west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone 304/926-0475

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.wvdep.org

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Permit No.:	R13-2438T
Plant ID No.:	053-00007
Applicant:	ICL-IP America Inc. (ICL)
Facility Name:	Gallipolis Ferry Plant
Location:	Mason County
SIC Code:	2869 - Industrial Organic Chemicals, Not Elsewhere Classified
Application Type:	Class II Administrative Update
Received Date:	May 18, 2017
Engineer Assigned:	John Legg
Fee Amount:	$1,300.00
Date Paid:	June 28, 2017
Applicant Ad Date:	May 25, 2017
Newspaper:	Point Pleasant Register
Complete-By Date:	August 28, 2017 (06/28/17 - Date Permit Fee was paid.)
UTM's:	Easting: 395.6 km Northing: 4,292.3 km Zone: 17S
Lat/Longs:	Latitude: 38.77303 N Longitude: -82.20183 W

SUMMARY

This class II administrative update gets ICL out of the Title V program by limiting/reducing the annual natural gas operating loads for Boilers B-5A and B-6:

Boiler	Maximum Annual Natural Gas Limit (MM ft3/yr)		Delta (MM ft3/yr) (Before - After)
	Before (R13-2438S)	After (R13-2438T)	
B-5A	1,067.84 @ 100% Load	568.98 @ 50% Load	-498.86
B-6	820.81 @ 100% Load	567.13 @ 75% Load	-253.68
Total	1,888.65	1136.11	-752.54

Total boiler Potentials to Emit (PTEs) are reduced by the following amounts:

NOx Emission Rate		CO Emission Rate		PM (Total) Emission Rate		SO2 Emission Rate		VOC Emission Rate	
(lb/hr)	(ton/hr)	(lb/hr)	(ton/hr)	(lb/hr)	(ton/hr)	(lb/hr)	(ton/hr)	(lb/hr)	(ton/hr)
-11.78	-90.19	+0.63	-29.78	0.05	-2.76	0.00	-0.23	+0.12	-1.60

DESCRIPTION

ICL wants to become a non-Title V source by creating a synthetic minor permit limit to lower the facility's PTE to emit NOx to less than 100 ton/yr. This update seeks to limit the operation of boilers B-5A and B-6 as follows:

- Boiler B-5A's annual operating load will be lowered from 100% to 50%.
- Boiler B-6's annual operating load will be lowered from 100% to 75%.

Each boilers will be operated as stated above, but will have the added operational flexibility to fire at 100% load during rare events when full capacity is required. Each boilers' Potential to Emit (PTE) will be based on a hourly natural gas usage rate set at full (100%) operational load/capacity and a 12-month rolling natural gas usage rate set at the reduced operating load stated above.

With regards to Boiler B-5A, NOx emissions were re-calculated using an emission factor reflective of the actual equipment installed, which includes using AP-42 emission factors for Flue Gas Re-circulation and Low NOx Burners, i.e., the NOx emission factor was reduced from 204 $lb/10^6$ scf (back calcuated) to 100 $lb/10^6$ scf (from AP-42, Table 1.4-1). The lower NOx emission factor combined with the reduction in load and combined with B-6's reduction in load will bring the PTE for the facility to below 100 ton/yr of NOx.

Table 1: Changes in NOx Emissions Resulting from Using Emission Factors Reflective of Actual Equipment Installed (Flue Gas Re-circulation and Low NOx Burners) and Boiler Load Reductions.

Boiler	MDHI (MM Btu/hr)	Maximum Natural Gas Limit		Emission Control Techniques	NOx AP-42 Emission Factors	NOx Emission Rate	
		Hourly (MM scf/hr)	Annual (MM scf/yr)		(lb/MM scf)	(lb/hr)	(ton/hr)
R13-2438S (Old) - Hourly & Annual NOx Emission Rates for Boilers B-5A & B-6 Calculated at 100 % Load							
B-5A	122	0.122 (1)	1,067.84 (2)	Uncontrolled	204 (3)	24.40	106.80 (2)
B-6	93.7	0.0937 (1)	820.81 (2)	Uncontrolled	100	9.18	40.20 (2)
					Total	33.58	147.00
R13-2438T (New) - Hourly NOx Emission Rates Calculated at 100% for Boilers B-5A and B-6; Annual NOx Emission Rates Calculated at 50% Load for B-5A and 75% Load of B-6							
B-5A	121.9	0.1312 (4) 0.0650 (5)	--- 568.98 (5)	Flue Gas Recirculation, Low NOx Burners	100	13.12 (4) ---	--- 28.45 (5)
B-6	93.7	0.0868 (4) 0.0647 (6)	--- 567.13 (6)	Uncontrolled	100	8.68 (4) ---	--- 28.36 (6)
					Total	21.80	56.81

(1) Based on 1,020 Btu/ft3 of natural gas.
(2) Based on 8,760 hr/yr.
(3) Back calculated. Not AP-42.
(4) Calculated by ICP @ 100% of maximum annual load.
(5) Calculated by ICP @ 50% of maximum annual load.
(6) Calculated by ICP @ 75% of maximum annual load.

Table 2: Changes in CO Emissions Resulting from Boiler Load Reductions.

Boiler	MDHI (MM Btu/hr)	Maximum Natural Gas Limit		Emission Control Techniques	CO AP-42 Emission Factors (lb/MM scf)	CO Emission Rate	
		Hourly (MM scf/hr)	Annual (MM scf/yr)			(lb/hr)	(ton/hr)
R13-2438S (Old) - Hourly & Annual CO Emission Rates for Boilers B-5A & B-6 Calculated at 100 % Load							
B-5A	122	0.122 (1)	1,067.84 (2)	Uncontrolled	84	10.00	43.80 (2)
B-6	93.7	0.0937(1)	820.81 (2)	Uncontrolled	84	7.68	33.70 (2)
					Total	17.68	77.50
R13-2438T (New) - Hourly CO Emission Rates Calculated at 100% for Boilers B-5A and B-6; Annual CO Emission Rates Calculated at 50% Load for B-5A and 75% Load of B-6							
B-5A	121.9	0.1312 (4) 0.0650 (5)	--- 568.98 (5)	Uncontrolled	84	11.02 (4) ---	--- 23.90 (5)
B-6	93.7	0.0868 (4) 0.0647 (6)	--- 567.13 (6)	Uncontrolled	84	7.29 (4) ---	--- 23.82 (6)
					Total	18.31	47.72

(1) Based on 1,020 Btu/ft3 of natural gas.
(2) Based on 8,760 hr/yr.
(3) Back calculated. Not AP-42.
(4) Calculated by ICP @ 100% of maximum annual load.
(5) Calculated by ICP @ 50% of maximum annual load.
(6) Calculated by ICP @ 75% of maximum annual load.

Table 3: Change in PM (Total) Emissions Resulting from Boiler Load Reductions.

Boiler	MDHI (MM Btu/hr)	Maximum Natural Gas Limit		Emission Control Techniques	PM AP-42 Emission Factors (lb/MM scf)	PM Emission Rate	
		Hourly (MM scf/hr)	Annual (MM scf/yr)			(lb/hr)	(ton/hr)
R13-2438S (Old) - Hourly & Annual PM Emission Rates for Boilers B-5A & B-6 Calculated at 100 % Load							
B-5A	122.00	0.122 (1)	1,067.84 (2)	Uncontrolled	7.6	0.91	4.00 (2)
B-6	93.70	0.0937(1)	820.81 (2)	Uncontrolled	7.6	0.70	3.08 (2)
					Total	1.61	7.08
R13-2438T (New) - Hourly PM Emission Rates Calculated at 100% for Boilers B-5A and B-6; Annual PM Emission Rates Calculated at 50% Load for B-5A and 75% Load of B-6							
B-5A	122.00	0.1312 (4) 0.0650 (5)	--- 568.98 (5)	Uncontrolled	7.6	1.00 (4) ---	--- 2.16 (5)
B-6	93.70	0.0868 (4) 0.0647 (6)	--- 567.13 (6)	Uncontrolled	7.6	0.66 (4) ---	--- 2.16 (6)
					Total	1.66	4.32

(1) Based on 1,020 Btu/ft3 of natural gas.
(2) Based on 8,760 hr/yr.
(3) Back calculated. Not AP-42.
(4) Calculated by ICP @ 100% of maximum annual load.
(5) Calculated by ICP @ 50% of maximum annual load.
(6) Calculated by ICP @ 75% of maximum annual load.

Table 4: Change in SO2 Emissions Resulting from Boiler Load Reductions.

Boiler	MDHI (MM Btu/hr)	Maximum Natural Gas Limit		Emission Control Techniques	SO2 AP-42 Emission Factors (lb/MM scf)	SO2 Emission Rate	
		Hourly (MM scf/hr)	Annual (MM scf/yr)			(lb/hr)	(ton/hr)
R13-2438S (Old) - Hourly & Annual SO2 Emission Rates for Boilers B-5A & B-6 Calculated at 100 % Load							
B-5A	122.00	0.122 (1)	1,067.84 (2)	Uncontrolled	0.6	0.07	0.32 (2)
B-6	93.70	0.0937 (1)	820.81 (2)	Uncontrolled	0.6	0.06	0.25 (2)
					Total	0.13	0.57
R13-2438T (New) - Hourly SO2 Emission Rates Calculated at 100% for Boilers B-5A and B-6; Annual SO2 Emission Rates Calculated at 50% Load for B-5A and 75% Load of B-6							
B-5A	122.00	0.1312 (4) 0.0650 (5)	--- 568.98 (5)	Uncontrolled	0.6	0.08 (4) ---	--- 0.17 (5)
B-6	93.70	0.0868 (4) 0.0647 (6)	--- 567.13 (6)	Uncontrolled	0.6	0.05 (4) ---	--- 0.17 (6)
					Total	0.13	0.34

(1) Based on 1,020 Btu/ft3 of natural gas.
(2) Based on 8,760 hr/yr.
(3) Back calculated. Not AP-42.
(4) Calculated by ICP @ 100% of maximum annual load.
(5) Calculated by ICP @ 50% of maximum annual load.
(6) Calculated by ICP @ 75% of maximum annual load.

Table 5: Change in VOC Emissions Resulting from Boiler Load Reductions.

Boiler	MDHI (MM Btu/hr)	Maximum Natural Gas Limit		Emission Control Techniques	VOC AP-42 Emission Factors	VOC Emission Rate	
		Hourly (MM scf/hr)	Annual (MM scf/yr)		(lb/MM scf)	(lb/hr)	(ton/hr)
R13-2438S (Old) - Hourly & Annual VOC Emission Rates for Boilers B-5A & B-6 Calculated at 100 % Load							
B-5A	122.00	0.122 (1)	1,067.84 (2)	Uncontrolled	5.1 (7)	0.61	2.67 (2)
B-6	93.70	0.0937 (1)	820.81 (2)	Uncontrolled	5.1 (7)	0.47	2.05 (2)
					Total	1.08	4.72
R13-2438T (New) - Hourly VOC Emission Rates Calculated at 100% for Boilers B-5A and B-6; Annual VOC Emission Rates Calculated at 50% Load for B-5A and 75% Load of B-6							
B-5A	122.00	0.1312 (4) 0.0650 (5)	--- 568.98 (5)	Uncontrolled	5.5	0.72 (4) ---	--- 1.56(5)
B-6	93.70	0.0868 (4) 0.0647 (6)	--- 567.13 (6)	Uncontrolled	5.5	0.48 (4) ---	--- 1.56 (6)
					Total	1.20	3.12

(1) Based on 1,020 Btu/ft3 of natural gas.
(2) Based on 8,760 hr/yr.
(3) Back calculated. Not AP-42.
(4) Calculated by ICP @ 100% of maximum annual load.
(5) Calculated by ICP @ 50% of maximum annual load.
(6) Calculated by ICP @ 75% of maximum annual load.
(7) Back calculated. Not AP-42.

Table 6: Calculated Emissions Resulting from Boiler Load Reductions.

Permit No.	NOx Emission Rate		CO Emission Rate		PM (Total) Emission Rate		SO2 Emission Rate	
	(lb/hr)	(ton/hr)	(lb/hr)	(ton/hr)	(lb/hr)	(ton/hr)	(lb/hr)	(ton/hr)
New (R13-2438T)	21.80	56.81	18.31	47.72	1.66	4.32	0.13	0.34
Old (R13-2438S)	33.58	147.00	17.68	77.50	1.61	7.08	0.13	0.57
Delta (New - Old)	-11.78	-90.19	+0.63	-29.78	0.05	-2.76	0.00	-0.23

Table 7: Calculated VOC Emissions Resulting from Boiler Load Reductions.

Permit No.	VOC Emission Rate	
	(lb/hr)	(ton/hr)
New (R13-2438T)	1.20	3.12
Old (R13-2438S)	1.08	4.72
Delta (New - Old)	+0.12	-1.60

CHANGES MADE TO OLD PERMIT (R13-2438S)

The changes made to the old permit (R13-2438S) by this update (R13-2438T) are shown in the compare file which is attached to this evaluation as Attachment 1.

The company and the writer's calculated emission rates differed slightly when compared to each other. The updated permit was changes based on the emission rates calculated by the company. See Tables 8 and 9 given below.

Table 8: Differences in Company and DAQ Emission Calculations Resulting from Boiler Load Reductions.

Proposed by:	NOx Emission Rate		CO Emission Rate		PM (Total) Emission Rate		SO2 Emission Rate	
	(lb/hr)	(ton/hr)	(lb/hr)	(ton/hr)	(lb/hr)	(ton/hr)	(lb/hr)	(ton/hr)
Company	21.80	56.81	18.31	47.72	1.66	4.32	0.13	0.34
DAQ	21.14	56.35	17.76	47.34	1.61	4.28	0.13	0.34
Delta (Company - DAQ)	+0.66	+0.46	+0.55	+0.38	+0.05	+0.04	0.00	0.00

Table 9: Differences in Company and DAQ VOC Emission Calculations Resulting from Boiler Load Reductions.

Proposed By:	VOC Emission Rate	
	(lb/hr)	(ton/hr)
Company	1.20	3.12
DAQ	1.17	3.10
Delta (Company - DAQ)	+0.03	+0.02

John Legg

Date 9/7/17

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO) FROM NATURAL GAS COMBUSTION[a]

Combustor Type (MMBtu/hr Heat Input) [SCC]	NO_x[b]		CO	
	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
Large Wall-Fired Boilers (>100) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS)[c]	280	A	84	B
Uncontrolled (Post-NSPS)[c]	190	A	84	B
Controlled - Low NO_x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO_x burners	50	D	84	B
Controlled - Low NO_x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [No SCC]				
Uncontrolled	94	B	40	B

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

[b] Expressed as NO_2. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

[c] NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.

TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION[a]

Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
CO_2[b]	120,000	A
Lead	0.0005	D
N_2O (Uncontrolled)	2.2	E
N_2O (Controlled-low-NO_X burner)	0.64	E
PM (Total)[c]	7.6	D
PM (Condensable)[c]	5.7	D
PM (Filterable)[c]	1.9	B
SO_2[d]	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $lb/10^6$ scf to 1b/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

[b] Based on approximately 100% conversion of fuel carbon to CO_2. $CO_2[lb/10^6$ scf] = (3.67) (CON) (C)(D), where CON = fractional conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.76), and D = density of fuel, $4.2x10^4$ $lb/10^6$ scf.

[c] All PM (total, condensible, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM_{10}, $PM_{2.5}$ or PM_1 emissions. Total PM is the sum of the filterable PM and condensible PM. Condensible PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

[d] Based on 100% conversion of fuel sulfur to SO_2. Assumes sulfur content is natural gas of 2,000 grains/10^6 scf. The SO_2 emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO_2 emission factor by the ratio of the site-specific sulfur content (grains/10^6 scf) to 2,000 grains/10^6 scf.

Attachment 1

Compare File

Comparing R13-2438T to R13-2438S

ICL-IP America Inc.

Gallipolis Ferry Plant

Mason County, WV

WordPerfect Document Compare Summary

Original document: Q:\AIR_QUALITY\J_LEGG\ICL-IP America, Inc\R13-2438S\053-00007_PERM_13-2438S.wpd
Revised document: Q:\AIR_QUALITY\J_LEGG\ICL-IP America, Inc\053-00007_PERM_13-2438T.wpd
Deletions are shown with the following attributes and color:
~~Strikeout~~, Blue RGB(0,0,255).
Deleted text is shown as full text.
Insertions are shown with the following attributes and color:
Double Underline, Redline, Red RGB(255,0,0).

The document was marked with 55 Deletions, 63 Insertions, 0 Moves.

West Virginia Department of Environmental Protection
Division of Air Quality

Jim Justice
Governor

~~Randy C. Huffman~~Austin Caperton
Cabinet Secretary

Permit for Class ~~I~~II Administrative Update

R13-2438S~~T~~

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45 C.S.R. 13 — Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the facility listed below is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:
ICL-IP
Gallipolis Ferry
053-00007

William F. Durham
Director

Issued: ~~March 16~~September 7, 201~~6~~7

This permit will supercede and replace Permit R13-2438~~O~~S.

Facility Location:	Gallipolis Ferry, Mason County, West Virginia
Mailing Address:	PO Box 1721, Gallipolis Ferry, WV
Facility Description:	Specialty Chemical Manufacturing Facility
SIC Codes:	2899 – Chemicals and Allied Products – Chemical Preparations, NEC 2869 – Chemicals and Allied Products – Industrial Organic Chemicals, NEC
UTM Coordinates:	396.50 km Easting • 4,292.30 km Northing • Zone 17
Permit Type:	Class ~~I~~II Administrative Update
Description:	Remove permit sections 4.1.18.10 and 4.2.11. These sections incorrectly required that a back pressure monitor be installed for the 237 hp diesel emergency firewater pump engine (Emission Unit ID: P-434). Correct two (2) minor typographical errors.ICL wants to become a non-Title V source by creating a synthetic minor permit limit to lower the facility's PTE to emit NOx to less than 100 ton/yr. This update seeks to limit the operation of boilers B-5A and B-6 as follows: • Boiler B-5A's annual operating load will be lowered from 100% to 50%. • Boiler B-6's annual operating load will be lowered from 100% to 75%. Each boilers will be operated as stated above, but will have the added operational flexibility to fire at 100% load during rare events when full capacity is required. Each boilers' Potential to Emit (PTE) will be based on a hourly natural gas usage rate set at full (100%) operational load/capacity and a 12-month rolling natural gas usage rate set at the reduced operating load stated above. With regards to Boiler B-5A, NOx emissions will be re-calculated using an emission factor reflective of the actual equipment installed, which includes using AP-42 emission factors for Flue Gas Re-circulation and Low NOx Burners, i.e., the NOx emission factor was reduced from 204 lb/10^6 scf to 100 lb/10^6 scf (from AP-42, Table 1.4-1). The lower NOx emission factor combined with the reduction in load and combined with B-6's reduction in load will bring the PTE for the facility to below 100 ton/yr of NOx.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

The source is not subject to 45CSR30. ~~Changes authorized by this permit must also be incorporated into the facility's Title V operating permit. Commencement of the operations authorized by this permit shall be determined by the appropriate timing limitations associated with Title V permit revisions per 45CSR30.~~

1.0 Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
WWTU	P-662 (Various Fugitive)	Wastewater Treatment Unit	1987	600 gpm	Chemical Digester
Combustion Sources					
C-120	H-C-120	Air Compressor	1987	128 hp	None
C-209	E-C-209	Diesel Engine	1996	78 hp	None
OM-183	D-O-183	Diesel Engine	1978	375 hp	None
OM-184	D-O-184	Diesel Engine	1978	375 hp	None
OM-231	H-O-231	Diesel Engine	1988	368.8 hp	None
OM-296	P-O-296	Diesel Engine	1988	368.8 hp	None
P-434	H-P-434	Diesel Engine Emergency Firewater Pump	2015	237 hp	None
B-6	H-B-6	Boiler	1977	93.7 ~~mmBtu/hr~~MM Btu/hr (3)	None
B-5A	H-B-5A	Boiler	1998	122 ~~mmBtu/hr~~MMBtu/hr (4)	~~None~~Flue Gas Re-circulation & Low NOx Burners (5)
F-5	C-F-5	Heater	1960	8.2 ~~mmBtu/hr~~MM Btu/hr	None
F-6	C-F-6	Heater	1969	6.4 ~~mmBtu/hr~~MM Btu/hr	None
F-7	C-F-7	Heater	1976	0.75 ~~mmBtu/hr~~MM Btu/hr	None
F-8	C-F-8	Heater	1976	0.75 ~~mmBtu/hr~~MM Btu/hr	None

(1) Continuous and Naturals Sub-Units are part of the Tri Aryl Production and Bis Phosphate Units. The tanks listed under the Tri Aryl Production and Bis Phosphate Units are common to both the Continuous and Naturals Sub-Units.

(2) This Emission Unit is the same Emission Unit listed in the Bis Phosphates Unit.

(3) Limited annually to 615,609 MM Btu/yr which is 75% of full load/capacity.
(4) Limited annually to 533,922 MM Btu/yr which is 50% of full load/capacity.
(5) Controls estimated to cut NOx emission by approximately 44% or 90.2 ton/yr.

2.3. Authority

This permit is issued in accordance with West Virginia Air Pollution Control Law W.Va. Code §§22-5-1 et seq. and the following Legislative Rules promulgated thereunder:

2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits and Procedures for Evaluation*

2.4. Term and Renewal

2.4.1. This permit supercedes and replaces previously issued Permit R13-2438~~R~~S. This permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any applicable legislative rule.

2.5. Duty to Comply

2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application R13-2438 through R13-2438~~S~~T and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to;
[45CSR§§13-5.11 and 13-10.3]

2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;

2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;

2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses and/or approvals from other agencies; i.e., local, state and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

2.7. Duty to Supplement and Correct Information

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[**45CSR§4.** ***State-Enforceable only.***]

3.5. Reporting Requirements

3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.

3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class or by private carrier with postage prepaid to the address(es), or submitted in electronic format y email as set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

~~If to the~~ DAQ:

Director
WVDEP
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304-2345

DAQ Compliance and Enforcement[1]:
DEPAirQualityReports@wv.gov

~~If to the USEPA~~US EPA:

Associate Director
Office of Air Enforcement and Compliance Assistance
(3AP20)
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

[1]For all self-monitoring reports (MACT, GACT, NSPS, etc.), stack tests and protocols, Notice of Compliance Status Reports, Initial Notifications, etc.

3.5.4. **Operating Fee.**

3.5.4.1. In accordance with 45CSR30 – Operating Permit Program, the permittee shall submit a Certified Emissions Statement (CES) and pay fees on an annual basis in accordance with the submittal requirements of the Division of Air Quality. A receipt for the appropriate fee shall be maintained on the premises for which the receipt has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

3.5.6. **Semi-annual monitoring reports.** The permittee shall submit reports of any required monitoring on or before September 15 for the reporting period January 1 to June 30 and on or before March 15 for the reporting period July 1 to December 31. All instances of deviation from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official.

HCl	0.002
Total HAPs	0.002

4.1.16. Oil Systems Limitations and Standards

4.1.16.1 Maximum annual aggregate emissions from all "Oil Systems" emission points identified under Section 1.0 of this permit shall not exceed the following:

Table 4.1.16.1: Other Logistics Annual Aggregate Emission Limits

Pollutant	tons/year
PM	0.03
VOCs	0.01

4.1.17. Wastewater Treatment Limitations and Standards

4.1.17.1 Maximum annual aggregate emissions from all "Wastewater Treatment" emission points identified under Section 1.0 of this permit shall not exceed the following:

Table 4.1.17.1: Wastewater Treatment Annual Aggregate Emission Limits(1)

Pollutant	tons/year
VOCs	0.41
Propylene Oxide	0.01
Propylene Dichloride	0.01
Ethylene Oxide	0.005
Ethylene Dichloride	0.39
Total HAPs	0.41

(1) Emissions calculated using Emitted Fractions from Table 34 of 40CFR63, Subpart G.

4.1.18. Combustion Sources Limitations and Standards

4.1.18.1 The following table provides a list of natural gas combustion units authorized to operate at the subject facility by this permit. The units shall not exceed the specified Maximum Design Heat Input (MDHI), shall utilize the specified control device, and shall combust only natural gas within the specified fuel consumption limits.

Table 4.1.18.1: Natural Gas Combustion Unit Specifications

ID No.	MDHI (MMBtu/Hr)	Control Device(s)	Maximum Annual Natural Gas Usage Limit (MM ft³)
Boiler B-5A	121.90	Flue Gas Re-circulation & Low NOx Burners	568.98 (1)
Boiler B-6	93.70	None	~~820.81Boiler B-5A122.00None1,067~~567.~~84~~ 13 (2)
Heater F-5	8.20	None	71.83
Heater F-6	6.40	None	56.06
Heater F-7	0.75	None	6.57

Heater F-8	0.75	None	6.57

(1) Based on operating annually at 50% of full capacity; 1ft3 of natural gas equals 1,020 Btu.
(2) Based on operating annually at 75% of full capacity; 1 ft3 of natural gas equals 1,020 Btu.

4.1.18.2 The following table provides a list of diesel engines authorized to operate at the subject facility by this permit. The units shall not exceed the specified maximum brake-horsepower, shall utilize the specified control device, and shall not exceed the specified maximum hours of operation.

Table 4.1.18.2: Diesel Engine Specifications

ID No.	Brake Horsepower	Control Device(s)	Maximum Annual Hours of Operation
C-120	128.00	None	500
C-209	78.00	None	500
OM-183	350.00	None	500
OM-184	350.00	None	500
OM-231	368.80	None	500
OM-296	368.80	None	500
P-434	237.00	None	500

4.1.18.3 Emissions resulting from the operation of the sources identified under 4.1.18.1 and 4.1.18.2 shall not exceed those limits as specified in the following table:

Table 4.1.18.3: Combustion Unit Emission Limits

ID No.	CO		NO_X		PM(1)		SO_2		VOC	
	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
Boiler B-65A	711.68 02	3323.70 90 (3)	13.12	28.45 (3)	1.00	92.1840. 2016 (3)	0.703.08	0.0617 (3)	0.250.47 2.0572	1.56 (3)
Boiler B-5A6	107.00 29	4323.80 82 (4)	8.68	228.36 (4.40106 .80)	0.9166	2.16 (4.00)	0.075	0.3217 (4)	0.612.67 48	1.56 (4)
Heater F-5	0.67	2.95	0.80	3.52	0.06	0.27	0.01	0.02	0.04	0.18
Heater F-6	0.52	2.30	0.63	2.75	0.05	0.21	0.00	0.02	0.03	0.14
Heater F-7	0.06	0.27	0.07	0.32	0.01	0.03	0.01	0.01	0.01	0.02
Heater F-8	0.06	0.27	0.07	0.32	0.01	0.03	0.01	0.01	0.01	0.02
C-120	1.74	0.43	8.06	2.00	0.57	0.14	0.53	0.13	0.66	0.16
C-209	0.40	0.10	1.85	0.46	0.13	0.03	0.12	0.03	0.15	0.04
OM-183	2.34	0.58	10.90	2.71	0.77	0.19	0.72	0.18	0.88	0.22
OM-184	2.34	0.58	10.90	2.71	0.77	0.19	0.72	0.18	0.88	0.22
OM-231	2.47	0.62	11.50	2.87	0.81	0.20	0.76	0.19	0.93	0.23
OM-296	2.47	0.62	11.50	2.87	0.81	0.20	0.76	0.19	0.93	0.23
P-434 (2)	0.47	0.12	1.48	0.37	0.05	0.01	0.49	0.12	0.05	0.01

(1) All particulate matter emissions are assumed to be PM_{10} or less.
(2) Emissions certified by firewater pump engine manufacturer (see Section 4.1.18.7 below).
(3) Based on operating annually at 50% of full capacity; 1 ft3 of natural gas equals 1,020 Btu.
(4) Based on operating annually at 75% of full capacity; 1 ft3 of natural gas equals 1,020 Btu.

Heater F-8	0.75	None	6.57

(1) Based on operating annually at 50% of full capacity; 1ft3 of natural gas equals 1,020 Btu.
(2) Based on operating annually at 75% of full capacity; 1 ft3 of natural gas equals 1,020 Btu.

4.1.18.2 The following table provides a list of diesel engines authorized to operate at the subject facility by this permit. The units shall not exceed the specified maximum brake-horsepower, shall utilize the specified control device, and shall not exceed the specified maximum hours of operation.

Table 4.1.18.2: Diesel Engine Specifications

ID No.	Brake Horsepower	Control Device(s)	Maximum Annual Hours of Operation
C-120	128.00	None	500
C-209	78.00	None	500
OM-183	350.00	None	500
OM-184	350.00	None	500
OM-231	368.80	None	500
OM-296	368.80	None	500
P-434	237.00	None	500

4.1.18.3 Emissions resulting from the operation of the sources identified under 4.1.18.1 and 4.1.18.2 shall not exceed those limits as specified in the following table:

Table 4.1.18.3: Combustion Unit Emission Limits

ID No.	CO		NO_x		PM(1)		SO_2		VOC	
	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
Boiler B-65A	711.68 02	3323.70 90 (3)	13.12	28.45 (3)	1.00	92.1840. 2016 (3)	0.703.08	0.0617 (3)	0.250.47 2.0572	1.56 (3)
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Heater F-5	0.67	2.95	0.80	3.52	0.06	0.27	0.01	0.02	0.04	0.18
Heater F-6	0.52	2.30	0.63	2.75	0.05	0.21	0.00	0.02	0.03	0.14
Heater F-7	0.06	0.27	0.07	0.32	0.01	0.03	0.01	0.01	0.01	0.02
Heater F-8	0.06	0.27	0.07	0.32	0.01	0.03	0.01	0.01	0.01	0.02
C-120	1.74	0.43	8.06	2.00	0.57	0.14	0.53	0.13	0.66	0.16
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OM-183	2.34	0.58	10.90	2.71	0.77	0.19	0.72	0.18	0.88	0.22
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OM-231	2.47	0.62	11.50	2.87	0.81	0.20	0.76	0.19	0.93	0.23
OM-296	2.47	0.62	11.50	2.87	0.81	0.20	0.76	0.19	0.93	0.23
P-434 (2)	0.47	0.12	1.48	0.37	0.05	0.01	0.49	0.12	0.05	0.01

(1) All particulate matter emissions are assumed to be PM_{10} or less.
(2) Emissions certified by firewater pump engine manufacturer (see Section 4.1.18.7 below).
(3) Based on operating annually at 50% of full capacity; 1 ft3 of natural gas equals 1,020 Btu.
(4) Based on operating annually at 75% of full capacity; 1 ft3 of natural gas equals 1,020 Btu.