#194

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

5636 Southern Boulevard
Virginia Beach, VA 23462
Tel# (757) 518-2000
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Dennis H. Treacy
Director

Francis L. Daniel
Tidewater Regional Director

February 14, 2000

Mr. John E. Davis
General Superintendent
Dominion Terminal Associates
Post Office Box 967 A
Newport News, Virginia 23607

AIRS ID No. 51-700-00074
Location: Newport News
Registration Number: 60997

Dear Mr. Davis:

Attached is a permit to construct and operate a coal and petroleum coke 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 permit dated September 22, 1992.

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 January 5, 2000.

This approval 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:

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 Laura Corl at (757) 518-2178.

Sincerely,

Karen Jackson Sismour
Permit Manager

KJS/LDC/dta00min.doc

Attachment: Permit
Appendix A

Director, OAPP (electronic file submission)
Manager, Data Analysis (electronic file submission)

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STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit supercedes your permit dated September 22, 1992

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
AIRS ID No. 51-700-00074
Registration Number: 60997

is authorized to construct and operate

a coal and petroleum coke storage and export facility

located at

Pier 11,
Harbor Road
Newport News

in accordance with the Condition of this permit.

Approved on February 14, 2000.

Director, Department of Environmental Quality

Permit consists of 22 pages.
Permit Conditions 1 to 32.
Appendix A included.
Document List included.

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, including amendment information dated August 25, 1981, October 19, 1989, April 22, 1992, and December 29, 1999. 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 5-80-10 K 4)

PROCESS REQUIREMENTS

2. **Equipment List** - Equipment to be constructed at this facility consists of:
   Previously permitted equipment at this facility prior to the date of this permit consists of:
   - rotary rail car dumper and other coal and petroleum coke handling and storage equipment
   - a permanent wet suppression system which can completely wet all coal and petroleum coke storage piles
   (9 VAC 5-80-10 A)

3. **Emission Controls** - Particulate (coal/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/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/coke dust) emissions from the conveyor belts 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. **Fugitive Dust Emission Controls** - Fugitive coal/coke 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)

7. **Fugitive Dust Emission Controls** - All coal storage piles shall be truncated and the top compacted to minimize fugitive coal dust emissions.
(9 VAC 5-50-260 and 9 VAC 5-50-90)

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

9. **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)

10. **Emission Controls** - When the permittee is using a piece of auxiliary coal and/or petroleum coke 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)

11. **Emission Controls** - When the permittee is using a particular piece of coal and/or petroleum coke 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)

12. **Emission Controls** - Particulate (coal/coke dust) emissions from each surge silo shall be controlled by a fabric filter with at least 99% collection efficiency. The fabric filters shall be provided with adequate access for inspection.
(9 VAC 5-50-260)

13. **Control Efficiency** - The fabric filter on the surge silo shall maintain, a control efficiency for particulate matter of no less than 99 percent
(9 VAC 5-50-260)

14. **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 5-80-10 H, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

15. **Wet Suppression System** - The wet suppression system for the coal and petroleum coke 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

16. **Storage** - The maximum quantity of coal and petroleum coke in storage at any one time shall not exceed 1.4×10^6 tons.
(9 VAC 5-80-10 H)

17. **Throughput** - The throughput of coal and petroleum coke shall not exceed 2.4×10^6 tons per year, calculated monthly as the sum of each consecutive 12 month period.
(9 VAC 5-80-10 H)

18. **Emission Limits** - Emissions from the operation of the coal and petroleum coke storage and export facility shall not exceed the limits specified below:

Particulate Matter			
Dumpers	0.2	lbs/hr	0.5 tons/yr
Transfer Points	1.3	lbs/hr	2.6 tons/yr
Stacker/Reclaimers	0.8	lbs/hr	1.5 tons/yr
Auxiliary Vehicles	5.4	lbs/hr	4.4 tons/yr
Coal and petroleum coke Piles			45.2 tons/yr

PM-10			
Dumpers	0.04	lbs/hr	0.1 tons/yr
Transfer Points	0.2	lbs/hr	0.5 tons/yr
Stacker/Reclaimers	0.1	lbs/hr	0.3 tons/yr
Auxiliary Vehicles	1.0	lbs/hr	0.8 tons/yr
Coal and petroleum coke Piles			8.1 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 3,4,5,6,9,and 19.
(9 VAC 5-50-260)

19. **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)

20. **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)

21. **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; and

    b. If emissions continue, the handling operation causing emissions will be stopped.

    c. At the first sign of dust emissions from the coal and petroleum coke storage piles, additional wet suppression will be applied; and

    d. If emissions continue, sealant will be applied.

    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)

22. **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 and petroleum coke terminal. Operation shall be in accordance with Appendix J of 40 CFR Part 50.
    (9 VAC 5-160-170)

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

    a. Failure to stop any coal and petroleum coke 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 and petroleum coke movement operation when it becomes known that the coal and petroleum coke 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

24. **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 and petroleum coke, calculated monthly as the sum of each consecutive 12 month period.

b. Maximum daily quantity of coal and petroleum coke in storage.

c. 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)

GENERAL CONDITIONS

25. **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)

26. **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)

27. **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)

28. **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)

29. **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 5-80-10 K)

30. **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 5-80-10 O)

31. **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)

32. **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 State Air Pollution Control Board permit to operate the Dominion Terminal Associates (Dominion) coal and petroleum coke 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} > l0; 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

$\sum$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.

DOCUMENT LIST

1. Permit application, dated July 29, 1981 and signed by Mr. F. J. Manusco.
2. State Air Pollution Control Board, Region VI engineering analysis, dated September 10, 1981.
3. Mathematical Supplement to: "Control of Fugitive Emissions from Open Coal Storage in Newport News, Virginia," page 67, "Control Methodology."
4. Dominion Terminal Associates letter, dated May 3, 1989 and signed by Mr. Howard B. Phillips.
5. Revised permit application, dated October 19, 1989 and signed by Mr. Thomas N. Houck, P.E.
6. Department of Air Pollution Control, Region VI engineering analysis, dated November 22, 1989.
7. Dominion Terminal Associates letter, dated April 22, 1992 and signed by Mr. Charles E. Brinley.
8. Local approval letter dated June 29, 1992.
9. Department of Air Pollution Control, Region VI engineering analysis, dated September 16, 1992.
10. Dominion Terminal Associates letter, dated December 29, 1999 and signed by Mr. John E. Davis.

OCR

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

COMMONWEALTH of VIRGINIA

James S. Gilmore, III DEPAR TWENT OF ENUR ONAIENTAL Q UALITY Dennis H. Treacy
Govemor 5636 Southern Boulevard Director
Virginia Beach, VA 23462
John Paul Woodley, Jr. Tel# (757) 5 18-2000 Francis L. Daniel
Secretary of Natural Resources http://www.deq.state.va.us Tidewater Regional D
irector

February 14, 2000

Mr. John E. Davis
General Superintendent
Dominion Terminal Associates
Post Office Box 967 A
Newport News, Virginia 2-3) 607

AIRS ID No. 51-700-00074
Location: Newport News
Registration Number: 60997

Dear Mr. Davis:

Attached is a permit to construct and operate a coal and petroleum coke storag
e and export
facility in accordance with the provisions of the Commonwealth of Virginia Sta
te Air Pollution
Control Board Regulations for the Control and Abatement of Air Pollution. Thi
s permit
supersedes your permit dated September 22, 1992.

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
project, the Department of Environmental Quality (DEQ) deemed the application
complete on
January 5, 2000.

This approval to construct and operate shall not relieve Dominion Terminal Ass
ociates of the
responsibility to comply with all other local, state, and federal permit regul
ations.

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 de
livered to you. 9
VAC 5-170-180 provides that you may request direct consideration of the decisi
on by the
Board if the Director of the DEQ made the decision. Please consult the releva
nt regulations for
additional requirements for such requests.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days fr
om the date
of service of this decision (the date you actually received this decision or t
he date on which it
'led to you, whichever occurred first), within which to initiate an appeal of
this decision
was mal
by filing a Notice of Appeal with:

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 Supre
me Court of
Virginia for information on the required content of the Notice of Appeal and f
or additional
requirements governing appeals from decision of administrative agencies.

If you have any questions concerning this permit, please call Laura Corl at (7
57) 518-2178.

Sincerely,

Karen Mckson Sismour
Pen-nit Manager

KJS/LDC/dtaOOmin.doc

Attachment: Permit
Appendix A

Director, OAPP (electronic file submission)
Manager, Data Analysis (electronic file submission)

COMMONWEALTH of VIRGINIA

James S. Gilmore, III DEPAR TMENT OF EAT7R ONMENTAL Q UALITY Dennis H. Treacy
Govemor 5636 Southern Boulevard Director
Virginia Beach, VA 23462
John Paul Woodley, Jr. Tel# (757) 518-2000 Francis L. Daniel
Secretary of Natural Resources http:Hwww.deq.state.va.us Tidewater Regional Di
rector

STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit supercedes your permit dated September 22, 1992

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 23 607
AIRS ID No. 51-700-00074
Registration Number: 60997

is authorized to construct and operate
a coal and petroleum coke storage and export facility

located at
Pier I 1,
Harbor Road
Newport News

in accordance with the Condition of this permit.

Approved on February 14, 2000.

Direc@/' Department of En;Aronmental Quality

Permit consists of 22 pages.
Pen-nit Conditions I to 32.
Appendix A included.
Document List included.

An Agency of the Natural Resources Secretariat

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, 19 8 1, including amendment information dated August 25, 198 1, October 19, 1989, April 22, 1992, and December 29, 1999. 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 pen-nit prior to construction may result in enforcement action.
(9 VAC 5-50-390 and 9 VAC 5-80-10 K 4)

PROCESS REQUIREMENTS

2. Equipment List - Equipment to be constructed at this facility consists of:
Previously permitted equipment at this facility prior to the date of this permit consists of-.
- rotary rail car dumper and other coal and petroleum coke handling and storage equipment
- a permanent wet suppression system which can completely wet all coal and petroleum coke storage piles
(9 VAC 5-80-10 A)

3. Emission Controls - Particulate (coal/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/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/coke dust) emissions from the conveyo r belts shall be

controlled by conveyor hoods and wind guards. Ground level reclaim conveyor b elts shall be

controlled by wet suppression as necessary.

(9 VAC 5-50-260)

6. Fugitive Dust Emission Controls - Fugitive coal/coke dust emissions from th e 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 a ccordance

with Appendix A. Each cycle shall consist of no less than 35,500 gallons of wa ter and attain

100 percent coverage of the coal and petroleum coke storage area. The wet sup pression

system shall be provided with adequate access for inspection.

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

7. Fugitive Dust Emission Controls - All coal storage piles shall be truncated and the top

compacted to minimize fugitive coal dust emissions.

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

8. Fugitive Dust Emission Controls - All petroleum coke storage piles shall be truncated using

the stacker/reclaimers to build flat top piles to minimize fugitive coke emiss ions.

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

9. Emission Controls - The permittee shall apply wet suppression as necessary to all incoming

loaded coal and petroleum coke trains located within facility boundaries if th ey are not to be

dumped within 24 hours.

(9 VAC 5-50-260)

1 0. Emission Controls - When the permittee is using a piece of auxiliary coal and/or petroleum

coke 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)

1 1. Emission Controls - When the permittee is using a particular piece of coal and/or petroleum

coke 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)

12. Emission Controls - Particulate (coal/coke dust) emissions from each surge silo shall be

controlled by a fabric filter with at least 99% collection efficiency. The fabric filters shall be

provided with adequate access for inspection.

(9 VAC 5-50-260)

13. Control Efficiency - The fabric filter on the surge silo shall maintain, a control efficiency

for particulate matter of no less than 99 percent

(9 VAC 5-50-260)

14. 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 5-80-10 H, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

15. Wet Suppression System - The wet suppression system for the coal and petro leum coke

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 p ermit.

Requests for changes in procedures shall be accompanied by an explanation of t he roposed
p
changes and the anticipated effect they shall have. These requests, if approv ed 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

16. Storage - The maximum quantity of coal and petroleum coke in storage at an y one time shall
not exceed 1.4 x 106 tons.

(9 VAC 5-80-10 H)

17. Throughput - The throughput of coal and petroleum coke shall not exceed 2. 4 x 106 tons per
year, calculated monthly as the sum of each consecutive 12 month period.

(9 VAC 5-80-10 H)

18. Emission Limits - Emissions from the operation of the coal and petroleum coke storage and
export facility shall not exceed the limits specified below:

Particulate Matter
Dumpers 0.2 Ibs/hr 0.5 tons/yr
Transfer Points 1. 3 lb s/hr 2.6 tons/yr
Stacker/Reclaimers 0. 8 Ibs/hr 1.5 tons/yr
Auxiliary Vehicles 5.4 lbs/hr 4.4 tons/yr
Coal and petroleum coke Piles 45.2 tons/yr

PM-10
Dumpers 0.04 lbs/hr 0. I tons/yr
Transfer Points 0.2 lbs/hr 0.5 tons/yr
Stacker/Reclaimers 0. I Ibs/hr 0.3 tons/yr
Auxiliary Vehicles 1.0 lbs/hr 0.8 tons/yr
Coal and petroleum coke Piles 8. 1 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 3,4,5,6,9,and 19.

(9 VAC 5-50-260)

19. 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)

20. 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)

2 1. 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; and
b. If emissions continue, the handling operation causing emissions will be stopped.
c. At the first sign of dust emissions from the coal and petroleum coke storage piles,
additional wet suppression will be applied; and
d. If emissions continue, sealant will be applied.
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)

22. Monitorinc, PM10 - Dominion Terminal Associates shall install and operate a PM IO
monitor at the Newport News Housing Authority Maintenance Building (I 80-J) to ascertain
the ambient air quality in the area surrounding the coal and petroleum coke terminal.
Operation shall be in accordance with Appendix J of 40 CFR Part 50.
(9 VAC 5-160-170)

23. Control of Emissions - The following actions are considered detrimental to the control of
coal and petroleum coke emissions:
a. Failure to stop any coal and petroleum coke 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 and petroleum coke movement operation when it becomes known
that the coal and petroleum coke handling equipment needed for that operation is
malfunctioning or operating -Ignificantly below designated specifications.

c. Failure of equipment operators to take immediate precautions to preclude fu gitive 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

24. On Site Records - The permittee shall maintain records of emission data an d operating

parameters as necessary to demonstrate compliance with this permit. The conte nt and fonnat

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 and petroleum coke, calculated monthly as the sum of each
consecutive 12 month period.

b. Maximum daily quantity of coal and petroleum coke in storage.

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

These records shall be available for inspection by the DEQ and shall be curren t for the most

recent five years.

(9 VAC 5-50-50)

GENERAL CONDITIONS

25. Right of Entry - The pen-nittee shall allow authorized local, state, and f ederal

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 k ept under the

terms and conditions of this pen-nit 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 reason able during

regular business hours or whenever the facility is in operation. Nothing cont ained herein

shall make an inspection time unreasonable during an emergency.

(9 VAC 5-170-130)

26. 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 emis sions for more

than one hour, by facsimile transmission, telephone or telegraph. Such notifi cation 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 perti nent facts,

including the estimated duration of the breakdown, within 14 days of the occur rence. When

the condition causing 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.

(9 VAC 5-20-180 C)

27. Violation of Ambient Air Quality Standard - The permittee shall, upon requ est 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 1)

28. Maintenance/Operating Procedures - During each shift, one designated perso
n shall be

ible for compliance with the procedures of Appendix A. Actions required i
responsi 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

duration and frequency of excess emissions, with respect to air pollution cont
rol equipment,

monitoring devices, and process equipment which affect such emissions:

a. Develop a maintenance schedule and maintain records of all scheduled and no n-

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 familiari ze 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 an d the nature

of the trainin-

Records of maintenance and training shall be maintained on site for a period o f 5 years and

shall be made available to DEQ personnel upon request.

(9 VAC 5-50-20 E)

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

a. Knowingly makes material misstatements in the application for this permit o r 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 lis ted in

Condition 2;

d. Causes emissions from this facility which result in violations of, or inter feres with the

attainment and maintenance of, any ambient air quality standard;

e. Fails to operate this facility in conformance with any applicable control s trategy,

including any emission standards or emission limitations, in the State Impleme ntation

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 applicati on for this permit

or any amendments to it; or

g. Allows the permit to become invalid.

(9 VAC 5-80-10 K)

30. 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 5-80-10 0)

3 1. 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. I- 13 14 (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)

32. 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 State Air Pollution Control Bo ard permit to
operate the Dominion Ten-ninal Associates (Dominion) coal and petroleum coke t erminal. All
procedures outlined in this appendix are enforceable as a condition of operati ng.

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 p from the equation p = -0.0001478(T) + 0.0853

Viscosity of air (1.68@t) from the following equations

-24.88 < T < 32 1.68@t = 0.0001207(T) + 0.0655479
32.00 < T < 64.40 1.68pi = 0.0001493(T) + 0.0646353
64.40 < T < 104 1.68@L = 0.0001344(T) + 0.0655899

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

Dominion shall use the data listed above for a computerized spreadsheet in a f on-nat as
described below, maintaining the records to be submitted to the Board upon req uest.

The program outlined in Appendix A when properly programmed will provide for c alling up

on the hour a visual display (graph) which depicts the following:

a. CE c for the KT predicted: will change by the new hourly prediction of KT. At the end of
unc
the day will represent the potential uncontrolled coal and petroleum coke emis sions

experienced in the past 24 hours.

b. Slope of the uncontrolled intended movement with time for the PASS- I syste m without

controls: will change by the new hourly prediction of KT.

c. PAS S- I 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 valu e will vary as

suppression cycles are applied. The extension of this line depicts the near l ow end of the day
3
value in @tg/m , if no further cycles are applied and is the primary control m edium. It

generates from 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 day value in pg/m , 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 cok e emissions in
3
@tg/m . It generates from the uncontrolled CEunc line (a.).

e. PASS-0 (180) line, with hourly markings in prgportions to the hourly K, dep icting 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 per

iods when the

wind is out of quadrant. Its extension represents the near end of day value in @Lg/M3 at station
180-J if no further cycles are applied. This line also generates from the uncontrolled CE"',
line (a.).

COLUMNI
TM Records the hourly values for a 24 hour day, beginning with a I at 0 1 00 h ours and ending

with a 24 at 2400 hours.

COLUMN2

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

K = ((WS * TEMP) / RH) * (p/1.68@t)

COLUMN3

KD Computes and records the K factor adjusted for rain and freeze effects. KD is used to

define the need for a cycle (Ci) administered by the computer controlled water

suppression system. KD is computed as follows:

KD = K * Ff,

COLUMN4

Ci Records the total number of cycles credited on the hour. A 20-minute suppre ssion cycle

(35,500 gallons of water) sprayed from the computer controlled water suppressi on system

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

greater than or equal to 0.0 I inches but less than 0.0225 inches is counted a s one Ci if the

adjusted rain amount for the hour is less than the actual rain amount.

COLUMN5

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) admin istered 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 l ess than

15.

2: represents a DEMAND 11 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

Y-Ci Records the total number of cycles credited since 0 1 00 or the sum of CO LUMN 4.

COLUMN 7

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

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

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

IRadj, the adjusted rain amount for the hour is also computed to include the e ffects of

non-consecutive rains, where:

IRadJ = CIRn-1 / (HRSn-1 + 1) when IR > 0 and HRS > 0

IRadJ = SUMIR,_1 / (HRSn-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 ea ch hour after

the rain ends, and continues to do so until another rain begins or until the e ffects of the

rain are over (Fr > 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 Ci = 3 and FIRn-1 = 0 or Ffm-l < I

HRS = 0 when IR > 0 and SUMIR > 0.0225

HRS = 0.5 when Ci = 3; FIR,-, > O;and Ffm-l > I

HRS = HRSn-1 + I when IR > 0 and SUMIR < 0.0225

or when IR = 0; SUMIR > 0.0225

Note: If TM = 24 and HRS < 48 and F, < 0.9 then HRS and SUMIR are carried forw ard

to the next day. If HRS = 48 or Fr > 0.9 the post rain effect has reached its limits. On the

next hour, F, = 1, HRS = 0, and SUMIR = 0.

COLUMN9

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

SUMIR = 0 when CIR = 0 and SUMIRn_j < 0.0225

SUMIR = SUMIRn-1 when CIR = 0 and SUMIR,_1 > 0.0225

SUMIR = CIR when CIR > 0;(IR + IRn-1) < 0.0225;and Ffm-l = I
SUMIR = CIR when CIR > 0; (IR + IRn-1) < 0.0225 Ffm_i < 1;

C1Rn-1 > 0; and Ci = 3

SUMIR = IR + SUMIRn- I when CIR > 0'; (IR + IRn-1) < 0.0225;

Ffm_j < 1; C1Rn-1 > 0; and Ci < 3

SUMIR = IRadin-I + CIR when CIR > 0; (IR + IR,_j) < 0.0225 Ffm-l < 1;

CIRn-1 = 0;

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

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

COLUMNIO
F, Computes and records the post rain recovery factor. F, ranges from zero to one, with F,
set to zero during a rain. When F, > 0.9, the effects of the rain are conside red over, and F,
is set to one on the next hour. F, is computed as follows:

Fr = 0 when CIR < 0.0225 and SUMIR > 0.0225

Fr= I when CIR < 0.0225 and SUMIR < 0.0225

Fr= 10 (-215.66*24*SUM1R/(HRS*KT)) when CIR < 0.0225 and SUMIR < 0.0225

COLUMN11

F fr Computes and records the combined effects of rain and freeze, where Ff, = Fr * Ff.
Ff (the post freeze effect) is calculated as follows:
Ff = ((SUMKF * FHRS)/(FIR * 106)) * 4.02917 + 0.305 when FIR > 0 and SUMKF > 0

Ff= I when FIR = 0 or SUMKF = 0

SUMKF (the sum of the freeze shear) is calculated by summing the K values begi nning
when the temperature reaches 29'F until Fr < 0.1 or until continuous cycles ar e
administered.

FIR (the potential freeze water) is calculated as follows:
FIR = SUMKF/ 1 9200 when FIRn- I= O;SUMIR = O;FHRS = 8; and SUMKF > 0
FIR = FIRn- I when FIRn-1 = 0; SUMIR = 0; MRS # 8 and SUMKF > 0
or when FIRn-1> 10; Fr = 1; and SUMIR + SUMIRn-i < FIRn-1
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 SUMKF > 0; TEMP > 34'F; and F, < 0. I
MRS MRS + I when SUMKF > 0; and TEMP < 34'F or Fr > 0-1

COLUMN 12
KT Computes and records the predicted sum of K at the end of the day as follow
s:
KT. = K, + K2 + K3 + Kn + K,1(24-TM)
EXAMPLE: TM K
I 10
2 10
3 20
KT3 = 10 + 10 + 20 + 20(24-3) = 460

COLUMN 13
H,,i Computes and records the estimated amount of dust entering the HVS during
the hour as
follows:
H,j = Ksum * SI * Ff,
where:
Ksum is the sum of the K values within the current cycle set.
SI is the slope of the sumH,j line for the current cycle set, and is computed
as follows:
At TM= 1
SI = sb when Ci = 0
where sb(base slope) = CE,,nt/KT
SI = sb * (I -eff) when Ci > 0
For all other times (n):
SI = Sl,i,-, * (I-efOn
where SIcj-j is the last value of SI in the previous Ci sequence SI,j-1 = sb p
rior to
any cycles.
(1-eff) term calculates the efficiency of the last cycle administered and is
calculated as follows:
Equation A:
(I-eff)a = (1-(36.657299 * 10(-O-'01""' * SU-1/100))C",
Equation B:
(1-eff)b == (1-((-0.0146913 * Ksum + 14-65059)/100))Cseq

Equation A can be used to calculate the efficiencies when KT < 288 otherwise u
se

Equation B until slope,,-, * (1-eff)b < sp(shift 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 Ksurn, and the calculation is multiplied by C,,q inste
ad of

raised to its power. The slope then remains constant until another cycle/cycl
es are

administered.
Cseq is the cycle sequence for the current cycle set.

where: Cs,q = 0 when Ci = 0

Cseq = Cseqn- I when Cin = Cin-1

Cseq = 0.5 when Cin > Cin-1; Ff, > 1; and Ci = I

Cseq = 1 when Cj= 1 or 3

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 (1 -eff) Cseq SI F & H,,i

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

Y_H,i Computes and records the sum of the coal and petroleum coke dust in the HVS (Hi Vol

Sampler) to the hour as follows:

Y-Hvi @ Hvi + Y-Hvicin-l

where Y-Hvicin-i is the last value of JHvi in the previous cycle sequence.

EXAMPLE: Using the values from the previous example:

TM Y-Hvicin-l Y-Hvi

I 0.0 8.2024

2 0.0 15.1398

3 15.1398 20.9029

4 15.1398 26.1705

COLUMN15

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 = Y-Hvi + KL * SI * (I -eff)

where KL = KT - sum(Ki + K2 K,)

(I -eff) is the same as COLUMN 14 except that K-L is used in the expression instead of Ksum.

COLUMN16

TEMP Records the temperature in degrees fahrenheit.

COLUMN 17
RH Records the relative humidity (percent)

COLUMN18
WD Records the wind direction (degrees)

COLUMN19

WS Records the wind speed (mi/hr)

COLUMN 20

#C, Records the number of suppression cycles credited for hour. The suppressio n cycles are

only credited when the wind is blowing within the 180 to 270 degree quadrant.

COLUMN 21

Y-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.

DOCUMENT LIST

I . Pen-nit application, dated July 29, 1981 and signed by Mr. F. J. Manusco.

2. State Air Pollution Control Board, Region VI engineering analysis, dated Se ptember

10, 1981.

3. Mathematical Supplement to: "Control of Fugitive Emissions from Open Coal

Storage in Newport News, Virginia," page 67, "Control Methodology."

4. Dominion Terminal Associates letter, dated May 3, 1989 and signed by Mr. Ho ward

B. Phillips.

5. Revised permit application, dated October 19, 1989 and signed by Mr. Thomas N.

Houck, P.E.

6. Department of Air Pollution Control, Region VI engineering analysis, dated

November 22, 1989.

7. Dominion Terminal Associates letter, dated April 22, 1992 and signed by Mr. Charles

E. Brinley.

8. Local approval letter dated June 29, 1992.

9. Department of Air Pollution Control, Region VI engineering analysis, dated

September 16, 1992.

10. Dominion Terminal Associates letter, dated December 29, 1999 and signed by Mr.

John E. Davis.