



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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STATE WATER CONTROL BOARD ENFORCEMENT ACTION

A SPECIAL ORDER BY CONSENT

ISSUED TO

THE UNITED STATES DEPARTMENT OF DEFENSE

FOR THE

PENTAGON – HEATING AND REFRIGERATION PLANT

(VPDES Permit No. VA0032000)

SECTION A: Purpose

This is a Consent Special Order issued under the authority of Va. Code § 62.1-44.15 (8a) and 10.1-1185, between the State Water Control Board and the United States Department of Defense regarding the Pentagon – Heating and Refrigeration Plant, for the purpose of resolving certain violations of environmental laws and regulations.

SECTION B: Definitions

Unless the context clearly indicates otherwise, the following words and terms have the meanings assigned to them below:

1. “Va. Code” means the Code of Virginia (1950), as amended.
2. “Board” means the State Water Control Board, a permanent citizens' board of the Commonwealth of Virginia as described in Va. Code § 62.1-44.7 and 10.1-1184.
3. “Department” or “DEQ” means the Department of Environmental Quality, an agency of the Commonwealth of Virginia as described in Va. Code § 10.1-1183.
4. “Director” means the Director of the Department of Environmental Quality.
5. “Order” means this document, also known as a Consent Special Order.

6. "DoD" means the United States Department of Defense.
7. "Pentagon" means the headquarters building of the United States Department of Defense.
8. "HRP" means the Pentagon – Heating and Refrigeration Plant.
9. "NVRO" means the Northern Virginia Regional Office of the Department.
10. "Permit" means Virginia Pollutant Discharge Elimination Permit System (VPDES) Permit No. VA0032000, issued February 25, 2000 and reissued on October 3, 2005.
11. "µg/L" means micrograms per liter.
12. "Passivate" means to make inactive or less reactive by coating or surface treatment.

SECTION C: Findings of Facts and Conclusions of Law

1. The DoD owns and operates the Pentagon – Heating and Refrigeration Plant located in Arlington County, Virginia and is subject to Permit No. VA0032000, which was most recently reissued on October 3, 2005 and expires on October 3, 2010.
2. Pursuant to the Permit, the HRP discharges wastewater to Roaches Run, which is located in the Potomac River Basin.
3. The Board has evidence to indicate that DoD has violated Va. Code § 62.1-44.5, 9 VAC 25-31-50.A, and Part I.A.1., Part I.D.2., Part I.E.8., Part I.F.1.b., Part I.F.3.e., Part II.C.1., Part II.C.2. of the Permit. The violations are referenced in the following Warning Letters ("WLs") and Notices of Violation ("NOVs"):
 - WL No. W2003-07-N-1006, dated July 16, 2003, citing a violation of the Permit; the overdue submittal of the May 2003 Discharge Monitoring Report (DMR) due by June 10, 2003 and received on June 27, 2003.
 - WL No. W2003-08-N-1005, dated August 14, 2003, citing a violation of the Permit; failure to submit the June 2003 DMR due by June 10, 2003.
 - WL No. W2003-09-N-1005, dated September 15, 2003, citing a violation of the Permit; failure to submit the Fourth Annual Chronic and Acute Monitoring Report due by July 10, 2003.
 - NOV No. W2003-10-N-0007, dated October 23, 2003, citing a violation of the Permit; failure to submit the Fourth Annual Chronic and Acute Monitoring Report due by July 10, 2003.

- NOV No. W2003-11-N-0005, dated November 21, 2003, citing a violation of the Permit; failure to submit the Fourth Annual Chronic and Acute Monitoring Report due by July 10, 2003.
- NOV No. W2003-12-N-0005, dated December 15, 2003, citing violations of the Permit, including: failure to submit the Fourth Annual Chronic and Acute Monitoring Report due by July 10, 2003, and the overdue submittal of the Fourteenth Quarterly Progress Report due by October 10, 2003 and received on November 3, 2003.
- NOV No. W2004-01-N-0006, dated January 15, 2004, citing violations of the Permit, including: failure to submit the Fourth Annual Chronic and Acute Monitoring Report due by July 10, 2003, and the overdue submittal of the Fourteenth Quarterly Progress Report due by October 10, 2003 and received on November 3, 2003.
- NOV No. W2004-02-N-0001, dated February 10, 2004, citing a violation of the Permit; the overdue submittal of the Fourth Annual Chronic and Acute Monitoring Report due by July 10, 2003 and received on January 20, 2004.
- NOV No. W2004-04-N-0014, dated May 7, 2004, citing violations of the Permit, including: failure to submit the Fourth Chronic Retest results due by March 10, 2004, failure to submit the results of downstream temperature testing due by March 10, 2004, the overdue submittal of the March 2004 DMR due by April 10, 2004 and received on April 19, 2004, submission of an outdated DMR form, exceedence of the weekly concentration average maximum limit for Total Recoverable Copper in March 2004, and exceedence of the monthly concentration average limit for Total Recoverable Copper in March 2004.
- NOV No. W2004-06-N-0001, dated June 11, 2004, citing violations of the Permit, including: the overdue submittal of the Fourth Chronic Retest results due by March 10, 2004 and received on May 10, 2004, failure to submit the results of downstream temperature testing due by March 10, 2004, failure to submit the results of downstream temperature testing due by April 10, 2004, exceedence of the weekly concentration average maximum limit for Total Recoverable Copper in April 2004, and exceedence of the monthly concentration average limit for Total Recoverable Copper in April 2004.
- NOV No. W2004-07-N-0003, dated July 13, 2004, citing violations of the Permit, including: use of a DMR form that does not include the copper limits or the correct certification statement, failure to submit the results of downstream temperature testing due by March 10, 2004, failure to submit the results of downstream temperature testing due by April 10, 2004, failure to submit the results of downstream temperature testing due by May 10, 2004, and failure to submit the results of downstream temperature testing due by June 10, 2004.

- NOV No. W2004-08-N-0001, dated August 5, 2004, citing violations of the Permit, including: use of a DMR form that does not include the copper limits or the correct certification statement, failure to submit the results of downstream temperature testing due by March 10, 2004, failure to submit the results of downstream temperature testing due by April 10, 2004, failure to submit the results of downstream temperature testing due by May 10, 2004, failure to submit the results of downstream temperature testing due by June 10, 2004, and failure to submit the results of downstream temperature testing due by July 10, 2004.
- NOV No. W2004-09-N-0005, dated September 9, 2004, citing violations of the Permit, including: use of a DMR form that does not include the copper limits or the correct certification statement, exceedence of the weekly concentration average maximum limit for Total Recoverable Copper in July 2004, exceedence of the monthly concentration average limit for Total Recoverable Copper in July 2004, failure to submit the results of downstream temperature testing due by March 10, 2004, failure to submit the results of downstream temperature testing due by April 10, 2004, failure to submit the results of downstream temperature testing due by May 10, 2004, failure to submit the results of downstream temperature testing due by June 10, 2004, failure to submit the results of downstream temperature testing due by July 10, 2004, and failure to submit the results of downstream temperature testing due by August 10, 2004.
- NOV No. W2004-10-N-0001, dated October 7, 2004, citing violations of the Permit, including: failure to submit the results of downstream temperature testing due by March 10, 2004, failure to submit the results of downstream temperature testing due by April 10, 2004, failure to submit the results of downstream temperature testing due by May 10, 2004, failure to submit the results of downstream temperature testing due by June 10, 2004, failure to submit the results of downstream temperature testing due by July 10, 2004, failure to submit the results of downstream temperature testing due by August 10, 2004, and failure to submit the results of downstream temperature testing due by September 10, 2004.
- NOV No. W2004-11-N-0004, dated November 4, 2004, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper in September 2004 and exceedence of the monthly concentration average limit for Total Recoverable Copper in September 2004.
- NOV No. W2004-12-N-0001, dated December 3, 2004, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 001 in October 2004, exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 001 in October 2004, exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in October 2004, exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in October 2004, and failure to report a value for water temperature at Outfall 001 in October 2004.

- NOV No. W2005-02-N-0002, dated February 11, 2005, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in December 2004 and exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in December 2004.
- NOV No. W2005-03-N-0003, dated March 7, 2005, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in January 2005 and exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in January 2005.
- NOV No. W2005-04-N-0007, dated April 12, 2005, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in February 2005 and exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in February 2005.
- NOV No. W2005-05-N-0003, dated May 16, 2005, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in March 2005 and exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in March 2005.
- NOV No. W2005-06-N-0003, dated June 13, 2005, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in April 2005 and exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in April 2005.
- NOV No. W2005-07-N-0010, dated July 6, 2005, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in May 2004 and exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in May 2005.
- NOV No. W2005-08-N-0004, dated August 5, 2005, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in June 2005 and exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in June 2005.
- NOV No. W2005-09-N-0001, dated September 12, 2005, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in July 2005 and exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in July 2005.

- NOV No. W2005-10-N-0002, dated October 12, 2005, citing violations of the Permit, including: exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in August 2005 and exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in August 2005.
 - NOV No. W2005-11-N-0006, dated November 10, 2005, citing violations of the Permit, including exceedence of the weekly concentration average maximum limit for Total Recoverable Copper for Outfall 002 in September 2005 and exceedence of the monthly concentration average limit for Total Recoverable Copper for Outfall 002 in September 2005.
4. Between July 2003 and December 2004, many of the Permit violations were administrative in nature, including late submittal of DMRs, annual chronic and acute monitoring reports, quarterly progress reports, and instream monitoring results, as well as the use of an outdated DMR form and an incomplete DMR.
 5. Discussions between DEQ and DoD revealed that many of these administrative violations were a result of the thorough and prolonged screening process that all mail leaving or entering the Pentagon is subject to for security reasons. The delays caused many submittals to DEQ to be received after the Permit deadlines. DoD has since been e-mailing its submissions to DEQ before mailing via U.S. mail, eliminating this problem.
 6. Since March 2004, the HRP has frequently violated its Permit effluent limits for copper. DoD has determined that elevated copper levels result when the cooling water passes through the soft copper condenser pipes in the chillers. It has also been determined that copper levels are highest after the pipes are scrubbed clean with nylon brushes.
 7. In December 2004, DoD began the addition of a liquid copper corrosion inhibitor, Chemstar 505. However, copper levels continued to be above the original Permit limit of 4.4 µg/L.
 8. The Permit, as reissued, contains an increased copper effluent limit of 34 µg/L. The revised copper limit was determined by recalculating the hardness and wasteload allocation. However, based on historic effluent levels as reported in the DMRs, the HRP would likely violate the copper limit several times per year.
 9. DEQ NVRO staff met with representatives of DoD on September 7, 2005, to discuss DoD's approach to meet copper effluent limits under the reissued Permit. DoD agreed to submit a plan and schedule, which has been incorporated into Appendix A of this Order, to meet the 34 µg/L limit contained in the Permit.

SECTION D: Agreement and Order

Accordingly, the Board, by virtue of its authority granted in Va. Code § 62.1-44.15(8a), orders the DoD, and the DoD agrees to perform the actions described in Appendix A of this Order in settlement of the violations cited in this Order.

SECTION E: Administrative Provisions

1. The Board may modify, rewrite, or amend the Order with the consent of DoD, for good cause shown by DoD, or on its own motion after notice and opportunity to be heard.
2. This Order addresses and resolves those violations specifically identified herein, including those matters addressed in the WLs and NOVs issued to DoD by DEQ on July 16, 2003, August 14, 2003, September 15, 2003, October 23, 2003, November 21, 2003, December 15, 2003, January 15, 2004, February 10, 2004, May 7, 2004, June 11, 2004, July 13, 2004, August 5, 2004, September 9, 2005, October 7, 2004, November 4, 2004, December 3, 2004, February 11, 2005, March 7, 2005, April 12, 2005, May 16, 2005, June 13, 2005, July 6, 2005, August 5, 2005, September 12, 2005, October 12, 2005, and November 10, 2005. This Order shall not preclude the Board or Director from taking any action authorized by law, including, but not limited to: (1) taking any action authorized by law regarding any additional, subsequent, or subsequently discovered violations; (2) seeking subsequent remediation of the Facility as may be authorized by law; and/or (3) taking subsequent action to enforce the terms of this Order. This Order shall not preclude appropriate enforcement actions by other federal, state, or local regulatory authorities for matters not addressed herein.
3. For purposes of this Order and subsequent actions with respect to this Order, DoD admits the jurisdictional allegations, factual findings, and conclusions of law contained herein.
4. DoD consents to venue in the Circuit Court of the City of Richmond for any civil action taken to enforce the terms of this Order.
5. DoD declares it has received fair and due process under the Virginia Administrative Process Act, Code §§ 2.2-4000 *et seq.*, and the State Water Control Law, and waives the right to any hearing or other administrative proceeding authorized or required by law or regulation and to judicial review of any issue of fact or law contained herein. Nothing herein shall be construed as a waiver of the right to any administrative proceeding for, or to judicial review of, any action taken by the Board to enforce this Order.
6. Failure by DoD to comply with any of the terms of this Order shall constitute a violation of an order of the Board. Nothing herein shall waive or bar the initiation of appropriate enforcement actions or the issuance of additional orders as appropriate by the Board or the Director as a result of such violations. Nothing

herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.

7. If any provision of this Order is found to be unenforceable for any reason, the remainder of the Order shall remain in full force and effect.
8. DoD shall be responsible for failing to comply with any of the terms and conditions of this Order unless compliance is made impossible by earthquake, flood, other acts of God, war, strike, or such other occurrence. DoD must show that such circumstances resulting in noncompliance were beyond its control and not due to a lack of good faith or diligence on its part. DoD shall notify the Director of NVRO in writing when circumstances are anticipated to occur, are occurring, or have occurred that may delay compliance or cause noncompliance with any requirement of this Order. Such notice shall set forth:
 - a. the reasons for the delay or noncompliance;
 - b. the projected duration of such delay or noncompliance;
 - c. the measures taken and to be taken to prevent or minimize such delay or noncompliance; and
 - d. the timetable by which such measures will be implemented and the date full compliance will be achieved.

Failure to so notify the Regional Director within 24 hours of learning of any condition listed above, which DoD intends to assert will result in the impossibility of compliance, shall constitute a waiver of any claim of inability to comply with a requirement of this Order.

9. This Order is binding on the parties hereto, their successors in interest, designees, and assigns, jointly and severally.
10. This Order shall become effective upon execution by both the Director or his designee and the DoD. Notwithstanding the foregoing, DoD agrees to be bound by any compliance date that proceeds the effective date of this Order.
11. This Order shall continue in effect until the Director or the Board terminates this Order in his or its sole discretion upon 30 days' written notice to DoD. Termination of this Order, or of any obligation imposed in this Order, shall not operate to relieve DoD from its obligation to comply with any statute, regulation, Permit condition, other order, certificate, certification, standard, or requirement otherwise applicable.

12. By its signature below, DoD voluntarily agrees to the issuance of this Order.

And it is so ORDERED this 17th day of MARCH ~~January~~ 90E, 2006.



Director
Department of Environmental Quality

The United States Department of Defense voluntarily agrees to the issuance of this Order.

Ralph E. Newton, Director, Defense Facilities Directorate
By: Ralph E. Newton

Date: 17 January 2006

Commonwealth of Virginia
City/County of Arlington

The foregoing document was signed and acknowledged before me this 17th day of

January, 2006, by Ralph E. Newton who is
(name)

DFD Director of the United States Department of Defense, on behalf of said
(title)
Department.



Notary Public

My commission expires: 31 October 2007

APPENDIX A
SCHEDULE OF COMPLIANCE

DoD shall:

1. Recirculate water with a Chemstar 505 concentration of 100 mg/L or less in each off-line chiller to allow passivation to occur. When the chiller is placed back into service, a minimal concentration of Chemstar 505, estimated to be 5 mg/L or less will be added to the cooling water to maintain passivation. This shall be continued until either the Permit is modified to include a further increased copper limit or an alternative approach is approved by DEQ per items #4 and #6 of this schedule.
2. By January 31, 2006, submit the results of a copper analysis of chiller maintenance water from flushing out the condenser tubes after cleaning to Arlington County Wastewater Treatment Facility with a request for authorization to discharge the chiller maintenance water to the sanitary sewer. Provided that Arlington County approves of this request, maintenance water will be routed to the sanitary sewer, and the chillers will be flooded with a Chemstar 505 solution to passivate the tubes (as mentioned in item #1 of this schedule) before being returned to service. DoD will notify DEQ of Arlington County's decision within two weeks of receiving its response.
3. Collect discharge samples as each chiller is cleaned to optimize the Chemstar 505 concentration (within the bounds of the approved maximum discharge concentration) and retention time needed to meet the Permit copper limit. All of the sampling will be completed and a report with the results will be provided to DEQ by February 28, 2006.
4. By January 7, 2006, develop final Standard Operating Procedures (SOPs) for the use of Chemstar 505 to be included in the HRP Operations and Maintenance Manual. By February 17, 2006, begin implementation and conduct training classes for the Pentagon HRP Operators to ensure minimal operator error when using Chemstar 505.
5. If by February 28, 2006, the HRP is unsuccessful in achieving effluent copper concentrations below the current Permit limit after implementing the preceding items of this schedule, by April 3, 2006, submit for DEQ review an alternative approach plan and schedule that includes the replacement of the existing copper condenser tubes with nickel/copper or titanium tubes or another alternative approach. Upon its approval by DEQ, this plan and its schedule shall become a part of and enforceable under the terms of this Order.
6. Operate the HRP in a workman-like manner in order to produce the best quality effluent of which the HRP is capable during implementation of this schedule.