to 6 am shift has approximately 127 employees.

The manufacturing process includes the following three departments: Blank (heading) department; Screw 1 and Screw 2 departments; and Nail department. Raw metallic titanium and 316 grade stainless steel bar stock are stored in the warehouse for use in the processes.

The Blank department uses coil stock and titanium or stainless-steel bar stock to make screws. Coil stock is cut to length before deburring. Bead blasting and vibratory finishers are used in the machining processes and spent baths and rinse wastewater are sent to System 1 of the wastewater treatment system. Products are routed through an ultrasonic cleaner, containing deionized (DI) water and surfactant, to remove residual coolant.

Screw 1 and Screw 2 departments perform identical processes; the differentiating factor being that screws manufactured in the Screw 1 department originate from the Blank department, while screws manufactured in the Screw 2 department are made from bar stock. The machining operations involve turning the metal to create screws. The products are cleaned between steps using a DI water and surfactant in an ultrasonic cleaning tank (photo 76). The cleaning process uses Mirachem 500 cleaner and a rinse tank. The contents of the ultrasonic rinse tank are discharged every shift by manually releasing the tank contents to a sump that pumps to System 1 of the wastewater treatment system. Vibratory finishers are used to smooth out edges and spent detergent is discharged to System 1 of the wastewater treatment system (photo 77). The screw products are degreased in totally enclosed vapor degreasers (photo 75). The vapor degreasers use Novec (1,2-Trans-Dichloroethylene). Spent degreaser is disposed of off-site by Safety-Kleen and not discharged to System 1 of the wastewater treatment system.

The Nail department uses bar stock to produce rods. Machining operations produce different diameter nails and hollow them out. The machined nail products are cleaned using ultrasonic cleaning and vibratory finishers. All spent baths and rinse wastewater are sent to System 1 of the wastewater treatment system.

The machined and cleaned screws and nails are sent to the Finishing Department for metal finishing. The Finishing Department includes Electropolishing (EP), Passivation, and Anodizing. The process lines are segregated into areas within the Finishing Department. The process lines are mounted on above-grade grates located above two collection pits. One larger collection pit encompasses the EP and Passivation lines; a smaller collection pit is located below the Anodizing line. The wastewater generated from the metal finishing process lines in the Finishing Department are pumped from the two collection pits to System 2 of the wastewater treatment system.

<u>Electropolishing</u>
EP and Passivation are used to finish stainless steel products. Parts are routed through either the A or B route with identical baths in the process. The rinse baths have 200-gallon capacity, and chemical solution tanks are 350-gallon capacity.

Parts are placed in an alkaline clean bath (6% sodium bicarbonate), then rinsed in hot-water and cold-water cascading rinse baths. The parts are placed in De-Ox descaling acid and heated electropolish tanks (phosphoric acid and sulfuric acid) charged with low electrical current (photo 80). The parts are rinsed in a hot water cascading bath and then two DI cold water cascading rinse baths.

Chemical solution tanks are reused and replenished with additional chemicals. The preventative maintenance (PM) schedule is followed for removal and disposal of chemical solutions. When the De-Ox and electropolish acid tanks become contaminated or spent, the solutions are barreled and sent

offsite for disposal through Safety Kleen. The tanks are cleaned with a bleach and water solution according to the PM schedule. The alkaline clean bath and wastewaters generated from the EP process line are collected in the pit (photo 81) located underneath the EP and Passivation process lines or discharge to System 2.

Passivation

The Passivation process line finishes stainless-steel parts and parts that initially go through EP are wet-transferred to the Passivation line. Parts are placed into a 50% nitric acid bath and then a 20% nitric acid bath (photo 82). Parts are then moved through a series of three cascading rinse tanks; two tanks of DI water and an ultrasonic rinse bath. The nitric acid baths are replenished with acid until the baths are contaminated or spent. The spent acid is disposed of offsite. The PM schedule indicated this process occurs semi-annually. The tanks are cleaned with a bleach and water solution according to the PM schedule. All tanks in the Passivation process line discharge to the pit (photo 81) located underneath the EP and Passivation process lines for discharge to System 2.

Anodizing

The Anodizing line finishes titanium products. A dilute detergent (Sparkleen) is used to clean the products followed by two cascading rinse baths of DI water which all discharge to wastewater treatment. The products are then placed in the bonderite nitric acid bath for etching. The 135-gallon bonderite nitric acid bath is barreled and sent out for disposal as hazardous waste through Safety Kleen when the chemical is spent. Products are rinsed in two cascading DI water rinse baths and then placed in anodize neutral salt baths, followed by two DI rinse baths (photos 78 and 79). The DI rinse baths and anodize neutral salt bath discharge to the smaller of two collection pits. The wastewater contained in the smaller collection pit is pumped to the larger collection pit and eventually pumped to System 2 of the wastewater treatment. The tanks are cleaned by completely draining the tanks and cleaning them with a bleach and water solution.

Sterilization

Certain parts undergo initial sterilization at the facility. The parts packaged under sterile conditions are first rinsed in one of five thermal rinse washers with DI water at 180°F for sterilization and are air-dried prior to packaging. The wastewater from the thermal rinse washers is collected in a conditioning tank where City water is injected to allow the temperature of the wastewater to decrease as it is discharged to System 1 of the wastewater treatment system. Each of the five washers generates approximately 8 gallons of wastewater per cycle and each cycle lasts approximately one hour for 12 hours per day. The approximate volume is 450 gallons per day (gpd).

Wastewater Treatment

The wastewater treatment system has two treatment systems (System 1 and System 2) that are designed to treat wastewater from the various manufacturing processes.

System 1 receives wastewater from stationary and mobile ultrasonic cleaners, vibratory deburring units, heated blank cleaning, the oil/water separator (photo 86), and the metal finishing ventilation/air scrubber. Janitorial mop water (photo 83) is discharged through the oil/water separator before flowing into System 1. Additionally, the reverse osmosis/ deionization (RO/DI) purification system and thermal rinse for sterilization discharge to System 1. System 2 receives wastewater from the Metal Finishing Department (Electropolishing, Passivation, and Anodizing).

System 1

The wastewaters enter the System 1 holding pit, which can hold 14,180 gallons, but floats shut off

incoming flow when the volume in the pit reaches 9,400 gallons. The wastewater in System 1 pit is pumped to a series of three treatment chambers and a surge tank (photo 88). Defoamer (ICM-TA-10X), coagulant (ACP-105), conditioner (benzo floc 90-C), and caustic (50% caustic) for pH adjustment are added to the wastewater in chamber 1. The wastewater is mixed in chamber 2, and flocculant (ACP 720) is added in chamber 3 to bind the metals to the floc. Wastewater overflows from chamber 3 into a surge tank and is pumped into the clarifier. Sludge is removed from the bottom of the clarifier and sent to the filter press (photo 88). There is also a backup filter press that is not currently used. Filter cake is disposed of in a class C landfill. Supernatant from the filter press and effluent from the clarifier flow to the Effluent 1 tank and then through a series of two 25-micron filter cannisters and sent to the Effluent 1 and 2 tank, where it combines with treated wastewater from System 2 (photo 90). The treated effluent then is sent through another 25-micron filter cannisters and then to the Final Discharge Tank. This new Final Discharge Tank was added on October 12, 2021. The wastewater then flows through a flow meter and pH meter and is then discharged to the Monument Sanitation District sewer. Effluent samples are taken from the Final Discharge Tank (photos 91 and 92).

System 2

Wastewater is collected into three 5,000-gallon and one 4,000-gallon storage tanks prior to treatment. The wastewater from the storage tanks is discharged to the System 2 pit. The System 2 pit can hold 784 gallons, but floats are installed to shut off incoming water at 500 gallons. The wastewater is pumped from the pit to a caustic chamber and then to a series of treatment chambers (photo 89). In the caustic chamber, 50% caustic solution is added to raise the pH to 8. Defoamer (ICM-TA-10X), coagulant (ACP-72), and conditioner (benzo floc 90-C) are added to the wastewater in chamber 1. Caustic (50% caustic) for pH adjustment is added in chamber 2. The wastewater is mixed and flocculant (ACP 720) is added in chamber 3 to bind the metals to the floc. Wastewater overflows from chamber 3 to a surge tank and pumped to a clarifier. Sludge is removed from the clarifier and sent to the System 2 filter press. Filter cake is disposed of as hazardous waste every two weeks. Supernatant from the filter press and effluent from the clarifier flow through a series of two 25-micron filter cannisters before combining with System 1 treated wastewater in the Effluent 1 and 2 tank (photo 90). The combined wastewater flows from the Effluent 1 and 2 tank through an additional 25-micron filter cannister for polishing prior to being sent to the Final Discharge Tank. This new Final Discharge Tank was added on October 12, 2021. The wastewater then flows through a flow meter and pH meter and is then discharged to the Monument Sanitation District sewer. Effluent samples are taken from the Final Discharge Tank (photos 91 and 92).

Sample Collection

Required wastewater samples are collected once per quarter, a 24-hour composite sample is collected from Final Discharge Tank for metal parameters, using an automatic sampler (photo 92). The cyanide sample is collected as a grab sample from the Final Discharge Tank (photo 91). The sample bottles are pre-preserved from the laboratory and the contents of the 24-hour composite sample jug is poured into the laboratory sample bottles. The flow and pH are continuously recorded from the discharge pipe of the final discharge tank (photo 90).

Facility Walk-Through

The inspectors performed a facility walk-through. The inspectors observed the Blank (heading) department; Screw 1 and Screw 2 departments; and Nail department. The inspectors then observed the Metal Finishing Department including the Electropolishing, Passivation, and Anodizing areas (photos 78-82). The inspectors also observed the storage area for the machine oils, degreasers and other fluids (photo 84). The inspectors then observed the equipment rinse station (photo 85) that is discharged to a pit

that is pumped to the oil water separator (photo 86). The inspectors also observed the hazardous and non-hazardous waste storage room with self-contained pits (photo 87). Then the inspectors observed the wastewater treatment System 1 and System 2 (photos 88-92).

Records Review

Jabil provided records to the inspectors before and after the inspection. Inspectors reviewed the Toxic Organic Management Plant (TOMP) and Slug Discharge Control Plan (SDCP). The inspectors reviewed the pH min and max daily records for 2021 and 2022. The pH probe calibration records were also reviewed. The inspectors also reviewed the waste hauling and waste breakdown sheets. Inspectors reviewed the Discharge Monitoring Reports (DMRs) and associated laboratory records, reports and chains-of-custody (COCs) from January 2021 (Q1 2021) to December 2022 (Q4 2022). Findings associated with the records review are described below.

The inspectors also performed a cursory review of the flow volumes of non-regulated streams (oil/water filtration, air scrubber return, DI reverse osmosis brine, treatment system cleaning and sterile product packaging-thermal rinse) for 2021 and 2022 that are treated in System 1 of the wastewater treatment system to ensure that the combined wastestream formula (CWF) limits found in the Notification of Discharge requirements was still representative of the current discharges. There was fluctuation in the flow volumes from month to month, but the total variation was less than 20% on a yearly basis for 2021 and 2022 compared to the non-regulated wastewater flow amounts listed in the Notification of Discharge requirements Fact Sheet.

Closing and Follow-Up

The inspectors held a closing conference with Mr. White, Mr. Grunska and Mr. Sievert on February 21, 2023 at 1:00 pm. EPA inspectors informed the facility contacts of the preliminary observations that were noted during the inspection. On March 3, 2023, EPA emailed the preliminary findings to the facility representatives and also requested additional information regarding the inspection.

Findings, Corrective Actions and Recommendations

Finding #1: Jabil did not collect a representative discharge sample during the fourth quarter of 2022.

On January 24, 2023, Jabil called the EPA and indicated that it failed to take a representative discharge sample for the fourth quarter of 2022. In preparing the discharge monitoring report, Jabil discovered that the wastewater treatment operator collected a sample on October 25, 2022 from the final discharge pipe while the treatment system was not actively discharging wastewater to the Monument POTW. The wastewater sample was collected from the stagnant water contained within the piping leading to Outfall 001. In addition, the sample collected was a grab instead of a composite sample. On January 31, 2023, Jabil submitted their fourth quarter 2022 DMR to the EPA, in which they indicated "No Data Collected" for the fourth quarter sampling event. The DMR also provided an explanation for the missed sample.

Pretreatment Requirement:

COPF00101 – Notice of Discharge Requirements

Part II.B.1 Specific Effluent Limitations and Monitoring Requirements (40 C.F.R.§ 403.12(g)(1-6); 40 C.F.R.§ 403.6(e); 40 C.F.R. § 433.17; 40 C.F.R. § 433.12)

All Regulated Process Wastewater discharged through Outfall 001 shall meet the limits identified in the Table 1. The limits in Table 1 are based on the Pretreatment Standards for New Sources (PSNS) at 40 C.F.R. Section 433.17. The facility introduces non-regulated process flows into Outfall 001, and the combined wastestream formula found in 40 C.F.R. § 403.6(e) was used to establish the alternative concentration limits.

Compliance with these limits shall be demonstrated by collecting samples or measurements at the minimum frequency and using the sample type listed in Table 1. The monitoring results shall be submitted to the EPA in accordance with the Periodic Compliance Report required by Part III.B of this Notification of Discharge Requirements. Samples and measurements taken at Outfall 001 shall be representative of the volume and nature of the discharge of the production day. Monitoring shall be conducted by sampling after treatment processes and prior to the introduction of sanitary flows.

Table 1 - Metal Finishing Point Source Category PSNS, 40 C.F.R. § 433.17 Discharges to Outfall 001							
ICIS Code	Parameter	Units	Numeric Limits[1]			Sample Type [2]	Frequency of Analysis[3]
			Instant-aneous	Daily Maximum	Monthly Average		
50050	Flow	gal/day	---	Report	Report	Continuous	Continuous
00400	pH	S.U.	≥5.0	---	---	Continuous	Continuous
01027	Total Cadmium	mg/l	---	0.08	0.05	Composite	Quarterly
01034	Total Chromium	mg/l	---	1.96	1.21	Composite	Quarterly
01042	Total Copper	mg/l	---	2.39	1.46	Composite	Quarterly
01051	Total Lead	mg/l	---	0.49	0.30	Composite	Quarterly
01067	Total Nickel	mg/l	---	2.81	1.68	Composite	Quarterly
01077	Total Silver	mg/l	---	0.30	0.17	Composite	Quarterly
01092	Total Zinc	mg/l	---	1.85	1.05	Composite	Quarterly
00720	Total Cyanide[4]	mg/l	---	0.85	0.46	Composite	Quarterly
78224	Total Toxic Organics [5,6]	mg/l	---	1.51	---	Volatile Organic Compounds = Grab Semi-Volatile Organic Compounds, Pesticides/PCBs = Composite	Once per six months

Part III.I.1.2.b Reporting and Notification Contacts
Effluent monitoring results shall be summarized for each month and recorded on a DMR to be submitted via NetDMR to the EPA on a **quarterly** basis. If no discharge occurs during a month, it shall be stated as such on the DMR.

Corrective Action 1:
Ensure that representative samples are taken from Outfall 001 at least once a quarter. Provide EPA with a response on how the facility will implement this corrective action.

Finding #2: The cyanide sample collected on June 6, 2022 did not meet the 14-day holding time required by 40 C.F.R 136 for cyanide samples.
The cyanide resample collected on June 6, 2022 at 11:00 am was analyzed by the laboratory on June 21, 2022, which is 15 days after the sample was collected. Therefore, the June 6, 2022 cyanide sample did not meet the 14-day holding time required by 40 C.F.R. 136 for cyanide samples.

Pretreatment Requirement:
COPF00101 – Notice of Discharge Requirements
Part II.C Sampling and Analysis Methods (40 C.F.R.§ 403.12(g)(3) and (5))
All sampling and analysis data must be representative of conditions occurring during the reporting period. All sampling and analyses shall be performed in accordance with procedures contained in 40 C.F.R. section 136 and amendments thereto or with any other test procedures approved by the EPA (*see* 40 C.F.R. §§136.4 and 136.5). Where 40 C.F.R. Part 136 does not include sampling or analytical

techniques for the pollutants in question, or where the EPA determines that part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analyses shall be performed using validated analytical methods or any other sampling and analytical procedures, including procedures suggested by EPA.

Corrective Action 2:
Ensure that sampling and analysis performed at the facility meets the requirements of 40 C.F.R. 136. Ensure that cyanide samples are analyzed within the 14-day holding time for cyanide samples. Provide EPA with a response on how the facility will implement this corrective action.

Finding #3: Treatment processes and the sampling location for the facility have changed since issuance of the May 26, 2020 Notice of Discharge Requirements.
According to the Fact Sheet, Outfall 001 is defined as the sampling port located on the 3-inch PVC discharge pipe from the final discharge tank and a flow meter is installed on the discharge pipe. During the inspection, Jabil indicated that they added a new final discharge tank after the previous final discharge tank (photo 90). The new tank was added on October 12, 2021. The combined wastewater flows from the previous final discharge tank through an additional 25-micron filter cannister for polishing prior to being sent to the new final discharge tank. The wastewater then flows through a flow meter and pH meter and is then discharged to the Monument Sanitation District sewer. Effluent samples are taken from the new final discharge tank (photos 91 and 92).

Pretreatment Requirement:
COPF00101 – Notice of Discharge Requirements
Part I.B Outfalls
No regulated process wastewater shall be discharged to the Tri-Lakes POTW except at Outfall 001, designated below. The outfall designated below shall not be changed without notification to the EPA. Outfall 001 is a sampling port located on the 3-inch PVC discharge pipe from the final discharge tank of the wastewater treatment system. The sampling port is located on a rise in the PVC pipe after the final flow and pH meters and prior to discharge to the POTW.

COPF00101 – Notice of Discharge Requirements
Part III.E. Notification of changed Discharge (40 C.F.R.§ 403.12(j))
The facility shall promptly notify the EPA and the POTW in advance of any substantial change in the volume or character of pollutants in its discharge, including any of the listed or characteristic hazardous wastes referenced in Part III.F of this Notification of Discharge Requirements. For purposes of establishing alternative limits based on the combined wastestream formula, the facility shall notify the EPA and the POTW if the regulated or non-regulated wastewater flow amounts listed in the Fact Sheet increase or decrease by 20%.

Corrective Action 3:
Notify the EPA (Al Garcia, Region 8 Pretreatment Coordinator; garcia.al@epa.gov) in writing of any changes to treatment processes and the sampling location that have occurred since issuance of the May 26, 2020 Notice of Discharge Requirements . Provide a copy of this notification in response to this report.