COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

5636 Southern Boulevard
Virginia Beach, VA 23462
www.deq.state.va.us

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Robert G. Burnley
Director

Francis L. Daniel
Tidewater Regional Director
(757) 518-2000

December 23, 2002

Mr. Charles E. Brinley
President
Dominion Terminal Associates
Post Office Box 967 A
Newport News, Virginia 23607

AFS Id. No.: 51-700-00074
Location: Newport News
Registration No.: 60997

Dear Mr. Brinley:

Attached is an amended permit to construct and operate a coal synfuel production, storage, and export facility in accordance with the provisions of the Commonwealth of Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. This permit supersedes your permits dated October 10, 1981, November 24, 1987, January 7, 1988, January 5, 1990, September 22, 1992, February 14, 2000, July 7, 2000.

This permit contains legally enforceable conditions. Failure to comply may results in a Notice of Violation and civil penalty. Please read all permit conditions carefully.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on December 11, 2002

This amended permit to construct and operate shall not relieve Dominion Terminal Associates of the responsibility to comply with all other local, state, and federal permit regulations.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code 5-170-200 provides that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. 9 VAC 5-170-180 provides that you may request direct consideration of the decision by the Board if the Director of the DEQ made the decision. Please consult the relevant regulations for additional requirements for such requests.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision (the date you actually received this decision or the date on which it was mailed to you, whichever occurred first), within which to initiate an appeal of this decision by filing a Notice of Appeal with:

Robert G. Burnley, Director
Department of Environmental Quality
Post Office Box 10009
Richmond, Virginia 23240-0009

In the event that this decision is served on you by mail, three days are added to the period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decision of administrative agencies.

If you have any questions concerning this permit, please call Mr. Barry Halcrow at (757) 518-2184.

Sincerely,

Francis L. Daniel

FLD/BWH/DTA 2002 min.doc

Attachment: Permit
NSPS, Subpart Y

cc Director, OAPP (electronic file submission)
Manager, Data Analysis (electronic file submission)
Chief, Air Enforcement Branch (3AP13), U.S. EPA, Region III

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STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

New Source Performance Standards (NSPS)

This permit supercedes your permit dated October 10, 1981, November 24, 1987, January 7, 1988, January 5, 1990, September 22, 1992, February 14, 2000, July 7, 2000.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Dominion Terminal Associates
Post Office Box 967 A
Newport News, Virginia 23607
AFS Id. No.: 51-700-00074
Registration No.: 60997

is authorized to construct and operate

a coal synfuel production, storage, and export facility and
a coal/petroleum coke storage and export facility

located at

Pier 11,
Harbor Road
Newport News

in accordance with the Conditions of this permit.

Approved on **December 23, 2002**.

Director, Department of Environmental Quality

Permit consists of 25 pages.
Permit Conditions 1 to 40, plus Appendix A
Source Testing Report Format

PERMIT CONDITIONS - the regulatory reference or authority for each condition is listed in parentheses ( ) after each condition.

APPLICATION

1. Except as specified in this permit, the permitted facility is to be constructed and operated as represented in the permit application dated August 17, 1981, and October 15, 2002, including amendment information dated August 25, 1981, October 19, 1989, April 22, 1992, December 29, 1999, and December 6, 2002, and December 11, 2002. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.
(9 VAC 5-50-390 and 9 VAC 5-80-1210)

PROCESS REQUIREMENTS

2. **Equipment List** - Equipment to be constructed at this facility consists of: synfuel plant #1 and synfuel #2. The new equipment added for the the synfuel operations includes:
   - conveyor belt #14 from existing coal storage pile to new coal storage pile for synfuel operations
   - conveyor belt #15 for coal from storage pile with belt feeds 15a & b for each crusher (NSPS)
   - belt storage bin # 4 from storage pile to conveyor belt #16 for crusher #1 and belt storage bin # 7 from storage pile to conveyor belt #30 for crusher #2 (NSPS)
   - coal crusher #1 & #2, each rated at 1000 ton/hr, and each within its respective crusher/screen bldg (NSPS)
   - coal screen #1 (double deck) for crusher #1 and coal screen #3 (double deck) for crusher #2, each rated at 700 ton/hr and within its respective crusher/screen bldg (NSPS)
   - conveyor belts # 17 and # 18 from coal screen #1 and conveyor belts # 31 and #32 from coal screen # 3 (NSPS)

- conveyor belt #19 to pugmill bin storage #5 for synfuel plant #1 and conveyor belt # 33 to pugmill bin storage #8 for synfuel plant #2
- conveyor belt # 20 to pugmill #1 and conveyor belt #34 to pugmill #2, each pugmill rated at 700 tons/hr
- binder silo # 1 and #2
- conveyor belts # 21 and #22 from pugmill #1 to spreader for synfuel plant #1 and conveyor belts #35 and #36 from pugmill #2 to spreader for synfuel plant #2 and each spreader within its respective synfuel bldg
- three briquette makers for synfuel plant #1 and three briquette makers for synfuel plant #2, each rated at 233 tons/hr and each briquette maker within its respective synfuel bldg
- conveyor belts #23-26 from briquette makers to synfuel screen #2 and conveyor belts #37-40 from briquette makers to synfuel screen #4 and each each screening operation within its respective bldg
- conveyor belt # 27 from synfuel screen #2 to spreaders in synfuel plant #1 and conveyor belt #41 from synfuel screen #4 to spreaders in synfuel plant #2
- conveyor belts # 28 & 29 from synfuel screen #2 to synfuel storage pile and conveyor belts #42 & 43 from synfuel screen #4 to synfuel storage pile
- synfuel storage piles (using the previously constructed wet suppression system which can completely wet all)
- conveyor belt #44 from synfuel storage pile to existing ship/barge loading conveyor system
-

Additional equipment to be added to the facility consists of:

- conveyor belts # 45, 46, 47, and 48 for coal and petroleum coke

Equipment previously permitted at this facility consists of:

- one tandem rotary rail car coal/petroleum coke dumper in an enclosed building with water spray, rated at 5800 tons/hr
- one coal/petroleum coke dumper surge silo with a fabric filter

- three coal/petroleum coke storage pile stackers/reclaimers, which may be on synfuel storage piles
- 13 conveyor belt systems for handling and storage of coal/petroleum coke, which may include synfuel
- coal/petroleum coke storage piles with a permanent wet suppression system which can completely wet all
- coal/petroleum coke storage pile auxiliary vehicles, which may be used on synfuel storage piles
- two coal/petroleum coke ship/barge loading storage surge silos, which may include synfuel, each with a fabric filter
- one coal/petroleum coke ship/barge loading apparatus, which may include synfuel, rated at 6800 tons/hr

(9 VAC 5-80-1100)

3. **Emission Controls** - Particulate (coal/petroleum coke dust) emissions from the enclosed rotary rail car dumper shall be controlled by wet suppression, which shall include the use of a surfactant. The surfactant to water ratio shall be in accordance with the manufacturer's recommendations. The minimum amount of water applied shall be 130 gallons per tandem dump. Compliance shall be achieved if there are no visible emissions.
(9 VAC 5-50-260)

4. **Emission Controls** - Particulate (coal/petroleum coke dust) emissions from the transfer points and stacker/reclaimers shall be controlled by wet suppression as necessary and by wet suppression with surfactant as necessary. Continuous wetting is not mandatory.
(9 VAC 5-50-260)

5. **Emission Controls** - Particulate (coal/petroleum coke dust) emissions from the conveyor system shall be controlled by conveyor hoods and wind guards. Ground level reclaim conveyor belts shall be controlled by wet suppression as necessary.
(9 VAC 5-50-260)

6. **Emission Controls** - Particulate (coal and synfuel dust) emissions, associated with the synfuel operations, from the conveyor belt system shall be controlled by enclosed conveyors and transfer points (also may include the use of building enclosures, where possible) and by wet suppression as necessary.
(9 VAC 5-50-260)

7. **Emission Controls** - Particulate (coal and synfuel dust) emissions, associated with the synfuel operations, from the storage bins and pugmills shall be controlled by by wet suppression as necessary.
(9 VAC 5-50-260)

8. **Emission Controls** - Particulate (coal and synfuel dust) emissions, associated with the synfuel operations, from the crushers, screens, spreaders, and briquette makers shall be controlled by enclosing such operations within buildings and by wet suppression as necessary.
(9 VAC 5-50-260)

9. **Fugitive Dust Emission Controls** - Fugitive coal/petroleum coke/synfuel dust emissions from the storage piles shall be controlled by a wet suppression system capable of wetting the entire coal and petroleum coke storage area. Wet suppression cycles shall be implemented in accordance with Appendix A. Each cycle shall consist of no less than 35,500 gallons of water and attain 100 percent coverage of the coal and petroleum coke storage area. The wet suppression system shall be provided with adequate access for inspection.
(9 VAC 5-50-260 and 9 VAC 5-50-90)

10. **Fugitive Dust Emission Controls** - All coal/petroleum coke/synfuel storage piles shall be truncated, stacker/reclaimers used to build flat top piles, and the top compacted to minimize fugitive emissions.
(9 VAC 5-50-260 and 9 VAC 5-50-90)

11. **Emission Controls** - The permittee shall apply wet suppression as necessary to all incoming loaded coal and petroleum coke trains located within facility boundaries if they are not to be dumped within 24 hours.
(9 VAC 5-50-260)

12. **Emission Controls** - When the permittee is using a piece of auxiliary coal/petroleum coke/snyfuel handling equipment (e.g., front end loader, bulldozer), the area to be worked shall be monitored and wet suppression shall be applied as necessary to control emissions.
(9 VAC 5-50-260)

13. **Emission Controls** - When the permittee is using a particular piece of coal/coke/synfuel handling equipment (e.g., a dumper, a conveyor, etc.), it shall utilize the wet suppression controls for that piece of equipment unless the use of such equipment would cause a safety hazard or damage to the equipment from freezing.
(9 VAC 5-50-260)

14. **Emission Controls** - Particulate (coal/coke/synfuel dust) emissions from each surge silo shall be controlled by a fabric filter. The fabric filters shall be provided with adequate access for inspection.
(9 VAC 5-50-260)

15. **Monitoring Devices** - The fabric filter for the surge silo shall be equipped with devices to continuously measure the differential pressure drop across the fabric filter. Each monitoring device shall be installed in a readily accessible location and shall be maintained by the permittee such that they are in proper working order at all times. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the fabric filter is operating.
(9 VAC 5-80-1180, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

16. **Wet Suppression System** - The wet suppression system for the coal/petroleum coke/synfuel storage piles shall be implemented as specified in Appendix A or by any other procedure as may be approved by the DEQ prior to use. Such approval shall be contingent on adequate documentation that any alternative procedure shall achieve at least as high an efficiency as Appendix A. This applies to all other dust control measures required by this permit. Requests for changes in procedures shall be accompanied by an explanation of the proposed changes and the anticipated effect they shall have. These requests, if approved by the DEQ, shall be subject to a test and evaluation procedure prior to being accepted as permanent changes to the control procedures.
(9 VAC 5-50-260)

OPERATING/EMISSION LIMITATIONS

17. **Storage** – On a daily average, the maximum quantity of coal, petroleum coke, and synfuel (combined) in storage shall not exceed 1,400,000 tons.
(9 VAC 5-80-1180)

18. **Throughput** - The coal/petroleum coke/synfuel (combined) throughput for the ship/barge loading apparatus shall not exceed 24,000,000 tons per year, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-1180)

19. **Throughput** - The synfuel operations (plant #1 & 2, combined) throughput shall not exceed 12,264,000 tons per year, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-1180)

20. **Emission Limits** - Emissions from the operations of facility(synfuel/ coal/ petroleum coke storage, production, and export) shall not exceed the limits specified below:

Particulate Matter	112.0 tons/yr
PM-10	20.9 tons/yr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition numbers 3-14, and 16-19.
(9 VAC 5-50-260)

21. **Visible Emission Limit** - Visible emissions from the enclosed rotary rail car dumper shall not exceed 0 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-260)

22. **Visible Emission Limit** - Visible emissions from the fabric filter shall not exceed 0 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-260)

23. **Visible Emission Limit** - Visible emissions from the conveyor belt transfer points shall not exceed 5 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-260)

24. **Visible Emission Limit** - Visible emissions from each building containing the coal crusher/screen operations, briquette makers, or synfuel screen operations shall not exceed 5 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-260)

25. **Visible Emission Limit** - Visible emissions from each storage bin and pugmill, associated with the synfuel productions, shall not exceed 5 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-260)

26. **Visible Emission Limit** - It is the intent of the control techniques and work practices contained in this permit to optimize particulate control from all emission points and to prevent visible particulate emissions throughout the facility. The permittee shall operate the facility, at all times, in accordance with the best known control strategies and work practices as prescribed in this permit to achieve the objective of no visible emissions. Where it is specified that water and/or surfactant is to be applied "as necessary", the permittee will apply water at any indication of visible emissions. The following measures shall be implemented:

    a. If emissions persist, surfactant will be added.
    b. If emissions continue, the handling operations causing the emissions will be stopped.
    c. At the first sign of dust emissions from the coal/petroleum coke/synfuel storage piles, additional wet suppression will be applied; and if emissions continue, sealant will be applied.

Monthly periodic visual evaluations and inspections of the methodology to control dust shall be conducted on all emission points. The details of the evaluations and inspections shall be arranged with the Director, Tidewater Regional Office.
(9 VAC 5-50-260)

27. **Monitoring PM10** - Dominion Terminal Associates shall install and operate a PM10 monitor at the Newport News Housing Authority Maintenance Building (180-J) to ascertain the ambient air quality in the area surrounding the coal/petroleum coke/synfuel terminal. Operation shall be in accordance with Appendix J of 40 CFR Part 50.
(9 VAC 5-160-170)

28. **Control of Emissions -** The following actions are considered detrimental to the control of coal/petroleum coke/synfuel emissions:

a. Failure to stop any coal/petroleum coke/synfuel movement operation when it becomes known that installed air pollution control systems are inoperative and would cause excess emissions.

b. Failure to stop a coal/petroleum coke/synfuel movement operation when it becomes known that the coal/petroleum coke/synfuel handling equipment needed for that operation is malfunctioning or operating significantly below designated specifications.

c. Failure of equipment operators to take immediate precautions to preclude fugitive dust emissions from the operation of bulldozers, front-end loaders, automobiles, or trucks (e.g., the use of water suppressant or limiting the speed of movement to below 10 miles per hour).

d. Failure of operational personnel to give precedence to designated personnel with the responsibility for controlling dust emissions.

(9 VAC 5-50-260)

RECORDS

29. **On Site Records -** The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

a. Annual throughput of coal/petroleum coke/synfuel (combined) for the ship/barge loading apparatus, calculated monthly as the sum of each consecutive 12 month period.

b. Annual throughput of synfuel production, calculated monthly as the sum of each consecutive 12 month period.

c. Maximum daily quantity of coal/petroleum coke/synfuel (combined) in storage.

d. Records of dust control measures as required by Appendix A.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-50-50)

INITIAL COMPLIANCE DETERMINATION

30. **Visible Emissions Evaluation** – Initial performance tests of Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the permittee on the following items: BS-4, BS-7, and each crusher/screen building. Each test shall consist of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. The details of the tests are to be arranged with the TRO Air Compliance Manager. The evaluation shall be performed to demonstrate compliance within 60 days after achieving the maximum production rate but in no event later than 180 days after start-up of the permitted facility. Should conditions prevent concurrent opacity observations, the permittee shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests. One copy of the test result shall be submitted to the TRO Air Compliance Manager within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30, 9 VAC 5-80-1200, and 9 VAC 5-50-410)

NOTIFICATIONS

31. **Initial Notifications** - The permittee shall furnish written notification to the TRO Compliance Manager:

    a. The actual date on which construction of the synfuel plants commenced, within 30 days after such date.

    b. The anticipated start-up date of the synfuel plants, postmarked not more than 60 days nor less than 30 days prior to such date.

    c. The actual start-up date of the synfuel plants, within 15 days after such date.

d. The anticipated date of the VEE performance tests for BS-4 and 7 and the crusher/screen buildings, post marked at least 30 days prior to such date.

Copies of the written notification referenced in items a through d above are to be sent to:

Office of Air Enforcement (3AP10)

U.S. Environmental Protection Agency, Region III

Attention: NSPS Subpart Y Coordinator

1650 Arch Street

Philadelphia, PA 19103-2029

(9 VAC 5-50-50)

GENERAL CONDITIONS

32. **Permit Invalidation** - This permit to construct the synfuel plants shall become invalid, unless an extension is granted by the DEQ, if:

a. A program of continuous construction is not commenced before the latest of the following:

i. 18 months from the date of this permit;

ii. Nine months from the date that the last permit or other authorization was issued from any other governmental agency;

iii. Nine months from the date of the last resolution of any litigation concerning any such permits or authorization; or

b. A program of construction is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ approved period between phases of a phased construction project.

(9 VAC 5-80-1210)

33. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;

b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;

c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.
(9 VAC 5-170-130)

34. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Director, Tidewater Regional Office of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but not later than four daytime business hours of the malfunction. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within 14 days of the occurrence. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify Director, Tidewater Regional Office in writing.
(9 VAC 5-20-180 C)

35. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I)

36. **Maintenance/Operating Procedures** - During each shift, one designated person shall be responsible for compliance with the procedures of Appendix A. Actions required in support of these procedures shall take precedence over routine coal and petroleum coke handing procedures. The permittee shall take the following measures in order to minimize the

duration and frequency of excess emissions, with respect to air pollution control equipment , monitoring devices, and process equipment which affect such emissions:

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
b. Maintain an inventory of spare parts.
c. Have available written operating procedures for equipment.
d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of 5 years and shall be made available to DEQ personnel upon request.
(9 VAC 5-50-20 E)

37. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:
    a. Knowingly makes material misstatements in the application for this permit or any amendments to it;
    b. Fails to comply with the conditions of this permit;
    c. Fails to comply with any emission standards applicable to the equipment listed in Condition 2;
    d. Causes emissions from this facility which result in violations of, or interferes with the attainment and maintenance of, any ambient air quality standard;
    e. Fails to operate this facility in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect on the date that the application for this permit is submitted;
    f. Fails to construct or operate this facility in accordance with the application for this permit or any amendments to it; or
    g. Allows the permit to become invalid.
    (9 VAC 5-80-1210)

38. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Tidewater Regional Office of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-1240)

39. **Registration/Update** - Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.
(9 VAC 5-170-60 and 9 VAC 5-20-160)

40. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-170-160)

APPENDIX A

This appendix is to be considered a part of the Department of Environmental Quality permit to operate the Dominion Terminal Associates (Dominion) coal/petroleum coke/synfuel terminal. All procedures outlined in this appendix are enforceable as a condition of operating.

Dominion shall record the following parameters on an hourly basis:

Average hourly temperature (T) in degrees Fahrenheit

Average hourly relative humidity (RH)

Average hourly wind speed in miles per hour (WS)

Average hourly wind direction (DIR)

Hourly rain in inches

Hourly occurrence of fog (visibility of 4 miles or less)

Density of air ρ from the equation $\rho = -0.0001478(T) + 0.0853$

Viscosity of air (1.68μ) from the following equations

$-24.88 < T \leq 32$	$1.68\mu = 0.0001207(T) + 0.0655479$
$32.00 < T \leq 64.40$	$1.68\mu = 0.0001493(T) + 0.0646353$
$64.40 < T \leq 104$	$1.68\mu = 0.0001344(T) + 0.0655899$

K as determined by the equation: $K = WS(T/RH)\ (\rho/\mu\ 1.68)$

Dominion shall use the data listed above for a computerized spreadsheet in a format as described below, maintaining the records to be submitted to the Board upon request.

The program outlined in Appendix A when properly programmed will provide for calling up on the hour a visual display (graph) which depicts the following:

a. CE_{unc} for the KT predicted: will change by the new hourly prediction of KT. At the end of the day will represent the potential uncontrolled coal and petroleum coke emissions experienced in the past 24 hours.

b. Slope of the uncontrolled intended movement with time for the PASS-1 system without controls: will change by the new hourly prediction of KT.

c. PASS-1 line, with hourly markings in proportion depicting the controlled to the hourly K, emission level attained when controls are applied. This line's slope and value will vary as suppression cycles are applied. The extension of this line depicts the near low end of the day value in $\mu g/m^3$, if no further cycles are applied and is the primary control medium. It generates from the uncontrolled slope line (b.).

d. PASS-0 line, depicting the controlled emissions level attained when controls are applied. This line's slope as in (c) will vary as suppression cycles are applied. The extension of this line depicts the near high end of the day value in $\mu g/m^3$, if no further cycles are applied. When, due to cycles, the PASS-0 line and the PASS-1 line are one and the same, their extension will be the end of the day value attained for coal and petroleum coke emissions in $\mu g/m^3$. It generates from the uncontrolled CE_{unc} line (a.).

e. PASS-0 (180) line, with hourly markings in proportions to the hourly K, depicting the controlled emission level when the wind direction is between 180° and 270°T. This line is activated by wind direction inputs and holds the last highest value during periods when the wind is out of quadrant. Its extension represents the near end of day value in $\mu g/m^3$ at station 180-J if no further cycles are applied. This line also generates from the uncontrolled CE_{unc} line (a.).

COLUMN 1

TM Records the hourly values for a 24 hour day, beginning with a 1 at 0100 hours and ending with a 24 at 2400 hours.

COLUMN 2

K Computes and records the hourly value of K as follows:

$$K = ((WS * TEMP) / RH) * (\rho/1.68\mu)$$

COLUMN 3

KD Computes and records the K factor adjusted for rain and freeze effects. KD is used to define the need for a cycle (C_i) administered by the computer controlled water suppression system. KD is computed as follows:

$$KD = K * F_{fr}$$

COLUMN 4

C_i Records the total number of cycles credited on the hour. A 20-minute suppression cycle (35,500 gallons of water) sprayed from the computer controlled water suppression system counts as one cycle as well as a rain event greater than or equal to 0.0225 inches. Rain greater than or equal to 0.01 inches but less than 0.0225 inches is counted as one C_i if the adjusted rain amount for the hour is less than the actual rain amount.

COLUMN 5

SYM Records the type of suppression cycle credited for the hour. Where:

A: represents an ASSURANCE CYCLE (one 20-minute spray cycle per hour from the computer controlled water suppression system).

F: represents a continuous cycle (three 20-minute spray cycles per hour) administered to recover from a freeze event.

R: represents a rain event credited as a cycle.

1: represents a DEMAND I cycle, where KD is greater than or equal to 10, but less than 15.

2: represents a DEMAND II cycle, where KD is greater than or equal to 15, but less than 30.

3: represents a DEMAND III cycle, where KD is greater than or equal to 30, but less than 45.

4: represents a DEMAND IV cycle, where KD is greater than or equal to 45.

COLUMN 6

$\sum C_i$ Records the total number of cycles credited since 0100 or the sum of COLUMN 4.

COLUMN 7

IR Records the amount of rain in inches for the hour as measured by the rain gauge.

Note: CIR, the total amount of rain credited for the hour is computed as follows:

CIR = IR if it is raining, but adds 0.0225 to IR if a DEMAND IV RBC is administered.

IRadj, the adjusted rain amount for the hour is also computed to include the effects of non-consecutive rains, where:

$IRadj = CIR_{n-1} / (HRS_{n-1} + 1)$ when IR > 0 and HRS > 0

$IRadj = SUMIR_{n-1} / (HRS_{n-1} + 1)$ when IR > 0, SUMIR ≥ 0.0225; and HRS = 0

IRadj = 0 when IR = 0, and SUMIR < 0.0225

COLUMN 8

HRS Records the number of hours following a rainfall. HRS increases by one each hour after the rain ends, and continues to do so until another rain begins or until the effects of the rain are over ($F_r \geq 0.9$ or HRS = 48)

Note: If a DEMAND IV cycle is administered in order to recover from a freeze, HRS is initially set to 0.5 instead of 1.

HRS = 0	when $C_i = 3$ and $FIR_{n-1} = 0$ **or** $F_{frn-1} < 1$
HRS = 0	when IR > 0 and SUMIR > 0.0225
HRS = 0.5	when $C_i = 3$; $FIR_{n-1} > 0$;and $F_{frn-1} \geq 1$
$HRS = HRS_{n-1} + 1$	when IR > 0 and SUMIR ≤ 0.0225
or	when IR = 0; SUMIR > 0.0225

Note: If TM = 24 and HRS < 48 and $F_r < 0.9$ then HRS and SUMIR are carried forward to the next day. If HRS = 48 or $F_r \geq 0.9$ the post rain effect has reached its limits. On the next hour, $F_r = 1$, HRS = 0, and SUMIR = 0.

COLUMN 9

SUMIR Computes and records the effective sum of the hourly rainfall as follows:

SUMIR = 0	when CIR = 0 and $SUMIR_{n-1} < 0.0225$
$SUMIR = SUMIR_{n-1}$	when CIR = 0 and $SUMIR_{n-1} \geq 0.0225$
SUMIR = CIR	when CIR > 0;$(IR + IR_{n-1}) < 0.0225$;and $F_{frn-1} = 1$
SUMIR = CIR	when CIR > 0; $(IR + IR_{n-1}) < 0.0225$ $F_{frn-1} < 1$; $CIR_{n-1} > 0$; and $C_i = 3$
$SUMIR = IR + SUMIR_{n-1}$	when CIR > 0'; $(IR + IR_{n-1}) < 0.0225$; $F_{frn-1} < 1$; $CIR_{n-1} > 0$; and $C_i < 3$
$SUMIR = IRadj_{n-1} + CIR$	when CIR > 0; $(IR + IR_{n-1}) < 0.0225$ $F_{frn-1} < 1$; $CIR_{n-1} = 0$;
$SUMIR = IRadj_{n-1} + CIR$	when CIR > 0; and $(IR + IR_{n-1}) \geq 0.0225$

Note: If $F_r = 1$ or HRS = 48 then SUMIR is set to zero the next hour.

COLUMN 10

F_r Computes and records the post rain recovery factor. F_r ranges from zero to one, with F_r set to zero during a rain. When $F_r \geq 0.9$, the effects of the rain are considered over, and F_r is set to one on the next hour. F_r is computed as follows:

$F_r = 0$	when CIR < 0.0225 and SUMIR ≥ 0.0225
$F_r = 1$	when CIR < 0.0225 and SUMIR < 0.0225
$F_r = 10^{(-215.66*24*SUMIR/(HRS*KT))}$	when CIR < 0.0225 and SUMIR < 0.0225

COLUMN 11

F_{fr} Computes and records the combined effects of rain and freeze, where $F_{fr} = F_r * F_f$.

F_f (the post freeze effect) is calculated as follows:

$F_f = ((SUMKF * FHRS)/(FIR * 106)) * 4.02917 + 0.305$	when FIR > 0 and SUMKF > 0
$F_f = 1$	when FIR = 0 or SUMKF = 0

SUMKF (the sum of the freeze shear) is calculated by summing the K values beginning when the temperature reaches 29°F until $F_r \leq 0.1$ or until continuous cycles are administered.

FIR (the potential freeze water) is calculated as follows:

FIR = SUMKF/19200	when $FIR_{n-1} = 0$;SUMIR = 0;FHRS = 8; and SUMKF > 0
$FIR = FIR_{n-1}$	when $FIR_{n-1} = 0$; SUMIR = 0; FHRS ≠ 8 and SUMKF > 0
	or when $FIR_{n-1} > 10$; $F_r = 1$; and $SUMIR + SUMIR_{n-1} \leq FIR_{n-1}$
FIR = SUMIR	for all other conditions

FHRS (the potential freeze hours) is calculated as follows:

FHRS = 0	when SUMIR = 0 and SUMKF = 0
FHRS = HRS	when SUMIR > 0 and SUMKF = 0
FHRS = HRS	when SUMKF > 0; TEMP > 34°F; and $F_r < 0.1$
FHRS = FHRS + 1	when SUMKF > 0; and TEMP ≤ 34°F **or** $F_r \geq 0.1$

COLUMN 12

KT Computes and records the predicted sum of K at the end of the day as follows:

$KT_n = K_1 + K_2 + K_3 + \ldots K_n + K_n(24\text{-}TM)$

EXAMPLE:

TM	K
1	10
2	10
3	20

$KT_3 = 10 + 10 + 20 + 20(24\text{-}3) = 460$

COLUMN 13

H_{vi} Computes and records the estimated amount of dust entering the HVS during the hour as follows:

$H_{vi} = Ksum * Sl * F_{fr}$

where:

Ksum is the sum of the K values within the current cycle set.

Sl is the slope of the sumH_{vi} line for the current cycle set, and is computed as follows:

At TM = 1

$Sl = sb$ when $C_i = 0$

where sb(base slope) = CE_{unt}/KT

$Sl = sb * (1\text{-}eff)$ when $C_i > 0$

For all other times (n):

$Sl = Sl_{cin-1} * (1\text{-}eff)_n$

where Sl_{ci-1} is the last value of Sl in the previous C_i sequence Sl_{ci-1} = sb prior to any cycles.

(1-eff) term calculates the efficiency of the last cycle administered and is calculated as follows:

Equation A:

$(1\text{-}eff)_a = (1\text{-}(36.657299 * 10^{(-0.00189215 * Ksum)}/100))C_{seq}$

Equation B:

$(1\text{-}eff)_b = (1\text{-}((-0.0146913 * Ksum + 14.65059)/100))C_{seq}$

Equation A can be used to calculate the efficiencies when KT < 288 otherwise use Equation B until $slope_{n-1} * (1\text{-}eff)_b \leq$ sp(shift point)

where sp = 0.6256838 - 0.0008297 * KT

then switch to Equation A.

Note: At the beginning of the day, (1-eff) = 1 until a cycle occurs. If a cycle is credited at time 1 (cycle performed at TM 0000) then the equation for (1-eff) changes as follows: KT replaces Ksum, and the calculation is multiplied by C_{seq} instead of raised to its power. The slope then remains constant until another cycle/cycles are administered.

C_{seq} is the cycle sequence for the current cycle set.

where: $C_{seq} = 0$ when $C_i = 0$

$C_{seq} = C_{seqn-1}$ when $C_{in} = C_{in-1}$

$C_{seq} = 0.5$ when $C_{in} > C_{in-1}$; $F_{fr} > 1$; and $C_i = 1$

$C_{seq} = 1$ when $C_i = 1$ or 3

$C_{seq} = 2$ when $C_i = 2$

EXAMPLE: KT(at TM = 4) = 368.60 i.e. ≥ 288

sb = 0.40804

sp = 0.31986

TM	K	RBC	Ksum	(1-eff)	C_{seq}	Sl	F_{fr}	H_{vi}
1	20.10	0	20.10	1.0	0	0.408	1.0	8.2024
2	17.00	0	37.10	1.0	0	0.408	1.0	15.1398
3	16.50	1	16.50	0.85592	1	0.349	1.0	15.7631
4	15.00	1	31.50	0.85592	1	0.350	1.0	11.0307

COLUMN 14

$\sum H_{vi}$ Computes and records the sum of the coal and petroleum coke dust in the HVS (Hi Vol Sampler) to the hour as follows:

$$\sum H_{vi} = H_{vi} + \sum H_{vicin-1}$$

where $\sum H_{vicin-1}$ is the last value of $\sum H_{vi}$ in the previous cycle sequence.

EXAMPLE: Using the values from the previous example:

TM	$\sum H_{vicin-1}$	$\sum H_{vi}$
1	0.0	8.2024
2	0.0	15.1398
3	15.1398	20.9029
4	15.1398	26.1705

COLUMN 15

HVT Computes and records the projected amount of dust on the HVS filter at the end of the day if no further cycles were administered.

$$HVT = \sum H_{vi} + KL * Sl * (1\text{-}eff)$$

where $KL = KT - sum(K_1 + K_2 + \ldots K_n)$

(1-eff) is the same as COLUMN 14 except that KL is used in the expression instead of Ksum.

COLUMN 16

TEMP Records the temperature in degrees Fahrenheit.

COLUMN 17

RH Records the relative humidity (percent)

COLUMN 18

WD Records the wind direction (degrees)

COLUMN 19

WS Records the wind speed (mi/hr)

COLUMN 20

#C_c Records the number of suppression cycles credited for hour. The suppression cycles are only credited when the wind is blowing within the 180 to 270 degree quadrant.

COLUMN 21

∑HVIc Computes and records the sum of the dust in the HiVol accumulated when the wind is blowing within the 180 to 270 degree quadrant.

DTA calculations: Using ProControl Dust Suppression software to estimate fugitive emissions from the facility.

Permit actions: PM PTE after permit = 112.0 - 61.0 tons (past actuals) = + 51.0 tons/yr
PM-10 PTE after permit = 20.9 - 12.0 tons(past actuals) = + 8.9 tons/yr

Permit an amendment since PM-10 (< 10 ton/yr increase) is used, when available, rather than PM.

New permit limit for current equipment: PM = 90.2 PM-10 = 17.0
New permit synfuel plants plus other new conveyor belts: PM = 21.8 PM-10 = 3.9

NEW TOTAL FACILITY PERMIT LIMITS: PM = 112.0 tons/yr PM-10 = 20.9 tons/yr

For CEDS code only one entry:
SCC 30501040 PM and PM-10 <u>emissions from the facility.</u>

Suggested permit limits:
Coal/petroleum coke/synfuel thruput = 24 million tons/yr
Coal/petroleum coke/synfuel storage = 1.4 million tons, daily average
Synfuel production = 12, 246,000 tons/yr

PM 112.0 tons/yr
PM-10 20.9 tons/yr

SOURCE TESTING REPORT FORMAT

Cover
1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Tester; name, address and report date

Certification
1. Signed by team leader / certified observer (include certification date)
* 2. Signed by reviewer

Introduction
1. Test purpose
2. Test location, type of process
3. Test dates
* 4. Pollutants tested
5. Test methods used
6. Observers' names (industry and agency)
7. Any other important background information

Summary of Results
1. Pollutant emission results / visible emissions summary
2. Input during test vs. rated capacity
3. Allowable emissions
* 4. Description of collected samples, to include audits when applicable
5. Discussion of errors, both real and apparent

Source Operation
1. Description of process and control devices
2. Process and control equipment flow diagram
3. Process and control equipment data

* Sampling and Analysis Procedures
1. Sampling port location and dimensioned cross section
2. Sampling point description
3. Sampling train description
4. Brief description of sampling procedures with discussion of deviations from standard methods
5. Brief description of analytical procedures with discussion of deviation from standard methods

Appendix
* 1. Process data and emission results example calculations
2. Raw field data
* 3. Laboratory reports
4. Raw production data
* 5. Calibration procedures and results
6. Project participants and titles
7. Related correspondence
8. Standard procedures

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* Not applicable to visible emission evaluations.

OCR

The following pages contain the Optical Character Recognition text of the preceding scanned images.

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COMMONWEALTH of VIR(CjINIA

DEPARTiVfENTOI-'ENI'IRO,,%',VfENT4L QUALITY

@(0,6 Southern Boulevard
W. Tayloe Murphy, Jr. Virginia Beach, VA 23462 Robert G. Burrilev
Secretarv of Natural Resources w w. d CLI. sta t c.'@ 3. US Director

Francis L. Daniel
Tidewater Re,.@ional Director
(75 7) @ 1 8-2000

December'23). 2002)

Mr. Charles E. Brinlev

President

DominionTerminal Associates

Post Office Box 967 A

Newport News, Virginia 2_3607

AFS Id. No.: 51-700-00074

Location: Newport News

Rec,istration No.: 60997

Dear I'vIr. Brinlev:

Attached is an amended permit to construct and operate a coal svnftiel product ion, storage,

and export facility in accordance with the provisions of the Commonwealth of V ir(@,inia State Air

Pollution Control Board Reoulations for the Control and Abatement of Air Pollu tion. This
In
Permit Supersedes Your permits dated October 10. 198 1, November 24, 1987, Jan uary 7, 1988.

k1IILMI-V 5, 1990, September 22. 19921, FebrUary 14. 2000, July 7, 1-000.

This permit contains legally enforceable conditions. Failure to comply may re sults in a

Notice of Violation and civil penalty. Please read all permit conditions care fully.

In the Course of evaluating the application and arriving at a final decision t o approve the
t,

pr 'ect, the Department of Environmental Quality (DEQ) deerned the application complete on Oi December II, 2002

This amended permit to construct and operate shall not relieve Dominion Termin al

Associates of the responsibility to comply with all other local, state, and fe deral permit

reoulations.

The Board's ReOUlations as contained in Title 9 of the Virginia Administrative Code 5-170-

200 provides that You may request a formal hearing from this case decision by filing a petition

with the Board within 30 days after this case decision noticewas mailed or del ivered to you. 9

VAC 5-1 70-1 80 provides that You may request direct consideration of the deci sion by the

Board if the Director of the DEQ made the decision. Please consult the releva nt regulations for

additional requirements for such requests.

Mr. Cliarles F. Brinlev
Dollllilloll Tel-111111,11 Associates
December 2002
I)agc 2

,\s provided by Rule 2,V2 oFflic Supreme Court ol"Orginia, you liave 'O days f
roill tile date
()I,Scl-vlcc ol'tilis decision (tile Clate VOLI aCtUally received this decisio
n oi- tile date oil wilicil it
'ICd to VOLI, \VIIlCIlC\Vr OCCLII I I I IMI
\V@IS IM11 I Ted first), w'di'll XvIllcil to Initiate all appeal oftlils dec's
'
by 1-Hino a Notice ol'Appeal with:

Robert G. RL11-111ey, Director
Departillcilt. of' FlIV11,01111lental QUalltv
Post Office Box 1 0009
Ricliniond. Virginla 23240-0009

In the event that this decision is served Oil VOU bv mail, three davs are adde
d to the period in
which to file an appeal. Please refer to Part Two A of the Rules of the Supre
me Court of
Virginla for information oil the required content of the Notice of Appeal and
for additional
reqUirenients (lovernin appeals fi-on-i decision ofacirninistrative auencies.

II'VOLI liave anv CILICStIMIS collcerning, this permit. please call Mr. Barry
Flalcrow at (757)
5 Is-2 1 84.

sincerelv,

Francis L. Daniel

FLD/BWFI/DTA 2002 i-nin.doc

Attaclinici-it: Permit
NSPS, Subpart Y

cc Director, OAPP (electronic file Submission)
Manager, Data Analysis (.electronic file submission)
Chief, Ali- Enforcement Branch (3AP 1 3), U.S. EPA. Region Ill

x"

COMMONWEALTH of V1RQ1NJA

DEPARTMENT OF EM'1ROiVMEVTAL QU,4LITY

5610 Southern Boulevard
W. Tayloe Murphy, Jr. Vin-nnia Beach, VA 23402 Robert G. Bumlev
Secretarv of Natural Resources m, w.deq.state.@, LIAIS Director

Francis L. Daniel
Tidewater Reizional Director
(757) 518-2000

STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE
New Source Performance Standards (NSPS)

This pci-mit supercedes VOUr permit dated October 10, 1 98 1, November 24. 198 7, January 7.
1988-Januarv 5, 1990, September 22,19-921 Februarv 14, 2000, July 7, -1000.

hi complimice with the Uedcral CleanAlt-Act and the Commonwealth of Virginia lZeoulatimis f'or the Control and Ahatemei-it ofAir Pollution.

Domimoii Terminal Associates
Post Office Box 967 A
Nev,-port News, Virginia 23607
AFS Id. No.: 51-700-00074
Reoistration No.: 60997
t@

is aUthOrlzed to construct and operate

a coal syriffiel. production, stora(ye, and export facility and
a coal/petroleum coke storage and export facility
located at
Pier I 1,
Harbor Road
Newport News

M accordance with the Conditions of this permit.

Approved on December 23, 2002.

L
Director, Department of Environmental Quali ty

Permit consists of 25 pages.
Permit Conditions I to 40, Plus Appendix A
Source Testing Report Format

.)omInIon Terminal Associates
Registration No.: 609(7
December 23, 2002
Pa " C

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parentheses after each Conditiml.

APPLICATION

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represented in tile permit appi ication dated Auoust 1 7, 198 1, and October 1 5, 2002, InclUdIlIC,

amendment ii-if'ormation dated Au"LlSt. 225, 1 98 1, October 1 9, 1989, April 22. 1992. December

21), 1 999, and December 6, 20021, and December I 1, 20021. Any changes in th e permit

application specifications or any existing I I I
facilities which alter the impact of the facility on air

qualitv mav re(JUtre a permit. FaItUre to obtain Such a permit prior to const ruction may result

In ent.,orcelliellt action.

(9 VAC 5-50-390 and 9 VAC 5-80-1 2IO)

PROCESS REQUIREMENTS

2. Equipment List - Equipment to be constructed at this facility consists of: synfuel plant 91

and synfuel 92. The new equipment added for the the synfuel operations
- convevor belt #14 frorn existing coal storage pile to new coal storage pile for synfuel
operations
- convevor belt 41 5 for coal from storaae pile @,vlth belt feeds I 5a. & b fo r each crusher

(NSPS)
- belt stora-e bin -4 4 fi-orn storage pile to conveyor belt #16 for crusher 9 1 and belt

storw,e bill 9 7 frorn storage pile to conveyor belt 430 for crusher 42 (NSPS)

z:1 t-7
- coal crusher 9 I & 4`2, each rated at I 000 ton/hr, and each within its resp ective

crusher/screen bid- (NSPS)
- coal screen 91 (double deck) for crusher #1 and coal screen #3 (double deck) for

crusher 92, each rated at 700 ton/hr and within its respective crusher/screen bldg

(NSPS)

- convevor belts # 17 and 9 1 8 from coal screen 9 I and conveyor belts 9 _3) I and 4')"?

from coal screen 4 3) (NSPS)

Oominlon Terminal Associates
Rcgistration No.: 60997
Dccember 21, 2002
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coll%,CN!ol- licit 91(to p1l"111111 hill stol"loe 95 I'or SVIII'Llcl plant U I and ColIN-cyor licit 4

to PLIgIllill bill storage H8 t'()i- syni'Liel plant 42

conveyor belt 9 20 to PLIIIIIIIII 41 and conveyor belt 434 to PLIOIIIIII #2, e ach PLIUIIIIIII

rated at 700 tons/hr

bincicr silo 9 I and 42

-"
convevor belts 4 21 alld 4 -0111 PLIon-i'll 41 to spreader for synfucl plant 4 1 and

convevor belts 935 and 936 Il-0111 PLIomill 92 to spreader for syrifuel plant #2 and each

spreader within its respective synfuel bldo

three briquette makers for syriffiel plant 91 and three briquette makers for s vnfLiel

plant #2, each rated at '23-3 tons/hr and each briquette maker within its resp ective

svnfucl bid(-,

convevor belts 423-26 From briquette makers to svi-iti-tel screen 42 and conic -,.,or belts

437-40 1ron-i briquette makers to svnI'Licl screen 44 and each each screening operation

within its respective bid,,

convevor belt # 27 from syriftiel screen 92 to spreaders in synfuel plant 91 a nd

conveyor belt 941 from synfuel. screen 94 to spreaders in synfuel plant 9")

convevor belts 9 28 & 29 from syriftiel. screen #2 to synfLiel storage pile an d conveyor

belts 442 & 43 fi-orn svriftiel. screen 94 to synfuel. storage pile

svriftiel storage piles (LISIng the previously constructed wet suppression sys tem which

call conipletely wet all)

conveyor belt #44 from svnfuel stora(-Ye pile to existing ship/barge loading c onveyor

svstem

Additional equipment to be added to the facilitv consists of-
- convevor belts # 45, 46, 47, and 48 for coal and petroleum coke

Equipment previously permitted at this facility consists of-
- one tandem rotary rail car coal/petroleLIM coke dumper in an enclosed buildi
ng with

water spray, rated at 5800 tons/hr
- one coal/petroleLlIll coke dumper surge silo with a fabric filter
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0. l"IIIIiSSiOII Controls - Pal'tICULAC (Co@ll alld SV11111CI CiLISI) emissions. associated with tile
SvIII'Llel operations, I'l-oill tile conveyor belt system shall be controlled by enclosed conveyors

aild transtcr Points (also 111,1V HICILICIC tile LISC Ol'bUildill" CIICIOSLII-CS, where possible) aild by

\\'et SLIIII)I'CSSIOII as IlcceSSM'V.
VAC 5-50-2260)

7. Emission Controls - PartiCLIlate (coal and synt-Iiel dLISt) emissions. associated with the

synfuel operations, From the storage bills and pup-nills shall be controlled by by wet
Suppression as necessary.

(1) VAC 5-50-260)

S. Emission Controls - Particulate (coal and synfuel CILISt) emissions, associated with the
synt'Liel operations, fi'0111 tile Crushers. Screens. Spreaders. and briquette makers shall be

controlled by eIlClOSIIIII Such OperatIOIIS Within 111.111dings and by wet suppression as
necessary.

(9 VAC 5-50-260)

9. Fu(yitivc Dust Emission Controls - FLIGitiVe coal/petroleLlIll coke/synfuel dust emissions
tn' P I
f'rom tile storaoe piles shall be controlled by a Wet Suppression svstern capable of wettina the

ciltire coal and pCtl-OICLIIII coke storage area. Wet Suppression cycles shall be implemented ill

accordance with Appendix A. Each cycle shall consist of no less than 35,500 gallons of

water and attain 100 percent covera(Te of the coal and petroleum coke storage area. The wet

Suppression system shall be provided with adequate access for inspection.

(9 VAC 5-50-260 and 9 VAC 5-50-90)

1 0. Fuuitive Dust Emission Controls - All coal/petroleLlIll coke/svnftiel storage piles shall be
truncated, stacker/reclaimerS used to build flat top piles, and the top compacted to minimize

fd("t've emissions.
11

(9 VAC 5-50-260 and 9 VAC 5-50-90)

1 1. F1111iSSiOn COMI-01S - The Pet-IIIIUCC Shall @1111)IV %VCt SUppression as necessary to all incoI1111111
loaded coal MId PCH-01CLIM coke trains located within facility boundaries ifth ey are not to lie

clumped within 24 hOLII-S.

((VAC 5-50-260)

1 2. Emission Controls - Whei-I the pci-IllittCC IS LISII1'0 Li piece ofaLIXIl lary coal/petroleurn

coke/snyfuel. handling eqUipillellt (C.(,., front end loader, bLI11dozer), the area to be worked

shall be monitored and wet suppression shall be applied as necessary to contro l emissions.

(9 VAC 5-50-260)

I Emission Controls - When the permittee is LIS11111 a particular piece of coa l/coke/synfuel

handling eqUipment LI dumper, a conveyor, etc.), it shall Util'Ze the Wet SLIp press'
I I I 1011

controls tor that piece oCeqUipillent unless the Use Of SLICh eqUipillent woUl d caUSe a safctv

hazard or damage to the eqUipillellt fl-01711 f1-CCZII101
(9 VAC 5-50-2-60)

14. Emission Controls - PartICUlate (coal/coke/synfuel dLISt) emissions from e ach SLirge silo

shall be controlled by a fabric filter. The fabric filters shall be provided with adeqUate access
for Inspection.

(9 VAC 5-50-260)

I 5. Monitorina Devices - The fabric filter for the SUrge silo shall be eqUipp ed. with devices to

COMMUOusly meaSUre the differential preSSUre drop across the fabric filter. E ach monitorinU

device shall be installed in a readily accessible location and shall be mainta ined by the

permittee SLICh that they are in proper workino order at all times. Each moni torinu device
t@ t-1
shall be provided with adequate access for inspection and shall be in operatio n when the

fabric filter is operatill",

(9 VAC 5-80-1180, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

1 0. NVO St1j)j)1-CSSiO11 SVStC111 - The Wet SUppreSSIoll SN'stem Cor the COa1 /pCt1_OICL11ll coke/sviiCuel
des shall be implemented as specified ill Appendix A oi- by any other procedur e as
storage pi l I I
iiiay he a)proved by the Dl-'Q prior to Lise. SLICII IPPI-OVal shall be cont ingent oil adequate

ClOCL1111CIltation that any alternative procedUre shall achieve at least as hi gh all efficiency as

Appelldix A. This applies to all offier dLlSt control nieaSUres reqUired by th is permit.
I

Requests for chantles in procedures shall be accompanied by all explanation of the proposed

clian(,es and the anticipated effect diev shall have. These reqUeStS, if appr oved by the DEQ.

-hall be SUH
s ject to a test and e@,,aluation procedure prior to being accepted as permane nt

clianges to the control PrOCedLll-C.S.

(9 VAC 5-50-2260)

OPERATING/EMISSION LIMITATIONS

1 7. Stoi-a-c - Oil a dailv wv-craoc, the niaxiML1111 CILILIntlity of coal, pC trOICL1111 coke, and synfuel
(.combined) in stora(ye shall not exceed 1,400.000 tons.

(9 VAC 5-80-1 1 80)

I S. Throughput - The coal/petroleLlIll Coke/syriftiel (combined) thrOLlghput for the ship/barge

loading apparatLIS shall not exceed 224,000.000 tons per year, calculated mont hly as the surn

OfeaCh CO1lSeCLltlVe 12-i-nonth period.

(9 VAC 5-80-1 1 80)

1 1). Throughput - The syrifuel operations (plant 4 I & 2, combined) throughp ut shall not exceed

12,2164,000 tons per year, calCLIlated monthly as the SLim of each consecutive 12-month

period.

(9 VAC 5-80-1 1 80)

(09Z-0@-@ DVA 6)

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(09-C-01-@-@ DVA 6)

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INITIAL COMPLIANCE. DE,rEwN1lNA,ri0 N

10. Visible Einissions Evaluation - Initial perl'61,111ance tests ot'Visible L imssion EVa1LMti(11s

(VEE) in accordance with 40 CFR Part 60. Appendix A, Method 9, shall be condu cted by the

permittee on the f(Howino items: BS-4, BS-7, and each crusher/screen buildin(, . Each test

shall consist of 30 sets of 24 C011SCCUt1VC observations (at I 5 second interv als) to @ield a six

111111Ute avera(,e.. The details of the tests are to be arranoed with the TRO Air Compliance

Manaoer. The evaluation shall be performed to demonstrate compliance within 6 0 days after

achlevina the maximum production rate but in no event tater than 180 days, aft er start-up of

the permitted facility. Should conditions prevent Concurrent opacitv observat ions, the

perni1ttee shall be notified in writing, within seven days, and visible emissi ons testing shall

tic rescheduled @withln 30 davs. Rescheduled testing shall be conducted under the same
conditions aS possible) as the initial perforniance tests. One copy of the tes t result shall be

SLIbIllitted to the 'FRO Air Compliance Manager within 45 days after test comp letion and

shall conf.'(rni to the test report forniat enclosed @,kith this permit.

(9 VAC 5-50-30. 9 VAC 5-80-1200, and 9 VAC 5-50-41 0)

NOTIFICATIONS

3 1. Initial Notifications - The peri-nittee shall furnish written notificatio n to the TRO

Compliance Manager:

a.
The actual date on which construction of the synfuel plants commenced, within 30 days
after Such date.

b. The anticipated start-up date of the syriffiel. plants, postmarked not more than 60 days nor
less than 30 days prior to Such date.
I

c. The actual start-up date of the synfuel plants, within 15 days after Such d ate.

d. The allticipated Clate of' tile VI-'I." perl'orillailce tests l')i- BS-4 an d 7 and tile C1-L1.SllC1-/SC1-CC11
bulldillos, post niarked at least 30 days prior to SLICII CkItC.

Copies of tile @\:ritten notification rel'erenced in items a thi-OLIgh d above are to be sent to:

I orceillellt
cc oCA11- F-111' 3AP I 0)

U.S. Env, I Protection Aoency, Reuion III
ironmenta

Attention: NSPS SUbpart Y Coordinator

1 650 Arch Street

Philadelphia, PA 19103-2029

(9 VAC 5-50-50)

G F, NE RA L CO ND I T I 0 N1 S

-LICt tile SN-Ilt'Llel plants shall become
Pei-init Invalidation - This permit to Consti

Ulliess an extension is granted by the DEQ, If:
t,
a. A prograrn of coi-it'1111-10LIS COlistruction is not commenced before the l atest of the
z::1

I. IS months from the date of this permit,

I -orn the date that the last permit or other authorization was ISSLIed from 11. Nine months fi

ariv other @-,ovcriimeiital a@-,encv-,

-n the date of the last resolution of anv liti(,ation concerning anN
lit,. Nine months froi such

permits or aUthorization-, or

h. A prooram Of COLIStRICtiOn is discoiltilILICI-I for a period of IS months o r more, or is not

completed within a reasonable time, except for a DEQ approved period between p hases

of a phased construction project.

(.9 VAC 5-80-1210)

Riaht of Entry - The permittee shall allow authorized local, state. and federa l
to,
representatives. Upon the presentation of credentials:

a. To enter Upon the peri-nittee's premises on which the facility is located o
r in which any
records are reqUired to be kept under the terms and conditions of this permit,

lilies MW I I
h. To have access to and CopN at reasollable t, VC(RIS I-C(ILI'l-Cd to he kept Wider the
terills and Conditions ot,tills perililt or the State Ali- P011LItiOn Control Board Rquilatl(lls,

To Inspect at CCSS SLib'ect to the terms and
C. reasonable times zinv facilitv, cqLllplllCllt, Or pro
conditions of., tills permit or the State All- I)011LItI0Il Control Board Repu lations-, and

d. To sallipic or test at reasonable times.

For 111.11-1)OSCS 01'tIllS Condition, the tlIIIC for ills ection shall be deei -ned reasonable dUrIII(
p
I-CU'Llial- bLISHICSS 110til-S Or Whenever the 11-icility is in operation. No thing contained here'

shall make all inspection time unreasonable dUring all emergency.

(1) VAC 5-170-130)

,4. Notification for Facility or Control Equipment Malfunction - The permittee shall fUrnlish

ific, 'oil to the Director. Tidewater Re(-,'oiial Office of malfunctions of t he affected
noti 1 ati I I -1 I I
I'acility or related all- Pollution control cqLllplllCllt that may cause exces s emissions for more

than one 1101-11-, bV facsimile transmission, telephone or telegraph. Such no tification shall be

made as soon as practicable but not later than four daytime business hours of the

malfunction. The permittee shall provide a written statement cliving all pert inent facts,

HICILiding the estimated duration of the breakdown. within 14 davs of the occu rrence. When
-1 I
the condition causin- the failure or malfunction has been corrected and the eq uipment is

again in operation, the permittee shall notify Director, Tidewater Regional Of fice in writing

(1) \,"AC 5-20- ISO C)

Violation of Ambient Air Quality Standard - The permittee shall, upon request of the

DEQ, reduce the level of operation or shut down a facility, as necessary to av oid violating

any primary ambient air quality standard and shall not return to normal operat

ion until Such

time as the ambient air qUality standard will not be violated.

(9 VAC 5-20-180 F)

36. Maintenance/Operating Procedures -7 During each shift, one designated pers on shall be responsible for compliance with the procedures of Appendix A. Actions required in support

of these procedures shall take precedence over routine coal and petroleum coke handing

procedures. The permittee shall take the following measures in order to minim ize the

Don-iii-ilonTerimnal Associates
Registration No.: 609(7
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tl

(11.11-@ItIOII MId 11'CCILIC11CV ()I'CXCCSS C111ISSIO11S, With I-CSI-)CCt to I II- I)OHLItioi-I coMrol eqU111111clit .

111ollitorill", (levices, alld proccss Cclulpillelit W111CII alTeCt SLICII CII IISSIMIS:
a. Develop a iliall-itcliance SC]ICCILIIC and niali-itain records ofall schedU led and non-

schedUIC(l 111MIltellance.
t@. Maintain all inventory ol'spare parts.

c. Have available @vrltten operating procedures for equipment.

cf. Train operators in the proper operation of. 'all such eqUipment, and famil iarize the

operators xvith the written operating procedUres. The peri-nittee sliall main tain records of

the training provided HICILiding the naines of trainees, the date of traininc, and the nature

f the tra'n'
I IIIC"
Records of niall-itclialice and trainin',, sliall be maintained on site for a period of 5 years and

sliall be i-nade available to DEO PCI-SOIIIICI Upon reqLICSt.

VAC 5-50-20 E)

37. Permit Suspension/Revocation - This permit may be suspended or revoked if the permittee:

a. Knowinaly makes material misstatements in the application for this permit o r any

amendi-nents to it,

b. Falls to comply with the conditions of tlils permit;

c. Falls to coniply witli any emission standards applicable to the eqUipment l isted in
Condition 2,

d. CaLlSeS emissions fron-i this facility which reSLIlt in violations of, or i nterferes with the

attainment and maintenance of, anv ambient air quality standard;

e. Falls to operate this facility in conformance ,,vith any applicable control strategy,,

includim, ariv emission standards or emission limitations, in the State Implem entation

Plan in effect on the date that the application for this permit is submitted;

f. Falls to construct or operate this facility in accordance with the applicat
ion for this permit

or any amendments to it, or
(Y. Allows the permit to become invalid.

(9 VAC 5-80-121 0)

)8. Change of Ownei-ship - In the case ofa transf r ofokviiership ofa stati ir ce, the new
e I ionary SOL

o%vner shall abide by any CLIrrent pernilt ISSLIed to the previOLIS o@,vner- T he new o,,vner shall
the Tidexvater Regional Office ofthe chari0e of o@vnership @,vithin 30 days of the
noti N I I I I I

tra II s 1`e r.
(1) VAC 5-80-1240)

/Update - Annual requirenients to
Reoristration fulfill le al obligations to maintain current

Stationary SOLIrCC enlISSIons data will necessitate a prompt response by the p ernuttee to

requests by the DEQ or the Board for ii-if'ormation to inclUde. as appropriate : process and

prodUCtIon data: changes in control eqUIPIllent, and operatino schcdLIIeS. SL ICh rcqLIeStS f0r

Hil'Orniation tl,oni the DEQ will either be in vvritlng, or by personal contac t. The avallabilltv

01"11601-111atiOn SLIbIllitted to the DEO oi- the Board be governed by applica ble provi slorls
I I I
ofthe Freedorn of' triformation Act. 2. 1-340 thrOLI(Ill 2). 1 -348 of the Code of Virginia.

I 0. I - I _3 14 (addressin(, information provided to the Board) of the Code o f Virginia, and 9

VAC 5-170-60 of the State Air Pollution Control Board Reaulations. friforniati on provided

to federal officials IS SLIbjeCt to appropriate federal law and re(ILIlations governing

confidentiality OfSLICII information.

9 VAC 5-170-60 and 9 VAC 5-20-160)

40. Pet-mit Copy - The peri-nittee shall keep a copy of this permit on the pre mises of the facility

to which it applies.

(9 VAC 5-170-160)

DoIlliillioll Terminal Associates
Registration No.: 60997
Deceillber 210, 200-1
Paoc I 0

APPENDIX A

Tills appei-idix Is to he coiisidered a part ol'tlic Departillellt of. , F-Ilv iroi-ItlicMal QUality permit
to operate the Doi-I-iji-iloii Teriniiial Associates (Dominion) coal/petroICLI III coke/synfuel terminal.
,\II procedi.11-CS OLItIIIICCl III this appendix are eii1lorceable as a condit ioi-I of operating

Dol-IIIII1011 SlIall record tile 1,011owill(' parailleters Oil an IIOLII-Iy, b asis:

Average I-1OLII-IV tCIIIPCI-atLII-C (T) in det4rees Fahrenheit

Averaue IIOLII-IN' relative 111.11111dity (RI 1)

,\X-Cra@,C IIOLII-IV ,@Jiid speed 'II IIIIICS Per 1101.11- (VVS)

1\VCI-a0C 1101-11-IN, w'nd directioi-I (DIR)

I IOLII-IV raiii III Mclies

I-IOLII-IV Occurrence 01. 'fo(l (visibility of'4 miles or less)

Density oC air p from the equation p = -0.000 1478(T) + 0.0853

Viscosity of air (1.68LL) from the following equations

-24.88 < T < 32- 1.6Sj-L = 0.0001207(T) + 0.0655479
'I
-) -1.00 < T < 64.40 1.68@1. = 0.0001493)(T) + 0.0646353
64.40 < T < 104 1.68@t = 0.000 I 344j) + 0.0655899

K as determined by the equation: K = WS(T/RH) (P/@L 1.68)

Doiiiiiiioii sliall use tile data listed above for a computerized spreadsheet in a format as
described below, maintaining the records to be submitted to the Board upon req uest.

The 111-0111-Mll OLItI1IICd III Appendix A when properly prooranimed will pro"
,-Ide 1`61- caIIIII0 UP
C,
Oil tile IIOUI- a. VISLIIl display (oraph) which depicts the 1`611owing:

-O -1,111
@I. I rthe K -eclicted: WiII CIIIII(_1C bV the IICW hOLII_IV prediction of KT. At the end of
the day xvill represent the p0tClItMI LHICOMI-Olled coal and petroleum coke em issions
expci-lenced in the past 24 hours.

h. Slope of' tile uncomrolled intended moveiiient xN.,ith time for the PASS- I svstern WithOLIt

controls: will chan,,e by the neNv hourly prediction of K-F.

C. P11\SS-I 11.11C, With IIOLII-IN' Illalj@ill!'S in III-01)OI-tiOn depicting the controlled to the 1101-irly K,
emission level attained NvIien controls are applied. This line's slope and va lue will vary as

Suppression cycles are applied. 'File extension of this line depicts the near low end of the day

1 3 if no further cycles are applied and is the primary control med'um. It VaILle in @tg/m ,I I

,,enei-L
- ites fi-om the uncontrolled slope line (b.).

d. PASS-0 line. depicting the controlled emissions level attained when control s are applied.

This line's slope as in (c) will vary as Suppression cycles are applied. The extension of this
3
line depicts the near high end of the dav value in I,t-/m ,if no further c cle s are applied.
y
When, due to cycles, the PASS-0 line and the PASS-1 line are one and the same, their

'II be the end ofthe day value attained for coal and petroleum coke emissions i
extension vvl I In
I
@tg/m'. It generates from the uncontrolled CEL1111 line (a.).

e. PASS-0 H 80) line. With h0LIrIV rnarkings in proportions to the hourly K, d epicting the

controlled emission level when the wind direction is between 180' and 270'T. This line is

activated by wind direction inputs and holds the last hiallest value during pe
riods when the
3
WIIICI IS Out of quadrant. Its extension represents the near end of day value
 in @tg/rn at station

I 804 if no further cycles are applied. This line also generates from the unc
ontrolled CE,111C

ne

DominlonTerminal Associates
lZegistration No.: 60997
December 20, 21002

COLUMN I
TN I Records the 11OLII-lV VaILICS I-Or a 24 hOLII- day, beginning with a I at 0 1 00 hours and endIM-1
with Li 24 at 2400 hours.

COLUMN I

K COMpUtes and records the 11OLII-1V Value of K as folloNvs:

K = ((WS * TE%MP) / RH) * (p/1.68@0

COLUMN 3

KD C011111MCS alld records the K factor ad'LIStCd for raM and fi-eeze effects. KD is used to

defIne the need for a cvcle (Q. administered bv the COMPLIter controlled water

SLIJ)presslon SvStCI-n. KD 'IS COIIIPLItCd Lis follows:

KD K * Fir

COLUMN4

Ci Records the total number of cycles credited on the hour. A '20-minUte suppr ession cycle

(35,500 aallons of water) spraved from the computer controlled water suppressi on SN'Stern

counts as one cycle as well as a rain event Ereater than or equal to 0.0225 in ches. Rain

oreater than or equal to 0.0 I inches but less than 0.0211-5 inches is counted as one Ci if the

ad'Usted rain amOUnt for the hour is less than the actual rain aMOLint.

SYN] lZecords the type Of Suppression cycle credited t'01- the l1OL11-. Where
:
represents ,in ASSt,JRANCF CYCI-F (one 20-mi
inute spray cycle per hour from the

COMPLItCr controlled water suppression systern).

F: represents a continuous CVCle (three 20-111inUtC spray cycles per hour) adm
inistered to

recover from a freeze event.

R: represents a rain event credited as a cycle.

I :represents a DEMAND I cycle, where KD is oreater than or equal to 10, but l
ess than

represents a DENJAND 11 cycle. wliere KD is lyreater dian or equal to 15, but
less than

30.

represents a DEN/IAND II I cycle, where KD is oreater than or equal to 30, but
less
than 4-5.

4: represents a DEMAND IV cycle, where KD is greater than or equal to 45.

COLUNIN 6

"5'C I Records the total number of cycles credited since 0 1 00 or the surn of
COLUMN 4.

COLUNIN 7

IR Records the amount of rain in inches for the hour as measured by the rain g
auge.
Z--
Note: CIR, the total amount of rain credited for the hour is computed as follo
ws:

CIR = IR if it is rainina, but adds 0.0'-')'-')5 to IR if a DEMAND IV RBC is a
dministered.
ID -
IRadj, the adjusted rain amount for the hour is also computed to include the e
ffects of

non-consecutive rains, where:

lRad' = CIR,,-, / (HRS,,-, + 1) when IR > 0 and HRS > 0

IRadj = SUMIR,,-, / (HRS,,-, + 1) when IR > 0, SUMIR > 0.0225; and FIRS = 0

IRad = 0 when IR = 0, and SUMIR < 0.0221-5

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Registration No.: 60997
December 20, 2002
I"i"C @O
COLUMN 8

1 IRS Records the 111.1mber 0fhOLirs [611oxving a rainfall. I-IRS increases by one each 11OLir after

the rain ends, and continues to do SO Until another rain begins or until the effects of the

. (F, > 0.9 or I-IRS = 48)
rain are ovet

Note: If a DEMAND IV cvcIe is administered in order to recover from a freeze, HRS is

initially set to 0.5 instead of 1.

HRS=O when Ci = 3) and FIR,,-, = 0 or Fjrjj_j ,::@ I

IJRS = 0 when IR > 0 and SUMIR > 0.0225

I-IRS = 0.5 when C. FIR,,-, > 0,and Fj@,,,_j > I

I IRS = FIRS,,-, + I N@-hcn IR > 0 and SUMIR < 0.02125

or when IR = 0-, SUMIR > 0.0225

Note: If T\1/1 = 24 and FIRS < 48 and Fr < 0.9 then FIRS and SUMIR are carried forward

to the next day. If I-IRS = 48 or F, > 0.9 the post rain effect has reached its limits. Oil the

next hOLir, F, = 1, FIRS = 0, and SUMIR = 0.

COLUMN9

S U'11,1 I RCOMPLItes and records the effective SLIM of the hourly rainfall as follows:

SUMIR = 0 when CIR = 0 and SUNIIR,,-, < 0.0225

SUMIR = SUNllR,1-1 v,'hen CIR = 0 and SUMIR,_1 > 0.0-225

SUMIR = CIR when CIR > 0-(IR + IR,,-,) < 0.0225;and Fl-,,,-, = I

SUMIR = Cl`R when CIR > 0; (IR + IR,1-1) < 0.022-5 Ff-,,,_1 < 1,

CIR,1-1 > 0; and Ci

SUMIR = IR + SUMIR,,-, when CIR > 0'; OR + I.R.1-1) < 0.0225;

Ft-,,,-, < 1, CIR,,_1 > 0; and Q < 3)

SUMIR = IRadj,,-, + CIR when CIR > 0-1 (IR + IR,,-,) < 0.0225 Ff,.-, < 1;
0.
CIR,,-

SUMIR = IRadj,,-, + CIR when CIR > 0, and (IR + IR,,-,) > 0.02-25

Note: If F, = I or HRS = 48 then SUMIR is set to zero the next hOUr.

COLUNIN 10
1.11. C0111111.1tes and records the post rain recoverv I'lactor. F, ranges fro m zero to one, with F,
I
set to zero dUrim, a rain. When F, > 0.9, the effects of the rain are conside red over, and Fr

is set to 011C Oil the IICXt hour. Fr 'IS COMPLIted as follows:

Fr = 0 @@,,hen CIR < 0.0212-5 and SUMIR > 0.02-2.5

Fr= I when CIR < 0.0225 and SUMIR < 0.0225

Fr = 1 0(-21 5.66*24*SUN11R/(I IIZS*KT)) when CIR < 0.0225 and SUMIR < 0.0225

COLUMN II

Fl-,- Computes and records the combined effects of rain and freeze, where F1-r = F, * Fl..

Fj- (the post freeze effect) is calculated as follows:

Fj- ((SUNIKF * F1-IRS)/(FIR * 106)) * 4.02917 + 0.305 wheil FIR > 0 and SUMKF > 0
Fj- = I when FIR = 0 or SUNIKF = 0

SUMKF (the surn of the freeze shear) is calculated by summing the K values beg inning

when the temperature reaches 297 until F, < 0. I or until continuous cycles ar e

administered.

FIR (the potential freeze water) is calculated as follows:

FIR = SUMKF/19200 when FIR,,-, = O;SUMIR = 0-FHRS = 8, and SUMKF > 0

FIR = FIR,1-1 when FIR,,-, = 0-, SUMIR = 0; MRS # 8 and SUMKF > 0

or when FlR,,_I > 10; Fr = 1; and SUMIR + SUMIR,,_1 < FIR,,-,
FIR = SUMIR for all other conditions

MRS (the potential freeze hours) is calculated as follows:

MRS = 0 when SUMIR = 0 and SUMKF = 0
MRS = HRS when SUMIR > 0 and SUMKF = 0

MRS = HRS when S UMKF > 0; TEMP > 3) 4'F; and F, < 0. I

MRS = MRS + I when SUMKF > 0; and TEMP < 34OF or F, > 0. I

COLUMN 12

KT ColllpUtCS and records the predicted SUM of'K at tile end ofthe day as foll
ows:

KT" = K I + K2 + K3 + K, + K,,(24-TNI)
EXAMPLE: TM K

I I 0

2 1 0
0

KT = 10 + 10 + 20 + 20(24-3) = 460
3

COLUMN 13

H, Coniputes and records the estimated amount of dust entering the FIVS during
the hour as

follows:

IJv- = KSUm * St * Fj@,
where:

KSUm is the surn of the K values within the current cycle set.

SI is the slope of the sumH,i line for the current cycle set, and is computed
as follows:

At TM= I

SI = sb when Ci = 0

where sb(base slope) = CE,,,,,/KT

SI = sb * (I -eff) when C, > 0
For all other times (n):

SI = SI1:i._1 * (I-effln

where Sici-I is the last value of SI in the previous Ci sequence SI,j-j =: sb
prior to

any cycles.

(I -eff) term calculates the efficiency of the last cycle administered and is

calculated as follows:
Equation A:

'I lo(-1.10119-115 * KSU111)/1
-eff),=(I-(36.657299* 00))Cseq
Equation B:

(I -eff)b = (I -((-O.O 1 46913 * Ksum + 14.65059)/100))C,,q

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P a i,, e 21
Equation A can be Used to calculate the efficiencies when KT < 2_88 otherwise use

Equation B U11t1I SIOPC,,-l * (I -Cf'1)1) :@ Sp(Sllift Point)

where sp = 0.6256838 - 0.0008297 * KT
then switch to Equation A.

Note: At the beginning of the day, (I -eff) = I until a cycle occurs. If a cy cle is

credited at time I (cycle performed at TM 0000) then the equation for (I-eff) changes

as follows: KT replaces KSU111, and the calculation is multiplied by C,,q inst ead of

raised to its power. I-lie slope then remains constant until another cycle/cy cles are
administered.

CSCq is the cycle sequence for the current cycle set.

where: CSeq = 0 when Ci 0

Cseq Cseqn-1 when C111 Cill-I

I I - > 1; and C- I
CSC(, 0.5 when C,11 C,,j_j, F1r

CSC(I I when C- = I or 3
I

Cseq 2 when Ci = 2

EXAMPLE: KT(at TM = 4) = 368.60 i.e. > 288

sb = 0.40804

sp = 0.31986

TM K RBC Ksum (I -eff) Cseq SI Fft Hvi

1 20.10 0 2) 0. I 0 1.0 0 0.408 1.0 8.2024

17.00 0 37.10 1.0 0 0.408 1.0 15.1398

16.50 1 16.50 0.85592 1 O_33 4 9 1 . 0 1 5.7 63) 1

4 15.00 1 3 1 .5 0 0.85592 1 0.350 1.0 11.0307

COLUNIN 14
I 1, COMPLItes and records the sum of the coal and petroleum coke dust in the HVS (Hi Vol
Sampler) to the hour as follows:
YFlvi::-- Hvi + Y-Hv,c,lI-,
where 7Hv,ci,, is the last value of Y_Hvi in the previous cycle sequence.
EXAMPLE: Using the values from the previous example:
TM Y-Hvicill-I Y-Hvi
I 0.0 8.21 0 2 4
2 0.0 15.1398
1 -5. 1 _3 9 820.9029
4 15. 1 3)98 26.1705

COLUNIN 15
HVT Computes and records the projected amount of dust on the HYS filter at the end of the
day if no further cycles were administered.
HVT = YHvi + KL * Si * (I -eff)
where KL = KT - sum(KI + K,- + . . . K,,)
O -eff) is the same as COLUNIN 14 except that KL is used in the expression instead of Ksum.

COLUMN 16
TEMP Records the temperature in degrees Fahrenheit.

COLUMN17
RH Records the relative humidity (percent)

COLUMN18
WD Records the wind direction (degrees)

COLUMN 19

W, S Records the wind speed (nil/lir)

COLUNIN 20

4C, Records the 11LIn-iber of suppression cycles credited for hour. The suppre ssion cycles are

only credited v,-hen the wind is blowing within the ISO to 2270 degree quadran t.

COLUMN21

Computes and records the sum of the dust in the HiVot accumulated when the win d is

blowing within the ISO to 270 degree quadrant.

DTA calculations: Using ProControl Dust Suppression software to estimate fugit
ive emissions
from the facility.

Permit actions: PM PTE after permit 112.0 - 61.0 tons (past actuals) + 51.0 to
ns/yr
PM- IO PTE after permit 20.9 - 12.0 tons(past actuals) + 8.9 tons/yr

Permit an amendment since PM-10 (< 10 ton/yr increase) is used, when available
, rather
than PM.

New permit limit for current equipment: PM = 90.2 PM- IO 17. 0
New permit synfuel plants plus other new conveyor belts: PM = 21.8 PM-10 3.9

NEW TOTAL FACILITY PERMIT LIMITS: PM = 112.Otons/yr PM-10=20.9tons/yr

For CEDS code only one entry:
SCC 30501040 PM and PM-10 emissions from the facility.

Suggested permit limits:
Coal/petroleum coke/synfael thruput = 24 million tons/yr
Coal/petroleum coke/synfuel storage = 1.4 million tons, daily average
Synfuel production = 12, 246,000 tons/yr

PM 1 12.0 tons/yr
PM-10 20.9 tons/yr

SOURCE TESTING REPORT FORMAT

Cover
I . Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or regis
tration)
I
-). Tester; name, address and report date

Certification
I Signed by team leader / certified observer (include certification date)
Sianed by reviewer

Introduction
I . Test purpose
Test location, type of process
Test dates
4. Pollutants tested
5. Test methods used
6. Observers'names (industry and agency)
7. Any other important background information

Summary of Results
I . Pollutant emission results / visible emissions summary
2. Input during test vs. rated capacity
Allowable emissions
4. Description of collected samples, to include audits when applicable
5. Discussion of errors, both real and apparent

Source Operation
I . Description of process and control devices
2. Process and control equipment flow diagram
"I
-). Process and control equipment data

Sampling and Analysis Procedures
I Sampling port location and dimensioned cross section
Sampling point description
D. Sampling train description
4. Brief description of sampling procedures with discussion of deviations from
standard methods
5. Brief description of analytical procedures with
discussion of deviation from standard methods

Appendix
1. Process data and emission results example calculations
2. Raw field data
Laboratory reports
4. Raw production data
5. Calibration procedures and results
6. Project participants and titles
7. Related correspondence
8. Standard procedures

Not applicable to visible emission evaluations.