

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N719164520

FACILITY: Tecomet dba Symmetry Medical		SRN / ID: N7191
LOCATION: 5212 Aurelius Rd., LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: INGHAM
CONTACT: Tracy Conley , Senior Manufacturing Engineer & Acting EHS		ACTIVITY DATE: 09/12/2022
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Onsite inspection to determine compliance with PTI No's 233-02A, 265-05, 213-08 and 185-14.		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow

Tecomet Personnel Present:

Tracy Conley, Senior Manufacturing Engineer (tracy.conley@tecomet.com)

Craig Terry, Maintenance

Purpose

Conduct an unannounced, onsite compliance inspection of Tecomet to determine compliance with PTI No's 185-14, 213-08, 265-05, 195-03A, and 233-02A.

Tecomet was last inspected September 2016.

Facility Background

Tecomet is primarily engaged in the machining of nonferrous forgings, predominantly for medical prosthetic joints and some aerospace work. Metal alloy blanks consist of titanium, chromium, manganese, and stainless steel. Hastelloy is a specific type of metal alloy they use on specific projects. The formed parts go through alkaline and acidic dip processes to treat the metal.

Wet dust collectors used to control dust from buffing, sanding, and grinding operations because zirconium and titanium particulate is flammable.

Tecomet does not currently have any emergency generators or boilers.

Inspection

I arrived at Tecomet at approximately 8:30 a.m. on September 12, 2022 and met with Tracy Conley, who is a Senior Manufacturing Engineer and currently the Acting EHS Manager.

During the inspection, T. Conley stated that EUCEMMILL&PICKLE (permitted under PTI 195-03A), for a metal treatment line using HF and nitric acid, has been removed from the facility. This equipment was located at the 5190 Jet Drive building. We walked over to this plant and I verified that the equipment was removed, including the control equipment. I have requested that PTI 195-03A be voided.

Table 1 contains a list of the equipment we observed during the inspection.

Table 1. Equipment located onsite

Equipment	Description	Control Device	PTI/ Exemption	Plant #
EUMTLTREAT	Metal chemical treatment line consisting of the following: <ul style="list-style-type: none"> • 1 brightening tank • 2 chemical milling tanks • 1 transport tank • 3 Water rinse tanks • 3 Waste acid accumulation tanks (vented in-plant) 	Packed bed scrubber “Scrubber #1”	233-02A	2
EUPOLISHSAND	Polishing operation cell: <ul style="list-style-type: none"> • 2 buffing machines • 2 belt sanders 	Whirlwet #230 Wet dust control, including mist eliminator (for both buffing and sanding?)	265-05	Forge Plant 2

EUPOLISHING1	Polishing operations cell: <ul style="list-style-type: none"> • 10 belt sanders • 3 double grinders 	Whirlwet #229, serial # 40705 Wet dust control, including a mist eliminator	213-08	Plant 4
EUPOLISHING2	Polishing operations cell: <ul style="list-style-type: none"> • 10 belt sanders • 3 double grinders 	Whirlwet #229, serial # 40705 & Wetrex #239 Wet dust control, including a mist eliminator Uniwash #753 associated with EUPOLISHING 2 was removed.	213-08	Plant 4
EUHIGHPOLISH	2 belt sanders 2 buffers	Uniwash #756 Uniwash wet dust control system vented to ambient air Previous unit was Uniwash #754	185-14	Plant 4
EUNEWPOLISHCELL	14 belt sanders 6 buffers	Wetrex #239 Wetrex 10 wet dust control system vented to ambient air	185-14	Plant 4
Screw and mechanical presses for forge	10 – 15 presses	NA	Rule 285(2)(l)(i)	Plants 2 & 3

Aqueous-based Parts Washer	Located in maintenance. Utilizes ArmaKleen 4 in 1 Cleaner. SDS states that it does not contain VOC's	NA	Rule 281(2)(k)	Plant 3/4
Solvent-based Parts washer	Located in maintenance. Utilizes SafetyKleen solvent. Unit contains operating instructions on inside of lid. Lid was not closed. I noted this to T. Conley who shut the lid.	Lid closure	Rule 281(2)(h)	Plant 3/4
Hot Form Scrubber	Scrubber used to control emissions from the hot form pickling process.	scrubber	Rule 290, TBD	
Blast Room Dust Collector	Utilizes aluminum oxide, glass beads or other dry media for blasting.	Fabric filter	Rule 285(2)(I)(vi)(C)	

PTI 233-02A: EUMTLTREAT

Permit for a metal parts chemical treatment process (a.k.a “Chem Etch”) consisting of 1 brightening tank (“electropolishing”), 2 chemical milling tanks, 1 transport tank (a bulk holding tank), 3 water rinse tanks, and 3 waste acid accumulation tanks. All tanks are controlled by a packed bed scrubber system, except for the 3 waste accumulation tanks which are vented in-plant. This emission unit was operating during the inspection.

There are no Emission Limits, Material Limits, Testing/Sampling or Reporting requirements for this emission unit at this time.

Process/Operational Restrictions and Design/Equipment Parameters

Tecomet is required to maintain the liquid flow rate, pH and pressure drop on the associated packed bed scrubber systems according to the operation and maintenance plan for the system which ensure satisfactory operation of the system.

Tecomet has a document that was submitted to the AQD in January 2003 (attached) which provides the appropriate operating ranges within which the pH, water flow, and pressure drop should be operating for the metal treatment scrubber system. Table 2 contains these ranges as well as the data that was recorded during the inspection for each of these parameters. Scrubber #1 appeared to be operating properly during the inspection, according to the established operating parameters.

Tecomet has out-of-range alarms (audible and visual) that will sound. There were no alarms during the inspection for this unit.

Table 2. Scrubber #1 Packed Bed Scrubber operating ranges and actual readings

Scrubber #1 Operating Parameters	Low	High	Actual (during inspection)
Liquid Flow (recirculation) rate (gpm)	120	150	101.3
pH	7.0	9.0	8.5
Pressure Drop (in. H ₂ O)	0.5	2.5	1.1

Monitoring/Recordkeeping

Tecomet is required to continuously monitor the liquid flow rate, pH, and pressure drop on the scrubber. During the inspection I confirmed that this is continuously monitored at the equipment, as well as via computer program.

Records of all out-of-range alarms for the liquid flow rate, pH, and scrubber pressure drop and required to be kept, as well as the representative bath make-ups for the treatment tanks. Tecomet provided these records for January – August 2022, as requested. The records include a minimum of weekly logs of the flow rate, pH, pressure drop and whether the flow, pH or pressure drop alarms are on.

Tecomet is tasked with updating their operation and maintenance plan for this emission unit. This should include identifying the operating ranges the pH, flow and pressure drop should be operating at, as the records indicate different operating ranges than those specified in the operation and maintenance plan. It should also the ranges at which the low and high alarms will go off for each liquid level and pressure drop, as well as information used to address these malfunctions. For example, January 2022 records indicate flow alarms 2 days in a row due to recirculation issues. These types of malfunctions should be addressed in the operation and maintenance plan. The new plan is tentatively due by October 11, 2022.

Stack/Vent Restrictions

SVTREAT is required to be 36' aboveground. Stack height determinations may be made during a future inspection using AQD's Nikon Forestry Pro II Rangefinder.

PTI No. 265-05: EUPOLISHSAND

Permit for metal polishing operations including 2 buffing machines and 2 belt sanders controlled by a wet dust control system (Trimer 28 MCD Whirlwet #230). This unit was operating during the inspection.

Emission Limits

Emissions from this unit are limited to 0.010 lb/1,000 lbs exhaust gas and 0.1 lb/hr. Testing is required upon request of the AQD. There were no visible emissions coming from the stack for this unit, and therefore AQD's professional judgment is that testing on this unit is not necessary at this time.

Process/Operational Limits, Equipment, & Recordkeeping

Tecomet is required to operate the control system according to the approved operation and maintenance (O & M) plan. The current O & M plan requires that the liquid level in the sight glass be ¼ to ½ inch visible in the sight glass, and that the pressure drop be maintained at 7.5 inches (+/- 1 inch). Alarm points are set at 1 inch below the normal "open valve" level and the high level alarm is 2 inches above the normal "valve closed" level.

There were no alarms on this unit during the inspection, indicative of proper operation. The pressure drop was 8.29 "H2O (within the range specified in the O & M plan). T. Conley and I agreed that putting demarcation lines on the sight glass for the low and high alarm levels will be appropriate as a visual indicator of where the liquid level in the sight glass should be. Tecomet will follow up on this and provide me with photos that this has been done. Tecomet will also review the current O & M plan and make any necessary adjustments or corrections to the operation ranges.

Records are required to be kept for all out-of-range alarms on the pressure drop and liquid level. Tecomet provided these records for January – August 2022, as requested. Records include actual pressure drop readings. February 9 – March 8; March 16 – April 19; and April 20 – May 5 records all indicated pressure drops higher than 8.5 and notes indicate a high pressure drop alarm for all days inclusive during those dates.

T. Conley provided me further clarification on why high alarm pressure drops appeared to be occurring daily for those 3 months. Water levels in the control device impact pressure drop. A conveyor that is used to remove particulate build-up in the bottom of the wet dust collector had been removed for repairs in late 2021. Without the conveyor, particulate was building up within the tank, increasing water levels, which increased the pressure drop of the system. T. Conley explained that the system corrected itself to maintain pressure drop at the appropriate levels and provided "blue box" data showing that the pressure drop was consistently increasing and decreasing throughout those periods (indicators of system correction). The "high alarm" records were only a snapshot for the day – pressure drop was not operating at "high alarm" the entire day for each calendar period. The conveyor was re-installed in May 2022 and after that time records indicated that there was no longer "high alarms" with the pressure drop. This explanation is satisfactory for the purposes of compliance. See attached for explanation from the company.

Stack/Vent Restrictions

SVPolishsand is required to have a minimum stack height of 28.5 feet above ground level. Future inspections may involve utilizing AQD's Nikon Forestry Pro II rangefinder to verify compliance with this stack height requirement.

PTI 213-08: EUPOLISHING1 & EUPOLISHING2

Permit for metal polishing, including belt sanders and double-grinders. According to the previous inspection, EUPOLISHING1 is controlled by Whirlwet #229 and EUPOLISHING2 is controlled by Uniwash #753. EUPOLISHING1 is still controlled by Whirlwet #229; however, EUPOLISHING2's Uniwash #753 was removed from the site, and emissions from this unit are now diverted to and controlled by the Whirlwet #229 (unit controlling EUPOLISH1) and the Wetrex #239 (unit controlling EUNEWPOLISHCELL). I've requested that Tecomet submit an exemption demonstration for routing emissions from EUPOLISHING2 to two existing collectors servicing other permitted equipment.

Both emission units were operating during the inspection.

EUPOLISHING1 and EUPOLISHING2 have the same permit requirements, therefore, both will be evaluated simultaneously, below.

Emission Limits

Emissions from these units are each limited to 0.01 lb/1,000 lbs exhaust gas and 0.3 lb/hr. Testing is required upon request of the AQD. Visible emissions are limited to 5%. There were no visible emissions coming from the stacks of these units, and therefore AQD's professional judgment is that testing on this unit is not necessary at this time.

Design/Equipment Parameters & Monitoring/Recordkeeping

Tecomet is required to maintain and operate the wet dust collectors in a satisfactory manner. AQD believes that satisfactory operation includes operating the control systems according to the approved operation and maintenance (O & M) plan. The current O & M plan, submitted to AQD on March 31, 2009, requires that the liquid level in the sight glasses be $\frac{1}{4}$ to $\frac{1}{2}$ inch visible in the sight glass, and that the pressure drop be maintained at 7.5 inches (+/- 1 inch).

Tecomet is tasked with updating their O & M plan for these emission units to include the change in wet collectors used to control EUPOLISHING2 emissions, as well as identifying the low and high alarm set points for each liquid level and pressure drop, and information used to address malfunctions.

There were no alarms on the Whirlwet #229 or Wetrex #239 during the inspection, indicative of proper operation; however, see the discussion for the Wetrex #239 operation under "PTI 185-14: EUHIGHPOLISH & EUNEWPOLISH" for items of concern. The pressure drop on the Whirlwet #229 was 13.55 "H₂O, which is outside the range specified in the current O & M plan. The records provided for January – August 2022 (as requested) indicate that a pressure drop similar to what was recorded during the inspection has been maintained throughout those 8 months. I requested that Tecomet further look into what the appropriate pressure drop should be on this unit, and to update the O & M plan with the correct pressure drop range. Additionally, T. Conley and I agreed that putting

demarcation lines on the sight glass for the low and high levels will be appropriate as a visual indicator of where the liquid level in the sight glass should be. Tecomet will follow up on this and provide me with photos that this work has been completed. Tecomet will also review the current O & M plan and make any necessary adjustments or corrections to the operation ranges.

Low and high level alarms are set on the liquid level. I have requested that the low and high level alarm set points for the liquid level be included in the O & M plan as well. Records indicate that there were no low or high level alarms for the liquid level from January – August 2022.

Stack/Vent Restrictions

SVPOLISHING1 is required to have a minimum stack height of 35 feet above ground level. SVPOLISHING2 has the same stack height requirement, however, because the Uniwash #753 control device has been removed, the stack for this unit is no longer present. Future inspections may involve utilizing AQD's Nikon Forestry Pro II rangefinder to verify compliance with SVPOLISHING1's stack height requirement.

PTI 185-14: EUHIGHPOLISH & EUNEWPOLISHCELL

Permit for metal polishing, including belt sanders and buffers. EUHIGHPOLISH is controlled by a Uniwash wet dust collector. During the previous inspection, a Uniwash #754 was installed as the control device for EUHIGHPOLISH; however, during this inspection it was verified that the Uniwash #754 was removed and replaced with a Uniwash #756 in 2020. I have requested Tecomet submit an exemption demonstration for this replacement. A follow-up activity report will be written addressing the exemption demonstration review.

EUNEWPOLISHCELL is controlled by a Wetrex #239 wet dust collector. This device also controls some of the emissions from EUPOLISHING2. The exemption demonstration for EUPOLISHING2 shall also include EUNEWPOLISHCELL and its ability to control emissions from EUPOLISHING2 in addition to its own designated emissions.

EUHIGHPOLISH was not operating during the inspection.

EUHIGHPOLISH and EUNEWPOLISHCELL have the same permit requirements, except for their Emissions Limits; both emissions will be evaluated simultaneously, below.

Emission Limits

Emissions from EUHIGHPOLISH are limited to 0.01 lb/1,000 lbs exhaust gas and 0.04 lb/hr. Emissions from EUNEWPOLISHCELL are limited to 0.01 lb/1,000 lbs exhaust gas and 0.17 lb/hr. Testing is required upon request of the AQD. Visible emissions are limited to 10% opacity from each stack. EUHIGHPOLISH was not operating, but there were no visible emissions coming from the stack of EUNEWPOLISHCELL. Because there were no visible emissions from EUNEWPOLISHCELL, it is AQD's professional judgment that testing on this unit is not necessary at this time. EUHIGHPOLISH will be considered during a future inspection when operating regarding opacity.

Process/Operational Restrictions, Design/Equipment Parameters & Monitoring/Recordkeeping

Tecomet is required to maintain and operate the wet dust collectors in a satisfactory manner. AQD believes that satisfactory operation includes operating the control systems according to the approved operation and maintenance (O & M) plan (which should include pressure drop and liquid level indicators). The current O & M plan, submitted to AQD on March 2, 2015, requires that the liquid level in the sight glass for EUHIGHPOLISH be maintained around 2". The plan does not include an appropriate operating range for the pressure drop. This unit was not operating and therefore I was unable to confirm whether the liquid level was at the appropriate level. This unit does have a sight glass with a line to indicate what the appropriate liquid level should be.

EUNEWPOLISHCELL is also covered under the March 2, 2015 O & M plan. The appropriate pressure drop range and liquid level ranges are 6.0 – 10 "H₂O and 8.7" – 9.15", respectively, with a low alarm of 7.00 and a high alarm of 16.50 for the liquid level. The unit was operating during the inspection; however, while viewing the monitor for the control device there was some confusion as to which number outputs on the monitor are the pressure drop and which are the liquid levels. The suggestion was that "OD2" was the readout for the liquid level and during the inspection this was 9.14.

There were no alarms on the Wetrex #239 during the inspection, indicative of proper operation.

Records include a pressure drop reading and whether there were low or high liquid level alarms. During the inspection we discussed the possibility that the pressure drop records may have incorrect values, as the wrong number may have been recorded during daily checks. The records indicate that there were no low or high level alarms for the liquid level from January – August 2022.

Tecomet is tasked with updating their O & M plan for EUHIGHPOLISH and EUNEWPOLISHCELL. The updates should include identifying that the Wetrex #239 also controls emissions from EUPOLISHING2, as well as identifying the proper operating range for pressure drop on the Uniwash #756; confirming the proper liquid level on the Uniwash #756; identifying the proper operating ranges for the pressure drop and liquid level on the Wetrex #239 and including a schematic that identifies where these two values can be found on the monitor screen itself. Low and high level alarm setpoints should also be addressed in the O & M plan.

Stack/Vent Restrictions

SVHIGHPOLISH and SVNEWPOLISHCELL are each required to have a minimum stack height of 35 feet above ground level. Future inspections may involve utilizing AQD's Nikon Forestry Pro II rangefinder to verify compliance with these stack height requirements.

Exemptions Discussion

Blast Room Dust Collector

Collection of particulate from this unit is done via fabric filter. Dust and residual media from this process is then collected in a drum connect to the bottom of the dust collector. During the inspection I noted that there was no opacity emitting from the stack, however there was dry blast media present on the ground surrounding the collection drum. I brought this to T. Conley's attention who had mentioned she also noticed this the day prior and stated that they would aim to clean this area. Photos will be forthcoming of the cleaned area.

Hot Form Scrubber

This unit was not operating during the inspection. This scrubber is used for the hot form pickling process and T. Conley stated that Tecomet operates this unit under exemption Rule 290. Records will be provided and AQD will review to ensure that the unit is in compliance with exemption Rule 290.

Compliance Statement

Tecomet appears to be in compliance with PTI No.'s 233-02A, 265-05, 213-08 and 185-14 at this time. However, follow-up is necessary and will occur with Tecomet to ensure their O & M plans for all permitted equipment are up-to-date with appropriate operating ranges.



Image 1(EUCEMMILL&PICKLE) : EUCEMMILL&PICKLE control equipment has been removed.

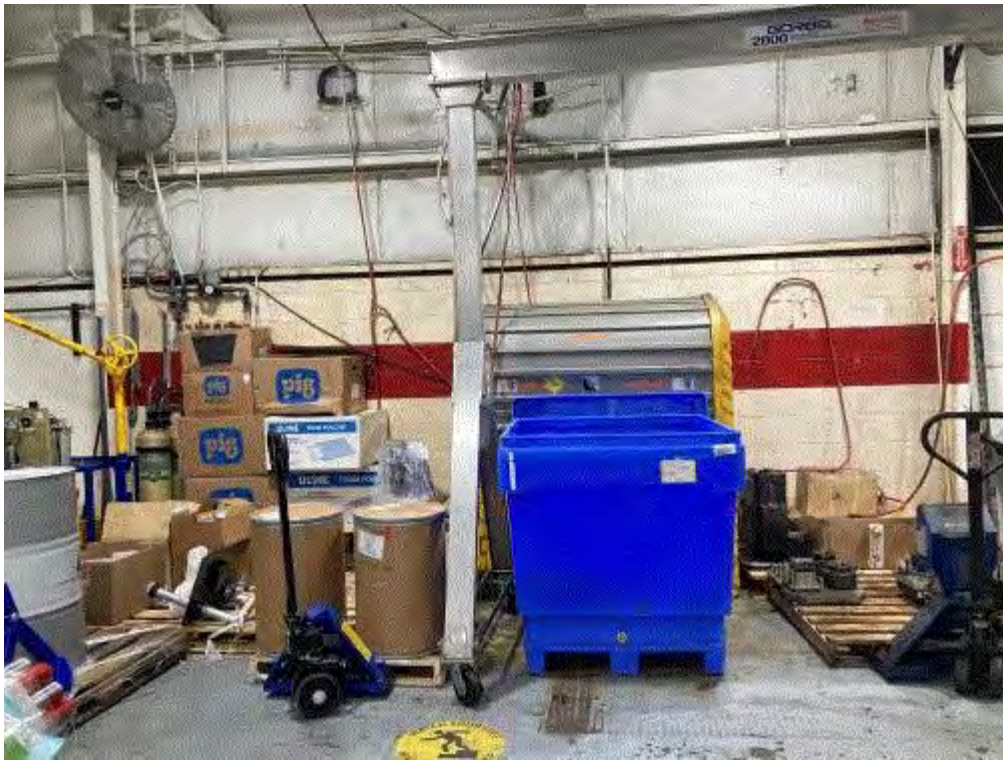


Image 2(Metal Treatment Line) : Metal treatment line for EUCEMMILL&PICKLE has been removed. (PTI 195-03A)



Image 3(Parts Washers) : Aqueous- (left) and Solvent-based (right) parts washers



Image 4(Shot Blast Media) : Shot blast media on ground surrounding collection drum

NAME Michelle Luplow

DATE 9/30/22

SUPERVISOR RB

Luplow, Michelle (EGLE)

From: Conley, Tracy <Tracy.Conley@Tecomet.com>
Sent: Friday, September 30, 2022 2:28 PM
To: Luplow, Michelle (EGLE)
Cc: Giannola, Emily; Cressman, James; Tabor, Jason
Subject: RE: [EXTERNAL] RE: Air Quality Division Records Request

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Michelle:

Sorry for this delay, just trying to make sure I have what you need.

Per your request regarding the DP high alarm notes on whirl Wet #230 alarm logs

I met with out Maintenance dept and our outside service company and as it turns out Unit #230 had the drag out conveyor removed for rebuild with a PO dated 9/29/2021 (PO#305341) I am still trying to confirm exact dates.

As I told you on the phone call, the whirl wet units are filter pass throughs and the water level directly effects the DP levels. As the system ran without the conveyor, the muck piled up in the bottom of he unit causing the level to slowly increase – as the internal levels increased the DP goes up and became more difficult to control as the auto refill didn't need to add water to keep the level sensors happy and Sensor resets were not always cleared.

The conveyor rebuild was pushed out months due to supply chain issues for spare parts. I can confirm per our OPV reports from Promec that on 5/21/22 the new system was installed – but again, I'm struggling to get an exact install date and I didn't want to delay responding waiting for this info so I went to our "blue Box" monitoring for #230 DP and found where the DP dropped back into compliance on or around May 5 2022 – so I am presuming this is when all of the repairs were finally completed.



Conditions Assessment and Operations Verification

PROJECT NAME: Tecomet WW-230 OPV®
LOCATION: Lansing, MI
TEST DATE: 10/1/2021
PROJECT MANAGER: Dennis Rasmussen

SYSTEM NO.: WW-230
LOCATION: Plant 2 / Forge
SERVING: Building 4 Grinding
TECHNICIAN(S): Dan Beem

Item	Operation and Condition Requirements	Results
Inlet Ducting		
Ducting From Users	Inspect general condition including all ductwork from hoods, drops, or other users leading to the main trunk duct. Verify that the duct connections are free of air and condensation leaks.	Fair
Ducting to Scrubber	Inspect general condition of the main trunk duct to the inlet of the scrubber system. Verify that the duct connections are free of air and condensation leaks.	Fair
Whirl-Wet Vessel		
Structure and Vessel	Verify system does not have excessive vibrations through structure and vessel	Fair
Mist Eliminator	Check for proper pressure drop through mist eliminator.	Fair
Mist Eliminator	Verify that mist eliminator is functioning properly without bypass or process mist carryover.	Good
Make-Up Water	Verify that make up water piping is not leaking.	Good
Proper Water Action	Verify through viewport proper whirl of water.	Good
Still Well	Check that the still well is in proper operation. The bottom is free to allow water to fill, the vent hole on the top is free and allowing proper equalization.	Fair
Electrical and Controls		
Digihelic	Operational Verification (Make-Up Water) Verify that the photohelic operates properly. Low pressure relay adds water, high pressure relay stop water fill.	Good
Make-Up Water Solenoid	Operational Verification (Make-Up Water) Verify that the make-up water solenoid opens and closes with the command of the photohelic.	Good
Make-Up Water Delay Timer	Verify delay timer is set properly and record timer setting.	Good
Control Panel	Verify all lights, buttons, and indicators are operating properly.	Good
Low Level Alarm	Verify proper operation of low level alarm.	Good
High Level Alarm	Verify proper operation of high level alarm.	Good
Fan and Stack		
Fan Operation	Verify Fan Proper Operation. Take operational readings and verify amperage is within nameplate FLA.	Completed
Stack	Verify stack is sturdy and free from excessive vibration.	Good
Fan	Operational Verification (Proper flow and static pressures)	Completed
Fan	Verify Proper Operating Parameters (Amps, Volts, RPM, Pressure, Flow)	Completed
Dragout		
Dragout Operation	Verify dragout turns smoothly when manual start is in on position.	Broken / Being fixed
Dragout Operation	Verify Dragout runs smoothly without any hangup, excessive noise, or vibration.	Broken / Being fixed
Scrapper Operation	Verify scrapper blade cleanly and smoothly scrapes the dragout blades returning back to proper resting position smoothly.	Broken / Being fixed

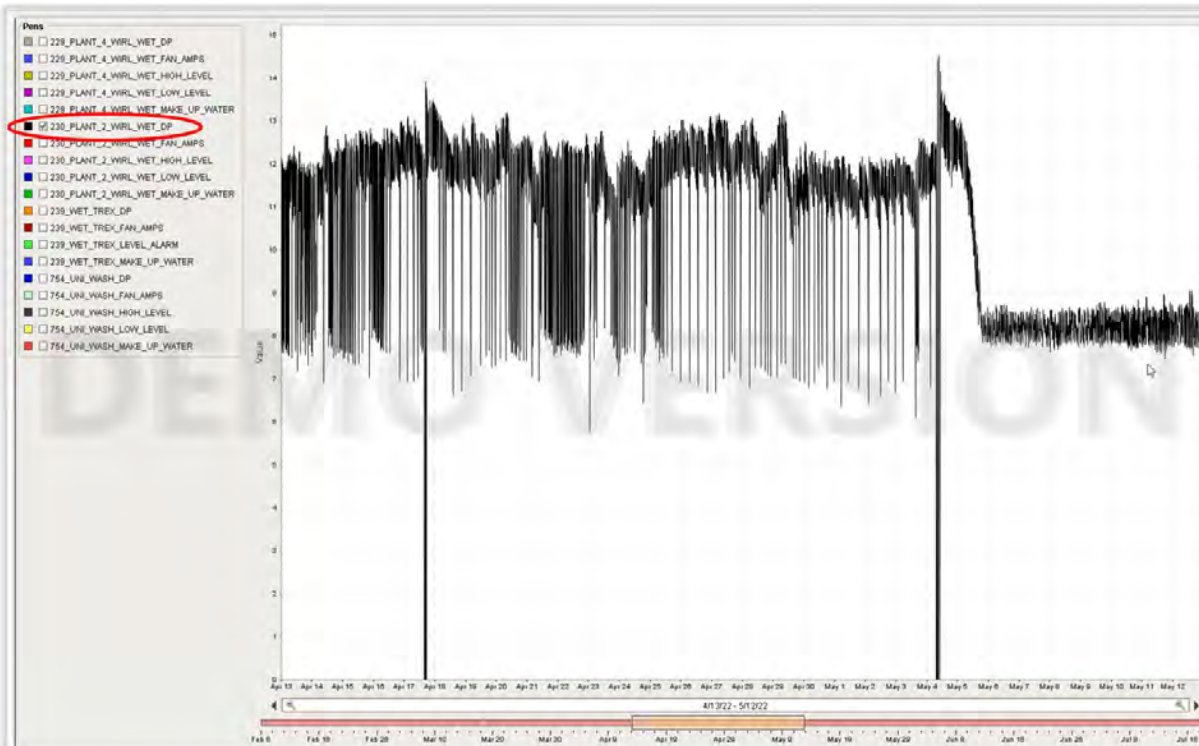


Conditions Assessment and Operations Verification

PROJECT NAME: Tecomet WW-230 OPV®
LOCATION: Lansing, MI
TEST DATE: 5/20/2022
PROJECT MANAGER: Dennis Rasmussen

SYSTEM NO.:
LOCATION:
SERVING:
TECHNICIAN:

Item	Operation and Condition Requirements	Results
Inlet Ducting		
Ducting From Users	Inspect general condition including all ductwork from hoods, drops, or other users leading to the main trunk duct. Verify that the duct connections are free of air and condensation leaks.	
Ducting to Scrubber	Inspect general condition of the main trunk duct to the inlet of the scrubber system. Verify that the duct connections are free of air and condensation leaks.	
Whirl-Wet Vessel		
Structure and Vessel	Verify system does not have excessive vibrations through structure and vessel	
Mist Eliminator	Check for proper pressure drop through mist eliminator.	
Mist Eliminator	Verify that mist eliminator is functioning properly without bypass or process mist carryover.	
Make-Up Water	Verify that make up water piping is not leaking.	
Proper Water Action	Verify through viewport proper whirl of water.	
Still Well	Check that the still well is in proper operation. The bottom is free to allow water to fill, the vent hole on the top is free and allowing proper equalization.	
Electrical and Controls		
Digihelic	Operational Verification (Make-Up Water) Verify that the photohelic operates properly. Low pressure relay adds water, high pressure relay stop water fill.	
Make-Up Water Solenoid	Operational Verification (Make-Up Water) Verify that the make-up water solenoid opens and closes with the command of the photohelic.	
Make-Up Water Delay Timer	Verify delay timer is set properly and record timer setting.	
Control Panel	Verify all lights, buttons, and indicators are operating properly.	
Low Level Alarm	Verify proper operation of low level alarm.	
High Level Alarm	Verify proper operation of high level alarm.	
Fan and Stack		
Fan Operation	Verify Fan Proper Operation. Take operational readings and verify amperage is within nameplate FLA.	
Stack	Verify stack is sturdy and free from excessive vibration.	
Fan	Operational Verification (Proper flow and static pressures)	
Fan	Verify Proper Operating Parameters (Amps, Volts, RPM, Pressure, Flow)	
Dragout		
Dragout Operation	Verify dragout turns smoothly when manual start is in on position.	
Dragout Operation	Verify Dragout runs smoothly without any hangup, excessive noise, or vibration.	
Scrapper Operation	Verify scrapper blade cleanly and smoothly scrapes the dragout blades returning back to proper resting position smoothly.	



Aurelius Rd. Plant #4 Outside

[illegible]

Retention Time: Five (5) years
Retention Location: EH&S Office

Whirl Wet Alarm Log #229 Tri-Mer

Aurelius Rd. Plant #4 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
7-4-22	7:00	CT	13.50	N	N	
7-13-22	7:00	CT	14.01	N	N	
7-14-22	7:00	CT	13.57	N	N	
7-15-22	7:00	CT	12.71	N	N	
7-18-22	7:00	CT	13.67	N	N	
7-19-22	7:00	CT	13.52	N	N	
7-20-22	7:00	CA	14.02	N	N	
7-21-22	7:00	CT	13.35	N	N	
7-25-22	7:00	CT	13.31	N	N	
7-26-22	7:00	CT	12.98	N	N	
8-4-22	7:30	CT	12.98	N	N	
8-9-22	8:00	CT	13.72	N	N	
8-10-22	7:00	CT	13.60	N	N	
8-11-22	7:00	CT	13.39	N	N	
8-12-22	7:00	CT	13.35	N	N	
8-15-22	7:00	CT	14.70	N	N	
8-16-22	7:00	CT	13.50	N	N	
8-17-22	7:00	CT	14.11	N	N	
8-18-22	7:00	CT	13.10	N	N	
8-19-22	7:00	CA	13.82	N	N	
8-23-22	7:00	CA	13.69	N	N	
8-24-22	7:00	CT	13.47	N	N	
8-25-22	7:00	CT	13.32	N	N	
8-26-22	7:00	CT	13.15	N	N	
8-27-22	7:00	CT	13.89	N	N	
8-30-22	7:00	CT	13.64	N	N	
8-31-22	7:00	CT	13.62	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Whirl Wet Alarm Log #229 Tri-Mer

Aurelius Rd. Plant #4 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
5-31-22	6:30	CT	13.87	N	N	
6-1-22	6:45	CT	13.41	N	N	
6-2-22	7:00	CT	13.15	N	N	
6-3-22	6:30	CT	14.30	N	N	
6-7-22	7:00	CT	14.15	N	N	
6-8-22	7:00	CT	13.20	N	N	
6-9-22	7:00	CT	13.69	N	N	
6-12-22	7:00	CT	13.43	N	N	
6-13-22	7:30	CT	13.12	N	N	
6-14-22	6:30	CT	13.17	N	N	
6-15-22	7:30	CT	14.70	N	N	
6-16-22	7:00	CT	13.71	N	N	
6-17-22	7:00	CT	13.01	N	N	
6-20-22	7:00	CT	13.60	N	N	
6-21-22	7:00	CT	14.18	N	N	
6-22-22	7:00	CT	13.76	N	N	
6-23-22	7:00	CT	12.99	N	N	
6-27-22	7:00	CT	13.97	N	N	
6-28-22	7:00	CT	13.47	N	N	
6-29-22	7:30	CT	13.50	N	N	
6-30-22	7:00	CT	13.24	N	N	
7-1-22	7:30	CT	13.31	N	N	
7-5-22	7:45	CT	13.25	N	N	
7-6-22	7:00	CT	13.27	N	N	
7-7-22	7:00	CT	13.63	N	N	
7-8-22	7:00	CT	13.29	N	N	
7-11-22	7:00	CT	13.85	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Whirl Wet Alarm Log #229 Tri-Mer

Aurelius Rd. Plant #4 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
4-26-22	7:00	CT	13.22	N	N	
4-27-22	7:30	CT	13.21	N	N	
4-28-22	6:45	CT	13.22	N	N	
4-29-22	7:00	CT	13.18	N	N	
4-30-22	6:45	CT	13.69	N	N	
4-27-22	6:30	CT	13.55	N	N	
4-28-22	6:45	CT	12.75	N	N	
4-29-22	6:45	CT	13.51	N	N	
5-2-22	7:00	CT	13.80	N	N	
5-3-22	7:15	CT	12.79	N	N	
5-4-22	6:30	CT	13.26	N	N	
5-5-22	6:30	CT	13.28	N	N	
5-6-22	6:30	CT	13.34	N	N	
5-9-22	7:00	CT	13.48	N	N	
5-10-22	7:00	CT	13.46	N	N	
5-11-22	7:00	CT	13.44	N	N	
5-12-22	7:00	CT	13.74	N	N	
5-13-22	7:20	CT	13.13	N	N	
5-17-22	7:00	CT	13.42	N	N	
5-18-22	7:00	CT	13.18	N	N	
5-19-22	7:00	CT	13.48	N	N	
5-20-22	7:00	CT	12.97	N	N	
5-23-22	6:30	CT	13.38	N	N	
5-24-22	6:30	CT	14.11	N	N	
5-25-22	7:00	CT	13.33	N	N	
5-26-22	6:45	CT	13.55	N	N	
5-27-22	6:45	CT	13.42	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Whirl Wet Alarm Log #229 Tri-Mer

Aurelius Rd. Plant #4 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
3-11-22	7:00	CT	12.45	N	N	
3-14-22	7:00	CT	13.84	N	N	
3-15-22	7:15	CT	12.83	N	N	
3-17-22	6:30	CT	12.94	N	N	
3-18-22	7:00	CT	12.92	N	N	
3-21-22	7:00	CT	12.84	N	N	
3-22-22	7:00	CT	12.93	N	N	
3-23-22	7:30	CT	13.66	N	N	
3-24-22	7:00	CT	13.47	N	N	
3-25-22	7:00	CT	13.29	N	N	
3-28-22	6:30	CT	13.13	N	N	
3-29-22	6:45	CT	13.08	N	N	
3-30-22	7:00	CT	13.15	N	N	
3-31-22	7:15	CT	12.77	N	N	
4-1-22	6:45	CT	13.59	N	N	
4-4-22	7:00	CT	13.41	N	N	
4-5-22	7:00	CT	13.46	N	N	
4-6-22	6:45	CT	13.31	N	N	
4-7-22	6:30	CT	13.39	N	N	
4-8-22	7:00	CT	13.16	N	N	
4-11-22	7:00	CT	13.66	N	N	
4-12-22	7:30	CT	13.49	N	N	
4-13-22	7:00	CT	13.52	N	N	
4-14-22	7:30	CT	13.25	N	N	
4-15-22	7:00	CT	13.70	N	N	
4-18-22	7:00	CT	13.13	N	N	
4-19-22	7:00	CT	13.04	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Whirl Wet Alarm Log #229 Tri-Mer

Aurelius Rd. Plant #4 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
2-1-22	7:30	CT	12.81	N	N	
2-3-22	7:00	CT	12.94	N	N	
2-4-22	7:15	CT	12.52	N	N	
2-7-22	7:00	CT	13.09	N	N	
2-8-22	6:30	CT	13.29	N	N	
2-9-22	6:30	CT	13.35	N	N	
2-10-22	6:45	CT	13.23	N	N	
2-11-22	6:30	CT	13.25	N	N	
2-14-22	6:45	CT	13.31	N	N	
2-15-22	6:30	CT	13.72	N	N	
2-16-22	6:30	CT	13.01	N	N	
2-17-22	6:30	CT	13.13	N	N	
2-18-22	7:00	CT	13.61	N	N	
2-21-22	7:00	CT	13.34	N	N	
2-22-22	7:30	CT	14.27	N	N	
2-23-22	7:00	CT	13.15	N	N	DP low alarm
2-24-22	6:30	CT	13.52	N	N	
2-25-22	7:00	CT	13.35	N	N	
2-28-22	6:30	CT	13.26	N	N	
3-1-22	7:00	CT	12.73	N	N	
3-2-22	7:00	CT	13.02	N	N	
3-3-22	7:15	CT	13.71	N	N	
3-4-22	6:45	CT	13.29	N	N	
3-7-22	6:30	CT	13.66	N	N	
3-8-22	6:45	CT	13.23	N	N	
3-9-22	6:30	CT	13.21	N	N	
3-10-22	7:00	CT	13.20	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Whirl Wet Alarm Log #229 Tri-Mer

Aurelius Rd. Plant #4 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
12-17-21	6:45	CT	13.79	N	N	
12-20-21	6:30	CT	13.92	N	N	
12-31-21	7:15	CT	13.24	N	N	
12-31-21	7:30	CT	14.03	N	N	
12-31-21	7:00	CT	14.29	N	N	
12-31-21	7:15	CT	13.85	N	N	
1-3-22	7:00	CT	13.07	N	N	
1-4-22	7:15	CT	13.45	N	N	
1-5-22	6:45	CT	13.21	N	N	
1-6-22	7:00	CT	13.29	N	N	
1-7-22	7:00	CT	13.97	N	N	
1-10-22	7:15	CT	13.44	N	N	
1-11-22	7:00	CT	13.62	N	N	
1-12-22	7:15	CT	13.37	N	N	
1-13-22	6:45	CT	13.11	N	N	
1-14-22	6:30	CT	13.63	N	N	
1-17-22	6:30	CT	13.13	N	N	
1-18-22	6:45	CT	13.58	N	N	
1-19-22	6:30	CT	14.01	N	N	
1-20-22	7:00	CT	13.76	N	N	
1-21-22	7:00	CT	13.66	N	N	
1-24-22	6:45	CT	13.26	N	N	
1-25-22	6:30	CT	14.03	N	N	
1-26-22	6:30	CT	13.39	N	N	
1-27-22	6:45	CT	13.90	N	N	
1-30-22	6:30	CT	13.98	N	N	
1-31-22	7:00	CT	13.11	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Aurelius Rd. Plant #2 Outside

[illegible]

Retention Time: Five (5) years
Retention Location: EH&S Office

Whirl Wet Alarm Log #230 Tri-Mer

Aurelius Rd. Plant #2 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
7-13-22	7:00	CT	8.42	N	N	
7-14-22	7:00	CT	7.84	N	N	
7-15-22	7:00	CT	8.44	N	N	
7-18-22	7:00	CT	8.52	N	N	
7-19-22	7:00	CT	8.13	N	N	
7-20-22	7:00	CT	8.17	N	N	
7-21-22	7:00	CT	8.05	N	N	
7-25-22	7:30	CT	8.11	N	N	
7-26-22	7:00	CT	8.21	N	N	
7-27-22	7:00	CT	8.12	N	N	
8-8-22	7:30	CT	8.28	N	N	
8-9-22	7:00	CT	8.18	N	N	
8-10-22	7:00	CT	8.05	N	N	
8-11-22	7:00	CT	8.21	N	N	
8-12-22	7:00	CT	8.09	N	N	
8-15-22	7:00	CT	8.88	N	N	
8-16-22	7:00	CT	8.13	N	N	
8-17-22	7:00	CT	8.32	N	N	
8-18-22	7:00	CT	8.28	N	N	
8-19-22	7:30	CT	7.85	N	N	
8-23-22	7:00	CT	7.88	N	N	
8-24-22	7:00	CT	8.20	N	N	
8-25-22	7:00	CT	7.74	N	N	
8-26-22	7:00	CT	7.67	N	N	
8-29-22	7:00	CT	7.85	N	N	
8-30-22	7:00	CT	8.20	N	N	
8-31-22	7:00	CT	8.07	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Whirl Wet Alarm Log #230 Tri-Mer

Aurelius Rd. Plant #2 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
6-1-22	6:45	CT	8.40	N	N	
6-1-22	7:00	CT	8.32	N	N	DP Low Alarm
6-3-22	7:00	CT	8.35	N	N	
6-7-22	7:30	CT	8.13	N	N	
6-8-22	7:00	CT	8.41	N	N	
6-9-22	7:30	CT	8.32	N	N	
6-10-22	7:00	CT	8.09	N	N	
6-13-22	7:30	CT	8.95	N	N	
6-14-22	7:00	CT	8.74	N	N	
6-15-22	7:30	CT	8.12	N	N	
6-16-22	7:00	CT	8.39	N	N	
6-17-22	7:00	CT	8.25	N	N	
6-20-22	7:00	CT	8.32	N	N	
6-21-22	7:00	CT	8.14	N	N	
6-22-22	7:00	CT	8.45	N	N	
6-23-22	7:00	CT	8.10	N	N	
6-27-22	7:30	CT	8.19	N	N	
6-28-22	7:00	CT	8.22	N	N	
6-29-22	7:30	CT	8.20	N	N	
6-30-22	7:00	CT	8.19	N	N	
7-1-22	7:15	CT	8.23	N	N	
7-5-22	7:30	CT	8.45	N	N	
7-6-22	7:00	CT	7.90	N	N	
7-7-22	7:00	CT	7.77	N	N	
7-8-22	7:30	CT	13.21	N	N	
7-11-22	7:00	CT	12.77	N	N	DP High alarm
7-12-22	7:00	CT	11.48	N	N	"

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Whirl Wet Alarm Log #230 Tri-Mer

Aurelius Rd. Plant #2 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
4-20-22	7:15	CT	12.24	N	N	DP High alarm
4-22-22	7:00	CT	9.71	N	N	
4-25-22	7:15	CT	9.39	N	N	" "
4-26-22	6:45	CT	9.07	N	N	" "
4-27-22	7:00	CT	12.64	N	N	" "
4-28-22	6:45	CT	12.65	N	N	" "
4-29-22	7:00	CT	12.29	N	N	" "
5-2-22	7:15	CT	11.63	N	N	" "
5-3-22	7:30	CT	11.24	N	N	" "
5-4-22	7:00	CT	11.68	N	N	" "
5-5-22	6:45	CT	12.10	N	N	" "
5-6-22	6:45	CT	8.36	N	N	
5-9-22	6:30	CT	8.34	N	N	
5-10-22	7:00	CT	9.39	N	N	
5-11-22	7:00	CT	9.17	N	N	
5-12-22	7:00	CT	8.40	N	N	
5-13-22	7:00	CT	8.15	N	N	
5-17-22	7:00	CT	8.09	N	N	
5-18-22	7:15	CT	8.63	N	N	
5-19-22	7:00	CT	8.24	N	N	
5-20-22	7:00	CT	8.20	N	N	
5-23-22	7:00	CT	8.29	N	N	
5-24-22	6:45	CT	8.16	N	N	
5-25-22	7:00	CT	7.93	N	N	
5-26-22	7:00	CT	8.20	N	N	
5-27-22	7:00	CT	7.91	N	N	
5-31-22	6:45	CT	8.74	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Whirl Wet Alarm Log #230 Tri-Mer

Aurelius Rd. Plant #2 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
3-11-22	7:15	CT	8.80	N	N	
3-14-22	7:30	CT	8.47	N	N	
3-15-22	7:00	CT	11.64	N	N	DP High Alarm
3-17-22	7:30	CT	11.55	N	N	" "
3-18-22	7:45	CT	11.88	N	N	" "
3-21-22	7:00	CT	11.73	N	N	" "
3-22-22	7:15	CT	11.46	N	N	" "
3-23-22	7:45	CT	8.85	N	N	" "
3-24-22	7:30	CT	9.13	N	N	" "
3-25-22	6:45	CT	8.45	N	N	
3-28-22	7:15	CT	12.03	N	N	" "
3-29-22	7:30	CT	11.46	N	N	" "
3-30-22	8:00	CT	12.16	N	N	" "
3-31-22	7:00	CT	9.00	N	N	" "
4-1-22	7:30	CT	10.11	N	N	" "
4-4-22	7:00	CT	12.27	N	N	" "
4-5-22	7:30	CT	11.63	N	N	" "
4-6-22	7:00	CT	11.70	N	N	" "
4-7-22	7:30	CT	11.76	N	N	" "
4-8-22	6:45	CT	11.35	N	N	" "
4-11-22	7:15	CT	12.15	N	N	" "
4-12-22	7:00	CT	12.50	N	N	" "
4-13-22	7:30	CT	11.30	N	N	" "
4-14-22	7:00	CT	11.37	N	N	" "
4-15-22	7:00	CT	11.79	N	N	" "
4-18-22	7:30	CT	12.41	N	N	" "
4-19-22	7:00	CT	12.12	N	N	" "

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Whirl Wet Alarm Log #230 Tri-Mer

Aurelius Rd. Plant #2 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
2-2-22	6:45	CT	8.97	N	N	
2-3-22	6:30	CT	11.02	N	N	
2-7-22	7:15	CT	9.89	N	N	
2-7-22	7:00	CT	10.59	N	N	
2-8-22	7:00	CT	9.63	N	N	DP High Alarm
2-9-22	6:30	CT	8.31	N	N	"
2-10-22	7:00	CT	7.60	N	N	"
2-11-22	6:30	CT	8.11	N	N	"
2-14-22	7:00	CT	6.30	N	N	"
2-15-22	7:30	CT	8.98	N	N	"
2-16-22	1:00	CT	9.62	N	N	"
2-17-22	7:00	CT	9.91	N	N	"
2-18-22	7:30	CT	9.62	N	N	"
2-21-22	6:45	CT	8.42	N	N	"
2-22-22	6:30	CT	8.33	N	N	"
2-23-22	6:30	CT	10.84	N	N	"
2-24-22	6:45	CT	8.37	N	N	"
2-25-22	7:00	CT	10.23	N	N	"
2-28-22	7:00	CT	11.14	N	N	"
2-29-22	8:30	CT	11.26	N	N	"
3-2-22	7:00	CT	11.52	N	N	"
3-3-22	7:15	CT	11.56	N	N	"
3-4-22	7:15	CT	11.48	N	N	"
3-7-22	7:30	CT	9.43	N	N	"
3-8-22	7:15	CT	8.18	N	N	"
3-9-22	7:00	CT	8.21	N	N	
3-10-22	6:30	CT	8.62	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Whirl Wet Alarm Log #230 Tri-Mer

Aurelius Rd. Plant #2 Outside

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
12-20-21	7:00	CT	7.51	N	N	
12-21-21	6:45	CT	8.33	N	N	
12-22-21	6:30	CT	8.13	N	N	
12-27-21	7:00	CT	7.67	N	N	
12-28-21	7:15	CT	8.62	N	N	
1-3-22	7:30	CT	8.11	N	N	
1-4-22	7:15	CT	8.05	N	N	
1-5-22	7:30	CT	8.11	N	N	
1-6-22	6:45	CT	8.22	N	N	
1-7-22	7:00	CT	8.62	N	N	
1-10-22	6:30	CT	8.41	N	N	
1-11-22	7:30	CT	8.45	N	N	
1-12-22	7:00	CT	8.07	N	N	
1-13-22	7:30	CT	8.78	N	N	
1-14-22	7:00	CT	8.13	N	N	
1-17-22	7:30	CT	8.01	N	N	
1-18-22	7:00	CT	8.03	N	N	
1-19-22	7:30	CT	7.92	N	N	
1-20-22	6:45	CT	7.86	N	N	
1-21-22	7:00	CT	7.91	N	N	
1-24-22	7:15	CT	7.99	N	N	
1-25-22	7:00	CT	8.13	N	N	
1-26-22	6:30	CT	8.08	N	N	
1-27-22	6:30	CT	7.80	N	N	
1-28-22	6:45	CT	8.19	N	N	
1-31-22	7:15	CT	7.35	N	N	
2-1-22	7:30	CT	7.76	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Aurelius Rd. Plant #4 - Outside (N. Side of Plant 4)

[illegible]

Retention Time: Five (5) years
Retention Location: EH&S Office

Wetrex Wet Dust Collector # 239 Alarm Log

Aurelius Rd. Plant #4 - Outside (N. Side of Plant 4)

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
6-29-22	7:30	CT	8.88	N	N	
6-30-22	7:30	CT	9.00	N	N	
7-1-22	7:30	CT	8.95	N	N	
7-5-22	7:30	CT	8.76	N	N	
7-6-22	7:00	CT	9.01	N	N	
7-7-22	7:00	CT	8.92	N	N	
7-8-22	7:00	CT	8.79	N	N	
7-11-22	7:30	CT	8.82	N	N	
7-12-22	9:00	CT	8.73	N	N	
7-13-22	7:00	CT	9.02	N	N	
7-14-22	7:00	CT	8.33	N	N	
7-15-22	7:00	CT	8.62	N	N	
7-18-22	7:30	CT	8.91	N	N	
7-19-22	7:00	CT	8.63	N	N	
7-20-22	7:00	CT	8.21	N	N	
7-21-22	7:00	CT	8.63	N	N	
7-25-22	7:30	CT	8.54	N	N	
7-26-22	7:00	CT	7.92	N	N	
7-27-22	7:30	CT	8.13	N	N	
8-8-22	7:00	CT	8.35	N	N	
8-9-22	8:00	CT	7.98	N	N	
8-10-22	7:30	CT	8.61	N	N	
8-11-22	7:00	CT	8.92	N	N	
8-12-22	7:00	CT	8.53	N	N	
8-15-22	7:30	CT	8.49	N	N	
8-16-22	7:00	CT	8.29	N	N	
8-17-22	7:00	CT	8.47	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Wetrex Wet Dust Collector # 239 Alarm Log

Aurelius Rd. Plant #4 - Outside (N. Side of Plant 4)

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
3-15-22	6:30	CT	8.43	N	N	
3-17-22	8:00	CT	9.06	N	N	
3-18-22	8:30	CT	8.79	N	N	
3-21-22	8:00	CT	8.88	N	N	
3-22-22	7:15	CT	8.77	N	N	
3-23-22	7:00	CT	8.76	N	N	
3-24-22	7:30	CT	8.81	N	N	
3-25-22	6:45	CT	9.27	N	N	
3-25-22	7:00	CT	8.53	N	N	
3-29-22	7:30	CT	8.96	N	N	
3-30-22	6:45	CT	9.08	N	N	
3-31-22	7:15	CT	8.95	N	N	
4-1-22	7:00	CT	9.10	N	N	
4-4-22	7:30	CT				Down
4-5-22	7:00	CT				Down
4-6-22	7:15	CT				Down
4-7-22	6:30	CT				Down
4-8-22	6:45	CT				Down
4-12-22	7:30	CT	8.35			
4-13-22	7:30	CT				Down
6-10-22	7:00	CT				
6-11-22	7:45	CT				
6-12-22	8:00	CT				
6-13-22	7:15	CT				
6-14-22	7:00	CT				
6-16-22	7:00	CT				
6-17-22	7:00	CT				

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Wetrex Wet Dust Collector # 239 Alarm Log

Aurelius Rd. Plant #4 - Outside (N. Side of Plant 4)

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
2-4-22	7:00	CT	7.52	N	N	
2-7-22	6:30	CT	8.71	N	N	
2-8-22	6:45	CT	8.78	N	N	
2-9-22	6:30	CT	8.81	N	N	
2-10-22	7:00	CT	8.71	N	N	
2-11-22	7:30	CT	8.92	N	N	
2-14-22	6:30	CT	9.17	N	N	
2-15-22	7:00	CT	9.01	N	N	
2-16-22	10:00	CT	8.98	N	N	
2-17-22	7:00	CT	8.84	N	N	
2-18-22	6:30	CT	8.83	N	N	
2-21-22	7:00	CT	8.76	N	N	
2-22-22	7:30	CT	8.90	N	N	
2-23-22	7:15	CT	8.83	N	N	
2-24-22	6:45	CT	8.98	N	N	
2-25-22	6:30	CT	9.15	N	N	
2-26-22	6:45	CT	8.94	N	N	
3-1-22	7:00	CT	8.89	N	N	
3-2-22	6:30	CT	8.84	N	N	
3-3-22	7:30	CT	8.73	N	N	
3-4-22	7:00	CT	8.95	N	N	
3-7-22	7:15	CT	8.72	N	N	
3-8-22	6:30	CT	8.65	N	N	
3-9-22	7:00	CT	9.09	N	N	
3-10-22	7:00	CT	8.79	N	N	
3-11-22	6:30	CT	8.82	N	N	
3-14-22	7:15	CT	8.78	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office

Aurelius Rd. Plant #4 - Inside (By High Polish Room)

Record value, and note any alarm conditions & actions taken

Date	Time	Inspected By:	Pressure Drop (in.)	Low Liquid Level Alarm On? Y/N	High Liquid Level Alarm On? Y/N	Comments
12-22-21	8:00	CT	9.17	N	N	
12-27-21	7:00	CT	8.99	N	N	
12-28-21	6:30	CT	9.09	N	N	
1-3-22	6:45	CT	8.97	N	N	
1-4-22	7:15	CT	8.97	N	N	
1-5-22	7:30	CT	8.91	N	N	
1-6-22	7:15	CT	9.00	N	N	
1-7-22	7:00	CT	8.96	N	N	
1-10-22	7:30	CT	9.03	N	N	
1-11-22	7:00	CT	8.83	N	N	
1-12-22	7:30	CT	8.84	N	N	
1-13-22	7:00	CT	9.03	N	N	
1-14-22	6:30	CT	8.81	N	N	
1-17-22	7:15	CT	8.97	N	N	
1-18-22	7:00	CT	8.89	N	N	
1-19-22	7:15	CT	9.12	N	N	
1-20-22	6:45	CT	9.01	N	N	
1-21-22	6:30	CT	9.24	N	N	
1-24-22	7:00	CT	9.17	N	N	
1-25-22	7:30	CT	8.91	N	N	
1-26-22	7:00	CT	8.74	N	N	
1-27-22	6:45	CT	8.33	N	N	
1-28-22	7:15	CT	7.99	N	N	
1-31-22	7:30	CT	7.61	N	N	
2-1-22	7:00	CT	7.02	N	N	
2-2-22	6:30	CT	7.13	N	N	
2-3-22	7:00	CT	7.31	N	N	

Note: When alarm sounds, notify department manager or maintenance immediately.

Retention Time: Five (5) years

Retention Location: EH&S Office



Safety Data Sheet

Material Name: ArmaKleen 4 in 1 Cleaner – Cleaning Solution

SDS ID: 820070

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

ArmaKleen 4 in 1 Cleaner – Cleaning Solution

Product Code

Not available.

Synonyms

Not available.

Product Use

Aqueous, alkaline cleaner that has been diluted with water for cleaning aluminum, magnesium, titanium, ferrous and non-ferrous alloys as well as plastic, glass, and composite materials. If this product is used in combination with other products, refer to the Safety Data Sheet for those products.

Restrictions on Use

For professional use only

Details of the supplier of the safety data sheet

MANUFACTURER

Church & Dwight
The ArmaKleen™ Company
469 North Harrison Street
Princeton, NJ 08543
Phone: (800) 332-5424
www.churchdwight.com

SUPPLIER (in the U.S.A.)

Safety-Kleen Systems, Inc.
42 Longwater Drive
Norwell, MA 02061-9149
Phone: 1-800-669-5740
www.safety-kleen.com

SUPPLIER (in CANADA)

Safety-Kleen Canada Inc.
25 Regan Road
Brampton, Ontario, Canada L7A 1B2
Phone: 1-800-669-5740

Emergency Telephone Number

1-800-468-1760

Issue Date

May 5, 2021

Supersedes Issue Date

March 21, 2021

Original Issue Date

October 22, 2009

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with Schedule 1 of Canada's Hazardous Products Regulations (HPR) (SOR/2015-17) and paragraph (d) of 29 CFR 1910.1200 in the United States

None needed according to classification criteria.

GHS Label Elements

Symbol(s)

None needed according to classification criteria.

Signal Word

None needed according to classification criteria

Hazard Statement(s)

None needed according to classification criteria.

Precautionary Statement(s)

Prevention

None needed according to classification criteria.

Safety Data Sheet

Material Name: ArmaKleen 4 in 1 Cleaner – Cleaning Solution

SDS ID: 820070

Response

None needed according to classification criteria.

Storage

None needed according to classification criteria. Do not store below 40°F (4.4°C).

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Repeated exposure may cause skin dryness or cracking. Contact with heated material may cause serious thermal burns.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
7732-18-5	Water	93-99
124-07-2	Octanoic Acid	0.25-0.27
68439-46-3	Alcohols, C9-11, ethoxylated	0.19-0.21
68987-81-5	Alcohols, C6-10, ethoxylated and propoxylated	0.14-0.16
61791-26-2	Amines, tallow, alkyl, ethoxylated	0.14-0.16

Section 4 - FIRST AID MEASURES

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention, if needed.

Skin

IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation occurs: Call a POISON CENTER or doctor. For thermal burns caused by contact with hot product, remove affected clothing and shoes. Wash skin thoroughly with cool water. Apply cool-packs or ice.

Eyes

IF IN EYES: If irritation or redness from exposure to vapor or mist develops, move away from exposure and rinse cautiously with water for 5 minutes. Upon direct contact with liquid, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

Most Important Symptoms/Effects

Acute

Contact with heated product can cause severe burns to the eyes and skin and can result in permanent eye damage.

Delayed

Repeated exposure may cause skin dryness or cracking.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Safety Data Sheet

Material Name: ArmaKleen 4 in 1 Cleaner – Cleaning Solution

SDS ID: 820070

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use extinguishing agents appropriate for surrounding fire.

Unsuitable Extinguishing Media

Do not use high-pressure water streams. Avoid using a direct stream of water.

Special Hazards Arising from the Chemical

Heated material may cause thermal burns.

Hazardous Combustion Products

Burning may produce oxides of carbon.

Advice for firefighters

Containers may rupture if heated or exposed to continual naked flame.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Keep storage containers cool with water spray. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact or static discharge.

Special Protective Equipment and Precautions for Firefighters

A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

Spilled product is slippery. Do not touch or walk through spilled product. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean tool into a sealable container for disposal. Additionally, for large spills: Dike far ahead of liquid spill for collection and later disposal.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Keep away from naked flame. Do not breathe dust or vapors. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities

None needed according to classification criteria.

Do not store below 40°F (4.4°C). Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from naked flame. Empty product containers may retain product residue and can be dangerous.

Incompatible Materials

Oxidizers, reducing agents, acids.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Canada and ACGIH have not developed exposure limits for any of this product's components.

Safety Data Sheet

Material Name: ArmaKleen 4 in 1 Cleaner – Cleaning Solution

SDS ID: 820070

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Provide general ventilation. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear safety glasses. Additional protection like goggles, face shields, or respirators may be needed dependent upon anticipated use and concentrations of mists or vapors. Eye wash fountain and emergency showers are recommended. Contact lens use is not recommended.

Respiratory Protection

A respiratory protection program which meets USA's OSHA General Industry Standard 29 CFR 1910.134 or Canada's CSA Standard Z94.4-M1982 requirements must be followed whenever workplace conditions warrant a respirator's use. Consult a qualified Industrial Hygienist or Safety Professional for respirator selection guidance.

Skin Protection/Glove Recommendations

Where skin contact is likely, wear gloves impervious to product; use of natural rubber (latex) or equivalent gloves is not recommended. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant face shield, boots, apron, whole body suits or other protective clothing. When product is heated and skin contact is likely, wear heat-resistant gloves, boots, and other protective clothing.

Protective Materials

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to regulatory requirements. The following PPE should be considered the minimum required: Safety glasses, Gloves, and Lab coat or apron.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, amber liquid	Physical State	Liquid
Odor	Mild	Color	Milky white
Odor Threshold	Not available	pH	2.5% Solution: 10.4 5% Solution: 10.5 10% Solution: 11.0
Melting Point	0 °C (32°F)	Boiling Point	100 °C (212°F)
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	<1 (butyl acetate = 1)	Flammability (solid, gas)	Not available
Autoignition Temperature	Not available	Flash Point	>100 °C (212°F)
Lower Explosive Limit	Not available	Decomposition temperature	Not available
Upper Explosive Limit	Not available	Vapor Pressure	17.5 mm Hg @ 20 °C (approx.)
Vapor Density (air=1)	<1 (Air)	Specific Gravity (water=1)	1.005
Water Solubility	(complete)	Partition coefficient: n-octanol/water	Not available

Safety Data Sheet

Material Name: ArmaKleen 4 in 1 Cleaner – Cleaning Solution

SDS ID: 820070

Viscosity	Not available	Physical Form	Liquid.
Solubility (Other)	Not available	Density	0.9
Molecular Weight	Not available		
	2.5% Solution	0.51 WT%; 0.044 LB/US gal; 5.25 g/L; As per 40 CFR Part 51.100(s)	
	5.0% Solution	1.02 WT%; 0.088 LB/US gal; 10.5 g/L; As per 40 CFR Part 51.100(s)	
	10% Solution	2.04 WT%; 0.175 LB/US gal; 21g/L; As per 40 CFR Part 51.100(s)	
Volatile Organic Compounds (As regulated)	VOC Content is less than 25 grams/liter: Product Vapor Pressure @20°C = 17.5 mmHg This solution is explicitly listed as either an “exempted” or a “Clean Air Solvent” by the South Coast Air Quality Management District (SCAQMD) because it does not contain reactive volatile organic compounds (VOCs) that can react with sunlight and nitrogen-dioxides to create ground-based ozone (smog). Consult with your state/local air pollution control agency and their rules/regulations for specific direction in your specific area. www.aqmd.gov		

Section 10 - STABILITY AND REACTIVITY

Reactivity

Stable under normal conditions.

Chemical Stability

Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions

Polymerization is not known to occur under normal temperatures and pressures. Not reactive with water.

Conditions to Avoid

Avoid naked flame and direct sunlight.

Incompatible Materials

Oxidizers, acids, reducing agents.

Hazardous decomposition products

None under normal temperatures and pressures.

Thermal decomposition products

Oxides of carbon.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

May cause respiratory irritation.

Skin Contact

May cause skin irritation. Repeated exposure may cause skin dryness or cracking. Contact with heated material may cause serious thermal burns.

Eye Contact

May cause eye irritation.

Ingestion

Large amounts may cause gastrointestinal disturbances.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

Safety Data Sheet

Material Name: ArmaKleen 4 in 1 Cleaner – Cleaning Solution

SDS ID: 820070

Product Toxicity Data

Acute Toxicity Estimate

No data available.

Immediate Effects

May cause skin, eye, and respiratory irritation.

Delayed Effects

Repeated exposure may cause skin dryness or cracking.

Irritation/Corrosivity Data

May cause skin irritation. Contact with heated material may cause serious thermal burns.

Respiratory Sensitization

Based on best current information, there is no known human sensitization associated with this product.

Dermal Sensitization

No information on significant adverse effects.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.

Germ Cell Mutagenicity

No information available for the product.

Tumorigenic Data

No data available

Reproductive Toxicity

No information available for the product.

Specific Target Organ Toxicity - Single Exposure

No information on significant adverse effects.

Specific Target Organ Toxicity - Repeated Exposure

No information on significant adverse effects.

Aspiration hazard

No information available for the product.

Medical Conditions Aggravated by Exposure

Individuals with pre-existing respiratory tract (nose, throat, and lungs), eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Other Toxicity

No additional information is available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact ArmaKleen regarding proper recycling or disposal.

Safety Data Sheet

Material Name: ArmaKleen 4 in 1 Cleaner – Cleaning Solution

SDS ID: 820070

Section 14 - TRANSPORT INFORMATION

US DOT Information: Not regulated for transport.

IATA Information: Not regulated for transport.

TDG Information: Not regulated for transport.

International Bulk Chemical Code

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

Canada Regulations

CEPA - Priority Substances List

None of this product's components are on the list.

Ozone Depleting Substances

None of this product's components are on the list.

Council of Ministers of the Environment - Soil Quality Guidelines

None of this product's components are on the list.

Council of Ministers of the Environment - Water Quality Guidelines

None of this product's components are on the list.

U.S. Federal Regulations

None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

California

Not listed under California Proposition 65.

SARA Section 311/312 (40 CFR 370 Subparts B and C) 2016 reporting categories

Acute Health: No **Chronic Health:** No **Fire:** No **Pressure:** No **Reactivity:** No

Section 16 - OTHER INFORMATION

Other Information

This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

NFPA Ratings

Health: 1 Fire: 1 Instability: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

Update to chemical emergency phone number and VOC information.

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for

Safety Data Sheet

Material Name: ArmaKleen 4 in 1 Cleaner – Cleaning Solution

SDS ID: 820070

Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, ArmaKleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information or the product to which the information refers. The data contained on this sheet apply to the product as supplied to the user.

Scrubber Alarm Log #1 Tri-Mer C/F - 8

Aurelius Rd. facility

Alarm Settings				
90-145		1 to 5 in.		6.5-9.5

Record values, and indicate any alarm conditions & actions taken

Date	Time	Inspected By:	Flow Alarm On? Y/N	Water Flow Rate** (gpm)	Pressure Alarm On? Y/N	Pressure Drop (in.)	pH Alarm On? Y/N	pH Reading	Caustic Soda Barrel Change? Y/N	Comments
8-15-22	7:30	CT	N	87.5	N	2.0	N	8.5	N	
8-16-22	7:00	CT	N	89.3	N	2.0	N	8.4	N	
8-17-22	7:00	CT	N	88.6	N	2.0	N	8.4	N	
8-18-22	7:00	CT	N	88.5	N	2.0	N	8.5	N	
8-19-22	7:00	CT	N	83.0	N	2.0	N	8.7	N	
8-23-22	7:00	CT	N	82.7	N	2.1	N	8.4	N	
8-24-22	7:00	CT	N	82.3	N	2.0	N	8.4	N	
8-25-22	7:00	CT	N	82.1	N	1.9	N	8.4	N	
8-26-22	7:00	CT	N	82.6	N	2.0	N	8.3	N	
8-29-22	7:00	CT	N	101.0	N	1.1	N	8.4	N	

MOVED TO NEW REV FORM 8-30-22

Moved to
New Rev
form
8-30-26
E

NOTE: When alarm sounds, notify Department Manager/Operations Leader, Team Facilitator or Maintenance immediately.

**** Water flow needs to be RECIRCULATING water flow, NOT Makeup Water flow**

Retention Time: Five (5) years

Retention Location: EH&S Manager's Office

Scrubber Alarm Log #1 Tri-Mer C/F - 8

Aurelius Rd. facility

Alarm Settings			
90-145		1 to 5 in.	6.5-9.5

Record values, and indicate any alarm conditions & actions taken

Date	Time	Inspected By:	Flow Alarm On? Y/N	Water Flow Rate** (gpm)	Pressure Alarm On? Y/N	Pressure Drop (in.)	pH Alarm On? Y/N	pH Reading	Caustic Soda Barrel Change? Y/N	Comments
6-23-22	7:30	CT	N	91.1	N	2.2	N	5.2	N	
6-27-22	7:00	CT	N	91.3	N	2.2	N	4.4	N	
6-28-22	7:30	CT	N	91.9	N	2.3	N	4.5	N	
6-29-22	7:00	CT	N	91.3	N	2.2	N	4.6	N	
6-30-22	7:30	CT	N	90.7	N	2.1	N	4.6	N	
7-1-22	7:45	CT	N	91.3	N	2.1	N	4.6	N	
7-5-22	7:30	CT	N	90.3	N	2.3	N	4.7	N	
7-6-22	7:00	CT	N	91.1	N	2.4	N	4.4	N	
7-7-22	7:00	CT	N	90.6	N	2.5	N	4.4	N	
7-8-22	7:30	CT	N	90.8	N	2.5	N	4.4	N	
7-11-22	7:00	CT	N	91.2	N	2.9	N	4.4	N	
7-12-22	7:00	CT	N	91.4	N	3.0	N	4.3	N	
7-13-22	7:00	CT	N	90.2	N	2.8	N	4.3	N	
7-14-22	7:00	CT	N	90.6	N	2.8	N	4.3	N	
7-15-22	7:00	CT	N	90.7	N	2.6	N	4.6	N	
7-18-22	7:00	CT	N	91.5	N	2.7	N	7.3	N	
7-19-22	7:00	CT	N	91.5	N	2.8	N	7.6	N	
7-20-22	7:00	CT	N	91.1	N	2.8	N	6.0	N	
7-21-22	7:00	CT	N	91.2	N	2.8	N	8.5	N	
7-25-22	7:30	CT	N	90.3	N	3.7	N	4.6	N	
7-26-22	7:00	CT	N	99.1	N	4.9	N	4.7	N	
7-27-22	7:00	CT	N	92.6	N	4.9	N	4.4	N	
8-4-22	7:30	CT	N	90.3	N	2.0	N	4.2	N	
8-9-22	8:00	CT	N	90.3	N	2.1	N	4.2	N	
8-10-22	7:00	CT	N	89.9	N	2.0	N	4.7	N	
8-11-22	7:00	CT	N	99.7	N	2.0	N	5.9	N	
8-11-22	1:30 PM	RD	Y	97.5	N	2.0	N	9.1	Y	Added 102.1 Reading
8-12-22	7:00	CT	N	90.4	N	2.0	N	9.2	N	

NOTE: When alarm sounds, notify Department Manager/Operations Leader, Team Facilitator or Maintenance immediately.

** Water flow needs to be RECIRCULATING water flow, NOT Makeup Water flow

Retention Time: Five (5) years

Retention Location: EH&S Manager's Office

Scrubber Alarm Log #1 Tri-Mer C/F - 8

Aurelius Rd. facility

Alarm Settings			
90-145		1 to 5 in.	6.5-9.5

Record values, and indicate any alarm conditions & actions taken

Date	Time	Inspected By:	Flow Alarm On? Y/N	Water Flow Rate** (gpm)	Pressure Alarm On? Y/N	Pressure Drop (in.)	pH Alarm On? Y/N	pH Reading	Caustic Soda Barrel Change? Y/N	Comments
5-11-22	7:00	CT	N	0	N	1.7	N	4.8	N	
5-12-22	7:00	CT	N	95.7	N	2.0	N	8.4	N	
5-13-22	7:00	CT	N	94.9	N	2.1	N	8.4	N	
5-17-22	7:00	CT	N	93.6	N	2.1	N	8.7	N	
5-18-22	9:00	CT	N	94.3	N	2.1	N	8.7	N	
5-19-22	7:00	CT	N	95.1	N	2.1	N	8.7	N	
5-20-22	7:00	CT	N	92.7	N	2.0	N	7.6	N	
5-23-22	7:00	CT	N	95.5	N	2.0	N	6.8	N	
5-24-22	6:45	CT	N	95.2	N	2.0	N	7.2	N	
5-25-22	6:30	CT	N	95.3	N	2.1	N	8.3	N	
5-26-22	7:00	CT	N	95.7	N	2.1	N	8.6	N	
5-27-22	7:00	CT	N	94.1	N	2.3	N	5.6	N	
5-31-22	6:45	CT	N	94.5	N	2.3	N	6.3	N	
6-1-22	6:30	CT	N	95.1	N	2.2	N	6.4	N	
6-2-22	7:00	CT	N	94.5	N	2.2	N	6.4	N	
6-3-22	7:00	CT	N	95.1	N	2.2	N	6.5	N	
6-7-22	7:30	CT	N	91.8	N	2.1	N	6.4	N	
6-8-22	7:00	CT	N	91.8	N	2.1	N	6.5	N	
6-9-22	7:30	CT	N	91.2	N	2.1	N	6.4	N	
6-10-22	7:00	CT	N	90.9	N	2.1	N	6.4	N	
6-13-22	7:30	CT	N	91.8	N	2.1	N	6.5	N	
6-14-22	7:00	CT	N	93.6	N	2.1	N	6.5	N	
6-16-22	7:30	CT	N	92.7	N	2.2	N	6.4	N	
6-16-22	7:00	CT	N	91.3	N	2.1	N	6.4	N	
6-17-22	7:00	CT	N	91.1	N	2.1	N	6.3	N	
6-20-22	7:00	CT	N	91.0	N	2.1	N	6.3	N	
6-21-22	7:00	CT	N	90.8	N	2.1	N	6.6	N	
6-22-22	7:00	CT	N	93.7	N	2.2	N	6.4	N	

NOTE: When alarm sounds, notify Department Manager/Operations Leader, Team Facilitator or Maintenance immediately.

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Retention Time: Five (5) years

Retention Location: EH&S Manager's Office

Scrubber Alarm Log #1 Tri-Mer C/F - 8

Aurelius Rd. facility

Alarm Settings		
90-145	1 to 5 in.	6.5-9.5

Record values, and indicate any alarm conditions & actions taken

Date	Time	Inspected By:	Flow Alarm On? Y/N	Water Flow Rate** (gpm)	Pressure Alarm On? Y/N	Pressure Drop (in.)	pH Alarm On? Y/N	pH Reading	Caustic Soda Barrel Change? Y/N	Comments
3-31-22	7:00	CT	N	97.8	N	2.1	N	8.6	N	
4-1-22	7:30	CT	N	91.6	N	2.1	N	8.5	N	
4-4-22	6:45	CT	N	94.3	N	2.1	N	8.4	N	
4-5-22	7:30	CT	N	93.2	N	2.1	N	8.4	N	
4-6-22	7:00	CT	N	95.4	N	2.1	N	8.1	N	
4-7-22	7:30	CT	N	94.9	N	2.0	N	8.5	N	
4-8-22	6:30	CT	N	95.3	N	1.9	N	8.4	N	
4-11-22	7:15	CT	N	93.6	N	2.2	N	8.4	N	
4-12-22	7:00	CT	N	92.7	N	2.1	N	8.5	N	
4-13-22	7:15	CT	N	93.4	N	2.0	N	8.5	N	
4-14-22	7:30	CT	N	93.4	N	2.0	N	8.4	N	
4-15-22	7:00	CT	N	92.7	N	2.1	N	8.5	N	
4-15-22	7:30	CT	N	93.9	N	2.1	N	8.6	N	
4-19-22	7:00	CT	N	93.4	N	2.1	N	8.2	N	
4-20-22	7:30	CT	N	95.4	N	2.1	N	8.3	N	
4-21-22	7:00	CT	N	90.0	N	2.1	N	8.4	N	
4-25-22	7:15	CT	N	92.4	N	2.1	N	8.4	N	
4-26-22	6:45	CT	N	93.1	N	2.2	N	8.4	N	
4-27-22	7:00	CT	N	93.7	N	2.1	N	8.6	N	
4-28-22	6:45	CT	N	95.3	N	2.1	N	8.3	N	
4-29-22	7:00	CT	N	94.4	N	2.2	N	8.3	N	
5-3-22	7:15	CT	N	94.2	N	2.0	N	8.3	N	
5-3-22	7:30	CT	N	94.8	N	2.1	N	8.5	N	
5-4-22	7:00	CT	N	92.6	N	2.1	N	7.3	N	
5-5-22	6:30	CT	N	94.0	N	2.1	N	8.4	N	
5-6-22	6:45	CT	N	93.6	N	2.1	N	8.4	N	
5-9-22	6:30	CT	N	93.1	N	2.1	N	7.3	N	
5-10-22	7:00	CT	N	95.6	N	2.1	N	6.8	N	

NOTE: When alarm sounds, notify Department Manager/Operations Leader, Team Facilitator or Maintenance immediately.

** Water flow needs to be RECIRCULATING water flow, NOT Makeup Water flow

Retention Time: Five (5) years

Retention Location: EH&S Manager's Office

Scrubber Alarm Log #1 Tri-Mer C/F - 8

Aurelius Rd. facility

Alarm Settings			
90-145		1 to 5 in.	6.5-9.5

Record values, and indicate any alarm conditions & actions taken

Date	Time	Inspected By:	Flow Alarm On? Y/N	Water Flow Rate** (gpm)	Pressure Alarm On? Y/N	Pressure Drop (in.)	pH Alarm On? Y/N	pH Reading	Caustic Soda Barrel Change? Y/N	Comments
2-21-22	7:00	CT	N	95.4	N	5.2	N	8.5	N	
2-22-22	6:30	CT	N	95.3	N	5.5	N	8.4	N	
2-23-22	6:45	CT	N	94.1	N	5.6	N	8.5	N	
2-24-22	6:45	CT	N	95.6	N	5.7	N	7.3	N	
2-25-22	7:00	CT	N	94.7	N	5.7	N	7.0	N	
2-28-22	7:30	CT	N	94.9	N	5.1	N	8.5	N	
3-1-22	7:43	CB	HY	96.3	N	5.4	N	8.5	N	ETCH line Neutralization failed to close
3-1-22	9:30	CT	N	94.0	N	5.5	N	9.0	N	"
3-2-22	7:30	CT	N	93.8	N	5.7	N	8.7	N	
3-3-22	7:15	CT	N	94.9	N	5.5	N	8.4	N	
3-4-22	7:00	CT	N	97.0	N	5.6	N	8.3	N	
3-6-22	7:00	RD	N	95.3	Y	5.4	N	8.5	N	Alarm going off continuously for Pressure
3-7-22	7:00	CT	N	95.7	N	5.6	N	8.5	N	
3-8-22	7:00	CT	N	97.1	N	5.7	N	9.6	N	
3-11-22	7:15	CT	N	96.5	N	2.1	N	9.1	N	
3-14-22	7:30	CT	N	95.7	N	1.9	N	8.9	N	
3-15-22	7:00	CT	N	94.7	N	1.8	N	10.7	N	
3-17-22	7:15	CT	N	95.0	N	2.0	N	8.4	N	
3-18-22	7:00	CT	N	94.3	N	2.0	N	9.1	N	
3-21-22	7:00	CT	N	91.6	N	2.2	N	8.6	N	
3-22-22	7:15	CT	N	91.8	N	2.1	N	11.1	N	
3-23-22	7:45	CT	N	92.4	N	2.0	N	8.5	N	
3-24-22	7:30	CT	N	91.1	N	2.1	N	8.5	N	
3-15-22	7:15	CT	N	91.3	N	2.1	N	9.7	N	
3-18-22	7:00	CT	N	91.1	N	5.8	N	11.9	N	
3-19-22	12:00	RD	Y	87.4	N	2.3	N	8.5	Y	
3-22-22	7:00	CT	N	87.2	N	2.2	N	9.5	N	
3-23-22	7:30	CT	N	88.0	N	2.1	N	8.4	N	

NOTE: When alarm sounds, notify Department Manager/Operations Leader, Team Facilitator or Maintenance immediately.

** Water flow needs to be RECIRCULATING water flow, NOT Makeup Water flow

Retention Time: Five (5) years

Retention Location: EH&S Manager's Office

Scrubber Alarm Log #1 Tri-Mer C/F - 8

Aurelius Rd. facility

Alarm Settings

90-145

1 to 5 in.

6.5-9.5

Record values, and indicate any alarm conditions & actions taken

Date	Time	Inspected By:	Flow Alarm On? Y/N	Water Flow Rate** (gpm)	Pressure Alarm On? Y/N	Pressure Drop (in.)	pH Alarm On? Y/N	pH Reading	Caustic Soda Barrel Change? Y/N	Comments
1-13-22	7:30	CT	N	122.4	N	—	N	8.5	N	
1-14-22	7:00	CT	N	121.5	N	—	N	8.5	N	
1-17-22	6:30	CT	N	119.6	N	—	N	8.5	N	
1-18-22	8:00	CT	N	122.0	N	—	N	8.5	N	
1-18-22	7:30	JC	N	118.3	N	—	N	8.4	N	
1-19-22	7:00	CT	N	119.6	N	—	N	8.4	N	
1-20-22	6:30	CT	N	119.1	N	—	N	8.4	N	
1-21-22	7:00	CT	N	117.5	N	—	N	8.4	N	
1-24-22	7:30	CT	N	116.0	N	—	N	8.5	N	
1-25-22	7:00	CT	N	109.8	N	—	N	8.5	N	
1-26-22	7:30	CT	N	98.2	N	—	N	8.4	N	
1-27-22	7:30	RD	Y	95.1	N	2.2	N	8.5	N	Recycle Pump Not Running
1-27-22	7:30	RD	Y	95.7	N	2.2	N	8.5	N	Recirculation Pump Not Running
1-28-22	7:00	CT	N	95.5	N	2.4	N	8.1	N	
1-31-22	7:00	CT	N	95.7	N	2.1	N	8.5	N	
1-31-22	10:53	CB	N	95.7	N	—	N	8.4	N	ETCH LINE Neutralization failed to close
2-1-22	7:00	CT	N	95.8	N	2.0	N	8.5	N	
2-4-22	2:00pm	RD	N	95.8	Y	2.1	N	8.4	N	
2-7-22	7:00	CT	N	95.1	N	2.1	N	8.5	N	
2-8-22	7:00	CT	N	96.4	N	2.1	N	8.2	N	
2-9-22	7:30	CT	N	95.2	N	2.1	N	7.3	N	
2-10-22	6:45	CT	N	94.6	N	2.1	N	8.4	N	
2-11-22	7:00	CT	N	94.2	N	2.1	N	8.4	N	
2-14-22	7:15	CT	N	93.1	N	2.4	N	8.5	N	
2-15-22	7:00	CT	N	92.4	N	2.4	N	8.3	N	
2-16-22	7:30	CT	N	92.1	N	2.4	N	8.3	N	
2-17-22	7:00	CT	N	91.9	N	2.4	N	8.9	N	
2-18-22	7:45	RD	Y	89.5	N	2.6	N	8.5	N	Recirc Flow

NOTE: When alarm sounds, notify Department Manager/Operations Leader, Team Facilitator or Maintenance immediately.

** Water flow needs to be RECIRCULATING water flow, NOT Makeup Water flow

Retention Time: Five (5) years

Retention Location: EH&S Manager's Office

Scrubber Alarm L #1 Tri-Mer C/F - 8

Aurelius Rd. facility

Alarm Settings											Aurelius Rd. facility
90-145			1 to 5 in.			6.5-9.5					
Record values, and indicate any alarm conditions & actions taken											
Date	Time	Inspected By:	Flow Alarm On? Y/N	Water Flow Rate** (gpm)	Pressure Alarm On? Y/N	Pressure Drop (in.)	pH Alarm On? Y/N	pH Reading	Caustic Soda Barrel Change? Y/N	Comments	
11-29-21	8:00	CT	N	119.3	N	—	N	8.5	N		
11-30-21	7:00	CT	N	115.3	N	—	N	8.5	N		
12-1-21	7:30	CT	N	117.5	N	—	N	8.4	N		
12-2-21	7:00	CT	N	118.1	N	—	N	8.5	N		
12-3-21	6:30	CT	N	118.1	N	—	N	8.5	N		
12-6-21	6:30	CT	N	118.6	N	—	N	8.4	N		
12-7-21	6:45	CT	N	118.8	N	—	N	8.5	N		
12-8-21	7:15	CT	N	119.4	N	—	N	8.4	N		
12-9-21	7:00	CT	N	120.4	N	—	N	8.5	N		
12-10-21	7:15	CT	N	119.6	N	—	N	8.4	N		
12-13-21	7:00	CT	N	119.2	N	—	N	8.5	N		
12-14-21	6:30	CT	N	117.3	N	—	N	8.5	N		
12-15-21	6:45	CT	N	118.2	N	—	N	8.5	N		
12-16-21	7:00	CT	N	118.7	N	—	N	8.4	N		
12-17-21	6:30	CT	N	119.5	N	—	N	8.5	N		
12-20-21	7:30	CT	N	120.5	N	—	N	8.5	N		
12-21-21	7:00	CT	N	115.3	N	—	N	8.5	N		
12-22-21	7:30	CT	N	116.5	N	—	N	8.5	N		
12-23-21	6:30	CT	N	117.6	N	—	N	8.4	N		
12-28-21	6:45	CT	N	116.5	N	—	N	8.4	N		
1-3-22	7:15	CT	N	117.1	N	—	N	8.5	N		
1-4-22	7:00	CT	N	117.8	N	—	N	8.5	N		
1-5-22	7:30	CT	N	110.6	N	—	N	8.4	N		
1-6-22	3:30	RD	Y	107.6	N	—	N	8.4	N	Added to Dayton K today	
1-7-22	7:00	CT	N	115.4	N	—	N	8.4	N		
1-10-22	6:30	CT	N	116.6	N	—	N	8.3	N		
1-11-22	7:15	CT	N	120.2	N	—	N	8.5	N		
1-12-22	7:30	CT	N	114.9	N	—	N	8.4	N		

NOTE: When alarm sounds, notify Department Manager/Operations Leader, Team Facilitator or Maintenance immediately.

** Water flow needs to be RECIRCULATING water flow, NOT Makeup Water flow

Retention Time: Five (5) years

Retention Location: EH&S Manager's Office