



VIA ELECTRONIC MAIL

October 31, 2025

Deborah Goldblum
Remedial Project Manager
U.S. Environmental Protection Agency, Region III
4 Penn Center, Mail Code – 3LD10
Philadelphia, PA 19103

**Subject: Quarterly Progress Report No. 36
Former Kop-Flex Facility Site, Hanover, Maryland
USEPA ID No. MDD043373935
Administrative Order on Consent, Docket No. RCRA-03-2016-0170 CA**

Dear Deborah:

On behalf of EMERSUB 16, LLC, a subsidiary of Emerson Electric Co. (Emerson), WSP USA, Inc. (WSP) is submitting this quarterly progress report describing the activities conducted in the 3rd Quarter of calendar year 2025 (July 1st through September 30th) as part of the corrective measures implementation at the former Kop-Flex, Inc. facility property located at 7555 Harmans Road (Site) in Hanover, Maryland. The Site is identical to the area described as the “Facility” in the Administrative Order on Consent, Docket No. RCRA-03-2016-0170 CA (Consent Order). The report also describes the activities planned for the 4th Quarter of calendar year 2025 (October 1st through December 31st).

This progress report is being submitted to the U.S. Environmental Protection Agency (EPA) pursuant to Section VI.C.3 of the Consent Order. Please note that, in addition to performing the work conducted under the Consent Order, EMERSUB 16 continues to perform the remedial activities specified in the October 2015 Response Action Plan (RAP) approved by the Maryland Department of the Environment (MDE) Voluntary Cleanup Program, and that EMERSUB 16 copies USEPA on all submittals required under that program.

If you have any questions, please do not hesitate to contact me at 703-709-6500.

Kind regards,

Robert E. Johnson
Vice President – Earth & Environment

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Encl.

cc: Mrs. Lisa Douglas, EMERSUB 16 LLC
Mr. Tate Stevens, Voluntary Cleanup Program Section, MDE
Mr. Brian Deitz, Site Assessment and Remediation Division, MDE

WSP USA
Suite 300
13530 Dulles Technology Drive
Herndon, VA 20171

Tel.: +1 703 709-6500
Fax: +1 703 709-8505
wsp.com



CERTIFICATION

I certify that the information contained in or accompanying this quarterly progress report is true, accurate, and complete.

As to those portions of this quarterly progress report for which I cannot personally verify their accuracy, I certify under penalty of law that this quarterly report and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature:

A handwritten signature in blue ink, appearing to read 'Stephen L. Clarke', written over a horizontal line.

Name:

Stephen L. Clarke

Title:

President of EMERSUB 16, LLC

WSP USA
Suite 300
13530 Dulles Technology Drive
Herndon, VA 20171

Tel.: +1 703 709-8500
Fax: +1 703 709-8505
wsp.com



Quarterly Progress Report No. 36

Former Kop-Flex Inc. Site

July 2025 through September 2025

Site Name: Former Kop-Flex Inc.
Site Address: 7555 Harmans Road
Hanover, Maryland 21077

Consultant: WSP USA Inc.
Address: 13530 Dulles Technology Drive, Suite 300
Herndon, Virginia 20171
Phone No.: (703) 709-6500

Project Coordinator: Eric Johnson
Alternate: Lisa Kelly

1.0 ACTIVITIES COMPLETED DURING JULY 2025 – SEPTEMBER 2025 REPORTING PERIOD

1.1 HYDRAULIC CONTAINMENT SYSTEM OPERATION

- The hydraulic containment system (System) operated for 66 of the 92 days during the third quarter of 2025, which equates to a 72% run-time efficiency over this 3-month period. There were two unplanned shutdowns during the reporting period. The first unplanned shutdown occurred from August 29, 2025, through September 5, 2025, due to a delay in the delivery of chemical additives for the boiler water. The boiler chemicals are required to maintain proper operation of the boiler, which produces the steam needed to regenerate the synthetic resin used for treatment of the contaminated groundwater. The System operations resumed on September 5, 2025, after the boiler chemicals were delivered and replenished in the boiler. A second unplanned shutdown occurred on September 8, 2025, due to two issues: high differential pressure on one of the resin vessels, and release of steam and hot water into the building due to the failure of two pilot valves on the boiler skid. The System was briefly restarted for a few hours on September 10th and September 25th to troubleshoot the issues and collect the September discharge sample but otherwise remained shut down through the end of the third quarter of 2025.¹
- A total of approximately 5.41 million gallons of impacted groundwater were extracted and treated during the third quarter of 2025, with a combined average withdrawal rate of 40.8 gallons per minute (GPM), including non-operational days, over the 3-month period. The combined flow is below the average of 63 GPM over the operational lifetime of the System, which is calculated from startup (2017) through 2024, primarily due to the run-time disruptions described previously. The normalized average withdrawal rate for the third quarter of 2025 calculated over operational days is 59.6 GPM, which remains slightly (3.4 GPM) below the lifetime average due to minor flow reductions from shallow recovery wells RW-1S and RW-3S and deep well RW-1D. WSP continues to monitor the flow rates of extracted groundwater from the recovery wells and evaluate the need for maintenance on the extraction wells, submersible pumps, and conveyance piping to enhance groundwater extraction efficiency.
- Monthly effluent samples were collected for chemical analysis in accordance with the requirements specified in the National Pollutant Discharge Elimination System (NPDES) Permit for the System during the third quarter of 2025. The analytical results for all monitoring parameters complied with the limits set forth in the NPDES permit.
- To monitor chlorinated volatile organic compounds (CVOCs) and 1,4-dioxane mass removal and treatment efficiency by the System, samples of both the influent and effluent were collected and analyzed during the reporting period. A quarterly influent sample was collected in July. Monthly effluent samples were collected during the operating months (July, August, and September) in accordance with the NPDES Permit. The concentration of total CVOCs (392.2 micrograms per liter [$\mu\text{g/L}$]) and 1,4-dioxane (89 $\mu\text{g/L}$) in the July influent sample were slightly higher than the influent concentrations present in the January and

¹. On October 17, 2025, the boiler pilot valves were replaced, and the System was restarted while continuing to assess the elevated differential pressure in the one resin vessel.



April 2025 samples and within range of historical total CVOC + 1,4-dioxane levels. By the end of September 2025, an estimated total of 578.8 pounds of CVOCs and 226.8 pounds of 1,4-dioxane have been recovered from the impacted portion of the Lower Patapsco aquifer.

No CVOC or 1,4-dioxane were detected at a concentration above the method reporting limits in the July 2025 and September 2025 effluent samples. In August 2025, two CVOCs, bromodichloromethane (1.4 µg/L) and chloroform (5.8 µg/L), and 1,4-dioxane (1.7 µg/L) were detected in the effluent at concentrations above the method reporting limits of 1.0 µg/L.

Bromodichloromethane and chloroform are not site-related contaminants, but are commonly found in chlorinated potable water as disinfectant byproducts of the reaction of chlorine and natural organic substances in the presence of bromide. The detections of these compounds in the August effluent water sample are believed to be related to the potable water that is added to the System during the resin regeneration process. The total volatile organic compound (VOC) concentration in the August sample (7.2 µg/L) was below the daily maximum of 100 µg/L in the Permit, and the 1,4-dioxane level was below the site-specific cleanup level of 15 µg/L. The System achieved an over 100% removal efficiency for site-related CVOCs and over 98% removal efficiency for 1,4-dioxane during the third quarter of 2025.

1.2 MDE SYSTEM INSPECTION

- On July 16, 2025, representatives from the MDE Water and Science Administration’s Compliance Program performed a routine yearly inspection of the System to assess compliance with the State Discharge Permit No. 21-DP-3442, which is equivalent to the NDPES Permit for the System. The compliance inspection included a walkthrough of the System components and a review of records.
- MDE provided WSP with an inspection report on July 24, 2025. This report identified two Environmental Article Title 9 violations, both of which were related to the late 2024 and early 2025 total copper exceedances and associated investigation activities, seven records review findings, and one additional comment on the records for the discharge monitoring reports. After addressing MDE’s violations and findings for the System, WSP submitted a response letter to MDE on August 29, 2025. A copy of WSP’s response letter, which also includes MDE’s inspection report, is provided as Enclosure A.
- WSP’s response letter requested clarification on the due dates for submitting the monthly DMRs and an alignment of the permit reporting requirements within the NetDMR system. To date, MDE has not provided a response to this clarification request.

1.3 BOILER INSPECTION AND MAINTENANCE

- The boiler began malfunctioning in late August 2025. The malfunction began as an occasional, minor release of pressurized steam and hot water which developed into a more consistent and significant problem in early September. By September 8, 2025, the volume of steam and hot water released into the treatment building posed safety concerns for the System operator and limited the efficiency of the resin regeneration process. As noted in Section 1.1 of this Quarterly Progress Report, the steam and hot water release contributed to the decision to temporarily shut down the System on September 8th until repairs could be completed to prevent the release of steam and hot water.
- Tate Engineering, Inc. (Tate), the System’s boiler mechanical subcontractor, inspected the boiler on August 27, 2025, but could not diagnose the issue as the leak was inconsistently occurring at that time. After the leak became more consistent and necessitated the System shutdown, Tate reinspected the boiler on September 17, 2025, and determined that two leaking valves, the Spence temperature pilot valve and the main valve, were the cause for the release of steam and hot water. Replacement valves were ordered after the second visit.²

² The replacement valves were installed upon delivery on October 17, 2025. The System resumed operations on that date.



2.0 PLANNED ONSITE ACTIVITIES FOR THE FOURTH QUARTER OF 2025

- Resume the operation for the System following the replacement of the boiler valves on October 17, 2025. Perform maintenance on the System as needed, investigate the elevated differential pressure in the one synthetic resin vessel, and collect and assess the operational data to evaluate System performance.
- Conduct the required monthly effluent monitoring and reporting pursuant to the NPDES Permit.
- Complete the annual System inspection and maintenance activities as specified in the Operations and Maintenance Manual.
- Submit a renewal application for the Wastewater Discharge Permit for the System that was issued by the Anne Arundel County Pre-Treatment Program.
- Collect water level measurements from the monitoring and recovery wells in mid-November 2025 and evaluate the data to assess the aquifer response to remedial pumping and capture of the contaminant plumes in the shallow and deep zones of the Lower Patapsco aquifer.
- Conduct semi-annual sampling of the monitoring wells and recovery well discharge in mid-November 2025 pursuant to the approved Groundwater Monitoring Plan.

3.0 KEY PERSONNEL/FACILITY CHANGES

There were no changes to key personnel for the corrective action or onsite conditions regarding activities being conducted by the current facility owner (Catalent) during the reporting period.

ENCLOSURE A – WSP RESPONSE TO MDE’S INSPECTION VIOLATIONS AND FINDINGS (JULY 2025)



VIA ELECTRONIC MAIL

August 29, 2025

Ms. Francesca Galasso
Regulatory Compliance Engineer
Compliance Program, Central Division
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230-1719

**Subject: Response to July 2025 Inspection Findings
EMERSUB 16 LLC/Catalent
State Discharge Permit No. 21-DP-3442**

Dear Ms. Galasso:

EMERSUB 16 LLC is in receipt of the Maryland Department of Environment (MDE) Inspection Report (Report), which was provided via electronic mail on July 24, 2025. This Report, a copy of which is provided in Enclosure A, presents the findings of the MDE inspection for the groundwater remediation system (System) at 7555 Harmans Road in Harmans, Maryland. The MDE inspection was conducted on July 16, 2025, to assess compliance with the System's State Discharge Permit No. 21-DP-3442 (Permit).

On behalf of EMERSUB 16, WSP USA Inc. (WSP) is submitting the responses below, including supplemental information, to the violations and findings presented in the Report. The violations and findings noted in the Report are discussed in the following order:

- Environmental Article Title 9 Violations;
- Records Review Findings

For each item, the MDE finding is first provided in *italics* type, followed by WSP's response.

ENVIRONMENTAL ARTICLE TITLE 9 VIOLATIONS

VIOLATION 1

*The facility reported an exceedance of the daily maximum concentration of copper in October 2024 and exceedances of the monthly average concentration of copper in October 2024, December 2024, and January 2025. **The facility should continue to investigate the copper exceedances and make changes as necessary to comply with the limits set forth within the permit authorization.***

WSP Response

In January and April 2025, WSP performed investigations to assess possible sources of the elevated copper concentrations detected in the System effluent in October 2024, December 2024, and January 2025. Following the source investigation, corrective actions were

WSP USA
Suite 300
13530 Dulles Technology Drive
Herndon, VA 20171

Tel.: +1 703 709-6500
Fax: +1 703 709-8505
wsp.com



evaluated to reduce the risk of recurring total copper exceedances in the effluent. A summary of the investigation and findings is provided below; a letter report detailing the copper assessment was provided to MDE on June 2, 2025¹.

The investigation included the collection of samples from various possible water sources that contain copper, including the individual groundwater recovery wells composing the System influent, the four sampling ports along the treatment train (the influent port, two midstream ports, and the effluent port), and the tap water added periodically to rinse the synthetic resin (after the second midstream port). The investigation demonstrated that the total copper levels from the recovery wells, influent port, and two midstream ports were not elevated enough to account for the total copper concentrations in the System effluent exceeding the Permit limits. However, in the tap water samples, the total copper concentrations were over three times the daily maximum specified in the Permit and over four times the monthly average maximum specified in the Permit. This suggests the tap water used for the resin rinsing is a likely contributor of copper mass to the process flow. Copper present in the tap water could arise from the public water supply and/or building plumbing corrosion.

The data suggests the copper from the rinse water was absorbing to the synthetic resin beads, and once the absorption capacity of the resin was reached, breakthrough concentrations of copper were released to the water passing through the resin and eventually discharged as the System effluent. WSP performed a resin cleaning event in early May 2025 as a corrective action to restore its absorbent capacity. Since the cleaning, no copper exceedances have been measured in the monthly System effluent samples. The facility will monitor for signs the resin is reaching its absorption capacity, indicated by increasing levels of copper and organic contaminants in the monthly System effluent samples. A resin cleaning will be scheduled once contaminant breakthrough has begun to occur to reduce the risk of a Permit exceedance. If copper exceedances recur even after this corrective action has been implemented, additional operational adjustments, equipment cleaning, copper piping replacement, or other measures will be evaluated to reduce effluent copper concentrations.

VIOLATION 2

The facility reported an exceedances for the monthly average concentration of copper in October 2024, December 2024, and January 2025. The facility should continue to investigate the copper exceedances and make changes as necessary to comply with the limits set forth within the permit authorization.

WSP Response

See WSP's response to Violation #1.

RECORDS REVIEW FINDINGS

MDE FINDING 1

The inline pH probe is checked monthly and only calibrated if discrepancies are noted during sampling activities. The facility should calibrate the meters at the frequency recommended by the manufacturer.

WSP Response

The manufacturer of the System's inline pH probe (GF Signet 3-2724-00) indicates that calibration should be performed routinely but does not specify a frequency. The user manual indicates that deterioration of the electrode gel within the probe will impact the probe's ability to sustain accurate measurements. The rate of deterioration depends on site conditions such as water temperature, flow rate, chemicals in the groundwater, and water chemistry. Once the electrode gel has deteriorated, - as evidenced by visual indications or decreased accuracy in measurement tests, - a calibration is recommended by the manufacturer to restore accuracy of the probe. The System's Operator checks the pH probe's accuracy once a month. If the pH probe measures within ± 0.10 of 7.0, the known pH of the solution, then the probe is confirmed to remain accurate. If the pH probe measurement is greater than 7.1 or less than 6.9, then the

¹ WSP 2025. Sampling Results to Assess Copper Concentrations in Remediation System Discharge, State Discharge Permit No. 21-DP-3442/NPDES Permit MD0069094, 7555 Harmans Road, Hanover, MD 21076. June 2.



meter is calibrated using the user manual's calibration instructions. While the current procedures meet the manufacturer's recommendations for pH calibration, WSP will supplement moving forward with semi-annual calibration of the pH meter and visual inspections of the probe's electrode. Records of pH calibrations will be kept in the calibration log onsite.

MDE FINDING 2

The flow meters within the facility were installed in 2017 when the plan was constructed and have not been replaced at this time. Mr. Makris stated that the meters are inspected if discrepancies are noted. The facility should calibrate the flow meters at the frequency recommended by the manufacturer.

WSP Response

The System has one effluent meter measuring the volume of water discharged. The manufacturer's manual for the effluent flow meter (FLOMEC Watermeter TM 300N) states the meter is factory-calibrated and does not require additional calibration upon installation.

MDE FINDING 3

Mr. Seaman's operator's license is not stored at the facility. The facility should maintain a copy of Mr. Seaman's operator's license onsite.

WSP Response

Since the inspection, a copy of Mr. Seaman's operator's license has been added to the facility's permit records.

MDE FINDING 4

The facility is uploading lab reports to NetDMR that do not align with the reporting month. For example, the facility submitted the January DMR with the December lab results attached. The facility should upload the correct lab results with the corresponding DMR.

WSP Response

WSP reviewed all submitted laboratory reports and their corresponding Discharge Monitoring Reports (DMRs) from November 2023 onward, verifying that each lab report except January 2025 was matched with the appropriate DMR. The January DMR has been resubmitted with January's lab results.

MDE FINDING 5

The facility did not upload lab results in April 2025. The facility should resume uploading lab results for ease of review.

WSP Response

WSP has uploaded lab results for the April 2025 DMR and has implemented a procedure requiring a second employee to verify that laboratory results are included with the monthly DMR submission, ensuring that the necessary documentation is provided to MDE.

MDE FINDING 6

The facility has not uploaded the calculations for TSS loading to NetDMR. The facility should upload the TSS loading calculations to NetDMR for ease of review.

WSP Response

Beginning with the June 2025 DMR, WSP has begun including Total Suspended Solids (TSS) calculations with the corresponding monthly DMRs submitted to MDE.



MDE FINDING 7

The second quarter BOD sample result was not reported on the April 2024 DMR. The facility should revise and resubmit the April 2024 DMR to include the missing BOD sample result.

WSP Response

The April 2024 DMR has been resubmitted with the correct biochemical oxygen demand (BOD) sample result. In addition, WSP has implemented a procedure requiring a second employee to verify that all of the required analytical results are included with the monthly DMR submissions.

ADDITIONAL COMMENTS – RECORDS REVIEW

NETDMR SUBMISSIONS

NetDMR submissions associated with the facility were reviewed from 01-01-2024 to 06-01-2025. Observations in the NetDMR submissions are listed below:

- *According to General Condition II.A.2., results shall be submitted no later than the 28th of the month following the end of the reporting month. The following DMRs submitted during the review period were submitted late:*
 - o *January 2024*
 - o *March 2024*
 - o *April 2024*
 - o *May 2024*
 - o *June 2024*
 - o *July 2024*
 - o *October 2024*
 - o *December 2024*
 - o *January 2025*

WSP Response

WSP is seeking clarification on the DMR due date from the State. In the Permit it states “For each effluent characteristic monitored at a frequency of less than once per month the results obtained during the reporting period shall be summarized on a single report for each quarter. More frequently monitored effluent characteristics and effluent characteristics limited as a monthly average shall be reported on a separate report for each calendar month of the reporting period. Results shall be submitted to the Department via NetDMR no later than the 28th of the month following the end of the reporting period.”



In the NetDMR system it lists the due date as the 28th of the month two months after the monitoring period end date (evidence below, taken on 8/12/2025).

DMRs 1 through 100 of 105 ◀◀ 1, 2 ▶▶

Next Step(s)	Permit ID	Facility	Permitted Feature	Discharge #	Discharge Description	Monitoring Period End Date	Scheduled/Unscheduled	DMR Due Date	Status	COR Received Date	Include Submit
<input type="button" value="Edit DMR"/> <input type="button" value="Go"/>	MD0069094	EMERSUB 16, LLC	001	001-A	21-DP-3442A	08/31/25	Scheduled	10/28/25	Ready for Data Entry		<input type="button" value="Check"/> <input type="button" value="Clear"/>
<input type="button" value="Edit DMR"/> <input type="button" value="Go"/>	MD0069094	EMERSUB 16, LLC	001	001-A	21-DP-3442A	07/31/25	Scheduled	09/28/25	NetDMR Validation Errors		
<input type="button" value="View Copy of Submissions"/> <input type="button" value="Go"/>	MD0069094	EMERSUB 16, LLC	001	001-A	21-DP-3442A	06/30/25	Scheduled	08/28/25	Completed	07/31/25	
<input type="button" value="View Copy of Submissions"/> <input type="button" value="Go"/>	MD0069094	EMERSUB 16, LLC	001	001-A	21-DP-3442A	05/31/25	Scheduled	07/28/25	Completed	07/09/25	
<input type="button" value="View Copy of Submissions"/> <input type="button" value="Go"/>	MD0069094	EMERSUB 16, LLC	001	001-A	21-DP-3442A	04/30/25	Scheduled	06/28/25	Completed	07/16/25 05/20/25	
<input type="button" value="View Copy of Submissions"/> <input type="button" value="Go"/>	MD0069094	EMERSUB 16, LLC	001	001-A	21-DP-3442A	03/31/25	Scheduled	05/28/25	Completed	07/16/25 04/28/25	
<input type="button" value="View Copy of Submissions"/> <input type="button" value="Go"/>	MD0069094	EMERSUB 16, LLC	001	001-A	21-DP-3442A	02/28/25	Scheduled	04/28/25	Completed	03/06/25	

WSP has been submitting the DMRs by the due dates specified in the NetDMR system. Thus, it appears that the language in the Permit regarding the submittal dates and the DMR due dates specified in NetDMR do not match. In addition, the Permit states that the quarterly sampling results are due on the 28th of the month following the end of the quarter on a separate DMR. NetDMR does not include BOD on a separate DMR from the effluent characteristics that are sampled monthly. The Permit also states that more frequently monitored effluent characteristics are due on the 28th of the month following the reporting period. However, it is not clear if this reporting period is the end of the quarter or the end of the month, given that BOD is included with the other effluent characteristics.

Given the above, WSP is requesting clarification on the due dates for the DMRs and an alignment of the permit requirements within the Net DMR system so that there is no confusion going forward for WSP or MDE.

If you have any questions, please do not hesitate to contact me by email at Eric.Johnson@wsp.com or by phone at (703) 318-3936.

Kind regards,

Robert E. Johnson
Vice President - Earth & Environment

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\\corp.pbwan.net\us\environmental\ES-JointClients\Emerson\Kop-Flex_\SONSITE AREA\NPDES Permit\MDE Inspections\2025 - July\Response to MDE Inspection Report\Kopflex_MDE Inspection Response_FINAL_082825.DOCX

cc: Steve Clarke, EMERSUB 16, LLC
Lisa Douglas, EMERSUB 16 LLC
Reza Zarghamee, Pillsbury Winthrop Shaw Pittman LLP
Dave Seaman, S&S Technologies, Inc.

ENCLOSURE A – REPORT OF JULY 16, 2025, MDE INSPECTION



Maryland Department of Environment
Water and Science Administration
Compliance Program
1800 Washington Blvd, Suite 420
Baltimore, MD 21230-1719
410- 537-3510, 1-800-633-6101

Inspector: Francesca Galasso
AI ID: 106

Site Name: Catalent (also called Emersub 16, LLC; formerly Kop Flex)
Facility Address: 7565 Harmans Rd, Harmans, MD 21077
County: Anne Arundel County

Start Date/Time: July 16, 2025, 10:00 AM
End Date /Time: July 16, 2025, 10:30 AM

Media Type(s): NPDES Industrial Minor Surface Water

Contact(s): Ryan Stolarczyk – MDE, RCE
Lisa Douglas – Emerson, PE PMP lisa.douglas@emerson.com
Eric Johnson – WSP, Vice President eric.johnson@wsp.com
Dave Seaman – S&S Technologies, Operator [stech.dave@comcast.net](mailto:sstech.dave@comcast.net)
Greg Makris – WSP, PE gregory.makris@wsp.com

NPDES Industrial Minor Surface Water

Permit / Approval Numbers: 21-DP-3442

NPDES Numbers: MD0069094

Inspection Reason: Initial Yearly, Routine Scheduled

Site Status: Active

Compliance Status: Noncompliance

Recommended Action: Additional Investigation Required

Evidence Collected: Photos or Videos Taken, Record Review, Visual Observation

Delivery Method: Email

Weather: Clear

Inspection Findings:

Catalent is authorized to discharge remediated groundwater, boiler blowdown, and resin regeneration water (generated using potable water) via Outfall 001 in accordance with the special and general conditions within the permit authorization above. Outfall 001 discharges to Stony Run, Use I. Use I waterways are protected for water recreation, fishing, aquatic life, and wildlife. The permit authorization was effective on 11-1-2023 and will expire on 10-31-2028. Reapplication for the permit renewal is due at least one year before the expiration date of this permit (10-31-2027).

The groundwater treatment facility was established due to the facility formerly manufacturing flexible couplings for the mechanical power transmission industry. Precision forged metal parts, including heat treatment and nitriding capabilities; universal joints, gear spindles, forgings, and power transmission components were produced at the plant from 1979 to 2012. The facility also provided a repair and maintenance program for the components. The facility was demolished in July 2016, after shutting down production operations in late 2012. The entire site was re-developed as part of a 2016-2017 construction project. Emersub 16, LLC has designated WSP USA, Inc. as the consultant/operator for its groundwater. Emersub 16, LLC, is still involved with this site as part of an EPA Consent Order Agreement and

Inspection Date: July 16, 2025
Site Name: Catalent (also called Emersub 16, LLC; formerly Kop Flex)
Facility Address: 7565 Harmans Rd, Harmans, MD 21077

MDE Land & Materials Administration's Land Restoration Program for Voluntary Cleanup (VCP). WSP began operation of the System in March 2017.

Groundwater is extracted from five recovery wells and conveyed via sub-grade piping to the treatment system located on the property. The groundwater is treated to meet the NPDES permit discharge limits by using bag filters for suspended solids removal, ion exchange resin to absorb the VOCs and 1,4-dioxane, addition of caustic soda for pH buffering, and in-line aerators to increase dissolved oxygen levels.

The above-listed individuals were present for the site inspection.

Site Walkthrough

The facility extracts groundwater from five (5) recovery wells on the property. Three (3) of the wells are shallow recovery wells and the other two (2) are deep recovery wells. The shallow and deep pipelines converge within the plant and a flow meter is in place to measure influent flow. Mr. Greg Makris stated that the average flow into the plant during pumping is between 60 to 70 gallons per minute (gpm). After entering the plant, groundwater enters the ~2,500gallon flow equalization (EQ) tank. Mr. Makris stated that the EQ tank is maintained half-full and additional volume is pumped down into the treatment portion of the plant.



Photo 1: View of the EQ tank.

From the EQ tank, the groundwater enters the two (2) bag filters. Mr. Dave Seaman stated that the bag filters are changed every couple of weeks. From the bag filters, filtered groundwater enters one (1) of the two (2) resin vessels (T1100 and T1200). The resin vessels utilize AmberSorb 560, a resin that treats 1,4-dioxane and other organic contaminants in groundwater. While one vessel is in operation, the other is typically in a 17-hour regeneration cycle. Following the resin vessels, caustic soda is added to the effluent for pH adjustment. Following pH adjustment, the effluent enters the mixers for aeration. Final effluent samples are taken following aeration to obtain accurate results. Prior to discharge at Outfall 001, the final effluent converges with stormwater from the facility in an underground pipe.



Photos 2, 3, & 4: View of the bag filters (Photo 2), a resin vessel (Photo 3), and the sample location (Photo 4).

Inspection Date: July 16, 2025
Site Name: Catalent (also called Emersub 16, LLC; formerly Kop Flex)
Facility Address: 7565 Harmans Rd, Harmans, MD 21077

An on-site boiler is utilized to produce steam for resin regeneration. The facility utilizes ChemAqua 16890 in potable water to maintain longevity of the boiler. During normal operation, the resin is regenerated three (3) times per week. The steam containing the desorbed constituents is discharged to the atmosphere through a steam reheater. A small amount of steam condensate from the regeneration process is added to the groundwater influent to the plant. Following each regeneration, softened potable water is used to quench (cool) and rinse the resin. This “quenching” wastewater is also added to the groundwater influent to the plant. The drains throughout the plant are routed back to the EQ tank.



Photo 5: View of the boiler on site.

Outfall 001 was not inspected as part of the site walkthrough.

Record Review

The facility maintains a binder containing the shorter Field Activity Log forms and the detailed O&M Log forms. The O&M Log forms include information on the treatment system, filter and chemical inventory, well head operations, forward flow, regeneration monitoring, and water chemistry. Mr. Eric Johnson provided the operator’s log for review. The log contains calibration records, routine maintenance activities, and sampling. Entries in the operator’s logs reviewed were dated 8-15-2023 to 7-16-2025.

The dissolved oxygen (DO), pH, and chlorine meters are calibrated prior to sampling. Buffer expiration dates and lot numbers are recorded as part of the calibration records. Mr. Makris stated that there is an inline pH probe for pH adjustment. The inline pH probe is checked monthly and only calibrated if discrepancies are noted during sampling activities. **The facility should calibrate the meters at the frequency recommended by the manufacturer.** The flow meters within the facility were installed in 2017 when the plan was constructed and have not been replaced at this time. Mr. Makris stated that the meters are inspected if discrepancies are noted. **The facility should calibrate the flow meters at the frequency recommended by the manufacturer.**

Mr. Seaman and/or Mr. Check Drevo are onsite three (3) days per week and monitor the system remotely the other two (2) days of the week. Dave Seaman is the licensed operator for the facility and has an I7 license that expires on 10-1-2027. Mr. Seaman’s license is not stored at the facility. **The facility should maintain a copy of Mr. Seaman’s operator’s license onsite.**

NetDMR submissions associated with the facility were reviewed from 01-01-2024 to 06-1-2025. Observations in the NetDMR submissions are listed below:

- According to General Condition II.A.2., results shall be submitted no later than the 28th of the month following the end of the reporting month. The following DMRs submitted during the review period were submitted late:
 - January 2024
 - March 2024
 - April 2024
 - May 2024
 - June 2024
 - July 2024
 - October 2024
 - December 2024
 - January 2025

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- During the review of accuracy of parameter reporting, it was observed that the facility is uploading lab reports to NetDMR that do not align with the reporting month. For example, the facility submitted the January DMR with the December lab results attached. **The facility should upload the correct lab results with the corresponding DMR.** Additionally, the facility had not consistently been uploading lab results and did not upload lab results in February, April, and May of 2025. Mr. Makris stated that the facility did not submit lab results for February because there was no discharge in February. The boiler underwent ~month-long maintenance for re-tubing in February. Mr. Makris also stated that an ~month-long resin cleaning occurred in May which also led to no discharge from the treatment system. **The facility should resume uploading lab results to NetDMR for ease of review.**

- Total Suspended Solids
According to Special Condition I.A.(3), the permittee shall report the monthly load for total suspended solids (TSS) under the “monthly average” column. The monthly load shall be calculated by the following equation:
$$\text{Load [lbs/month]} = \text{TSS Average Concentration [mg/L]} * \text{Cumulative Monthly Flow [MG]} * 8.34$$

The facility has not uploaded the calculations for TSS loading to NetDMR. **The facility should upload the TSS loading calculations to Net DMR for ease of review.**

- Copper
According to Special Condition I.A. “Effluent Limitations and Monitoring Requirements,” the monthly average concentration limit for copper is 9µg/L and the daily maximum concentration limit for copper is 13µg/L. The facility reported the following copper exceedances during the review period:
 - 10/2024: 16µg/L daily maximum and monthly average concentration
 - 12/2024: 12.9µg/L monthly average concentration
 - 1/2025: 10µg/L monthly average concentrationIn the noncompliance letters sent to MDE, the facility hypothesized that the increase in copper could be from the deep recovery wells being offline. Reportedly copper concentrations are lower in the deep wells and higher in the shallow aquifer zone. However, during the inspection Mr. Makris stated that the hypothesis was incorrect and recent testing revealed that there were noticeably higher copper levels in the tap water utilized for rinsing the resin. Mr. Makris stated that the facility will be monitoring the copper levels in the coming months to see if the resin cleaning has any impact on copper concentrations.

- Biochemical Oxygen Demand
According to Special Condition I.A. “Effluent Limitations and Monitoring Requirements,” biochemical oxygen demand (BOD) shall be monitored and reported quarterly. During the review period, the facility monitored and reported BOD on the following instances:
 - January 2024 (Quarter 1)
 - July 2024 (Quarter 3)
 - October 2024 (Quarter 4)
 - January 2025 (Quarter 1)
 - March 2025 (Quarter 2)Mr. Johnson stated that he reviewed the samples collected during Quarter 2 of 2024 and found that BOD had been sampled and analyzed in April 2024. The sample results had not been reported at the time, but Mr. Johnson stated that the BOD result was 2mg/L. Mr. Johnson will be revising the April 2024 submission to include the missing BOD sample result.

Corrective Action(s)

1. The inline pH probe is checked monthly and only calibrated if discrepancies are noted during sampling activities. **The facility should calibrate the meters at the frequency recommended by the manufacturer.**

2. The flow meters within the facility were installed in 2017 when the plan was constructed and have not been replaced at this time. Mr. Makris stated that the meters are inspected if discrepancies are noted. **The facility should calibrate the flow meters at the frequency recommended by the manufacturer.**

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3. Mr. Seaman's operator's license is not stored at the facility. **The facility should maintain a copy of Mr. Seaman's operator's license onsite.**
4. The facility is uploading lab reports to NetDMR that do not align with the reporting month. For example, the facility submitted the January DMR with the December lab results attached. **The facility should upload the correct lab results with the corresponding DMR.**
5. The facility did not upload lab results in April 2025. **The facility should resume uploading lab results to NetDMR for ease of review.**
6. The facility has not uploaded the calculations for TSS loading to NetDMR. **The facility should upload the TSS loading calculations to Net DMR for ease of review.**
7. The Quarter 2 BOD sample result was not reported on the April 2024 DMR. **The facility should revise and resubmit the April 2024 DMR to include the missing BOD sample result.**

Violation(s)

With respect to the above authorization, the following violations of Environmental Article Title 9 by Emersub 16 LLC were observed on this date, with corrections needed immediately:

1. The facility reported an exceedance of the daily maximum concentration of copper in October 2024. Mr. Markis stated that he believes the source of the copper has been identified and will be monitoring the recent resin cleaning to see if the issue has been addressed. **Correction: The facility should continue to investigate the copper exceedances and make changes as necessary to comply with the limits set forth within the permit authorization.**
2. The facility reported exceedances for the monthly average concentration of copper in October and December 2024 and January 2025. Mr. Markis stated that he believes the source of the copper has been identified and will be monitoring the recent resin cleaning to see if the issue has been addressed. **Correction: The facility should continue to investigate the copper exceedances and make changes as necessary to comply with the limits set forth within the permit authorization.**

A reinspection will occur to verify compliance.

Contact this inspector upon implementation of the requested corrective actions, reasonably necessary to bring the site into compliance. If the corrective actions cannot be completed within the prescribed time frames above, you should continue to advise this inspector of the status of the measures taken to complete the corrective actions. If you have any questions, need assistance or to request a re-inspection, please contact this inspector at or in writing at [410-537-3598](tel:410-537-3598) or by e-mail at francesca.galasso@maryland.gov.

STATE LAW PROVIDES FOR PENALTIES FOR VIOLATIONS OF MARYLAND ENVIRONMENT ARTICLE TITLE 9 FOR EACH DAY THE VIOLATIONS CONTINUE. THE MARYLAND DEPARTMENT OF THE ENVIRONMENT MAY SEEK PENALTIES FOR THE AFOREMENTIONED VIOLATIONS OF TITLE 9 ON THIS SITE FOR EACH DAY THE VIOLATIONS CONTINUE.

A copy of this report will be sent via email to the above-listed individuals.

Inspector:  7/23/2025
Francesca Galasso /Date
francesca.galasso@maryland.gov
410-537-3598

Received by:  7/28/25
Signature/Date
R. Eric Johnson
Print Name