air pollution control district
SANTA BARBARA COUNTY

HEARING BOARD STAFF REPORT

TYPE: **REGULAR VARIANCE**

CASE NO: **2025-04-R**

DATE: **March 05, 2025**

1.0 GENERAL INFORMATION:

1.1 PETITIONER COMPANY NAME: MANN+HUMMEL Water Fluid Solutions, Inc., dba MNUS

1.2 EQUIPMENT LOCATION: 6325 Lindmar Avenue, Goleta, California

1.3 PERMIT NUMBER(S): Permit to Operate 16120

1.4 FACILITY NAME/ID: MNUS / FID 3640

1.5 FACILITY DESCRIPTION: MANN+HUMMEL Water Fluid Solutions, Inc, dba MNUS (Petitioner) manufactures water purification filters. The Petitioner uses three types of casting processes to manufacture water filters. Three types of casting processes are used to manufacture these filters: Cellulose Acetate (CA) Casting, Polysulfone (PSF) Casting, and Advanced Composite Membrane (ACM) Casting. The Petitioner utilizes various casting equipment, solvents, wet scrubbers and a thermal oxidizer in their process.

2.0 REASON FOR THE VARIANCE REQUEST: The Petitioner's Advanced Composite Member (ACM) Casting utilizes reactive organic compounds (ROCs) in the process. Emissions from the ACM process are routed to a thermal oxidizer (APCD Device ID 109886), to control emissions. The Petitioner's permitted thermal oxidizer is required to be source tested annually. Results from the November 6, 2024 thermal oxidizer source test, indicated the Best Available Control Technology (BACT) 10 ppmv ROC outlet concentration limit and the 750 scfm outlet flow rate limit were both exceeded; the source test results showed the ROC outlet concentration was 20.66 ppmv and the outlet flow rate was 1290 scfm.

On December 10, 2024, the Petitioner contacted a third-party vendor to inspect the thermal oxidizer. During this evaluation, it was determined the heat exchanger pipes are deteriorated. According to the Petitioner, the deterioration is due to the age of the equipment. The thermal oxidizer has been in use for approximately 30 years.

The Petitioner is currently evaluating the situation and will either repair or replace the thermal oxidizer to achieve compliance. However, this will take time to obtain the necessary quotes, make the repairs and/or procure a new thermal oxidizer and obtain a District permit prior to installation.

Without coverage, the Petitioner will be in violation of District Rule 206, Permit to Operate 16120, Conditions 1, 2.d.iv, 9, 11.a (for thermal oxidizer, APCD Device ID 109886), Table 3 (ACM Casting Dryer and Rinse Tank Emissions), and Table 4.

3.0 BACKGROUND: The Petitioner is currently operating under Interim Variance Order 2025-03-I, granted on February 19, 2025, by Chair Dressler. Variance Order 2025-03-I provides relief from the Best Available Control Technology (BACT) reactive organic compounds (ROCs) destruction efficiency requirements, outlet flow rate, and source test requirements for

the thermal oxidizer from January 29, 2025 through April 28, 2025, or the date compliance is achieved, or the date a decision is made on the Regular Variance, whichever occurs first.

If granted, Variance Order 2025-04-R, would allow continued relief from the Best Available Control Technology (BACT) reactive organic compounds (ROCs) destruction efficiency requirements, outlet flow rate, and source test requirements for the thermal oxidizer through January 28, 2026, or the date compliance is achieved, whichever occurs first.

4.0 **PERMITTING HISTORY**: The initial permit to operate was issued to Trisep in 1991. Since then, there has been one transfer of owner/operator from Trisep to Mcrodyn-Nadir in 2017, and a name change to MANN+HUMMEL (MNUS) in 2023. There have also been several permitting actions since the facility was first permitted in 1991 (see Permit History table below).

Date of Permit Action	Permit Number	Description
Issued May 8, 1991	Authority to Construct 8074	Solvent operations
Issued January 13, 1993	Permit to Operate 8717	PSF and ACM casting and the installation of a wet scrubber to control emissions from CA and PSF casting
Issued May 28, 1996	Permit to Operate Modification 8717	Epoxy bonding operations removed from permit
Issued April 3, 1996	Authority to Construct 9524	Use of an additional solvent in the casting process
Issued April 3, 1996	Permit to Operate 9524	Use of an additional solvent in the casting process
Issued June 15, 1999	Permit to Operate 10127-R1	Change in the daily emissions calculations
Issued November 27, 2002	Permit to Operate 10127-R2	Change in the emission limits from CA casting to the ACM Casting
Issued July 20, 2007	Authority to Construct/Permit to Operate 12276	Temporary project to continue operations under existing practices that were not previously permitted. Installation of thermal oxidizer.
Issued March 10, 2017	Transfer of Owner Operator 12276-01	Transfer owner/operator from Trisep to Microdyn-Nadir US
Issued September 30, 2008	Authority to Construct 12622	Installation of new CA-V2, PSF-V2, water scrubber and ventilation system. Removal of CA-V1, PSF-V1, and existing water scrubber.
Issued May 22, 2015	Authority to Construct 14521	Installation of a thermal catalytic oxidizer.
Issued March 10, 2017	Authority to Construct Modification 14521-01	Minor modifications

Issued March 10, 2017	Permit to Operate 14521	Combined permits 12276 and 12622.
Issued April 12, 2021	Authority to Construct 15285	New solvent added to casting process and decreasing usage of a specific solvent
Issued December 10, 2020	Authority to Construct/Permit to Operate 15596	Pilot study
Issued December 15, 2022	Authority to Construct 15971	Modify solvent usage, add solvents operating under temporary permit 15596, and company name change from Microdyn-Nadir US to MANN+HUMMEL Water Fluid Solutions, Inc., dba MNUS
Issued September 13, 2023	Authority to Construct 16120	Change in solvent usage
Issued December 16, 2024	Permit to Operate 16120	Change in solvent usage
Deemed incomplete August 21, 2024	Authority to Construct 16298	Increase the emission limits

5.0 **COMPLIANCE HISTORY:** In the past three years, the following Notices of Violations (NOVs) were issued to the facility:

- NOV 13441 issued on June 27, 2023, for failing to conduct the 2023 wet scrubber #2 source test by the anniversary date.
- NOV 13442 issued on June 27, 2023, for failing to add a minimum of 3 gal/min of fresh water to wet scrubber #2.
- NOV 13469 issued on August 3, 2023, for failing to submit the 2023 source test results for wet scrubber #2 and the thermal oxidizer by the due date.
- NOV 13757 issued on June 26, 2024, for failing to submit the 2024 source test plan for the thermal oxidizer at least 30 days prior to source test initiation and obtain written approval of the source test plan prior to commencement of source testing.
- NOV 13758 issued on June 26, 2024, for failing to conduct the 2024 thermal oxidizer source test by the anniversary date.
- NOV 13761 issued on June 26, 2024, for failing to submit the 2024 source test plan for wet scrubber #2 at least 30 days prior to source test initiation and obtain written approval of the source test plan prior to commencement of source testing.
- NOV 13762 issued on June 26, 2024, for failing to conduct the 2024 wet scrubber #2 source test by the anniversary date.
- NOV 13763 issued on June 26, 2024, for failing to record the recirculation rate and rate of fresh water added to wet scrubber #1.
- NOV 13834 issued on October 30, 2024, for failing to maintain the inlet and outlet flowrate below 750 scfm during the 2022 thermal oxidizer source test.

- NOV 13835 issued on October 30, 2024, for failing to maintain the inlet and outlet flowrate below 750 scfm during the 2023 thermal oxidizer source test.
- NOV 13880 issued on January 15, 2025, for failing to submit the 2024 source test report for the thermal oxidizer within 45 days of source test completion.
- NOV 13883 issued on January 30, 2025, for failing to conduct the 2024 wet scrubber source test by the anniversary date and for failing to submit the source test report within 45 days of source test completion.
- NOV 13884 issued on January 30, 2025, for exceeding 10 ppmv outlet stack ROC concentration, exceeding the exhaust flowrate limit of 750 dscfm specified in Table 3; and, emitting regulated air pollutants without Best Available Control Technology (BACT) during the 2024 thermal oxidizer source test.

6.0 **REGULATORY ANALYSIS**: The Petitioner requested the below permit conditions and rules be included in the Variance Order. Pursuant to California Government Code Section 6254.7 (air pollution data; public records, notices and orders to building owners; trade secrets), are not considered public records. Trade secrets are defined as (but are not limited to) any formula, plan pattern, process, tool, mechanism, compound, produced, production data, or compilation of information which is not patented, which is known only to certain individuals within commercial concern who are using it to fabricate, produce, or compound an article or trade or service having commercial value wand which gives it user an opportunity to obtain a business advantage over competitors who do not know or use it. The Petitioner has submitted the required documentation per the District's Policies and Procedures (6100.020.2016) as it pertains to confidential information. As such, condition 1 below is a redacted public version of the Petitioner's permit.

- **Permit to Operate 16120, Conditions:**
  - 1 (redacted)
    - **Emission Limitations.** The mass emissions from the equipment permitted herein shall not exceed the values listed in Table 1 and Table 2. Compliance shall be based on the operational, monitoring, recordkeeping, and reporting conditions of this permit. Compliance with the pound per day (lb/day) emission limits for all solvents except for [redacted] in the ACM-V1 line shall be demonstrated by dividing the monthly emissions by 21.7 days per month. Compliance with the pound per day (lb/day) emission limit for [redacted] in the ACM-V1 line shall be demonstrated by dividing the monthly emissions by the number of days that the tanks were rinsed with [redacted] in that month. Compliance with the ton per year (TPY) emission limit shall be demonstrated by compiling the monthly ROC emission records for the year. Emissions shall be calculated in accordance with the emission calculation formulas specified in Attachment B of the *Engineering Evaluation* of this permit.
  - 2.d.iv
    - ***Removal Efficiency*.** The ROC removal efficiency across the thermal oxidizer shall be greater than 98 percent (mass basis) or outlet stack ROC concentrations shall be <10 ppmv, whichever is attainable.
  - 9
    - ***Best Available Control Technology***. The permittee shall apply emission control technology and plant design measures that represent

Best Available control Technology (BACT) to the operation of the equipment/facilities as described in this permit and the District's Permit Evaluation for this permit. Table 3 and the Emissions, Operational, Monitoring, Recordkeeping and Reporting Conditions of this permit define the specific control technology and performance standard emission limits for BACT. The BACT shall be in place, and shall be operational at all times, for the life of the project. This permit contains BACT related monitoring, recordkeeping and reporting requirements.

- 11.a (for thermal oxidizer, APCD Device ID 109886)
  - ***Source Testing.*** The following source testing provisions shall apply: a. Source testing shall be performed on an annual schedule (anniversary date of April). The permittee shall conduct source testing of air emissions and process parameters listed in Table 4 of this permit. More frequent source testing may be required if the equipment does not comply with permitted limitations or if other compliance problems, as determined by the District, occur. If after the issuance of ATC 16120, two consecutive source tests demonstrate compliance with the requirements of Table 4, the District may approve biennial (every two years) source testing for DID #109886 and DID #111707 upon permittee request. If a subsequent source test shows a unit to be out of compliance, then source testing of that unit shall revert to an annual basis.

Table 3 - Best Available Control Technology Requirements
FID 3640 MNUS: PTO 16120

Emission Unit/Process	Control Technology	Pollutant	Performance Standard		
CA-V1 Casting and PSF-V1 Casting	Wet Scrubber	ROC	90.0 mass percent ROC removal	or	10 ppmv
ACM Casting Dryer and Rinse Tank Emissions	Thermal Oxidizer	ROC	98.0 mass percent ROC destruction	or	10 ppmv
PSF-V2 Casting & iSep Solvent Welding Emissions	Wet Scrubber	ROC	95.0 mass percent ROC removal	or	10 ppmv
CA-V1 Casting, PSF-V1 Casting, and PSF-V2 Casting	Covered Tanks and 2000 cfm Ventilation System	ROC	95.0 percent ROC capture		

Table 4 - Source Test Requirements
FID 3640 MNUS: PTO 16120

Emission Test Point	Pollutants	Parameters	Test Methods	Limit
Water Scrubber Inlet and Outlet (DID #111707)	Reactive Organic Compounds (ROC)	Inlet and Outlet Concentration (ppmvd) and Mass Rate (lb/hr)	EPA Method 18	95% DRE by mass ~ 10 ppmv ROC
Thermal Oxidizer Fuel Line (DID #109886)	-	Supplemental Fuel Consumption (scfh)	Calibrated meter	952 scfh
Thermal Oxidizer Inlet (DID #109886)	ROC	Flow Rate (scfm) Concentration (ppmvd) Mass Rate (lb/hr)	EPA Method 2 EPA Method 308 EPA Method 308	750 scfm N/A N/A
Thermal Oxidizer Outlet (DID #109886)	ROC	Flow Rate (scfm) Concentration (ppmvd) Mass Rate (lb/hr) Efficiency (%)	EPA Method 2 EPA Method 308 EPA Method 308 EPA Method 308	750 scfm N/A N/A 98%
Thermal Oxidizer Combustion Chamber (DID #109886)	-	Residence Time (seconds)	-	1 second

Notes:
1. Alternative methods may be acceptable on a case-by-case basis.
2. Performance testing of each emission control device shall be performed on an "as-found" basis.
3. All test results are to be reported at standard conditions (60° Fahrenheit, 1 atm).
4. All tests shall be performed on the frequency described in Condition 10 of this permit.
5. Hourly mass emission rates (lb/hour) require measurment of the exhaust stack velocity.
6. Destruction rate efficiency = [100 x (inlet mass - outlet mass)] ÷ (inlet mass)]
7. Residence Time (sec) = combustion chamber volume (cubic feet) x 60 (sec/min) ÷ Outlet Flow Rate (scfm)

7.0 **EMISSIONS ANALYSIS**: At this time, the excess emissions associated with the granting of this variance are unknown. However, the emissions from the thermal oxidizer are expected to be below or negligible compared to the facility's permitted emission limit. The excess emissions, if any will be reported in the Petitioner's final report.

8.0 ***RESERVED***

9.0 **OTHER FACTORS**: None.

10.0 **DISTRICT RECOMMENDATION**: The District supports the Petitioner's variance request.

11.0 **ATTACHMENTS**:

- Attachment 1 – Variance Petition for 2025-04-R
- Attachment 2 – Interim Variance Order 2025-03-I
- Attachment 3 – DRAFT Variance Order 2025-04-R

Aimee Long, Air Quality Specialist
Compliance Division

February 20, 2025
Date