



K A N S A S

RODERICK L. BREMBY, SECRETARY

DEPARTMENT OF HEALTH AND ENVIRONMENT

KATHLEEN SEBELIUS, GOVERNOR

May 17, 2006

Gary J. LeRock, Plant Manager
Koch Nitrogen Company
11559 US Highway 50,
P. O. Box 1337
Dodge City, KS 67801-1337

469378



RCRA RECORDS

Re: Class 1a Permit Modification to Install Reverse Osmosis Unit
Koch Nitrogen Company, Dodge City
EPA ID# KSD044625010

Dear Mr. LeRock:

The Kansas Department of Health and Environment (KDHE) has reviewed the above referenced Class 1a Permit Modification Request submitted on May 15, 2006, requiring approval by KDHE prior to implementation. This permit modification request involves the replacement of the current electrochemical treatment unit with a reverse osmosis unit to remediate chromium and nitrate contaminated groundwater and asks to make changes in the Permit, Part B Permit Application, and Sampling and Analysis Plan.

KDHE has determined this change will enhance the existing treatment system and therefore grants approval of this request. The revised pages have been placed in the facility's Part B Permit Application on file at KDHE. Revisions to the Permit have been enclosed with this letter.

In accordance with 40 CFR 270.42, this Class 1a permit modification requires the permittee to send notice of the modification to all persons on the facility mailing list within 90 calendar days after KDHE approves the request. The notice must specify changes being made to permit conditions and supporting documents referenced by the permit must explain why the changes are necessary.

DIVISION OF ENVIRONMENT
Bureau of Waste Management
CURTIS STATE OFFICE BUILDING, 1000 SW JACKSON ST., STE. 320, TOPEKA, KS 66612-1366
Voice 785-296-1600 Fax 785-296-8909 <http://www.kdhe.state.ks.us/waste>

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ARTD/RCAP

If you have not already done so, please submit a clean copy of all revised pages and an index of changes to each holder of the Part B permit application. If you have any questions or concerns about this letter, you may contact me at espellma@kdhe.state.ks.us or (785) 296-1616.

Sincerely,



Everett Spellman
Professional Geologist
Hazardous Waste Permitting Section

Enclosure – replacement pages for Part 1 of Permit

cc: **Andrea Stone - USEPA/Region 7/ARTD/RCAP - w/enc.**
Allen Guernsey - KDHE/DEA/SWDO/Waste Programs - w/enc.
Bill Bider - KDHE/BWM – w/o enc.

SECTION III - CLOSURE AND POST-CLOSURE CARE

The Permittee may choose to complete the requirements of Sections C.5.f. and C.6.a. of Part II of this Permit in lieu of the requirements established in this Section, [40 CFR 264.110(c)]. In the event the Permittee is unable to complete the requirements of Sections C.5.f. and C.6.a. of Part II of this Permit, the Secretary shall require the Permittee to complete the requirements of Section III of Part I of the Permit.

III.A. GENERAL CONDITIONS

The Permittee shall provide closure and post-closure care for the Chromium Destruct Unit in accordance with the terms and conditions of this Permit. This closure and post-closure care shall be in accordance with the Post-Closure Plan, Section F, and the Post-Closure Inspection Plan, Section G of the Part B Permit Application, and 40 CFR 264.110.

The hazardous waste management unit at the facility subject to closure and post-closure care, in accordance with 40 CFR 264.110, is the Chromium Destruct Unit. This unit was used to treat cooling tower blowdown wastewater that contained hexavalent chromium. This process involved the conversion of hexavalent chromium to trivalent chromium. Use of the Chromium Destruct Unit for this purpose was discontinued in 1984 when the facility ceased using chromium corrosion inhibitors in the plant's cooling systems. At that time, the Chromium Destruct Unit was used to treat chromium contaminated groundwater generated by the recovery system. In 1991, all operations of the Chromium Destruct Unit were replaced by an electrochemical chrome reduction treatment unit that was installed to treat the recovered groundwater. The status of the Chromium Destruct Unit is currently inactive. [In 2006, the electrochemical chrome reduction treatment unit was replaced by a reverse-osmosis \(RO\) unit for further reduction of chromium levels in the treated water.](#)

III.B. CLOSURE REQUIREMENTS FOR THE CHROMIUM DESTRUCT UNIT

The Permittee shall close the Chromium Destruct Unit as required by 40 CFR 264.111 and this Permit. Since final closure has not been completed in accordance with 40 CFR 264.228, the Permittee shall fulfill the requirements of Permit Condition III.B.1. and III.B.2.

- III.B.1 The Permittee shall submit, within two-hundred-forty (240) days of the effective date of the Permit, a closure plan to meet the requirements of 40 CFR 264.111, 264.112, 264.228, and Permit Condition II.H. The Permittee may submit the closure plan as part of the RCRA Facility Investigation (RFI) Work Plan required by Permit Condition C. of Part II of this permit.
- III.B.2 After final closure, the Permittee shall follow the plans and procedures in the Post-Closure Plan, Section F, and the Post-Closure Inspection Plan, Section G, of the Part B Permit Application and Section III.C. of this Permit.

III.C. POST-CLOSURE PROCEDURES AND USE OF PROPERTY

The Permittee operated a Chromium Destruct Unit which is subject to post-closure care in accordance with 40 CFR 264.117 through 264.120. The post-closure care period shall begin on the date final closure certification is completed, and continue for thirty (30) years after that date unless otherwise specified by the Secretary. The post-closure care period for an individual regulated unit shall be automatically extended for the duration of any unresolved corrective action for that unit.

SECTION IV - GROUNDWATER CORRECTIVE ACTION

The Permittee may choose to complete the requirements of Section C.5.e. of Part II of this Permit, in lieu of Section IV of Part I of the Permit [40 CFR 264.90(f)]. If the Part II portion of this Permit is implemented, the Permittee will no longer be required to complete the requirements of Section I.B.3. of Part I of this Permit. In the event the Permittee is unable to complete the requirements of Section C.5.e. of Part II of this Permit, the Secretary shall require the Permittee to complete the requirements of Section IV of Part I of this Permit.

IV.A. UNIT DESCRIPTION

The hazardous waste management unit at the facility subject to corrective action, in accordance with 40 CFR 264.100, is the Chromium Destruct Unit as shown in Permit Attachment A and Permit Attachment B. This unit was used to treat cooling tower blowdown wastewater that contained hexavalent chromium. This process involved the conversion of hexavalent chromium to trivalent chromium. Use of the Chromium Destruct Unit for this purpose was discontinued in 1984 when the facility ceased using chromium corrosion inhibitors in the plant's cooling systems. At that time, the Chromium Destruct Unit was used to treat chromium contaminated groundwater generated by the recovery system. In 1991, all operations of the Chromium Destruct Unit were replaced by an electrochemical chrome reduction treatment unit that was installed to treat the recovered groundwater. The status of the Chromium Destruct Unit is currently inactive. In 2006, the electrochemical chrome reduction treatment unit was replaced by a reverse-osmosis (RO) unit for further reduction of chromium levels in the treated water.

Since levels of contaminants in the groundwater underlying the Chromium Destruct Unit have exceeded the groundwater protection standard (GWPS) established by this Permit, Permit Attachment C, the Permittee shall implement a corrective action program as required by 40 CFR 270.14(c)(8) and detailed in this section. The corrective action program shall consist of a groundwater recovery and treatment system and a groundwater monitoring system.

The groundwater recovery and treatment system consists of sixty-~~eight~~^{five} (68⁵) recovery wells, a ~~n electrochemical reduction~~RO unit, ~~a settling basin~~, a 2.8 million gallon equalization tank, a 300,000 gallon wastewater tank, a filtration facility, and two Class I non-hazardous injection wells. The recovery wells are used to remove groundwater to achieve an inward hydraulic gradient and prevent the migration of contaminated groundwater. The recovery wells pump groundwater to either the ~~electrochemical reduction~~RO unit for treatment and utilization as plant process water, or directly to one of the two (2) injection wells for disposal under an Underground Injection Control (UIC) permit. The recovered groundwater pumped directly to the UIC wells and the plant wastewater pass through the filtration facility before disposal in the UIC well. Water that has been treated for plant operations passes through the settling basin before the water is pumped to the equalization tank for storage. The wastewater tank is used to temporarily store plant wastewater prior to disposal.

The groundwater monitoring system consists of two networks composed of a total of 110 wells for the combined purpose of measuring water levels and groundwater quality (Permit Attachment D). The monitoring well network consists of 48 wells; 25 wells are sampled quarterly, 13 wells are sampled semi-annually (twice each year), and 10 private wells in the vicinity of the facility are sampled quarterly. The supplemental monitoring well network consists of the remaining 59 wells installed at the facility and any additional wells that are installed in the future and will be used to obtain water level measurements, potential water quality samples, and other information.

If the GWPS concentration limits are being exceeded at the end of the compliance period at or beyond the point of compliance, the Permittee's groundwater corrective action program shall continue until the Permittee complies with Permit Condition IV.F.

IV.B.6. Implementation of Corrective Action Program

The Permittee shall implement a corrective action program to ensure compliance with the GWPS. [40 CFR 264.100(d)]

IV.C. CORRECTIVE ACTION PROGRAM

The Chromium Destruct Unit, as defined in Permit Condition IV.A., is subject to the corrective action program requirements of 40 CFR 264.100, as incorporated by reference in K.A.R. 28-31-1, and this Permit until corrective action requirements contained in 40 CFR Part 264 Subpart F and this Permit have been satisfied. The corrective action program for the Chromium Destruct Unit shall consist of a program to ensure that groundwater quality will achieve compliance with the GWPS in a reasonable time period. This program shall consist of operation of the groundwater recovery and treatment system and installation/modification of the groundwater monitoring system in accordance with Permit Condition IV.D. The recovery system shall continue to operate until the GWPS established in Permit Condition IV.B. has not been exceeded for a period of three consecutive years at and beyond the point of compliance. [40 CFR 264.100 (c)]

IV.C.1. Groundwater Corrective Action System

IV.C.1.a. The corrective action system for the Chromium Destruct Unit shall consist of operation of the groundwater recovery and treatment system. This system consists of the recovery wells specified in Table 2, ~~an electrochemical reduction RO unit, a settling basin,~~ a 2.8 million gallon equalization tank, a 300,000 gallon wastewater tank, a filtration facility, and two Class I non-hazardous injection wells.

Table 2 - Groundwater Recovery Wells

Recovery Wells
TW-1A, TW-2, TW-4, TW-7, TW-8, TW-9, TW-10, TW-13, TW-14, TW-16, TW-17, TW-18, TW-19, TW-20, TW-21, TW-23, TW-26, TW-27, TW-28, TW-29, TW-30, TW-31, <i>TW-36, TW-37, TW-38, TW-39, TW-40</i> , TW-46, TW-48, TW-49, <i>TW-50</i> , TW-51, TW-52, TW-53, TW-54, TW-55, TW-56, TW-57, TW-58, TW-64, TW-65, TW-66, TW-67, TW-68, TW-69, TW-70, TW-71, TW-72, TW-73, TW-74, TW-75, TW-76, TW-77, TW-78, <i>TW-79</i> , TW-82, TW-83, TW-84, TW-85, TW-86, TW-87, TW-88, TW-89, TW-90, TW-91, TW-92, TW-93, TW-94

All wells are pumped on a routine basis except italicized wells.