

ILLINOIS POLLUTION CONTROL BOARD
February 17, 1994

IN THE MATTER OF:)
)
PETITION OF CABOT CORPORATION)
FOR AN ADJUSTED STANDARD FROM) AS 92-8
35 ILL. ADM. CODE 738.SUBPART B) (Adjusted Standard)

OPINION AND ORDER OF THE BOARD (by R.C. Flemal):

This matter is before the Board on an amended petition for adjusted standard filed by Cabot Corporation (Cabot) on September 25, 1992. Cabot requests that the Board grant an exemption from the underground injection control (UIC) disposal prohibitions in 35 Ill. Adm. Code 738.Subpart B for certain wastes disposed at Cabot's Tuscola facility. The United States Environmental Protection Agency (USEPA) has granted an exemption from the parallel federal UIC rules.

The Board's responsibility in this matter arises from the Environmental Protection Act (Act) (415 ILCS 5/1 et seq.). The Board is charged therein to "determine, define and implement the environmental control standards applicable in the State of Illinois" (Act at Section 5(b)) and to "grant *** an adjusted standard for persons who can justify such an adjustment" (Act at Section 28.1(a)). More generally, the Board's responsibility in this matter is based on the system of checks and balances integral to Illinois environmental governance: the Board is charged with the rulemaking and principal adjudicatory functions, and the Illinois Environmental Protection Agency (Agency) is responsible for carrying out the principal administrative duties.

Based upon the record before it and upon review of the factors involved in the consideration of adjusted standards, the Board finds that Cabot has demonstrated that grant of an adjusted standard in the instant matter is warranted. The adjusted standard accordingly will be granted.

BACKGROUND

Cabot operates a inorganic chemical manufacturing facility (SIC Code 2819) located in Tuscola, Illinois. The facility occupies approximately 100 acres and employs 184 persons.

The facility manufactures silicon dioxide (SiO₂), marketed under the trademark Cab-O-Sil. The production process consists of the hydrolysis/oxidation of a chlorosilane feed stock to produce SiO₂ and hydrochloric acid (HCl).

Several hazardous waste streams are generated at the Tuscola facility. The majority are disposed of in one of two UIC wells (Well No. 1 and Well No. 2) located at the facility. The waste streams injected in the UIC wells include acidic waste water from air pollution control scrubbers, stack drains, fan drains, other equipment drains, and wash downs (D002), plus unsalable by-product HCl (also D002); spent acetone from the QC laboratory (F003); and surface water drainage, seepage, leachate, and groundwater (F039).

The two UIC wells are permitted by the Agency.

Wastes with hazardous waste numbers D002, F003, and F039 are explicitly prohibited¹ from underground injection unless an exemption has been granted. Cabot disposes of these wastes via underground injection based in the exemption granted under federal law.

The injection zone at the Cabot site includes the upper part of the Franconia Formation, all of the Potosi and Eminence Dolomites and the Gunter Sandstone, and the lower part of the Oneota Dolomite between the depths of 5,400 and 4,442 feet. The immediately overlying confining zone is the Shakopee Dolomite between 4,442 and 4,124 feet. The confining zone is separated from the lowermost source of underground drinking water at a depth of 2,750 feet by sequences of permeable and less permeable sedimentary rocks which provide additional protection from fluid migration into underground sources of drinking water. (55 Fed. Reg. 49340 (November 27, 1990).)

PROCEDURAL HISTORY

Cabot has sought and obtained "no-migration exemptions" from USEPA pursuant to the exemption procedures found at 40 CFR 148.20 et seq. for the same wastes here at issue. Cabot's petition to USEPA was submitted in April 1989. On August 24, 1990 USEPA issued a notice to grant the exemptions published at 55 Fed. Reg. 34739. On November 6, 1990 USEPA granted the exemption for Well No. 2, published at 55 Fed. Reg. 49340 (November 27, 1990) and on February 4, 1991 USEPA granted the exemption for Well No. 1, published at 58 Fed. Reg. 5826 (February 13, 1991).

On August 3, 1992 Cabot filed a petition with the Board seeking to effectuate the exemption in State law. The Board

¹ The prohibition against waste F003 occurs at Section 738.110 of the Board's regulations and at the parallel 40 CFR 148.10 of USEPA regulations; the prohibitions against wastes D002 and F039 occur at Section 748.116 and 40 CFR 148.16, respectively.

initially docketed the petition as a site-specific rulemaking under docket R92-16. However, by orders of August 13, 1992 the Board closed docket R92-16 and redocketed the matter as the instant proceeding, AS 92-8. In redocketing this matter as an adjusted standard, the Board observed:

... neither the Board nor USEPA rule provides for regulatory action on a "no-migration exemption". USEPA has not taken regulatory action. Rather, it has published Federal Register notices of non-regulatory actions which appear to be similar to adjusted standards. The UIC actions are not rules, and will not appear in the CFR.

Section 13(c) of the Act requires the Board to adopt rules which are "identical in substance" to federal regulations. In this case, there are no regulations.

(In re: Petition of Cabot Corporation, R92-16, 135 PCB 471, August 13, 1992)

In its August 13, 1992 order opening Docket AS 92-8 the Board also directed Cabot to file certain additional information. On September 24, 1992 Cabot responded by filing the amended petition here before the Board.

On December 1, 1992 the Agency filed its response to Cabot's amended petition. The Agency response is accompanied by exhibits consisting of the Agency record of its participation before USEPA in response to Cabot's request for federal exemption.

The Agency argues first that Cabot's petition before the Board should be dismissed for lack of State authority to grant the requested exemption (see following). The Agency argues in the alternative that the adjusted standard be granted.

By order of November 4, 1993 the Board observed that it desired to move the instant matter to decision on the freshest record possible, and accordingly allowed Cabot and the Agency opportunity to bring any matters up-to-date. No additional filings have been made.

ADJUSTED STANDARD PROCEDURE

The Act at Section 28.1 provides that a petitioner may request, and the Board may impose, an environmental standard that is: (a) applicable solely to the petitioner, and (b) different from the standard that would otherwise apply to the petitioner as the consequence of the operation of a rule of general applicability. Such a standard is called an adjusted standard.

The general procedures that govern an adjusted standard proceeding are found at Section 28.1 of the Act and within the Board's procedural rules at 35 Ill. Adm. Code Part 106.

The procedures via which an adjusted standard from the UIC prohibitions may be sought, and the level of justification required for a petitioner to qualify for a UIC adjusted standard, are set out at 35 Ill. Adm. Code 738.Subpart C. 738.Subpart C was adopted in Board docket R92-2, UIC UPDATE, January 25, 1990, effective February 20, 1990. The 738.Subpart C regulations are identical-in-substance to the federal UIC exemption procedures.

738.Subpart C has the following organization:

	PART 738
	HAZARDOUS WASTE INJECTION RESTRICTIONS
	SUBPART C: PETITION STANDARDS AND PROCEDURES
Section	
738.120	Petitions to Allow Injection of a Prohibited Waste
738.121	Required Information to Support Petitions
738.122	Submission, Review and Approval or Denial of Petitions
738.123	Review of Adjusted Standards
738.124	Termination of Adjusted Standards

Each of the Part 738 sections is identical-in-substance to the federal UIC exemption provisions, with the correspondence as follows:

<u>State Regulation</u>	<u>Federal Regulation</u>
Section 738.120	40 CFR 148.20 (1988)
Section 738.121	40 CFR 148.21 (1988)
Section 738.122	40 CFR 148.22 (1988)
Section 738.123	40 CFR 148.23 (1988)
Section 738.124	40 CFR 148.24 (1988)

AUTHORITY

A threshold issue raised by the Agency is whether the Board has authority to grant exemptions from UIC land disposal prohibitions. The Agency contends that this authority, unless explicitly delegated to the State as part of a primacy delegation, is vested solely in the Administrator of USEPA. In the instant case the State has never sought primacy with respect to the provisions of Part 738, and accordingly the Agency contends that the State has never been given the authority to grant exemptions from land disposal prohibitions. On this basis, the Agency recommends that the Board dismiss the instant docket.

The Board is unable to agree with the Agency. The Administrator of USEPA has explicit authority to grant exemptions from the federal UIC law. But the law at issue here is State law. In State law the authority to grant exemptions is vested in the Board. This authority resides in the Board pursuant to regulations adopted under Sections 13(c) and 22.4(a) of the Act, which, among other matters, mandate that the Board adopt regulations implementing a State UIC program. The Agency has presented nothing in the Act, nor in any precedent, that in any way suggests invalidity of the State regulations absent USEPA's delegation of primacy.

Cabot has sought and received exemption under federal law from the Administrator of USEPA. To receive exemption under State law Cabot must, accordingly and as it now does, seek exemption from the Board.

The Board notes that in arriving at this conclusion regarding authority, it distinguishes the issue of authority from the issues of conflict and relative stringency that might arise from Cabot holding an exemption under federal law for the same activity prohibited under State law. The conflict/stringency issues go to the merits of Cabot's request for exemption from the State UIC regulations, to which the Board next turns.

MERITS

The elements of justification required for an exemption under Board regulations are the same as those required for federal exemption. Cabot accordingly stands on its petition as presented to USEPA as demonstration of the merits of its petition before the Board.

The Agency observes that it actively participated in the USEPA review of Cabot's federal petition. (See, e.g., Exhibits 1-12 to Agency's Response.) The Agency observes that it was assisted in its review by the Illinois State Geological Survey and Illinois State Water Survey, and that it conducted an extensive technical review and submitted numerous comments to USEPA regarding the Cabot petition. The Agency further observes that, although it initially considered Cabot's federal petition to contain "deficiencies or inconsistencies" (Agency Response at ¶ 8), Cabot ultimately addressed and satisfied all of the Agency's concerns. The Agency accordingly concludes that it has no new comments to present to the Board in the instant proceeding. (Id. at ¶9.)

The demonstration that must be made to gain the "no-migration exemption" here requested is found at Section 738.120(a)(1)(A). A showing is required that:

Fluid movement conditions are such that the injected fluids will not migrate within 10,000 years:

- i) Vertically upward out of the injection zone; or
- ii) Laterally within the injection zone to a point of discharge or interface with an Underground Source of Drinking Water (USDW) as defined in 35 Ill. Adm. Code 730.

In proposing to grant the exemptions requested by Cabot, USEPA summarized the elements that entered into its decision to move forward on Cabot's petition:

The draft decision to approve Cabot's petition for continued injection was reached after a careful consideration of the factors involved in an environmentally protective injection operation. These factors include the type of waste injected, well construction, well operation, proof of mechanical integrity of the wells, properties of the injection and confining zones, including their ability to receive and confine the waste, a detailed search for any abandoned boreholes which may serve as a conduit for upward waste migration, and comprehensive modeling of the existing waste plume and further growth and movement of the plume, both vertically and laterally, for the next 10,000 years. (55 Fed. Reg. 34741 (August 24, 1990).)

In granting the federal exemption for injection into Well No. 2², USEPA found:

USEPA personnel reviewed all data pertaining to the petition including but not limited to well construction, regional and local geology, seismic activity, penetrations of the confining zone, and the mathematical models submitted by Cabot to demonstrate that no migration from the injection zone would occur. The USEPA has determined that the geological setting at the site as well as the construction and operation of Well No. 2 are adequate to prevent fluid migration out of the injection zone within 10,000 years, as required under 40 CFR Part 148. (55 Fed. Reg. 49340 (November 27, 1990).)

USEPA has further found:

² USEPA's findings with regard to Well No. 1, which were presented at a later date, were substantively the same. See 58 Fed. Reg. 5826 (February 13, 1991).

As required by 40 CFR part 148, Cabot has demonstrated to a reasonable degree of certainty that there will be no migration of hazardous constituents from the injection zone for as long as the waste remains hazardous. This final decision allows the continued underground injection by Cabot of specific restricted hazardous wastes including hydrochloric acid and wastewaters contaminated with hydrochloric acid which are hazardous because they are corrosive (i.e., pH is less than or equal to 2.0 hence its waste code of D002 under 40 CFR 261) a multisource leachate (Code F039) contaminated with small amounts of 1,1-dichloroethylene, 1,2-dichloroethylene, methylene chloride, phenol, tetrachloroethylene, and trichloroethylene from a closed waste storage impoundment and low concentrations of residual spent acetone (Code F003) rinsed from laboratory glassware cleaned with solvent into a Class I hazardous waste injection well specifically identified as Well No. 2 at the Tuscola facility. This decision constitutes a final USEPA action for which there is no administrative appeal. (55 Fed. Reg. 49340 (November 27, 1990) and 58 Fed. Reg. 5826 (February 13, 1991).)

The Board has also reviewed the justification provided by Cabot to USEPA, and finds that Cabot has made all the demonstrations required pursuant to the identical-in-substance regulations at 35 Ill. Adm. Code 738.Subpart C.

As an additional matter, the Board observes that programs, such as the State UIC program, that are intended to be identical-in-substance" with federal programs are, by their nature, intended to be no more (or less) stringent than the corresponding federal program. The Board finds that withholding the exemption that Cabot here seeks would cause a more stringent State law to apply to Cabot, in contradistinction to the stringency principle.

In sum, the Board finds that Cabot has demonstrated that grant of adjusted standard is warranted. The Board further finds that the conditions imposed by USEPA on the similar federal exemption are necessary limitations on the grant of this adjusted standard. Accordingly, the adjusted standard will be granted subject to those conditions³.

³ The Board notes that the leachate concentration limits specified in today's order (condition 2) are the same as those specified in Cabot's federal exemption. These concentration limits are derived from health-based levels using a conservative "final to initial" concentration ratio of 0.003. USEPA notes that the concentration ratio of 0.003 provides 10 times the dilution sufficient to increase the pH of the waste from 0.5 to 2.0 and more than enough to reduce the concentration of all hazardous constituents to nonhazardous levels. (55 Fed. Reg.

ORDER

Cabot Corporation is hereby granted an adjusted standard from the requirements of 35 Ill. Adm. Code 738.Subpart B for the underground injection control Wells Nos. 1 and 2 at its Tuscola, Illinois, facility. This adjusted standard constitutes an exemption from the prohibitions of Subpart B such as to allow the underground injection disposal of wastes classified as acidic water (D002), by-product hydrochloric acid (D002), spent acetone (F003), and multi-source leachate (F039). The adjusted standard is subject to the following conditions:

- (1) The monthly average injection rate must not exceed 400 gallons per minute.
- (2) The concentrations of the constituents included in the injected leachate may not exceed the following values:

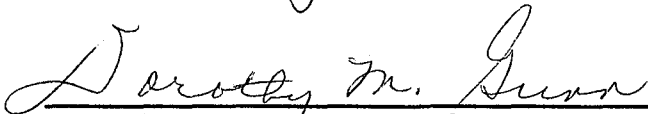
Acetone	47,000	mg/L
Tetrachloroethylene	1.66	mg/L
Methylene Chloride	59.0	mg/L
Trichloroethylene	1.66	mg/L
1,2 Dichloroethylene	.33	mg/L
1,1 Dichloroethylene	2.33	mg/L
Phenol	12,000	mg/L

- (3) Injection must occur only into the Franconia, Potosi, and Eminence Dolomites and the Gunter Sandstone;
- (4) The injection zone consists of the Franconia, Potosi, Eminence, and Oneota Dolomites and the Gunter Sandstone, found between 4,441 and 5,400 feet in Cabot's Well No. 1 and between 4,442 and 5,400 feet in Cabot's Well No. 2; and
- (5) Cabot shall be in full compliance with all conditions of its permits and other conditions relating to the exemption found in 35 Ill. Adm. Code 738.123 and 738.124.

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1992)) provides for the appeal of final Board orders within 35 days of the date of service of this order. The Rules of the Supreme Court of Illinois establish filing requirements. (See also 35 Ill. Adm. Code 101.246 "Motions for Reconsideration".)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 17th day of February, 1994, by a vote of 6-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board