MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

May 22, 2019
Revised July 23, 2019

PERMIT TO INSTALL
151-18

ISSUED TO
Trenton Refined Coal, LLC

LOCATED AT
4695 W Jefferson Avenue
Trenton, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
B2811

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: **November 7, 2018**	
DATE PERMIT TO INSTALL APPROVED: **May 22, 2019**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department	Michigan Department of Environmental Quality
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MDEQ	Michigan Department of Environmental Quality
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H_2S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO_x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpd	Tons per day
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU-PREREFFEED	Coal handling activity consisting of utilizing existing Elevator Conveyor No. 1 to feed coal to a new feed conveyor and surge bin and then feeds to the Reduced Emissions Fuel (REF) production process, EU-REF-TCRC.	TBD	FG-REF-TCRC
EU-REF-TCRC	The REF production process consists of using Chem-Mod Technology by adding solid Chem-Mod additive (S-Sorb), contained in Pig No. 1 and Day Bin No. 1, to the coal in a mixer. Liquid Chem-Mod additive (MerSorb), contained in Liquid Storage Tank No. 1, is also added to the coal in a totally enclosed mixer.	TBD	FG-REF-TCRC
EU-REFCOAL-TCRC	The coal treated with Chem-Mod is transferred from the mixer to an existing enclosed Elevating Conveyor No. 2 to be fed into EU-BOILER_9A.	TBD	FG-REF-TCRC

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-REF-TCRC	Emission Units within the Trenton Channel Refined Coal (TCRC) source producing the REF coal using Chem-Mod Technology.	EU-PREREFFEED, EU-REF-TCRC, EU-REFCOAL-TCRC

FG-REF-TCRC
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group represents emission units within the Trenton Channel Refined Coal (TCRC) source. The process used to produce REF, a multi-pollutant emission control technology, using Chem-Mod Technology and blending with the coal prior to combustion in EU-BOILER_9A.

The REF process involves receiving coal from the existing Elevator Conveyor No. 1 and feeding the coal to a new feed conveyor and surge bin. The coal is fed to a totally enclosed mixer of the REF production process, EU-REF-TCRC, where the solid Chem-Mod additive (S-Sorb) and liquid Chem-Mod additive (MerSorb) is mixed with the coal. The coal treated with Chem-Mod in the mixer is transferred from the mixer to existing enclosed Elevating Conveyor No. 2, EU-REFCOAL-TCRC, to be fed into EU-BOILER_9A.

Emission Unit: EU-PREREFFEED-TCRC, EU-REF-TCRC, EU-REFCOAL-TCRC

POLLUTION CONTROL EQUIPMENT

EU-PREFEFFEED-TCRC:
Elevator Conveyor No.1 – enclosed
New Feed Conveyor – enclosed
Surge Bin – Bin vents

EU-REFCOAL-TCRC:
Elevating Conveyor No. 2 - enclosed

EU-REF-TCRC:
Pig No. 1 – Bin vents
Day Bin No. 1 - Bin vents
Conveyors – enclosed
Liquid Storage Tank No. 1 – enclosed
Mixer - enclosed

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Visible Emissions	10 percent	6-minute average	FG-REF-TCRC	SC V.1	R 336.1301(1)(c)

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. S-Sorb	33.6 tpd	Calendar Day	FG-REF-TCRC	SC VI.2	R 336.1205(1)(a) & (b), R 336.1225
2. S-Sorb	3,040 tpy	12-month rolling time period as determined at the end of each calendar month	FG-REF-TCRC	SC VI.2	R 336.1205(1)(a) & (b), R 336.1225
3. Mer-Sorb	3.7 tpd	Calendar Day	FG-REF-TCRC	SC VI.2	R 336.1205(1)(a) & (b), R 336.1225
4. Mer-Sorb	334 tpy	12-month rolling time period as determined at the end of each calendar month	FG-REF-TCRC	SC VI.2	R 336.1205(1)(a) & (b), R 336.1225
5. Chem-Mod treated Coal	1,520,000 tpy (throughput to EU-BOILER_9A)	12-month rolling time period as determined at the end of each calendar month	FG-REF-TCRC	SC VI.2	R 336.1205(1)(a) & (b), R 336.1225

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FG-REF-TCRC unless a revised Fugitive Dust Control Plan to manage fugitive sources, such as haul roads, etc., from FG-REF-TCRC, has been submitted no later than 60 days before the commencement of initial startup, and is implemented and maintained. If at any time the Fugitive Dust Control Plan fails to address or inadequately addresses an event that meets the characteristics of fugitive dust, the permittee shall amend the Fugitive Dust Control Plan within 45 days after such an event occurs. The permittee shall also amend the Fugitive Dust Control Plan within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the Fugitive Dust Control Plan and any amendments to the Fugitive Dust Control Plan to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 60 days of submittal, the Fugitive Dust Control Plan or amended Fugitive Dust Control Plan shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1370, R 336.1371, R 336.1372, R 336.2803, R 336.2804, 40 CFR 60.254)**

2. The permittee shall not operate FG-REF-TCRC unless a malfunction abatement plan (MAP) as described in Rule 911(2), for FG-REF-TCRC, has been submitted no later than 60 days before the commencement of initial startup, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 60 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1910, R 336.1911)**

3. The fugitive emission sources of FG-REF-TCRC shall be operated in a manner which will minimize the fugitive particulate emissions. **(R 336.1331, R 336.1370, R 336.1371, R 336.1372)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate FG-REF-TCRC unless the enclosed conveyors and bin vent filters are installed, maintained and operated in a satisfactory manner, and/or in accordance with a malfunction abatement plan (MAP), approvable by the AQD District Supervisor. **(R 336.1205(1)(a) and (b), R 336.1224, R 336.1910, R 336.1911)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup, the permittee shall conduct visible emissions tests of applicable emission units contained in FG-REF-TCRC, at owner's expense, as required by federal Standards of Performance for New Stationary Sources, 40 CFR Subparts A and Y. Visible emission observation procedures shall be used as described in 40 CFR 60.257(a). Verification of visible emissions includes the submittal of a complete report of opacity observations to the AQD within 60 days following the last date of the evaluation. **(R 336.1301(1)(c), 40 CFR 60.255(b)(2), 40 CFR Part 60 Subparts A & Y)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall perform and document non-certified visible emissions observations to demonstrate compliance with SC I.1 on a daily basis when FG-REF-TCRC is operating. If during the observation there are any visible emissions detected from an emission point, a USEPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point. Records of the non-certified visible emissions observations, USEPA Method 9 observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file and in a format acceptable to the AQD. **(R 336.1301(1)(c), R 336.1303)**

2. The permittee shall keep, in a satisfactory manner records on a daily, monthly, and 12-month rolling time period as determined at the end of each calendar month of the S-Sorb, MerSorb, and Chem-Mod treated coal processed in FG-REF-TCRC. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804)**

3. The permittee shall calculate and keep records of PM, PM10 and PM2.5 emissions from FG-REF-TCRC, in tons per calendar year. The annual calendar year recordkeeping period shall begin on the first day of the month during which FG-REF-TCRC commences operation. The calculations and records shall be kept in the format described in Appendix A, or an alternative format acceptable to the AQD Permit Section Supervisor. The requirement to calculate and keep records shall end 10 calendar years after FG-REF-TCRC commences operation. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2802(4)(e), R 336.2818)**

VII. REPORTING

1. The permittee shall provide written notification of construction and operation to comply with the federal Standards of Performance for New Stationary Sources, 40 CFR 60.7. The permittee shall submit this notification to the AQD District Supervisor within the time frames specified in 40 CFR 60.7. **(40 CFR 60.7)**

2. The permittee shall submit records of the annual emission of PM, PM10, and PM2.5 from FG-REF-TCRC, in tons per year on a calendar year basis, to both the AQD Permit Section Supervisor and the AQD District Supervisor within 60 days following the end of first calendar year identified in Special Condition VI.3. Thereafter, the permittee shall submit records of the annual emission of PM, PM10, and PM2.5 from FG-REF-TCRC, in tons per year on a calendar year basis, to both the AQD Permit Section Supervisor and the AQD District Supervisor within 60 days following the end of each recordkeeping year identified in Special Condition VI.3 if either of the following occur:
   a) The yearly actual emission of PM, PM10, and/or PM2.5 exceed the baseline actual emissions (BAE) by a significant amount, and/or
   b) The year's actual emissions differ from the pre-construction projection. The pre-construction projection is the sum of the projected actual emissions from each existing emission unit and the potential emissions from each new emission unit included in the Hybrid Applicability Test.

   The report shall contain the name, address, and telephone number of the facility (major stationary source); the annual emissions as calculated pursuant to FG-REF-TCRC Condition VI.3, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection). **(R 336.1205(1)(a) & (b), R 336.2802(4)(e), R 336.2818)**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Y, as they apply to FG-REF-TCRC. **(40 CFR Part 60 Subparts A & Y)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

APPENDIX A

Recordkeeping Provisions for PSD Source Using Hybrid Applicability Test

All information in this Appendix shall be maintained pursuant to R 336.2818 for 10 years after the Chem-Mod Technology process equipment becomes operational and shall be provided for the first year and all the years made available to the Department upon request.

A. Project Description: The project is to install new sorbent technology which uses Chem-Mod sorbent solution as a fuel additive to reduce mercury, nitrogen oxides, and sulfur dioxide emissions. These changes include installation of a liquid storage tank, a solid storage pig, day bin, mixer, existing partially enclosed and new enclosed conveyors, and other material handling equipment to allow for the coal to be treated with sorbent material processed in FG-REF-TCRC and prior to combustion in EU-BOILER_9A at Trenton Channel Power Plant.

B. Applicability Test Description: Minor modifications are not subject to PSD. Actual to projected actual hybrid applicability test as described in the table below will be used to demonstrate that PSD does not apply to these modifications.

C. Emissions: Trenton Channel Power Plant and Trenton Refined Coal

Emissions for FG-REF-TCRC and EU-BOILER_9A	**PM** **tpy**	**PM10** **tpy**	**PM2.5** **tpy**	**Reference**
A. Baseline Actual Emissions[1]	103.8	43.9	13.5	MAERS data from 2016/2017, used for all pollutants
B. Capable of Accommodating[2]	170.6	74.0	22.1	March 2017
C. Projected Emissions[3]	170.6	74.0	22.1	March 2017
D. Excluded Emissions (D=B-A)	66.8	30.1	8.6	
E. Projected Actual Emissions (E=C-D)	103.8	43.9	13.5	
F. Emission Increase from existing equipment (F=E-A)	**0.0**	**0.0**	**0.0**	
G. PTE new equipment + sorbent in boiler	**20.2**	**13.5**	**5.9**	
H. Total Hybrid Emissions (H=F+G)	**20.2**	**13.5**	**5.9**	

[1] Actual emissions emitted from Boiler 9A during a 24-month consecutive time period.
[2] Emissions that Boiler 9A is capable of accommodating in the future. Must have been achieved during the baseline period.
[3] Projected Emissions based on historical emissions and operating data from Boiler 9A.