and the pesticide formulating, packaging and repackaging industry which was proposed on April 14, 1994, to Radian Corp. under Contract No. 68-C0-0081. The data transferred included the questionnaires sent to 90 pesticide active ingredient manufacturing facilities in 1988 to collect information about the production, production processes, water usage and wastewater treatment and discharge practices. Another questionnaire sent to about 700 pesticide formulating, packaging and repackaging facilities in 1990 and requested information on production processes, water usage and wastewater discharge and treatment practices has also been transferred to Radian. Also included in this transfer are financial and economic data collected in the same pesticide formulating, packaging and repackaging questionnaire. EPA has also transferred data collected through site visits and sampling visits conducted at pesticide manufacturing and pesticide formulating, packaging and repackaging facilities. These visits collected information on production processes, water usage and wastewater generation, pollution prevention practices in use and wastewater characteristics and wastewater treatment performance. All transferred data are information collected through treatability studies, data submitted in support of comments on proposed rules and data submitted post-promulgation in support of litigation.

EPA has entered into a new contract to support the continuation of the pesticide industry rulemaking development. The new contract is Contract No. 68-C5-0023 with Radian Corp. of Herndon, Virginia. Radian Corp. will continue to support EPA on the pesticides rulemaking development along with their subcontractors including: DynCorp—EENSP; Westat, Inc.; GeoLogics Corporation; and Chemical Consultants International, Inc. The effective date of this contract is June 2, 1995.

3. Oil and Gas Industry

Data collected through questionnaires mailed to 361 Coastal Oil and Gas facilities in 1992 and collected information on production, drilling, wastewater generation, and wastewater treatment and disposal practices were transferred to EPA's engineering contractor SAIC under Contract No. 68-C0-0044. Also transferred were data collected through sampling and site visits at coastal oil and gas facilities and treatability studies conducted on coastal oil and gas wastewaters. In addition all data included as part of the rulemaking record for the Offshore Oil and Gas industry was transferred to EPA's engineering contractor.

EPA has entered into a new contract to support the continuation of the oil and gas rulemaking development and litigation support. The new contract is Contract No. 68-C5-0035 with Avanti Corporation of Vienna, Virginia. Avanti will support EPA on the oil and gas rulemaking efforts along with their subcontractors: Radian Corp.; DynCorp—EENSP; Louisiana State University and as a consultant Dr. Michael Kavanaugh. The effective date of this contract is June 2, 1995.

Anyone wishing to comment on the above matters must submit comments to the address given above by August 3, 1995.


Robert Perciasepe,
Assistant Administrator for Water.

FOR FURTHER INFORMATION CONTACT:
Harlan Gerrish, Lead Petition Reviewer, UIC Section, Water Division; Office Telephone Number: (312) 866-2999; 17th Floor Metcalfe Building, 77 West Jackson Street, Chicago, Illinois 60604, Attention: Richard J. Zdanowicz, Chief.

SUPPLEMENTARY INFORMATION:

I. Background

A. Authority—The Hazardous and Solid Waste Amendments of 1984 (HSWA), enacted on November 8, 1984, impose substantial new responsibilities on those who handle hazardous waste. The amendments prohibit the land disposal of untreated hazardous waste beyond specified dates, unless the Administrator determines that the prohibition is not required in order to protect human health and the environment for as long as the waste remains hazardous (RCRA Sections 3004(d)(1), (e)(1), (f)(2), (g)(5)). The statute specifically defined land disposal to include any placement of hazardous waste in an injection well (RCRA Section 3004(k)). After the effective date of prohibition, hazardous waste stream is currently disposed of through off-site injection and BP would like to dispose of it on site. The EPA is requesting public comments on its proposed decision to exempt the wastes listed above.

Comments will be accepted until September 11, 1995. Comments postmarked after the close of the comment period will be stamped “Late”.

Public information meeting and a public hearing to allow comment on this action have been scheduled. If the USEPA does not receive written comments indicating substantial public interest, thereby warranting a public hearing on this action, the tentatively scheduled hearing and meeting will be canceled.

ADDRESSES: Submit written comments, by mail, to: United States Environmental Protection Agency, Region 5, Underground Injection Control Section (WD-17), 77 West Jackson Street, Chicago, Illinois 60604, Attention: Richard J. Zdanowicz, Chief.
waste can be injected only under two circumstances:

(1) When the waste has been treated in accordance with the requirements of Title 40 of the Code of Federal Regulations (40 CFR) Part 268 pursuant to Section 3004(m) of RCRA, (the EPA has adopted the same treatment standards for injected wastes in 40 CFR Part 148, Subpart B); or

(2) When the owner/operator has demonstrated that there will be no migration of hazardous constituents from the injection zone for as long as the waste remains hazardous. Applicants seeking this “no-migration” exemption from the ban must demonstrate a reasonable degree of certainty that hazardous waste will not leave the injection zone until either:

(a) The waste undergoes a chemical transformation within the injection zone through attenuation, transformation, or immobilization of hazardous constituents so as to no longer pose a threat to human health and the environment; or

(b) The fluid flow is such that injected fluids will not migrate vertically upward out of the injection zone, or laterally to a point of discharge or interface with an USDW, for a period of 10,000 years.

The EPA promulgated final regulations on July 26, 1988, (53 FR 28118) which govern the submission of petitions for exemption from the disposal prohibition (40 CFR Part 148). Most companies seeking exemption have opted to demonstrate waste confinement (option (b) above) rather than waste transformation (option (a) above). A time frame of 10,000 years was specified for the confinement demonstration not because migration after that time is of no concern, but because a demonstration which can meet a 10,000 year time frame will likely provide containment for a substantially longer time period, and also to allow time for geochemical transformations which would render the waste immobile. The Agency’s confinement standard thus does not imply that leakage will occur at some time after 10,000 years, rather, it is a showing that leakage will not occur within that time frame and probably much longer.

The EPA regulations at 40 CFR § 148.20(f) provide that any person who has been granted an exemption to the land disposal restrictions may request that the Agency modify the exemption to include additional wastes. If the EPA determines, to a reasonable degree of certainty, that the new wastes will behave hydraulically and chemically in a manner similar to previously exempted wastes and that injection thereof will not interfere with the containment capability of the injection zone, the modification may be granted. Neither the existing exemption from the restrictions of the HSWA to RCRA nor this modification exempts BPCI from the duty to comply with other laws or regulations.

B. Facility Operation and Process—The BPCI facility in Lima, Ohio, produces acrylonitrile and associated products. The process combines propylene, ammonia, and air in the presence of a catalyst to form acrylonitrile, acetonitrile, and hydrogen cyanide. Process waste waters, laboratory wastes, contaminated product, wash water, cleaning solutions, contaminated ground and storm waters, scrubber water, ammonia blowdown, and waters from the unloading sump are managed through a deep well disposal system.

The waste stream is currently injected into WDWs No. 1, 2, 3, and 4 which are Class I hazardous-waste injection wells completed for the disposal of liquid wastes in one or more of the Middle Run, Mt. Simon, and Eau Claire Formations which are found between 6,000 and 11,000 feet underground in the formations. BPCI has already received or is currently undergoing review of a request to inject waste into WDW No. 4. Injection of wastewater into WDWs No. 1, 2, 3, and 4 which are Class II injection wells is approved by EPA Region 5.

The Hampshire Chemical process reacts hydrogen cyanide to produce nitrilotriacetonitrile (NTAN), iminodiacetonitrile (IDAN), ethylenediamine tetraacetonic acid (EDTA), propylenediamine tetraacetonic acid (PDTA), dimethylhydantoin (DMH), methyl ethylhydantoin (MEH), and oleyl sacosinate. The processes also produce water and result in waste streams which are hazardous as a result of corrosivity (D002) and contain acetone cyanohydrin which, if commercially produced and then land disposed, would be a restricted waste bearing the code P069.

In addition to waste constituents for which BPCI has already received or requested exemption, the Hampshire waste stream contains methyl ethyl ketone which will be banned from underground injection as a result of promulgation of the final Phase III Land Disposal Restrictions rule which is expected in January of 1996. In order to promote efficiency, Region 5 has reviewed BPCI’s demonstration of the ability of the injection zone to contain migration of methyl ethyl ketone. Based on this review, Region 5 has determined that if the health-based limit for methyl ethyl ketone remains at a level as low as 0.6 mg/l, then U.S. EPA will process a final modification granting the exemption for methyl ethyl ketone as D035 on or before the ban date established by the final Phase III rule. If the health-based limit is reduced from 0.6 mg/l, modification of the exemption must be reconsidered.

Although acrylamide in the waste is deemed exempted as a constituent of the process wastes which carry K011, K013, and K014 codes, BPCI requested clarification of its exemption to specifically include acrylamide because the migration of this constituent at hazardous levels defines the extent of the waste-plume. BPCI requested that a modification of the exemption to include P030, P101, U056, and U219 because it wanted to dispose of possible spills of such laboratory chemicals on site. The remaining waste codes which are the subject of BPCI’s modification request allow BPCI flexibility to dispose of wastestreams from new process lines which use raw materials or by-products of the principal processes.

C. Exemption—The existing exemption allows BPCI to dispose of wastes through its four wells. The specific waste codes are listed in the Federal Register notice dated March 12, 1993 (57 FR 8753). This modification will simply add a number of waste codes to the existing exemption, so that BPCI may also dispose of the wastes containing the following constituents when denoted by the respective RCRA waste codes: cyanide salts, P030; acetone cyanohydrin, P069; propionitrile, P101; vanadium pentoxide, P120; acrylamide, U007; cyclohexanone, U056; malononitrile, U149; 2 methyl pyridine, U191; and thiourea, U219. A final modification allowing disposal of methyl ethyl ketone (D035) upon the date of its restriction from underground injection will be processed as described above.

D. Submission—On July 13, 1994, February 10, 1995, and June 12, 1995, BPCI submitted requests and supporting documentation to modify its existing exemption from the land disposal restrictions on hazardous waste disposal. The submissions were reviewed by staff at the EPA. Although BPCI requested on May 9, 1995, that the modification include all D-coded wastes which would become restricted by a forthcoming rule, this request was withdrawn on June 7, 1995.

II. Basis for Determination

A. Waste Description and Analysis—Compatibility testing showed that the wastes are chemically compatible although some migration of precipitates. This will be controlled to some extent through the
maintenance of pH above 3, and filtration will remove any particles which are formed. Testing of the waste's effects on well components indicated that the well components exposed to the waste will not deteriorate as a result of contact.

B. Model Demonstration of No Migration—The grant of an exemption from the land disposal restrictions imposed by the HSWA of RCRA is based on a demonstration that disposed wastes will not migrate out of the waste management unit, which is defined in the background section of the final notice of the decision to grant BPCI an exemption from the HSWA, for a period of 10,000 years. The no migration demonstration is made through use of computer simulations which use geological information collected at the site or which is found to be appropriate for the site and mathematical models which have been proven to be capable of simulating natural responses to injection. The simulator is calibrated by matching simulation results against observations at the site.

In 1992, BPCI used the SWIFT II simulator to locate the greatest lateral extent of movement by the waste plume, defined at the 0.01 concentration level, due to advective flow during the wells' operational lives. The result, 14,325 feet, was multiplied by 1.2 to 17,190 feet in order to ensure that the plume would be bounded. Additional movement of waste constituents at hazardous levels was determined by calculating the extent of natural groundwater movement, including dispersion, and movement of hazardous molecules for the 10,000 year post operating period. The worst case for movement was determined by comparing the starting concentration and health-based limits for each constituent and calculating the reduction factor needed to bring the original concentration to the health-based limit. The greatest reduction factor was for acrylamide and the total distance of travel from the wells' centroid required to reduce the concentration of acrylamide to its health-based limit was 28,580 feet. This estimate does not take into account either adsorption of acrylamide to lithic materials or chemical transformations which might reduce the level of hazard associated with the wastes. The lateral extent of migration was shown to be significantly less than distances to features which might allow discharge of hazardous waste constituents into USDWs.

The limit of vertical movement was determined by a similar process. Although evidence exists that no waste has migrated upward beyond the lowermost Eau Claire just above 2,800 feet, it was assumed that it may have reached 2,640 feet and that depth was used as a starting point to calculate the distance to the health-based limit accounting for molecular diffusion through 10,000 years. This exercise found that the mobility and concentration of hydrogen cyanide in the waste stream make it the most conservative molecule to use in estimating the maximum vertical limits for the hazardous-waste plume. The depth at which the assumed maximum concentration of hydrogen cyanide would be reduced to its health-based limit was decreased from 2,484 (1992) feet to 2,456 (1994) feet due to an adjustment in the maximum concentration of hydrogen cyanide permitted in the injectate from 8,000 to 5,300 ppm. This adjustment was made because of a reduction in the health-based limit from 0.7 to 0.02 ppm. This vertical plume was contained with the waste management unit defined for BPCI's four injection wells. Therefore, the Agency accepted the demonstration and granted an exemption in 1992.

A modification of an existing exemption to allow injection of additional hazardous waste constituents must show that the waste constituents denoted by the codes for which the modification is requested behave similarly to those constituents for which the original demonstration of no migration was made. In this case, the new constituents are mostly organic molecules which are generally similar to those for which the original exemption was granted. The waste here proposed for exemption is similar to that currently exempted from land disposal restrictions although the concentrations of constituents in the injectate will be affected by the combination of waste streams. The plume boundary defined laterally by acrylamide and vertically by hydrogen cyanide in the exemption already granted will not be affected by the waste streams proposed for this modification. Accordingly, U.S. EPA proposes to grant the modification to the exemption as requested.

III. Conditions of Petition Approval

The existing exemption was granted with conditions. All of the original conditions remain in force. No new conditions are attached to this modification to the exemption. Dated: July 10, 1995.

Richard J. Zdanowicz,
Acting Director, Water Division, Region 5, U.S. Environmental Protection Agency.