West Virginia Department of Environmental Protection
Division of Air Quality

Joe Manchin, III
Governor

Randy C. Huffman
Cabinet Secretary

Permit to Construct

R13-2791

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, 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:

TransGas Development Systems, LLC
TransGas Coal to Gasoline Plant
059-00102

John A. Benedict
Director

Issued: ***February 25, 2010*** • *Effective:* ***February 25, 2010***

Facility Location:	Wharncliffe, Mingo County, West Virginia
Mailing Address:	630 First Avenue, Suite 30G New York, New York 10016-3799
Facility Description:	Coal to Gasoline Plant
SIC Codes:	2999
UTM Coordinates:	417.917 km Easting • 4,162.952 km Northing • Zone 17
Permit Type:	Construction
Description:	Construction of an approximately 18,000 barrels per day coal to gasoline plant. Facility will utilize methanol-to-gas (MTG) process.

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 subject to 45CSR30. The Title V (45CSR30) application will be due within twelve (12) months after the date of the commencement of the operation or activity (activities) authorized by this permit, unless granted a deferral or exemption by the Director from such filing deadline pursuant to a request from the permittee.

Unless otherwise stated, WVDEP DAQ has not determined whether the permittee is subject to an area source air toxics standard requiring Generally Achievable Control Technology (GACT) promulgated after January 1, 2007 pursuant to 40 CFR 63, including the area source air toxics provisions of 40 CFR 63, Subpart BBBBBB.

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Table 1.0: Emission Units[(1)]

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
Material Handling, Sizing, Storage, & Preparation					
BC1	TPC3 TPC4 TPC5	Primary Crusher Feed Belt Conveyer	New	346 TPH	PE
BC2	TPC6 TPC7	Stockpile Feed Belt Conveyer	New	346 TPH	PE
BC3	TPC7 TPC8	Stockpile Transfer Belt Conveyer	New	346 TPH	PE
BC4	TPC8 TPC9	Stockpile Transfer Belt Conveyer	New	346 TPH	PE
BC5	TPC10 TPC11	Stockpile Reclaim Belt Conveyer	New	346 TPH	PE
BC6	TPC11 TPC12	Plant Feed Belt Conveyer	New	346 TPH	PE
BC7	TPA1	Slag Conveyer	New	69 TPH	PE
BC8	TPA2 TPA3	Slag Reclaim Belt Conveyer	New	100 TPH	PE
BC9	TPA3 TPA4	Slag Bin Feed Conveyer	New	100 TPH	PE
BC10	TPFC1	Filter Cake Transport Belt Conveyer	New	100 TPH	PE
BC11	TPL2 TPL3	Reclaim Belt Conveyer	New	100 TPH	PE
BC12	TPL4 TPL5	Plant Feed Belt Conveyer	New	100 TPH	PE
CR1	CR1	Coal Crusher	New	346 TPH	BHCS5
CR7	CR7	Limestone Crusher	New	100 TPH	FE
FH1	VF1	Coal Feed Bunkers	New	50 Tons	VF1
FH3	VF3	Coal Feed Bunkers	New	50 Tons	VF3
FH5	VF5	Coal Feed Bunkers	New	50 Tons	VF5
FH7	VF7	Coal Feed Bunkers	New	50 Tons	VF7
FH9	VF9	Coal Feed Bunkers	New	50 Tons	VF9
FH2	VF2	Limestone Feed Bunkers	New	50 Tons	VF2

Table 1.0: Emission Units[(1)]

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
FH4	VF4	Limestone Feed Bunkers	New	50 Tons	VF4
FH6	VF6	Limestone Feed Bunkers	New	50 Tons	VF6
FH8	VF8	Limestone Feed Bunkers	New	50 Tons	VF8
FH10	VF10	Limestone Feed Bunkers	New	50 Tons	VF10
B1	TPC1 TPC3	Truck Dump Bin 1	New	50 Tons	PE
B2	TPC2 TPC4	Truck Dump Bin 2	New	50 Tons	PE
OS1	BHCS1 - BHCS4	Coal Stockpile	New	40,000 Tons	BHCS1 - BHCS4
OS2	BHCL1 BHCL2	Limestone Stockpile	New	20,000 Tons	BHCL1 BHCL2
FCS	TPFC1 TPFC2	Filter Cake Storage/Loadout Silo	New	200 Tons	FE
SSP	TPA1 TPA2	Slag Stockpile	New	200,000 Tons	FE
SB	TPA4 TPA5	Slag Truck Loadout Bin	New	100 Tons	FE
Gasification & Gas Cleanup					
CR2	A1/1	Roller Mill & Heater	New	360 TPH	BH1
CR3	A1/2	Roller Mill & Heater	New	360 TPH	BH2
CR4	A1/3	Roller Mill & Heater	New	360 TPH	BH3
CR5	A1/4	Roller Mill & Heater	New	360 TPH	BH4
CR6	A1/5	Roller Mill & Heater	New	360 TPH	BH5
SUV1	A2/1	Start Up Vessel 1	New	36 TPH	VF12
SUV2	A2/2	Start Up Vessel 2	New	36 TPH	VF14
LH1	B1/1	Lock Hopper 1	New	36 TPH	BH6
LH2	B1/1	Lock Hopper 2	New	36 TPH	BH7
LH3	B1/1	Lock Hopper 3	New	36 TPH	BH8
LH4	B1/1	Lock Hopper 4	New	36 TPH	BH9
LH5	B1/1	Lock Hopper 5	New	36 TPH	BH10

Table 1.0: Emission Units[1]

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
LH6	B1/1	Lock Hopper 6	New	36 TPH	BH11
FDB1	B1/1	Feed Dust Bunker 1	New	180 TPH	BH12
LH7	B1/2	Lock Hopper 7	New	36 TPH	BH13
LH8	B1/2	Lock Hopper 8	New	36 TPH	BH14
LH9	B1/2	Lock Hopper 9	New	36 TPH	BH15
LH10	B1/2	Lock Hopper 10	New	36 TPH	BH16
LH11	B1/2	Lock Hopper 11	New	36 TPH	BH17
LH12	B1/2	Lock Hopper 12	New	36 TPH	BH18
FDB2	B1/2	Feed Dust Bunker 2	New	180 TPH	BH19
PDQ-1	B2/1	PDQ Gasifier 1	New	180 TPH	Flare[2]
PDQ-2	B2/2	PDQ Gasifier 2	New	180 TPH	Flare[2]
COS	n/a	CO Shift	New	n/a	n/a
SWS	n/a	Sour Water Stripping	New	n/a	n/a
AGR	C2	Acid Gas Removal System	New	n/a	Flare[2]
MA	n/a	Mercury Removal System	New	n/a	n/a
COP	C1	CO_2 Purification System	New	n/a	None
SRU	n/a	Sulfur Recovery Unit	New	3 TPH Sulfur	n/a
PSA	n/a	Pressure Swing Absorber	New	n/a	n/a
Methanol and Methanol-to-Gasoline Plant					
MP	Fugitive	Methanol Plant	New	263 TPH	None
SURGH	E1	Start-Up/Regeneration Gas Heater	New	30 mmBtu/Hr	n/a
SURH	E2	Start-Up/Reactivation Heater	New	120 mmBtu/Hr	n/a
RCH	E3	HGT Reactor Charge Heater	New	4 mmBtu/Hr	n/a
RGSI	n/a	Process Waste Regeneration Gas Silencer	New	n/a	n/a
MtG	E5	Methanol-to-Gasoline Plant	New	32,172 gal/hr (gasoline) 12 TPH LPG	Flare[3]
Miscellaneous Sources					
CT	CT	Cooling Tower	New	308,167 GPM	DE

Table 1.0: Emission Units[1]

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
TK1	TK1	Gasoline Storage Tank 1	New	2,000,000 Gallons	n/a
TK2	TK2	Gasoline Storage Tank 2	New	2,000,000 Gallons	n/a
TK3	TK3	Gasoline Storage Tank 3	New	2,000,000 Gallons	n/a
TK4	TK4	LPG Storage Tank 1	New	400 Tons	n/a
TK5	TK5	LPG Storage Tank 2	New	400 Tons	n/a
TK6	TK6	Methanol Storage Tank	New	2,000,000 Gallons	n/a
TK7	TK7	Liquid Sulfur Storage Tank	New	70,000 Gallons	n/a
LR1	LR1	Loading Rack 1	New	2,000 GPM	VR/VB
LR2	LR2	Loading Rack 2	New	2,000 GPM	VR/VB
F	F	Start-Up Steam Boiler	New	81.84 mmBtu/Hr	n/a
G	G	Flare Pilot Light	New	0.60 mmBtu/Hr	n/a

(1) BH = Baghouse; TPH = Tons Per Hour; DE = Drift Eliminator; GPM = Gallons Per Minute; LPG = Liquid Petroleum Gas (Propane); mmBtu/HR = Million British Thermal Units Per Hour; PE = Partial Enclosure; FE = Full Enclosure; N = None; VF = Particulate Matter Filter; VR/VB = Vapor Recovery/Vapor Balance; n/a = not applicable.

(2) Gasifiers/AGR vent to flare only during times of startup/shutdown. During steady-state operations, no direct emissions.

(3) MTG Plant only vents to flare during times when front half of plant is not operating.

2.0. General Conditions

2.1. Definitions

2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.

2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.

2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45 CSR § 30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

2.2. Acronyms

CAAA	Clean Air Act Amendments	**NSPS**	New Source Performance Standards
CBI	Confidential Business Information	**PM**	Particulate Matter
CEM	Continuous Emission Monitor	**$PM_{2.5}$**	Particulate Matter less than 2.5µm in diameter
CES	Certified Emission Statement	**PM_{10}**	Particulate Matter less than 10µm in diameter
C.F.R. *or* CFR	Code of Federal Regulations	**Ppb**	Pounds per Batch
CO	Carbon Monoxide	**pph**	Pounds per Hour
C.S.R. *or* CSR	Codes of State Rules	**ppm**	Parts per Million
DAQ	Division of Air Quality	**Ppmv or ppmv**	Parts per million by volume
DEP	Department of Environmental Protection	**PSD**	Prevention of Significant Deterioration
dscm	Dry Standard Cubic Meter	**psi**	Pounds per Square Inch
FOIA	Freedom of Information Act	**SIC**	Standard Industrial Classification
HAP	Hazardous Air Pollutant	**SIP**	State Implementation Plan
HON	Hazardous Organic NESHAP	**SO_2**	Sulfur Dioxide
HP	Horsepower	**TAP**	Toxic Air Pollutant
lbs/hr	Pounds per Hour	**TPY**	Tons per Year
LDAR	Leak Detection and Repair	**TRS**	Total Reduced Sulfur
M	Thousand	**TSP**	Total Suspended Particulate
MACT	Maximum Achievable Control Technology	**USEPA**	United States Environmental Protection Agency
MDHI	Maximum Design Heat Input	**UTM**	Universal Transverse Mercator
MM	Million	**VEE**	Visual Emissions Evaluation
MMBtu/hr *or* mmbtu/hr	Million British Thermal Units per Hour	**VOC**	Volatile Organic Compounds
MMCF/hr *or* mmcf/hr	Million Cubic Feet per Hour	**VOL**	Volatile Organic Liquids
NA	Not Applicable		
NAAQS	National Ambient Air Quality Standards		
NESHAPS	National Emissions Standards for Hazardous Air Pollutants		
NO_x	Nitrogen Oxides		

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, Temporary Permits, General Permits and Procedures for Evaluation;*

2.4. Term and Renewal

2.4.1. This permit supercedes and replaces previously issued Permit R13-2791. 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 R13-2791 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.

2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-4]

2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-5.4.]

2.10. Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.
[45CSR§13-5.1]

2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

2.12. Emergency

2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency.

An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are not met.

2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

b. The permitted facility was at the time being properly operated;

c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and,

d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emission, and corrective actions taken.

2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

2.12.5. The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

2.13. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

2.14. Suspension of Activities

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

2.15. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege.

2.16. Severability

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

2.17. Transferability

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. **[45CSR§13-10.1]**

2.18. Notification Requirements

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

2.19. Credible Evidence

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

3.0. Facility-Wide Requirements

3.1. Limitations and Standards

3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]

3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]

3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.
[40CFR§61.145(b) and 45CSR§15]

3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1 State-Enforceable only.]

3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.
[45CSR§13-10.5.]

3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45 C.S.R. 11.
[45CSR§11-5.2.]

3.2. Monitoring Requirements

[Reserved]

3.3. Testing Requirements

3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit

and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4 or 45CSR§13-5.4 as applicable.

b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4 or 45CSR§13-5.4 as applicable.

c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.
[WV Code § 22-5-4(a)(15)]

3.4. Recordkeeping Requirements

3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.

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 with postage prepaid to the address(es) 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

If to the USEPA:

Associate Director
Office of Enforcement and Permits Review
(3AP12)
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

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.

3.5.4.2. In accordance with 45CSR30 – Operating Permit Program, enclosed with this permit is a Certified Emissions Statement (CES) Invoice, from the date of initial startup through the following June 30. Said invoice and the appropriate fee shall be submitted to this office no later than 30 days prior to the date of initial startup. For any startup date other than July 1, the permittee shall pay a fee or prorated fee in accordance with the Section 4.5 of 45CSR22. A copy of this schedule may be found attached to the Certified Emissions Statement (CES) Invoice.

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.

4.0. Source-Specific Requirements

4.1. General Limitations and Standards

4.1.1. In accordance with the information filed in Permit Application R13-2791, the equipment identified under Section 1.0 of this permit shall be installed, maintained, and operated so as to minimize any fugitive escape of pollutants and the equipment/processes shall use the specified control devices.

4.1.2. Maximum hourly and annual emissions shall not exceed those limits as specified in Appendix A. Compliance with the emission limits shall be based on the applicable requirements as given in this permit. Only those emission points or sources of fugitive emissions as identified in Appendix A, with the exception of any *de minimis* sources as identified under Table 45-13B of 45CSR13, are authorized at the permitted facility.

4.1.3. The emission of compounds defined as Hazardous Air Pollutants (HAPs) under Section 112(b) of the Clean Air Act from the subject facility shall be in accordance with the following:

a. Maximum hourly and annual emissions of listed HAPs from applicable emission sources/points shall not exceed those mass emission limits as specified in Appendix A.

b. Facility-wide emission of mercury shall not exceed 20 pounds per rolling twelve month period.

c. No reasonably detectable emissions of antimony, arsenic, beryllium, chromium, cobalt, lead, manganese, nickel, and selenium and their compounds are permitted from the facility. This includes any emissions resulting from the handling of slag/flyash, the emptying of the quench tank, and gases escaping when slag is removed from the gasifiers.

4.1.4. Material Handling

4.14.1. The maximum design capacity of each material handling source listed under Table 1.0, identified as Belt Conveyers BC1 through BC 12 and Crushers CR1 and CR7, shall not exceed the specified values.

4.1.4.2. The maximum design storage capacity of each material handling storage source listed under Table 1.0, identified as the Coal and Limestone Feed Bunkers FH1 through FH10, Truck Dump Bins B1 and B2 Filter Cake Storage/Loadout Silo FCS, and the Slag Truck Loadout Bin SB shall not exceed the specified values.

4.1.4.3. The permittee shall not exceed the specified maximum annual throughputs of material trucked into or out of the facility as listed the following table:

Table 4.1.4.3.: Maximum Annual Throughputs

Parameter	Limit	Units
Coal Into Facility	3,030,960	tons/year
Limestone Into Facility	166,440	tons/year
Ash/Filter Cake Out of Facility	665,760	tons/year
Sulfur, LPG, Gasoline, Miscellaneous Out of Facility	226,271	tons/year

4.1.4.4. The operation of storage piles shall be in accordance with the following:

a. The permittee is authorized to operate one coal storage pile at the facility (identified as OS1) according to the following requirements:

(1) The active storage pile area for OS1 shall not exceed 196,020 square feet nor store greater than 40,000 tons at one time.

(2) Coal shall be enclosed in a building that is vented through a maximum of four baghouses. Each baghouse shall be installed, operated, and maintained so as to not exceed a maximum stack emission concentration of 5 mg/m^3.

b. The permittee is authorized to operate one limestone storage pile at the facility (identified as OS2) according to the following requirements:

(1) The active storage pile area for OS2 shall not exceed 87,120 square feet nor store greater than 20,000 tons at one time.

(2) Limestone shall be enclosed in a building that is vented through a maximum of two baghouses. Each baghouse shall be installed, operated, and maintained so as to not exceed a maximum stack emission concentration of 5 mg/m^3.

c. The permittee is authorized to operate one slag storage pile at the facility identified as SSP. The slag storage pile shall be fully enclosed and the slag stored in this pile shall not exceed 200,000 tons.

d. On all storage piles, the permittee shall manage on-pile activity so as to minimize the release of emissions.

e. For each storage pile enclosed in a building, the permittee shall meet the following requirements:

(1) With the exception of the building entrance, the permittee shall keep all building exterior and interior openings closed except during times of emergencies.

(2) Each building entrance shall be kept closed except during times of material delivery.

(3) The ventilation systems used in the coal and limestone storage buildings shall be designed to effectively exhaust the particulate-laden air through the baghouses prior to release to the atmosphere.

(4) Each building shall be reasonably maintained and any significant holes shall be repaired immediately.

f. The reclamation of material from all storage piles pile shall be by accomplished be underpile loadout only.

4.1.4.5. The transfer points shall use the specified control devices as listed in the following table:

Table 4.1.4.5.: Transfer Point Control Devices

Source ID No.	Source Description	Control Device
Coal Transfer Points		
TPC1	Coal Truck Unloading to Coal Bin B1	PE
TPC2	Coal Truck Unloading to Coal Bin B2	PE
TPC3	Coal Bin B1 to Coal Crusher Feed Belt BC1	FE
TPC4	Coal Bin B2 to Coal Crusher Feed Belt BC1	FE
TPC5	Coal Crusher Feed Belt BC1 to Coal Crusher CR1	FE
TPC6	Coal Crusher CR1 to Stockpile Feed Belt BC2	FE
TPC7	Stockpile Feed Belt BC2 to Coal Stockpile OS1 or Stockpile Feed Belt BC3	PE
TPC8	Stockpile Feed Belt BC3 to Coal Stockpile OS1 or Stockpile Feed Belt BC4	PE
TPC9	Stockpile Feed Belt BC4 to Coal Stockpile OS1	PE
TPC10	Coal Stockpile OS1 to Underpile Reclaim Belt BC5	FE
TPC11	Underpile Reclaim Belt BC5 to Plant Coal Feed Belt BC6	PE
TPC12	Plant Feed Belt BC6 to Plant Coal Bunkers	FE
Limestone Transfer Points		
TPL1	Limestone Truck Unloading to Limestone Pile OS2	N
TPL2	Limestone Stockpile OS2 to Underpile Reclaim Belt BC11	FE
TPL3	Underpile Reclaim Belt BC11 to Limestone Crusher CR7	FE
TPL4	Limestone Crusher CR7 to Plant Limestone Feed Belt BC12	FE
TPL5	Plant Limestone Feed Belt BC12 to Plant Limestone Bunkers	FE
Slag/Filter Cake Transfer Points		
TPA1	Plant Slag Belt BC7 to Slag Stockpile SSP	FE
TPA2	Slag Stockpile SSP to Underpile Slag Reclaim Belt BC8	FE
TPA3	Underpile Slag Reclaim Conveyer BC8 to Slag Loadout Bin Belt BC9	FE
TPA4	Slag Loadout Bin Feed Belt BC9 to Slag Truck Loadout Bin SB	FE
TPA5	Slag Truck Loadout Bin SB to Loadout Trucks	PE

Source ID No.	Source Description	Control Device
TPFC1	Filter Cake Transport Belt BC10 to Filter Cake Silo FCS	FE
TPFC2	Filter Cake Silo FCS to Loadout Truck	PE

4.1.4.6 Material handling equipment shall be operated according to the following requirements:

a All belt conveyors transporting material shall be, at a minimum, partially covered.

b. The Coal Crusher (CR1) shall be fully enclosed and controlled by a Baghouse. The baghouse shall be installed, operated, and maintained so as to achieve a minimum control efficiency of 99.00%

c. The Limestone Crusher (CR7) shall be, at a minimum, fully enclosed.

4.1.4.7. Exhaust and off gases from the Coal and Limestone Feed Bunkers shall be controlled by particulate matter filters as specified in Table 1.0. Each filter shall be installed, operated, and maintained so as to not exceed a maximum stack emission concentration of 5 mg/m^3.

4.1.4.8. Bulk materials other than coal, limestone, or slag that have the potential for generating particulate matter emissions shall be stored in silos, bins, and buildings. Such materials shall not be stored in outdoor piles except on a temporary basis during breakdown or other disruption in the capabilities of the enclosed storage facilities.

4.1.4.9. Fugitive particulate emissions resulting from use of haulroads and mobile work areas shall be minimized by the following:

a. The permittee shall pave, and maintain such pavement, on all haulroads and mobile work areas (including a reasonable shoulder area) within the plant boundary.

b. Truck Hauling distances shall not exceed the following:

(1) For delivery of coal or limestone to the facility or the removal of ash/filter cake from the facility, the truck hauling distance shall not exceed 0.11 miles.

(2) For the removal of sulfur, LPG, gasoline, or any other material, the truck hauling distance shall not exceed 0.45 miles.

(3) For the purposes of this permit, “truck hauling distance” shall mean the total length of travel both into and out of the plant for one truck in accomplishing the specified task.

c. The permittee shall maintain access to a vacuum sweeper truck in good operating condition, and shall utilize same as needed to remove excess dirt and dust from all haulroads and mobile work areas. The haulroads and mobile work areas shall be flushed with water immediately prior to each vacuum sweeping.

d. The permittee shall maintain a water truck on site and in good operating condition, and shall utilize same to apply a mixture of water and an environmentally acceptable dust control additive, hereinafter referred to as solution, as often as is necessary in order to minimize the atmospheric entrainment of fugitive particulate emissions that may be generated from haulroads and other work areas where mobile equipment is used. The spraybar shall be equipped with commercially available spray nozzles, of sufficient size and number, so as to provide adequate coverage to the area being treated.

The pump delivering the solution, shall be of sufficient size and capacity so as to be capable of delivering to the spray nozzle(s) an adequate quantity of solution, and at a sufficient pressure, so as to assure that the treatment process will minimize the atmospheric entrainment of fugitive particulate emissions generated from the haulroads and work areas where mobile equipment is used.

e. The permittee shall maintain an underbody truck wash, rumble strips or employ other suitable measures to prevent tracking of solids by vehicular traffic from access and/or haulroads onto any public road or highway.

f. A maximum speed limit of 15 miles per hour shall be maintained on all haulroads. Clear and visible signs shall be posted displaying this speed limit wherever necessary to ensure compliance with this requirement.

g. The permittee shall collect, in a timely fashion, material spilled on haulroads that could become airborne if it dried or were subject to vehicle traffic.

4.1.4.10 The permittee shall properly install, operate and maintain winterization systems for all water trucks and/or water sprays in a manner that all such fugitive dust control systems remain effective and functional, to the maximum extent practicable, during winter months and cold weather. At all times, including periods of cold weather, the registrant shall comply with the water trucks and/or water sprays requirements of this permit.

4.1.4.11 The coal processing and conveying equipment are subject to the applicable limitations and standards under 45CSR5, including the requirement given under (a) through (d).

a. The permittee shall not cause, suffer, allow or permit emission of particulate matter into the open air from any stack which is twenty percent (20%) opacity or greater, except as noted in subsection 3.2 of 45CSR5.
[45CSR§5-3.1]

b. The permittee shall not cause, suffer, allow or permit emission of particulate matter into the open air from any fugitive dust control system which is twenty percent (20%) opacity or greater.
[45CSR§5-3.4]

c. The permittee shall not cause, suffer, allow or permit a coal preparation plant or handling operation to operate that is not equipped with a fugitive dust control system. This system shall be operated and maintained in such a manner as to minimize the emission of particulate matter into the open air.
[45CSR§5-6.1]

d. The owner or operator of a coal preparation plant or handling operation shall maintain dust control of the premises and owned, leased or controlled access roads by paving, or other suitable measures. Good operating practices shall be observed in relation to stockpiling, car loading, breaking, screening and general maintenance to minimize dust generation and atmospheric entrainment.
[45CSR§5-6.2]

4.1.4.12 The limestone processing and conveying equipment are subject to the applicable limitations and standards under 45CSR7, including the requirements given below under (a) and (b).

a. The permittee shall not cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from the limestone handling/processing operations which is greater than twenty (20) percent opacity, except as noted under 4.1.8.7.b.
[45CSR§7-3.1]

b. The provisions of subsection 45CSR§7-3.1 shall not apply to smoke and/or particulate matter emitted from the limestone handling/processing operations which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.
[45CSR§7-3.2]

4.1.4.13 The limestone processing and conveying equipment are subject to the applicable limitations and standards under 40 CFR 60, Subpart OOO, including the requirements given below under (a) through (e).

a. Affected facilities must meet the stack emission limits and compliance requirements in Table 2 of Subpart OOO within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.8. The requirements in Table 2 of Subpart OOO apply for affected facilities with capture systems used to capture and transport particulate matter to a control device.
[40 CFR §60.672(a)]

b. Affected facilities must meet the fugitive emission limits and compliance requirements in Table 3 of Subpart OOO within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11. The requirements in Table 3 of Subpart OOO apply for fugitive emissions from affected facilities without capture systems and for fugitive emissions escaping capture systems.
[40 CFR §60.672(b)]

c. Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.
[40 CFR §60.672(d)]

d. If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in 40 CFR §60.672(a) and (b), or the building enclosing the affected facility or facilities must comply with the following emission limits:

(1) Fugitive emissions from the building openings (except for vents as defined in §60.671) must not exceed 7 percent opacity; and

(2) Vents (as defined in §60.671) in the building must meet the applicable stack emission limits and compliance requirements in Table 2 of Subpart OOO.
[40 CFR §60.672(e)]

e. Any baghouse that controls emissions from only an individual, enclosed storage bin is exempt from the applicable stack PM concentration limit (and associated performance testing) in Table 2 of Subpart OOO but must meet the applicable stack opacity limit and compliance requirements in Table 2 of Subpart OOO. This exemption from the stack PM concentration limit does not apply for multiple storage bins with combined stack emissions.
[40 CFR §60.672(f)]

4.1.4.14 The coal processing and conveying equipment, coal storage systems, transfer and loading systems, and open storage piles are subject to the applicable limitations and standards under 40 CFR 60, Subpart Y, including the requirement given under (a).

a. On and after the date on which the performance test is conducted or required to be completed under §60.8, whichever date comes first, the permittee shall meet the requirements in paragraphs (b)(1) through (3) of [40 CFR §60.254], as applicable to the affected facility and given below.

(1) Except as provided in paragraph (b)(3) of [40 CFR §60.254], the permittee must not cause to be discharged into the atmosphere from the affected facility any gases which exhibit 10 percent opacity or greater.

(2) The permittee must not cause to be discharged into the atmosphere from any mechanical vent on an affected facility gases which contain particulate matter in excess of 0.023 g/dscm (0.010 gr/dscf).

(3) Equipment used in the loading, unloading, and conveying operations of open storage piles are not subject to the opacity limitations of paragraph (b)(1) of [40 CFR §60.254].
[40 CFR §60.254(b)]

4.1.5. Gasification and Gas Cleanup

4.1.5.1. The Roller Mills and Heaters, identified as CR2 through CR6, shall be operated according to the following requirements:

a. The units shall not process coal in an amount exceeding an aggregate of 346 tons/hour and the coal feedstock shall not produce emissions greater than 7.1 mg-CO/kg-coal and 3.5 mg-VOC/kg-coal as averaged over periods of 1 hour and 8 hours, respectively.

b. The heaters shall, with the exception of during times of startup, be fueled only with pure hydrogen. During startup, the heaters shall be fueled with either pipeline-quality natural gas or pure hydrogen. For the purposes of this permit, “pure hydrogen” shall mean hydrogen gas that is 99.99% by volume pure. Each heater shall not exceed a maximum design heat input of 17.0 mmBtu/Hr.

c. Exhaust and off gases from the Roller Mills and Heaters shall be controlled by baghouses as specified in Table 1.0. Each baghouse shall be installed, operated, and maintained so as to not exceed a maximum stack emission concentration of 5 mg/m^3.

d. The Roller Mills and Heaters shall be limited to an total aggregate startup time of 80 hours per rolling twelve month period. For the purposes of 4.1.5.1., "start-up" is defined as periods of time when the Rolling Mills and Heaters are combusting natural gas.

e. The permittee shall not cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from the Roller Mills and Heaters which is greater than twenty (20) percent opacity, except as noted under 4.1.8.7.f.
[45CSR§7-3.1]

f. The provisions of subsection 45CSR§7-3.1 shall not apply to smoke and/or particulate matter emitted from the Roller Mills and Heaters which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.
[45CSR§7-3.2]

4.1.5.2. The Coal Dust Feeding System, identified as Units LH1 through LH12, SUV1 and SUV2, FDB2, FL-ST, GFB1 and GFB2 shall be operated according to the following requirements:

a. Inert gas used to pressurize any component within the Coal Dust Feeding System shall not contain CO in excess of 1 ppm_v or SO_x in excess of 10 ppm_v. Nitrogen shall not be used as a carrier gas.

b. Exhaust and off gases from the Coal Dust Feeding System shall be controlled by baghouses as specified in Table 1.0. Each baghouse shall be installed, operated, and maintained so as to not exceed a maximum stack emission concentration of 5 mg/m^3.

c. The permittee shall not cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from the Coal Dust Feeding System which is greater than twenty (20) percent opacity, except as noted under 4.1.8.7.d.
[45CSR§7-3.1]

d. The provisions of subsection 45CSR§7-3.1 shall not apply to smoke and/or particulate matter emitted from the Coal Dust Feeding System which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.
[45CSR§7-3.2]

e. On and after the date on which the performance test is conducted or required to be completed under §60.8, whichever date comes first, the permittee shall meet the requirements in paragraphs (b)(1) through (3) of [40 CFR §60.254], as applicable to the Coal Dust Feeding System and given below.

(1) Except as provided in paragraph (b)(3) of [40 CFR §60.254], the permittee must not cause to be discharged into the atmosphere from the affected facility any gases which exhibit 10 percent opacity or greater.

(2) The permittee must not cause to be discharged into the atmosphere from any mechanical vent on an affected facility gases which contain particulate matter in excess of 0.023 g/dscm (0.010 gr/dscf).
[40 CFR §60.254(b)]

4.1.5.3. This permit authorizes the operation of two gasifiers with a maximum aggregate gasification capacity (either by design or by upstream/downstream bottleneck) of 346 tons of coal per hour. The gasifiers shall include a cleanup train that consists of 2 wet scrubbers, a slag fines removal system, a sour CO shift unit, an Acid Gas Removal Unit, and a carbon adsorption system for mercury removal. A flare shall be used to control gasifier startup/shutdown emissions subject to the requirements under 4.1.5.5.

4.1.5.4. The gasification process and Acid Gas Removal System shall be designed, maintained, and operated so that, except during times of startup/shutdown, raw or clean synthesis gas (syngas) or any other offgases shall not be flared. At no time, including times of startup/shutdown, shall any raw or clean syngas or any other offgases be released directly into the atmosphere. This requirement does not apply to air, nitrogen, steam, or any other non-pollutant entrained gas stream introduced into unit(s) during periods when a unit is shut down as might be needed for purposes of maintenance or to purge unit(s) in preparation for startup/shutdown.

4.1.5.5. Startup/Shutdown of the gasifiers shall be in accordance with the following requirements:

a. For the purposes of 4.1.5.5., "start-up" and "shutdown" are defined as periods of time when a gasifier is venting raw syngas to the flare during unit startup and shutdown, respectively.

b. Gasifiers shall be started-up individually and not simultaneously. Aggregate gasifier startup/shutdown operations shall not exceed 60 hours per twelve month rolling period.

c. Coal gasified during start-up shall not contain sulfur in excess of 0.5% by-weight.

d. During start-up/shutdown all raw syngas shall be flared.

e. The maximum aggregate dry gas volume of raw syngas sent to the flare from the gasifiers shall not exceed 100,000 m^3n/hour or 6,000,000 m^3n/per rolling twelve month period. The maximum aggregate heat content of the raw syngas sent to the flare from the gasifiers shall not exceed 63,900 mmBtu/per rolling twelve month period. For the purposes of this permit, all flow rate limits are given as normal (n): 0 degrees centigrade and 1 atmosphere.

f. During startup/shutdown, the CO content of the raw syngas shall not exceed 60% by volume and the content of total reduced sulfur compounds (including H_2S) of the raw syngas shall not exceed 0.17% by volume.

g. The permittee shall not cause, suffer, allow or permit the combustion of any syngas in the flare during startup/shutdown operations that contains hydrogen sulfide in a concentration greater than 50 grains per 100 cubic feet of gas.
[45CSR§10-5.1]

h. Compliance with the allowable hydrogen sulfide concentration limitations given under [45CSR§10-5.1)] shall be based on a block three (3) hour averaging time.
[45CSR§10-5.4]

4.1.5.6. The Acid Gas Removal system (AGR) shall be operated according to the following requirements:

a. During steady-state operation, the AGR's waste CO_2 gas stream shall be vented to the CO_2 Purification System and not vented into the atmosphere.

b. During steady-state operations, the Rectisol Process shall be used to limit the total reduced sulfur compounds (including H_2S) of the cleaned syngas to a maximum of 1 ppm_v and SO_x from the AGR's waste CO_2 gas stream to a maximum of 10 ppm_v.

c. For the purposes of 4.1.5.6., AGR "start-up" and "shutdown" are defined as periods of time when the AGR is venting raw syngas to the flare during unit startup and shutdown, respectively. AGR startup/shutdown operations shall not exceed 2 hours per twelve month rolling period.

d. During AGR startup/shutdown, flared syngas shall not contain total reduced sulfur compounds (including H_2S) in excess of 100 ppm_v.

e. The maximum aggregate dry gas volume of raw syngas sent to the flare from the AGR during periods of startup/shutdown shall not exceed 863,207 m^3n/hour or 1,726,414 m^3n/per rolling twelve month period.

f. The permittee shall not cause, suffer, allow or permit the combustion of any syngas in the flare during AGR startup/shutdown operations that contains hydrogen sulfide in a concentration greater than 50 grains per 100 cubic feet of gas.
[45CSR§10-5.1]

g. Compliance with the allowable hydrogen sulfide concentration limitations given under [45CSR§10-5.1)] shall be based on a block three (3) hour averaging time.
[45CSR§10-5.4]

4.1.5.7. The Sulfur Recovery Unit (SRU) shall use the Claus-type sulfur recovery process and shall, during all times of operation, reintroduce any off gases back into the AGR. Solidification of liquid sulfur is prohibited at the facility.

4.1.5.8. The flow rate of offgas from the CO_2 Purification Unit (Emission Point C1) shall not exceed 7,883.5 kmol/hr during times when MtG Regeneration Offgas is not being sent to the unit and shall not, at any time, contain CO in excess of 1 ppm_v or SO_x in excess of 10 ppm_v.

4.1.5.9. The coal gasifiers are subject to the applicable limitations and standards under 40 CFR 60, Subpart RRR, including the requirement given under (a).

a. Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of [40 CFR §60.702] for each vent stream on and after the date on which the initial performance test required by §60.8 and §60.704 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(1) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3

percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(2) Combust the emissions in a flare that meets the requirements of §60.18; or

(3) Maintain a TRE index value greater than 1.0 without use of a VOC emission control device.

[40 CFR §60.702]

4.1.6. Methanol Production and Methanol-to-Gasoline (MtG) Plant

4.1.6.1. The Methanol Production and MtG Units shall be designed, operated, and maintained so that tail gases, offgases (including process vents used in normal operation) from these units shall not be released directly or indirectly into the atmosphere (unless in accordance with the provisions of this section). This requirement does not apply to process heater combustion exhaust, air, nitrogen, steam, or any other non-pollutant entrained gas stream introduced into unit(s) during periods when a unit is shut down as might be needed for purposes of maintenance or to purge unit(s) in preparation for startup.

4.1.6.2. The Process Heaters in the MtG Plant shall be operated according to the following requirements:

a. The nominal maximum design heat input of each listed process heater shall not exceed the given value:

Table 4.1.6.2(a): Nominal Maximum Design Heat Inputs

Heater	MDHI (mmBtu/hr)
SURGH	30.00
SURH	120.00
RCH	4.00

b. The process heaters in the MtG Plant shall not, on an annual basis, combust fuel in excess of the values given in the following table:

Table 4.1.6.2(b): Maximum Annual Heat Input Combustion Limits

Heater	mmBtu/yr
SURGH	25,887.5
SURH	67,466.4
RCH	25,280.0

c. With the exception noted in this section, the process heaters shall use cleaned syngas as the fuel source. For the purposes of this permit, “cleaned syngas” shall be defined as syngas that has been processed by the AGR and Mercury Adsorber. At times when cleaned syngas is unavailable, the permittee may use MtG tail gas as a fuel source in the RCH.

d. No process heater shall have a stack gas concentration in excess of 100 ppm_v of NO_x or 120 ppm_v of CO.

e. The permittee shall not cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from the Process Heaters which is greater than twenty (20) percent opacity, except as noted under 4.1.8.7.b.
[45CSR§7-3.1]

f. The provisions of subsection 45CSR§7-3.1 shall not apply to smoke and/or particulate matter emitted from the Process Heaters which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.
[45CSR§7-3.2]

4.16.3. The regeneration of catalyst in the MtG Plant shall be in accordance with the following requirements:

a. The regeneration offgas shall be directed to the CO_2 Purification Unit and the maximum volume of offgas shall not exceed 7,000 m^3n/hour or 10,088,680 m^3n/per rolling twelve month period.

b. The regeneration offgas shall not contain any detectable amount of NO_x, reduced sulfur compounds, particulate matter, or VOCs.

4.1.6.4. Tail gas produced in the MtG Plant shall be handled in accordance with the following requirements:

a. During normal plant operation, tail gas produced in the MtG Plant shall be recycled back into the front end of the plant and not emitted directly to the atmosphere or flared.

b. During times when the coal gasifiers are not in operation, tail gas produced in the MtG Plant shall be flared and not emitted directly to the atmosphere.

c. Tail gas produced in the MtG Plant shall be flared for a maximum of 40 hours per rolling twelve month period.

4.1.6.5. The production of gasoline in the MtG Plant shall not exceed 756,000 gallons per day.

4.1.6.6. The methanol plant is subject to the applicable limitations and standards under 40 CFR 60, Subpart RRR, including the requirement given under (a).

a. The permittee shall comply with paragraph (a), (b), or (c) of [40 CFR §60.702] for each vent stream on and after the date on which the initial performance test required by §60.8 and §60.704 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. The permittee shall either:

(1) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(2) Combust the emissions in a flare that meets the requirements of §60.18; or

(3) Maintain a TRE index value greater than 1.0 without use of a VOC emission control device.

[40 CFR §60.702]

4.1.6.7. The methanol-to-gasoline plant is subject to the applicable limitations and standards under 40 CFR 60, Subpart NNN, including the requirement given under (a).

a. The permittee shall comply with paragraph (a), (b), or (c) of [§60.662] for each vent stream on and after the date on which the initial performance test required by §60.8 and §60.664 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. The permittee shall either:

(1) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(2) Combust the emissions in a flare that meets the requirements of §60.18; or

(3) Maintain a TRE index value greater than 1.0 without use of a VOC emission control device.

[40 CFR §60.662]

4.1.7. Miscellaneous Sources

4.1.7.1. The Start-Up Steam Boiler shall operate in accordance with the following requirements:

a. The boiler shall not exceed a nominally rated Maximum Design Heat Input of 81.84 mmBtu/hr.

b. The boiler is limited to operate only during facility startup and is limited to a maximum firing of 31,426 mmBtu/year.

c. The boiler shall only combust pipeline-quality natural gas or cleaned syngas.

d. The boiler shall not have exceed a stack gas concentration of 100 ppm_v of NO_x or 120 ppm_v of CO.

e. The fuel burning unit, identified as the Start-Up Steam Boiler, is subject to the applicable limitations and standards under 45CSR2, including the requirements as given below under (1) through (3).

(1) The permittee shall not cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from the Start-Up Steam Boiler which is greater than ten (10) percent opacity based on a six minute block average.

[45CSR§2-3.1]

(2) The permittee shall not cause, suffer, allow or permit the discharge of particulate matter into the open air from the Start-Up Steam Boiler, measured in terms of pounds per hour in excess of the amount determined as follows:

(i) The product of 0.05 and the total design heat input for the Start-Up Steam Boiler in million British Thermal Units (B.T.U.'s) per hour, provided however that no more than twelve hundred (1200) pounds per hour of particulate matter shall be discharged into the open air.
[45CSR§2-4.1a]

(3) The visible emission standards set forth in section 3 of 45CSR2 shall apply at all times except in periods of start-ups, shutdowns and malfunctions. Where the Director believes that start-ups and shutdowns are excessive in duration and/or frequency, the Director may require an owner or operator to provide a written report demonstrating that such frequent start-ups and shutdowns are necessary.
[45CSR§2-9.1]

4.1.7.2. The Cooling Tower shall operate in accordance with the following requirements:

a. The Cooling Tower shall use the control device specified under Section 1.0 at all times in operation and not exceed the specified maximum operational limits in the following table:

Table 4.1.7.2(a): Cooling Tower Specifications

Source ID No.	Water Circulation Rate (gal/min)	Total Dissolved Solids (ppm)	Mist Eliminator Max Drift Rate (%)
CT	308,167	5,000	0.0010

b. Water circulated in the Cooling Tower shall contain no reasonably detectable, as based on a test method approved by the Director, amount of CO or VOCs.

c. The permittee shall not cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from the Cooling Tower which is greater than twenty (20) percent opacity, except as noted under 4.1.8.7.b.
[45CSR§7-3.1]

b. The provisions of subsection 45CSR§7-3.1 shall not apply to smoke and/or particulate matter emitted from the Cooling Tower which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.
[45CSR§7-3.2]

4.1.7.3. The storage tanks shall be subject to the following requirements:

a. The following table provides a list of storage tanks authorized to operate by this permit at the subject facility. The tanks shall be installed, maintained, and operated so as to minimize any fugitive escape of emissions and the following operational limits shall not be exceeded:

Table 4.1.7.3(a): List of Authorized Storage Tanks

Tank ID No.	Calculated[1] Volume	Material Stored or Blended	Maximum Turnovers[2]	Maximum Throughput[2]
TK1	2,000,000 gal	Gasoline	45.99	91,980,000 gal
TK2	2,000,000 gal	Gasoline	45.99	91,980,000 gal
TK3	2,000,000 gal	Gasoline	45.00	91,980,000 gal
TK4[1]	400 Tons	LPG	n/a	n/a
TK5[1]	400 Tons	LPG	n/a	n/a
TK6	2,000,000 gal	Methanol	30	60,000,000 gal
TK7	70,000 gal	Liquid Sulfur	n/a	25,782 tons

(1) LPG shall be stored in tanks pressurized to at least 2.5 psi.
(2) These limits are based on rolling twelve month totals.

b. Storage tanks TK1, TK2, TK3, and TK6 are subject to the VOC standards as given under 40 CFR 60, Subpart Kb, Section §60.112b(a).

4.1.7.4. The loading of gasoline into rail and truck tankers shall be in accordance with the following:

a. The maximum hourly capacity of the loading racks shall be limited by design to 31,500 gallons per hour.

b. The maximum throughput of the loading racks shall not exceed 275,940,000 gallons per year.

c. The permittee shall comply with all requirements relating to the loading racks as given under 40 CFR 60, Subpart XX and 40 CFR 63, Subpart R provided that the permittee shall comply only with the provisions in each subpart that contain the most stringent control requirements for that facility including:

(1) Emissions to the atmosphere from the vapor collection and processing systems due to the loading of gasoline cargo tanks shall not exceed 10 milligrams of total organic compounds per liter of gasoline loaded.
[40 CFR §63.422(b)]

d. The permittee shall not use combustion (flare or oxidizer) to comply with the emission limit given under 4.1.7.4(c).

4.1.8. Control Devices

4.1.8.1. The permittee shall, within 180 days of initial startup of either of the gasifiers, determine the optimal operating ranges of the following control device parameters so as to monitor the effective operation of those control devices. The determination of operating ranges shall be based on data obtained from performance testing, manufacturing recommendations, or operational experience. The permittee maintain on site, and update as necessary, a certified report listing the operating ranges.

Table 4.1.8.1.: Control Device Parameters

Control Device	Parameter[(1)]
Gasification Scrubbing System	Scrubbant Flow Rate
CO Shift	Pressure Drop
AGR	Solvent Flow Rate
Carbon Adsorber	Pressure Drop
Flare	Maximum Gas Velocity

(1) The permittee may petition the Director, when appropriate, for approval to monitor other operating parameters than those listed in this table if shown to better reflect proper control device operation.

4.1.8.2. The Flare shall operate in accordance with the following requirements:

a. The flare shall be designed, operated and maintained according to good engineering practices, manufacturing recommendations, and include the following: a natural gas pilot light, a design for smokeless combustion, a flame detection system, steam assitance, and an auto-ignition system. The flare pilot light shall have a maximum nominal design heat input of 0.60 mmBtu/Hr and shall only combust natural gas.

b. The flare shall, at a minimum, achieve:

(1) An 8-hour block average combustion rate of CO of 99.5%; and

(2) A 3-hour block average reduced sulfur compound destruction rate of 98%.

c. The permittee shall operate the flare at all times with an adequate steam to hydrocarbon ratio in each flare and a minimum heat content of 300 Btu/scf in the vent gas.

d. At least 180 days prior to startup of the facility, the permittee shall submit a "Flare Monitoring and Compliance Demonstration Report" that includes a determination of the appropriate steam-to-hydrocarbon ratios, the basis for the ratios, a detailed description of the monitoring of the flare (including monitor specifications), a description of QA/QC procedures related to the operation of the flare (as related to requirements in this permit), access to a copy of all vendor recommended maintenance procedures, and access to a copy of any vendor combustion efficiency guarantees for the flare.

e. The permittee shall not cause, suffer, allow or permit particulate matter to be discharged from the flare into the open air in excess of the quantity determined by use of the following formula:

Emissions (lb/hr) = F x Incinerator Capacity (tons/hr)

Where, the factor, F, is as indicated in Table I below:

Table I: Factor, F, for Determining Maximum Allowable Particulate Emissions

Incinerator Capacity	Factor F
A. Less than 15,000 lbs/hr	5.43
B. 15,000 lbs/hr or greater	2.72

[45CSR§6-4.1]

f. The flare shall meet all applicable requirements of 40 CFR 60, Subpart A, Section 60.18 and 40 CFR 60, Subpart RRR.

4.1.8.3. The permittee shall install, maintain, and operate all pollution control equipment required by this permit in a manner consistent with safety and good air pollution control practices for minimizing emissions, and shall follow all manufacture's recommendations concerning control device maintenance and performance.

4.1.9. Leak Detection and Repair (LDAR)

4.1.9.1. The permittee shall install, maintain, and operate the following equipment leak controls on all specified equipment:

Table 4.1.9.1.: Equipment Leak Control Methods(1)

Equipment	Control Method(s)
Pumps In Hydrocarbon Service	Sealless Design
Compressors	Dual mechanical seal with barrier fluid maintained at a higher pressure than the compressed gas
Pressure Relief Devices	Closed Vent System(2)
Valves	Sealless Design
Connectors	***(3)
Open-ended lines	Blind, Cap, Plug, or Second Valve
Sampling Connections	Closed-Loop Sampling

(1) All equipment and control method descriptions shall be as described in the document EPA-453/R-95-017.
(2) Pursuant to footnote 'c' of Table 5-1 (EPA-453/R-95-017), the permittee used a control efficiency of 90% for this control method.
(3) 915 of 1,045 total connectors in MTG and MeOH Synthesis Sections shall be welded together. The remainder of all connectors shall be controlled by the method as described under 4.1.9.2.

4.1.9.2. For all non-welded connectors, as defined in the document EPA-453/R-95-017, permittee shall institute a monthly leak detection monitoring program. Leaks shall be defined as pollutant concentrations in excess of 10,000 ppm_v. When a leak is detected, the permittee shall take corrective action to repair the connector and retest the connector to verify the efficacy of the repair.

4.1.9.3. The permittee shall not exceed the number and type of components (valves, compressors, pressure relief valves, etc.) as listed for each area of the plant in Attachment 3 to Task Order 1 in Attachment N of Permit Application R13-2791.

4.1.9.4. The permittee shall institute an LDAR program in accordance with 40 CFR 60 Subpart VVa and 41 CFR 61, Subpart J and V provided that the permittee shall comply with any more stringent

requirements contained in this permit. On pieces of equipment that are subject to both 60 Subpart VVa and 61 Subpart V, only the provisions of 61 Subpart V will apply.

4.2. Monitoring, Compliance Demonstration, and Record-Keeping Requirements

4.2.1. The permittee shall produce, upon request by the Director, and within a reasonable time-frame, calculations that show the actual emissions of the facility from the previous 12 calendar months. Actual emissions shall be calculated by using emission factors, emission modeling software, or other appropriate emission estimation models or calculation methodologies developed, where applicable, from site-specific testing or data. The emission factors, emission models, and other calculation methods shall be maintained current for all processes and process modifications.

4.2.2. For the purposes of demonstrating continuous compliance with the facility-wide mercury emission limit, the permittee shall, on a monthly basis, determine the emissions of mercury from the previous 12 calendar months. This calculation shall be based on the actual mercury content of the gasified coal as determined according to coal sampling done, at a minimum, on a weekly basis, or more frequently if necessary due blending of different sources of coal. The permittee exercise a different testing schedule upon written approval by the Director that there is reasonable evidence that the this requirement will be met under a different testing schedule. Additionally, this calculation may take into account the efficiency of the mercury control system if verified by performance testing conducted according to an approved protocol under 3.3.1.

4.2.3. The permittee shall install, maintain, and operate all monitoring equipment required by this permit in accordance with all manufacture's recommendations concerning maintenance and performance.

4.2.4. <u>Material Handling</u>

4.2.4.1. For the purposes of demonstrating continuous compliance with maximum throughput limitations set forth in 4.1.4.3., the permittee shall monitor and record the monthly and rolling twelve month throughput of each material specified under Table 4.1.4..3. trucked into or out of the facility.

4.2.4.2. For the purpose of determining continuous compliance with the opacity limits given in this permit, the permittee shall conduct visible emission checks for all material handling emission sources subject to an opacity limit. The visibility checks shall be performed according to the following:

a. The visible emission check shall determine the presence or absence of visible emissions. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training may be obtained from written materials found in the References 1 and 2 from 40CFR Part 60, Appendix A, Method 22 or from the lecture portion of the 40CFR Part 60, Appendix A, Method 9 certification course.

b. Visible emission checks shall be conducted at least once per month with a maximum forty-five (45) days between consecutive readings. These checks shall be performed for a sufficient time interval to determine if the source has any visible emissions during periods of normal facility operation and appropriate weather conditions.

c. If visible emissions are identified at a source for three (3) months in a calendar year, the permittee shall conduct an opacity reading at those sources using the procedures and requirements of METHOD 9 or 45CSR7A, as applicable and as soon as practicable, but within seventy-two (72) hours of the final visual emission check for the month.

d. In no way does compliance with 4.2.4.2(a) through (c) obviate the requirement that the permittee meet all applicable opacity monitoring, compliance demonstration, and record-keeping requirements under 45CSR5, 45CSR7, 40 CFR 60, Subpart Y, and 40 CFR 60, Subpart OOO.

4.2.4.3. The permittee shall demonstrate continuous compliance with the aggregate fugitive particulate matter emission limit in Appendix A by using the appropriate emission factors for each fugitive source that were used to estimate the source's potential emissions in the permit application unless an alternative emission factor is approved by the Director.

4.2.4.4. The permittee shall meet all applicable material handling monitoring, compliance demonstration, and record-keeping requirements as given under 45CSR5, 45CSR7, 40 CFR 60, Subpart Y, and 40 CFR 60, Subpart OOO.

4.2.5. Gasification and Gas Cleanup

4.2.5.1. For the purposes of demonstrating continuous compliance with the limitations set forth in 4.1.5.1, the permittee shall:

a. daily monitor and record the hours of operation and the amount of coal processed by each Rolling Mill and Heater. The permittee may, upon approval, be exempt from this requirement if information is supplied to the Director verifying that the maximum design capacity of a Rolling Mill and Heater is less than the limit given under 4.1.1.5(a).

b. monitor and record the duration of each specific Rolling Mill and Heater startup.

4.2.5.2. The permittee shall continuously monitor and record the flow rate, CO and SO_x concentrations of the outlet of the CO_2 Purification System (Process Stream 26).

4.2.5.3. For the purposes of demonstrating continuous compliance with maximum aggregate coal gasification limitation set forth in 4.1.5.3, the permittee shall daily monitor and record the hours of operation of each gasifier and the amount of coal gasified in each gasifier.

4.2.5.4. During each startup/shutdown of a gasifier, the permittee shall monitor and record the following:

a. The date, time and duration of each specific gasifier startup/shutdown.

b. The source, amount, and sulfur and content of the coal used during start-up. The sulfur content of the coal shall be determined according one of the following methods:

(1) Conduct, or have conducted, testing of a composite sample of the startup coal storage pile to be done prior to use during a gasifier startup. Results of testing may be used until new coal is added or blended to the startup coal storage pile. Testing shall be done in accordance with approved protocol submitted to the Director prior to startup.

(2) Obtain from the coal supplier a certification of the sulfur content of the coal provided the sulfur content was tested according to an accepted method.

(3) Any alternative means upon receiving prior approval from the Director.

c. The volume, heat content, CO content, and total reduced sulfur (including H_2S) concentration of raw syngas sent to the flare. The aggregate rolling yearly total of volume of raw syngas sent to the flare shall be calculated and recorded.

4.2.5.5. The permittee shall continuously monitor and record the SO_x content of the waste CO_2 gas stream from the AGR (Process Stream 16).

4.2.5.6. During each startup/shutdown the AGR, the permittee shall monitor and record the following:

a. The date, time and duration of the AGR startup/shutdown.

b. The volume and total reduced sulfur concentration (including H_2S) of syngas sent to the flare. The rolling yearly total of volume of syngas sent to the flare shall be calculated and recorded.

4.2.5.7. The permittee shall meet all applicable gasification and gas cleanup monitoring, compliance demonstration, and record-keeping requirements as given under 45CSR7, 45CSR10, and 40 CFR 60, Subpart RRR.

4.2.6. Methanol Production and Methanol-to-Gasoline (MtG) Plant

4.2.6.1. For the purposes of demonstrating compliance with maximum fuel combustion limitations set forth in 4.1.2.6(b), the permittee shall monitor and record the monthly and rolling twelve month total of fuel (as expressed in mmBtu) combusted by each process heater.

4.2.6.2. The permittee shall meet all applicable Start-Up Steam Boiler monitoring, compliance demonstration, and record-keeping requirements as given under 45CSR2 and 40 CFR 60, Subpart Dc.

4.2.6.3. The permittee shall continuously monitor and record the volume of regeneration offgas sent to the CO_2 purification unit. The rolling yearly total of regeneration offgas sent to the CO_2 purification unit shall be calculated and recorded.

4.2.6.4. For each period when tail gas produced in the MtG Plant is flared, the permittee shall monitor and record the date, time and duration of the event.

4.2.6.5. For the purposes of demonstrating continuous compliance with maximum flaring time limitations set forth in 4.1.6.4(c), the permittee shall record the monthly and rolling twelve month total of time that the tail gas produced in the MtG Plant is flared.

4.2.6.6. For the purposes of demonstrating continuous compliance with gasoline production limitations set forth in 4.1.6.5., the permittee shall record the daily total of gasoline produced.

4.2.6.7. The permittee shall meet all applicable Methanol Plant and MtG Plant monitoring, compliance demonstration, and record-keeping requirements as given under 45CSR7, 45CSR10, 40 CFR 60, Subpart NNN, and 40 CFR 60, Subpart RRR.

4.2.7. Miscellaneous Sources

4.2.7.1. For the purposes of demonstrating compliance with maximum fuel combustion limitations set forth in 4.1.7.1(b), the permittee shall monitor and record the monthly and rolling twelve month total of fuel (as expressed in mmBtu) combusted by the Start-Up Steam Boiler.

4.2.7.2. The permittee shall meet all applicable Start-Up Steam Boiler monitoring, compliance demonstration, and record-keeping requirements as given under 45CSR2, and 40 CFR 60, Subpart Dc.

4.2.7.3. For the purposes of demonstrating continuing compliance with the operational limits set forth in 4.1.7.2, the permittee shall meet the following requirements:

a. The permittee shall continuously monitor the circulating water flow rate in units of gallons per minute, the circulating water's total dissolved solids content via conductivity and the number of cycles of concentration of CT.

b. The permittee shall take a grab sample of the cooling tower circulating water and analyze on a weekly basis to determine the total solids content of the cooling tower circulating water. Upon request of the permittee, the Director may change the frequency of the testing under this section to a monthly basis once enough data has been established to verify compliance.

c. The permittee shall, if there is an increase in the total dissolved solids content conductivity measurement from the normal operating range of conductivity, take a grab sample of the cooling tower circulating water and analyze the sample within 8 hours to verify the accuracy of the measurement and the total solids content of the circulating water.

4.2.7.4. For the purposes of demonstrating compliance with maximum throughput limitations set forth in 4.1.7.3(a), the permittee shall monitor and record the monthly and rolling twelve month total of material throughput in storage tanks TK1, TK2, TK3, and TK6.

4.2.7.5. The permittee shall meet all applicable monitoring, compliance demonstration, and record-keeping requirements as given under 40 CFR 60, Subpart Kb for storage tanks TK1, TK2, TK3, and TK6.

4.2.7.6. The permittee shall meet the following requirements for the loading out of gasoline:

a. The permittee shall monitor and record the monthly and rolling twelve month total of the amount of gasoline loaded from the loading racks.

b. The permittee shall meet all applicable monitoring, compliance demonstration, and record-keeping requirements as given under 40 CFR 60, Subpart XX and 40 CFR 63, Subpart R.

4.2.8. Control Devices

4.2.8.1. The permittee shall install, maintain, and operate instrumentation to continuously monitor the control device parameters as determined under 4.1.8.1.

4.2.8.2. The permittee shall record the date, time and duration of all deviations of the control device parameters outside the ranges established under 4.1.8.1. and any corrective action taken to bring the control devices back within the operating ranges.

4.2.8.3. The permittee shall monitor and record the following parameters as related to the venting of syngas to the Flare:

a. The date, time and duration of all gas venting to the flare.

b. The hourly gas combustion rate (in SCFM).

c. The hourly natural gas usage rates by the flare.

d. The steam flow rate to the flare and the steam to hydrocarbon ratio.

e. The heat content of the gas venting to the flare.

f. A Continuous Emissions Monitoring System (CEMS) shall be installed prior to the flare to continuously monitor the methane and H_2S concentration of all gas vented to the flare for destruction.

4.2.8.4. The permittee shall meet all applicable flare monitoring, compliance demonstration, and record-keeping requirements as given under 40 CFR §60.18 and 40 CFR 60, Subpart RRR.

4.2.8.5. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

4.2.8.6. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

a. The equipment involved.

b. Steps taken to minimize emissions during the event.

c. The duration of the event.

d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

e. The cause of the malfunction.

f. Steps taken to correct the malfunction.

g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

4.2.9. Leak Detection and Repair (LDAR)

4.2.9.1. The permittee shall meet all applicable monitoring, compliance demonstration, and record-keeping requirements as given under 40 CFR 60 Subpart VVa and 41 CFR 61, Subpart J and V

provided that the permittee shall comply with any more stringent requirements contained in this permit. On pieces of equipment that are subject to both 60 Subpart VVa and 61 Subpart V, only the provisions of 61 Subpart V will apply.

4.3. Testing Requirements

4.3.1. Within 60 days after achieving the maximum syngas production rate at which the gasifiers will be operated, but not later than 180 days after initial startup, the permittee shall conduct, or have conducted, in accordance with a protocol submitted pursuant to 3.3.1.c., a test on each of the monitors required under 4.2. to demonstrate the accuracy of the monitoring equipment.

4.3.2. Within 60 days after achieving the maximum syngas production rate at which the gasifiers will be operated, but not later than 180 days after initial startup, the permittee shall conduct, or have conducted, in accordance with a protocol submitted pursuant to 3.3.1.c., the following:

a. A test on the gasifiers' and AGR waste gas streams sent to the flare during startup/shutdown to determine if there is a potential to emit any HAPs, in addition to those already identified in Appendix A, in amounts that exceed 0.01 lbs/hr.

b. A test on the slag/slag fines to determine if antimony, arsenic, beryllium, chromium, cobalt, lead, manganese, nickel, and selenium and their compounds are retained in the slag/slag fines. This test will be done in accordance with a test on the feedstock coal and the test as required under 4.3.2(a) to determine, on a mass balance basis, the retention rate of these metals and their compounds in the slag.

4.3.3. Material Handling

4.3.3.1. Within 180 days after initial startup, the permittee shall conduct, or have conducted, in accordance with a protocol submitted pursuant to 3.3.1.c., performance tests on the coal crusher baghouse to determine compliance with the particulate matter limit given under Appendix A. The baghouse performance test shall take place while the crusher is operating at maximum permitted capacity.

4.3.3.2. The permittee shall meet all applicable material handling testing requirements as given under 45CSR5, 45CSR7, 40 CFR 60, Subpart Y, and 40 CFR 60, Subpart OOO.

4.3.4. Gasification and Gas Cleanup

4.3.4.1. Within 60 days after achieving the maximum syngas production rate at which the gasifiers will be operated, but not later than 180 days after initial startup, the permittee shall conduct, or have conducted, in accordance with a protocol submitted pursuant to 3.3.1.c., performance tests on each baghouse to determine compliance with the particulate matter limits given under 4.1.5.1(c) and 4.1.5.2(b). The baghouse performance tests shall take place while the associated emission sources are operating at maximum permitted capacity.

4.3.4.2. Within 180 days after initial startup, the permittee shall conduct, or have conducted, in accordance with a protocol submitted pursuant to 3.3.1.c., the following tests on the Rolling Mill and Heaters:

a. A test on the purity of the hydrogen fuel supplied to the Rolling Mill and Heaters; and

b. A test on the coal feedstock to determine the CO and VOC emissions produced from coal heated in the Rolling Mill and Heaters in order to show compliance with the limits under 4.1.5.1(a). The permittee will perform this test, within 60 days of use, each time the source of the coal feedstock of the plant is changed.

4.3.4.3. Within 60 days after achieving the maximum gasoline production rate at which the gasifiers will be operated, but not later than 180 days after initial startup, the permittee shall conduct, or have conducted, in accordance with a protocol submitted pursuant to 3.3.1.c., a test on the gasifiers' and AGR waste gas streams sent to the flare so as to determine the validity of the substantive mass balance assumptions made in calculation of the potential emissions in Permit Application R13-2791.

4.3.4.4. Within 60 days after achieving the maximum syngas production rate at which the gasifiers will be operated, but not later than 180 days after initial startup, the permittee shall conduct, or have conducted, in accordance with a protocol submitted pursuant to 3.3.1.c., a test on the gasifiers' and AGR raw syngas streams sent to the flare (during startup/shutdown) so to determine the concentrations of CO and total reduced sulfur compounds (including H_2S).

4.3.4.5. Within 60 days after achieving the maximum syngas production rate at which the gasifiers will be operated, but not later than 180 days after initial startup, the permittee shall conduct, or have conducted, in accordance with a protocol submitted pursuant to 3.3.1.c., a test on the waste CO_2 gas stream from the AGR (Process Stream 16) so as to determine the concentration of SO_x.

4.3.4.6. The permittee shall meet all applicable gasification and gas cleanup testing requirements as given under 45CSR7, 45CSR10, and 40 CFR 60, Subpart RRR.

4.3.5. Methanol Production and Methanol-to-Gasoline (MtG) Plant

4.3.5.1 Within 60 days after achieving the maximum rate at which the Startup/Reactivation Heater and Startup/Regeneration Heater will be operated, but not later than 180 days after initial startup, and at such times thereafter as may be required by the Secretary, the permittee shall conduct, or have conducted, a performance test on the Startup/Reactivation Heater and Startup/Regeneration Heater to determine compliance with the emission limits of the pollutants listed in Table 4.3.5.1. The permittee shall use the test methods specified in Table 4.3.5.1 unless granted approval in writing by the Director to use an alternative test method in a protocol submitted pursuant to 3.3.1.c.

Table 4.3.5.1: Startup/Reactivation Heater Test Methods

Pollutant	Test Method[(1)]
CO	Method 10
NO_x	Method 7E
PM_{10} (condensible)	Method 202
PM_{10} (filterable)	Method 5

(1) All test methods refer to those given under 40 CFR 60, Appendix A

4.3.5.2. Within 60 days after achieving the maximum gasoline production rate at which the MtG Plant will be operated, but not later than 180 days after initial startup, the permittee shall conduct, or have

conducted, in accordance with a protocol submitted pursuant to 3.3.1.c., a test on the MtG Plant waste gas stream sent to the flare so as to determine the validity of the substantive mass balance assumptions made in calculation of the potential emissions in Permit Application R13-2791.

4.3.5.3. Within 180 days after initial startup, the permittee shall conduct, or have conducted, in accordance with a protocol submitted pursuant to 3.3.1.c., a test on the catalyst regeneration offgas stream sent to the CO_2 Purification Unit so to determine if reasonably detectable levels of NO_x, reduced sulfur compounds, particulate matter, or VOCs are present in the gas stream.

4.3.5.4. The permittee shall meet all applicable Methanol Plant and MtG Plant testing requirements as given under 45CSR7, 45CSR10, 40 CFR 60, Subpart NNN, and 40 CFR 60, Subpart RRR.

4.3.6. Miscellaneous Sources

4.3.6.1. Within 60 days after achieving the maximum rate at which the Startup Steam Boiler will be operated, but not later than 180 days after initial startup, the permittee shall conduct, or have conducted, a performance test on the Startup/Reactivation Heater to determine compliance with the emission limits of the pollutants listed in Table 4.3.6.1(a). The performance tests will be performed in accordance with the following:

a. The permittee shall use the test methods specified in Table 4.3.6.1(a) unless granted approval in writing by the Director to use an alternative test method in a protocol submitted pursuant to 3.3.1.c.

Table 4.3.6.1(a): Start-Up Steam Boiler Test Methods

Pollutant	Test Method[(1)]
CO	Method 10
NO_x	Method 7E
PM_{10} (condensible)	Method 202
PM_{10} (filterable)	Method 5

(1) All test methods refer to those given under 40 CFR 60, Appendix A

b. The permittee shall conduct all applicable Startup Steam Boiler performance testing in accordance with the requirements of 45CSR2 and 40 CFR 60, Subpart Dc.

4.3.6.2. The permittee shall comply with all testing requirements relating to the loading racks as given under 40 CFR 60, Subpart XX and 40 CFR 63, Subpart R provided that the permittee shall comply only with the provisions in each subpart that contain the most stringent control requirements.

4.3.6.3. The permittee shall meet all testing requirements as given under 40 CFR 60, Subpart Kb for storage tanks TK1, TK2, TK3, and TK6.

4.3.6.4. The permittee shall test the cooling water for the presence of CO and VOCs. This testing shall be in accordance with a protocol submitted pursuant to 3.3.1.c and shall be conducted, at a minimum of once per month unless, based on a sufficient number of tests showing no detectable levels of the pollutants, an alternate schedule is approved in writing by the Director.

4.3.7. Control Devices

4.3.7.1. Within 60 days after achieving the maximum syngas production rate at which the gasifiers will be operated, but not later than 180 days after initial startup, the permittee shall conduct, or have conducted, in accordance with manufacturer's recommendations and good engineering practices, tests on the flare to confirm proper operation of the components required under 4.1.8.1.

4.3.7.1. The permittee shall meet all applicable flare testing requirements as given under 40 CFR §60.18, 40 CFR 60, Subpart NNN, and 40 CFR 60, Subpart RRR.

4.3.8. Leak Detection and Repair (LDAR)

4.3.8.1. Within 60 days after achieving the maximum syngas production rate at which the gasifiers will be operated, but not later than 180 days after initial startup, the permittee shall conduct, or have conducted, tests on the syngas to verify the accuracy of the constituent weight fractions used in the fugitive emissions calculations located under "Attachment N: Attachment 3 to Task Order 1" in permit application R13-2791.

4.3.8.2. The permittee shall meet all applicable performance testing requirements as given under 40 CFR 60 Subpart VVa and 41 CFR 61, Subpart J and V provided that the permittee shall comply with any more stringent requirements contained in this permit. On pieces of equipment that are subject to both 60 Subpart VVa and 61 Subpart V, only the provisions of 61 Subpart V will apply.

4.3.8.3. At least 180 days prior to startup of the facility, the permittee shall submit an "LDAR Monitoring and Compliance Demonstration Report" that includes a detailed description of all equipment at the facility subject to an LDAR requirement, identifies each rule and permit condition applicable to the equipment, the method of determining compliance with each rule and permit condition applicable to the equipment, the proposed schedule for any required LDAR monitoring, and a description of the appropriate monitors that will be used on the equipment.

4.3.9 With respect to the performance testing required above under Sections 4.3.4.4., 4.3.5.1, and 4.3.6.1(a), the permittee shall, after the initial performance test, periodically conduct additional performance testing on the specified sources according to the following schedule:

Table 4.3.9.: Performance Testing Schedule

Test	Test Results	Retesting Frequency
Initial Baseline	<50% of weight emission standard	Once/3 years
Initial Baseline	between 50% and 80 % of weight emission standard	Once/2 years
Initial Baseline	>80% of weight emission standard	Annual
Annual	after three successive tests indicate mass emission rates <50% of weight emission standard	Once/3 years
Annual	after two successive tests indicate mass emission rates <80 % of weight emission standard	Once/2 years
Annual	any tests indicates a mass emission rate >80% of weight emission standard	Annual

Once/2 years	After two successive tests indicate mass emission rates <50% of weight emission standard	Once/3 years
Once/2 years	any tests indicates a mass emission rate <80 % of weight emission standard	Once/2 years
Once/2 years	any tests indicates a mass emission rate >80% of weight emission standard	Annual
Once/3 years	any tests indicates a mass emission rate <50% of weight emission standard	Once/3 years
Once/3 years	any test indicates mass emission rates between 50% and 80 % of weight emission standard	Once/2 years
Once/3 years	any test indicates a mass emission rate >80% of weight emission standard	Annual

4.4. General Recordkeeping Requirements

4.4.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:

a. The date, place as defined in this permit and time of sampling or measurements;

b. The date(s) analyses were performed;

c. The company or entity that performed the analyses;

d. The analytical techniques or methods used;

e. The results of the analyses; and

f. The operating conditions existing at the time of sampling or measurement.

4.5. Reporting Requirements

4.5.1. The permittee shall submit the following information to the DAQ according to the specified schedules:

a. The permittee shall submit reports of all required monitoring on or before September 15 for the reporting period January 1 to June 30 and 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.

b. The permittee shall submit to the Director on or before March 15, a certification of compliance with all requirements of this permit for the previous calendar year ending on December 31. If, during the previous annual period, the permittee had been out of compliance with any part of this permit, it shall be noted along with the following information: 1) the source/equipment/process that was non-compliant and the specific requirement of this permit that was not met, 2) the date the permitted discovered that the source/ equipment/process was out of compliance, 3) the date the Director was notified, 4) the corrective measures to get the source/equipment/process back into compliance, and 5) the date the source began to operate in compliance. The submission of any non-compliance report shall give no enforcement action immunity to episodes of non-compliance contained therein.

4.5.2. The permittee shall meet all applicable performance reporting requirements as given under 45CSR2, 45CSR5, 45CSR7, 45CSR10, 45CSR13, 40 CFR 60 Subpart Y, 40 CFR 60 Subpart XX, 40 CFR 60 Subpart OOO, 40 CFR 60 Subpart RRR, 40 CFR 60 Subpart Kb, 40 CFR 60 Subpart Dc, and 40 CFR 60 Subpart VVa.

CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached _____, representing the period beginning _____ and ending _____, and any supporting documents appended hereto, is true, accurate, and complete.

Signature[1] _____ _____
(please use blue ink) Responsible Official or Authorized Representative Date

Name and Title _____ _____
(please print or type) Name Title

Telephone No. _____ Fax No. _____

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[1] This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:

a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(I) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), or

(ii) the delegation of authority to such representative is approved in advance by the Director;

b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of USEPA); or

d. The designated representative delegated with such authority and approved in advance by the Director.