

ADEQ

ARKANSAS
Department of Environmental Quality

October 13, 2014

David Taylor
EHSQ Manager
Evonik Cyro, LLC
P.O. Box 388
Osceola, AR 72370

Dear Mr. Taylor:

In response to your Administrative Amendment permit application, you will find enclosed a copy of your final permit. Section 19.407 (A) of the Arkansas Plan of Implementation for Air Pollution Control (SIP) and 18.307 (A) of the Arkansas Air Pollution Control Act do not require a public notice or public comment period for Administrative Amendments.

Sincerely,



Mike Bates
Chief, Air Division

Enclosures: Draft Permit

ADEQ MINOR SOURCE AIR PERMIT


Permit No. : 0759-AR-10

IS ISSUED TO:

Evonik Cyro, LLC
1500 Richard Prewitt Drive
Osceola, AR 72370
Mississippi County
AFIN: 47-00194

THIS PERMIT IS THE ABOVE REFERENCED PERMITTEE'S AUTHORITY TO CONSTRUCT, MODIFY, OPERATE, AND/OR MAINTAIN THE EQUIPMENT AND/OR FACILITY IN THE MANNER AS SET FORTH IN THE DEPARTMENT'S MINOR SOURCE AIR PERMIT AND THE APPLICATION. THIS PERMIT IS ISSUED PURSUANT TO THE PROVISIONS OF THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT (ARK. CODE ANN. SEC. 8-4-101 *ET SEQ.*) AND THE REGULATIONS PROMULGATED THEREUNDER, AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:


Mike Bates
Chief, Air Division

October 13, 2014
Date

Evonik Cyro, LLC
Permit #: 0759-AR-10
AFIN: 47-00194

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List of Acronyms and Abbreviations

A.C.A.	Arkansas Code Annotated
AFIN	ADEQ Facility Identification Number
CFR	Code of Federal Regulations
CO	Carbon Monoxide
HAP	Hazardous Air Pollutant
lb/hr	Pound Per Hour
No.	Number
NO _x	Nitrogen Oxide
PM	Particulate Matter
PM ₁₀	Particulate Matter Smaller Than Ten Microns
SO ₂	Sulfur Dioxide
Tpy	Tons Per Year
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

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Section I: FACILITY INFORMATION

PERMITTEE: Evonik Cyro, LLC
AFIN: 47-00194
PERMIT NUMBER: 0759-AR-10
FACILITY ADDRESS: 1500 Richard Prewitt Drive
Osceola, AR 72370
MAILING ADDRESS: P.O. Box 388
Osceola, AR 72370
COUNTY: Mississippi County
CONTACT NAME: David Taylor
CONTACT POSITION: EHSQ Manager
TELEPHONE NUMBER: (870) 563-1672
REVIEWING ENGINEER: Joseph Hurt
UTM North South (Y): Zone 16: 3953498.64 m
UTM East West (X): Zone 16: 229581.62 m

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Section II: INTRODUCTION

Summary of Permit Activity

Evonik Cyro, LLC (CYRO) owns and operates a facility at 1500 Richard Prewitt Drive, Osceola, which manufactures polymer pellets and sheets. CYRO has proposed to remove sheet line 3 (SN-55). The total permitted emission decreases include 0.5 tpy of PM/PM₁₀, 0.5 tpy of SO₂, 1.0 tpy of VOC, 6.2 tpy of CO, 0.5 tpy of NO_x, 0.5 tpy of Single HAP, and 1.0 tpy of Combination HAP.

Process Description

Pellet Forming Operation

Methacrylic and acrylic monomers are received and stored in tanks outside of the production building. The materials are transferred to the production portion of the facility as needed and combined with portions of catalysts and other additives. The monomer solutions are then by pumped to a reactor where, under controlled conditions acrylic pellets are formed. The resulting solution is fed to a devolatilizer extruder where the unreacted monomers are removed then recycled back into the process. Molten polymer is transferred through a strand die, cooled, cut into pellets then conveyed to one of eleven storage silos for future packaging and shipment to the customer, or fed to the sheet manufacturing process.

Sheet Manufacturing

Pellets are melted and the molten polymer is extruded through a large slit die into a ribbon of hot plastic. Then the molten material passes through a series of water cooled rollers which flatten it into a uniform sheet. The acrylic sheet then goes through another series of rollers to complete the cooling. The finished sheet is masked, cut to specific sizes, stacked, labeled, and packaged for shipping.

Cutting Operations

Evonik Cyro manufactures acrylic sheet in various sizes and thickness, usually four feet by eight feet. A saw will take the large sheets of acrylic and cut them into smaller pieces. When the saw makes a cut, small acrylic saw chips are produced. The saw has a chip removal system that utilizes a bag house (SN-60) to capture the chips and exhausts the air.

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Regulations

The following table contains the regulations applicable to this permit.

Regulations
Arkansas Air Pollution Control Code, Regulation 18, effective June 18, 2010
Regulations of the Arkansas Plan of Implementation for Air Pollution Control, Regulation 19, effective September 13, 2014
40 CFR Part 60, Subpart Kb – <i>Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which construction, reconstruction, or modification commenced after July 23, 1984</i>

The facility is not subject to 40 CFR 60, Subpart Ka – *Standards of Performance for Petroleum Liquid Storage Vessels for Which Construction or Modification Commenced after July 23, 1984*; bulk storage tanks are not subject to this subpart because the capacities are less than 151m³. The facility does not have the physical potential to be a major GHG source.

Total Allowable Emissions

The following table is a summary of emissions from the facility. This table, in itself, is not an enforceable condition of the permit.

TOTAL ALLOWABLE EMISSIONS		
Pollutant	Emission Rates	
	lb/hr	tpy
PM	2.4	11.3
PM ₁₀	2.4	11.3
SO ₂	0.6	3.0
VOC	1.4	5.3
CO	9.6	42.2
NO _x	2.6	11.8
Single HAP	0.97	3.5
Combination HAP	1.17	4.5

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Section III: PERMIT HISTORY

CYRO Industries was issued its first air permit on July 25, 1985. This was permit number 0759-A. Initial emission rates were quantified at that time.

Air permit #0759-AR-1 was issued on January 3, 1989. It added a color line, conveying system, and a monomer recovery system.

Air permit #0759-AR-2 was issued on September 19, 1989. SN-21 was deleted with emissions routed to SN-20 (No. 1 condensate tank), and a die Hood vent (SN-41) was added. There were no emission increases.

Air permit #0759-AR-3 was issued on May 16, 1995. It added a condenser and carbon bed to the vent of the Methyl methacrylate bulk storage tank (SN-01) to meet NSPS requirements. A new sheet manufacturing line was added (SN-28, SN-30, SN-32, SN-34, and SN-45). Furnace exhaust in the pellet drying area vented to the atmosphere through SN-43 and SN-44, and additional combustion products (SN-5, SN-31, SN-32, SN-43, and SN-44) were added.

Air permit #0759-AR-4 was issued on April 4, 1998. It was a modification which allowed for the installation and use of two (2) 1,500 KW diesel generators, a diesel storage tank with a capacity of less than 10,000 gallons. Emission rates were corrected based upon a better understanding of the pollutants allowing the Methyl methacrylate emissions to be reduced from 24.6 tpy to 8.5 tpy.

Air permit #0759-AR-5 was issued on January 15, 1999. It added a sheet line (SN-50 through SN-57), routed previous points (SN-17 through SN-20) to SN-51, added a thermal oxidizer (SN-51), and increased criteria pollutants. Methyl methacrylate (HAP) emissions were reduced from 8.5 tpy to 6.5 tpy, and Ethyl Acrylate (HAP) emissions increased from 1.0 tpy to 1.5 tpy.

Air permit #0759-AR-6 was issued on May 10, 2001. It added a back-up emission control system, new oxidizer (SN-49) to control HAP emissions. Another baghouse (SN-58) was added in series with two cyclones, and removed two emission points (SN-33 and SN-34) with the addition of the new baghouse. The carbon absorbers (SN-57) were removed, and the permitted emissions for Methyl methacrylate (HAP) increased from 6.5 tpy to 7.3 tpy.

Air permit #0759-AR-7 was issued on February 22, 2002. It increased the fugitive VOC emissions from SN-59 by 0.2 tpy to reflect "as built" conditions, and reduced emissions of PM/PM₁₀ from SN-56 due to the addition of a baghouse. The acrylic pellet forming equipment was added to the list of insignificant activities.

Air permit 0759-AR-8 was issued on July 26, 2006. CYRO proposed to implement a Leak Detection and Repair Program (LDAR) in accordance with the EPA Emission Inventory Improvement Program (EIIP), Volume II, Chapter 4. The total maximum allowable SO₂, VOC, and HAP emissions were updated to correct typographical error from the previous permit.

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Air permit 0759-AR-9 was issued on August 15, 2013. CYRO proposed to remove the diesel electric generators (SN-47 and SN-48) and to add a baghouse (SN-60) to collect the saw chips generated by the new acrylic panel saw. The total permitted emission increases included 0.1 tpy of PM/PM₁₀. The total permitted emission decreases included 1.2 tpy of SO₂, 0.4 tpy of VOC, 3.8 tpy of CO, and 18.4 tpy of NO_x.

Section IV: EMISSION UNIT INFORMATION

Specific Conditions

- The permittee shall not exceed the emission rates set forth in the following table.
 [Regulation 19 §19.501 et seq. and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

SN	Description	Pollutant	lb/hr	tpy
01	Bulk Storage Tank # 1	VOC ⁽¹⁾	0.1	0.1
02	Bulk Storage Tank # 2	VOC ⁽¹⁾	0.1	0.1
03	Bulk Storage Tank # 3	VOC ⁽¹⁾	0.1	0.1
05	Oil Heater Stack	PM ₁₀	0.1	0.5
		SO ₂	0.1	0.5
		VOC	0.1	0.4
		CO	0.8	3.5
		NO _x	1.1	4.9
19	Bulk Storage Tank	Emissions routed to SN-49		
22	Conveying System Vent	PM ₁₀	0.1	0.5
27	Conveying System Vent	PM ₁₀	0.1	0.5
28	Conveying System Vent	PM ₁₀	0.1	0.5
29	Conveying System Vent	PM ₁₀	0.1	0.5
30	Conveying System Vent	PM ₁₀	0.1	0.5
31	Vacuum Vent Sheet # 1	PM ₁₀	0.1	0.5
		SO ₂	0.1	0.5
		VOC	0.2	1.0
		CO	1.4	6.2
		NO _x	0.1	0.5

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SN	Description	Pollutant	lb/hr	tpy
32	Vacuum Vent Sheet # 2	PM ₁₀	0.1	0.5
		SO ₂	0.1	0.5
		VOC	0.2	1.0
		CO	1.4	6.2
		NO _x	0.1	0.5
35	Conveying System Vent	PM ₁₀	0.2	0.9
42	Color conveying Vent	PM ₁₀	0.4	1.9
45	Conveying System ⁽²⁾ Vent	No emissions		
47	Diesel Electric Generator # 1	Sources removed in 2013.		
48	Diesel Electric Generator # 2			
49	Seal Pot Vent # 1 (New Oxidizer)	PM ₁₀	0.1	0.5
		SO ₂	0.1	0.5
		VOC	0.2	0.9
		CO	2.6	11.4
		NO _x	0.1	0.5
50	Oil Heater Stack	PM ₁₀	0.1	0.5
		SO ₂	0.1	0.5
		VOC	0.1	0.4
		CO	0.8	3.5
		NO _x	1.1	4.9
51	Seal Pot Vent (Pellet Making) (Existing Oxidizer)	PM ₁₀	0.1	0.5
		SO ₂	0.1	0.5
		VOC	0.2	0.9
		CO	2.6	11.4
		NO _x	0.1	0.5
52	Conveying System Vent	PM ₁₀	0.1	0.5
53	Conveying System Vent	PM ₁₀	0.1	0.5

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SN	Description	Pollutant	lb/hr	tpy
54	Conveying System Vent	PM ₁₀	0.1	0.5
55	Vacuum Vent (Sheet Line 3)	Sources removed in 2014.		
56	Conveying System Baghouse	PM ₁₀	0.1	0.5
58	Conveying System Vent	PM ₁₀	0.1	0.5
59	Fugitive Equipment Leaks	VOC	0.1	0.4
60	Panel Saw Dust Collector	PM ₁₀	0.2	0.5

1. VOC totals include HAPs
2. Spare transfer system for sheet line #2. Only two of the three systems will operate at any one time (SN-28, SN-30, SN-45)

2. The permittee shall not exceed the emission rates set forth in the following table.
 [Regulation 18 §18.801 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

SN	Description	Pollutant	lb/hr	tpy
01	Bulk Storage Tank # 1	Methyl Methacrylate ⁽¹⁾	0.1	0.1
02	Bulk Storage Tank # 2	Methyl Methacrylate ⁽¹⁾	0.1	0.1
03	Bulk Storage Tank # 3	Methyl Methacrylate ⁽¹⁾	0.1	0.1
05	Oil Heater Stack	PM	0.1	0.5
19	Bulk Storage Tank	Emissions routed to SN-49		
22	Conveying System Vent	PM	0.1	0.5
27	Conveying System Vent	PM	0.1	0.5
28	Conveying System Vent	PM	0.1	0.5
29	Conveying System Vent	PM	0.1	0.5
30	Conveying System Vent	PM	0.1	0.5
31	Vacuum Vent Sheet # 1	PM	0.1	0.5
		Methyl Methacrylate ⁽¹⁾	0.1	0.5
		Methyl Acrylate ⁽¹⁾	0.1	0.5
32	Vacuum Vent Sheet # 2	PM	0.1	0.5

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SN	Description	Pollutant	lb/hr	tpy
		Methyl Methacrylate ⁽¹⁾	0.1	0.5
		Methyl Acrylate ⁽¹⁾	0.1	0.5
35	Conveying System Vent	PM	0.2	0.9
42	Color conveying Vent	PM	0.4	1.9
45	Conveying System ⁽²⁾ Vent	No Emissions		
47	Diesel Electric Generator # 1	Sources removed in 2013.		
48	Diesel Electric Generator # 2			
49	Seal Pot Vent # 1 (New Oxidizer)	PM	0.1	0.5
		Methyl Methacrylate ⁽¹⁾	0.2	0.9
50	Oil Heater Stack	PM	0.1	0.5
51	Seal Pot Vent (Pellet Making) (Existing Oxidizer)	PM	0.1	0.5
		Methyl Methacrylate ⁽¹⁾	0.2	0.9
52	Conveying System Vent	PM	0.1	0.5
53	Conveying System Vent	PM	0.1	0.5
54	Conveying System Vent	PM	0.1	0.5
55	Vacuum Vent (Sheet Line 3)	Sources removed in 2014.		
56	Conveying System Baghouse	PM	0.1	0.5
58	Conveying System Vent	PM	0.1	0.5
59	Fugitive Equipment Leaks	Methyl Methacrylate ⁽¹⁾	0.07	0.40
60	Panel Saw Dust Collector	PM	0.2	0.5

1. HAPs included in VOC totals
2. Spare transfer system for sheet line #2. Only two of the three systems will operate at any one time (SN-28, SN-30, SN-45)
3. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

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SN	Limit	Regulatory Citation
05, 22, 27 – 32, 35, 42, 49 – 54, 56, 58, & 60	5%	§18.501

4. The permittee shall not cause or permit the emission of air contaminants, including odors or water vapor and including an air contaminant whose emission is not otherwise prohibited by Regulation #18, if the emission of the air contaminant constitutes air pollution within the meaning of A.C.A. §8-4-303. [Regulation 18 §18.801 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
5. The permittee shall not conduct operations in such a manner as to unnecessarily cause air contaminants and other pollutants to become airborne. [Regulation 18 §18.901 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
6. The permittee shall use only natural gas as a fuel for the oil heater (SN-05). Natural gas usage shall not exceed 78.84 MMcf per rolling 12-month period. [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
7. The permittee shall use only natural gas as a fuel for the oil heater (SN-50). Natural gas usage shall not exceed 78.84 MMcf per rolling 12-month period. [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
8. The permittee shall maintain monthly records which demonstrate compliance with Specific Conditions 6 and 7. The permittee shall update the records by the 15th day of the month following the month to which the records pertain. The permittee shall keep the records onsite, and make the records available to Department personnel upon request. [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
9. The permittee shall implement and maintain a Leak Detection and Repair (LDAR) Program at the facility as outlined in Appendix B. The LDAR procedure shall be kept on site at all times and will be made available to Department personnel upon request. The permittee shall maintain a log of the LDAR inspections and shall retain these records for three years. These inspection logs shall be maintained on site and made available to Department personnel upon request. [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
10. The permittee shall maintain quarterly records of fugitive emissions which demonstrates compliance with the LDAR program proposed and Specific Condition 2. The permittee shall use the emission calculation methods outlined in the EPA Emission Inventory Improvement Program, Volume II, Chapter 4.4. The permittee shall update the records by the 15th day of the month following the quarter to which the records pertain. These records shall be maintained onsite and made available to Department personnel upon request. [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

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11. The permittee will test the thermal oxidizing units (SN-31, SN-32, SN-49, and SN-51) to determine the VOC destruction rate. In accordance with the facility's current testing procedures, EPA Reference Method 18 shall be used to determine the concentrations of Methyl acrylate and Methyl methacrylate in the inlet and outlet streams. These concentrations shall be used to calculate the destruction efficiency of the thermal oxidizers. This test shall be performed a minimum of once every five years. Testing for SN-49 and SN-51 was last performed on February 3 and February 4, 2010. Testing for SN-31 and SN-32 was last performed on March 27 and March 28, 2013. This test shall be performed with these units operating at or above 90% of its design capacity. These units shall achieve a VOC destruction rate of not less than 99%. A written report of the results of the completed tests shall be submitted to the Department within 30 days of completion of the test. Reports shall be sent to the address listed in General Condition 6. [Regulation 19 §19.702 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
12. The permittee will maintain a temperature of 550 °F in the catalytic oxidizers during operations. Startup and shutdown shall not be considered operations. [Regulation 18 §18.1003 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
13. The permittee will install, calibrate, and maintain a continuous temperature recorder on the catalytic oxidizers used to control emissions from SN-49 and SN-51. These records will be maintained on site and made available to Department personnel upon request. [Regulation 18 §18.1003 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
14. The baghouse (SN-56) will be operated according to the vendor's specifications at all times. The baghouse will be inspected as necessary, but not less than once per month, to insure that it is in good working condition. Maintenance records shall be kept on site at all times and will be made available to Department personnel upon request. [Regulation 19 §19.303 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
15. The permittee shall not process in excess of 24,226,700 pounds of Acrylic sheet during any consecutive 12-month period through the panel saw, which is controlled by the panel saw dust collector (SN-60). [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
16. The permittee shall maintain monthly records which demonstrate compliance with Specific Condition 15. The permittee shall update the records by the 15th day of the month following the month to which the records pertain. The permittee shall keep the records onsite, and make the records available to Department personnel upon request. [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

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NSPS Requirements

17. The permittee will maintain readily accessible records for SN-01, SN-02, SN-03, and SN-19 to Department personnel. The records shall show the dimensions of the storage vessel and the calculations for the capacity of the storage vessel. These records shall be kept on site for the life of the source, and shall be made available to Department personnel upon request. Below is a table showing the current status of the storage capacities and reporting requirements. [Regulation 19 §19.304 and 40 CFR Part 60 Subpart Kb, §60.116b]

Tank	> than (m ³)	< than (m ³)	Min VP (kPa)	Max VP (kPa)	Record Keeping per §60.116b (b)/(c)		Report
					Contents	Volume	
SN-01		75			No	Yes	No
SN-02	40	151		14.9	No	Yes	No
SN-03		75			No	Yes	No
SN-19		75			No	Yes	No

18. The permittee will maintain a record for two years of the VOC stored in SN-01 and the maximum true vapor pressure of the VOC. The maximum true vapor pressure is to be determined using one of the options detailed in §60.116b(e)(3). [Regulation 19 §19.705; A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311; and 40 CFR Part 60 Subpart Kb, §60.116b]
19. The permittee will not exceed a maximum of 100 turnovers in SN-01 (bulk storage tank one), 100 turnovers in SN-02 (bulk storage tank two), and 30 turnovers in SN-03 (bulk storage tank three) per consecutive 12-month period. Monthly records of the number of turnovers per tank will be maintained on site and made available to Department personnel upon request. [Regulation 18 §18.1004 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
20. The permittee will handle any upset conditions, defined as exceedances of applicable emission limitations lasting more than 30 minutes, in the aggregate, during a 24-hour period, as defined in General Condition 10 of this permit. [Regulation 19 §19.6(a) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

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Section V: INSIGNIFICANT ACTIVITIES

The Department deems the following types of activities or emissions as insignificant on the basis of size, emission rate, production rate, or activity in accordance with Group A of the Insignificant Activities list found in Regulation 18 and 19 Appendix A. Insignificant activity emission determinations rely upon the information submitted by the permittee in an application dated September 27, 2001.

Description	Category
PYRO-CLEAN System	A-13
Acrylic Pellet Forming Equipment (small extruder with emissions routed to SN-49 or SN-51)	A-13

Section VI: GENERAL CONDITIONS

1. Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission Regulation 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.). Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute.
2. This permit does not relieve the owner or operator of the equipment and/or the facility from compliance with all applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated under the Act. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
3. The permittee shall notify the Department in writing within thirty (30) days after commencement of construction, completion of construction, first operation of equipment and/or facility, and first attainment of the equipment and/or facility target production rate. [Regulation 19 §19.704 and/or A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
4. Construction or modification must commence within eighteen (18) months from the date of permit issuance. [Regulation 19 §19.410(B) and/or Regulation 18 §18.309(B) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
5. The permittee must keep records for five years to enable the Department to determine compliance with the terms of this permit such as hours of operation, throughput, upset conditions, and continuous monitoring data. The Department may use the records, at the discretion of the Department, to determine compliance with the conditions of the permit. [Regulation 19 §19.705 and/or Regulation 18 §18.1004 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
6. A responsible official must certify any reports required by any condition contained in this permit and submit any reports to the Department at the address below. [Regulation 19 §19.705 and/or Regulation 18 §18.1004 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

Arkansas Department of Environmental Quality
Air Division
ATTN: Compliance Inspector Supervisor

Evonik Cyro, LLC
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5301 Northshore Drive
North Little Rock, AR 72118-5317

7. The permittee shall test any equipment scheduled for testing, unless stated in the Specific Conditions of this permit or by any federally regulated requirements, within the following time frames: (1) newly constructed or modified equipment within sixty (60) days of achieving the maximum production rate, but no later than 180 days after initial start up of the permitted source or (2) existing equipment already operating according to the time frames set forth by the Department. The permittee must notify the Department of the scheduled date of compliance testing at least fifteen (15) business days in advance of such test. The permittee must submit compliance test results to the Department within thirty (30) calendar days after the completion of testing. [Regulation 19 §19.702 and/or Regulation 18 §18.1002 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
8. The permittee shall provide: [Regulation 19 §19.702 and/or Regulation 18 §18.1002 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
 - a. Sampling ports adequate for applicable test methods;
 - b. Safe sampling platforms;
 - c. Safe access to sampling platforms; and
 - d. Utilities for sampling and testing equipment
9. The permittee shall operate equipment, control apparatus and emission monitoring equipment within their design limitations. The permittee shall maintain in good condition at all times equipment, control apparatus and emission monitoring equipment. [Regulation 19 §19.303 and/or Regulation 18 §18.1104 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
10. If the permittee exceeds an emission limit established by this permit, the permittee will be deemed in violation of said permit and will be subject to enforcement action. The Department may forego enforcement action for emissions exceeding any limits established by this permit provided the following requirements are met: [Regulation 19 §19.601 and/or Regulation 18 §18.1101 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
 - a. The permittee demonstrates to the satisfaction of the Department that the emissions resulted from an equipment malfunction or upset and are not the result of negligence or improper maintenance, and the permittee took all reasonable measures to immediately minimize or eliminate the excess emissions.
 - b. The permittee reports the occurrence or upset or breakdown of equipment (by telephone, facsimile, or overnight delivery) to the Department by the end of the next business day after the occurrence or the discovery of the occurrence.
 - c. The permittee must submit to the Department, within five business days after the occurrence or the discovery of the occurrence, a full, written report of such occurrence, including a statement of all known causes and of the scheduling and

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nature of the actions to be taken to minimize or eliminate future occurrences, including, but not limited to, action to reduce the frequency of occurrence of such conditions, to minimize the amount by which said limits are exceeded, and to reduce the length of time for which said limits are exceeded. If the information is included in the initial report, the information need not be submitted again.

11. The permittee shall allow representatives of the Department upon the presentation of credentials: [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
 - a. To enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of this permit;
 - b. To have access to and copy any records required to be kept under the terms and conditions of this permit, or the Act;
 - c. To inspect any monitoring equipment or monitoring method required in this permit;
 - d. To sample any emission of pollutants; and
 - e. To perform an operation and maintenance inspection of the permitted source.
12. The Department issued this permit in reliance upon the statements and presentations made in the permit application. The Department has no responsibility for the adequacy or proper functioning of the equipment or control apparatus. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
13. The Department may revoke or modify this permit when, in the judgment of the Department, such revocation or modification is necessary to comply with the applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated the Arkansas Water and Air Pollution Control Act. [Regulation 19 §19.410(A) and/or Regulation 18 §18.309(A) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
14. This permit may be transferred. An applicant for a transfer must submit a written request for transfer of the permit on a form provided by the Department and submit the disclosure statement required by Arkansas Code Annotated §8-1-106 at least thirty (30) days in advance of the proposed transfer date. The permit will be automatically transferred to the new permittee unless the Department denies the request to transfer within thirty (30) days of the receipt of the disclosure statement. The Department may deny a transfer on the basis of the information revealed in the disclosure statement or other investigation or, deliberate falsification or omission of relevant information. [Regulation 19 §19.407(B) and/or Regulation 18 §18.307(B) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
15. This permit shall be available for inspection on the premises where the control apparatus is located. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

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16. This permit authorizes only those pollutant emitting activities addressed herein. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
17. This permit supersedes and voids all previously issued air permits for this facility. [Regulation 18 and 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
18. The permittee must pay all permit fees in accordance with the procedures established in Regulation No. 9. [A.C.A §8-1-105(c)]
19. The permittee may request in writing and at least 15 days in advance of the deadline, an extension to any testing, compliance or other dates in this permit. No such extensions are authorized until the permittee receives written Department approval. The Department may grant such a request, at its discretion in the following circumstances:
 - a. Such an extension does not violate a federal requirement;
 - b. The permittee demonstrates the need for the extension; and
 - c. The permittee documents that all reasonable measures have been taken to meet the current deadline and documents reasons it cannot be met.

[Regulation 18 §18.314(A), Regulation 19 §19.416(A), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 52, Subpart E]

20. The permittee may request in writing and at least 30 days in advance, temporary emissions and/or testing that would otherwise exceed an emission rate, throughput requirement, or other limit in this permit. No such activities are authorized until the permittee receives written Department approval. Any such emissions shall be included in the facilities total emissions and reported as such. The Department may grant such a request, at its discretion under the following conditions:
 - a. Such a request does not violate a federal requirement;
 - b. Such a request is temporary in nature;
 - c. Such a request will not result in a condition of air pollution;
 - d. The request contains such information necessary for the Department to evaluate the request, including but not limited to, quantification of such emissions and the date/time such emission will occur;
 - e. Such a request will result in increased emissions less than five tons of any individual criteria pollutant, one ton of any single HAP and 2.5 tons of total HAPs; and
 - f. The permittee maintains records of the dates and results of such temporary emissions/testing.

[Regulation 18 §18.314(B), Regulation 19 §19.416(B), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 52, Subpart E]

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21. The permittee may request in writing and at least 30 days in advance, an alternative to the specified monitoring in this permit. No such alternatives are authorized until the permittee receives written Department approval. The Department may grant such a request, at its discretion under the following conditions:
 - a. The request does not violate a federal requirement;
 - b. The request provides an equivalent or greater degree of actual monitoring to the current requirements; and
 - c. Any such request, if approved, is incorporated in the next permit modification application by the permittee.

[Regulation 18 §18.314(C), Regulation 19 §19.416(C), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 52, Subpart E]

Appendix A

*40 CFR Part 60, Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels
(Including Petroleum Liquid Storage Vessels) for which construction, reconstruction, or modification
commenced after July 23, 1984*

Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

Contents

§60.110b Applicability and designation of affected facility.
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§60.114b Alternative means of emission limitation.
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§60.116b Monitoring of operations.
§60.117b Delegation of authority.

SOURCE: 52 FR 11429, Apr. 8, 1987, unless otherwise noted.

§60.110b Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m³) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

(c) [Reserved]

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to 1,589.874 m³ used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

(8) Vessels subject to subpart GGGG of 40 CFR part 63.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§60.112b through 60.117b for storage vessels that are subject to this subpart that meet the specifications in paragraphs (e)(1)(i) and (ii) of this section. When choosing to comply with 40 CFR part 65, subpart C, the monitoring requirements of §60.116b(c), (e), (f)(1), and (g) still apply. Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(i) A storage vessel with a design capacity greater than or equal to 151 m³ containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa; or

(ii) A storage vessel with a design capacity greater than 75 m³ but less than 151 m³ containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

(3) *Internal floating roof report.* If an owner or operator installs an internal floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.43. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

(4) *External floating roof report.* If an owner or operator installs an external floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.44. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 78275, Dec. 14, 2000; 68 FR 59332, Oct. 15, 2003]

§60.111b Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this subpart as follows:

Bulk gasoline plant means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the Administrator and any other person.

Condensate means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

Custody transfer means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

Fill means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

Gasoline service station means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

- (1) In accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference—see §60.17); or
- (2) As obtained from standard reference texts; or
- (3) As determined by ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17);
- (4) Any other method approved by the Administrator.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

Process tank means a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. In many process tanks, unit operations such as reactions and blending are conducted. Other process tanks, such as surge control vessels and bottoms receivers, however, may not involve unit operations.

Reid vapor pressure means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323-82 or 94 (incorporated by reference—see §60.17).

Storage vessel means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

- (1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors;
- (2) Subsurface caverns or porous rock reservoirs; or
- (3) Process tanks.

Volatile organic liquid (VOL) means any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere.

Waste means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 61756, Oct. 17, 2000; 68 FR 59333, Oct. 15, 2003]

§60.112b Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(2) An external floating roof. An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following specifications:

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in §60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in §60.113b(b)(4).

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(iii) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(3) A closed vent system and control device meeting the following specifications:

(i) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, subpart VV, §60.485(b).

(ii) The control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements (§60.18) of the General Provisions.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in §60.114b of this subpart.

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m³ which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with one of the following:

(1) A closed vent system and control device as specified in §60.112b(a)(3).

(2) A system equivalent to that described in paragraph (b)(1) as provided in §60.114b of this subpart.

(c) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia ("site").

(1) For any storage vessel that otherwise would be subject to the control technology requirements of paragraphs (a) or (b) of this section, the site shall have the option of either complying directly with the requirements of this subpart, or reducing the site-wide total criteria pollutant emissions cap (total emissions cap) in accordance with the procedures set forth in a permit issued pursuant to 40 CFR 52.2454. If the site chooses the option of reducing the total emissions cap in accordance with the procedures set forth in such permit, the requirements of such permit shall apply in lieu of the otherwise applicable requirements of this subpart for such storage vessel.

(2) For any storage vessel at the site not subject to the requirements of 40 CFR 60.112b (a) or (b), the requirements of 40 CFR 60.116b (b) and (c) and the General Provisions (subpart A of this part) shall not apply.

[52 FR 11429, Apr. 8, 1987, as amended at 62 FR 52641, Oct. 8, 1997]

§60.113b Testing and procedures.

The owner or operator of each storage vessel as specified in §60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of §60.112b.

(a) After installing the control equipment required to meet §60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(a)(3). Such a request for an extension must

document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years;
or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(b) After installing the control equipment required to meet §60.112b(a)(2) (external floating roof), the owner or operator shall:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph (b)(4) of this section.

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in (b)(4) (i) and (ii) of this section:

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm² per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm² per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(C) There are to be no holes, tears, or other openings in the seal or seal fabric.

(iii) If a failure that is detected during inspections required in paragraph (b)(1) of §60.113b(b) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) Notify the Administrator 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator the opportunity to have an observer present.

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal

fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.

(ii) For all the inspections required by paragraph (b)(6) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph (b)(6) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in §60.112b (a)(3) or (b)(2) (other than a flare) is exempt from §60.8 of the General Provisions and shall meet the following requirements.

(1) Submit for approval by the Administrator as an attachment to the notification required by §60.7(a)(1) or, if the facility is exempt from §60.7(a)(1), as an attachment to the notification required by §60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with paragraph (c)(1) of this section, unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in §60.112b (a)(3) or (b)(2) shall meet the requirements as specified in the general control device requirements, §60.18 (e) and (f).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§60.114b Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in §60.112b, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in §60.112b.

§60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in §60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of §60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with §60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(1) and §60.113b(a)(1). This report shall be an attachment to the notification required by §60.7(a)(3).

(2) Keep a record of each inspection performed as required by §60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in §60.113b(a)(2) are detected during the annual visual inspection required by §60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by §60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in §60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of §60.112b(a)(1) or §60.113b(a)(3) and list each repair made.

(b) After installing control equipment in accordance with §60.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(2) and §60.113b(b)(2), (b)(3), and (b)(4). This report shall be an attachment to the notification required by §60.7(a)(3).

(2) Within 60 days of performing the seal gap measurements required by §60.113b(b)(1), furnish the Administrator with a report that contains:

- (i) The date of measurement.
- (ii) The raw data obtained in the measurement.
- (iii) The calculations described in §60.113b (b)(2) and (b)(3).

(3) Keep a record of each gap measurement performed as required by §60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

- (i) The date of measurement.
- (ii) The raw data obtained in the measurement.
- (iii) The calculations described in §60.113b (b)(2) and (b)(3).

(4) After each seal gap measurement that detects gaps exceeding the limitations specified by §60.113b(b)(4), submit a report to the Administrator within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b)(2) of this section and the date the vessel was emptied or the repairs made and date of repair.

(c) After installing control equipment in accordance with §60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

- (1) A copy of the operating plan.
- (2) A record of the measured values of the parameters monitored in accordance with §60.113b(c)(2).

(d) After installing a closed vent system and flare to comply with §60.112b, the owner or operator shall meet the following requirements.

(1) A report containing the measurements required by §60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by §60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date.

(2) Records shall be kept of all periods of operation during which the flare pilot flame is absent.

(3) Semiannual reports of all periods recorded under §60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator.

§60.116b Monitoring of operations.

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in §60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see §60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph (e) of this section.

(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in §60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

- (i) ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17); or
- (ii) ASTM D323-82 or 94 (incorporated by reference—see §60.17); or
- (iii) As measured by an appropriate method as approved by the Administrator.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specification of §60.112b or with emissions reductions equipment as specified in 40 CFR 65.42(b)(4), (b)(5), (b)(6), or (c) is exempt from the requirements of paragraphs (c) and (d) of this section.

[52 FR 11429, Apr. 8, 1987, as amended at 65 FR 61756, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000; 68 FR 59333, Oct. 15, 2003]

§60.117b Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §§60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

Appendix B

Leak Detection and Repair Program Procedure

CYRO Industries
1500 Richard Prewitt Drive
PO Box 388
Osceola, AR 72370-0388

Reference Code: 5-6023

Leak Detection & Repair of Process Piping

Prepared By: Ed B Smith
Formal/Periodic Review/Approval By:

1.0 Purpose

The purpose of this procedure is to detect equipment leaks and initiate prompt repairs to ensure compliance with our facility air license and minimize product loss.

2.0 Scope

These sources include outdoor process piping, tanks, connectors, flanges, valves, and pump seals.

3.0 Safety

3.1 Safety equipment needed:

- a) Refer to Osceola Plant Safety Standard 5-9022 ☐ - Personal Protective Equipment (fall protection)
- b) Appropriate ladder, man lift, or other equipment to safely access potential leak areas.
- c) Refer to Osceola Plant Safety Standard 5-9009 ☐ Elevated work.

4.0 Environmental Considerations:

This procedure is associated with Legal/Regulatory Requirements related to the air permit.

The following are compliance conditions of our air permit.

- a) To conduct preventive maintenance inspections of all piping components quarterly, and
- b) To repair all leaks as soon as is reasonably possible.
- c) Maintain a log of these inspections for three years.

This procedure is meant to comply with Section 4.4 of the EPA's 40 CFR Method 21 "Preferred Method for Estimating Emissions."

Areas with automatic monitoring equipment (KP 31-41-51 add mix room, extruder rooms, FF vacuum pump rooms, and recycle areas) are exempt from this inspection requirement as long as the monitoring equipment is effective and currently calibrated. When the TLV/LEL system detects vapor in the air, the source of the vapor must be determined. When the source of the vapor is determined to be a leak, a measurement is to be taken using the photo ionization detector and recorded. If the leak is < 10,000 PPM, a workorder is to be entered to repair the leak. If the leak is > 10,000 PPM an action plan to repair the leak must be developed. Notify the SHE Coordinator whenever a leak is greater than 10,000 PPM.

The production departments are responsible for testing and recording leaks inside the building. Maintenance is responsible for the quarterly outdoor checks. All leaks discovered will be

repaired as soon as is reasonably possible.

5.0 Procedure

- 5.1 Obtain a Photo-Ionization Detector (PID). Check to be sure that the PID is calibrated according to SOP 5-6081. ☐
- 5.2 Complete the information required in the header of the inspection log.
- 5.3 Confirm the piping to be inspected contains liquid. This is especially important with piping from the truck unloading pumps to the storage tanks. Pipes not in use can not be inspected unless they are in service (follow-up survey required).
- 5.4 Determine the local ambient VOC concentration around the source by moving the probe randomly upwind and downwind at a distance of one to two meters from the source. If an interference exists with this determination due to a nearby emission or leak, the local ambient concentration may be determined at distances closer to the source, but in no case shall the distance be less than 25 centimeters. Then move the probe inlet to the surface of the source and determine the concentration. The difference between these concentrations determines whether there are no detectable emissions.
- 5.5 Inspect the piping component for leaks:
 - a) Slowly move the end of the PID tubing along each component where a leak could occur. Allow sufficient time, in consideration of the instrument response time, to ensure that leaks are detected. Moving the PID too quickly could result in a failure to identify leaking components. Response time for the MultiRAE is a few seconds, without tubing extensions attached. With 25' tubing (1/8"x1/4") extension attached, the response time is 10 to 15 seconds.
 - b) If the PID measures more than 10,000 ppm at any component, that component is considered to be leaking and a corrective action plan is required per this SOP (see Section 5.7). Readings more than 0 ppm and less than 10,000 ppm should be addressed to minimize the leakage, but are not considered to be leaking equipment per this SOP.
 - c) Visually look for wetness. Also look for evidence of drips underneath.
 - d) Listen for any leaking vapors (especially in vapor return lines).
 - e) Notice any odors. Although the odor threshold for MMA and MA is extremely low, a properly maintained system should be nearly odor free.
- 5.6 Examples of components are: Valves; connections (flanges, blanked lines, capped lines, etc.); open ends ; pump seals.

Caution: Elevated or hard to reach connections can be reached using extension tubing and an extension adjustable length pole (painters pole). Also, a pole should be used in the pipe run from the tank farm, as the manlift can not reach all necessary flanges. A pole should be used to reach all connections on the MMA and MA storage tanks in the tank farm, instead of physically walking out onto the tanks.
- 5.7 Complete the log sheet for each system inspected. If a leak is identified (>10,000 ppm), initiate a work order and include the work order number in the remarks section of the leak description sheet. Note on the work order that it must be completed as soon as reasonably possible.

- 5.8 Send a copy of the log to the SHE Coordinator. The copy must be maintained on file for 3 years.
- 5.9 Notify your supervisor and the SHE Coordinator of any components which appear to be chronic leakers. A design change may be required to fix permanently.
- 5.10 The Maintenance Department must notify the SHE Coordinator if any leak repairs can not be completed in a reasonable time period.

NOTE: If the PID readout cannot be properly calibrated, a malfunction of the analyzer is indicated and corrective actions are necessary before conducting the LDAR survey.

Quarterly Emission Check



Send a copy of this report to SHE Coordinator

Date _____

Inspector _____

Enter work order to repair leaks.

Process/Location	Type of Component	Annual Hr. of Services	# Comps. Surveyed	# Leaking (>10,000 ppmv)	# No Leak (<10,000 ppmv)	Comments
MMA Storage Tank	valves	8760	15			
	connectors	8760	45			
	open ends	8760	0			
	pump seals	8760	2			
Waste Tank/Load	valves	8760	8			
	connectors	8760	19			
	open ends	8760	1			
	pump seals	8760	1			
MMA Unloading/Load	valves	8760	20			
	connectors	8760	30			
	open ends	8760	2			
	pump seals	8760	1			
MA Unloading/Load	valves	8760	14			
	connectors	8760	26			
	open ends	8760	4			
	pump seals	8760	1			
MA Storage Tank	valves	8760	12			
	connectors	8760	45			
	open ends	8760	0			
	pump seals	8760	2			

QUARTERLY LDAR EMISSION RELEASE REPORT

Enter a work order to repair any leaks.

Inspection Quarter / Year: _____

LDAR RESULTS			Describe piping/equipment leaking	Leak concentration PPM
Category				
Valve	<input type="checkbox"/> Connection	<input type="checkbox"/>		
Open End	<input type="checkbox"/> Pump Seal	<input type="checkbox"/>		
Valve	<input type="checkbox"/> Connection	<input type="checkbox"/>		
Open End	<input type="checkbox"/> Pump Seal	<input type="checkbox"/>		
Valve	<input type="checkbox"/> Connection	<input type="checkbox"/>		
Open End	<input type="checkbox"/> Pump Seal	<input type="checkbox"/>		
Valve	<input type="checkbox"/> Connection	<input type="checkbox"/>		
Open End	<input type="checkbox"/> Pump Seal	<input type="checkbox"/>		
Valve	<input type="checkbox"/> Connection	<input type="checkbox"/>		
Open End	<input type="checkbox"/> Pump Seal	<input type="checkbox"/>		
Valve	<input type="checkbox"/> Connection	<input type="checkbox"/>		
Open End	<input type="checkbox"/> Pump Seal	<input type="checkbox"/>		
Valve	<input type="checkbox"/> Connection	<input type="checkbox"/>		
Open End	<input type="checkbox"/> Pump Seal	<input type="checkbox"/>		
Valve	<input type="checkbox"/> Connection	<input type="checkbox"/>		
Open End	<input type="checkbox"/> Pump Seal	<input type="checkbox"/>		
Valve	<input type="checkbox"/> Connection	<input type="checkbox"/>		
Open End	<input type="checkbox"/> Pump Seal	<input type="checkbox"/>		

Inspector(s) _____

CERTIFICATE OF SERVICE

I, Pamela Owen, hereby certify that a copy of this permit has been mailed by first class mail to Evonik Cyro, LLC, P.O. Box 388, Osceola, AR, 72370, on this 13th day of October, 2014.

Pamela Owen

Pamela Owen, AAIL, Air Division