



Ashland Hercules Water Technologies

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Mr. Jack Aruda
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Subject: Pioneer Valley Energy Center (PVEC) – Priority Pollutants Letter

With the exceptions below, the Ashland Hercules Water Technologies products in the attached list do not contain any Priority Pollutants as described in 40 CFR 423, Appendix A, either as a formulation component or as a known contaminant.

Based upon raw material profiles, the following products and contaminant levels are reported:

Drewgard 315	1 ppm maximum Cd, Hg, As, Ni, Pb, Cr
Drew 11-644	100 ppm acrylonitrile
Ameroyal 710	1 ppm maximum Cd, Hg, As, Ni, Pb, Cr
Wrico BGA	1 ppm maximum As
Millsperse 956	1 ppm maximum As, Cd, Pb

Engineering calculations will show that the amount of priority pollutants from these sources will be less than the quantitative standards of the respective contaminants using methods as referenced in 40 CFR 136.

If you have any questions, please feel free to call me at 508-380-0607.

Sincerely yours,

Jeffrey Kisty
Sr. Technical Sales Representative

Ashland Hercules Water Technology Product List for PVEC.

Drewphos PT	Drew 6134
Amercor 8750	Drewclean 2010
Amercor 8780	Drewclean RO
AmeRoyal C800	Mekor 6701
SLCC-D	Drew 11-644
Biosperse 244 OT	Biosperse 3001

Engineering Calculations of Potential Priority Pollutant Levels in PPB:

Product	Priority Pollutant Priority	Nominal Dose Rate (PPM)	Priority Pollutant Components (footnote 1) Cd, Hg, As, Ni, PB, Cr	Priority Pollutants using dose dilution factor	Priority pollutants expressed as PPB	Lowest EPA standard for any contained priority pollutants
Drewgard 315	1	1000	Cd, Hg, As, Ni, Pb, Cr	0.0001 ppm	0.1 ppb	0.2 ppb Hg
Drew 11-644 Cooling Tower Dispersant	1	20	acrylonitrile 0.01%	0.002 ppm	2.0 ppb	20 ppb acrylonitrile
Ameroyal 710	2	7	Cd, Hg, As, Ni, Pb, Cr	0.000007 ppm	0.007 ppb	0.2 ppb Hg
Wrico BGA	1	50	As	0.00005 ppm	0.05 ppb	1.4 ppb As
Millsperse 956	1	50	As, Cd, Pb	0.00005 ppm	0.05 ppb	0.5 ppb Cd

Footnote 1) Unless otherwise noted, metals concentrations are reported as zero (0) in the Ashland SAP system. Experience indicates that these reported metals concentrations, may be assumed to be present at < 1 ppm (often much lower), however, we will assume 1 ppm to be conservative

**Table 1
PVEC Facility Water Use and Wastewater Discharge**

Ambient Air Temp. (°F)	Plant Load (%)	Fuel Use	NOx Control Water Injection	Potable Water Requirement City of Westfield (gal/day)	Cooling Water Requirement City of Holyoke (gal/day)	Total Water Requirement Potable + Cooling (gal/day)	Wastewater Discharge to Sewer (gal/day)
20	100	Fuel Oil (24 hours)	Yes	501,216	1,488,600	1,989,816	305,953
59	100	Fuel Oil (24 hours)	Yes	494,006	1,745,334	2,239,340	324,286
90	100	Fuel Oil (24 hours)	Yes	480,287	1,973,115	2,453,402	341,119
20	100	Natural Gas (24 hours)	No	87,321	1,445,468	1,532,789	201,816
59	100	Natural Gas (24 hours)	No	110,947	1,719,177	1,830,124	229,278
90	100	Natural Gas (24 hours)	No	121,678	1,951,486	2,073,164	252,464

**Table 2
PVEC Chemical Treatment Programs Summary**

	Generic	Product Name	Actives	Feedpoint	PPM as Product		PPM Active Average	As Product daily Max LBS	Comments
					Min ppm	Max ppm			
Boiler Water Treatment Program									
	Phosphate	Drewphos PT	Phosphate	HP & IP drum	15	30	1	4	Phosphate in Boiler Water
	Ammonia	SLCC-D	Ammonia 7.6% as NH3	Condensate Feedpump Suction	1.0	3.0	0.152	59	Ammonia In Feedwater
	Oxygen Scavenger	MEKOR 6701	MEKO	Condensate Feedpump Suction	0.1	0.5	0.025	5	MEKO In Feedwater
Cooling Water Treatment Program									
	Dispersant	Drew 11-644	Polymer	condenser water return	18	22	8.7	23.6	Polymer in condenser water
	Corrosion Inhibitor	Millsperse 956	Polyphosphate	condenser water return	30	40	10	41.3	Phosphate (as PO4) in condenser water
	Microbiocide	Sodium Hypochlorite	Hypochlorite	condenser water supply	200	450	0.25	1250	Continuous Chlorination at 0.20 ppm Free Chlorine, approx 12% sodium hypochlorite usage will be 125 GPD in summer.
	Algaecide	Wrico BGA	Ortho benzyl para chlorophenol 23.5%	condenser water return	40	60	11.75	59	twice monthly slug feed
RO Chemical Feed									
	Dechlorination	Drew 6134	sodium Bisulfite 40%	RO inlet after filters/with Cl2 analyzer	-4	-8		13	4 ppm per ppm of influent total chlorine
	RO Antiscalant	Ameroyal 710	polymer	RO inlet after filters	3	5		6	
	Microbiocide	Biosperse 244OT	DBNPA	RO inlet ahead of filters	10	100	10	10	Feed once per week for 3 hours
	Alkaline Cleaner	Drewclean RO	surfact/alkali/sequestering agents	Cleaning tank					Intermittent use, 4 to 6 X per year; 28 LB/100 gallons cleaning solution
	Acidic Cleaner	Drewclean 2010	citric acid	Cleaning tank					4 gallons per 100 gallons cleaning solution
Closed Cooling Loop									
	Corrosion Inhibitor	Drewgard 315	molybdate	By-pass feeder	1000	1500	150		PPM Molybdate as MoO4

	Million Pounds/day
Cooling Tower BD	1.18
Boiler Blowdown	0.14
Boiler Feedwater	19.83
RO Make-up	1.6

**Table 3
PVEC Non-Treatment Program Chemical List**

Ref No.	Chemical Description	Chemical Use	System	Potential Storage Volume			Storage Method
				Range (To/From)			
				Min Vol.	Max Vol.	Units	
1	Oil (for example Mobile DTE 832)	Lube Oil	Gas Turbine (GT)	15,000	20,000	gal	Tank
2	Oil (for example Mobile DTE 832)	Lube Oil	Steam Turbine (ST)	5,000	10,000	gal	Tank
3	Oil (for example Mobile DTE 832)	Lube Oil	Waste Lube Oil	2,000	4,000	gal	Drums
4	Turbine Cleaning Solution	Turbine Cleaning	GT	275	550	gal	Tote ^[2]
5	Hydrogen (H ₂)	Generator Hydrogen Cooler	Generators	240,000	240,000	scf	Tube Trailers
6	Aqueous Ammonia (N ₄ OH)	Emissions Control	Ammonia Grid	15,000	20,000	gal	Tank
7	ULSD No. 2 Fuel Oil	Fuel	Gas Turbine (GT)	0.5	1.0	MMGal	Tank
8	Natural Gas ^[3]	Fuel	Gas Turbine (GT)	NA	NA		Contained within system piping and GT.
9	Conventional Transformer Oil ^[3]	Dielectric Oil	GSU	10,000	20,000	gal	Transformer
10	Conventional Transformer Oil ^[3]	Dielectric Oil	Aux Transformer	2,000	4,000	gal	Transformer
11	ULSD No. 2 Fuel Oil	Fuel	Emergency Diesel Generator	500	1,000	gal	Tank
12	ULSD No. 2 Fuel Oil	Fuel	Fire Pump	500	1,000	gal	Tank
13	Conventional Transformer Oil ^[3]	Dielectric Oil	Aux Transformer	2,000	4,000	gal	Transformer
14	Oil ^[3]	Lube oil	WCT Fan Gear Box	275	550	gal	Tote ^[2]
15	Nitrogen (N ₂)	Lay up	HRSG & Aux Boiler	12	24	bottles	Compressed gas cylinders
16	Carbon Dioxide (CO ₂)	Fire Protection	GT Enclosure	12	24	bottles	Compressed gas cylinders
17	Acetylene (C ₂ H ₂) ^[1]	Maintenance – Cutting Gas	NA	2	10	bottles	Compressed gas cylinders
18	Oxygen (O ₂) ^[1]	Maintenance – Cutting Gas	NA	2	10	bottles	Compressed gas cylinders

**Table 3
PVEC Non-Treatment Program Chemical List**

Ref No.	Chemical Description	Chemical Use	System	Potential Storage Volume			Storage Method
				Range (To/From)			
				Min Vol.	Max Vol.	Units	
19	Propane (C ₃ H ₈) ^[1]	Maintenance – Temp Heat	NA	2	10	bottles	Compressed gas cylinders
20	Argon (Ar) ^[1]	Maintenance – Welding Gas	NA	2	10	bottles	Compressed gas cylinders
21	Thinners, Solvents, Xylene, MEK, Acetone ^[1]	Cleaners	NA	20	40	gal	Containers
22	Polywater® Lubricant ^[1]	Cable pulling	NA	200	400	gal	Containers
23	Gasoline ^[1]	Tools & Pumps	NA	200	400	gal	Above ground storage tank or fuel truck

Notes:

[1] Primarily used during construction but may be present during operation for maintenance.

[2] Single tote volume based on 275 gallons.

[3] Volume typically contained within the equipment or system.

[4] Boilerwater treatment chemicals are provided for a range of treatments.

**Table 4
PVEC Federal Wastewater Discharge Effluent Limits**

Effluent Limits New Source Performance Standards (NSPS)	
pH	6.0 to 9.0
PCBs	No detectable amount
Metal cleaning wastes	
Copper – maximum one day limit	1.0 mg/L
Copper – average value, 30 consecutive days	1.0 mg/L
Iron – maximum one day limit	1.0 mg/L
Iron – average value, 30 consecutive days	1.0 mg/L
Cooling Tower Blowdown	
Free Available chlorine – maximum	0.5 mg/L
Free Available chlorine – average	0.2 mg/L
126 Priority Pollutants – maximum for any 1 day	No detectable amount
126 Priority Pollutants – average of 30 consecutive days	No detectable amount
Chromium, total – maximum for any 1 day	0.2 mg/L
Chromium, total – average of 30 consecutive days	0.2 mg/L
Zinc, total – maximum for any 1 day	1.0 mg/L
Zinc, total – average of 30 consecutive days	1.0 mg/L
Pretreatment Standards for New Sources (PSNS)	
PCBs	No detectable amount
Metal cleaning wastes	
Copper – maximum one day limit	1.0 mg/L
Cooling Tower Blowdown	
126 Priority Pollutants – maximum for any 1 day	No detectable amount
Chromium, total – maximum for any 1 day	0.2 mg/L
Zinc, total – maximum for any 1 day	1.0 mg/L
No discharge from fly ash transport water	