6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[FRL-9943-23-Region 5]

Notice of Final Decision To Reissue the Ineos Nitriles USA LLC Land-Ban Exemption

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of final decision on a Request by Ineos Nitriles USA LLC of Lima, Ohio to Reissue its Exemption from the Land Disposal Restrictions under the Resource Conservation and Recovery Act.

SUMMARY: Notice is hereby given by the U.S. Environmental Protection Agency (U.S. EPA or Agency) that an exemption to the land disposal restrictions under the 1984 Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act (RCRA) has been granted to Ineos Nitriles USA LLC (formerly known as Ineos USA LLC) (Ineos) of Lima, Ohio for four Class I injection wells located in Lima, Ohio. As required by 40 CFR Part 148, Ineos has demonstrated, to a reasonable degree of certainty, that there will be no migration of hazardous constituents out of the injection zone or into an underground source of drinking water for at least 10,000 years. This final decision allows the continued underground injection by Ineos of those hazardous wastes designated by the codes in Table 1 through its four Class I hazardous waste injection wells identified as #1, #2, #3, and #4. This decision constitutes a final U.S. EPA action for which there is no administrative appeal.

DATES: This action is effective as of [**INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER**].

FOR FURTHER INFORMATION CONTACT: Stephen Roy, Lead Petition Reviewer, U.S. EPA, Region 5, Underground Injection Control Branch, WU-16J, 77 W. Jackson Blvd., Chicago,

Illinois 60604-3590; telephone number: (312) 886-6556; fax number (312) 692-2951; email address: roy.stephen@epa.gov. Copies of the petition and all pertinent information are on file and are part of the Administrative Record. Please contact the lead reviewer to review the Administrative Record.

SUPPLEMENTARY INFORMATION:

Ineos submitted a request for reissuance of its existing exemption from the land disposal restrictions for hazardous waste in August, 2005. U.S. EPA reviewed all data pertaining to the petition including, but not limited to, well construction, well operations, regional and local geology, seismic activity, penetrations of the confining zone, and computational models of the injection zone. U.S. EPA has determined that the hydrogeological and geochemical conditions at the site and the nature of the waste streams are such that injected fluids will not migrate out of the injection zone within 10,000 years, as set forth at 40 CFR Part 148. The injection zone includes the injection interval into which fluid is directly emplaced and the overlying arrestment interval into which fluid may diffuse. The injection interval for the Ineos facility is composed of the Lower Eau Claire Formation, the Mt. Simon Sandstone and the Middle Run Formation between 2,631 and 3,241 feet below ground level. The arrestment interval is composed of the Lower Black River Group, the Wells Creek Formation, the Knox Dolomite and the Upper Eau Claire Formation between 1,631 and 2,631 feet below ground level. The confining zone is composed of the Upper Black River Group between 1,427 and 1,631 feet below ground level. The confining zone is separated from the lowermost underground source of drinking water (at a depth of approximately 400 feet below ground level) by a sequence of permeable and less permeable sedimentary rocks. This sequence provides additional protection from fluid migration

into drinking water sources.

U.S. EPA issued a draft decision, which described the reasons for granting this exemption in more detail, a fact sheet, which summarized these reasons, and a public notice on September 10, 2015, pursuant to 40 CFR § 124.10. The public comment period ended on October 13, 2015. U.S. EPA received comments from one citizen during the comment period. U.S. EPA has prepared a response to these comments, which can be viewed at the following URL: http:\\epa.gov\region5\water\uic\ineos-response-to-comments. The response is part of the Administrative Record for this decision. U.S. EPA is issuing the final exemption with no changes from the draft decision.

Conditions

This exemption is subject to the following conditions. Non-compliance with any of these conditions is grounds for termination of the exemption.

1) The exemption applies to the four existing hazardous waste injection wells, #1, #2, #3, and #4, located at the Ineos facility at 1900 Fort Amanda Road, Lima, Ohio;

2) Injection of hazardous waste is limited to the parts of the Lower Eau Claire Formation, the Mt. Simon Sandstone and the Middle Run Formation at depths between 2,631 and 3,241 feet below ground level;

3) The only RCRA-restricted wastes that may be injected are those designated by the RCRA waste codes found in Table 1;

4) Maximum concentrations of chemicals that are allowed to be injected are listed in Table 2;

5) The average specific gravity of the injected waste stream must be between 1.00 and 1.05 over a three month period;

6) Ineos may inject up to 175 gallons per minute through each of its four wells, based on a monthly average;

7) This exemption is approved for the 20-year modeled injection period, which ends on January 31, 2025. Ineos may petition U.S. EPA for reissuance of the exemption beyond that date, provided that a new and complete petition and no-migration demonstration is received at U.S. EPA, Region 5, by June 30, 2024;

8) Ineos must submit a quarterly report containing the fluid analyses of the injected waste and indicate the chemical and physical properties, including the concentrations, of all the injected chemical constituents listed in Table 2 to U.S. EPA;

9) Ineos must submit an annual report containing the results of a bottom hole pressure survey (fall-off test) performed on one well each year to U.S. EPA. The survey must be performed after shutting down the well for sufficient time to conduct a valid observation of the pressure fall-off curve under 40 CFR § 146.68(e)(1). The annual report must include a comparison of reservoir parameters determined from the fall-off test with parameters used in the approved no-migration petition;

10) Ineos must submit the results of radioactive tracer surveys and annulus pressure tests for its four wells to U.S. EPA annually;

11) Ineos must notify U.S. EPA in writing if any well loses mechanical integrity and prior to any workover or plugging;

12) Ineos must fully comply with all requirements set forth in Underground Injection Control Permits #UIC 03-02-003-PTO-1, UIC 03-02-004-PTO-1, UIC 03-02-005-PTO-01 and 03-02-006-PTO-1 issued by the Ohio Environmental Protection Agency;

13) Upon the expiration, cancellation, reissuance, or modification of the permits referenced above, this exemption is subject to review by U.S. EPA; and

14) Whenever U.S. EPA determines that the basis for approval of a petition under 40 CFR §§ 148.23 and 148.24 may no longer be valid, U.S. EPA may terminate this exemption and will require a new demonstration in accordance with 40 CFR § 148.20.

Table 1. List of RCRA waste codes approved for injection.

D001	D002	D003	D004	D005	D006	D007	D008	D009	D010	D011	D018
D019	D035	D038	F039	K011	K013	K014	P003	P005	P030	P063	P069
P098	P101	P106	P120	U001	U002	U003	U007	U008	U009	U019	U031
U044	U053	U056	U057	U080	U112	U122	U123	U124	U125	U129	U140
U147	U149	U151	U152	U154	U159	U161	U169	U188	U191	U196	U211
U213	U219	U220	U239								

These waste codes are identified in 40 CFR Part 261, Subpart C and Subpart D.

Table 2. Concentration limits of chemical contaminants that are hazardous at less than 0.001 mg/L

Chemical Constituent	**Waste Code**	**Health Based Limit (mg/L)**	**Concentration Limit at the Wellhead (mg/L) (Note 2)**	**Concentration Reduction Factor (C/C_0)**
Acetaldehyde	U001	0.11	2,000	5.5×10^{-5}
Acetamide	Note 2	1.0×10^{-5}	10,000	1.0×10^{-9}
Acetic acid	Note 2	6.0×10^{-6}	6,000	1.0×10^{-9}
Acetone	U002	3.5	2,000	1.75×10^{-3}
Acetone cyanohydrin	P069	0.005	6,000	8.33×10^{-7}
Acetonitrile	K011, K013, K014, U003	0.21	100,000	2.1×10^{-6}
Acrolein	P003	0.005	2,000	2.5×10^{-6}
Acrylamide	K011, K013, K014, U007	8×10^{-6}	6,000	1.33×10^{-9} Note 1
Acrylic acid	U008	17.5	60,000	2.92×10^{-4}
Acrylonitrile	K011, K013, K014, U009	6.0×10^{-5}	24,000	2.5×10^{-9}
Allyl alcohol	P005	0.175	2,000	8.75×10^{-5}
Antimony	F039	0.006	100	6.0×10^{-5}

Arsenic	D004	0.05	100	5.0×10^{-4}
Barium	D005	2	100	2.0×10^{-2}
Benzene	D018, K011, K013, K014, U019	0.005	400	1.25×10^{-5}
1,3-Butanediol	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
1,4-Butanediol	Note 2	1.4×10^{-5}	14,000	1.0×10^{-9}
Butanetriol	Note 2	4.0×10^{-6}	4,000	1.0×10^{-9}
Butanol	U140	3.5	4,000	8.75×10^{-4}
Butyrolactone	Note 2	5.0×10^{-6}	5,000	1.0×10^{-9}
Cadmium	D006	0.005	100	5.0×10^{-5}
Carbon tetrachloride	D019, U211	0.005	100	5.0×10^{-5}
Chloroform	U044	0.006	100	6.0×10^{-5}
Chromium	D007	0.1	100	1.0×10^{-3}
Cobalt	Note	1.0×10^{-7}	100	1.0×10^{-9}
Crotonaldehyde	U053	0.002	200	1.0×10^{-5}
Crotonitrile	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
Cyclohexane	U056	9.0×10^{-5}	100	9.0×10^{-7}
Cyclohexanone	U057	180	100	1.8
Diethylenetriamine pentaacetic acid	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
Dimethylhydantoin	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
Ethanol	Note 2	2.0×10^{-6}	2,000	1.0×10^{-9}
Ethyl acetate	U112	31.5	100	3.15×10^{-1}
Ethylenediamine tetracetonitrile	Note 2	4.0×10^{-6}	4,000	1.0×10^{-9}
Formic acid	U123	0.01	20,000	5.0×10^{-7}
Formaldehyde	U122	7	4,000	1.75×10^{-3}
Formamide	Note 2	4.0×10^{-6}	4,000	1.0×10^{-9}
Fumaronitrile	Note 2	4.0×10^{-6}	4,000	1.0×10^{-9}
Furan	U124	3.5×10^{-3}	100	3.5×10^{-4}
Furfural	U125	0.11	100	1.1×10^{-3}
Glyconitrile	Note 2	7.0×10^{-6}	7,000	1.0×10^{-9}
HCN (Free)	K011, K013, K014, P030, P063, P098, P106	0.2	3,200	6.25×10^{-5}
HCN (Total)	K011, K013, K014, P030, P063, P098, P106	0.7	21,200	3.3×10^{-5}
Hexamethylenetetramine (or acid)	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}

Iminodiacetonitrile	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
Isobutanol	U140	11	200	5.5×10^{-2}
Isopropyl alcohol	Note 2	1.2×10^{-6}	1,200	1.0×10^{-9}
Lead	D008	0.001	100	1.0×10^{-5}
Lindane	U129	2.0×10^{-4}	1,000	2.0×10^{-7}
Maleic anhydride	U147	3.5	100	3.5×10^{-2}
Maleonitrile	Note 2	2.0×10^{-5}	20,000	1.0×10^{-9}
Malonitrile	U149	0.005	2,000	2.5×10^{-6}
Mercury	D009, U151	0.002	100	2.0×10^{-5}
Methanol	U154	17.5	40,000	4.38×10^{-4}
Methyacrylonitrile	U152	0.0035	400	8.75×10^{-6}
Methylethylhydantoin	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
Methylene chloride	U080	5.3×10^{-3}	100	5.0×10^{-5}
Methyl ethyl ketone	D035, U159	21	1,000	2.1×10^{-2}
Methyl isobutyl ketone	U161	2.0×10^{-3}	100	2.0×10^{-5}
2-Methylpyridine	U191	2.0×10^{-3}	1,000	2.0×10^{-6}
3-Methylpyridine	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
Nickel	F006	0.001	100	1.0×10^{-5}
Nicotinonitrile	Note 2	6.0×10^{-6}	6,000	1.0×10^{-9}
Nitrilotiracetonitrile	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
Nitrobenzene	U169	1.8×10^{-2}	100	1.8×10^{-4}
Oleic acid	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
Oleoylsarconsinate	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
Phenol	U188	21	100	2.1×10^{-1}
1,2-Propanediol	Note 2	6.0×10^{-8}	60	1.0×10^{-9}
1,3-Propanediol	Note 2	2.0×10^{-6}	2,000	1.0×10^{-9}
Propanol	Note 2	$2,0 \times 10^{-6}$	2,000	1.0×10^{-9}
Propionitrile	P101	0.005	2,000	2.5×10^{-6}
Propylenediamine tetracetonitrile	Note 2	1.0×10^{-6}	1,000	1.0×10^{-9}
Pyroazole	Note 2	4.0×10^{-6}	4,000	1.0×10^{-9}
Pyridine	D038, U196	0.035	2,000	1.75×10^{-5}
Selenium	D010	0.05	100	5.0×10^{-4}
Silver	D011	0.175	100	1.75×10^{-3}
Sodium cyanide	D003, K011, K013, P030, P063, P106	1.4	1,200	1.17×10^{-3}
Strontium	Note 2	1.0×10^{-7}	100	1.0×10^{-9}
Succinic acid	Note 2	8.0×10^{-7}	800	1.0×10^{-9}
Succinotrile	Note 2	6.0×10^{-6}	6,000	1.0×10^{-9}
Tetrahydrofuran	U213	0.002	5,000	4.0×10^{-7}

Thiourea	U219	1.0×10^{-2}	100	1.0×10^{-4}
Toluene	U220	1	100	1.0×10^{-2}
Vanadium	P120	0.004	100	4.0×10^{-5}
Vanadium pentoxide	P120	0.315	400	7.88×10^{-4}
Xylene	U239	10	100	1.0×10^{-1}
Zinc	Note 2	10.5	400	2.63×10^{-2}

Note 1 – Worst-case constituent. Health Based Limit (HBL) contour for no-migration boundary set at 1.0×10^{-9} for this constituent. The HBL values are from the compilation by EPA Region 6, revised 2005.

Note 2 – Constituents not associated with an EPA RCRA waste code or listed in HBL guidelines are assigned the minimum C/C_0 of 1.0×10^{-9}. A provisional "HBL" for these constituents is then derived from the product of C/C_0 and the concentration limit at the wellhead. If a RCRA waste code is promulgated for any of these constituents, the HBL selected by EPA will be compared to the provisional "HBL" on this table. If the EPA HBL is more stringent, the Concentration Limit at the Wellhead will be reduced or migration of the constituent will be reconsidered in detail.

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Director, Water Division

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