Dominion Terminal Associates
Dan Wagoner
Superintendent Engineering/Maintenance

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Newport News, VA 23607
(757) 245-2275
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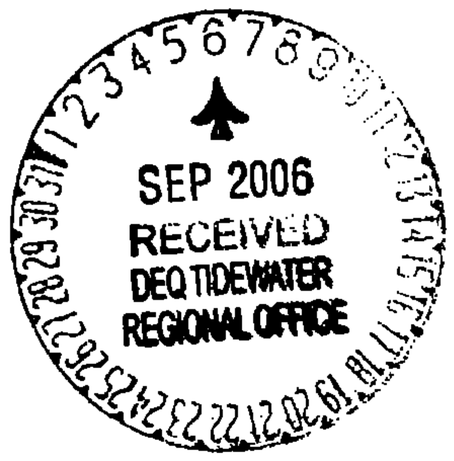
DTA

September 1, 2006



Virginia Department of Environmental Quality
5636 Southern Boulevard
Virginia Beach, VA 23462

Attention: Ms Kelly Ryan

Dear Ms Ryan:

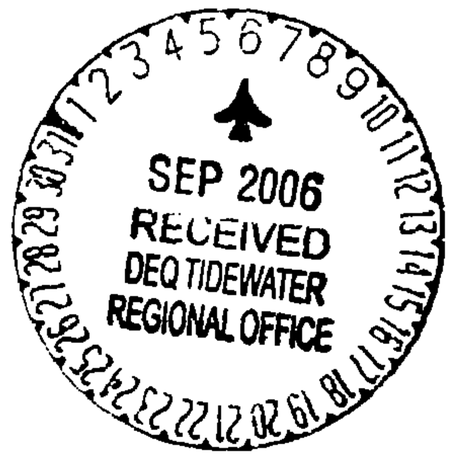
As indicated in my email, our president, Charles E. Brinley is on vacation and unable to sign the Draft Permit Approval Form. I have signed it on his behalf, and am providing it herein. If this is not acceptable, please let me know and I'll have him sign one upon his return and deliver it to you. If I don't hear otherwise I'll assume this is adequate. I am also including a marked-up copy of the draft for your further review.

Thank you,

Dan Wagoner
Superintendent
Engineering/Maintenance

DRAFT PERMIT APPROVAL FORM

Department of Environmental Quality
Tidewater Regional Office
5636 Southern Blvd.
Virginia Beach, Virginia 23462



Instructions:

The "Draft Permit Approval Form" provides the owner or certified company official an opportunity to accept or suggest appropriate changes to a draft permit. If a signed form is not received within one (1) week of the date of receipt of the draft permit, DEQ will assume that the draft permit is considered acceptable and will proceed with processing the permit. **Please check the applicable statement(s) below after thoroughly reviewing the draft permit. Forms may be returned by facsimile to 757-518-2009, Attention:** Ms. Kelly M. Ryan or Ms. Jane A. Workman.

____ The owner or certified company official agrees with the conditions of the draft permit dated _____ . Please proceed to issue the permit with no change.

____ The owner or certified company official finds condition number(s) _____ of the draft permit dated _____ unacceptable.

__X__ The suggested changes are attached for your consideration.

____ The owner or certified company official requests further discussion with DEQ regarding the above referenced condition(s).

Signature: _____
Daniel R. Wagoner for Charles E. Brinley

Name: _____
Superintendent Engineering/Maintenance

Title: _____
Dominion Terminal Associates

Facility: _____
August 31, 2006

Date: _____

STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit supersedes your permit dated September 13, 2004.

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
PO Box 967-A
Newport News, VA 23607
Registration No.: 60997

is authorized to construct and operate

a coal, petroleum coke and limestone receiving, storage and shipping facility

located at

Pier 11, Harbor Road
Newport News, Virginia

in accordance with the Conditions of this permit.

Approved on DRAFT.

Maria R. Nold, Deputy Regional Director

Permit consists of 10 pages.
Permit Conditions 1 to 39.

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INTRODUCTION

1. This permit approval is based on the permit application dated August 17, 1981, October 15, 2002 and May 8, 2004 including amendment information dated August 25, 1981, October 19, 1989, April 22, 1992, December 11, 2002, July 13, 2004 and April 3, 2006. 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.

   Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-10 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

   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, § 2.2-3700 through 2.2-3714 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.

PROCESS REQUIREMENTS

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2. **Equipment List** - Equipment at this facility consists of the following:

Equipment to be constructed:			
Reference No.	**Equipment Description**	**Rated Capacity**	**Air Pollution Control(s)**
UL-1	Marine vessel grab unloader	2000 tons/hr	Enclosed grab
UL-2	Marine vessel grab unloader	2000 tons/hr	Enclosed grab
BH-1	Ship unload hopper	3400 tons/hr	Fabric filter (DC-2)
BH-2	Ship unload hopper	3400 tons/hr	Fabric filter (DC-3)
BC-14	Ship unload conveyor	6800 tons/hr	Fully enclosed
BC-15	Ship unload conveyor	6800 tons/hr	Fully enclosed
Equipment permitted prior to the date of this permit:			
RD-1	Tandem rotary rail car dumper	5800 tons/hr	Enclosed bldg. with water spray
BS-1	Surge silo	1000 tons	Fabric filter (DC-1)
BS-2	Surge silo	3800 tons	Fabric filter (DC-5)
BS-3	Surge silo	4100 tons	Fabric filter (DC-6)
BC-1 through BC-13	Various coal handling and storage conveyors	Largest belt 6800 tons/hr	All fully enclosed (except 4, 7 and 13 – yard belts)
S/R-1 & S/R-2	Two (2) rotary stacker/reclaimers	5900 tons/hr stacking, 6500 tons/hr reclaim	Wet suppression
S/R-3	Rotary reclaimer	6800 tons/hr reclaim only	Wet suppression
OS-1 through OS-4	Coal, coke and limestone storage piles	Up to 350,00 tons	Wet suppression system (computerized)
SL-1	Ship/barge loader	6800 tons/hr	Wet suppression, telescoping loading chutes

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Specifications included in the permit under this Condition are for informational purposes only and do not form enforceable terms or conditions of the permit.
(9 VAC 80-1180 D 3)

3. **Emission Controls** - Particulate emissions from each marine vessel grab unloader (UL-1 and UL-2) shall be controlled by using closed grab buckets. The grab buckets shall be completely closed during movement of material from marine vessels to receiving hoppers.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

Comment: "Enclosed" gives the impression that the grabs are in a separate enclosure.

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4. **Emission Controls** - Particulate emissions from each marine vessel unloading hopper (BH-1 and BH-2) shall be controlled by a fabric filter (DC-2 and DC-3). The fabric filters shall be provided with adequate access for inspection.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

5. **Emission Controls** - Particulate emissions from the enclosed rotary rail car dumper building (RD-1) shall be controlled by wet suppression, which, if necessary, 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 5-80-1180 and 9 VAC 5-50-260)

Comment: To match item #17

6. **Emission Controls** - Particulate emissions from the transfer points and stacker/reclaimers (S/R-1, 2 and 3) shall be controlled by wet suppression as necessary and by wet suppression with surfactant as necessary. Continuous wetting is not mandatory.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

7. **Emission Controls** - Particulate 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 5-80-1180 and 9 VAC 5-50-260)

8. **Fugitive Dust Emission Controls** – Fugitive dust emissions from the storage piles shall be controlled by a wet suppression system capable of wetting the entire 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, with assistance from other equipment, attain 100 percent coverage of the storage area. The wet suppression system shall be provided with adequate access for inspection.
(9 VAC 5-50-90, 9 VAC 5- 80-1180 and 9 VAC 5-50-260)

Comment: 100% coverage is not always possible by rainbird sprays alone with wind and other factors.

9. **Fugitive Dust Emission Controls** – All storage piles shall be truncated, stacker/reclaimers used to build flat top piles, and the top compacted to minimize fugitive emissions.
(9 VAC 5-50-90, 9 VAC 5- 80-1180 and 9 VAC 5-50-260)

Comment: Could we just say "Peaks on piles shall be avoided to minimize fugitive emissions."?

10. **Emission Controls** – Wet suppression shall be applied as necessary to all incoming loaded railcars located within facility boundaries if they are not to be dumped within 24 hours.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

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11. **Emission Controls** – Work areas shall be monitored and wet suppression applied as necessary to control emissions while operating a piece of auxiliary handling equipment (e.g., front end loader, bulldozer, etc.). (9 VAC 5-80-1180 and 9 VAC 5-50-260)

12. **Emission Controls** – Wet suppression shall be utilized when operating a particular piece of handling equipment (e.g., a dumper, a conveyor, etc.), unless the use of such controls would cause a safety hazard or damage to the equipment from freezing.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

13. **Emission Controls** – Particulate emissions from each surge silo (BS-1, BS-2 and BS-3) shall be controlled by a fabric filter (DC-1, DC-5 and DC-6). The fabric filters shall be provided with adequate access for inspection.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

14. **Monitoring – Marine Vessel Unloading Hoppers** – Once per ship, within the initial 2 hours after unloading begins, the permittee shall observe the baghouse fan motor amperage for the marine vessel unloading hoppers (BH-1 and BH-2). An acceptable range shall be established that reflects good air pollution control practice. An observation outside the acceptable range shall indicate the need for corrective action. The permittee shall maintain a log of the date, time, location, name of person performing the observation, the motor amperage reading, whether or not visible emissions were detected, and any corrective actions taken, if necessary. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-80-1180 and 9 VAC 5-50-20)

15. **Monitoring – Fabric Filters** – Once per day, when in operation, the exhaust from each surge silo fabric filter (DC-1, DC-5 and DC-6) shall be observed by the permittee for a period of no less than one minute for the presence of visible emissions. If visible emissions are observed, the permittee shall perform corrective actions to eliminate the cause of the visible emissions. The permittee shall maintain a log of the date, time, location, name of person performing the observation, whether or not visible emissions were detected, and any corrective actions taken, if necessary. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-80-1180 D, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

Deleted: Once per day, during normal operations

16. **Monitoring – Fabric Filters** – Once per day, when in operation, the exhaust from each marine vessel unloading hopper fabric filter (DC-2 and DC-3) shall be observed by the permittee for a period of no less than one minute for the presence of visible emissions. If visible emissions are observed, the permittee shall perform corrective actions to eliminate the cause of the visible emissions. The permittee shall maintain a log of the date, time, location, name of person performing the observation, whether or not visible emissions were detected, and any corrective actions taken, if necessary. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-80-1180 D, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

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17. **Monitoring – Process Equipment** – Once per day, when in operation, particulate emissions from the marine vessel grab unloaders (UL-1 and UL-2), the enclosed rotary rail car dumper building (RD-1) and the conveyor systems shall be observed by the permittee for a period of no less than one minute for the presence of visible emissions. If visible emissions are observed, the permittee shall perform corrective actions to eliminate the cause of the visible emissions, if necessary. The permittee shall maintain a log of the date, time, location, name of person performing the observation, whether or not visible emissions were detected, and any corrective actions taken, if necessary. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-80-1180 D, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

Comment: Attempting to make the frequency wording consistent between paragraphs 15, 16 and 17.

Deleted: Once per day, when operating

18. **Wet Suppression System** – The wet suppression system for the 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. Request 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 LIMITATIONS

19. **Storage** – On a daily annual average basis, the maximum quantity of coal, petroleum coke and limestone (combined) in storage shall not exceed 1,100,000 tons, and at no time shall more than 1,400,000 tons of coal, petroleum coke and limestone (combined) be stored at the facility.
(9 VAC 5-80-1180)

20. **Throughput** - The throughput of coal/petroleum coke/limestone (combined), via rail and ship, shall not exceed 24,000,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. No more than 10,000,000 tons per year of coal/petroleum coke/limestone (combined) shall be imported via ship. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180)

EMISSION LIMITS

21. **Emission Limits** – Particulate emissions from the operation of the coal/petroleum coke/limestone receiving, storage and shipping facility shall not exceed the limits specified below:

Particulate Matter (PM)	54.0 tons/yr
PM-10	9.7 tons/yr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition numbers 3-20.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

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22. **Visible Emission Limit** – There shall be no detectable visible emissions from the enclosed rotary rail car dumper building (RD-1). Failure to meet this limitation due to the presence of water vapor shall not be a violation.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

23. **Visible Emission Limit** – There shall be no detectable visible emissions from any fabric filter exhaust stack (DC-1 – DC-6).
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

24. **Visible Emission Limit** - There shall be no detectable visible emissions from the conveyor belt transfer points. Failure to meet this limitation due to the presence of water vapor shall not be a violation.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

25. **Monitoring PM_{10}** – 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/limestone terminal. Operation shall be in accordance with Appendix J of 40 CFR Part 50.
(9 VAC 5-160-170)

26. **Control of Emissions** – The following actions are considered detrimental to the control of coal/petroleum coke/limestone emissions:
    a. Failure to stop any coal/petroleum coke/limestone 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/limestone movement operation when it becomes known that the coal/petroleum coke/limestone 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 5-80-1180 and 9 VAC 5-50-260)

RECORDS

27. **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/limestone (combined), via rail and ship, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

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b. Annual throughput of imported coal/petroleum coke/limestone (combined), via ship, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

c. Records of visible emission observations for fabric filters (DC-1, DC-5 and DC-6) as required in Condition 15.

d. Records of visible emission observations for fabric filters (DC-2 and DC-3) as required in Condition 16

e. Records of visible emission observations for the process equipment as required in Condition 17.

f. Records of baghouse fan motor amperage measurement observations for the marine vessel unloading hoppers (BH-1 and BH-2) as required in Condition 14.

g. Records of PM10 monitoring operations as required by Appendix J of 40 CFR Part 50.

h. Maximum daily quantity of coal/petroleum coke/limestone (combined) in storage.

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i. Annual daily average of coal/petroleum coke/limestone (combined) in storage.

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

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These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-80-1180 and 9 VAC 5-50-50)

INITIAL COMPLIANCE DETERMINATION

28. **Visible Emissions Evaluation** – Initial performance test of Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the permittee on the marine vessel unloading operations. 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, including specific emission points, 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. One copy of the test results 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)

changed to be consistent w/ other similar facility.

NOTIFICATIONS

29. **Initial Notifications** - The permittee shall furnish written notification to the Tidewater Regional Office of:

a. The actual date on which construction of the marine unloading facilities commenced within 30 days after such date.

b. The anticipated start-up date of the marine unloading facilities postmarked not more than 60 days nor less than 30 days prior to such date.

c. The actual start-up date of the marine unloading facilities within 15 days after such date.

d. The anticipated date of the VEE performance tests of the marine unloading facilities postmarked at least 30 days prior to such date.

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

Associate Director
Office of Air Enforcement (3AP10)
U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029]
(9 VAC 5-50-50 and 9 VAC 5-80-1180)

GENERAL CONDITIONS

30. **Permit Invalidation** – The portions of this permit regarding construction of the marine unloading facilities shall become invalid, unless an extension is granted by the DEQ, if:

    a. A program of continuous construction is not commenced within 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 entity;

        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)

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

    a. Knowingly makes material misstatements in the permit application 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 a permitted emissions unit;

    d. Causes emissions from the stationary source which result in violations of , or interfere with the attainment and maintenance of, any ambient air quality standard; or

    e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9 VAC 5-80-1210 F)

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32. **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;

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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 and 9 VAC 5-80-1180)

33. **Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

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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, petroleum coke and limestone handling 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:

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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. These procedures shall be based on the manufacturer's recommendations, at a minimum.

d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. 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 five years and shall be made available to DEQ personnel upon request.
(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

34. **Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.
(9VAC 5-20-180 J and 9 VAC 5-80-1180 D)

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35. **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, telegraph or other electronic communication. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Director, Tidewater Regional Office.
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

36. **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 and 9 VAC 5-80-1180)

37. **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 Director, Tidewater Regional Office of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-1240)

38. **Registration/Update** – Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to request 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)

39. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)

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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/limestone 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 (lb/ft^3) from the equation $\rho = -0.0001478(T) + 0.0853$

Viscosity of air (1.68μ lb/ft-hr) 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 an hourly 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.

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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:

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

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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

ΣC_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

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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.

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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** $F_r \geq 0.1$

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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.

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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

OCR

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

Dominion Terminal Associates
Dan Wagoner P. 0- Box 967-A
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(757) 245-2275
Ext. 305
Cellular (757) 897-8670
FAX: (757) 247-9729
E-mail: dwagoner@dominionterminal.com

OTA

September 1, 2006
7

Virginia Department of Environmental Quality
SEP 2006
5636 Southem Boulevard REGENLD
Virginia Beach, VA 23462 MO

Attention: Ms Kelly Ryan

Dear Ms Ryan:

As indicated in my emad, our president, Charles E. Brinley is on vacation and unable to
sign the Draft Permit Approval Form. I have signed it on his behatf, and am p roviding it'
herein. If this is not acceptable, please let me know and I'H have him sign o ne upon his
return and deliver it to you. If I don't hear otherwise I'll assume this is a dequate. I am
also including a marked-up copy of the draft for your further review.

Thank you,

Dan Wagoner
Superintendent
Engineering/Maintenance

DRAFT PERMIT APPROVAL FORM

Department of Environmental Quality
Tidewater Regional Office
5636 Southem Blvd.
Virginia Beach, Virginia 23462

Instructions:

The "Draft Permit Approval Form" provides the owner or certified company official an opportunity to accept or suggest appropriate changes to a draft permit. If a signed form is not received within one (1) week of the date of receipt of the draft permit, DEQ will assume that the draft permit is considered acceptable and will proceed with processing the pemiit. Please check the applicable statement(s) below after thoroughly reviewing the draft permit. Forms may be returned by facsimile to 757-518-2009, Attention: Ms. Kelly M. Ryan or Ms. Jane A. Workman.

The owner or certified company official agrees with the conditions of the draft permit dated

. Please proceed to issue the permit with no change.

The owner or certified company official finds condition number(s)

of the draft pen-nit dated unacceptable.

x The suggested changes are attached for your consideration.

The owner or certified company official requests further discussion with DEQ regarding the above referenced condition(s).

Signature'.
Daniel R. Wagoner foroarles E. Brinley

Nanic:
Stiperli-itendent Engineering/Maintenance

Title:
Doii-iiiiion Terniinal Associates

Facility:
ALigust 31, 2006

Date:

STATIONARY SOURCE rERMIT TO CONSTRUCT AND OPERATE

This pemiit LuMsedes your pemiit datcd Sgpternber 13, 2004.

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

Dominion Terminal Associates
PO Box 967-A
Newport News, VA 23607
Registration No.: 60997

is authorized to construct and operate

a coal, petroleum coke and hmestone receiving, storage and shipping facility

located at

Pier I 1, Harbor Road
Ne,%port News, Virginia

in accordance with the Conditions of this permit.

Approved on DRAFT.

Maria R. Nold, Deputy Regional Director

Perrait consisis of IO pages.
Perniit Conditions I to 39.

INTRODUCTION

I This permit approval is based on the permit application dated August 17, 198 1, October 15, 2002 and May 8, 2004 including amendment information dated August 25, 198 1, October 19, 19 89, April 22, 1992, December 11, 2002, July 13, 2004 and April 3, 2006. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quali ty niay require a pennit. Failure to obukin such a pennit prior to construction may result in enforcement action.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-1 0-1 0 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollu tion. The regulatory reference or authority for each condition is listed in parentheses (after eac h condition.

Annual requireinents to fulfill legal obligations to nmintain current stationa ry source emissions data will necessitate a prompt response by the pennittee to requests by the DEQ or the B oard for infomiation to include, as appropriate: process and production data; changes in control equip ment; and operating schedules. Such requests for information from the DEQ wifl either be in writi ng or by personal contact.

T'he availability of inforniation submitted to the DEQ or the Board wdl be gov emed by applicable provisions of the Freedom of Information Act, 2.2-3700 through 2.2-3714 of t he Code of Virginia, 10. I - 1314 (addressing information provided to the Board) of the Code of Virginia, a nd 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Inforniation provided to feder al officials is subject to appropriate federal law and regulations goveming confidentiahty of such infonn ation.

ZROCESS REQUEREMEENTS Deleted:

2. Equipment List - Equipment at this facility consists of the following:

Equipment to be constructed:

Reference No.	Equipment Desciription	RaW Capadty	Air PoRution Controt(s)
UL-1	Marine vessel grab unloader	2000 tons/hr	Enclosed grab
UL-2	Marine vewel gmb unloader	2000 ton&lhr	Enclosed grab
BH-1	Ship tmload hopper	3400 tonsthr	Fabrir, filter (DC-2)
BH-2	Ship unload hDppCr	3400 tonst'br	Fabric filter (DC-3)
BC-14	Ship unload conveyor	6800 tons/hr	Fully enclosed
BC-15	IShip unload oonveyor	6800 tonsthr	Fully enclosed

Equipment permitted p to the date of thk pernlik:

RD-1	Tandem rotary raii car dumper	-5800 ton&1hr	Enclosed bldg. with water spr ay
BS-1	Surge gilo	1000 tons	Fabric filter (DC-1)
BS-2	Suge silo	3800 tons	Fabrir, filter (DC-5)
BS-3	Surgc silo	41 00 tons	Fabric filter (DC-6)
BC-1 tbrough BC-13	Various coal handling and gtorage Largegt belt	6800 ton&/hr	All fully enclosed (except 4, 7 conveyors and 13 - y-d belts)
S/R-1 & S/R-2	Two (2) rotary stacker/rmlaimers	5900 tonsfhr	staeking, WaL supp

ression
6500 tonsthr reclaim
SfR-3 Rotary reoWmer 6900 tons/hr reeWm only Wet suppression
OS-1 through OS-4 Coal, coke and limestone storage Up to 350,00 tons Wet suppr
ession system
piles (oomputerizcd)
SL-1 Ship/barge loader 6800 tons/hr Wet suppression, telescoping
loading chutes

Specifications included in the perffiit under this Condition are for informati onal purposes only and do not
fonn enforceable terms or conditions of the pemiit.
(9 VAC 80-1180 D 3)

3. Emission Controls - Particulate eniissions from each marine vessel grab unl oader (UL-1 and UL-2) shall be
controHadbyusing@losedgrabbuckets. ThegrabbucketsshaUbecompletelyclosedduringm ovementof Commmt: "Enclosed' gives the
hnpression that die grabs are in a sepante
matmial from mai-ine vessels to receiving hoppers. emlomm.
(9 VAC 5-80-1180 and 9 VAC 5-50-260) Deleted: m

4. Emission Controls - Particulate en-tissions from each niarine vessel unload ing hopper (BH- I and BH-2)
shall be controlled by a fabric filter (DC-2 and DC-3). 'Me fabric filters sh aU be provided with adequate
ar-cess for inspection.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

5. Emission Controls - Particulate en-dssions from the enclosed rotary rail ca r dumper (RD- I) shall rmich itmn 1 7
Fc;-----,L- T. -V
be controlled by wet suppression, which, if necessary, shall include the use o f a swfactant. T'he mffactant to
water ratio shall be in accordance with the manufacturer's reconunendations. The n-dnimum ainount of
water apphed shall be 130 gaflons per tandern dump. Compliance shall be achie ved if there are no visible
emissions.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

6. Emission Controb - Particulate en-dssions from the transfer points and stac ker/reclaitners (S/R-1, 2 and 3)
shall be controlled by wet suppression as necessary and by wet suppression wit h surfactant as necessary.
Continuous wetting is not mandatory.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

7. Emission Controls - Particulate emissions from the conveyor system shall be controlled by conveyor hoods
and wind guards. Ground level reclaim conveyor belts shall be controlled by w et suppi-ession as necessary.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

8. Fugitive Dust Emission Controls - Fugitive dust eniissions from the storage piles shall be controRed by a
wet suppression system capable of wetting the entire storage area. Wet suppre ssion cycles shall be
iniplemented in accordance with Appendix A. Each cycle shall consist of no les s than 35,500 gallons of
water and, widi assistance from other equipment, attain I 00 percent coverago of the storage area. The vvet Co m mmt: I 00% coverage is not
suppression system shall be provided with adequate access for inspection. alwa yspossiblebyrairilirdwayselone
(9 VAC 5-50-90, 9 VAC 5- 80-1180 and 9 VAC 5-50-260) with wbW and other factor s.

9. Fugitive Dust Emission Controls - All storage piles shall be tnLncated, sta cker/reclaimers used to build flat
top piles, and the top compacted to minin-dze fugitive emissions. COrnr"Mt'.CO

UMWejtWsaY'Peah
(9 VAC 5-56-go, 9 'VAC 5- 80-1180 and 9 VAC 5-50-260) onridesshallbeavoidedtor
riviiini7e.
ftitive emissions.7

10. Emission Controls - Wet suppression shall be applied as necessary to all i
ncon-dng loaded railcars located
within facility boundaries if they are not to be dumped within 24 hours.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

1 1. Emission Controb - WoTk areas shafl be monitored and wet suppression appl ied as necessary to control
emissions while opemting a piece of auxiliary handling equiprnent (e.g., front end loader, bulldozer, etc.).
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

12. Emission Controls - Wet suppression shall be utilized when operating a par ticular piece of handling
equipment (e.g., a dumper, a conveyor, etc.), unless the use of such controls would cause a safety hazard or
damage to the equipment from freezing.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

13. Emission Controls - Particulate emissions from each surge silo (BS- 1, BS-2 and BS-3) shafl be controlled
by a fabric filter (DC-1, DC-5 and DC-6). The fabric fdters sha be provided w ith adequate access for
inspection.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

14. Monitoring - Marine Vessel Unloading Hoppers - Once per ship, Arithin the initial 2 hours atler
unloading begins, the pennittee shafl observe the baghouse fan motor amperage for the marine vessel
unloading hoppers (BH- I and BH-2). An acceptable range shall be established that reflects good air
pollution control practice. An observation outside the acceptable range shall indicate the need for corrective
action. T'he pennittee shall maintain a log of the date, titne, location, nai ne of person perforniing the
observation, the motor amperage reading, whether or not visible eniissions wer e detected, and any
corrective actions taken, if necessary. These records shall be available for inspection by the DEQ and shall
be cuffent for the most recent five years.
(9 VAC 5-80-1180 and 9 VAC 5-50-20)

15. Monitoring - Fabric Filters - Once per day, when in operati n, the exhaust from each surge sflo fabfic Deleted: Once per day, during norrral
filter (DC-1, DC-5 and DC-6) shall be observed by the permittee for a period o f no less than one minute for
the presence of visible eniissions. If visible eniissions are observed, the p ennittee shall perform coffective
actions to eliminate the cause of the visible emissions. 'Me perniittee sbaH maintain a log of the date, time,
location, name of person perfonning the observation, whether or not visible er aissions were detected, and
any corrective actions taken, if necessary. These records shall be available for inspection by the DEQ and
shall be current for the most recent five years.
(9 VAC 5-80-1180 D, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

16. Monitoring - Fabric Filters - Once per day, when in operation, the exhaust from each marine vessel
unloading hopper fabric filter (DC-2 and DC-3) shall be observed by the pertni ttee for a period of no less
than one minute for the presence of visible emissions. If visible eniissions are observed, the perniittee shall
perforin corrective actions to eliminate the cause of the visible emissions. The permittee shaU maintain a
log of the date, time, location, name of persort perfonning the observation, w

hether or not visible emissions
were detected, and any corrective actions taken, if necessary. These records shall be available for inspection
by the DEQ and shall be current for the most recent five years.
(9 VAC 5-80-1180 D, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

17. Monitoring - Process Equipment - Qncp per day xvhen ni oi@ particulate emi ssions from the Commmt: AttempbM to inake
_L -qperati freqmncy wording consiswnt bemeen
marine vessel grab unloaders (UL-1 and UL-2), the enclosed rotwy rail car duni per building (RD-]) and the paragra* 15,16 and 17.
conveyor systerns shall be observed by the pennittee for a pefiod of no less t han one niinute foy- the presence
of visible emissions. If visible emissions are observed, ttw pennittee shall p erfonn corrective actions to tD.Iftd: Oncm puday, wheri operafing

eliniinate the cause of the visible emissions, if necessagy. 'Me permittee sh all maintain a log of the date,
time, location, naine of person performing the@obgdvation, whether or not visi ble emissions were detected,
and any corTective actions taken, if necessary. These records shaR be availab le for inspection by the DEQ
and shafl be curTent for the most recent five years.
(9 VAC 5-80-1180 D, 9 VAC 5-50-20 C and 9 VAC 5-50-260)

18. Wet Suppression System - The wet suppression system for the storage pfles shafl be irnplemented as
specified in Appendix A or by any other procedure as may be approved by the DE Q prior to use. Such
approval shall be contingent on adequate documentation that any altemative pro cedure shall achieve at least
as high an efficiency as Appendix A. This applies to all other dust control me asures required by this pern-dt.
Request for changes in procedures shabe accompanied by an explanation of the p roposed changes and the
anticipated effect they shall have. These requests, if approved bv the DEQ, s hall be subject to a test and
evaluation procedure prior to being accepted as permanent changes to the contr ol procedures.
(9 VAC 5-50-260)

OPERATING LIMITATIONS

19. Storage - On a daily annual average basis, the maximum quantity of coal, p etroleum coke and limestone
(combined) in storage shall not exceed 1, I 00,000 tons, and at no time shall more than 1,400,000 tons of
coal, petroleum coke and liniestone (combined) be stored at the facihty.
(9 VAC 5-80-1180)

20. Throughput - The throughput of coal/petroleum cokefliTnegtone (combined), via rail and ship, shaR not
exceed 24,000,000 tons per year, calculated montbly as the sum of each consecu tive 12-month peaiod. No
more than I 0,000,000 tons per year of coal/petroleum cokeflimestone (combined) shaU be inTorted via
ship. Compliance for the consecutive 12-month period shafl be demonstrated mo nthly by adding the total for
the most recently completed calendar rrionth to the individual monthly totals for the preceding I I months.
(9 VAC 5-80-1180)

EMISSION LIMITS

21. Emission Limits - Particulate emissions from the operation of the coal/pet roleum coke/liniestone receiving,
storage and shipping facility shall not exceed the liniits specified below:

Particulate Matter (PM) 54.0 tons/yr

PM-10 9.7 tons/yr

'Mese emissions are derived from the estiniated overall emission contribution from oper-ating liniits.
Exceedance of the operating limits niay be considered credible evidence of the exceedance of emission
liniits. Compliance with these emission liniits may be detennined as stated in Condition numbers 3-20.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

22. Visible Emission Limit - There shall be no detectable visible emissions fr
om the enclosed Totary rail car
dumperbuilding(RD-1). Failuretomeetthislimitationduetothepresenceofwatervapor
shallnotbea
violation.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

23. Visible Emission Limit - There shall be no detectable visible ernissions f
rom anv fabric filter exhaust stack
(DC -I -DC -6).
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

24. Visible Emission Limit - There shall be no detectable visible emissions fr
om the conveyor belt transfer
points. Failuretomeetfliislirnitationduetotliepresenceol'x%ateri,aporshalinot
beaviolation.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

25. Monitoring PM19 - Dominion Tenninal Associates shall install and operate a
PMIO monitor at the
Nemport News Housing Authority Maintenance Building (180-J) to ascertain the a
mbient air quality in the
area surrounding the coal/petroleum cokellimestone temiinal. Operation shall
be in accordance with
Appendix J of 40 CFR Part 50.
(9 VAC 5-160-170)

26. Control of Emissions - The following actions are considered detrimental to
the control of coal/petroleum
coke/limestone emissions:
a. Failure to stop any coal/petroleum coke/limestone movement operation when i
t becomes known that
installed air pollution control systems are inoperative and would cause excess
emissions.
b. Failure to stop a coal/petroleum coke/limestone movement operation when it
becomes known that the
coal/petroleum coke/Iiinestone handling equipinent needed for that operation i
s nialftinctioning or
opemting significantly below designated specifications.
c. Failure of equipment operators to take immediate precautions to preclude fu
gitive dust eniissions Erom
the operation of bulldozers, front-end loaders, automobiles, or trucks (e.g.,
the use of water suppressant
or hmiting the speed of movement to below 10 niiles per hour.)
d. Failure of operational personnel to give precedence to designated persomiel
with the responsibility for
controfling dust eniissions.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

RECORD

27. On Site Records -The perniittee shall maintain records of eniission data a
nd operating parameters as
necessary to demonstrate compliance with this pem-tit. The content and format
of such records shall be
arranged with the Director, Tidewater Regional Office. These records shall in
clude, but are not limited to:

a. Annual throughput of coal/petroleum coke/limestone (combined), via rail and

ship, calculated montlily Formatted: Bullets and Numbering
as the sum of each consecutive 12-month period. Compliance for the consecutiv
e 12-month period shall
be demonstrated monthly by adding the total for the most recently completed ca
lendar month to the
individual monthly totals for the preceding I I months.

b. Annual throughput of iniported coal/petroleum cokeAimestone (combined), via ship, calculated monthly as the swn of each consecutive 12-nionth period. Compliance for the consecutive 12-month period shall be demonstrated rnonthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding I I months.

c. Records of visible eniission observations for fabric filters (DC-1, DC-5 and DC-6) as required in Condition 15.

d. Records of visible en-dssion observations for fabric filters (DC-2 and DC-3) as required in Condition 16

e. Records of visible emission observations for the process equipment as required in Condition 17.

f Records of baghouse fan motor amperage measurement obser-vations for the marine vessel unloading hoppers (BH-1 and BH-2) as required in Condition 14.

g. Records of PMI 0 monitoring operations as required by Appendix J of 40 CFR Part 50.

Ii. Maximum daily quantity of coal/petroleum cokellimestone (combined) in storage. Formafted: Bullets and Numbedng

i. Annual daily average of coal/petroleum cokeAimestone (combined) iri storage.

i.-Records of dust control measures as requirecl by Appendix A. Formatted: 13ullets and Numbedng

These records shaff be available for inspection by the DEQ and shaU be current for the most recent five years.
(9 VAC 5-80-1180 and 9 VAC 5-50-50)

JNITIAL COMPLUNCE DETERMINATION
.1w

28. Visible Emissions Evaluation - Initial perfonmmce test of Visible Eniission Evaluations (VEE) in C@ VS accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the pennittee on the marinc C'x vessel unloading operations. Each test shall consist of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six tninute average. The details of the tests, including specific emission points, are to b arranged with the TRO Air Compliance Manager. 'Me evaluation shaU be pefforni ed to demonstrate compliance within 60 days aller achieving the niaxiinum production rate but in no event later than 180 days after start-up of the penWtted facihty. One copy of the test results 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 pennit.
(9 VAC 5-50-30,9 VAC 5-80-1200 and 9 VAC 5-50410)

NOTIFICATIONS

29. Initial Notifications - The permittee shaU fumish written notification to the Tidewater Regional Ofrice of

a. The actual date on which construction of the ruarine unloading facilities c onunenced within 30 days
after such date.

b. 'Me anticipated start-up date of the marine unloading facilities postmarked not more than 60 days nor
less than 30 days prior to such date.

c. The actual start-up date of the marine unloading facilities widiin 15 days after such date.

d. Ile anticipated date of the VEE perfon-nance tests of the marine unloading facilities posftnarked at least
30 days prior to such date.

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

Associate Director
Office of Air Enforcenient (3AP IO)
U.S. Envirorumental Protection Agencv
Region IH
1650 Arch Street
Philadelphia, PA 19103-20291
(9 VAC 5-50-50 and 9 VAC 5-80-1180)

GENERAL CONDITIONS

30. Permit Invalidation -Me portions of this perniit regarding constiuction of the marine unloading facihties
shall become invalid, unless an extension is granted by the DEQ, if.

a. A prograrn of continuous construction is not commenced within the latest of the following:

i. 18 months from the date of this permi@ DoWed:

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

iii. Nine nionths from the date of the last resolution of any htigation concem ing any such permits or
authorization, or

b. A program of construction is discontinued for a period of 18 months or nior e, or is not completed widiin
a reasonable time, except for a DEQ approved period between phases of a phased constTuction project.
(9 VAC 5 -80-121 0)

3 1. Permit Suspension/Revocation -'Mis permit may be suspended or revoked if the pennittee:

a. Knowingly makes material misstatements in the permit application or any ame ndments to it@

b. Fails to comply with the conditions of this pemiit,

c. Fails to comply with any einission standards applicable to a Mnnitted eniis sions uni@ Deleted: an
DoWed: included in ffiis pffnlit
d- Causes eniissions from the stationary source which result in violations of , or interfere with the
attainment and maintenance of, any ambient air qualitv standard; or

e. Fails to operate in confomiance with any applicable control strategy, inclu ding any eniission standards
or emission limitations, in the State Implementation Plan in effect at the tim e an application for this
perniit is subntitted.
(9 VAC 5-80-121 0 F)

32. Right of Entry - The pemiittee shall allow authorized local, state, and fe deral representatives, upon the
presentation of credentials:

a. To enter upon the pern-tittee's premises on which the facihty 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 tilnes any records required to be kept under the terms and
conditions of this pemiit 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. Nodiing contained herein shaU make an inspection time unreasonable during an emergency.
(9 VAC 5-170-130 and 9 VAC 5-80-1180)

33. Maintenance/Operating Procedures - At all times, including periods of start-up, shutdown, and malfunction, the pennittee shall, to the extent practicable, maintain and operate Pe affected source, Deleted: including associated air pollufion control equipment, in a nianner consistent with good air poUution control practices for minin-dzing emissions.

During each shift, one designated person shafl be responsible for compliance with the procedures of Appendix A. Actions required in support of these procedures shafl take precedence over roufine coal, petroleum coke and hmestone handhng procedures. The permittee shall take the following measures in order to niinirnize the duration and frequency of excess emissions, with respect to air pollufion control equipmen@ monitoring devices and process equipment which affect such emissions: Deleted-

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled niaintenance.

b. Maintain an inventory of spare parts.

c. Have available written operating procedures for equipment. 'Mese procedures shall be based on the manufacturer's recommendations, at a niinimum.

d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The pemiiftee shall maint,ain records of the training provided including the names of trainees, the date of training and the nature of the training.
Records of maintenance and traftiing shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

34. Record of Malfunctions - The perraittee shall niaintain records of the occur-rence and duration of any bypass, malfimefion, shutdown or failure of the facihty or its associated air pollution control equipment that results in excess emissions for nmre than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, pre

ventive measures taken and name
of person generating the record.
(9VAC 5-20-180 J and 9 VAC 5-80-1180 D)

35. Notification for Facility or Control Equipment Malfunction - The permittee shall ftimish notification to the Director, Tidcwater RegionaI Ofrice of malfunctions of the affected facili ty or related air pollution control equipnient that may cause excess eniissions for more than one hour, by facsiniile transmission, telephone, telegraph or other electronic communication. Such notification sha U be made as soon as practicable but no later than four daytime business hours after the malfunctio n is discovered. The permittee shall provide a wiitten stateinent giving all pertinent facts, including the e stiniated duration of the breakdown, within two weeks of discovery of the malfunction. When the conditi on causing the failure or malfunction has been corrected and the equipment is again in operation, the pe rmittee shaU notify the Director, Tidewater Regional Office.
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

36. Violation of Ambient Air Quality Standard - The pemiittee shall, upon requ est of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating an y priniary ambient air quality standard and shall not return to nonnal opemtion until such time as the ainbie nt air quality standard will not be violated.
(9 VAC 5-20-180 I and 9 VAC 5-80-1180)

37. Change of Ownership - hi the case of a transfer of ownership of a stationa ry source, the new owner shall abide by any current permit issued to the previous owner. 'Me new owner shall notify the Director, Tidewater Regional Office of the change of ownership widiin 30 days of the trm sfer.
(9 VAC 5-80-1240)

38. RegistrationtUpdate - Annual requireinents to fulfdl legal obligations to maintain current stationary source eniissions data wifl necessitate a prompt response by the pennittee to request by the DEQ or the Board for information to include, as appropriate: process and production data; changes i n control equipment; and operating schedules. Such requests for infonnation from the DEQ will either b e in writing or by personal contact. The availabihty of information submitted to the DEQ or the Board wiU be govemed by applicable provisions of the Freedom of Information Act, 2.1-340 through 2.1-348 of the Code of Virginia, IO. I - 1314 (addrcssing information provided to the Board) of the Code of Virginia, a nd 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Inforniation provided to feder al officials is subject to appropriate federal law and regulations goveming confidentiality of such infor mation.
(9 VAC 5-170-60 and 9 VAC 5-20-160)

39. Permit Copy - -fbe permittee shafl keep a copy of this permit on the pren- dses of the facility to which it applies.
(9 VAC 5-80-1180)

APPENDIX A

This appendix is to be considered a part of the Department of Environnientat Q uality perrrdt to operate
the Dominion Temiinal Associates (Doniinion) coal/petroleum coke/limestone ten ninal. 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 ho-arly relative humidity (RH)

Average hourly wind speed in rniles per hour (WS)

Average hourly wind direction (DIR)

Hourly rain in inches

Hourlv occurrence of fog (visibility of 4 niiles or less)

Density of air p (lb/ft) from the equation p = -0.000 1478(T) + 0.0853

Viscosity orair (1.68@t lb/ft-hr) from the following equations

-24.88 < T < 32 1.68p = 0.0001207(T) + 0.0655479
32.00 < T < 64.40 1.68p = 0.0001493(T) + 0.0646353
64.40 < T < 104 1.68g = 0.0001 344(T) + 0.0655899

K as detemiined bv the equation: K = WS(T/RH) (p/p 1.68)

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

The prograin outlined in Appendix A when properly programmed will provide for an hourly visual
display (graph) which depicts the foHowing:

a. CEm for the KT Wedicted: wifl change by the new hourly prediction of KT. A t the end of the day will

rcpresent the potential uncontrolled coal and petroleuin coke emissions experi enced in the past 24 hours.

b. Slopp of the uncontrolled intended movement with time for the PASS-1 system without controls: will

changc by the new hourly prediction of KT,

c. PASS-1 hne, with hourly markinizs in propqrtio on
n dqpictinp, the controlled to the hourly K, emissi n level

attained when controls are applied. This line's slope and value will vary as suppression cycles are applied.

The extension of this fine depicts the near low end of the day value in pg /M3 , if no further cycles are apphed

and is the primary control medium. It generates from the uncontroHed slope li ne (b.).

d. PASS-0 hne, depictinp, the controlled eniissions level attained when contro ls are Whed. This line's slope

as in (c) wifl vary as suppression cycles are applied. The extension of this line depicts the near high end of

the day value in Wm3, if no further cycles are applied. When, due to cycles, the PASS4) line and the

PASSA line are one and the same, their extension wiU be the end of the day val ue attained for coal and

petroleum coke einissions in AWM3. It generates from the uncontrolled CE. hne (a.).

e. PASS-0 (I 80) line, %rith hourly markings in proportions to the hourly K. d Qictinp, the controBed emission

level when the wind direction is between 180' and 270'T. 'Ibis fine is activa ted by wind direction inputs

and holds the last highest value during periods when the wind is out of quadra nt. Its extension represents

the near end of day value in Wm3 at station 180-J if no further cycles are app lied. Iltis line also generates

from the uncontrolled CEun, line (a.).

COUMV I
TM Records the houriv values for a 24 hour dav, beginning with a I at 0 1 00 h ours and ending with a 24 at

2400 hours.

COLUAfN 2
K Computes and records the hourly value of K as follows:

K = ((WS * TENW) / RH) * (p/1.68g)

COL LIA" 3
KD Computes and records the K factor adjusted for rain and freeze effects. KD is used to defme the need

for a cvcle (Ci) administered by the computer controfled water suppression sys
tem. KD is computed as

follows:

KD = K * Ff,

COLUA,EV 4
Ci Records the total nLLmber of cycles credited on the hour. A 20-minute suppr ession cycle (35,500 gallons

of water) sprayed from the computer controlled wateT suppression system counts as one cycle as well as

a rain event greater than or equal to 0.0225 inches. Rain greater than or equ al to 0.0 I inches but less

than 0.0225 inches is counted as one Ci if the adjusted rain ainount for the h otir is less than the actual

rain amount.

COLUALV 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 coniputer

controfled water suppression system).

F :represents a continuous cycle (three 20-niinute spray cycles per hour) adni inistered to recover from a

freeze event.

R: represents a rain event cr-edited as a cycle.

I represents a DENlAND I cycle, where KD is greater than or equal to I 0, but less than 15.

2 represents a DEMAND H cycle, where KD is greater than or equal to 15, but le ss than 30.

3: represents a DENIAND IH 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.

COL LTAN
vci Records the total ntunber of cycles credited since 0 1 00 or the sum of CO LUMN 4.

COLtlIjOV 7
IR Records the ainount of rain in inches for the hour as measured by the rain gauge.

Note: CIR, the total mnount of rain credited for the hour is computed as foHow s:

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

[Radj, the adjusted rain amount for the hour is also computed to include the e ffects of non-consecutive

rains, where:

IRadj = CIR,1 / (HRS@_l + 1) when IR > 0 and HRS > 0

[Radj = SUMIR..1 / (HRSn-I + 1) when IR > 0, SUMIR > 0.0225; and HRS = 0

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

COL LTAN 8
HRS Records the number of hOUTS following a Tainfall. HRS increases by one eac h hour after the rain ends,

and continues to do so until another rain begins or until the effects of the r ain are over (F, > 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-I = 0 or Ff.-i < I

fiRS = 0 when IR > 0 and SUMIR > 0.0225

HRS = 0.5 when Ci @ 3; FIR,,-, > O;and Ffn-I > I

HRS = HRS,j + I when IR > 0 and SLrMIR < 0.0225

or when IR = 0; SUMIR > 0.0225

Note: IfTM=24andHRS<48andF,<0.9thenHRSandSUMIRarecarriedforwardtothenext

day. IfHRS=48orF,;->0.9thepostraineffecthasreacheditslintits. Onthenex:thour, F,=1,HRS=

0, and SUMIR = 0.

COLUAILV 9
SUMIR Coniputes and records the effective sum of the hourlv raitifall as follo ws:

SUMIR = 0 when CIR = 0 aiid SUMMn-j < 0.0225

SLTNM = SLTMIRn-I when CIR = 0 mid SUMIR,j > 0.0225

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

SLTMIR = CIR when CIR > 0; (IR + IR.-j) < 0.0225 Ffm-l < L,

CIR.- I > 0-, and Ci = 3

SUMIR = IR + SUMfR,,-, when CIR > O', (IR + [Rn-1) < 0.0225-1

Ffrn-I < 1; C 1R.., > 0; and Ci < 3

SUMIR @ Madj,,.1 + CIR when C IR > 0-, (M + M, 1) < 0.0225 Ffr,,-) < 1;

CIRn-I = 0;

SLTMIR = IRadi., + CIR when CM > 0, and (IR + IRn-1) > 0.0225

Note: IfF,=IorHRS=48thenSUNIlRissettozerothenexthour.

COLUAILV 10
F, Computes and records the post rain recoveiy 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 considered over, an d F, is set to one on the next

hour. Fr is computed as follows:

F, = 0 when CIR < 0.0225 and SUMIR > 0.0225

Fr = I when CIR < 0.0225 and SUMIR < 0.0225
F, = IO(-215.66-24-SLT&11R1(HRS'KT)) when CIR < 0.0225 and SUMIR < 0.0225

COLLTALVII
Ffr Computes and records the combined effects of rain and fi-eeze, where Ff, = F, * Ff.

F r (the post freeze effect) is calculated as follows:

Ff - ((SUMKF * FHRSY(FIR * 106)) * 4.02917 + 0.305 when FIR > 0 and SLTMKF > 0

Ff= I when FIR = 0 or SUNIKF = 0

SUNIKF (the sum of the freeze shear) is calculated by summing the K values beg inning when the

temperature reaches 29OF until F, < 0. I or until continuous cycles are admini stered.

FIR (die potential freeze water) is calculated as foHows:

FIR = SUMKF/I 9200 when FIRn-I = O;SLTM[R O;FHRS = 8; and SUNfKF > 0

FIR = FIR.-, when FIR,, = 0; SLTMIR 0-, FHRS # 8 and SUNIKF > 0

or when FIR,,_j > 10; F, = 1; and SUMIR + SUMIR,j < FIR, I

FIR = SLTMIR for all other conditions

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

FHRS = 0 when SUMIR = 0 and SUMKF = 0

FERS = HRS when SLTMIR > 0 and SLTNIKF = 0

FHRS = HRS when SUMKF > 0; TEMP > 34'F; and F, < 0. I

FHRS = FHRS + I when SLTNIKF > 0; and TENM < 341F or F, > 0. I

COLUAN 12
KT Coniputes and records the predicted sm of K at the end of the day as follow s:

KT. = K, + K2 + K3 + - - - K. + K,,(24-TM)

EXAWLE: TM K

I 10

2 10

3 20

KT3 = 10 + 10 + 20 + 20(24-3) = 460

COLUNLV 13
H,j Coniputes and records the estiinated amount of dust entering the HVS durin g the hour as foHows:

H,i = Ksum I SI * Ffr

where:

Ksum is the sum of the K values wid-dn the current cycle set.

SI is the slope of the sumHj line for the current cycle set, and is computed a s follows:

At TM = I

SI = sb when Ci = 0

where sb(base slope) = CE.XT

SI = sb * (I -eff) when Ci > 0

For all other times (n):

SI = Sl@- I * (1--eft).

where Slci-l is tile last value of SI in the previous Ci sequence SLi-I = sb p rior to any cycles.

(I -efl) tenn calculates the efficiency of the last cycle adniinistered and is calculated as follows:

Equation A:

(I -eft). = (I -(36.657299 *101-0.10111211 ' K-)/100))C'@'

Equation B:

(I -efT)b = (I -((-0.0146913 * Ksum + 14.65059)/] 00))C!,,eq

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

sloM- I * (I -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 cv cle is credited at time I

(cycle performed at TM 0000) then the equation for (I -efl) changes as follows : KT replaces Ksum,

and the calculation is multiphed by C.q instead of raised to its power. 'Me s lope then remains

constant until another cycle/cycles are administered.

C.q iS the cycle sequence for the current cycle set.

where: C,,,q = 0 when Ci = 0

C.q = CSeqr'I when Qn = C.-,

C@, = 0.5 when Cn > Ci,,-,, Ff, > I and Ci I

C'@q = I when Ci= I or3

C,.q = 2 when Ci = 2

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

sb = 0.40804

sp = 0.31986

TM K RBC Kswn (I -efl) Cseq Si Ffr Hvi

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

COLI)WIN 14
Y,H,i Computes and records the stun of the coal and petroleum coke ditst in th e HVS (M Vol Sanipler) to the

hour as foHows:

ZH@ = H,,, + EH,,@.-

where Y_Hj..@_1 is the last value of Y_Hi in the previous cycle sequence.

EXAWLE: Using the values from the previous exainple:

TM EH,..j.., '@-Hvj

I 0.0 8.2024

2 0.0 15.1398

3 15.1398 20.9029

4 15.1398 26.1705