



## Asset History Report

Date: 3/13/2018

**Equipment:** Chiller, Water Cooled, High Pressure Centrifugal, 1100-1499 Tons

**Customer:** DUPONT EXPERIMENTAL STATION

**Site:** DUPONT EXPERIMENTAL

**Customer Tag:** CHILLER #8

**Asset Id:** 1-FY0MJZY

**Make:** JCI\_YORK

**Model #:** OTT4G2-ZBES

**Serial Number:** GACM117864

**Installed:**

**Location:** DUPONT EXPERIMENTAL

**Area Served:**

**Size/Capacity:** 1250 TONS



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Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
02/27/2018	1-SD6XC2L	Completed	Field Repair	<p>CHILLER #8 (ADDITIONAL WORK PERFORMED):</p> <p>ASSISTING DuPont Personnel with CHILLER MOTOR ALIGNMENT</p> <p>TROUBLESHOOTING &amp; ASSISTING DuPont Electricians with MOTOR STARTER ISSUES on Day of Startup</p> <p>ADDING YORK J Compressor Oil to CHILLERS #9 &amp; #10 due to Low Levels (Oil Provided By DuPont)</p> <p>EMPTYING Seal Oil Bottles on CHILLERS #9 &amp; #10 and Recording Quantities for Yearly Leakage Rate Calculation</p>	<p>CHILLER #8 WORK PERFORMED BEYOND ANNUAL MAINT. QUOTE DUPONT PO#: 6501785366 JCI QUOTE#: 1-S67LYC9</p> <p>(ADDITIONAL WORK PERFORMED on 02/08-09/2018):</p> <ul style="list-style-type: none"> <li>• ASSISTED DuPont Personnel with CHILLER #8's MOTOR ALIGNMENT</li> <li>• TROUBLESHOT &amp; ASSISTED DuPont Electricians with #8's MOTOR STARTER ISSUES on Day of Startup</li> <li>• ADDED YORK "J" Compressor Oil to CHILLERS #9 &amp; #10 due to Low Levels (Oil Provided By DuPont)</li> <li>• EMPTIED Seal Oil Bottles on CHILLERS #9 &amp; #10 and Recorded Quantities for Yearly Leakage Rate Calculation</li> </ul>	Kevin Frazee
12/20/2017	1-QZB8I7L	Completed	Field Repair	<p>CHILLER #8 REFRIGERANT LEAK REPAIRS (DEC. 2017)</p> <p>TRANSFER R-134A CHARGE TO YORK CENTRAL RECOVERY TANK DOCUMENT WEIGHT OF CHARGE &amp; CALCULATED PERCENTAGE LOSS BASED ON DESIGN</p> <p>REPAIR OF THE FOLLOWING REFRIGERANT LEAK FOUND ON 11/27/17: COMPRESSOR PRE-ROTATION VANE SHAFT SEAL</p>	<p>12/1/17 - 12/4/17:</p> <ul style="list-style-type: none"> <li>• Performed Recovery of CHILLER #8's R-134A Charge to the YORK Central Recovery Tank to EPA Specification, Weighed, &amp; Documented.</li> <li>◇ TOTAL R-134A RECOVERED: 2,540 LBS (12/04/2017)</li> <li>◇ TOTAL DESIGN CHARGE: 3,250 LBS</li> <li>◇ DEFICIT = 710 LBS (21.8% LOW)</li> <li>◇ LAST DATE OF RECORDED CHARGE: 02/08/2017 (315 Days)</li> <li>◇ CHARGE at that TIME: 3,070 LBS</li> <li>◇ LEAK RATE (Based on EPA Formula)= 20%</li> </ul>	Kevin Frazee



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				DISSMANTLE & REMOVE OLD SEAL ASSEMBLY FURNISH & INSTALL NEW SEAL ASSEMBLY WITH NEW ORINGS, GASKET, & FASTENERS PROPERLY SET & TORQUE SEAL  12" FREE-COOLING BUTTERFLY O-RING FLANGE SEALS RIG, DISSMANTLE, & REMOVE VALVE CLEAN VALVE & FLANGE SURFACES INSTALL NEW O-RING SEALS IN VALVE FLANGE FACES RE-INSTALL VALVE & PROPERLY TORQUE FLANGES *(Does not include any additional repairs to valve if discovered & necessary upon removal)  COMPRESSOR OIL RESERVOIR ACCESS COVER GASKET REMOVE ACCESS COVER & OLD GASKET CLEAN COMPRESSOR & COVER SURFACES INSPECT RESERVOIR INSTALL NEW GASKET RE-INSTALL ACCESS COVER & PROPERLY TORQUE  VERIFY TIGHTNESS OF ALL REPAIRS WITH	12/13/2017: • Started Chiller Evacuation / Dehydration Process • Performed a Double Evac., then allowed Vacuum Pump to run Overnight  12/14/2017: • CHILLER VACUUM LEVEL was @ 425 microns • Performed a VACUUM HOLD TEST for 5 Hrs • VACUUM RISE = 76.7microns/Hr (GOOD) • Brought Chiller out of Vacuum, up to 5psig, with the Recovered R-134A in the Storage Tank  12/19/2017: ◇ ALL RECOVERED CHARGE WAS RE-INSTALLED: 2,540 LBS  **CURRENTLY CHILLER IS STILL 710 LBS (21.8%) LOW on CHARGE**  ***RECOMMEND REFRIGERANT PURCHASE & INSTALLATION TO ACHIEVE FULL TONNAGE***	



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				NITROGEN PRESSURE TEST PERFORM EVACUATION/DEHYDRATION, & VACUUM HOLD TEST TRANSFER RECOVERED CHARGE BACK INTO CHILLER PROVIDE DUPONT WITH EPA LEAK REPAIR DOCUMENTATION		
12/20/2017	1-QWZSIHN	Completed	Field Repair	Chiller #8 Annual Maintenance (2017 YEAR-END)  Refrigerant Leak Test chiller and Document Leaks Found (repair minor leaks, if possible) Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier Disassemble Compressor Coupling, Clean, & Check Cold Alignment Measure & Record Compressor Low-Speed Axial Thrust Reassemble Coupling and Re-Check Compressor Cold Alignment Vacuum out Compressor Motor and Change Air Filters Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Document all tasks and Provide DuPont with a Comprehensive Report  *Refrigerant & Oil Samples will be performed under a separate Quote*	12/13/17: - MADE HORIZONTAL PARALLEL CORRECTION OF MOTOR MISALIGNMENT (11MILS TO THE RIGHT, FACING COMPRESSOR)  12/19/17: - MADE DETAILED ALIGNMENT CHECK REPORT OF CHILLER #8 AND EMAILED TO DUPONT  * COUPLINNG HUB WILL BE RE-ASSEMBLED ONCE DUPONT DECIDES WHAT TO DO WITH THE VERTICAL MISALIGNMENT *  • DOCUMENTED ALL ANNUAL MAINTENANCE TASKS PERFORMED & PROVIDED DUPONT WITH COMPREHENSIVE REPORT (INCLUDING OIL AND REFRIGERANT ANALYSIS REPORTS)	Kevin Fraze
12/19/2017	1-QNN0AP3	Completed	Field Repair	Chiller #8 Annual Maintenance (2017 YEAR-	• CHECKED ALL CHILLER CONTROLS, SAFETIES, &	Kevin Fraze



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				END)  Refrigerant Leak Test chiller and Document Leaks Found (repair minor leaks, if possible) Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier Disassemble Compressor Coupling, Clean, & Check Cold Alignment Measure & Record Compressor Low-Speed Axial Thrust Reassemble Coupling and Re-Check Compressor Cold Alignment Vacuum out Compressor Motor and Change Air Filters Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Document all tasks and Provide DuPont with a Comprehensive Report  *Refrigerant & Oil Samples will be performed under a separate Quote*	LOW VOLTAGE ELECTRICAL CONNECTIONS • VERIFIED BOTH HIGH PRESSURE SWITCH CUTOFF PRESSURES OF 180PSIG & ALARM POINT ACTIVATION ON THE POWERHOUSE MAIN CONTROL SYSTEM • ADDED 5 GALLONS OF NEW YORK "J" OIL (CUSTOMER SUPPLIED)	
12/15/2017	1-QZB3OK0	Completed	Field Repair	CHILLER #8 REFRIGERANT LEAK REPAIRS (DEC. 2017)  TRANSFER R-134A CHARGE TO YORK CENTRAL RECOVERY TANK DOCUMENT WEIGHT OF CHARGE & CALCULATED PERCENTAGE LOSS BASED ON DESIGN  REPAIR OF THE FOLLOWING	12/08/17: • Removed Oil Reservoir Access Cover & Old Gasket • Cleaned Compressor & Cover Surfaces • Inspected Reservoir (Clean/Clear) • Installed New Gasket • Re-Installed Cover & Properly Torqued (14 Ft/Lbs)  12/11/17: • Dismantled & Removed Old Compressor Pre-Rotation	Kevin Frazee



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				REFRIGERANT LEAK FOUND ON 11/27/17: COMPRESSOR PRE-ROTATION VANE SHAFT SEAL DISSMANTLE & REMOVE OLD SEAL ASSEMBLY FURNISH & INSTALL NEW SEAL ASSEMBLY WITH NEW ORINGS, GASKET, & FASTENERS PROPERLY SET & TORQUE SEAL  12" FREE-COOLING BUTTERFLY O-RING FLANGE SEALS RIG, DISSMANTLE, & REMOVE VALVE CLEAN VALVE & FLANGE SURFACES INSTALL NEW O-RING SEALS IN VALVE FLANGE FACES RE-INSTALL VALVE & PROPERLY TORQUE FLANGES *(Does not include any additional repairs to valve if discovered & necessary upon removal)  COMPRESSOR OIL RESERVOIR ACCESS COVER GASKET REMOVE ACCESS COVER & OLD GASKET CLEAN COMPRESSOR & COVER SURFACES INSPECT RESERVOIR INSTALL NEW GASKET RE-INSTALL ACCESS COVER &	Vane Shaft Seal Assembly • Installed New Control Shaft Seal w/ New Orings, Gasket, & Fasteners • Properly Set Full Open/Closed Positions & Torqued Seal ( • Installed New Seal Assembly with New Gasket, O-Rings, Control Shaft, and Bolts • Set to Appropriate Positioning and Torqued to Spec (Shaft=75 Ft/Lbs / Cover=35 Ft/Lbs) • Reconnected PRV Actuator, Checked, & Adjusted to Proper Travel  **MONITORING RECOMMENDED**: - There is a noticeable binding of the Internal PRV components at a certain position in the rotation, when stroked from OPEN to CLOSED manually by HAND (This was evident w/ both the Old & New Seal Assemblies). However, there seems to be no hesitation in the stroke when the Actuator Motor is in control. - Actuator Motor has Leaked a Sufficient amount of Hydraulic Fluid & should be "Topped Off"  12/12/17: • Dismantled & Removed 12" Free-Cooling Butterfly • Removed Old Flange O-Rings • Cleaned Flanges, O-Ring Grooves, & Valve Internals • Installed New Flange O-Ring Seals & Greased Internal Seat Components • Re-Installed Valve & Torqued Bolts to 180 Ft/Lbs	



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				PROPERLY TORQUE  VERIFY TIGHTNESS OF ALL REPAIRS WITH NITROGEN PRESSURE TEST PERFORM EVACUATION/DEHYDRATION, & VACUUM HOLD TEST TRANSFER RECOVERED CHARGE BACK INTO CHILLER PROVIDE DUPONT WITH EPA LEAK REPAIR DOCUMENTATION	<ul style="list-style-type: none"> <li>Pressurized with Nitrogen to 100psig &amp; Verified All Replaced Components were LEAK-FREE</li> </ul>	
12/06/2017	1-QWYMB2J	Completed	Field Repair	CHILLER #8 REFRIGERANT LEAK REPAIRS (DEC. 2017)  TRANSFER R-134A CHARGE TO YORK CENTRAL RECOVERY TANK DOCUMENT WEIGHT OF CHARGE & CALCULATED PERCENTAGE LOSS BASED ON DESIGN  REPAIR OF THE FOLLOWING REFRIGERANT LEAK FOUND ON 11/27/17: COMPRESSOR PRE-ROTATION VANE SHAFT SEAL DISSMANTLE & REMOVE OLD SEAL ASSEMBLY FURNISH & INSTALL NEW SEAL ASSEMBLY WITH NEW ORINGS, GASKET, & FASTENERS PROPERLY SET & TORQUE SEAL		Kevin Fraze



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				12" FREE-COOLING BUTTERFLY O-RING FLANGE SEALS RIG, DISSMANTLE, & REMOVE VALVE CLEAN VALVE & FLANGE SURFACES INSTALL NEW O-RING SEALS IN VALVE FLANGE FACES RE-INSTALL VALVE & PROPERLY TORQUE FLANGES *(Does not include any additional repairs to valve if discovered & necessary upon removal)  COMPRESSOR OIL RESERVOIR ACCESS COVER GASKET REMOVE ACCESS COVER & OLD GASKET CLEAN COMPRESSOR & COVER SURFACES INSPECT RESERVOIR INSTALL NEW GASKET RE-INSTALL ACCESS COVER & PROPERLY TORQUE  VERIFY TIGHTNESS OF ALL REPAIRS WITH NITROGEN PRESSURE TEST PERFORM EVACUATION/DEHYDRATION, & VACUUM HOLD TEST TRANSFER RECOVERED CHARGE BACK INTO CHILLER PROVIDE DUPONT WITH EPA LEAK REPAIR DOCUMENTATION		



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Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
12/04/2017	1-QWYMAR9	Completed	Field Repair	<p>CHILLER #8 REFRIGERANT LEAK REPAIRS (DEC. 2017)</p> <p>TRANSFER R-134A CHARGE TO YORK CENTRAL RECOVERY TANK DOCUMENT WEIGHT OF CHARGE &amp; CALCULATED PERCENTAGE LOSS BASED ON DESIGN</p> <p>REPAIR OF THE FOLLOWING REFRIGERANT LEAK FOUND ON 11/27/17: COMPRESSOR PRE-ROTATION VANE SHAFT SEAL DISSMANTLE &amp; REMOVE OLD SEAL ASSEMBLY FURNISH &amp; INSTALL NEW SEAL ASSEMBLY WITH NEW ORINGS, GASKET, &amp; FASTENERS PROPERLY SET &amp; TORQUE SEAL</p> <p>12" FREE-COOLING BUTTERFLY O-RING FLANGE SEALS RIG, DISSMANTLE, &amp; REMOVE VALVE CLEAN VALVE &amp; FLANGE SURFACES INSTALL NEW O-RING SEALS IN VALVE FLANGE FACES RE-INSTALL VALVE &amp; PROPERLY TORQUE FLANGES</p> <p>*(Does not include any additional repairs to valve if discovered &amp; necessary upon removal)</p>		Kevin Frazee



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				COMPRESSOR OIL RESERVOIR ACCESS COVER GASKET REMOVE ACCESS COVER & OLD GASKET CLEAN COMPRESSOR & COVER SURFACES INSPECT RESERVOIR INSTALL NEW GASKET RE-INSTALL ACCESS COVER & PROPERLY TORQUE  VERIFY TIGHTNESS OF ALL REPAIRS WITH NITROGEN PRESSURE TEST PERFORM EVACUATION/DEHYDRATION, & VACUUM HOLD TEST TRANSFER RECOVERED CHARGE BACK INTO CHILLER PROVIDE DUPONT WITH EPA LEAK REPAIR DOCUMENTATION		
11/28/2017	1-QOAMEST	Completed	Field Repair	Chiller #8 Annual Maintenance (2017 YEAR- END)  Refrigerant Leak Test chiller and Document Leaks Found (repair minor leaks, if possible) Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier Disassemble Compressor Coupling, Clean, & Check Cold Alignment Measure & Record Compressor Low-Speed Axial Thrust	COMPRESSOR ALIGNMENT CHECK 72PSIG / OIL SUMP @ 139F  • DISASSEMBLED 1-7/8" YORK-FLEX COUPLING • AXIAL SHIMS= 0.150" + 0.100" = 0.250" • MEASURED MOTOR SHAFT FLOAT= 0.521" (ACCEPTABLE)  MOTOR TO COMP SHAFT CLEARANCE: Motor Full Forward= 3.379" Motor Full Back= 3.900"	Kevin Fraze



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				Reassemble Coupling and Re-Check Compressor Cold Alignment Vacuum out Compressor Motor and Change Air Filters Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Document all tasks and Provide DuPont with a Comprehensive Report  *Refrigerant & Oil Samples will be performed under a separate Quote*	Float Total= 0.521" (0.500-0.565) (Min-Max)  MEASURED MOTOR COUPLING RIM RUNOUT= 0.003" / FACE RUNOUT= 0.002" MEASURED COMP SHAFT RIM RUNOUT: 0.003" / FACE RUNOUT= 0.000"  • TIGHTENED MOTOR FEET BOLTS • RECORDED ALIGNMENT w/LASER & DIALS - ALIGNMENT IS CURRENTLY OUT OF TOLERANCE (Details will be forwarded to DuPont)  MEASURED COMP AXIAL THRUST= 0.018" (12/11/17 @ 0 PSIG) 0.025" (12/12/17: 0-100 PSIG NITRO)	
11/27/2017	1-QOAMERY	Completed	Field Repair	Chiller #8 Annual Maintenance (2017 YEAR-END)  Refrigerant Leak Test chiller and Document Leaks Found (repair minor leaks, if possible) Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier Disassemble Compressor Coupling, Clean, & Check Cold Alignment Measure & Record Compressor Low-Speed Axial Thrust Reassemble Coupling and Re-Check Compressor Cold Alignment Vacuum out Compressor Motor and Change Air Filters	• REFRIGERANT LEAK TESTED ENTIRE CHILLER. LEAKS DISCOVERED:  1. COMPRESSOR OIL RESERVOIR ACCESS COVER PLATE (SMALL) 2. 12" FREE-COOLING NORRISEAL BUTTERFLY FLANGE SEALS (LARGE) 3. COMPRESSOR Pre-Rotation Vane SHAFT SEAL (MEDIUM)  • CREATED QUOTE FOR REPAIR OF LEAKS NOTED ABOVE • CLEANED MOTOR. VACUUMED OUT INTERNALS. CHANGED BEARING OIL & AIR FILTERS (16x25x2 QTY-	Kevin Frazee



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Activity History						
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				Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Document all tasks and Provide DuPont with a Comprehensive Report  *Refrigerant & Oil Samples will be performed under a separate Quote*	4)	
11/22/2017	1-QNN0ALF	Completed	Field Repair	Chiller #8 Annual Maintenance (2017 YEAR-END)  Refrigerant Leak Test chiller and Document Leaks Found (repair minor leaks, if possible) Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier Disassemble Compressor Coupling, Clean, & Check Cold Alignment Measure & Record Compressor Low-Speed Axial Thrust Reassemble Coupling and Re-Check Compressor Cold Alignment Vacuum out Compressor Motor and Change Air Filters Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Document all tasks and Provide DuPont with a Comprehensive Report  *Refrigerant & Oil Samples will be performed under a separate Quote*	CHILLER #8 ANNUAL MAINTENANCE (2017 YEAR-END): DUPONT PO#: 6501816123 QUOTE#: 1-QM3C8P5 SR: 1-57994324284  RUN HOURS: 50,207 / STARTS: 2185  <ul style="list-style-type: none"> <li>• REMOVED REFRIGERANT SAMPLE &amp; SHIPPED TO LAB FOR ANALYSIS. Condition is NORMAL. (Expense covered under QUOTE# 1-QLCJ7O1)</li> <li>• REMOVED OIL SAMPLE FROM COMPRESSOR SUMP &amp; SHIPPED TO LAB FOR ANALYSIS. Condition is NORMAL. (Expense covered under QUOTE# 1-QLCJ7O1)</li> <li>• REPLACED MAIN OIL FILTER (w/15u 026-11225-000)</li> <li>• REPLACED OIL RETURN FILTER-DRIER (C-413)</li> <li>• CHECKED OIL HEATER OPERATION. OFFLINE SUMP TEMP IS 135F</li> </ul>	Kevin Fraze
02/16/2017	1-LMIW5PD	Completed	Field Repair	CHILLER. #8 RELIEF TREE INSTALL	Completed Documentation for Job	Kevin Fraze



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				Transfer Refrigerant to DuPonts Central Storage Tank according to EPA Specs. Record quantity recovered.  Break Vacuum w/Nitrogen & Remove Current Relief Device.  Install New 3-Way Valve, Relief Tree, and Relief Devices.  Pressurize w/Nitrogen, Leak Test Entire Chiller.  Evacuate Chiller & Perform Vacuum Hold Test.  Recharge, Run, and Inspect Chiller Performance.  ***DuPont will be responsible for providing all material to be installed and for constructing a scaffold that will allow the work to be carried out safely***		
02/10/2017	1-LF7V8LT	Completed	Field Repair	6501700761 Chiller #9 Annual Maintenance 2017  Remove Refrigerant Sample for Chemical Analysis Refrigerant leak test chiller and document leaks found (repair minor leaks, if possible) Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier	CHILLER #9 ANNUAL MAINTENANCE: DuPont PO#: 6501700761  RUN HOURS: 44,840 TOTAL STARTS: 1999  • REMOVED REFRIGERANT SAMPLE FROM R-134A RECOVERED FROM CHILLER & SHIPPED TO LAB FOR ANALYSIS (will forward report to DuPont upon receipt)	Kevin Frazee



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				Furnish & Install Sight-Glass in Oil Return Line Change Compressor Oil w/ YORK J (Provided by DuPont) Disassemble Compressor Coupling and Check Cold Alignment Check Low-Speed Compressor Axial Thrust Reading Reassemble Coupling and Re-Check Compressor Coupling Cold Alignment Vacuum out Compressor Motor and Change Air Filters Change Oil in Compressor Motor Bearings (Provided by DuPont) Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Documents all tasks and Provide Comprehensive Report to DuPont	<ul style="list-style-type: none"> <li>• REMOVED OIL SAMPLE FROM COMPRESSOR SUMP &amp; SHIPPED TO LAB FOR ANALYSIS (Expense covered under QUOTE# 1-JV664S7)</li> <li>• REPLACED MAIN OIL FILTER</li> <li>• REPLACED OIL RETURN FILTER-DRIER (C-413)</li> <li>• CHECKED OIL HEATER OPERATION. INCREASED OFFLINE SUMP SETTING TO 135F</li> </ul>	
02/09/2017	1-LFBR9NG	Completed	Field Repair	(PO 6501697258) CHILLER #8 EVAPORATOR WATERBOX REPAIRS:  CLEAN AND PREPARE TUBE SHEET FOR STEEL EPOXY COATING APPLY BELZONA 1121 "SUPER XL-METAL" (PURCHASED UNDER DUPONT PO#: 6501690015) TO FILL IN PITS AND GOUGING CLEAN UP AND ENSURE EPOXY INTEGRITY AFTER 24HR CURE TIME	<ul style="list-style-type: none"> <li>• ENSURED INTEGRITY OF BELLZONA EPOXY AFTER 24HR CURE TIME.</li> <li>• CLEANED OFF EXCESS, SHAPED APPROPRIATE, AND PAINTED.</li> <li>• REMOVED TEMPORARY RUBBER TUBE PLUGS.</li> <li>• INSTALLED DIVISION PLATE (REPAIRED BY MDAVIS) WITH NEW GASKETING MATERIAL.</li> </ul>	Kevin Frazee
02/08/2017	1-LESEDELS	Completed	Field Repair	CHILLER. #8 RELIEF TREE INSTALL  Transfer Refrigerant to DuPonts Central Storage Tank according to EPA Specs. Record	Transferred back the recovered R-134A charge (2,920lbs).  Added an Additional 150lbs from the YORK Central Recovery Tank.	Kevin Frazee



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				<p>quantity recovered.</p> <p>Break Vacuum w/Nitrogen &amp; Remove Current Relief Device.</p> <p>Install New 3-Way Valve, Relief Tree, and Relief Devices.</p> <p>Pressurize w/Nitrogen, Leak Test Entire Chiller.</p> <p>Evacuate Chiller &amp; Perform Vacuum Hold Test.</p> <p>Recharge, Run, and Inspect Chiller Performance.</p> <p>***DuPont will be responsible for providing all material to be installed and for constructing a scaffold that will allow the work to be carried out safely***</p>	<p>CURRENT TOTAL CHILLER CHARGE= 3,070lbs</p> <p>TOTAL DESIGN CHARGE= 3,250lbs</p> <p>CURRENT CHARGE DEFICIT= 180lbs</p>	
02/07/2017	1-LEAP0SA	Completed	Field Repair	<p>CHILLER. #8 RELIEF TREE INSTALL</p> <p>Transfer Refrigerant to DuPonts Central Storage Tank according to EPA Specs. Record quantity recovered.</p> <p>Break Vacuum w/Nitrogen &amp; Remove Current Relief Device.</p> <p>Install New 3-Way Valve, Relief Tree, and Relief Devices.</p>	<p>Released Nitrogen Pressure.</p> <p>Evacuated Chiller down to 1000 microns.</p> <p>Performed Vacuum Hold Test.</p> <p>OBSERVED= 120u/hr Rise (Good)</p> <p>YORK MAX LIMIT= 650u/hr Rise</p>	Kevin Fraze



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				Pressurize w/Nitrogen, Leak Test Entire Chiller.  Evacuate Chiller & Perform Vacuum Hold Test.  Recharge, Run, and Inspect Chiller Performance.  ***DuPont will be responsible for providing all material to be installed and for constructing a scaffold that will allow the work to be carried out safely***		
02/07/2017	1-LEB1FO9	Completed	Field Repair	(PO 6501697258) CHILLER #8 EVAPORATOR WATERBOX REPAIRS:  CLEAN AND PREPARE TUBE SHEET FOR STEEL EPOXY COATING APPLY BELZONA 1121 "SUPER XL-METAL" (PURCHASED UNDER DUPONT PO#: 6501690015) TO FILL IN PITS AND GOUGING CLEAN UP AND ENSURE EPOXY INTEGRITY AFTER 24HR CURE TIME	<ul style="list-style-type: none"> <li>• PREPPED AND APPLIED BELZONA 1121 "SUPER XL-METAL" (PURCHASED UNDER DUPONT PO# 6501690015) TO FILL IN 1/4" PIT AND ALL GOUGING ON STEEL CHANNELS IN WATERBOX.</li> <li>• ALLOWED 24HR CURE TIME.</li> </ul>	Kevin Frazee
02/06/2017	1-LDPYGR2	Completed	Field Repair	CHILLER. #8 RELIEF TREE INSTALL  Transfer Refrigerant to DuPonts Central Storage Tank according to EPA Specs. Record quantity recovered.  Break Vacuum w/Nitrogen & Remove Current Relief Device.	Pressurized Chiller with Trace Gas and Nitrogen up to 120psig  Verified that Newly Installed Relief Devices and Interconnecting Piping were Leak Free with Electronic Leak Detector and Soap Bubbles.  Installed Relief Gauges & Copper Tubing from above each Rupture Disk to the common Release Pressure Switch.	Kevin Frazee



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				Install New 3-Way Valve, Relief Tree, and Relief Devices.  Pressurize w/Nitrogen, Leak Test Entire Chiller.  Evacuate Chiller & Perform Vacuum Hold Test.  Recharge, Run, and Inspect Chiller Performance.  ***DuPont will be responsible for providing all material to be installed and for constructing a scaffold that will allow the work to be carried out safely***	Verified Switch Closure at 50psig & Alarm Point activation on the Powerhouse Main Control System.	
02/06/2017	1-LDSKEYX	Completed	Field Repair	(PO 6501697258) CHILLER #8 EVAPORATOR WATERBOX REPAIRS:  CLEAN AND PREPARE TUBE SHEET FOR STEEL EPOXY COATING APPLY BELZONA 1121 "SUPER XL-METAL" (PURCHASED UNDER DUPONT PO#: 6501690015) TO FILL IN PITS AND GOUGING CLEAN UP AND ENSURE EPOXY INTEGRITY AFTER 24HR CURE TIME	<ul style="list-style-type: none"> <li>• REMOVED ALL RUST AND CORROSION FROM WATERBOX TUBE SHEET AROUND 1/4" PIT AND DIVISION PLATE CHANNELS WITH WIREWHEEL.</li> <li>• THOROUGHLY CLEANED STEEL SURFACES WITH DENATURED ALCOHOL AND ALLOWED TO DRY.</li> </ul>	Kevin Frazee
02/06/2017	1-LDSKEXM	Completed	Field Repair	Chiller #8 Annual Maintenance 2017  Remove Refrigerant Sample for Chemical Analysis Refrigerant leak test chiller and document leaks found (repair minor leaks, if possible)	<ul style="list-style-type: none"> <li>• DRAINED OLD OIL CHARGE &amp; INSTALLED 15 GALLONS OF NEW YORK "J" OIL.</li> <li>• DOCUMENTED ALL ANNUAL MAINTENANCE TASKS PERFORMED AND PROVIDED DUPONT WITH COMPREHENSIVE REPORT (INCLUDING OIL AND REFRIGERANT ANALYSIS REPORTS)</li> </ul>	Kevin Frazee



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Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier Change Compressor Oil w/ YORK J (Provided by DuPont) Disassemble Compressor Coupling and Check Cold Alignment Check Low-Speed Compressor Axial Thrust Reading Reassemble Coupling and Re-Check Compressor Coupling Cold Alignment Vacuum out Compressor Motor and Change Air Filters Change Oil in Compressor Motor Bearings (Provided by DuPont) Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Documents all tasks and Provide Comprehensive Report to DuPont  *All other task, such as Recovery, Evacuation, Oil Sample, and Re-Charge are being performed under other Quotes*		
02/03/2017	1-LCXHVOM	Completed	Field Repair	(PO 6501697258) CHILLER #8 EVAPORATOR WATERBOX REPAIRS:  CLEAN AND PREPARE TUBE SHEET FOR STEEL EPOXY COATING APPLY BELZONA 1121 "SUPER XL-METAL" (PURCHASED UNDER DUPONT PO#: 6501690015) TO FILL IN PITS AND GOUGING CLEAN UP AND ENSURE EPOXY	CHILLER #8 EVAPORATOR WATERBOX REPAIR JOB: DUPONT PO#: 6501697258 JCI QUOTE#: 1-LCBP20N  • TEMPORARILY PLUGGED ALL EVAPORATOR TUBES WITH RUBBER CORKS TO PREVENT INGRESS OF DEBRIS.	Kevin Frazee



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
02/03/2017	1-LAW98P1	Completed	Field Repair	<p>INTEGRITY AFTER 24HR CURE TIME</p> <p>CHILLER. #8 RELIEF TREE INSTALL</p> <p>Transfer Refrigerant to DuPonts Central Storage Tank according to EPA Specs. Record quantity recovered.</p> <p>Break Vacuum w/Nitrogen &amp; Remove Current Relief Device.</p> <p>Install New 3-Way Valve, Relief Tree, and Relief Devices.</p> <p>Pressurize w/Nitrogen, Leak Test Entire Chiller.</p> <p>Evacuate Chiller &amp; Perform Vacuum Hold Test.</p> <p>Recharge, Run, and Inspect Chiller Performance.</p> <p>***DuPont will be responsible for providing all material to be installed and for constructing a scaffold that will allow the work to be carried out safely***</p>	<p>Installed 3-Way Valve, 2 Rupture Disks, Interconnecting Piping, &amp; 2 Relief Valves (Provided and Tagged by DuPont's Pressure Vessel Group).</p> <p>Torqued all Flanges to Specs and Connected Relief Valve "A" to Exhaust Pipe.</p> <p>Relief Valve "B" Outlet was Plugged.</p>	Kevin Frazee
02/03/2017	1-LCVM5ZZ	Completed	Field Repair	<p>Chiller #8 Annual Maintenance 2017</p> <p>Remove Refrigerant Sample for Chemical Analysis</p> <p>Refrigerant leak test chiller and document leaks found (repair minor leaks, if possible)</p>	<ul style="list-style-type: none"> <li>• CHECKED ALL CHILLER CONTROLS, SAFETIES, &amp; LOW VOLTAGE ELECTRICAL CONNECTIONS</li> <li>• VERIFIED BOTH HIGH PRESSURE SWITCH CUTOFF PRESSURES OF 180PSIG &amp; ALARM POINT ACTIVATION ON THE POWERHOUSE MAIN CONTROL SYSTEM</li> </ul>	Kevin Frazee



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier Change Compressor Oil w/ YORK J (Provided by DuPont) Disassemble Compressor Coupling and Check Cold Alignment Check Low-Speed Compressor Axial Thrust Reading Reassemble Coupling and Re-Check Compressor Coupling Cold Alignment Vacuum out Compressor Motor and Change Air Filters Change Oil in Compressor Motor Bearings (Provided by DuPont) Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Documents all tasks and Provide Comprehensive Report to DuPont  *All other task, such as Recovery, Evacuation, Oil Sample, and Re-Charge are being performed under other Quotes*		
02/02/2017	1-LC1C31C	Completed	Field Repair	Chiller #8 Annual Maintenance 2017  Remove Refrigerant Sample for Chemical Analysis Refrigerant leak test chiller and document leaks found (repair minor leaks, if possible) Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier Change Compressor Oil w/ YORK J (Provided	• REPLACED ALL ORIGINAL PRESSURE TRANSDUCERS AND COMPRESSOR DISCHARGE THERMISTOR PROACTIVELY(PROVIDED BY DUPONT)	Kevin Frazee



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				by DuPont) Disassemble Compressor Coupling and Check Cold Alignment Check Low-Speed Compressor Axial Thrust Reading Reassemble Coupling and Re-Check Compressor Coupling Cold Alignment Vacuum out Compressor Motor and Change Air Filters Change Oil in Compressor Motor Bearings (Provided by DuPont) Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Documents all tasks and Provide Comprehensive Report to DuPont  *All other task, such as Recovery, Evacuation, Oil Sample, and Re-Charge are being performed under other Quotes*		
02/02/2017	1-L4S9CHR	Completed	Field Repair	CHILLER. #8 RELIEF TREE INSTALL  Transfer Refrigerant to DuPonts Central Storage Tank according to EPA Specs. Record quantity recovered.  Break Vacuum w/Nitrogen & Remove Current Relief Device.  Install New 3-Way Valve, Relief Tree, and Relief Devices.	Prepped for installation work. Organized materials provided by DuPont, including Garlock 3300 Gaskets.	Kevin Fraze



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				Pressurize w/Nitrogen, Leak Test Entire Chiller.  Evacuate Chiller & Perform Vacuum Hold Test.  Recharge, Run, and Inspect Chiller Performance.  ***DuPont will be responsible for providing all material to be installed and for constructing a scaffold that will allow the work to be carried out safely***		
02/02/2017	1-LCE0W50	Completed	Field Repair	<b>CHILLER #8 SHAFT SEAL REPLACEMENT:</b>  Based on measurements take over the past 2 months CHILLER#8 seal oil leak has been calculated at 4.92ml/hr.  This is double the factory recommended max leak rate of 2.23ml/hr (signal point for replacement).  <b>SCOPE:</b> REMOVE COMPRESSOR COUPLING HUB REMOVE OLD SHAFT SEAL CLEAN & INSPECT INTERNAL COMPRESSOR SHAFT SURFACES CLEAN & RESUSE SHAFT SEAL COVER PLATE (if not damaged) INSTALL NEW SHAFT SEAL COMPONENTS (COLLAR, SEAL, SPRINGS, O-RINGS) CHECK FOR LEAKS & REASSEMBLE	<ul style="list-style-type: none"> <li>• Pressurized Chiller with Nitrogen and leak tested newly installed shaft seal.</li> <li>• No leaks detected</li> <li>• Reassembled coupling and cleaned up job.</li> </ul>	Kevin Fraze



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				COUPLING  **REFRIGERANT RECOVERY, EVACUATION, & RE-CHARGE IS COVERED UNDER OTHER QUOTES**		
02/01/2017	1-LC1C2ZF	Completed	Field Repair	<p>CHILLER #8 SHAFT SEAL REPLACEMENT:</p> <p>Based on measurements take over the past 2 months CHILLER#8 seal oil leak has been calculated at 4.92ml/hr.</p> <p>This is double the factory recommended max leak rate of 2.23ml/hr (signal point for replacement).</p> <p>SCOPE:            REMOVE COMPRESSOR COUPLING HUB            REMOVE OLD SHAFT SEAL            CLEAN &amp; INSPECT INTERNAL COMPRESSOR SHAFT SURFACES            CLEAN &amp; RESUSE SHAFT SEAL COVER PLATE (if not damaged)            INSTALL NEW SHAFT SEAL COMPONENTS (COLLAR, SEAL, SPRINGS, O-RINGS)            CHECK FOR LEAKS &amp; REASSEMBLE COUPLING</p> <p>**REFRIGERANT RECOVERY, EVACUATION, &amp; RE-CHARGE IS COVERED UNDER OTHER QUOTES**</p>	<p>CHILLER #8 SHAFT SEAL REPLACEMENT JOB</p> <p>DuPont PO#: 6501694234</p> <p>Based on measurements take over the past 2 months CHILLER #8 seal oil leak has been calculated at 4.92ml/hr. This is double the factory recommended max leak rate of 2.23ml/hr (signal point for replacement).</p> <ul style="list-style-type: none"> <li>• Ordered Necessary Parts</li> <li>• Removed Compressor Coupling Hub</li> <li>• Removed Old Shaft Seal</li> <li>• Clean &amp; Inspect Internal Compressor Shaft Surfaces</li> <li>• Cleaned &amp; Resused Shaft Seal Cover Plate (No Damaged Detected)</li> <li>• Installed New Shaft Seal Components (Collar, Seal, Springs, O-Rings)</li> </ul>	Kevin Fraze
01/31/2017	1-LAW98QI	Completed	Field Repair	Chiller #8 Annual Maintenance 2017	• CLEANED MOTOR. VACUUMED OUT INTERNALS.	Kevin Fraze



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				Remove Refrigerant Sample for Chemical Analysis Refrigerant leak test chiller and document leaks found (repair minor leaks, if possible) Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier Change Compressor Oil w/ YORK J (Provided by DuPont) Disassemble Compressor Coupling and Check Cold Alignment Check Low-Speed Compressor Axial Thrust Reading Reassemble Coupling and Re-Check Compressor Coupling Cold Alignment Vacuum out Compressor Motor and Change Air Filters Change Oil in Compressor Motor Bearings (Provided by DuPont) Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Documents all tasks and Provide Comprehensive Report to DuPont  *All other task, such as Recovery, Evacuation, Oil Sample, and Re-Charge are being performed under other Quotes*	CHANGED BEARING OIL & AIR FILTERS (16x25x2 QTY-4) • TIGHTENED MOTOR FEET BOLTS • RECORDED ALIGNMENT w/LASER BEFORE DRIVE COUPLING DISASSEMBLY • DISASSEMBLED 1-7/8" YORK-FLEX COUPLING • AXIAL SHIMS= 0.225" • MEASURED MOTOR SHAFT FLOAT= 0.522" (ACCEPTABLE)  MOTOR TO COMP SHAFT CLEARANCE: Motor Full Forward= 3.368" Motor Full Back= 3.890" Float Total= 0.522" (0.500-.565) Min-Max)  MEASURED MOTOR COUPLING RIM RUNOUT= 0.003" MEASURED COMP SHAFT RADIAL RUNOUT: 0.001" MEASURED COMP AXIAL THRUST= 0.0165"  • REASSEMBLED COUPLING & RECHECKED/RECORDED COLD ALIGNMENT	
01/31/2017	1-L51ULGQ	Completed	Field Repair	(Emergency PO) Chiller #8, erosion repair (pitting) to tube sheet in evaporator.	CHILLER #8 EVAP WATERBOX EROSION:  DuPont PO#: 6501690015  01/30/2016:	Kevin Frazee



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
					<ul style="list-style-type: none"> <li>Discovered erosion of EVAP Division Plate and Tube Sheet</li> <li>Gasket between Plate and Tube Sheet appears to have blown out towards the top, allowing high velocity bypass &amp; subsequent gouging and erosion of steel</li> <li>Measured depth of gouging in tube sheet to be approximately 1/4"</li> <li>Placed an order for BELZONA 1121 (Steel Repair Compound) 3KG Kit</li> </ul> <p>01/31/2016:</p> <ul style="list-style-type: none"> <li>Coordinated and Discussed Division Plate Welding Repairs w/ MDAVIS &amp; KBR</li> </ul>	
01/30/2017	1-L4SFZ67	Completed	Field Repair	<p>Chiller #8 Annual Maintenance 2017</p> <ul style="list-style-type: none"> <li>Remove Refrigerant Sample for Chemical Analysis</li> <li>Refrigerant leak test chiller and document leaks found (repair minor leaks, if possible)</li> <li>Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier</li> <li>Change Compressor Oil w/ YORK J (Provided by DuPont)</li> <li>Disassemble Compressor Coupling and Check Cold Alignment</li> <li>Check Low-Speed Compressor Axial Thrust Reading</li> <li>Reassemble Coupling and Re-Check Compressor Coupling Cold Alignment</li> <li>Vacuum out Compressor Motor and Change</li> </ul>	<ul style="list-style-type: none"> <li>REFRIGERANT LEAK TESTED ENTIRE CHILLER</li> <li>NEW LEAKS DISCOVERED &amp; FIXED:               <ol style="list-style-type: none"> <li>COMPRESSOR DISCHARGE FLANGE (SMALL)</li> </ol> </li> <li>OLD LEAKS FIXED:               <ol style="list-style-type: none"> <li>REMOVED &amp; REPLACED LEAKING REFRIGERANT ANGLE VALVE &amp; 3/8" THREADED PIPING ON TOP OF CONDENSER (Leak was discovered 06/23/2016 &amp; noted)</li> <li>REPLACED LEAKING SHAFT SEAL (UNDER QUOTE#: 1-L390LXB)</li> <li>REMOVED &amp; REPLACED LEAKING RUPTURE DISK (UNDER QUOTE#: 1-FRO6QSB)</li> </ol> </li> <li>DISCOVERED OIL RETURN SOLENOID VALVE SEVERELY CORRODED. REPLACED VALVE &amp; INSTALLED INLINE SIGHT GLASS.</li> </ul>	Kevin Frazee



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				Air Filters Change Oil in Compressor Motor Bearings (Provided by DuPont) Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Documents all tasks and Provide Comprehensive Report to DuPont  *All other task, such as Recovery, Evacuation, Oil Sample, and Re-Charge are being performed under other Quotes*		
01/27/2017	1-L3J429F	Completed	Field Repair	Chiller #8 Annual Maintenance 2017  Remove Refrigerant Sample for Chemical Analysis Refrigerant leak test chiller and document leaks found (repair minor leaks, if possible) Furnish and Change Compressor Oil Filter, and Oil Return Filter-Drier Change Compressor Oil w/ YORK J (Provided by DuPont) Disassemble Compressor Coupling and Check Cold Alignment Check Low-Speed Compressor Axial Thrust Reading Reassemble Coupling and Re-Check Compressor Coupling Cold Alignment Vacuum out Compressor Motor and Change Air Filters Change Oil in Compressor Motor Bearings (Provided by DuPont)	CHILLER #8 ANNUAL MAINTENANCE:  DuPont PO#: 6501692933  RUN HOURS: 47,714 TOTAL STARTS: 2088  <ul style="list-style-type: none"> <li>• REMOVED REFRIGERANT SAMPLE FROM R-134A RECOVERED FROM CHILLER &amp; SHIPPED TO LAB FOR ANALYSIS (will forward report to DuPont upon receipt)</li> <li>• REMOVED OIL SAMPLE FROM COMPRESSOR SUMP &amp; SHIPPED TO LAB FOR ANALYSIS (Expense covered under QUOTE# 1-JV664S7)</li> <li>• REPLACED MAIN OIL FILTER</li> <li>• REPLACED OIL RETURN FILTER-DRIER (C-413)</li> <li>• CHECKED OIL HEATER OPERATION. INCREASED OFFLINE SUMP SETTING TO 135F</li> </ul>	Kevin Fraze



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				Check all Chiller Controls, Safeties, and Low Voltage Electrical Connections Documents all tasks and Provide Comprehensive Report to DuPont  *All other task, such as Recovery, Evacuation, Oil Sample, and Re-Charge are being performed under other Quotes*		
01/27/2017	1-L383U4T	Completed	Field Repair	CHILLER #8 EDDY-CURRENT  EDDY-CURRENT TESTING & ANALYSIS OF ALL EVAPORATOR & CONDENSER TUBES (1,582 TOTAL).  FINAL REPORT OF TUBE CONDITION WILL BE PROVIDED UPON COMPLETION.  *NOTE: HEADS MUST BE DOWN AND TUBES CLEANED AND BRUSHED BEFORE TECHNICIAN ARRIVES. UNIT MUST BE READY FOR TESTING WITH NO WAITING TIME.*  **THIS WORK IS CURRENTLY SCHEDULED FOR JAN. 27TH & 28TH. ACCESS TO SITE AND POWERHOUSE WILL NEED TO BE ARRANGED & PROVIDED FOR THE TECHNICIAN BY DUPONT ON SATURDAY THE 28TH.**	CHILLER #8 EDDY-CURRENT DUPONT PO#: 6501681197  EDDY-CURRENT TESTING was Completed on CHILLER #8s EVAP & COND tubes.  Provided DuPont with ANALYSIS REPORT.  NO TUBES have been recommended to be Plugged or Pulled at this Time.  NEXT TEST RECOMMENDED: JANUARY 26th, 2020	Kevin Fraze



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
01/26/2017	1-L383U3N	Completed	Field Repair	<p>CHILLER #8 EDDY-CURRENT</p> <p>EDDY-CURRENT TESTING &amp; ANALYSIS OF ALL EVAPORATOR &amp; CONDENSER TUBES (1,582 TOTAL).</p> <p>FINAL REPORT OF TUBE CONDITION WILL BE PROVIDED UPON COMPLETION.</p> <p>*NOTE: HEADS MUST BE DOWN AND TUBES CLEANED AND BRUSHED BEFORE TECHNICIAN ARRIVES. UNIT MUST BE READY FOR TESTING WITH NO WAITING TIME.*</p> <p>**THIS WORK IS CURRENTLY SCHEDULED FOR JAN. 27TH &amp; 28TH. ACCESS TO SITE AND POWERHOUSE WILL NEED TO BE ARRANGED &amp; PROVIDED FOR THE TECHNICIAN BY DUPONT ON SATURDAY THE 28TH.**</p>	<p>CHILLER #8 EDDY-CURRENT DUPONT PO#: 6501681197</p> <p>EDDY-CURRENT TESTING was performed on ALL CHILLER #8s EVAP &amp; COND tubes.</p>	Kevin Frazee
01/25/2017	1-L2NPFDP	Completed	Field Repair	<p>CHILLER. #8 RELIEF TREE INSTALL</p> <p>Transfer Refrigerant to DuPonts Central Storage Tank according to EPA Specs. Record quantity recovered.</p> <p>Break Vacuum w/Nitrogen &amp; Remove Current Relief Device.</p>	<p>Dismantled and Removed Old Rupture Disk / Relief Valve Assembly from the Chiller, and Capped flange with pressure gauge.</p> <p>Chiller shell will remain capped, isolated, and at atmospheric pressure until DuPont approves use of GARLOCK 3300 Gaskets on new Rupture Disks, 3-Way Valve, and interconnecting 300# 2" Flanges.</p>	Kevin Frazee



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				Install New 3-Way Valve, Relief Tree, and Relief Devices.  Pressurize w/Nitrogen, Leak Test Entire Chiller.  Evacuate Chiller & Perform Vacuum Hold Test.  Recharge, Run, and Inspect Chiller Performance.  ***DuPont will be responsible for providing all material to be installed and for constructing a scaffold that will allow the work to be carried out safely***		
01/24/2017	1-L250YRA	Completed	Field Repair	CHILLER. #8 RELIEF TREE INSTALL  Transfer Refrigerant to DuPonts Central Storage Tank according to EPA Specs. Record quantity recovered.  Break Vacuum w/Nitrogen & Remove Current Relief Device.  Install New 3-Way Valve, Relief Tree, and Relief Devices.  Pressurize w/Nitrogen, Leak Test Entire Chiller.  Evacuate Chiller & Perform Vacuum Hold Test.	Completed Recovery down to EPA Required Spec of 15"hg Vacuum. Refrigerant is being stored in the YORK Central Recovery Tank.  TOTAL R-134A Recovered= 2,920lbs DESIGN CHARGE= 3,300lbs SHORT: 380lbs  Brought Chiller up to Atmospheric Pressure with Powerhouse Nitrogen and safed off.	Kevin Fraze



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				Recharge, Run, and Inspect Chiller Performance.  ***DuPont will be responsible for providing all material to be installed and for constructing a scaffold that will allow the work to be carried out safely***		
01/23/2017	1-L1R58K6	Completed	Field Repair	CHILLER. #8 RELIEF TREE INSTALL  Transfer Refrigerant to DuPonts Central Storage Tank according to EPA Specs. Record quantity recovered.  Break Vacuum w/Nitrogen & Remove Current Relief Device.  Install New 3-Way Valve, Relief Tree, and Relief Devices.  Pressurize w/Nitrogen, Leak Test Entire Chiller.  Evacuate Chiller & Perform Vacuum Hold Test.  Recharge, Run, and Inspect Chiller Performance.  ***DuPont will be responsible for providing all material to be installed and for constructing a scaffold that will allow the work to be carried out safely***	CHILLER #8 RELIEF TREE JOB DuPont PO#: 6501691743 JCI QUOTE#: 1-FRO6QSB  Coordinated with DuPont Personnel for Shutdown and Lockout of CHILLER #8.  Verified Operation of Central Recovery Pump Out Unit and began Transferring CHILLER #8's R-134A charge into the Central Recovery Tank.  Began organizing material for Installation of new Relief Devices.  Stopped Recovery and Isolated. Will finished Vapor Recovery tomorrow.	Kevin Frazee



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
01/20/2017	1-L0VSZJ4	Completed	Field Repair	<p>CHILLER. #8 RELIEF TREE INSTALL</p> <p>Transfer Refrigerant to DuPonts Central Storage Tank according to EPA Specs. Record quantity recovered.</p> <p>Break Vacuum w/Nitrogen &amp; Remove Current Relief Device.</p> <p>Install New 3-Way Valve, Relief Tree, and Relief Devices.</p> <p>Pressurize w/Nitrogen, Leak Test Entire Chiller.</p> <p>Evacuate Chiller &amp; Perform Vacuum Hold Test.</p> <p>Recharge, Run, and Inspect Chiller Performance.</p> <p>***DuPont will be responsible for providing all material to be installed and for constructing a scaffold that will allow the work to be carried out safely***</p>		Kevin Fraze
01/19/2017	1-L0E6R52	Completed	Field Repair	<p>Consultive service of 1/18.</p> <p>Emergency work of 1/19.</p>	<p>CHILLER #9 RUPTURE DISK INSPECTION.</p> <p>Assisted DuPont with the pulling, inspecting, and re-installation of both Rupture Disks on Chiller #9, as per Chris Cooper's instructions.</p>	Kevin Fraze
12/28/2016	1-K2Y3NEJ	Completed	Field Repair	<p>CHILLER #8 LOW OIL LEVEL</p> <p>Add appropriate amount of YORK "J" Oil</p>	CHILLER #8 LOW OIL LEVEL	Kevin Fraze



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
				(Customer Supplied) to Chiller #8 to bring back to Normal Operating Level. Measure Seal Oil Leakage and Calculate Leak rates on #8,9,&10 to determine Condition of Shaft Seals. Make necessary Adjustments on Chiller #8's Vane Arm Assembly. Change and Tighten Fasteners. Apply Sealant to Actuator Motor Shaft.	<ul style="list-style-type: none"> <li>Added approximately 3 Gallons of YORK "J" Oil (Customer Supplied) to Chiller #8 to bring Oil Sump Level up to 1/2 T.S.G.</li> <li>Measured Seal Oil Leakage and Calculated Leak rates on #8,9,&amp;10 to determine Condition of Shaft Seals.</li> <li>Emptied #8 &amp; #9's Seal Oil Jars &amp; Disposed of Oil.</li> <li>Made necessary Adjustments to Chiller #8's Vane Arm Assembly. Changed and Tightened Fasteners. Applied Sealant to Actuator Motor Shaft.</li> </ul>	
06/23/2016	1-G8WWXZR	Completed	Field Repair	Inspect and Repair Chiller #8 Evaporator issues, ESL Powerhouse (E315)	Refrigerant Leak Tested Chiller #8. Discovered leaks on 1/2" Access Valve threads on top of Evaporator and Rupture Disk. Recommend Shutdown of Chiller and Repair of Leaks.	Kevin Frazee
06/06/2016	1-FXQPPJW	Completed	Field Repair	Inspect and Repair Chiller #8 Evaporator issues, ESL Powerhouse (E315)	<p>CHILLER #8 Mod: OTT4G2-ZBES Ser: GACM117864</p> <p>DuPont Operators explained that the chiller has been limiting itself on a Low Pressure Override for the past year. Refrigerant level in Sight Glass has appeared low. Transferred Liquid Charge over to Central Storage Tank and weighed.</p> <p>Recovered: 1490lbs Design Charge: 3250lbs Transferred Back: 3120lbs</p> <p>Started Chiller and verified operation to be Normal at this time.</p>	Kevin Frazee



## Asset History Report

Date: 3/13/2018

Activity History						
Date	Activity #	Activity Status	Activity Type	Service Requested	Work Performed	By
					<p>CHILLER #8 will be down for removal and replacement of the relief device in the next few weeks. A thorough leak test will be performed at that time.</p> <p>***Central Storage Tank by Chiller #7 is almost empty. Recommend adding a few thousand pounds for future use.***</p>	