

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

- 1) Heading of the Part: Groundwater Quality
- 2) Code Citation: 35 Ill. Adm. Code 620
- 3)

<u>Section Numbers:</u>	<u>Proposed Action:</u>
620.110	Amend
620.125	Amend
620.210	Amend
620.302	Amend
620.310	Amend
620.410	Amend
620.420	Amend
620.440	Amend
620.450	Amend
620.505	Amend
620.510	Amend
620.605	Amend
620.APPENDIX A	Amend
620.APPENDIX B	Amend
620.APPENDIX C	Amend
620.APPENDIX D	Amend
- 4) Statutory Authority: Implementing and authorized by Section 8 of the Illinois Groundwater Protection Act [415 ILCS 55/8] and Section 27 of the Environmental Protection Act [415 ILCS 5/27]
- 5) A Complete Description of the Subjects and Issues Involved: The proposed amendments update the groundwater quality rules (35 Ill. Adm. Code 620) based upon new scientific data, federal amendments and technical references. The changes proposed for first notice add groundwater quality standards for those chemical constituents detected in Illinois groundwater that have toxicity values established by the United States Environmental Protection Agency (USEPA) or that have groundwater remediation objectives under the Tiered Approach to Corrective Action Objectives (TACO) (35 Ill. Adm. Code 742). In all, 39 chemical constituents are added to Part 620. Additionally, the Class I groundwater quality standard for arsenic is revised from 0.05 milligrams per liter (mg/L) to 0.010 mg/L in order to reflect the new federal Maximum Contaminant Level (MCL) for arsenic in drinking water. Also included are amendments to various definitions, provisions for preventive response levels, compliance determinations, monitoring and analytical requirements, and health advisories, as well as Part 620 Appendices A through D. For a more detailed discussion of these amendments, please refer to the Board's October 20,

R08-18

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2001 opinion and order in docket R08-18, Proposed Amendments to Groundwater Quality Standards (35 Ill. Adm. Code 620).

- 6) Published studies or reports and sources of underlying data, used to compose this rulemaking: "Standard Practice for Classification of Soils for Engineering Purposes (Unified Classification System)" ASTM D2487-06. The material is prepared by and available from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

"Guidance Document for Groundwater Protection Needs Assessments (January 1995)", prepared by the Illinois Environmental Protection Agency (IEPA), Illinois State Water Survey, and Illinois State Geologic Survey and available from IEPA, 1020 N. Grand Ave. East, PO Box 19276, Springfield, IL 62794-9276.

"The Illinois Wellhead Protection Program Pursuant to Section 1428 of the Federal Safe Drinking Water Act (#22480, October 1992)", prepared by and available from IEPA, 1020 N. Grand Ave. East, PO Box 19276, Springfield, IL 62794-9276.

"Methods for Chemical Analysis of Water and Wastes (March 1983)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://nepis.epa.gov/>.

"Methods for the Determination of Inorganic Substances in Environmental Samples (August 1993)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://nepis.epa.gov/>.

"Methods for the Determination of Metals in Environmental Samples (June 1991)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://nepis.epa.gov/>.

"Methods for the Determination of Metals in Environmental Samples-Supplement I (May 1994)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://nepis.epa.gov/>.

"Methods for the Determination of Organic Compounds in Drinking Water (revised July 1991)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://nepis.epa.gov/>.

"Methods for the Determination of Organic Compounds in Drinking Water, Supplement I (July 1990)", prepared by USEPA and available from National Technical

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Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://nepis.epa.gov/>.

"Methods for the Determination of Organic Compounds in Drinking Water, Supplement II (August 1992)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://nepis.epa.gov/>.

"Methods for the Determination of Organic Compounds in Drinking Water, Supplement III (August 1995)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://nepis.epa.gov/>.

"Methods for the Determination of Organic and Inorganic Compounds in Drinking Water: Volume I (August 2000)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://nepis.epa.gov/>.

"Prescribed Procedures for Measurement of Radioactivity in Drinking Water (August 1980)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://nepis.epa.gov/>.

"Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions (May 1973)", prepared by H.L. Krieger and S. Gold and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

"Radiochemical Analytical Procedures for Analysis of Environmental Samples (March 1979)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

"Radiochemistry Procedures Manual (December 1987)", prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA Publication No. SW-846, as amended by Updates I, II, IIA, IIB, III, IIIA, and IIIB, prepared by USEPA and available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or online at <http://www.epa.gov/epaoswer/hazwaste/test/main.htm>.

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"Water Quality Criteria 1972", prepared by National Academy of Sciences, Washington D.C., available from USEPA's National Service Center for Environmental Publications <http://www.epa.gov/nscep/index.html>

- 7) Will this rulemaking replace any emergency rulemaking currently in effect? No
- 8) Does this rulemaking contain an automatic repeal date? No
- 9) Does this rulemaking contain incorporations by reference? Yes
- 10) Are there any other proposed rulemakings pending on this Part? No
- 11) Statement of Statewide Policy Objectives: These proposed amendments do not create or enlarge a State mandate as defined in Section 3(b) of the State Mandates Act [30 ILCS 805/3(b)].
- 12) Time, Place, and Manner in which interested persons may comment on this proposed rulemaking: The Board will accept written public comments on this proposal for a period of 45 days after the date of publication in the Illinois Register. Comments should refer to docket R08-18 and be addressed to:

John Therriault
Clerk's Office
Illinois Pollution Control Board
100 W. Randolph St., Suite 11-500
Chicago, IL 60601

Interested persons may request copies of the Board's opinion and order in R08-18 by calling the Clerk's office at 312-814-3620, or may download copies from the Board's Web site at www.ipcb.state.il.us. For more information, contact hearing officer Richard McGill at 312/814-6983 or e-mail mcgillr@ipcb.state.il.us.

- 13) Initial Regulatory Flexibility Analysis:
 - A) Types of small businesses, small municipalities and not for profit corporations affected: It is not anticipated that the proposed amendments would have a significant impact on any small business, small municipality, or not-for-profit corporation. Facilities that may be impacted would include those that cause, threaten or allow the contamination of groundwater. However, the proposed amendments do not establish new corrective action or monitoring programs, and

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new chemical constituent standards would be phased into existing programs, as appropriate, on a site-by-site basis over time. Any economic impact resulting from applying the new standards therefore should be incremental. Considering the groundwater resource and its end users, economic benefits may result from adopting these new standards, including reduced health risks, reduced expenses for treating water at wellheads, and reduced expenses for obtaining water supplies.

- B) Reporting, bookkeeping or other procedures required for compliance: No additional reporting or bookkeeping will be required for compliance beyond what is already required for preventative notification procedures (Section 620.305), preventative response activities (Section 620.310), and reporting associated with monitoring and analytical requirements (Section 620.510).
- C) Types of Professional skills necessary for compliance: No professional skills will be necessary beyond those currently required by the existing regulations applicable to affected facilities. These may include the services of a licensed professional engineer, a licensed professional geologist, and an attorney.
- 14) Regulatory Agenda in which these amendments were summarized: July 2011

The full text of the Proposed Amendments begins on the next page:

1ST NOTICE VERSION

JCAR350620-1118502r01

1 TITLE 35: ENVIRONMENTAL PROTECTION
2 SUBTITLE F: PUBLIC WATER SUPPLIES
3 CHAPTER I: POLLUTION CONTROL BOARD
4

5 PART 620
6 GROUNDWATER QUALITY
7

8 SUBPART A: GENERAL
9

10	Section	
11	620.105	Purpose
12	620.110	Definitions
13	620.115	Prohibition
14	620.125	Incorporations by Reference
15	620.130	Exemption from General Use Standards and Public and Food Processing Water 16 Supply Standards
17	620.135	Exclusion for Underground Waters in Certain Man-Made Conduits 18

19 SUBPART B: GROUNDWATER CLASSIFICATION
20

21	Section	
22	620.201	Groundwater Designations
23	620.210	Class I: Potable Resource Groundwater
24	620.220	Class II: General Resource Groundwater
25	620.230	Class III: Special Resource Groundwater
26	620.240	Class IV: Other Groundwater
27	620.250	Groundwater Management Zone
28	620.260	Reclassification of Groundwater by Adjusted Standard 29

30 SUBPART C: NONDEGRADATION PROVISIONS
31 FOR APPROPRIATE GROUNDWATERS
32

33	Section	
34	620.301	General Prohibition Against Use Impairment of Resource Groundwater
35	620.302	Applicability of Preventive Notification and Preventive Response Activities
36	620.305	Preventive Notification Procedures
37	620.310	Preventive Response Activities 38

39 SUBPART D: GROUNDWATER QUALITY STANDARDS
40

41	Section	
42	620.401	Applicability
43	620.405	General Prohibitions Against Violations of Groundwater Quality Standards

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- 44 620.410 Groundwater Quality Standards for Class I: Potable Resource Groundwater
- 45 620.420 Groundwater Quality Standards for Class II: General Resource Groundwater
- 46 620.430 Groundwater Quality Standards for Class III: Special Resource Groundwater
- 47 620.440 Groundwater Quality Standards for Class IV: Other Groundwater
- 48 620.450 Alternative Groundwater Quality Standards

49
50 SUBPART E: GROUNDWATER MONITORING AND ANALYTICAL PROCEDURES

- 51
- 52 Section
- 53 620.505 Compliance Determination
- 54 620.510 Monitoring and Analytical Requirements

55 SUBPART F: HEALTH ADVISORIES

- 56
- 57
- 58 Section
- 59 620.601 Purpose of a Health Advisory
- 60 620.605 Issuance of a Health Advisory
- 61 620.610 Publishing Health Advisories
- 62 620.615 Additional Health Advice for Mixtures of Similar-Acting Substances

- 63
- 64 620.APPENDIX A Procedures for Determining Human Threshold Toxicant Advisory
- 65 620.APPENDIX B Concentration for Class I: Potable Resource Groundwater
- 66 620.APPENDIX C Procedures for Determining Hazard Indices for Class I: Potable
- 67 620.APPENDIX C Resource Groundwater for Mixtures of Similar-Acting Substances
- 68 620.APPENDIX C Guidelines for Determining When Dose Addition of Similar-
- 69 620.APPENDIX C Acting Substances in Class I: Potable Resource Groundwaters is
- 70 620.APPENDIX C Appropriate
- 71 620.APPENDIX C Confirmation of an Adequate Corrective Action Pursuant to 35 Ill.
- 72 620.APPENDIX C Adm. Code 620.250(a)(2)

73
74 AUTHORITY: Implementing and authorized by Section 8 of the Illinois Groundwater
75 Protection Act [415 ILCS 55/8] and authorized by Section 27 of the Illinois Environmental
76 Protection Act [415 ILCS 5/27].

77
78 SOURCE: Adopted in R89-14(B) at 15 Ill. Reg. 17614, effective November 25, 1991; amended
79 in R89-14(C) at 16 Ill. Reg. 14667, effective September 11, 1992; amended at 18 Ill. Reg. 14084,
80 effective August 24, 1994; amended in R96-10 at 21 Ill. Reg. 6518, effective May 8, 1997;
81 amended in R97-11 at 21 Ill. Reg. 7869, effective July 1, 1997; amended in R01-14 at 26 Ill.
82 Reg. 2662, effective February 5, 2002; amended in R08-18 at 36 Ill. Reg. _____, effective

83 _____.

84 SUBPART A: GENERAL

85
86

87 **Section 620.110 Definitions**

88
89 The definitions of the Environmental Protection Act [415 ILCS 5] and the Groundwater
90 Protection Act [415 ILCS 55] apply to this Part. The following definitions also apply to this
91 Part.

92
93 "Act" means the Environmental Protection Act [415 ILCS 5].

94
95 "Agency" means the Illinois Environmental Protection Agency.

96
97 *"Aquifer" means saturated (with groundwater) soils and geologic materials which*
98 *are sufficiently permeable to readily yield economically useful quantities of water*
99 *to wells, springs, or streams under ordinary hydraulic gradients. [415 ILCS*
100 *55/3(b)]*

101
102 "BETX" means the sum of the concentrations of benzene, ethylbenzene, toluene,
103 and xylenes.

104
105 "Board" means the Illinois Pollution Control Board.

106
107 *"Carcinogen" means a contaminant that is classified as a Category A1 or A2*
108 *Carcinogen by the American Conference of Governmental Industrial Hygienists;*
109 *or a Category 1 or 2A/2B carcinogen by the World Health Organization's*
110 *International Agency for Research on Cancer; or a "Human carcinogen" or*
111 *"Anticipated Human Carcinogen" by the United States Department of Health and*
112 *Human Service National Toxicological Program; or a Category A or B1/B2*
113 *Carcinogen by the United States Environmental Protection Agency in Integrated*
114 *Risk Information System or a Final Rule issued in a Federal Register notice by*
115 *the USEPA. [415 ILCS 5/58.2]*

116
117 *"Community water supply" means a public supply which serves or is intended to*
118 *serve at least 15 service connections used by residents or regularly serves at least*
119 *25 residents. [415 ILCS 5/~~3.1453-05~~]*

120
121 *"Contaminant" means any solid, liquid, or gaseous matter, any odor, or any form*
122 *of energy, from whatever source. [415 ILCS 5/~~3.1653-06~~]*

123
124 "Corrective action process" means those procedures and practices that may be
125 imposed by a regulatory agency when a determination has been made that
126 contamination of groundwater has taken place, and are necessary to address a
127 potential or existing violation of the standards set forth in Subpart D.

128
129 "Cumulative impact area" means the area, including the coal mine area permitted

130 under the Surface Coal Mining Land Conservation and Reclamation Act [225
131 ILCS 720] and 62 Ill. Adm. Code 1700 through 1850, within which impacts
132 resulting from the proposed operation may interact with the impacts of all
133 anticipated mining on surface water and groundwater systems.

134
135 "Department" means the Illinois Department of Natural Resources.

136
137 "Detection" means the identification of a contaminant in a sample at a value equal
138 to or greater than the:

139
140 "Method Detection Limit" or "MDL" means the minimum concentration
141 of a substance that can be measured as reported with 99 percent
142 confidence that the true value is greater than zero, pursuant to 40 CFR
143 136, appendix B (2006)56 Fed. Reg. 3526-3597, incorporated by reference
144 at Section 620.125; or

145
146 "Method Quantitation Limit" or "MQL" means the minimum
147 concentration of a substance that can be measured and reported pursuant
148 to "Test Methods for Evaluating Solid Wastes, Physical/Chemical
149 Methods", incorporated by reference at Section 620.125.

150
151 "*Groundwater*" means *underground water which occurs within the saturated zone*
152 *and geologic materials where the fluid pressure in the pore space is equal to or*
153 *greater than atmospheric pressure.* [415 ILCS 5/3.2103-64]

154
155 "Hydrologic balance" means the relationship between the quality and quantity of
156 water inflow to, water outflow from, and water storage in a hydrologic unit such
157 as a drainage basin, aquifer, soil zone, lake, or reservoir. It encompasses the
158 dynamic relationships among precipitation, runoff, evaporation, and changes in
159 ground and surface water storage.

160
161 "IGPA" means the Illinois Groundwater Protection Act. [415 ILCS 55].

162
163 "LOAEL" or "Lowest observable adverse effect level" means the lowest tested
164 concentration of a chemical or substance that produces a statistically significant
165 increase in frequency or severity of non-overt adverse effects between the
166 exposed population and its appropriate control. LOAEL may be determined for a
167 human population (LOAEL-H) or an animal population (LOAEL-A).

168
169 "*Licensed Professional Engineer*" or "*LPE*" means *a person, corporation, or*
170 *partnership licensed under the laws of the State of Illinois to practice professional*
171 *engineering.* [415 ILCS 5/57.2]

172

173 *"Licensed Professional Geologist" or "LPG" means an individual who is licensed*
174 *under the Professional Geologist Licensing Act to engage in the practice of*
175 *professional geology in Illinois. (~~Professional Geologist Licensing Act~~[225 ILCS*
176 *745/15])*

177
178 "NOAEL" or "No observable adverse effect level" means the highest tested
179 concentration of a chemical or substance that does not produce a statistically
180 significant increase in frequency or severity of non-overt adverse effects between
181 the exposed population and its appropriate control. NOAEL may be determined
182 for a human population (NOAEL-H) or an animal population (NOAEL-A).

183
184 *"Non-community water supply" means a public water supply that is not a*
185 *community water supply. [415 ILCS 5/3.1453-05]*

186
187 "Off-site" means not on-site.

188
189 "On-site" means on the same or geographically contiguous property that may be
190 divided by public or private right-of-way, provided the entrance and exit between
191 properties is at a crossroads intersection and access is by crossing as opposed to
192 going along the right-of-way. Noncontiguous properties owned by the same
193 person but connected by a right-of-way that he controls and that the public does
194 not have access to is also considered on-site property.

195
196 "Operator" means the person responsible for the operation of a site, facility or
197 unit.

198
199 "Owner" means the person who owns a site, facility or unit or part of a site,
200 facility or unit, or who owns the land on which the site, facility or unit is located.

201
202 *"Potable" means generally fit for human consumption in accordance with*
203 *accepted water supply principles and practices. [415 ILCS 5/3.3403-65]*

204
205 *"Potential primary source" means any unit at a facility or site not currently*
206 *subject to a removal or remedial action which:*

207
208 *Is utilized for the treatment, storage, or disposal of any hazardous or*
209 *special waste not generated at the site; or*

210
211 *Is utilized for the disposal of municipal waste not generated at the site,*
212 *other than landscape waste and construction and demolition debris; or*

213
214 *Is utilized for the landfilling, land treating, surface impounding or piling*
215 *of any hazardous or special waste that is generated on the site or at other*

216 *sites owned, controlled or operated by the same person; or*

217
218 *Stores or accumulates at any time more than 75,000 pounds above*
219 *ground, or more than 7,500 pounds below ground, of any hazardous*
220 *substances. [415 ILCS 5/3.3453-59]*

221
222 *"Potential route" means abandoned and improperly plugged wells of all kinds,*
223 *drainage wells, all injection wells, including closed loop heat pump wells, and*
224 *any excavation for the discovery, development or production of stone, sand or*
225 *gravel. This term does not include closed loop heat pump wells using USP food*
226 *grade propylene glycol. [415 ILCS 5/3.3503-58]*

227
228 *"Potential secondary source" means any unit at a facility or a site not currently*
229 *subject to a removal or remedial action, other than a potential primary source,*
230 *which:*

231
232 *Is utilized for the landfilling, land treating, or surface impounding of*
233 *waste that is generated on the site or at other sites owned, controlled or*
234 *operated by the same person, other than livestock and landscape waste,*
235 *and construction and demolition debris; or*

236
237 *Stores or accumulates at any time more than 25,000 but not more than*
238 *75,000 pounds above ground, or more than 2,500 but not more than 7,500*
239 *pounds below ground, of any hazardous substance; or*

240
241 *Stores or accumulates at any time more than 25,000 gallons above*
242 *ground, or more than 500 gallons below ground, of petroleum, including*
243 *crude oil or any fraction thereof which is not otherwise specifically listed*
244 *or designated as a hazardous substance; or*

245
246 *Stores or accumulates pesticides, fertilizers, or road oils for purposes of*
247 *commercial application or for distribution to retail sales outlets; or*

248
249 *Stores or accumulates at any time more than 50,000 pounds of any de-*
250 *icing agent; or*

251
252 *Is utilized for handling livestock waste or for treating domestic*
253 *wastewaters other than private sewage disposal systems as defined in the*
254 *Private Sewage Disposal Licensing Act [225 ILCS 225]. [415 ILCS*
255 *5/3.3553-60]*

256
257 *"Practical Quantitation Limit" or "PQL" means the lowest concentration or level*
258 *that can be reliably measured within specified limits of precision and accuracy*

259 during routine laboratory operating conditions in accordance with "Test Methods
260 for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No.
261 SW-846, incorporated by reference at Section 620.125.

262
263 "Previously mined area" means land disturbed or affected by coal mining
264 operations prior to February 1, 1983.
265 BOARD NOTE: February 1, 1983, is the effective date of the Illinois permanent
266 program regulations implementing the Surface Coal Mining Land Conservation
267 and Reclamation Act [225 ILCS 720] as codified in 62 Ill. Adm. Code 1700
268 through 1850.

269
270 "Property class" means the class assigned by a tax assessor to real property for
271 purposes of real estate taxes.

272 BOARD NOTE: The property class (rural property, residential vacant land,
273 residential with dwelling, commercial residence, commercial business,
274 commercial office, or industrial) is identified on the property record card
275 maintained by the tax assessor in accordance with the Illinois Real Property
276 Appraisal Manual (February 1987), published by the Illinois Department of
277 Revenue, Property Tax Administration Bureau.

278
279 *"Public water supply" means all mains, pipes and structures through which water*
280 *is obtained and distributed to the public, including wells and well structures,*
281 *intakes and cribs, pumping stations, treatment plants, reservoirs, storage tanks*
282 *and appurtenances, collectively or severally, actually used or intended for use for*
283 *the purpose of furnishing water for drinking or general domestic use and which*
284 *serve at least 15 service connections or which regularly serve at least 25 persons*
285 *at least 60 days per year. A public water supply is either a "community water*
286 *supply" or a "non-community water supply". [415 ILCS 5/3.3653-28]*

287
288 "Regulated entity" means a facility or unit regulated for groundwater protection
289 by any State or federal agency.

290
291 "Regulatory agency" means the Illinois Environmental Protection Agency,
292 Department of Public Health, Department of Agriculture, the Office of Mines and
293 Minerals in the Department of Natural Resources, and the Office of State Fire
294 Marshal.

295
296 *"Regulated recharge area" means a compact geographic area, as determined by*
297 *the Board pursuant to Section 17.4 of the Act, the geology of which renders a*
298 *potable resource groundwater particularly susceptible to contamination. [415*
299 *ILCS 5/3.3903-67]*

300
301 *"Resource groundwater" means groundwater that is presently being, or in the*

302 *future is capable of being, put to beneficial use by reason of being of suitable*
303 *quality. [415 ILCS 5/3.4303-66]*

304
305 "Saturated zone" means a subsurface zone in which all the interstices or voids are
306 filled with water under pressure greater than that of the atmosphere.

307
308 *"Setback zone" means a geographic area, designated pursuant to this Act,*
309 *containing a potable water supply well or a potential source or potential route*
310 *having a continuous boundary, and within which certain prohibitions or*
311 *regulations are applicable in order to protect groundwaters. [415 ILCS*
312 *5/3.4503-61]*

313
314 *"Site" means any location, place, tract of land and facilities, including but not*
315 *limited to, buildings and improvements used for the purposes subject to regulation*
316 *or control by the Act or regulations thereunder. [415 ILCS 5/3.4603-43]*

317
318 "Spring" means a natural surface discharge of an aquifer from rock or soil.

319
320 "Threshold dose" means the lowest dose of a chemical at which a specified
321 measurable effect is observed and below which it is not observed.

322
323 "Treatment" means the technology, treatment techniques, or other procedures for
324 compliance with 35 Ill. Adm. Code, Subtitle F.

325
326 *"Unit" means any device, mechanism, equipment, or area (exclusive of land*
327 *utilized only for agricultural production). [415 ILCS 5/3.5153-62]*

328
329 "USEPA" means the United States Environmental Protection Agency.

330
331 "Wellhead protection area" or "WHPA" means the surface and subsurface
332 recharge area surrounding a community water supply well or well field,
333 delineated outside of any applicable setback zones (pursuant to Section 17.1 of
334 the Act [415 ILCS 5/17.1]), and pursuant to Illinois' Wellhead Protection
335 Program, through which contaminants are reasonably likely to move toward such
336 well or well field.

337
338 "Wellhead Protection Program" or "WHPP" means the wellhead protection
339 program for the State of Illinois, approved by USEPA under 42 USC 300h-7.
340 BOARD NOTE: Derived from 40 CFR 141.71(b) (2003). The wellhead
341 protection program includes the "groundwater protection needs assessment" under
342 Section 17.1 of the Act [415 ILCS 5/17.1] and 35 Ill. Adm. Code 615-617.

343
344 (Source: Amended at 36 Ill. Reg. _____, effective _____)

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Section 620.125 Incorporations by Reference

a) The Board incorporates the following material by reference:

ASTM International. 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959 (610) 832-9500. ASTM, American Society for Testing and Materials, 1976 Race Street, Philadelphia, Pa. 19103 (215) 299-5585

"Standard Practice for Classification of Soils for Engineering Purposes (Unified Classification System)" ASTM D2487-06.
"Standard Practice for Description and Identification of Soils (Visual Manual Procedure)" D2488-84

CFR (Code of Federal Regulations). Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (202) 783-3238.

Method Detection Limit Definition, appendix B to Part 136, 40 CFR 136, appendix B (2006).

Control of Lead and Copper, general requirements, 40 CFR 141.80 (2006).

Maximum contaminant levels for organic contaminants, 40 CFR 141.61 (2006).

Maximum contaminant levels for inorganic contaminants, 40 CFR 141.62 (2006).

Maximum contaminant levels for radionuclides, 40 CFR 141.66 (2006).

GPO. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401, (202) 783-3238).

Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper; Final Rule, 56 Fed. Reg. 26460-26564 (June 7, 1991).

National Primary Drinking Water Regulations, Final Rule, 56 Fed. Reg. 3526-3597 (January 30, 1991).

388
389 National Primary Drinking Water Regulations, Final Rule, 57 Fed.
390 Reg. 31776-31849 (July 17, 1992).
391
392 USEPA Guidelines for Carcinogenic Risk Assessment, 51 Fed.
393 Reg. 33992-34003 (September 24, 1986).
394
395 Illinois Environmental Protection Agency, 1020 North Grand Avenue
396 East, P.O. Box 19276, Springfield, IL 62794-9276 (217) 785-4787.
397
398 "Guidance Document for Groundwater Protection Needs
399 Assessments," Agency, Illinois State Water Survey, and Illinois
400 State Geologic Survey Joint Report, January 1995.
401
402 "The Illinois Wellhead Protection Program Pursuant to Section
403 1428 of the Federal Safe Drinking Water Act," Agency, # 22480,
404 October 1992.
405
406 NCRP. National Council on Radiation Protection, 7910 Woodmont Ave.,
407 Bethesda, MD (301) 657-2652.~~(301) 657-6252~~
408
409 "Maximum Permissible Body Burdens and Maximum Permissible
410 Concentrations of Radionuclides in Air and in Water for
411 Occupational Exposure", NCRP Report Number 22, June 5, 1959.
412
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414 Springfield, VA 22161 (703) 605-6000~~(703) 487-4600~~.
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 444 Drinking Water, Supplement II," Doc. No. PB92-207703,
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 462 Aqueous Solutions," H.L. Krieger and S. Gold, Doc. No. PB222-
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487 July 1992, (Doc. No. 955-001-00000-1) (available on line at
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495 States Geological Survey, Guidelines for Collection and Field
496 Analysis of Ground-Water Samples for Selected Unstable
497 Constituents", Book I, Chapter D2 (19761981).

498
499 b) This Section incorporates no later editions or amendments.

500
501 (Source: Amended at 36 Ill. Reg. _____, effective _____)

502
503 SUBPART B: GROUNDWATER CLASSIFICATION

504
505 **Section 620.210 Class I: Potable Resource Groundwater**

506
507 Except as provided in Sections 620.230, 620.240, or 620.250, Potable Resource Groundwater is:

- 508
509 a) Groundwater located 10 feet or more below the land surface and within:
- 510
511 1) The minimum setback zone of a well which serves as a potable water
512 supply and to the bottom of such well;
 - 513
514 2) Unconsolidated sand, gravel or sand and gravel which is 5 feet or more in

515 thickness and that contains 12 percent or less of fines (i.e., fines which
516 pass through a No. 200 sieve tested according to ASTM Standard Practice
517 D2487-06~~D2488-84~~, incorporated by reference at Section 620.125);
518

519 3) Sandstone which is 10 feet or more in thickness, or fractured carbonate
520 which is 15 feet or more in thickness; or

521
522 4) Any geologic material which is capable of a:

523
524 A) Sustained groundwater yield, from up to a 12 inch borehole, of 150
525 gallons per day or more from a thickness of 15 feet or less; or

526
527 B) Hydraulic conductivity of 1×10^{-4} cm/sec or greater using one of
528 the following test methods or its equivalent:

529
530 i) Permeameter;

531
532 ii) Slug test; or

533
534 iii) Pump test.
535

536 b) Any groundwater which is determined by the Board pursuant to petition
537 procedures set forth in Section 620.260, to be capable of potable use.

538
539 BOARD NOTE~~(Board Note: Any portion of the thickness associated with the~~
540 geologic materials as described in subsections 620.210(a)(2), (a)(3) or (a)(4)
541 should be designated as Class I: Potable Resource Groundwater if located 10 feet
542 or more below the land surface.)
543

544 (Source: Amended at 36 Ill. Reg. _____, effective _____)
545

546 SUBPART C: NONDEGRADATION PROVISIONS
547 FOR APPROPRIATE GROUNDWATERS
548

549 **Section 620.302 Applicability of Preventive Notification and Preventive Response**
550 **Activities**

551
552 a) Preventive notification and preventive response as specified in Sections 620.305
553 through 620.310 applies to:

554
555 1) Class I groundwater under Section 620.210(a)(1), (a)(2), or (a)(3)
556 that~~which~~ is monitored by the persons listed in subsection (b); or
557

- 558 2) Class III groundwater ~~that~~which is monitored by the persons listed in
- 559 subsection (b).
- 560
- 561 b) For purposes of subsection (a), the persons that conduct groundwater monitoring
- 562 are:
- 563
- 564 1) An owner or operator of a regulated entity for which groundwater quality
- 565 monitoring must be performed pursuant to State or Federal law or
- 566 regulation (e.g., ~~section~~Section 106 and 107 of the Comprehensive
- 567 Environmental Response, Compensation and Liability Act (42 ~~USCU.S.C.~~U.S.C.
- 568 9601, et seq.); ~~sections~~Sections 3004 and 3008 of the Resource
- 569 Conservation and Recovery Act (42 ~~USCU.S.C.~~U.S.C. 6901, et seq.);
- 570 ~~sections~~Sections 4(q), 4(v), 12(g), 21(d), 21(f), 22.2(f), 22.2(m) and 22.18
- 571 of the Act; 35 Ill. Adm. Code 724, 725, 730, 731, 750, 811 and 814);
- 572
- 573 2) An owner or operator of a public water supply well who conducts
- 574 groundwater quality monitoring;
- 575
- 576 3) A ~~State~~state agency ~~that~~which is authorized to conduct, or is the recipient
- 577 of, groundwater quality monitoring data (e.g., Illinois Environmental
- 578 Protection Agency, Department of Public Health, ~~Department of~~
- 579 ~~Conservation, Department of Mines and Minerals, Department of~~
- 580 Agriculture, Office of State Fire Marshal or Department of ~~Energy and~~
- 581 Natural Resources); or
- 582
- 583 4) An owner or operator of a facility that conducts groundwater quality
- 584 monitoring pursuant to State or federal judicial or administrative order.
- 585
- 586 c) If a contaminant exceeds a standard set forth in Section 620.410 or Section
- 587 620.430, the appropriate remedy is corrective action and Sections 620.305 and
- 588 620.310 do not apply.
- 589

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 620.310 Preventive Response Activities

- 592
- 593
- 594 a) The following preventive assessment must be undertaken:
- 595
- 596 1) If a preventive notification under Section 620.305(c) is provided by a
- 597 community water supply:
- 598
- 599 A) The Agency shall notify the owner or operator of any identified
- 600 potential primary source, potential secondary source, potential

- 601 route, or community water supply well that is located within 2,500
 602 feet of the wellhead.
 603
- 604 B) The owner or operator notified under subsection (a)(1)(A) shall,
 605 within 30 days after the date of issuance of such notice, sample
 606 each water well or monitoring well for the contaminant identified
 607 in the notice if the contaminant or material containing such
 608 contaminant is or has been stored, disposed of, or otherwise
 609 handled at the site. If a contaminant identified under Section
 610 620.305(a) is detected, then the well must be resampled within 30
 611 days of the date on which the first sample analyses are received. If
 612 a contaminant identified under Section 620.305(a) is detected by
 613 the resampling, preventive notification must be given as set forth
 614 in Section 620.305.
 615
- 616 C) If the Agency receives analytical results under subsection (a)(1)(B)
 617 that show a contaminant identified under Section 620.305(a) has
 618 been detected, the Agency shall:
 619
- 620 i) Conduct a well site survey pursuant to 415 ILCS 5/17.1(d),
 621 if such a survey has not been previously conducted within
 622 the last 5 years; and
 - 623 ii) Identify those sites or activities that represent a hazard to
 624 the continued availability of groundwaters for public use
 625 unless a groundwater protection needs assessment has been
 626 prepared pursuant to 415 ILCS 5/17.1(d).
 627
 628
- 629 2) If a preventive notification is provided under Section 620.305(c) by a non-
 630 community water supply or for multiple private water supply wells, the
 631 Department of Public Health shall conduct a sanitary survey within 1,000
 632 feet of the wellhead of a non-community water supply or within 500 feet
 633 of the wellheads for multiple private water supply wells.
 634
- 635 3) If a preventive notification under Section 620.305(b) is provided by the
 636 owner or operator of a regulated entity and the applicable standard in
 637 Subpart D has not been exceeded:
 638
- 639 A) The appropriate regulatory agency shall determine if any of the
 640 following occurs for Class I: Potable Resource Groundwater:
 641
 - 642 i) The levels set forth below are exceeded or are changed for
 643 pH:

644

Constituent	Criteria (mg/L)
Para-Dichlorobenzene	0.005
Ortho-Dichlorobenzene	0.01
Ethylbenzene	0.03
Methyl Tertiary-Butyl Ether (MTBE)	0.02
Phenols	0.001
Styrene	0.01
Toluene	0.04
Xylenes	0.02

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ii) A statistically significant increase occurs above background (as determined pursuant to other regulatory procedures (e.g., 35 Ill. Adm. Code 616, 724, 725 or 811)) for arsenic, beryllium, cadmium, chromium, cyanide, lead, mercury, ~~or~~ thallium, or vanadium (except due to natural causes); or for acenaphthene, acetone, aldicarb, anthracene, atrazine, benzoic acid, carbon disulfide, carbofuran, dalapon, 2-butanone (MEK), dicamba, dichlorodifluoromethane, 1,1-dichloroethane, diethyl phthalate, di-n-butyl phthalate, dinoseb, endrin, endothall, fluoranthene, fluorine, hexachlorocyclopentadiene, isopropylbenzene (cumene), lindane (gamma-hexachloro cyclohexane), 2,4-D, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, MCPP (mecoprop), 2-methylnaphthalene, methoxychlor, 2-methylphenol, monochlorobenzene, naphthalene, picloram, pyrene, simazine, 2,4,5-TP (silvex/Silvex), 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, and 1,1,1-trichloroethane, and trichlorofluoromethane.

iii) For a chemical constituent of gasoline, diesel fuel, or heating fuel, the constituent exceeds the following:

Constituent	Criterion (mg/L)
BETX	0.095

669

670

671

672

iv) For pH, a statistically significant change occurs from background.

673 BOARD NOTE: Constituents that are carcinogens have not been
674 listed in subsection (a)(3)(A) because the standard is set at the PQL
675 and any exceedence thereof is a violation subject to corrective
676 action.
677

678 B) The appropriate agency shall determine if, for Class III: Special
679 Resource Groundwater, the levels as determined by the Board are
680 exceeded.
681

682 C) The appropriate regulatory agency shall consider whether the
683 owner or operator reasonably demonstrates that:
684

685 i) The contamination is a result of contaminants remaining in
686 groundwater from a prior release for which appropriate
687 action was taken in accordance with laws and regulations in
688 existence at the time of the release;
689

690 ii) The source of contamination is not due to the on-site
691 release of contaminants; or
692

693 iii) The detection resulted from error in sampling, analysis, or
694 evaluation.
695

696 D) The appropriate regulatory agency shall consider actions necessary
697 to minimize the degree and extent of contamination.
698

699 b) The appropriate regulatory agency shall determine whether a preventive response
700 must be undertaken based on relevant factors including, but not limited to, the
701 considerations in subsection (a)(3).
702

703 c) After completion of preventive response pursuant to authority of an appropriate
704 regulatory agency, the concentration of a contaminant listed in subsection
705 (a)(3)(A) in groundwater may exceed 50 percent of the applicable numerical
706 standard in Subpart D only if the following conditions are met:
707

708 1) The exceedence has been minimized to the extent practicable;
709

710 2) Beneficial use, as appropriate for the class of groundwater, has been
711 assured; and
712

713 3) Any threat to public health or the environment has been minimized.
714

715 d) Nothing in this Section shall in any way limit the authority of the State or of the

716 United States to require or perform any corrective action process.

717
 718 (Source: Amended at 36 Ill. Reg. _____, effective _____)

719
 720 SUBPART D: GROUNDWATER QUALITY STANDARDS

721
 722 **Section 620.410 Groundwater Quality Standards for Class I: Potable Resource**
 723 **Groundwater**

724
 725 a) Inorganic Chemical Constituents
 726 Except due to natural causes or as provided in Section 620.450, concentrations of
 727 the following chemical constituents must not be exceeded in Class I groundwater:
 728

Constituent	Units	Standard
Antimony	mg/L	0.006
Arsenic*	mg/L	<u>0.010</u> 0.05
Barium	mg/L	2.0
Beryllium	mg/L	0.004
Boron	mg/L	2.0
Cadmium	mg/L	0.005
Chloride	mg/L	200.0
Chromium	mg/L	0.1
Cobalt	mg/L	1.0
Copper	mg/L	0.65
Cyanide	mg/L	0.2
Fluoride	mg/L	4.0
Iron	mg/L	5.0
Lead	mg/L	0.0075
Manganese	mg/L	0.15
Mercury	mg/L	0.002
Nickel	mg/L	0.1
Nitrate as N	mg/L	10.0
<u>Perchlorate</u>	<u>mg/L</u>	<u>0.0049</u>
Radium-226	pCi/l	20.0
Radium-228	pCi/l	20.0
Selenium	mg/L	0.05
Silver	mg/L	0.05
Sulfate	mg/L	400.0
Thallium	mg/L	0.002
Total Dissolved Solids (TDS)	mg/L	1,200
<u>Vanadium</u>	<u>mg/L</u>	<u>0.049</u>

Zinc mg/L 5.0

*Denotes a carcinogen.

- b) Organic Chemical Constituents
 Except due to natural causes or as provided in Section 620.450 or subsection (c), concentrations of the following organic chemical constituents shall not be exceeded in Class I groundwater:

Constituent	Standard (mg/L)
<u>Acenaphthene</u>	<u>0.42</u>
<u>Acetone</u>	<u>6.3</u>
Alachlor*	0.002
Aldicarb	0.003
<u>Anthracene</u>	<u>2.1</u>
Atrazine	0.003
Benzene*	0.005
<u>Benzo(a)anthracene*</u>	<u>0.00013</u>
<u>Benzo(b)fluoranthene*</u>	<u>0.00018</u>
<u>Benzo(k)fluoranthene*</u>	<u>0.00017</u>
Benzo(a)pyrene*	0.0002
<u>Benzoic acid</u>	<u>28.0</u>
<u>2-Butanone (MEK)</u>	<u>4.2</u>
Carbofuran	0.04
<u>Carbon Disulfide</u>	<u>0.7</u>
Carbon Tetrachloride*	0.005
Chlordane*	0.002
<u>Chloroform*</u>	<u>0.07</u>
<u>Chrysene*</u>	<u>0.012</u>
Dalapon	0.2
<u>Dibenzo(a,h)anthracene*</u>	<u>0.0003</u>
<u>Dicamba</u>	<u>0.21</u>
<u>Dichlorodifluoromethane</u>	<u>1.4</u>
<u>1,1-Dichloroethane</u>	<u>1.4</u>
Dichloromethane*	0.005
Di(2-ethylhexyl)phthalate*	0.006
<u>Diethyl Phthalate</u>	<u>5.6</u>
<u>Di-n-butyl Phthalate</u>	<u>0.7</u>
Dinoseb	0.007
Endothall	0.1
Endrin	0.002
Ethylene Dibromide*	0.00005

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<u>Fluoranthene</u>	<u>0.28</u>
<u>Fluorene</u>	<u>0.28</u>
Heptachlor*	0.0004
Heptachlor Epoxide*	0.0002
Hexachlorocyclopentadiene	0.05
<u>Indeno(1,2,3-cd)pyrene*</u>	<u>0.00043</u>
<u>Isopropylbenzene (Cumene)</u>	<u>0.7</u>
Lindane (Gamma-Hexachlorocyclohexane)	0.0002
2,4-D	0.07
ortho-Dichlorobenzene	0.6
para-Dichlorobenzene	0.075
1,2-Dibromo-3-Chloropropane*	0.0002
1,2-Dichloroethane*	0.005
1,1-Dichloroethylene	0.007
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1
1,2-Dichloropropane*	0.005
Ethylbenzene	0.7
<u>MCCP (Mecoprop)</u>	<u>0.007</u>
Methoxychlor	0.04
<u>2-Methylnaphthalene</u>	<u>0.028</u>
<u>2-Methylphenol</u>	<u>0.35</u>
Methyl Tertiary-Butyl Ether (MTBE)	0.07
Monochlorobenzene	0.1
<u>Naphthalene</u>	<u>0.14</u>
<u>P-Dioxane*</u>	<u>0.0077</u>
Pentachlorophenol*	0.001
Phenols	0.1
Picloram	0.5
<u>Pyrene</u>	<u>0.21</u>
Polychlorinated Biphenyls (PCBs) (as decachloro-biphenyl)*	0.0005
<u>alpha-BHC (alpha-Benzene hexachloride)*</u>	<u>0.00011</u>
Simazine	0.004
Styrene	0.1
2,4,5-TP (Silvex)	0.05
Tetrachloroethylene*	0.005
Toluene	1.0
Toxaphene*	0.003

1,1,1-Trichloroethane	0.2
1,1,2-Trichloroethane	0.005
1,2,4-Trichlorobenzene	0.07
Trichloroethylene*	0.005
<u>Trichlorofluoromethane</u>	<u>2.1</u>
Vinyl Chloride*	0.002
Xylenes	10.0

*Denotes a carcinogen.

737
 738 c) Explosive Constituents
 739 Concentrations of the following explosive constituents must not exceed the Class
 740 I groundwater standard:
 741

<u>Constituent</u>	<u>Standard (mg/L)</u>
<u>1,3-Dinitrobenzene</u>	<u>0.0007</u>
<u>2,4-Dinitrotoluene*</u>	<u>0.0001</u>
<u>2,6-Dinitrotoluene*</u>	<u>0.00031</u>
<u>HMX (High Melting</u> <u>Explosive, Octogen)</u>	<u>1.4</u>
<u>Nitrobenzene</u>	<u>0.014</u>
<u>RDX (Royal Demolition</u> <u>Explosive, Cyclonite)</u>	<u>0.084</u>
<u>1,3,5-Trinitrobenzene</u>	<u>0.84</u>
<u>2,4,6-Trinitrotoluene (TNT)</u>	<u>0.014</u>

*Denotes a carcinogen.

742
 743 d)e) Complex Organic Chemical Mixtures
 744
 745 Concentrations of the following chemical constituents of gasoline, diesel fuel, or
 746 heating fuel must not be exceeded in Class I groundwater:
 747

<u>Constituent</u>	<u>Standard (mg/L)</u>
Benzene*	0.005
BETX	11.705

*Denotes a carcinogen.

748
 749 e)d) pH
 750 Except due to natural causes, a pH range of 6.5 - 9.0 units must not be exceeded

in Class I groundwater.

f)e) Beta Particle and Photon Radioactivity

- 1) Except due to natural causes, the average annual concentration of beta particle and photon radioactivity from man-made radionuclides shall not exceed a dose equivalent to the total body organ greater than 4 mrem/year in Class I groundwater. If two or more radionuclides are present, the sum of their dose equivalent to the total body, or to any internal organ shall not exceed 4 mrem/year in Class I groundwater except due to natural causes.
- 2) Except for the radionuclides listed in subsection (f)e)(3), the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalent must be calculated on the basis of a 2 liter per day drinking water intake using the 168-hour data in accordance with the procedure set forth in NCRP Report Number 22, incorporated by reference at Section 620.125(a).
- 3) Except due to natural causes, the average annual concentration assumed to produce a total body or organ dose of 4 mrem/year of the following chemical constituents shall not be exceeded in Class I groundwater:

Constituent	Critical Organ	Standard (pCi/L)
Tritium	Total body	20,000.0
Strontium-90	Bone marrow	8.0

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 620.420 Groundwater Quality Standards for Class II: General Resource Groundwater

a) Inorganic Chemical Constituents

- 1) Except due to natural causes or as provided in Section 620.450 or subsection (a)(3) or (d) of this Section, concentrations of the following chemical constituents must not be exceeded in Class II groundwater:

Constituent	Standard (mg/L)
Antimony	0.024

Arsenic*	0.2
Barium	2.0
Beryllium	0.5
Cadmium	0.05
Chromium	1.0
Cobalt	1.0
Cyanide	0.6
Fluoride	4.0
Lead	0.1
Mercury	0.01
Nitrate as N	100.0
<u>Perchlorate</u>	<u>0.0049</u>
Thallium	0.02
<u>Vanadium</u>	<u>0.1</u>

*Denotes a carcinogen.

- 785
786 2) Except as provided in Section 620.450 or subsection (a)(3) or (d) of this
787 Section, concentrations of the following chemical constituents must not be
788 exceeded in Class II groundwater:
789

Constituent	Standard (mg/L)
Boron	2.0
Chloride	200.0
Copper	0.65
Iron	5.0
Manganese	10.0
Nickel	2.0
Selenium	0.05
Total Dissolved Solids (TDS)	1,200.0
Sulfate	400.0
Zinc	10.0

- 790
791 3) The standard for any inorganic chemical constituent listed in subsection
792 (a)(2) of this Section, for barium, or for pH does not apply to groundwater
793 within fill material or within the upper 10 feet of parent material under
794 such fill material on a site not within the rural property class for which:
795
796 A) Prior to November 25, 1991, surficial characteristics have been
797 altered by the placement of such fill material so as to impact the

798 concentration of the parameters listed in subsection (a)(3) of this
 799 Section, and any on-site groundwater monitoring of such
 800 parameters is available for review by the Agency.
 801

802 B) On November 25, 1991, surficial characteristics are in the process
 803 of being altered by the placement of such fill material, that
 804 proceeds in a reasonably continuous manner to completion, so as
 805 to impact the concentration of the parameters listed in subsection
 806 (a)(3) of this Section, and any on-site groundwater monitoring of
 807 such parameters is available for review by the Agency.
 808

809 4) For purposes of subsection (a)(3) of this Section, the term "fill material"
 810 means clean earthen materials, slag, ash, clean demolition debris, or other
 811 similar materials.
 812

813 b) Organic Chemical Constituents
 814

815 1) Except due to natural causes or as provided in Section 620.450 or
 816 subsection (b)(2) or (d) of this Section, concentrations of the following
 817 organic chemical constituents must not be exceeded in Class II
 818 groundwater:
 819

Constituent	Standard (mg/L)
<u>Acenaphthene</u>	<u>2.1</u>
<u>Acetone</u>	<u>6.3</u>
Alachlor*	0.010
Aldicarb	0.015
<u>Anthracene</u>	<u>10.5</u>
Atrazine	0.015
Benzene*	0.025
<u>Benzo(a)anthracene*</u>	<u>0.00065</u>
<u>Benzo(b)fluoranthene*</u>	<u>0.0009</u>
<u>Benzo(k)fluoranthene*</u>	<u>0.006</u>
Benzo(a)pyrene*	0.002
<u>Benzoic acid</u>	<u>28.0</u>
<u>2-Butanone (MEK)</u>	<u>4.2</u>
<u>Carbon Disulfide</u>	<u>3.5</u>
Carbofuran	0.2
Carbon Tetrachloride*	0.025
Chlordane*	0.01
<u>Chloroform*</u>	<u>0.35</u>

<u>Chrysene*</u>	<u>0.06</u>
Dalapon	2.0
<u>Dibenzo(a,h)anthracene</u>	<u>0.0015</u>
<u>Dicamba</u>	<u>0.21</u>
<u>Dichlorodifluoromethane</u>	<u>7.0</u>
<u>1,1-Dichloroethane</u>	<u>7.0</u>
Dichloromethane*	0.05
Di(2-ethylhexyl)phthalate*	0.06
<u>Diethyl Phthalate</u>	<u>5.6</u>
<u>Di-n-butyl Phthalate</u>	<u>3.5</u>
Dinoseb	0.07
Endothall	0.1
Endrin	0.01
Ethylene Dibromide*	0.0005
<u>Fluoranthene</u>	<u>1.4</u>
<u>Fluorene</u>	<u>1.4</u>
Heptachlor*	0.002
Heptachlor Epoxide*	0.001
Hexachlorocyclopentadiene	0.5
<u>Indeno(1,2,3-cd)pyrene*</u>	<u>0.0022</u>
<u>Isopropylbenzene (Cumene)</u>	<u>3.5</u>
Lindane (Gamma-Hexachloro cyclohexane)	0.001
2,4-D	0.35
Ortho-Dichlorobenze	1.5
Para-Dichlorobenzene	0.375
1,2-Dibromo-3-Chloropropane*	0.002
1,2-Dichloroethane*	0.025
1,1-Dichloroethylene	0.035
cis-1,2-Dichloroethylene	0.2
Trans-1,2-Dichloroethylene	0.5
1,2-Dichloropropane*	0.025
Ehylbenzene	1.0
<u>MCPP (Mecoprop)</u>	<u>0.007</u>
Methoxychlor	0.2
<u>2-Methylnaphthalene</u>	<u>0.14</u>
<u>2-Methylphenol</u>	<u>0.35</u>
Methyl Tertiary-Butyl Ether (MTBE)	0.07
Monochlorobenzene	0.5
<u>Naphthalene</u>	<u>0.22</u>
<u>P-Dioxane*</u>	<u>0.0077</u>
Pentachlorophenol*	0.005
Phenols	0.1

Picloram	5.0
<u>Pyrene</u>	<u>1.05</u>
Polychlorinated Biphenyls (PCBs) (as decachloro-biphenyl)*	0.0025
<u>alpha-BHC (alpha-Benzene hexachloride)*</u>	<u>0.00055</u>
Simazine	0.04
Styrene	0.5
2,4,5-TP	0.25
Tetrachloroethylene*	0.025
Toluene	2.5
Toxaphene*	0.015
1,1,1-Trichloroethane	1.0
1,2,4-Trichlorobenzene	0.7
1,1,2-Trichloroethane	0.025
<u>Trichlorofluoromethane</u>	<u>10.5</u>
Vinyl Chloride*	0.01
Xylenes	10.0

* Denotes a carcinogen.

- 820
821 2) The standards for pesticide chemical constituents listed in subsection
822 (b)(1) of this Section do not apply to groundwater within 10 feet of the
823 land surface, provided that the concentrations of such constituents result
824 from the application of pesticides in a manner consistent with the
825 requirements of the Federal Insecticide, Fungicide and Rodenticide Act (7
826 USC 136 et seq.) and the Illinois Pesticide Act [415 ILCS 60].
827
828 c) Explosive Constituents
829 Concentrations of the following explosive constituents must not exceed the Class
830 II groundwater standard:
831

<u>Constituent</u>	<u>Standard (mg/L)</u>
<u>1,3-Dinitrobenzene</u>	<u>0.0007</u>
<u>2,4-Dinitrotoluene*</u>	<u>0.0001</u>
<u>2,6-Dinitrotoluene*</u>	<u>0.00031</u>
<u>HMX (High Melting Explosive, Octogen)</u>	<u>1.4</u>
<u>Nitrobenzene</u>	<u>0.014</u>
<u>RDX (Royal Demolition Explosive, Cyclonite)</u>	<u>0.084</u>

<u>1,3,5-Trinitrobenzene</u>	<u>0.84</u>
<u>2,4,6-Trinitrotoluene (TNT)</u>	<u>0.014</u>

*Denotes a carcinogen.

832
 833 de) Complex Organic Chemical Mixtures
 834 Concentrations of the following organic chemical constituents of gasoline, diesel
 835 fuel, or heating fuel must not be exceeded in Class II groundwater:
 836

Constituent	Standard (mg/L)
Benzene*	0.025
BETX	13.525

*Denotes a carcinogen

837
 838 ed) pH
 839 Except due to natural causes, a pH range of 6.5 - 9.0 units must not be exceeded
 840 in Class II groundwater that is within 5 feet of the land surface.
 841

(Source: Amended at 36 Ill. Reg. _____, effective _____)

844 **Section 620.440 Groundwater Quality Standards for Class IV: Other Groundwater**

- 845
- 846 a) Except as provided in ~~subsections~~ subsections (b) or (c), Class IV: Other
 847 Groundwater standards are equal to the existing concentrations of constituents in
 848 groundwater.
 - 849
 - 850 b) For groundwater within a zone of attenuation as provided in 35 Ill. Adm. Code
 851 811 and 814, the standards specified in Section 620.420 must not be exceeded,
 852 except for concentrations of contaminants within leachate released from a
 853 permitted unit.
 854
 - 855 c) For groundwater within a previously mined area, the standards set forth in Section
 856 620.420 must not be exceeded, except for concentrations of TDS, chloride, iron,
 857 manganese, sulfates, ~~or~~ pH, 1,3-dinitrobenzene, 2,4-dinitrotoluene, 2,6-
 858 dinitrotoluene, HMX (high melting explosive, octogen), nitrobenzene, RDX
 859 (royal demolition explosive, cyclonite), 1,3,5-trinitrobenzene, or 2,4,6-
 860 trinitrotoluene (TNT). For concentrations of TDS, chloride, iron, manganese,
 861 sulfates, ~~or~~ pH, 1,3-dinitrobenzene, 2,4-dinitrotoluene, 2,6-dinitrotoluene, HMX,
 862 nitrobenzene, RDX, 1,3,5-trinitrobenzene, or 2,4,6-trinitrotoluene (TNT), the
 863 standards are the existing concentrations.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 620.450 Alternative Groundwater Quality Standards

- a) Groundwater Quality Restoration Standards
 - 1) Any chemical constituent in groundwater within a groundwater management zone is subject to this Section.
 - 2) Except as provided in subsections (a)(3) or (a)(4) ~~below~~, the standards as specified in Sections 620.410, 620.420, 620.430, and 620.440 apply to any chemical constituent in groundwater within a groundwater management zone.
 - 3) Prior to completion of a corrective action described in Section 620.250(a), the standards as specified in Sections 620.410, 620.420, 620.430, and 620.440 are not applicable to such released chemical constituent, provided that the initiated action proceeds in a timely and appropriate manner.
 - 4) After completion of a corrective action as described in Section 620.250(a), the standard for such released chemical constituent is:
 - A) The standard as set forth in Section 620.410, 620.420, 620.430, or 620.440, if the concentration as determined by groundwater monitoring of such constituent is less than or equal to the standard for the appropriate class set forth in those Sections~~sections~~; or
 - B) The concentration as determined by groundwater monitoring, if such concentration exceeds the standard for the appropriate class set forth in Section 620.410, 620.420, 620.430, or 620.440 for such constituent, and:
 - i) To the extent practicable, the exceedence has been minimized and beneficial use, as appropriate for the class of groundwater, has been returned; and
 - ii) Any threat to public health or the environment has been minimized.
 - 5) The Agency shall develop and maintain a listing of concentrations derived pursuant to subsection (a)(4)(B) ~~above~~. This list shall be made available to the public and be updated periodically, but no less frequently than semi-

907 annually. This listing shall be published in the Environmental Register.
908

909 b) Coal Reclamation Groundwater Quality Standards
910

911 1) Any inorganic chemical constituent or pH in groundwater, within an
912 underground coal mine, or within the cumulative impact area of
913 groundwater for which the hydrologic balance has been disturbed from a
914 permitted coal mine area pursuant to the Surface Coal Mining Land
915 Conservation and Reclamation Act [225 ILCS 720] and 62 Ill. Adm. Code
916 1700 through 1850, is subject to this Section.
917

918 2) Prior to completion of reclamation at a coal mine, the standards as
919 specified in Sections 620.410(a) and (d), 620.420(a) and (e), 620.430 and
920 620.440 are not applicable to inorganic constituents and pH.
921

922 3) After completion of reclamation at a coal mine, the standards as specified
923 in Sections 620.410(a) and (d), 620.420(a), 620.430, and 620.440 are
924 applicable to inorganic constituents and pH, except:
925

926 A) The concentration of total dissolved solids (TDS) must not exceed:
927

928 i) The post-reclamation concentration or 3000 mg/L,
929 whichever is less, for groundwater within the permitted
930 area; or
931

932 ii) The post-reclamation concentration of TDS must not
933 exceed the post-reclamation concentration or 5000 mg/L,
934 whichever is less, for groundwater in underground coal
935 mines and in permitted areas reclaimed after surface coal
936 mining if the Illinois Department of Mines and Minerals
937 and the Agency have determined that no significant
938 resource groundwater existed prior to mining (62 Ill. Adm.
939 Code 1780.21(f) and (g)); and
940

941 B) For chloride, iron, manganese and sulfate, the post-reclamation
942 concentration within the permitted area must not be exceeded.
943

944 C) For pH, the post-reclamation concentration within the permitted
945 area must not be exceeded within Class I: Potable Resource
946 Groundwater as specified in Section 620.210(a)(4).
947

948 D) For 1,3-dinitrobenzene, 2,4-dinitrotoluene, 2,6-dinitrotoluene,
949 HMX (high melting explosive, octogen), nitrobenzene, RDX (royal

950 demolition explosive, cyclonite), 1,3,5-trinitrobenzene, and 2,4,6-
951 trinitrotoluene (TNT), the post-reclamation concentration within
952 the permitted area must not be exceeded.
953

- 954 4) A refuse disposal area (not contained within the area from which
955 overburden has been removed) is subject to the inorganic chemical
956 constituent and pH requirements of:
957
- 958 A) 35 Ill. Adm. Code 302.Subparts B and C, except due to natural
959 causes, for such area that was placed into operation after February
960 1, 1983, and before the effective date of this Part, provided that the
961 groundwater is a present or a potential source of water for public or
962 food processing;
 - 963
 - 964 B) Section 620.440(c) for such area that was placed into operation
965 prior to February 1, 1983, and has remained in continuous
966 operation since that date; or
967
 - 968 C) Subpart D of this Part for such area that is placed into operation on
969 or after the effective date of this Part.
970
- 971 5) For a refuse disposal area (not contained within the area from which
972 overburden has been removed) that was placed into operation prior to
973 February 1, 1983, and is modified after that date to include additional area,
974 this Section applies to the area that meets the requirements of subsection
975 (b)(4)(C) and the following applies to the additional area:
976
- 977 A) 35 Ill. Adm. Code 302.Subparts B and C, except due to natural
978 causes, for such additional refuse disposal area that was placed into
979 operation after February 1, 1983, and before the effective date of
980 this Part, provided that the groundwater is a present or a potential
981 source of water for public or food processing; and
982
 - 983 B) Subpart D for such additional area that was placed into operation
984 on or after the effective date of this Part.
985
- 986 6) A coal preparation plant (not located in an area from which overburden
987 has been removed) which contains slurry material, sludge or other
988 precipitated process material, is subject to the inorganic chemical
989 constituent and pH requirements of:
990
- 991 A) 35 Ill. Adm. Code 302.Subparts B and C, except due to natural
992 causes, for such plant that was placed into operation after February

- 993 1, 1983 and before the effective date of this Part, provided that the
- 994 groundwater is a present or a potential source of water for public or
- 995 food processing;
- 996
- 997 B) Section 620.440(c) for such plant that was placed into operation
- 998 prior to February 1, 1983, and has remained in continuous
- 999 operation since that date; or
- 1000
- 1001 C) Subpart D for such plant that is placed into operation on or after
- 1002 the effective date of this Part.
- 1003
- 1004 7) For a coal preparation plant (not located in an area from which overburden
- 1005 has been removed) which contains slurry material, sludge or other
- 1006 precipitated process material, that was placed into operation prior to
- 1007 February 1, 1983, and is modified after that date to include additional area,
- 1008 this Section applies to the area that meets the requirements of subsection
- 1009 (b)(6)(C) and the following applies to the additional area:
- 1010
- 1011 A) 35 Ill. Adm. Code 302.Subparts B and C, except due to natural
- 1012 causes, for such additional area that was placed into operation after
- 1013 February 1, 1983, and before the effective date of this Part,
- 1014 provided that the groundwater is a present or a potential source of
- 1015 water for public or food processing; and
- 1016
- 1017 B) Subpart D for such additional area that was placed into operation
- 1018 on or after the effective date of this Part.
- 1019
- 1020 c) Groundwater Quality Standards for Certain Groundwater Subject to a No Further
- 1021 Remediation Letter under Part 740. While a No Further Remediation Letter is in
- 1022 effect for a region formerly encompassed by a groundwater management zone
- 1023 established under 35 Ill. Adm. Code 740.530, the groundwater quality standards
- 1024 for "contaminants of concern", as defined in 35 Ill. Adm. Code 740.120, within
- 1025 such area shall be the groundwater objectives achieved as documented in the
- 1026 approved Remedial Action Completion Report.
- 1027

(Source: Amended at 36 Ill. Reg. _____, effective _____)

SUBPART E: GROUNDWATER MONITORING AND ANALYTICAL PROCEDURES

Section 620.505 Compliance Determination

- 1032 a) Compliance with standards at a site is to be determined as follows:
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- 1) For a structure (e.g., buildings), at the closest practical distance beyond the outermost edge for the structure.
 - 2) For groundwater that underlies a potential primary or secondary source, the outermost edge as specified in Section 620.240(e)(1).
 - 3) For groundwater that underlies a coal mine refuse disposal area, a coal combustion waste disposal area, or an impoundment that contains sludge, slurry, or precipitated process material at a coal preparation plant, the outermost edge as specified in Section 620.240(f)(1) or location of monitoring wells in existence as of the effective date of this Part on a permitted site.
 - 4) For a groundwater management zone, as specified in a corrective action process.
 - 5) For groundwater, any point, where monitoring is conducted using a water well, or a monitoring well that meets one of the following conditions:
 - A) For a potable water supply well if geologic ~~logs~~log(s) exist for this well or geologic logs in the immediate 1,000-foot area of this well are representative of the hydrogeologic materials encountered by this well as determined by a licensed professional geologist or a licensed professional engineer or a WHPA has been delineated outside of an applicable setback zone of a community water well or well field in accordance with the "Guidance Document for Groundwater Protection Needs Assessments," incorporated by reference at Section 620.125, and "Illinois Approved WHPP," incorporated by reference at Section 620.125.
 - B) For a potable water supply well other than a community water supply well, a construction report has been filed with the Department of Public Health for such potable well, or such well has been located and constructed (or reconstructed) to meet the Illinois Water Well Construction Code [415 ILCS 30] and 77 Ill. Adm. Code 920.
 - C) For a potable water supply well that was constructed prior to August 20, 1965, the enactment of the Illinois Water Well Construction Code [415 ILCS 30], and meets all of the following criteria:
 - i) Construction must be done in a manner that will enable the

- 1079 collection of groundwater samples that represent in situ
1080 groundwater conditions;
- 1081
1082 ii) Casings and screens must be made from durable material
1083 resistant to expected chemical or physical degradation that
1084 do not interfere with the quality of groundwater samples
1085 being collected; and
1086
- 1087 iii) The annular space opposite the screened section of the well
1088 (i.e., the space between the bore hole and well screen) must
1089 be filled with gravel or sand if necessary to collect
1090 groundwater samples. The annular space above and below
1091 the well screen must be sealed to prevent migration of
1092 water from adjacent formations and the surface to the
1093 sampled depth.
1094
- 1095 D) For a community water supply well, such well has been permitted
1096 by the Agency, or has been constructed in accordance with 35 Ill.
1097 Adm. Code 602.115.
1098
- 1099 E) For a water well other than a potable water supply well (e.g., a
1100 livestock watering well or an irrigation well), a construction report
1101 has been filed with the Department of Public Health or the Office
1102 of Mines and Minerals in the Department of Natural Resources for
1103 such well, or such well has been located and constructed (or
1104 reconstructed) to meet the Illinois Water Well Construction Code
1105 [415 ILCS 30] and 35 Ill. Adm. Code 920.
1106
- 1107 F) For a monitoring well, such well meets the following requirements:
1108
- 1109 i) Construction must be done in a manner that will enable the
1110 collection of groundwater samples;
1111
- 1112 ii) Casings and screens must be made from durable material
1113 resistant to expected chemical or physical degradation that
1114 do not interfere with the quality of groundwater samples
1115 being collected; and
1116
- 1117 iii) The annular space opposite the screened section of the well
1118 (i.e., the space between the bore hole and well screen) must
1119 be filled with gravel or sand if necessary to collect
1120 groundwater samples. The annular space above and below
1121 the well screen must be sealed to prevent migration of

water from adjacent formations and the surface to the
sampled depth.

6) Monitoring shall not be conducted for compliance determinations pursuant
to subsection (a) of this Section:

A) For a water well that is:

- i) Less than 15 feet in total depth from the land surface,
- ii) bored or dug,
- iii) constructed of permeable materials (e.g., cement, tile, stone
or brick), and
- iv) 36 inches or more in diameter.

B) For a water well with water quality problems due to damaged well
construction materials or poorly-designed well construction;

C) For a water well in a basement or pit; or

D) For water well water from a holding tank.

b) For a spring, compliance with this Subpart shall be determined at the point of
emergence.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 620.510 Monitoring and Analytical Requirements

a) Representative Samples

A representative sample shall be taken from locations as specified in Section
620.505.

b) Sampling and Analytical Procedures

- 1) Samples must be collected in accordance with the procedures set forth in
the documents pertaining to groundwater monitoring and analysis
"Methods for Chemical Analysis of Water and Wastes," "Methods for the
Determination of Inorganic Substances in Environmental Samples,"
"Methods for the Determination of Metals in Environmental Samples,"
"Methods for the Determination of Organic Compounds in Drinking

- 1165 Water," "Methods for the Determination of Organic Compounds in
 1166 Drinking Water, Supplement I," "Methods for the Determination of
 1167 Organic Compounds in Drinking Water, Supplement II," "Methods for the
 1168 Determination of Organic Compounds in Drinking Water, Supplement
 1169 III," "Methods for the Determination of Organic and Inorganic
 1170 Compounds in Drinking Water," "Prescribed Procedures for Measurement
 1171 of Radioactivity in Drinking Water," "Procedures for Radiochemical
 1172 Analysis of Nuclear Reactor Aqueous Solutions," "Radiochemical
 1173 Analytical Procedures for Analysis of Environmental Samples,"
 1174 "Radiochemistry Procedures Manual," "Practical Guide for Ground Water
 1175 Sampling," "Test Methods for Evaluating Solid Wastes,
 1176 Physical/Chemical Methods" (SW-846), 40 CFR 136, appendix B, 40
 1177 CFR 141.80, 40 CFR 141.61, and 40 CFR 141.62, "Techniques of Water
 1178 Resources Investigations of the United States Geological Survey,
 1179 Guidelines for Collection and Field Analysis of Ground Water Samples
 1180 for Selected Unstable Constituents," "Methods for Chemical Analysis of
 1181 Water and Wastes," "Methods for the Determination of Organic
 1182 Compounds in Drinking Water," "Practical Guide for Ground-Water
 1183 Sampling," "Test Methods for Evaluating Solid Wastes,
 1184 Physical/Chemical Methods" (SW-846), 56 Fed. Reg. 3526-3597, 56 Fed.
 1185 Reg. 26460-26564, 57 Fed. Reg. 31776-31849, "Techniques of Water
 1186 Resources Investigations of the United States Geological Survey,
 1187 Guidelines for Collection and Field Analysis of Ground-Water Samples
 1188 for Selected Unstable Constituents," incorporated by reference at Section
 1189 620.125 or other procedures adopted by the appropriate regulatory agency.
 1190
- 1191 2) Groundwater elevation in a groundwater monitoring well must be
 1192 determined and recorded when necessary to determine the gradient.
 1193
- 1194 3) The analytical methodology used for the analysis of constituents in
 1195 Subparts C and D must be consistent with both of the following:
 1196
- 1197 A) The methodology must have a PQL at or below the preventive
 1198 response levels of Subpart C or groundwater standard set forth in
 1199 Subpart D, whichever is applicable; and
 1200
- 1201 B) "Methods for Chemical Analysis of Water and Wastes," "Methods
 1202 for the Determination of Inorganic Substances in Environmental
 1203 Samples," "Methods for the Determination of Metals in
 1204 Environmental Samples," "Methods for the Determination of
 1205 Organic Compounds in Drinking Water," "Methods for the
 1206 Determination of Organic Compounds in Drinking Water,
 1207 Supplement I," "Methods for the Determination of Organic

1208 Compounds in Drinking Water, Supplement II," "Methods for the
1209 Determination of Organic Compounds in Drinking Water,
1210 Supplement III," "Methods for the Determination of Organic and
1211 Inorganic Compounds in Drinking Water," "Prescribed Procedures
1212 for Measurement of Radioactivity in Drinking Water," "Procedures
1213 for Radiochemical Analysis of Nuclear Reactor Aqueous
1214 Solutions," "Radiochemical Analytical Procedures for Analysis of
1215 Environmental Samples," "Radiochemistry Procedures Manual,"
1216 "Practical Guide for Ground Water Sampling," "Test Methods for
1217 Evaluating Solid Wastes, Physical/Chemical Methods" (SW-846),
1218 40 CFR 136, appendix B, 40 CFR 141.80, 40 CFR 141.61, and 40
1219 CFR 141.62, "Techniques of Water Resources Investigations of the
1220 United States Geological Survey, Guidelines for Collection and
1221 Field Analysis of Ground Water Samples for Selected Unstable
1222 Constituents,"The methodology must be consistent with
1223 methodologies contained in "Methods for Chemical Analysis of
1224 Water and Wastes", "Methods for the Determination of Organic
1225 Compounds in Drinking Water", "Practical Guide for Ground-
1226 Water Sampling", "Test Methods for Evaluating Solid Wastes,
1227 Physical/Chemical Methods" (SW-846), "Techniques of Water
1228 Resources Investigations of the United States Geological Survey,
1229 Guidelines for Collection and Field Analysis of Ground-Water
1230 Samples for Selected Unstable Constituents", incorporated by
1231 reference at Section 620.125.
1232

1233 c) Reporting Requirements

1234 At a minimum, groundwater monitoring analytical results must include
1235 information, procedures and techniques for:

- 1236 1) Sample collection (including but not limited to name of sample collector,
1237 time and date of the sample, method of collection, and identification of the
1238 monitoring location);
- 1239 2) Sample preservation and shipment (including but not limited to field
1240 quality control);
- 1241 3) Analytical procedures (including but not limited to the method detection
1242 limits and the PQLs); and
- 1243 4) Chain of custody control.

1244 (Source: Amended at 36 Ill. Reg. _____, effective _____)
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SUBPART F: HEALTH ADVISORIES

Section 620.605 Issuance of a Health Advisory

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- a) The Agency shall issue a Health Advisory for a chemical substance if all of the following conditions are met:
 - 1) A community water supply well is sampled and a substance is detected and confirmed by resampling;
 - 2) There is no standard under Section 620.410 for such chemical substance; and
 - 3) The chemical substance is toxic or harmful to human health according to the procedures of Appendix A, B, or C.

 - b) The Health Advisory must contain a general description of the characteristics of the chemical substance, the potential adverse health effects, and a guidance level to be determined as follows:
 - 1) If disease or functional impairment is caused due to a physiological mechanism for where there is a threshold dose below which no damage occurs, the guidance level for any such substance shall be the Maximum Contaminant Level Goal ("MCLG"), adopted by USEPA for such substance, 40 CFR 136, appendix B, 40 CFR 141.80, 40 CFR 141.61, and 40 CFR 141.62~~56 Fed. Reg. 26460-26564, 56 Fed. Reg. 3526-3597, and 57 Fed. Reg. 31776-31849~~, incorporated by reference at Section 620.125. If there is no MCLG for the substance, the guidance level is the Human Threshold Toxicant Advisory Concentration for such substance as determined in accordance with Appendix A, unless the concentration for such substance is less than the lowest appropriate PQL specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846 (SW-846), incorporated by reference at Section 620.125 for the substance. If the concentration for such substance is less than the lowest appropriate PQL for the substance specified in SW-846, incorporated by reference at Section 620.125, the guidance level is the lowest appropriate PQL.
 - 2) If the chemical substance is a carcinogen, the guidance level for any such chemical substance is the one-in-one-million cancer risk concentration, unless the concentration for such substance is less than the lowest appropriate PQL specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 (SW-846),

1294 lowest appropriate PQL specified in SW-846, incorporated by reference at
 1295 Section 620.125 for such substance. If the concentration for such
 1296 substance is less than the lowest appropriate PQL for the substance
 1297 specified in SW-846, the guidance level is the lowest appropriate PQL.
 1298 The one-in-one-million cancer risk concentration, the Human
 1299 Nonthreshold Toxicant Advisory Concentration (HNTAC), shall be
 1300 determined according to the following equation:
 1301

$$\frac{HNTC = TR \times BW \times AT \times 365 \text{ days / year}}{(mg / L) \times SF \times IR \times EF \times ED}$$

1303 Where:

- 1304 TR = Target Risk = 1.0E-06
- 1305 BW = Body Weight = 70 kg
- AT = Averaging Time = 70 years
- SFo = Oral Slope Factor = Chemical-specific
- IR = Daily Water Ingestion Rate = 2 liters/day
- EF = Exposure Frequency = 350 days/year
- ED = Exposure Duration = 30 years

1306 (Source: Amended at 36 Ill. Reg. _____, effective _____)
 1307

1308 **Section 620.APPENDIX A Procedures for Determining Human Threshold Toxicant**
 1309 **Advisory Concentration for Class I: Potable Resource Groundwater**

1310
 1311 a) Calculating the Human Threshold Toxicant Advisory Concentration
 1312 For those substances for which USEPA has not adopted a Maximum Contaminant
 1313 Level Goal ("MCLG"), the Human Threshold Toxicant Advisory Concentration is
 1314 calculated as follows:
 1315

1316
$$HTTAC = \frac{RSC \times ADE}{W}$$

1317
 1318 Where:
 1319

- HTTAC = Human Threshold Toxicant Advisory Concentration in milligrams per liter (mg/L);
- RSC = Relative contribution of the amount of the exposure to a chemical via drinking water when compared to the total exposure to that chemical from all sources. Valid chemical-specific data shall be used if available. If valid chemical-specific data are not available, a value of 20% (= 0.20) must be used;
- ADE = Acceptable Daily Exposure of substance in milligrams per day (mg/d) as determined pursuant to subsection (b); and
- W = Per capita daily water consumption equal to 2 liters per day (L/d).

1320
 1321 b) Procedures for Determining Acceptable Daily Exposures for Class I: Potable
 1322 Resource Groundwater

- 1323 1) The Acceptable Daily Exposure (ADE) represents the maximum amount
 1324 of a threshold toxicant in milligrams per day (mg/d), which if ingested
 1325 daily for a lifetime results in no adverse effects to humans. Subsections
 1326 (b)(2) through (b)(6) list, in prescribed order, methods for determining the
 1327 ADE in Class I: Potable Resource Groundwater.
 1328
 1329
- 1330 2) For those substances for which the USEPA has derived a Verified Oral
 1331 Reference Dose for humans, USEPA's Reference Dose given in
 1332 milligrams per kilogram per day (mg/kg/d), as determined in accordance
 1333 with methods provided in National Primary and Secondary Drinking
 1334 Water Regulations, 40 CFR 136, appendix B, 40 CFR 141.80, 40 CFR
 1335 141.61, and 40 CFR 141.62; Final Rule, 56 Fed. Reg. 3526-3597, (January

- 1336 30, 1991), incorporated by reference at Section 620.125, must be used.
1337 The ADE equals the product of multiplying the Reference Dose by 70
1338 kilograms (kg), which is the assumed average weight of an adult human.
1339
- 1340 3) For those substances for which a no observed adverse effect level for
1341 humans (NOAEL-H) exposed to the substance has been derived, the ADE
1342 equals the product of multiplying one-tenth of the NOAEL-H given in
1343 milligrams of toxicant per kilogram of body weight per day (mg/kg/d) by
1344 the average weight of an adult human of 70 kilograms (kg). If two or
1345 more studies are available, the lowest NOAEL-H must be used in the
1346 calculation of the ADE.
1347
- 1348 4) For those substances for which only a lowest observed adverse effect level
1349 for humans (LOAEL-H) exposed to the substance has been derived, one-
1350 tenth the LOAEL-H must be substituted for the NOAEL-H in subsection
1351 (b)(3).
1352
- 1353 5) For those substances for which a no observed adverse effect level has been
1354 derived from studies of mammalian test species (NOAEL-A) exposed to
1355 the substance, the ADE equals the product of multiplying 1/100 of the
1356 NOAEL-A given in milligrams toxicant per kilogram of test species
1357 weight per day (mg/kg/d) by the average weight of an adult human of 70
1358 kilograms (kg). Preference will be given to animal studies having High
1359 Validity, as defined in subsection (c), in the order listed in that subsection.
1360 Studies having a Medium Validity must be considered if no studies having
1361 High Validity are available. If studies of Low Validity must be used, the
1362 ADE must be calculated using 1/1000 of the NOAEL-A having Low
1363 Validity instead of 1/100 of the NOAEL-A of High or Medium Validity,
1364 except as described in subsection (b)(6). If two or more studies among
1365 different animal species are equally valid, the lowest NOAEL-A among
1366 animal species must be used in the calculation of the ADE. Additional
1367 considerations in selecting the NOAEL-A include:
1368
- 1369 A) If the NOAEL-A is given in milligrams of toxicant per liter of
1370 water consumed (mg/L), prior to calculating the ADE the NOAEL-
1371 A must be multiplied by the average daily volume of water
1372 consumed by the mammalian test species in liters per day (L/d/d)
1373 and divided by the average weight of the mammalian test species
1374 in kilograms (kg).
1375
- 1376 B) If the NOAEL-A is given in milligrams of toxicant per kilogram of
1377 food consumed (mg/kg), prior to calculating the ADE, the
1378 NOAEL-A must be multiplied by the average amount in kilograms

1379 of food consumed daily by the mammalian test species (kg/d) and
1380 divided by the average weight of the mammalian test species in
1381 kilograms (kg).
1382

1383 C) If the mammalian test species was not exposed to the toxicant each
1384 day of the test period, the NOAEL-A must be multiplied by the
1385 ratio of days of exposure to the total days of the test period.
1386

1387 D) If more than one equally valid NOAEL-A is available for the same
1388 mammalian test species, the best available data must be used.
1389

1390 6) For those substances for which a NOAEL-A is not available but the lowest
1391 observed adverse effect level (LOAEL-A) has been derived from studies
1392 of mammalian test species exposed to the substance, one-tenth of the
1393 LOAEL-A may be substituted for the NOAEL-A in subsection (b)(5).
1394 The LOAEL-A must be selected in the same manner as that specified in
1395 subsection (b)(5). One-tenth the LOAEL-A from a study determined to
1396 have Medium Validity may be substituted for a NOAEL-A in subsection
1397 (b)(3) if the NOAEL-A is from a study determined to have Low Validity,
1398 or if the toxicity endpoint measured in the study having the LOAEL-A of
1399 Medium Validity is determined to be more biologically relevant than the
1400 toxicity endpoint measured in the study having the NOAEL-A of Low
1401 Validity.
1402

1403 c) Procedures for Establishing Validity of Data from Animal Studies
1404

1405 1) High Validity Studies
1406

1407 A) High validity studies use a route of exposure by ingestion or
1408 gavage, and are based upon:
1409

1410 i) Data from animal carcinogenicity studies with a minimum
1411 of 2 dose levels and a control group, 2 species, both sexes,
1412 with 50 animals per dose per sex, and at least 50 percent
1413 survival at 15 months in mice and 18 months in rats and at
1414 least 25 percent survival at 18 months in mice and 24
1415 months in rats;
1416

1417 ii) Data from animal chronic studies with a minimum of 3
1418 dose levels and a control group, 2 species, both sexes, with
1419 40 animals per dose per sex, and at least 50 percent survival
1420 at 15 months in mice and 18 months in rats and at least 25
1421 percent survival at 18 months in mice and 24 months in

1422 rats, and a well-defined NOAEL; or

1423
1424 iii) Data from animal subchronic studies with a minimum of 3
1425 dose levels and control, 2 species, both sexes, 4 animals per
1426 dose per sex for non-rodent species or 10 animals per dose
1427 per sex for rodent species, a duration of at least 5% of the
1428 test species' lifespan, and a well-defined NOAEL.

1429
1430 B) Supporting studies which reinforce the conclusions of a study of
1431 Medium Validity may be considered to raise such a study to High
1432 Validity.

1433
1434 2) Medium Validity Studies

1435 Medium validity studies are based upon:

1436
1437 A) Data from animal carcinogenicity, chronic, or subchronic studies in
1438 which minor deviations from the study design elements required
1439 for a High Validity Study are found, but which otherwise satisfy
1440 the standards for a High Validity Study;

1441
1442 B) Data from animal carcinogenicity and chronic studies in which at
1443 least 25 percent survival is reported at 15 months in mice and 18
1444 months in rats (a lesser survival is permitted at the conclusion of a
1445 longer duration study, but the number of surviving animals should
1446 not fall below 20 percent per dose per sex at 18 months for mice
1447 and 24 months for rats), but which otherwise satisfy the standards
1448 for a High Validity Study;

1449
1450 C) Data from animal subchronic or chronic studies in which a Lowest
1451 Observable Adverse Effect Level (LOAEL) is determined, but
1452 which otherwise satisfy the standards for a High Validity Study; or

1453
1454 D) Data from animal subchronic or chronic studies which have an
1455 inappropriate route of exposure (for example, intraperitoneal
1456 injection or inhalation) but which otherwise satisfy the standards
1457 for a High Validity Study, with correction factors for conversion to
1458 the oral route.

1459
1460 3) Low Validity Studies

1461 Low validity studies are studies not meeting the standards set forth in
1462 subsection (c)(1) or (c)(2).

1463
1464 (Source: Amended at 36 Ill. Reg. _____, effective _____)

1465 **Section 620.APPENDIX B Procedures for Determining Hazard Indices for Class I:**
 1466 **Potable Resource Groundwater for Mixtures of Similar-Acting Substances**
 1467

1468 a) This appendix describes procedures for evaluating mixtures of similar-acting
 1469 substances which may be present in Class I: Potable Resource Groundwaters.
 1470 Except as provided otherwise in subsection (c), subsections (d) through (h)
 1471 describe the procedure for determining the Hazard Index for mixtures of similar-
 1472 acting substances.
 1473

1474 b) For the purposes of this appendix, a "mixture" means two or more substances
 1475 which are present in Class I: Potable Resource Groundwater which may or may
 1476 not be related either chemically or commercially, but which are not complex
 1477 mixtures of related isomers and congeners which are produced as commercial
 1478 products (for example, PCBs or technical grade chlordane).
 1479

1480 c) The following substances listed in Section 620.410 are mixtures of similar acting
 1481 substances:

1482 1) Mixtures of ortho-Dichlorobenzene and para-Dichlorobenzene. The
 1483 Hazard Index ("HI") for such mixtures is determined as follows:

$$1484 \text{HI} = [\text{ortho-Dichlorobenzene}]^{0.6} + [\text{para-Dichlorobenzene}]^{0.075}$$

1485 2) Mixtures of 1,1-Dichloroethylene and 1,1,1-trichloroethane. The Hazard
 1486 Index ("HI") for such mixtures is determined as follows:

$$1487 \text{HI} = [1,1\text{-Dichloroethylene}]^{0.007} + [1,1,1\text{-trichloroethane}]^{0.2}$$

1488 d) When two or more substances occur together in a mixture, the additivity of the
 1489 toxicities of some or all of the substances will be considered when determining
 1490 health-based standards for Class I: Potable Resource Groundwater. This is done
 1491 by the use of a dose addition model with the development of a Hazard Index for
 1492 the mixture of substances with similar-acting toxicities. This method does not
 1493 address synergism or antagonism. Guidelines for determining when the dose
 1494 addition of similar-acting substances is appropriate are presented in Appendix C.
 1495 The Hazard Index is calculated as follows:
 1496
 1497
 1498
 1499
 1500

$$1501 \text{HI} = [A]^{LA} + [B]^{LB} + \dots [I]^{LI}$$

1502 Where:

1503 HI = Hazard Index, unitless.
 1504
 1505

[A], [B], [I] = Concentration of each similar-acting substance in groundwater in milligrams per liter (mg/L).

ALA, ALB, ALI = The acceptable level of each similar-acting substance in the mixture in milligrams per liter (mg/L).

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e) For substances which are considered to have a threshold mechanism of toxicity, the acceptable level is:

- 1) The standards listed in Section 620.410; or
- 2) For those substances for which standards have not been established in Section 620.410, the Human Threshold Toxicant Advisory Concentration (HTTAC) as determined in Appendix A.

f) For substances ~~that~~^{which} are carcinogens, the acceptable level is:

- 1) The standards listed in Section 620.410; or
- 2) For those substances for which standards have not been established under Section 620.410, the one-in-one-million cancer risk concentration, unless the concentration for such substance is less than the lowest appropriate PQL specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846, incorporated by reference at Section 620.125, for the substance, in which case the lowest appropriate PQL shall be the acceptable level.~~the lowest appropriate PQL of USEPA-approved analytical methods specified in SW-846, incorporated by reference at Section 620.125, for each substance.~~

g) Since the assumption of dose addition is most properly applied to substances that induce the same effect by similar modes of action, a separate HI must be generated for each toxicity endpoint of concern.

h) In addition to meeting the individual substance objectives, a Hazard Index must be less than or equal to 1 for a mixture of similar-acting substances.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 620.APPENDIX C Guidelines for Determining When Dose Addition of Similar-Acting Substances in Class I: Potable Resource Groundwaters is Appropriate

- a) Substances must be considered similar-acting if:
 - 1) The substances have the same target in an organism (for example, the same organ, organ system, receptor, or enzyme).
 - 2) The substances have the same mode of toxic action. These actions may include, for example, central nervous system depression, liver toxicity, or cholinesterase inhibition.
- b) Substances that have fundamentally different mechanisms of toxicity (threshold toxicants vs. carcinogens) must not be considered similar-acting. However, carcinogens which also cause a threshold toxic effect should be considered in a mixture with other similar-acting substances having the same threshold toxic effect. In such a case, an Acceptable Level for the carcinogen must be derived for its threshold effect, using the procedures described in Appendix A.
- c) Substances which are components of a complex mixture of related compounds which are produced as commercial products (for example, PCBs or technical grade chlordane) are not mixtures, as defined in Appendix B. Such complex mixtures are equivalent to a single substance. In such a case, the Human Threshold Toxicant Advisory Concentration may be derived for threshold effects of the complex mixture, using the procedures described in Appendix A, if valid toxicological or epidemiological data are available for the complex mixture. If the complex mixture is a carcinogen, the Health Advisory Concentration is the one-in-one-million cancer risk concentration, unless the concentration for such substance is less than the lowest appropriate PQL specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846, incorporated by reference at Section 620.125, for the substance, in which case the lowest appropriate PQL shall be the Health Advisory Concentration, lowest appropriate PQL of USEPA approved analytical methods specified in SW-846, incorporated by reference at Section 620.125.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

1574 **Section 620.APPENDIX D Confirmation of an Adequate Corrective Action Pursuant to 35**
1575 **Ill. Adm. Code 620.250(a)(2)**

1576
1577 Pursuant to 35 Ill. Adm. Code 620.250(a) if an owner or operator provides a written confirmation
1578 to the Agency that an adequate corrective action, equivalent to a corrective action process
1579 approved by the Agency, is being undertaken in a timely and appropriate manner, then a
1580 groundwater management zone may be established as a three-dimensional region containing
1581 groundwater being managed to mitigate impairment caused by the release of contaminants from
1582 a site. This document provides the form in which the written confirmation is to be submitted to
1583 the Agency.
1584

Note 1. Parts I and II are to be submitted to IEPA at the time that the facility claims the alternative groundwater standards. Part III is to be submitted at the completion of the site investigation. At the completion of the corrective process, a final report is to be filed which includes the confirmation statement included in Part IV.

Note 2. The issuance of a permit by IEPA's Division of Air Pollution Control or Water Pollution Control for a treatment system does not imply that the Agency has approved the corrective action process.

Note 3. If the facility is conducting a cleanup of a unit which is subject to the requirements of the Resource Conservation and Recovery Act (RCRA) or the 35 Ill. Adm. Code 731 regulations for Underground Storage Tanks, this confirmation process is not applicable and cannot be used.

Note 4. If the answers to any of these questions require explanation or clarification, provide such in an attachment to this document.

1585
1586

Part I. Facility Information

Facility Name _____

Facility Address _____

County _____

Standard Industrial Code (SIC) _____

1587
1588 1. Provide a general description of the type of industry, products manufactured, raw
1589 materials used, location and size of the facility.
1590

1591
1592
1593

2. What specific units (operating or closed) are present at the facility which are or were used to manage waste, hazardous waste, hazardous substances or petroleum?

	<u>YES</u>	<u>NO</u>
Landfill	_____	_____
Surface Impoundment	_____	_____
Land Treatment	_____	_____
Spray Irrigation	_____	_____
Waste Pile	_____	_____
Incinerator	_____	_____
Storage Tank (above ground)	_____	_____
Storage Tank (underground)	_____	_____
Container Storage Area	_____	_____
Injection Well	_____	_____
Water Treatment Units	_____	_____
Septic Tanks	_____	_____
French Drains	_____	_____
Transfer Station	_____	_____
Other Units (please describe)	_____	_____
_____	_____	_____
_____	_____	_____

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3. Provide an extract from a USGS topographic or county map showing the location of the site and a more detailed scaled map of the facility with each waste management unit identified in Question 2 or known/suspected source clearly identified. Map scale must be specified and the location of the facility must be provided with respect to Township, Range and Section.

4. Has the facility ever conducted operations which involved the generation, manufacture, processing, transportation, treatment, storage or handling of "hazardous substances" as defined by the Illinois Environmental Protection Act? Yes ___ No ___ If the answer to this question is "yes" generally describe these operations.

5. Has the facility generated, stored or treated hazardous waste as defined by the Resource Conservation and Recovery Act? Yes ___ No ___ If the answer to this question is "yes" generally describe these operations.

6. Has the facility conducted operations which involved the processing, storage or handling of petroleum? Yes ___ No ___ If the answer to this question is "yes" generally describe these operation.

7. Has the facility ever held any of the following permits?

- 1616
- 1617 a. Permits for any waste storage, waste treatment or waste disposal
- 1618 operation. Yes ___ No ___ If the answer to this question is "yes", identify
- 1619 the IEPA permit numbers.
- 1620
- 1621 b. Interim Status under the Resources Conservation and Recovery Act (filing
- 1622 of a RCRA Part A application). Yes ___ No ___ If the answer to this
- 1623 question is "yes", attach a copy of the last approved Part A application.
- 1624
- 1625 c. RCRA Part B Permits. Yes ___ No ___ If the answer to this question is
- 1626 "yes", identify the permit log number.
- 1627
- 1628 8. Has the facility ever conducted the closure of a RCRA hazardous waste
- 1629 management unit? Yes ___ No ___
- 1630
- 1631 9. Have any of the following State or federal government actions taken place for a
- 1632 release at the facility?
- 1633
- 1634 a. Written notification regarding known, suspected or alleged contamination
- 1635 on or emanating from the property (e.g., a Notice pursuant to Section 4(q)
- 1636 of the Environment Protection Act)? Yes ___ No ___ If the to this
- 1637 question is "yes", identify the caption and date of issuance.
- 1638
- 1639 b. Consent Decree or Order under RCRA, CERCLA, EPAct Section 22.2
- 1640 (State Superfund), or EPAct Section 21(f) (State RCRA). Yes ___ No ___
- 1641
- 1642 c. If either of Items a or b were answered by checking "yes", is the notice,
- 1643 order or decree still in effect? Yes ___ No ___
- 1644
- 1645 10. What groundwater classification will the facility be subject to at the completion of
- 1646 the remediation?
- 1647
- 1648 Class I ___ Class II ___ Class III ___ Class IV ___
- 1649 If more than one Class applies, please explain.
- 1650
- 1651 11. Describe the circumstances which the release to groundwater was identified.
- 1652

Based on my inquiry of those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true and accurate.

Facility Name

Signature of Owner/Operator

Location of Facility	Name of Owner/Operator
----------------------	------------------------

EPA Identification Number	Date
---------------------------	------

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PART II: Release Information

1. Identify the chemical constituents release to the groundwater. Attach additional documents as necessary.

Chemical Description

Chemical Abstract No.

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2. Describe how the site will be investigated to determine the source or sources of the release.
3. Describe how groundwater will be monitored to determine the rate and extent of the release.
4. Has the release been contained on-site at the facility?
5. Describe the groundwater monitoring network and groundwater and soil sampling protocols in place at the facility.
6. Provide the schedule for investigation and monitoring.
7. Describe the laboratory quality assurance program utilized for the investigation.
8. Provide a summary of the results of available soil testing and groundwater monitoring associated with the release at the facility. The summary or results should provide the following information: dates of sampling; types of samples taken (soil or water); locations and depths of samples; sampling and analytical methods; analytical laboratories used; chemical constituents for which analyses were performed; analytical detection limits; and concentrations of chemical constituents in ppm (levels below detection should be identified as "ND").

1687 Based on my inquiry of those persons directly responsible for gathering the information, I certify
1688 that the information submitted is, to the best of knowledge and belief, true and accurate and
1689 confirm that the actions identified herein will be undertaken in accordance with the schedule set
1690 forth herein.
1691

Facility Name	Signature of Owner/Operator
Location of Facility	Name of Owner/Operator
EPA Identification Number	Date

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Part III: Remedy Selection Information

1. Describe the selected remedy.
2. Describe other remedies which were considered and why they were rejected.
3. Will waste, contaminated soil or contaminated groundwater be removed from the site in the course of this remediation? Yes ___ No ___ If the answer to this question is "yes", where will the contaminated material be taken?
4. Describe how the selected remedy will accomplish the maximum practical restoration of beneficial use of groundwater.
5. Describe how the selected remedy will minimize any threat to public health or the environment.
6. Describe how the selected remedy will result in compliance with the applicable groundwater standards.
7. Provide a schedule for design, construction and operation of the remedy, including dates for the start and completion.
8. Describe how the remedy will be operated and maintained.
9. Have any of the following permits been issued for the remediation?
 - a. Construction or Operating permit from the Division of Water Pollution Control. Yes ___ No ___
 - b. Land treatment permit from the Division of Water Pollution Control. Yes ___ No ___ If the answer to this question is "yes", identify the permit number.
 - c. Construction or Operating permit from the Division of Air Pollution Control.

1728 Yes ___ No ___ If the answer to this question is "yes", identify the permit
1729 number.

1730
1731 10. How will groundwater at the facility be monitored following completion of the
1732 remedy to ensure that the groundwater standards have been attained?
1733

1734 Based on my inquiry of those persons directly responsible for gathering the information, I
1735 certify that the information submitted is, to the best of my knowledge and belief, true and
1736 accurate and confirm that the actions identified herein will be undertaken in accordance
1737 with the schedule set forth herein.

_____	_____
Facility Name	Signature of Owner/Operator
_____	_____
Location of Facility	Name of Owner/Operator
_____	_____
EPA Identification Number	Date

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1739
1740 PART IV: Completion Certification
1741

1742 This certification must accompany documentation which includes soil and groundwater
1743 monitoring data demonstrating successful completion of the corrective process described in Parts
1744 I-III.
1745

Facility Name _____

Facility Address _____

County _____

Standard Industrial Code (SIC) _____

Date _____

1746
1747 Based on my inquiry of those persons directly responsible for gathering the information, I certify
1748 that an adequate corrective action, equivalent to a corrective action process approved by the
1749 Agency, has been undertaken and that the following restoration concentrations are being met:
1750

<u>Chemical Name</u>	<u>Chemical Abstract No.</u>	<u>Concentration</u>
----------------------	------------------------------	----------------------

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE F: PUBLIC WATER SUPPLIES
CHAPTER I: POLLUTION CONTROL BOARD

PART 620
GROUNDWATER QUALITY

SUBPART A: GENERAL

Section

- 620.105 Purpose
- 620.110 Definitions
- 620.115 Prohibition
- 620.125 Incorporations by Reference
- 620.130 Exemption from General Use Standards and Public and Food Processing Water Supply Standards
- 620.135 Exclusion for Underground Waters in Certain Man-Made Conduits

SUBPART B: GROUNDWATER CLASSIFICATION

Section

- 620.201 Groundwater Designations
- 620.210 Class I: Potable Resource Groundwater
- 620.220 Class II: General Resource Groundwater
- 620.230 Class III: Special Resource Groundwater
- 620.240 Class IV: Other Groundwater
- 620.250 Groundwater Management Zone
- 620.260 Reclassification of Groundwater by Adjusted Standard

SUBPART C: NONDEGRADATION PROVISIONS
FOR APPROPRIATE GROUNDWATERS

Section

- 620.301 General Prohibition Against Use Impairment of Resource Groundwater
- 620.302 Applicability of Preventive Notification and Preventive Response Activities
- 620.305 Preventive Notification Procedures
- 620.310 Preventive Response Activities

SUBPART D: GROUNDWATER QUALITY STANDARDS

Section

- 620.401 Applicability
- 620.405 General Prohibitions Against Violations of Groundwater Quality Standards
- 620.410 Groundwater Quality Standards for Class I: Potable Resource Groundwater
- 620.420 Groundwater Quality Standards for Class II: General Resource Groundwater
- 620.430 Groundwater Quality Standards for Class III: Special Resource Groundwater
- 620.440 Groundwater Quality Standards for Class IV: Other Groundwater
- 620.450 Alternative Groundwater Quality Standards

SUBPART E: GROUNDWATER MONITORING AND ANALYTICAL PROCEDURES

Section



620.505 Compliance Determination
620.510 Monitoring and Analytical Requirements

SUBPART F: HEALTH ADVISORIES

Section

620.601 Purpose of a Health Advisory
620.605 Issuance of a Health Advisory
620.610 Publishing Health Advisories
620.615 Additional Health Advice for Mixtures of Similar-Acting Substances

620. ~~Appendix A Procedures~~ APPENDIX A Procedures for Determining Human Threshold Toxicant Advisory Concentration for Class I: Potable Resource Groundwater

620. ~~Appendix B Procedures~~ APPENDIX B Procedures for Determining Hazard Indices for Class I: Potable Resource Groundwater for Mixtures of Similar-Acting Substances

620. ~~Appendix C Guidelines~~ APPENDIX C Guidelines for Determining When Dose Addition of Similar-Acting Substances in Class I: Potable Resource Groundwaters is Appropriate

620. ~~Appendix D Confirmation~~ APPENDIX D Confirmation of an Adequate Corrective Action Pursuant to 35 Ill. Adm. Code 620.250(a)(2)

AUTHORITY: Implementing and authorized by Section 8 of the Illinois Groundwater Protection Act [415 ILCS 55/8] and authorized by Section 27 of the Illinois Environmental Protection Act [415 ILCS 5/27].

SOURCE: Adopted in R89-14(B) at 15 Ill. Reg. 17614, effective November 25, 1991; amended in R89-14(C) at 16 Ill. Reg. 14667, effective September 11, 1992; amended at 18 Ill. Reg. 14084, effective August 24, 1994; amended in R96-10 at 21 Ill. Reg. 6518, effective May 8, 1997; amended in R97-11 at 21 Ill. Reg. 7869, effective July 1, 1997; amended in R01-14 at 26 Ill. Reg. 2662, effective February 5, 2002; amended in R08-18 at 36 Ill. Reg. _____, effective _____.

SUBPART A: GENERAL

Section 620.110 Definitions

The definitions of the Environmental Protection Act [415 ILCS 5] and the Groundwater Protection Act [415 ILCS 55] apply to this Part. The following definitions also apply to this Part.

"Act" means the Environmental Protection Act [415 ILCS 5].

"Agency" means the Illinois Environmental Protection Agency.

"Aquifer" means saturated (with groundwater) soils and geologic materials which are sufficiently permeable to readily yield economically useful quantities of water to wells, springs, or streams under ordinary hydraulic gradients. [415 ILCS 55/3(b)]

"BETX" means the sum of the concentrations of benzene, ethylbenzene, toluene, and xylenes.

"Board" means the Illinois Pollution Control Board.

"Carcinogen" means a contaminant that is classified as a Category A1 or A2 Carcinogen by the American Conference of Governmental Industrial Hygienists; or a Category 1 or 2A/2B carcinogen by the World Health Organization's International Agency for Research on Cancer; or a "Human carcinogen" or "Anticipated Human Carcinogen" by the United States Department of Health and Human Service National Toxicological Program; or a Category A or B1/B2 Carcinogen by the United States Environmental Protection Agency in Integrated Risk Information System or a Final Rule issued in a Federal Register notice by the USEPA. [415 ILCS 5/58.2]

"Community water supply" means a public supply which serves or is intended to serve at least 15 service connections used by residents or regularly serves at least 25 residents. [415 ILCS 5/3.145-3.05]

"Contaminant" means any solid, liquid, or gaseous matter, any odor, or any form of energy, from whatever source. [415 ILCS 5/3.165-3.06]

"Corrective action process" means those procedures and practices that may be imposed by a regulatory agency when a determination has been made that contamination of groundwater has taken place, and are necessary to address a potential or existing violation of the standards set forth in Subpart D.

"Cumulative impact area" means the area, including the coal mine area permitted under the Surface Coal Mining Land Conservation and Reclamation Act [225 ILCS 720] and 62 Ill. Adm. Code 1700 through 1850, within which impacts resulting from the proposed operation may interact with the impacts of all anticipated mining on surface water and groundwater systems.

"Department" means the Illinois Department of Natural Resources.

"Detection" means the identification of a contaminant in a sample at a value equal to or greater than the:

"Method Detection Limit" or "MDL" means the minimum concentration of a substance that can be measured as reported with 99 percent confidence that the true value is greater than zero, pursuant to 40 CFR 136, Appendix appendix B (2006) ~~56 Fed. Reg. 3526-3597,~~ incorporated by reference at Section 620.125; or

"Method Quantitation Limit" or "MQL" means the minimum concentration of a substance that can be measured and reported pursuant to "Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods", incorporated by reference at Section 620.125.

"Groundwater" means underground water which occurs within the saturated zone and geologic materials where the fluid pressure in the pore space is equal to or greater than atmospheric pressure. [415 ILCS 5/3.210-3.64]

"Hydrologic balance" means the relationship between the quality and quantity of water inflow to, water outflow from, and water storage in a hydrologic unit such as a drainage basin, aquifer, soil zone, lake, or reservoir. It encompasses the dynamic relationships among precipitation, runoff, evaporation, and changes in ground and surface water storage.

"IGPA" means the Illinois Groundwater Protection Act ~~7~~ [415 ILCS 55] 1.

"LOAEL" or "Lowest observable adverse effect level" means the lowest tested concentration of a chemical or substance that produces a statistically significant increase in frequency or severity of non-overt adverse effects between the exposed population and its appropriate control. LOAEL may be determined for a human population (LOAEL-H) or an animal population (LOAEL-A).

"Licensed Professional Engineer" or "LPE" means a person, corporation, or partnership licensed under the laws of the State of Illinois to practice professional engineering. [415 ILCS 5/57.2]

"Licensed Professional Geologist" or "LPG" means an individual who is licensed under the Professional Geologist Licensing Act to engage in the practice of professional geology in Illinois.—(~~Professional Geologist Licensing Act~~ [225 ILCS 745/15] †)

"NOAEL" or "No observable adverse effect level" means the highest tested concentration of a chemical or substance that does not produce a statistically significant increase in frequency or severity of non-overt adverse effects between the exposed population and its appropriate control. NOAEL may be determined for a human population (NOAEL-H) or an animal population (NOAEL-A).

"Non-community water supply" means a public water supply that is not a community water supply. [415 ILCS 5/3.145—3.05]

"Off-site" means not on-site.

"On-site" means on the same or geographically contiguous property that may be divided by public or private right-of-way, provided the entrance and exit between properties is at a crossroads intersection and access is by crossing as opposed to going along the right-of-way. Noncontiguous properties owned by the same person but connected by a right-of-way that he controls and that the public does not have access to is also considered on-site property.

"Operator" means the person responsible for the operation of a site, facility or unit.

"Owner" means the person who owns a site, facility or unit or part of a site, facility or unit, or who owns the land on which the site, facility or unit is located.

"Potable" means generally fit for human consumption in accordance with accepted water supply principles and practices. [415 ILCS 5/3.340—3.65]

"Potential primary source" means any unit at a facility or site not currently subject to a removal or remedial action which:

Is utilized for the treatment, storage, or disposal of any hazardous or special waste not generated at the site; ~~exIsor~~

Is utilized for the disposal of municipal waste not generated at the site, other than landscape waste and construction and demolition debris; ~~exIsor~~

Is utilized for the landfilling, land treating, surface impounding or piling of any hazardous or special waste that is generated on the site or at other sites owned, controlled or operated by the same person; ~~exStoresor~~

Stores or accumulates at any time more than 75,000 pounds above ground, or more than 7,500 pounds below ground, of any hazardous substances. [415 ILCS 5/3.345-~~3.59~~]

"Potential route" means abandoned and improperly plugged wells of all kinds, drainage wells, all injection wells, including closed loop heat pump wells, and any excavation for the discovery, development or production of stone, sand or gravel. This term does not include closed loop heat pump wells using USP food grade propylene glycol. [415 ILCS 5/3.350-~~3.58~~]

"Potential secondary source" means any unit at a facility or a site not currently subject to a removal or remedial action, other than a potential primary source, which:

Is utilized for the landfilling, land treating, or surface impounding of waste that is generated on the site or at other sites owned, controlled or operated by the same person, other than livestock and landscape waste, and construction and demolition debris; ~~exStoresor~~

Stores or accumulates at any time more than 25,000 but not more than 75,000 pounds above ground, or more than 2,500 but not more than 7,500 pounds below ground, of any hazardous substance; ~~exStoresor~~

Stores or accumulates at any time more than 25,000 gallons above ground, or more than 500 gallons below ground, of petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance; ~~exStoresor~~

Stores or accumulates pesticides, fertilizers, or road oils for purposes of commercial application or for distribution to retail sales outlets; ~~exStoresor~~

Stores or accumulates at any time more than 50,000 pounds of any de-icing agent; or ~~is~~

Is utilized for handling livestock waste or for treating domestic wastewaters other than private sewage disposal systems as defined in the Private Sewage Disposal Licensing Act [225 ILCS 225]. [415 ILCS 5/3.355-~~3.60~~]

"Practical Quantitation Limit" or "PQL" means the lowest concentration or level that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions in accordance with "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846, incorporated by reference at Section 620.125.

"Previously mined area" means land disturbed or affected by coal mining operations prior to February 1, 1983.

BOARD NOTE: February 1, 1983, is the effective date of the Illinois permanent program regulations implementing the Surface Coal Mining Land Conservation and Reclamation Act [225 ILCS 720] as codified in 62 Ill. Adm. Code 1700 through 1850.

"Property class" means the class assigned by a tax assessor to real property for purposes of real estate taxes.

BOARD NOTE: The property class (rural property, residential vacant land, residential with dwelling, commercial residence, commercial business, commercial office, or industrial) is identified on the property record card maintained by

the tax assessor in accordance with the Illinois Real Property Appraisal Manual (February 1987), published by the Illinois Department of Revenue, Property Tax Administration Bureau.

"Public water supply" means all mains, pipes and structures through which water is obtained and distributed to the public, including wells and well structures, intakes and cribs, pumping stations, treatment plants, reservoirs, storage tanks and appurtenances, collectively or severally, actually used or intended for use for the purpose of furnishing water for drinking or general domestic use and which serve at least 15 service connections or which regularly serve at least 25 persons at least 60 days per year. A public water supply is either a "community water supply" or a "non-community water supply". [415 ILCS 5/3.365-~~3.28~~]

"Regulated entity" means a facility or unit regulated for groundwater protection by any State or federal agency.

"Regulatory agency" means the Illinois Environmental Protection Agency, Department of Public Health, Department of Agriculture, the Office of Mines and Minerals in the Department of Natural Resources, and the Office of State Fire Marshal.

"Regulated recharge area" means a compact geographic area, as determined by the Board pursuant to Section 17.4 of the Act, the geology of which renders a potable resource groundwater particularly susceptible to contamination. [415 ILCS 5/3.390-~~3.67~~]

"Resource groundwater" means groundwater that is presently being, or in the future is capable of being, put to beneficial use by reason of being of suitable quality. [415 ILCS 5/3.430-~~3.66~~]

"Saturated zone" means a subsurface zone in which all the interstices or voids are filled with water under pressure greater than that of the atmosphere.

"Setback zone" means a geographic area, designated pursuant to this Act, containing a potable water supply well or a potential source or potential route having a continuous boundary, and within which certain prohibitions or regulations are applicable in order to protect groundwaters. [415 ILCS 5/3.450-~~3.61~~]

"Site" means any location, place, tract of land and facilities, including but not limited to, buildings and improvements used for the purposes subject to regulation or control by the Act or regulations thereunder. [415 ILCS 5/3.460-~~3.43~~]

"Spring" means a natural surface discharge of an aquifer from rock or soil.

"Threshold dose" means the lowest dose of a chemical at which a specified measurable effect is observed and below which it is not observed.

"Treatment" means the technology, treatment techniques, or other procedures for compliance with 35 Ill. Adm. Code, Subtitle F.

"Unit" means any device, mechanism, equipment, or area (exclusive of land utilized only for agricultural production). [415 ILCS 5/3.515-~~3.62~~]

"USEPA" means the United States Environmental Protection Agency.

"Wellhead ~~Protection Area~~" ~~(protection area or "WHPA")~~ means the surface and subsurface recharge area surrounding a community water supply well or well field, delineated outside of any applicable setback zones (pursuant to Section 17.1 of the Act ~~([415 ILCS 5/17.1])~~), and pursuant to Illinois' Wellhead Protection Program, through which contaminants are reasonably likely to move toward such well or well field.

"Wellhead ~~protection program~~Protection Program" or "WHPP" means the wellhead protection program for the State of Illinois, approved by USEPA under 42 USC 300h-7.

BOARD NOTE: Derived from 40 CFR 141.71(b) (2003). The wellhead protection program includes the "groundwater protection needs assessment" under Section 17.1 of the Act ~~([415 ILCS 5/17.1])~~ and 35 Ill. Adm. Code 615-617.

(Source: Amended at 36 Ill. Reg. , effective)

Section 620.125 Incorporations by Reference

a) The Board incorporates the following material by reference:

ASTM International. 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959 (610) 832-9500. ~~ASTM. American Society for Testing and Materials, 1976 Race Street, Philadelphia, Pa. 19103 (215) 299-5585~~

"Standard Practice for Classification of Soils for Engineering Purposes (Unified Classification System)" ASTM D2487-~~06~~ ~~"Standard Practice for Description and Identification of Soils (Visual Manual Procedure)" D2488-84~~06.

CFR (Code of Federal Regulations). Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (202) 783-3238.

Method Detection Limit Definition, ~~Appendix~~appendix B to Part 136, 40 CFR 136, ~~Appendix~~appendix B (2006).

Control of Lead and Copper, general requirements, 40 CFR 141.80 (2006).

Maximum contaminant levels for organic contaminants, 40 CFR 141.61 (2006).

Maximum contaminant levels for inorganic contaminants, 40 CFR 141.62 (2006).

Maximum contaminant levels for radionuclides, 40 CFR 141.66 (2006).

GPO. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. ~~20401~~, 20401 (202) 783-3238)

~~Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper, Final Rule, 56 Fed. Reg. 26460-26564 (June 7, 1991). National Primary Drinking Water Regulations, Final Rule, 56 Fed. Reg. 3526-3597 (January 30, 1991). National Primary Drinking Water Regulations, Final Rule, 57 Fed. Reg. 31776-31849 (July 17, 1992).~~

USEPA
Guidelines for Carcinogenic Risk Assessment, 51 Fed. Reg. 33992-34003 (September 24, 1986).

Illinois Environmental Protection Agency, 1020 North Grand Avenue East, P.O. Box 19276, Springfield, IL 62794-9276 (217) 785-4787.

"Guidance Document for Groundwater Protection Needs Assessments," Agency, Illinois State Water Survey, and Illinois State Geologic Survey Joint Report, January 1995.

"The Illinois Wellhead Protection Program Pursuant to Section 1428 of the Federal Safe Drinking Water Act," Agency, # 22480, October 1992.

NCRP. National Council on Radiation Protection, 7910 Woodmont Ave., Bethesda, MD (301) 657-2652. ~~(301) 657-6252~~

"Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure", NCRP Report Number 22, June 5, 1959.

NTIS. National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 (703) 605-~~6000(703) 487-4600~~. 6000.

~~"Methods for Chemical Analysis of Water and Wastes," EPA Publication No. EPA-600/4-79-020, (March 1983), Doc. No. PB 84-128677 "Methods for the Determination of Organic Compounds in Drinking Water", EPA, EMSL, EPA 600/4-88/039 (Dec. 1988), Doc. No. PB 89-220461~~ "Methods for Chemical Analysis of Water and Wastes," March 1983, Doc. No. PB84-128677. EPA 600/4-79-020 (available online at <http://nepis.epa.gov/>).

"Methods for the Determination of Inorganic Substances in Environmental Samples," August 1993, PB94-120821 (referred to as "USEPA Environmental Inorganic Methods"). EPA 600/R-93-100 (available online at <http://nepis.epa.gov/>).

"Methods for the Determination of Metals in Environmental Samples," June 1991, Doc. No. PB91-231498. EPA 600/4-91-010 (available online at <http://nepis.epa.gov/>).

"Methods for the Determination of Metals in Environmental Samples - Supplement I," May 1994, Doc. No. PB95-125472. EPA 600/R-94-111 (available online at <http://nepis.epa.gov/>).

"Methods for the Determination of Organic Compounds in Drinking Water," Doc. No. PB91-231480. EPA/600/4-88/039 (December 1988 (revised July 1991)) (available online at <http://nepis.epa.gov/>).

"Methods for the Determination of Organic Compounds in Drinking Water, Supplement I," Doc. No. PB91-146027. EPA/600/4-90/020 (July 1990) (available online at <http://nepis.epa.gov/>).

"Methods for the Determination of Organic Compounds in Drinking Water, Supplement II," Doc. No. PB92-207703. EPA/600/R-92/129 (August 1992) (available online at <http://nepis.epa.gov/>).

"Methods for the Determination of Organic Compounds in Drinking Water, Supplement III," Doc. No. PB95-261616. EPA/600/R-95/131 (August 1995) (available online at <http://nepis.epa.gov/>).

"Methods for the Determination of Organic and Inorganic Compounds in Drinking Water+" Volume I: EPA 815-R-00-014 (August 2000) (available online at <http://nepis.epa.gov/>).

"Prescribed Procedures for Measurement of Radioactivity in Drinking Water," Doc. No. PB80-224744. EPA 600/4-80-032, (August 1980) (available online at <http://nepis.epa.gov/>).

"Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions," H.L. Krieger and S. Gold, Doc. No. PB222-154/7BA. EPA-R4-73-014, May 1973.

"Radiochemical Analytical Procedures for Analysis of Environmental Samples," March 1979, Doc. No. EMSL LV 053917.

"Radiochemistry Procedures Manual," Doc. No. PB-84-215581. EPA-520/5-84-006, December 1987.

"Practical Guide for Ground-Water Sampling", EPA Publication No. EPA/600/2-85/104 (September 1985), Doc. ~~No.~~ No. PB 86-137304

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," USEPA Publication No. SW-846, as amended by Updates ~~Updates~~ I, II, IIA, IIB, III, IIIA, and IIIB (~~Third Edition, Final Update IIIA, April 1998~~), as amended by ~~Updates I, IIA, III, and IIIA (Doc. No. Doc. No. 955-001-00000-1)~~, (available ~~online~~ on line at <http://www.epa.gov/epaoswer/hazwaste/test/main.htm>). ~~"Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846 (Third Edition, 1986, as amended by Revision I, Final Update I, July 1992, Doc. No. PB-89-148076~~

USGS. United States Geological Survey, 1961 Stout St., Denver, CO 80294 (303) 844-4169

"Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground-Water Samples for Selected Unstable Constituents", Book I, Chapter D2 (1976) ~~(1981)~~.

b) This Section incorporates no later editions or amendments.

~~(Source: Amended at 36 Ill. Reg. _____, effective _____)~~

~~SUBPART B: GROUNDWATER CLASSIFICATION~~

~~Section 620.201 Groundwater Designations~~

~~All groundwaters of the State are designated as:~~

~~a) One of the following four classes of groundwater in accordance with Sections 620.210 through 620.240:~~

- ~~1) Class I: Potable Resource Groundwater;~~
- ~~2) Class II: General Resource Groundwater;~~
- ~~3) Class III: Special Resource Groundwater;~~
- ~~4) Class IV: Other Groundwater;~~

~~b) A groundwater management zone in accordance with Section 620.250; or~~

~~e) A groundwater management zone as defined in 35 Ill. Adm. Code 740.120 and established under 35 Ill. Adm. Code 740.530.~~

(Source: Amended at 36 Ill. Reg. _____, effective _____)

SUBPART B: GROUNDWATER CLASSIFICATION

Section 620.210 Class I: Potable Resource Groundwater

Except as provided in Sections 620.230, 620.240, or 620.250, Potable Resource Groundwater is:

a) Groundwater located 10 feet or more below the land surface and within:

1) The minimum setback zone of a well which serves as a potable water supply and to the bottom of such well;

2) Unconsolidated sand, gravel or sand and gravel which is 5 feet or more in thickness and that contains 12 percent or less of fines (i.e. fines which pass through a No. 200 sieve tested according to ASTM Standard Practice D2487-~~06~~ ~~D2488-84~~, 06, incorporated by reference at Section 620.125);

3) Sandstone which is 10 feet or more in thickness, or fractured carbonate which is 15 feet or more in thickness; or

4) Any geologic material which is capable of a:

A) Sustained groundwater yield, from up to a 12 inch borehole, of 150 gallons per day or more from a thickness of 15 feet or less; or

B) Hydraulic conductivity of 1×10^{-4} cm/sec or greater using one of the following test methods or its equivalent:

i) Permeameter;

ii) Slug test; or

iii) Pump test.

b) Any groundwater which is determined by the Board pursuant to petition procedures set forth in Section 620.260, to be capable of potable use.

BOARD NOTE: ~~(Board Note:—~~Any portion of the thickness associated with the geologic materials as described in subsections 620.210(a)(2), (a)(3) or (a)(4) should be designated as Class I: Potable Resource Groundwater if located 10 feet or more below the land surface.~~†~~

(Source: Amended at 36 Ill. Reg. _____, effective _____)

SUBPART C: NONDEGRADATION PROVISIONS FOR APPROPRIATE GROUNDWATERS

Section 620.302 Applicability of Preventive Notification and Preventive Response Activities

a) Preventive notification and preventive response as specified in Sections 620.305 through 620.310 applies to:

1) Class I groundwater under Section 620.210(a)(1), (a)(2), or (a)(3) ~~which~~that is monitored by the persons listed in subsection (b); or

2) Class III groundwater ~~which~~that is monitored by the persons listed in subsection (b).

b) For purposes of subsection (a), the persons that conduct groundwater monitoring are:

1) An owner or operator of a regulated entity for which groundwater quality monitoring must be performed pursuant to State or Federal law or regulation (e.g., ~~Section~~section 106 and 107 of the Comprehensive Environmental Response, Compensation and Liability Act (42 ~~U.S.C.~~USC 9601, et seq.); ~~Sections~~sections 3004 and 3008 of the Resource Conservation and Recovery Act (42 ~~U.S.C.~~USC 6901, et seq.); ~~Sections~~sections 4(g), 4(v), 12(g), 21(d), 21(f), 22.2(f), 22.2(m) and 22.18 of the Act; 35 Ill. Adm. Code 724, 725, 730, 731, 750, 811 and 814);

2) An owner or operator of a public water supply well who conducts groundwater quality monitoring;

3) A ~~state~~State agency ~~which~~that is authorized to conduct, or is the recipient of, groundwater quality monitoring data (e.g., Illinois Environmental Protection Agency, Department of Public Health, Department of ~~Conservation,~~ ~~Department of Mines and Minerals,~~ ~~Department of~~ Agriculture, Office of State Fire Marshal or Department of ~~Energy and~~ Natural Resources); or

4) An owner or operator of a facility that conducts groundwater quality monitoring pursuant to State or federal judicial or administrative order.

c) If a contaminant exceeds a standard set forth in Section 620.410 or Section 620.430, the appropriate remedy is corrective action and Sections 620.305 and 620.310 do not apply.

(Source: Amended at 36 Ill. Reg. , effective)

Section 620.310 Preventive Response Activities

a) The following preventive assessment must be undertaken:

1) If a preventive notification under Section 620.305(c) is provided by a community water supply:

A) The Agency shall notify the owner or operator of any identified potential primary source, potential secondary source, potential route, or community water supply well that is located within 2,500 feet of the wellhead.

B) The owner or operator notified under subsection (a)(1)(A) shall, within 30 days after the date of issuance of such notice, sample each water well or monitoring well for the contaminant identified in the notice if the contaminant or material containing such contaminant is or has been stored, disposed of, or otherwise handled at the site. If a contaminant identified under Section 620.305(a) is detected, then the well must be resampled within 30 days of the date on which the first sample analyses are received. If a contaminant

identified under Section 620.305(a) is detected by the resampling, preventive notification must be given as set forth in Section 620.305.

C) If the Agency receives analytical results under subsection (a)(1)(B) that show a contaminant identified under Section 620.305(a) has been detected, the Agency shall:

i) Conduct a well site survey pursuant to 415 ILCS 5/17.1(d), if such a survey has not been previously conducted within the last 5 years; and

ii) Identify those sites or activities that represent a hazard to the continued availability of groundwaters for public use unless a groundwater protection needs assessment has been prepared pursuant to 415 ILCS 5/17.1(d).

2) If a preventive notification is provided under Section 620.305(c) by a non-community water supply or for multiple private water supply wells, the Department of Public Health shall conduct a sanitary survey within 1,000 feet of the wellhead of a non-community water supply or within 500 feet of the wellheads for multiple private water supply wells.

3) If a preventive notification under Section 620.305(b) is provided by the owner or operator of a regulated entity and the applicable standard in Subpart D has not been exceeded:

A) The appropriate regulatory agency shall determine if any of the following occurs for Class I: Potable Resource Groundwater:

i) The levels set forth below are exceeded or are changed for pH:

Constituent Criteria (mg/L) Para-Dichlorobenzene 0.005 Ortho-Dichlorobenzene 0.01 Ethylbenzene 0.03 Methyl Tertiary-Butyl Ether (MTBE) 0.02 Phenols 0.001 Styrene 0.01 Toluene 0.04 Xylenes 0.02

ii) A statistically significant increase occurs above background (as determined pursuant to other regulatory procedures (e.g., 35 Ill. Adm. Code 616, 724, 725 or 811)) for arsenic, beryllium, cadmium, chromium, cyanide, lead, mercury, ~~or~~ thallium, or vanadium (except due to natural causes); or for acenaphthene, acetone, aldicarb, anthracene, atrazine, benzoic acid, carbon disulfide, carbofuran, dalapon, 2-butanone (MEK), dicamba, dichlorodifluoromethane, 1,1-dichloroethane, diethyl phthalate, di-n-butyl phthalate, dinoseb, endrin, endothall, fluoranthene, fluorine, hexachlorocyclopentadiene, isopropylbenzene (cumene), lindane (gamma-hexachloro cyclohexane), 2,4-D, 1,1 - dichloroethylene, ~~cis-1,2~~cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, MCPP (mecoprop), 2-methylnaphthalene, methoxychlor, 2-methylphenol, monochlorobenzene, naphthalene, picloram, pyrene, simazine, 2,4,5-TP (~~s~~Silvex~~silvex~~), 1,2,4-~~trichloro-benzen~~trichlorobenzene, 1,1,2-trichloroethane, ~~and~~ 1,1,1-trichloroethane, and trichlorofluoromethane.

iii) For a chemical constituent of gasoline, diesel fuel, or heating fuel, the constituent exceeds the following:

Constituent Criterion (mg/L) BETX 0.095

iv) For pH, a statistically significant change occurs from background.

BOARD NOTE: Constituents that are carcinogens have not been listed in subsection (a)(3)(A) because the standard is set at the PQL and any exceedence thereof is a violation subject to corrective action.

B) The appropriate agency shall determine if, for Class III: Special Resource Groundwater, the levels as determined by the Board are exceeded.

C) The appropriate regulatory agency shall consider whether the owner or operator reasonably demonstrates that:

i) The contamination is a result of contaminants remaining in groundwater from a prior release for which appropriate action was taken in accordance with laws and regulations in existence at the time of the release;

ii) The source of contamination is not due to the on-site release of contaminants; or

iii) The detection resulted from error in sampling, analysis, or evaluation.

D) The appropriate regulatory agency shall consider actions necessary to minimize the degree and extent of contamination.

b) The appropriate regulatory agency shall determine whether a preventive response must be undertaken based on relevant factors including, but not limited to, the considerations in subsection (a) (3).

c) After completion of preventive response pursuant to authority of an appropriate regulatory agency, the concentration of a contaminant listed in subsection (a) (3) (A) in groundwater may exceed 50 percent of the applicable numerical standard in Subpart D only if the following conditions are met:

1) The exceedence has been minimized to the extent practicable;

2) Beneficial use, as appropriate for the class of groundwater, has been assured; and

3) Any threat to public health or the environment has been minimized.

d) Nothing in this Section shall in any way limit the authority of the State or of the United States to require or perform any corrective action process.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

SUBPART D: GROUNDWATER QUALITY STANDARDS

Section 620.410 Groundwater Quality Standards for Class I: Potable Resource Groundwater

a) Inorganic Chemical Constituents

Except due to natural causes or as provided in Section 620.450, concentrations of the following chemical constituents must not be exceeded in Class I groundwater:

Constituent	Units	Standard
Antimony	mg/L	0.006
Arsenic	*mg/L	0.01 0.05 <u>0.010</u>
Barium	mg/L	2.0
Beryllium	mg/L	0.004
Boron	mg/L	2.0
Cadmium	mg/L	0.005
Chloride	mg/L	200.0
Chromium	mg/L	0.1
Cobalt	mg/L	1.0
Copper	mg/L	0.65
Cyanide	mg/L	0.2
Fluoride	mg/L	4.0
Iron	mg/L	5.0
Lead	mg/L	0.0075
Manganese	mg/L	0.15
Mercury	mg/L	0.002
Nickel	mg/L	0.1
Nitrate as N	mg/L	10.0
Perchlorate	mg/L	0.0049
Radium-226	pCi/l	20.0
Radium-228	pCi/l	20.0
Selenium	mg/L	0.05
Silver	mg/L	0.05
Sulfate	mg/L	400.0
Thallium	mg/L	0.002
Total Dissolved Solids (TDS)	mg/L	2,000
Vanadium	mg/L	0.049
Zinc	mg/L	5.0

*Denotes a carcinogen.

b) Organic Chemical Constituents

Except due to natural causes or as provided in Section 620.450 or subsection ~~I~~(c), concentrations of the following organic chemical constituents shall not be exceeded in Class I groundwater:

Constituent Standard

(mg/L) Acenaphthene 0.42 Acetone 6.3 Alachlor* 0.002 Aldicarb 0.003 Anthracene 2.1 Atrazine 0.003 Benzene* 0.005 Benzo(a)anthracene* 0.00013 Benzo(b)fluoranthene* 0.00018 Benzo(k)fluoranthene* 0.00017 Benzo(a)pyrene* 0.0002 Benzoic acid 28.02-Butanone (MEK) 4.2 Carbofuran 0.04 Carbon Disulfide 0.7 Carbon Tetrachloride* 0.005 Chlordane* 0.002 Chloroform* 0.07 Chrysene* 0.012 Dalapon 0.2 Dibenzo(a,h)anthracene* 0.0003 Dicamba 0.21 Dichlorodifluoromethane 1.41,1-Dichloroethane 1.4 Dichloromethane* 0.005 Di(2-ethylhexyl)phthalate* 0.006 Diethyl Phthalate 5.6 Di-n-butyl Phthalate 0.7 Dinoseb 0.007 Endothal 0.1 Endrin 0.002 Ethylene Dibromide* 0.00005 Fluoranthene 0.28 Fluorene 0.28 Heptachlor* 0.0004 Heptachlor Epoxide* 0.0002 Hexachlorocyclopentadiene 0.05 Indeno(1,2,3-cd)pyrene* 0.00043 Isopropylbenzene (Cumene) 0.7 Lindane (Gamma-Hexachlorocyclohexane) 0.00022,4-D0.07 ortho-Dichlorobenzene 0.6 para-Dichlorobenzene 0.07 1,2-Dibromo-3-Chloropropane* 0.00021,2-Dichloroethane* 0.005 1,1-Dichloroethylene 0.007 cis-1,2-Dichloroethylene 0.07 trans-1,2-Dichloroethylene 0.11,2-Dichloropropane* 0.005 Ethylbenzene 0.7 MCPP (Mecoprop) 0.007 Methoxychlor 0.04 2-Methylnaphthalene 0.02 82-Methylphenol 0.35 Methyl Tertiary-Butyl Ether (MTBE) 0.07 Monochlorobenzene 0.1 Naphthalene 0.14 P-Dioxane* 0.0077 Pentachlorophenol* 0.001 Phenols 0.1 Picloram 0.5 Pyrene 0.21 Polychlorinated Biphenyls (PCBs) (as decachloro-biphenyl)* 0.0005 alpha-BHC (alpha-Benzene hexachloride)* 0.00011 Simazine 0.004 Styrene 0.12,4,5-TP (Silvex) 0.05 Tetrachloroethylene* 0.005 Toluene 1.0 Toxaphene* 0.003 1,1,1-Trichloroethane 0.21,1,2-Trichloroethane 0.005 1,2,4-Trichlorobenzene 0.07 Trichloroethylene* 0.005 Trichlorofluoromethane 2.1 Vinyl Chloride* 0.002 Xylenes 10.0 *Denotes a carcinogen.

c) Explosive Constituents

Concentrations of the following explosive constituents must not exceed the Class I groundwater standard:

Constituent	Standard	Constituent	Standard (mg/L)
1,3-Dinitrobenzene	0.0007	2,4,6-Dinitrotoluene*	2,4,6-0.00072,4-
Dinitrotoluene*	0.0001	0.00031 HMX (High Melting Explosive, Octogen)	
0.00031		1.4 Nitrobenzene	0.014
Explosive, Cyclonite)	0.084	RD (Royal Demolition Explosive, Cyclonite)	
1,3,5-0.0841,3,5-		Trinitrobenzene	0.84
Trinitrotoluene (TNT)	0.014	2,4,6-Dinitrotoluene*	2,4,6-0.842,4,6-

*Denotes a carcinogen.

d) ~~e)~~ Complex Organic Chemical Mixtures

Concentrations of the following chemical constituents of gasoline, diesel fuel, or heating fuel must not be exceeded in Class I groundwater:

Constituent Standard (mg/L) Benzene* 0.005 BETX 11.705 *Denotes a carcinogen.

e) ~~d)~~ pH

Except due to natural causes, a pH range of 6.5 - 9.0 units must not be exceeded in Class I groundwater.

f) ~~e~~ Beta Particle and Photon Radioactivity

1) Except due to natural causes, the average annual concentration of beta particle and photon radioactivity from man-made radionuclides shall not exceed a dose equivalent to the total body organ greater than 4 mrem/year in Class I groundwater. If two or more radionuclides are present, the sum of their dose equivalent to the total body, or to any internal organ shall not exceed 4 mrem/year in Class I groundwater except due to natural causes.

2) Except for the radionuclides listed in subsection (e) (3), the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalent must be calculated on the basis of a 2 liter per day drinking water intake using the 168-hour data in accordance with the procedure set forth in NCRP Report Number 22, incorporated by reference at ~~in~~ Section 620.125(a).

3) Except due to natural causes, the average annual concentration assumed to produce a total body or organ dose of 4 mrem/year of the following chemical constituents shall not be exceeded in Class I groundwater:

CriticalStandardConstituentOrgan(pCi/L) TritiumTotal body20,000.0Strontium-90Bone marrow8.0

(Source: Amended at 36 Ill. Reg. , effective)

Section 620.420 Groundwater Quality Standards for Class II: General Resource Groundwater

a) Inorganic Chemical Constituents

1) Except due to natural causes or as provided in Section 620.450 or subsection (a) (3) or (d) of this Section, concentrations of the following chemical constituents must not be exceeded in Class II groundwater:

~~ConstituentStandard~~

ConstituentStandard(mg/L) Antimony0.024Arsenic*0.2Barium2.0Beryllium0.5Cadmium0.05Chromium1.0Cobalt1.0Cyanide0.6Fluoride4.0Lead0.1Mercury0.01Nitrate as N100.0Perchlorate0.0049Thallium0.02Vanadium0.1 *Denotes a carcinogen.

2) Except as provided in Section 620.450 or subsection (a) (3) or (d) of this Section, concentrations of the following chemical constituents must not be exceeded in Class II groundwater:

ConstituentStandard(mg/L) Boron2.0Chloride200.0Copper0.65Iron5.0Manganese10.0Nickel2.0Selenium0.05Total Dissolved Solids (TDS)1,200.0Sulfate400.0Zinc10.0

3) The standard for any inorganic chemical constituent listed in subsection (a) (2) of this Section, for barium, or for pH does not apply to groundwater within fill material or within the upper 10 feet of parent material under such fill material on a site not within the rural property class for which:

A) Prior to November 25, 1991, surficial characteristics have been altered by the placement of such fill material so as to impact the concentration of the parameters listed in subsection (a) (3) of this Section, and any on-site groundwater monitoring of such parameters is available for review by the Agency.

B) On November 25, 1991, surficial characteristics are in the process of being altered by the placement of such fill material, that proceeds in a reasonably continuous manner to completion, so as to impact the concentration of

the parameters listed in subsection (a)(3) of this Section, and any on-site groundwater monitoring of such parameters is available for review by the Agency.

4) For purposes of subsection (a)(3) of this Section, the term "fill material" means clean earthen materials, slag, ash, clean demolition debris, or other similar materials.

b) Organic Chemical Constituents

1) Except due to natural causes or as provided in Section 620.450 or subsection (b)(2) or (d) of this Section, concentrations of the following organic chemical constituents must not be exceeded in Class II groundwater:

Constituent Standard (mg/L) Acenaphthene 2.1 Acetone 6.3 Alachlor* 0.01 Aldicarb 0.015 Ant
hracene 10.5 Atrazine 0.015 Benzene* 0.025 Benzo(a)anthracene* 0.00065 Benzo(b)fluoranth
ene* 0.0009 Benzo(k)fluoranthene* 0.006 Benzo(a)pyrene* 0.002 Benzoic acid 28.02-
Butanone (MEK) 4.2 Carbon Disulfide 3.5 Carbofuran 0.2 Carbon
Tetrachloride* 0.025 Chlordane* 0.01 Chloroform* 0.35 Chrysene* 0.06 Dalapon 2.0 Dibenzo(a
,h)anthracene 0.0015 Dicamba 0.21 Dichlorodifluoromethane 7.01, 1-
Dichloroethane 7.0 Dichloromethane* 0.05 Di(2-ethylhexyl)phthalate* 0.06 Diethyl
Phthalate 5.6 Di-n-butyl Phthalate 3.5 Dinoseb 0.07 Endothall 0.1 Endrin 0.01 Ethylene
Dibromide* 0.0005 Fluoranthene 1.4 Fluorene 1.4 Heptachlor* 0.002 Heptachlor
Epoxide* 0.001 Hexachlorocyclopentadiene 0.5 Indeno(1,2,3-
cd)pyrene* 0.0022 Isopropylbenzene (Cumene) 3.5 Lindane (Gamma-Hexachloro
~~eyclohexane~~ cyclohexane) 0.0012, 4-D0.35 Ortho-
~~Dichlorobenzene~~ Dichlorobenze 1.5 Para-Dichlorobenzene 0.375 1,2-Dibromo-3-
Chloropropane* 0.0021, 2-Dichloroethane* 0.025 1,1-Dichloroethylene 0.035 cis-1,2-
Dichloroethylene 0.2 Trans-1,2-Dichloroethylene 0.51, 2-
Dichloropropane* 0.025 ~~Ethylbenzene~~ Ehylbenzene 1.0 MCPP
(Mecoprop) 0.007 Methoxychlor 0.22 Methylnaphthalene 0.142 Methylphenol 0.35 Methyl
Tertiary-Butyl Ether (MTBE) 0.07 Monochlorobenzene 0.5 Naphthalene 0.22 P-
Dioxane* 0.0077 Pentachlorophenol* 0.005 Phenols 0.1 Picloram 5.0 Pyrene 1.05 Polychlorina
ted Biphenyls (PCBs) (as decachloro-biphenyl)* 0.0025 alpha-BHC (alpha-
Benzene
hexachloride)* 0.00055 Simazine 0.04 Styrene 0.52, 4, 5-
TP0.25 Tetrachloroethylene* 0.025 Toluene 2.5 Toxaphene* 0.015 1,1,1-
Trichloroethane 1.01, 2, 4-Trichlorobenzene 0.71, 1, 2-
Trichloroethane ~~0.05~~ Trichloroethylene* 0.025 Trichlorofluoromethane 10.5 Vinyl
Chloride* 0.01 Xylenes 10.0 * Denotes a carcinogen.

2) The standards for pesticide chemical constituents listed in subsection (b)(1) of this Section do not apply to groundwater within 10 feet of the land surface, provided that the concentrations of such constituents result from the application of pesticides in a manner consistent with the requirements of the Federal Insecticide, Fungicide and Rodenticide Act (7 USC 136 et seq.) and the Illinois Pesticide Act [415 ILCS 60].

c) Explosive Constituents

Concentrations of the following explosive constituents must not exceed the Class II groundwater standard:

Constituent	Standard	Constituent	Standard (mg/L)
1,3-Dinitrobenzene	0.0007	2,4-Dinitrobenzene	2.4 <u>0.00072, 4-</u>
Dinitrotoluene*	0.0001	2,6-Dinitrotoluene*	2.6 <u>0.00012, 6-</u>
0.00031 HMX (High Melting Explosive, Octogen)	1.4	Nitrobenzene	0.014
(Royal Demolition Explosive, Cyclonite)		RDX	
			0.084 <u>1,3,5-0.0841,3,5-</u>

Trinitrobenzene ~~0.84~~ ~~2,4,6~~0.842,4,6-Trinitrotoluene (TNT)
0.014

*Denotes a carcinogen.

d) ~~e~~ Complex Organic Chemical Mixtures

Concentrations of the following organic chemical constituents of gasoline, diesel fuel, or heating fuel must not be exceeded in Class II groundwater:

Constituent Standard (mg/L) Benzene*0.025 BETX13.525*Denotes a carcinogen

e) ~~d~~ pH

Except due to natural causes, a pH range of 6.5 - 9.0 units must not be exceeded in Class II groundwater that is within 5 feet of the land surface.

(Source: Amended at 36 Ill. Reg. , effective)

Section 620.440 Groundwater Quality Standards for Class IV: Other Groundwater

a) Except as provided in ~~subsections~~subsection (b) or (c), Class IV: Other Groundwater standards are equal to the existing concentrations of constituents in groundwater.

b) For groundwater within a zone of attenuation as provided in 35 Ill. Adm. Code 811 and 814, the standards specified in Section 620.420 must not be exceeded, except for concentrations of contaminants within leachate released from a permitted unit.

c) For groundwater within a previously mined area, the standards set forth in Section 620.420 must not be exceeded, except for concentrations of TDS, chloride, iron, manganese, sulfates, ~~or~~ pH, 1,3-dinitrobenzene, 2,4-dinitrotoluene, 2,6-dinitrotoluene, HMX (high melting explosive, octogen), nitrobenzene, RDX (royal demolition explosive, cyclonite), 1,3,5-trinitrobenzene, or 2,4,6-trinitrotoluene (TNT). For concentrations of TDS, chloride, iron, manganese, sulfates, ~~or~~ pH, 1,3-dinitrobenzene, 2,4-dinitrotoluene, 2,6-dinitrotoluene, HMX, nitrobenzene, RDX, 1,3,5-trinitrobenzene, or 2,4,6-trinitrotoluene (TNT), the standards are the existing concentrations.

(Source: Amended at 36 Ill. Reg. , effective)

Section 620.450 Alternative Groundwater Quality Standards

a) Groundwater Quality Restoration Standards

1) Any chemical constituent in groundwater within a groundwater management zone is subject to this Section.

2) Except as provided in subsections (a)(3) or (a)(4) ~~below~~, the standards as specified in Sections 620.410, 620.420, 620.430, and 620.440 apply to any chemical constituent in groundwater within a groundwater management zone.

3) Prior to completion of a corrective action described in Section 620.250(a), the standards as specified in Sections 620.410, 620.420, 620.430, and 620.440 are not applicable to such released chemical constituent, provided that the initiated action proceeds in a timely and appropriate manner.

4) After completion of a corrective action as described in Section 620.250(a), the standard for such released chemical constituent is:

A) The standard as set forth in Section 620.410, 620.420, 620.430, or 620.440, if the concentration as determined by groundwater monitoring of such constituent is less than or equal to the standard for the appropriate class set forth in those ~~sections~~Sections; or

B) The concentration as determined by groundwater monitoring, if such concentration exceeds the standard for the appropriate class set forth in Section 620.410, 620.420, 620.430, or 620.440 for such constituent, and:

i) To the extent practicable, the exceedence has been minimized and beneficial use, as appropriate for the class of groundwater, has been returned; and

ii) Any threat to public health or the environment has been minimized.

5) The Agency shall develop and maintain a listing of concentrations derived pursuant to subsection (a)(4)(B) ~~above~~. This list shall be made available to the public and be updated periodically, but no less frequently than semi-annually. This listing shall be published in the Environmental Register.

b) Coal Reclamation Groundwater Quality Standards

1) Any inorganic chemical constituent or pH in groundwater, within an underground coal mine, or within the cumulative impact area of groundwater for which the hydrologic balance has been disturbed from a permitted coal mine area pursuant to the Surface Coal Mining Land Conservation and Reclamation Act [225 ILCS 720] and 62 Ill. Adm. Code 1700 through 1850, is subject to this Section.

2) Prior to completion of reclamation at a coal mine, the standards as specified in Sections 620.410(a) and (d), 620.420(a) and (~~de~~), 620.430 and 620.440 are not applicable to inorganic constituents and pH.

3) After completion of reclamation at a coal mine, the standards as specified in Sections 620.410(a) and (d), 620.420(a), 620.430, and 620.440 are applicable to inorganic constituents and pH, except:

A) The concentration of total dissolved solids (TDS) must not exceed:

i) The post-reclamation concentration or 3000 mg/L, whichever is less, for groundwater within the permitted area; or

ii) The post-reclamation concentration of TDS must not exceed the post-reclamation concentration or 5000 mg/L, whichever is less, for groundwater in underground coal mines and in permitted areas reclaimed after surface coal mining if the Illinois Department of Mines and Minerals and the Agency have determined that no significant resource groundwater existed prior to mining (62 Ill. Adm. Code 1780.21(f) and (g)); and

B) For chloride, iron, manganese and sulfate, the post-reclamation concentration within the permitted area must not be exceeded.

C) For pH, the post-reclamation concentration within the permitted area must not be exceeded within Class I: Potable Resource Groundwater as specified in Section 620.210(a)(4).

D) For 1,3-dinitrobenzene, 2,4-dinitrotoluene, 2,6-dinitrotoluene, HMX (high melting explosive, octogen), nitrobenzene, RDX (royal demolition explosive, cyclonite), 1,3,5-trinitrobenzene, and 2,4,6-trinitrotoluene (TNT), the post-reclamation concentration within the permitted area must not be exceeded.

4) A refuse disposal area (not contained within the area from which overburden has been removed) is subject to the inorganic chemical constituent and pH requirements of:

A) 35 Ill. Adm. Code 302.Subparts B and C, except due to natural causes, for such area that was placed into operation after February 1, 1983, and before the effective date of this Part, provided that the groundwater is a present or a potential source of water for public or food processing;

B) Section 620.440(c) for such area that was placed into operation prior to February 1, 1983, and has remained in continuous operation since that date; or

C) Subpart D of this Part for such area that is placed into operation on or after the effective date of this Part.

5) For a refuse disposal area (not contained within the area from which overburden has been removed) that was placed into operation prior to February 1, 1983, and is modified after that date to include additional area, this Section applies to the area that meets the requirements of subsection (b)(4)(C) and the following applies to the additional area:

A) 35 Ill. Adm. Code 302.Subparts B and C, except due to natural causes, for such additional refuse disposal area that was placed into operation after February 1, 1983, and before the effective date of this Part, provided that the groundwater is a present or a potential source of water for public or food processing; and

B) Subpart D for such additional area that was placed into operation on or after the effective date of this Part.

6) A coal preparation plant (not located in an area from which overburden has been removed) which contains slurry material, sludge or other precipitated process material, is subject to the inorganic chemical constituent and pH requirements of:

A) 35 Ill. Adm. Code 302.Subparts B and C, except due to natural causes, for such plant that was placed into operation after February 1, ~~1983~~, 1983 and before the effective date of this Part, provided that the groundwater is a present or a potential source of water for public or food processing;

B) Section 620.440(c) for such plant that was placed into operation prior to February 1, 1983, and has remained in continuous operation since that date; or

C) Subpart D for such plant that is placed into operation on or after the effective date of this Part.

7) For a coal preparation plant (not located in an area from which overburden has been removed) which contains slurry material, sludge or other precipitated process material, that was placed into operation prior to February 1, 1983, and is modified after that date to include additional area, this Section applies to the area that meets the requirements of subsection (b)(6)(C) and the following applies to the additional area:

A) 35 Ill. Adm. Code 302.Subparts B and C, except due to natural causes, for such additional area that was placed into operation after February 1, 1983, and before the effective date of this Part, provided that the groundwater is a present or a potential source of water for public or food processing; and

B) Subpart D for such additional area that was placed into operation on or after the effective date of this Part.

c) Groundwater Quality Standards for Certain Groundwater Subject to a No Further Remediation Letter under Part 740. While a No Further Remediation Letter is in effect for a region formerly encompassed by a groundwater management zone established under 35 Ill. Adm. Code 740.530, the groundwater quality standards for "contaminants of concern", as defined in 35 Ill. Adm. Code 740.120, within such area shall be the groundwater objectives achieved as documented in the approved Remedial Action Completion Report.

(Source: Amended at 36 Ill. Reg. , effective)

SUBPART E: GROUNDWATER MONITORING AND ANALYTICAL PROCEDURES

Section 620.505 Compliance Determination

a) Compliance with standards at a site is to be determined as follows:

1) For a structure (e.g., buildings), at the closest practical distance beyond the outermost edge for the structure.

2) For groundwater that underlies a potential primary or secondary source, the outermost edge as specified in Section 620.240(e)(1).

3) For groundwater that underlies a coal mine refuse disposal area, a coal combustion waste disposal area, or an impoundment that contains sludge, slurry, or precipitated process material at a coal preparation plant, the outermost edge as specified in Section 620.240(f)(1) or location of monitoring wells in existence as of the effective date of this Part on a permitted site.

4) For a groundwater management zone, as specified in a corrective action process.

5) For groundwater, any point, where monitoring is conducted using a water well, or a monitoring well that meets one of the following conditions:

A) For a potable water supply well if geologic ~~log(s)~~ logs exist for this well or geologic logs in the immediate 1,000-foot area of this well are representative of the hydrogeologic materials encountered by this well as determined by a licensed professional geologist or a licensed professional engineer or a WHPA has been delineated outside of an applicable setback zone of a community water well or well field in accordance with ~~the~~ "Guidance Document for ~~Conducting~~ Groundwater Protection Needs Assessments," incorporated by reference at Section 620.125, and "Illinois Approved WHPP," incorporated by reference at Section 620.125.

B) For a potable water supply well other than a community water supply well, a construction report has been filed with the Department of Public Health for such potable well, or such well has been located and constructed (or

reconstructed) to meet the Illinois Water Well Construction Code [415 ILCS 30] and 77 Ill. Adm. Code 920.

C) For a potable water supply well that was constructed prior to August 20, 1965, the enactment of the Illinois Water Well Construction Code [415 ILCS 30], and meets all of the following criteria:

i) Construction must be done in a manner that will enable the collection of groundwater samples that represent in situ groundwater conditions;

ii) Casings and screens must be made from durable material resistant to expected chemical or physical degradation that do not interfere with the quality of groundwater samples being collected; and

iii) The annular space opposite the screened section of the well (i.e., the space between the bore hole and well screen) must be filled with gravel or sand if necessary to collect groundwater samples. The annular space above and below the well screen must be sealed to prevent migration of water from adjacent formations and the surface to the sampled depth.

D) For a community water supply well, such well has been permitted by the Agency, or has been constructed in accordance with 35 Ill. Adm. Code 602.115.

E) For a water well other than a potable water supply well (e.g., a livestock watering well or an irrigation well), a construction report has been filed with the Department of Public Health or ~~the~~ the Office of Mines and Minerals in the Department of Natural Resources for such well, or such well has been located and constructed (or reconstructed) to meet the Illinois Water Well Construction Code [415 ILCS 30] and 35 Ill. Adm. Code 920.

F) For a monitoring well, such well meets the following requirements:

i) Construction must be done in a manner that will enable the collection of groundwater samples;

ii) Casings and screens must be made from durable material resistant to expected chemical or physical degradation that do not interfere with the quality of groundwater samples being collected; and

iii) The annular space opposite the screened section of the well (i.e., the space between the bore hole and well screen) must be filled with gravel or sand if necessary to collect groundwater samples. The annular space above and below the well screen must be sealed to prevent migration of water from adjacent formations and the surface to the sampled depth.

6) Monitoring shall not be conducted for compliance determinations pursuant to subsection (a) of this Section:

A) For a water well that is:

i) Less than 15 feet in total depth from the land surface,

ii) bored or dug,

iii) constructed of permeable materials (e.g., cement, tile, stone or brick), and

iv) 36 inches or more in diameter.

B) For a water well with water quality problems due to damaged well construction materials or poorly-designed well construction;

C) For a water well in a basement or pit; or

D) For ~~a~~-water well water from a holding tank.

b) For a spring, compliance with this Subpart shall be determined at the point of emergence.

(Source: Amended at 36 Ill. Reg. , effective)

Section 620.510 Monitoring and Analytical Requirements

a) Representative Samples

A representative sample shall be taken from locations as specified in Section 620.505.

b) Sampling and Analytical Procedures

1) Samples must be collected in accordance with the procedures set forth in the documents pertaining to groundwater monitoring and analysis "Methods for Chemical Analysis of Water and Wastes," "Methods for the Determination of Inorganic Substances in Environmental Samples," "Methods for the Determination of Metals in Environmental Samples," "Methods for the Determination of Organic Compounds in Drinking Water," "Methods for the Determination of Organic Compounds in Drinking Water, Supplement I," "Methods for the Determination of Organic Compounds in Drinking Water, Supplement II," "Methods for the Determination of Organic Compounds in Drinking Water, Supplement III," "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water," "Prescribed Procedures for Measurement of Radioactivity in Drinking Water," "Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions," "Radiochemical Analytical Procedures for Analysis of Environmental Samples," "Radiochemistry Procedures Manual," "Practical Guide for Ground Water Sampling," "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (SW-846), 40 CFR 136, ~~Appendix appendix~~ B, 40 CFR 141.80, 40 CFR 141.61, and 40 CFR 141.62, "Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground Water Samples for Selected Unstable Constituents," ~~"Methods for Chemical Analysis of Water and Wastes," "Methods for the Determination of Organic Compounds in Drinking Water," "Practical Guide for Ground-Water Sampling," "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (SW 846), 56 Fed. Reg. 3526-3597, 56 Fed. Reg. 26460-26564, 57 Fed. Reg. 31776-31849,~~ "Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground-Water Samples for Selected Unstable Constituents," incorporated by reference at Section 620.125 or other procedures adopted by the appropriate regulatory agency.

2) Groundwater elevation in a groundwater monitoring well must be determined and recorded when necessary to determine the gradient.

3) The analytical methodology used for the analysis of constituents in Subparts C and D must be consistent with both of the following:

A) The methodology must have a PQL at or below the preventive response levels of Subpart C or groundwater standard set forth in Subpart D, whichever is applicable; and

B) "Methods for Chemical Analysis of Water and Wastes," "Methods for the Determination of Inorganic Substances in Environmental Samples," "Methods for the Determination of Metals in Environmental Samples," "Methods for the Determination of Organic Compounds in Drinking Water," "Methods for the Determination of Organic Compounds in Drinking Water, Supplement I," "Methods for the Determination of Organic Compounds in Drinking Water, Supplement II," "Methods for the Determination of Organic Compounds in Drinking Water, Supplement III," "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water," "Prescribed Procedures for Measurement of Radioactivity in Drinking Water," "Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions," "Radiochemical Analytical Procedures for Analysis of Environmental Samples," "Radiochemistry Procedures Manual," "Practical Guide for Ground Water Sampling," "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (SW-846), 40 CFR 136, ~~Appendix~~ B, 40 CFR 141.80, 40 CFR 141.61, and 40 CFR 141.62, "Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground Water Samples for Selected Unstable Constituents," ~~The methodology must be consistent with methodologies contained in "Methods for Chemical Analysis of Water and Wastes", "Methods for the Determination of Organic Compounds in Drinking Water", "Practical Guide for Ground-Water Sampling", "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (SW-846),~~ "Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground-Water Samples for Selected Unstable Constituents", incorporated by reference at Section 620.125.

c) Reporting Requirements

At a minimum, groundwater monitoring analytical results must include information, procedures and techniques for:

1) Sample collection (including but not limited to name of sample collector, time and date of the sample, method of collection, and identification of the monitoring location);

2) Sample preservation and shipment (including but not limited to field quality control);

3) Analytical procedures (including but not limited to the method detection limits and the PQLs); and

4) Chain of custody control.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

SUBPART F: HEALTH ADVISORIES

Section 620.605 Issuance of a Health Advisory

a) The Agency shall issue a Health Advisory for a chemical substance if all of the following conditions are met:

1) A community water supply well is sampled and a substance is detected and confirmed by resampling;

2) There is no standard under Section 620.410 for such chemical substance;
and

3) The chemical substance is toxic or harmful to human health according to the procedures of Appendix A, B, or C.

b) The Health Advisory must contain a general description of the characteristics of the chemical substance, the potential adverse health effects, and a guidance level to be determined as follows:

1) If disease or functional impairment is caused due to a physiological mechanism for where there is a threshold dose below which no damage occurs, the guidance level for any such substance shall be the Maximum Contaminant Level Goal (~~"MCLG"~~), adopted by USEPA for such substance, 40 CFR 136, ~~Appendix~~appendix B, 40 CFR 141.80, 40 CFR 141.61, and 40 CFR ~~141.62~~ ~~56 Fed. Reg. 26460-26564,~~ ~~56 Fed. Reg. 3526-3597,~~ and ~~57 Fed. Reg. 31776-31849,~~ 141.62, incorporated by reference at Section 620.125. If there is no MCLG for the substance, the guidance level is the Human Threshold Toxicant Advisory Concentration for such substance as determined in accordance with Appendix A, unless the concentration for such substance is less than the lowest appropriate PQL specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846 (SW-846), incorporated by reference at Section 620.125 for the substance. If the concentration for such substance is less than the lowest appropriate PQL for the substance specified in SW-846, incorporated by reference at Section 620.125, the guidance level is the lowest appropriate PQL.

2) If the chemical substance is a carcinogen, the guidance level for any such chemical substance is the one-in-one-million cancer risk concentration, unless the concentration for such substance is less than the lowest appropriate PQL specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 (SW-846), ~~lowest appropriate PQL specified in SW-846,~~ incorporated by reference at Section 620.125 for such substance. If the concentration for such substance is less than the lowest appropriate PQL for the substance specified in SW-846, the guidance level is the lowest appropriate PQL. The one-in-one-million cancer risk concentration, the Human Nonthreshold Toxicant Advisory Concentration (HNTAC), shall be determined according to the following equation:

$$\text{HNTAC} = \frac{\text{TR} \times \text{BW} \times \text{AT} \times 365 \text{ days/year}}{(\text{mg/l}) \times \text{Sf} \times \text{IR} \times \text{EF} \times \text{ED}}$$

Where:

TR= Target Risk = 1.0E-06 BW= Body Weight = 70 ~~kg~~ kg AT= Averaging Time = 70 ~~years~~ years Sf= Oral Slope Factor = Chemical-~~specific~~ specific IR= Daily Water Ingestion Rate = 2 liters/~~day~~ day EF= Exposure Frequency = 350 days/~~year~~ year ED= Exposure Duration = 30 years
(Source: Amended at 36 Ill. Reg. ~~_____~~, effective ~~_____~~)

Section 620. ~~Appendix~~ APPENDIX A Procedures for Determining Human Threshold Toxicant Advisory Concentration for Class I: Potable Resource Groundwater

a) Calculating the Human Threshold Toxicant Advisory Concentration

For those substances for which USEPA has not adopted a Maximum Contaminant Level Goal ("MCLG"), the Human Threshold Toxicant Advisory Concentration is calculated as follows:

$$\text{HTTAC} = \text{RSC} \times \text{ADE}/\text{W}$$

Where:

HTTAC = Human Threshold Toxicant Advisory Concentration in milligrams per liter (mg/L); RSC = Relative contribution of the amount of the exposure to a chemical via drinking water when compared to the total exposure to that chemical from all sources. Valid chemical-specific data shall be used if available. If valid chemical-specific data are not available, a value of 20% (= 0.20) must be used; ADE = Acceptable Daily Exposure of substance in milligrams per day (mg/d) as determined pursuant to subsection (b); and W = Per capita daily water consumption equal to 2 liters per day (L/d).

b) Procedures for Determining Acceptable Daily Exposures for Class I: Potable Resource Groundwater

1) The Acceptable Daily Exposure (ADE) represents the maximum amount of a threshold toxicant in milligrams per day (mg/d) which if ingested daily for a lifetime results in no adverse effects to humans. Subsections (b)(2) through (b)(6) list, in prescribed order, methods for determining the ADE in Class I: Potable Resource Groundwater.

2) For those substances for which the USEPA has derived a Verified Oral Reference Dose for humans, USEPA's Reference Dose given in milligrams per kilogram per day (mg/kg/d), as determined in accordance with methods provided in National Primary and Secondary Drinking Water Regulations, 40 CFR 136, ~~Appendix appendix~~ B, 40 CFR 141.80, 40 CFR 141.61, and 40 CFR ~~141.62 Final Rule, 56 Fed. Reg. 3526-3597, (January 30, 1991), 141.62~~, incorporated by reference at Section 620.125, must be used. The ADE equals the product of multiplying the Reference Dose by 70 kilograms (kg), which is the assumed average weight of an adult human.

3) For those substances for which a no observed adverse effect level for humans (NOAEL-H) exposed to the substance has been derived, the ADE equals the product of multiplying one-tenth of the NOAEL-H given in milligrams of toxicant per kilogram of body weight per day (mg/kg/d) by the average weight of an adult human of 70 kilograms (kg). If two or more studies are available, the lowest NOAEL-H must be used in the calculation of the ADE.

4) For those substances for which only a lowest observed adverse effect level for humans (LOAEL-H) exposed to the substance has been derived, one-tenth the LOAEL-H must be substituted for the NOAEL-H in subsection (b)(3).

5) For those substances for which a no observed adverse effect level has been derived from studies of mammalian test species (NOAEL-A) exposed to the substance, the ADE equals the product of multiplying 1/100 of the NOAEL-A given in milligrams toxicant per kilogram of test species weight per day (mg/kg/d) by the average weight of an adult human of 70 kilograms (kg). Preference will be given to animal studies having High Validity, as defined in subsection (c), in the order listed in that subsection. Studies having a Medium Validity must be considered if no studies having High Validity are available. If studies of Low Validity must be used, the ADE must be calculated using 1/1000 of the NOAEL-A having Low Validity instead of 1/100 of the NOAEL-A of High or Medium Validity,

except as described in subsection (b)(6). If two or more studies among different animal species are equally valid, the lowest NOAEL-A among animal species must be used in the calculation of the ADE. Additional considerations in selecting the NOAEL-A include:

A) If the NOAEL-A is given in milligrams of toxicant per liter of water consumed (mg/L), prior to calculating the ADE the NOAEL-A must be multiplied by the average daily volume of water consumed by the mammalian test species in liters per day (L/d) and divided by the average weight of the mammalian test species in kilograms (kg).

B) If the NOAEL-A is given in milligrams of toxicant per kilogram of food consumed (mg/kg), prior to calculating the ADE, the NOAEL-A must be multiplied by the average amount in kilograms of food consumed daily by the mammalian test species (kg/d) and divided by the average weight of the mammalian test species in kilograms (kg).

C) If the mammalian test species was not exposed to the toxicant each day of the test period, the NOAEL-A must be multiplied by the ratio of days of exposure to the total days of the test period.

D) If more than one equally valid NOAEL-A is available for the same mammalian test species, the best available data must be used.

6) For those substances for which a NOAEL-A is not available but the lowest observed adverse effect level (LOAEL-A) has been derived from studies of mammalian test species exposed to the substance, one-tenth of the LOAEL-A may be substituted for the NOAEL-A in subsection (b)(5). The LOAEL-A must be selected in the same manner as that specified in subsection (b)(5). One-tenth the LOAEL-A from a study determined to have Medium Validity may be substituted for a NOAEL-A in subsection (b)(3) if the NOAEL-A is from a study determined to have Low Validity, or if the toxicity endpoint measured in the study having the LOAEL-A of Medium Validity is determined to be more biologically relevant than the toxicity endpoint measured in the study having the NOAEL-A of Low Validity.

c) Procedures for Establishing Validity of Data from Animal Studies

1) High Validity Studies

A) High validity studies use a route of exposure by ingestion or gavage, and are based upon:

i) Data from animal carcinogenicity studies with a minimum of 2 dose levels and a control group, 2 species, both sexes, with 50 animals per dose per sex, and at least 50 percent survival at 15 months in mice and 18 months in rats and at least 25 percent survival at 18 months in mice and 24 months in rats;

ii) Data from animal chronic studies with a minimum of 3 dose levels and a control group, 2 species, both sexes, with 40 animals per dose per sex, and at least 50 percent survival at 15 months in mice and 18 months in rats and at least 25 percent survival at 18 months in mice and 24 months in rats, and a well-defined NOAEL; or

iii) Data from animal subchronic studies with a minimum of 3 dose levels and control, 2 species, both sexes, 4 animals per dose per sex for non-rodent species or 10 animals per dose per sex for rodent species, a duration of at least 5% of the test species' lifespan, and a well-defined NOAEL.

B) Supporting studies which reinforce the conclusions of a study of Medium Validity may be considered to raise such a study to High Validity.

2) Medium Validity Studies

Medium validity studies are based upon:

A) Data from animal carcinogenicity, chronic, or subchronic studies in which minor deviations from the study design elements required for a High Validity Study are found, but which otherwise satisfy the standards for a High Validity Study;

B) Data from animal carcinogenicity and chronic studies in which at least 25 percent survival is reported at 15 months in mice and 18 months in rats (a lesser survival is permitted at the conclusion of a longer duration study, but the number of surviving animals should not fall below 20 percent per dose per sex at 18 months for mice and 24 months for rats), but which otherwise satisfy the standards for a High Validity Study;

C) Data from animal subchronic or chronic studies in which a Lowest Observable Adverse Effect Level (LOAEL) is determined, but which otherwise satisfy the standards for a High Validity Study; or

D) Data from animal subchronic or chronic studies which have an inappropriate route of exposure (for example, intraperitoneal injection or inhalation) but which otherwise satisfy the standards for a High Validity Study, with correction factors for conversion to the oral route.

3) Low Validity Studies

Low validity studies are studies not meeting the standards set forth in subsection (c)(1) or (c)(2).

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 620. ~~Appendix~~ APPENDIX B Procedures for Determining Hazard Indices for Class I: Potable Resource Groundwater for Mixtures of Similar-Acting Substances

a) This appendix describes procedures for evaluating mixtures of similar-acting substances which may be present in Class I: Potable Resource Groundwaters. Except as provided otherwise in subsection (c), subsections (d) through (h) describe the procedure for determining the Hazard Index for mixtures of similar-acting substances.

b) For the purposes of this appendix, a "mixture" means two or more substances which are present in Class I: Potable Resource Groundwater which may or may not be related either chemically or commercially, but which are not complex mixtures of related isomers and congeners which are produced as commercial products (for example, PCBs or technical grade chlordane).

c) The following substances listed in Section 620.410 are mixtures of similar acting substances:

1) Mixtures of ortho-Dichlorobenzene and para-Dichlorobenzene. The Hazard Index (HI) for such mixtures is determined as follows:

$$HI = [\text{ortho-Dichlorobenzene}] \backslash 0.6 + [\text{para-Dichlorobenzene}] \backslash 0.075$$

2) Mixtures of 1,1-Dichloroethylene and 1,1,1-trichloroethane. The Hazard Index (HI) for such mixtures is determined as follows:

$$HI = [1,1\text{-Dichloroethylene}] \backslash 0.007 + [1,1,1\text{-trichloroethane}] \backslash 0.2$$

d) When two or more substances occur together in a mixture, the additivity of the toxicities of some or all of the substances will be considered when determining health-based standards for Class I: Potable Resource Groundwater. This is done by the use of a dose addition model with the development of a Hazard Index for the mixture of substances with similar-acting toxicities. This method does not address synergism or antagonism. Guidelines for determining when the dose addition of similar-acting substances is appropriate are presented in Appendix C. The Hazard Index is calculated as follows:

$$HI = [A] \backslash ALA + [B] \backslash ALB + . . . [I] \backslash ALI$$

Where:

HI = Hazard Index, unitless. [A], [B], [I] = Concentration of each similar-acting substance in groundwater in milligrams per liter (mg/L). ALA, ALB, ALI = The acceptable level of each similar-acting substance in the mixture in milligrams per liter (mg/L).

e) For substances which are considered to have a threshold mechanism of toxicity, the acceptable level is:

1) The standards listed in Section 620.410; or

2) For those substances for which standards have not been established in Section 620.410, the Human Threshold Toxicant Advisory Concentration (HTTAC) as determined in Appendix A.

f) For substances ~~which~~that are carcinogens, the acceptable level is:

1) The standards listed in Section 620.410; or

2) For those substances for which standards have not been established under Section 620.410, the one-in-one-million cancer risk concentration, unless the concentration for such substance is less than the lowest appropriate PQL specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846, incorporated by reference at Section 620.125, for the substance, in which case the lowest appropriate PQL shall be the acceptable level. ~~the lowest appropriate PQL of USEPA approved analytical methods specified in SW-846, incorporated by reference at Section 620.125, for each substance.~~

g) Since the assumption of dose addition is most properly applied to substances that induce the same effect by similar modes of action, a separate HI must be generated for each toxicity endpoint of concern.

h) In addition to meeting the individual substance objectives, a Hazard Index must be less than or equal to 1 for a mixture of similar-acting substances.

(Source: Amended at 36 Ill. Reg. , effective)

Section 620. ~~Appendix~~APPENDIX C Guidelines for Determining When Dose Addition of Similar-Acting Substances in Class I: Potable Resource Groundwaters is Appropriate

a) Substances must be considered similar-acting if:

1) The substances have the same target in an organism (for example, the same organ, organ system, receptor, or enzyme).

2) The substances have the same mode of toxic action. These actions may include, for example, central nervous system depression, liver toxicity, or cholinesterase inhibition.

b) Substances that have fundamentally different mechanisms of toxicity (threshold toxicants vs. carcinogens) must not be considered similar-acting. However, carcinogens which also cause a threshold toxic effect should be considered in a mixture with other similar-acting substances having the same threshold toxic effect. In such a case, an Acceptable Level for the carcinogen must be derived for its threshold effect, using the procedures described in Appendix A.

c) Substances which are components of a complex mixture of related compounds which are produced as commercial products (for example, PCBs or technical grade chlordane) are not mixtures, as defined in Appendix B. Such complex mixtures are equivalent to a single substance. In such a case, the Human Threshold Toxicant Advisory Concentration may be derived for threshold effects of the complex mixture, using the procedures described in Appendix A, if valid toxicological or epidemiological data are available for the complex mixture. If the complex mixture is a carcinogen, the Health Advisory Concentration is the one-in-one-million cancer risk concentration, unless the concentration for such substance is less than the lowest appropriate PQL specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846, incorporated by reference at Section 620.125, for the substance, in which case the lowest appropriate PQL shall be the Health Advisory Concentration. ~~lowest appropriate PQL of USEPA approved analytical methods specified in SW 846, incorporated by reference at Section 620.125.~~

(Source: Amended at 36 Ill. Reg. , effective)

Section 620. ~~Appendix~~ APPENDIX D Confirmation of an Adequate Corrective Action Pursuant to 35 Ill. Adm. Code 620.250(a)(2) ~~-~~

Pursuant to 35 Ill. Adm. Code 620.250(a) if an owner or operator provides a written confirmation to the Agency that an adequate corrective action, equivalent to a corrective action process approved by the Agency, is being undertaken in a timely and appropriate manner, then a groundwater management zone may be established as a three-dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site. This document provides the form in which the written confirmation is to be submitted to the Agency.

Note 1. Parts I and II are to be submitted to IEPA at the time that the facility claims the alternative groundwater standards. Part III is to be submitted at the completion of the site investigation. At the completion of the corrective process, a final report is to be filed which includes the confirmation statement included in Part IV.

Note 2. The issuance of a permit by IEPA's Division of Air Pollution Control or Water Pollution Control for a treatment system does not imply that the Agency has approved the corrective action process.

Note 3. If the facility is conducting a cleanup of a unit which is subject to the requirements of the Resource Conservation and Recovery Act (RCRA) or the 35 Ill. Adm. Code 731 regulations for Underground Storage Tanks, this confirmation process is not applicable and cannot be used.

Note 4. If the answers to any of these questions require explanation or clarification, provide such in an attachment to this document.

Part I. Facility Information

Facility Name _____
Facility Address _____
County _____ Standard _____ Name Facility _____
Address County Standard Industrial Code (SIC) _____

1. Provide a general description of the type of industry, products manufactured, raw materials used, location and size of the facility.

2. What specific units (operating or closed) are present at the facility which are or were used to manage waste, hazardous waste, hazardous substances or petroleum?

~~YES NO~~ Landfill _____ Surface Impoundment _____ Land _____
Treatment _____ Spray Irrigation _____ Waste _____
Pile _____ Incinerator _____ Storage YES NO Landfill Surface
Impoundment Land Treatment Spray Irrigation Waste Pile Incinerator Storage Tank
(above ground) _____ Storage ~~Storage Tank~~
(underground) _____ Container Storage Area _____ Injection _____
Well _____ Water Treatment Units _____ Septic _____
Tanks _____ French Drains _____ Transfer _____
Station _____ Other Units (Please describe) _____
_____ Tank (underground) Container Storage Area Injection
Well Water Treatment Units Septic Tanks French Drains Transfer Station Other Units
(please describe)

3. Provide an extract from a USGS topographic or county map showing the location of the site and a more detailed scaled map of the facility with each waste management unit identified in Question 2 or known/suspected source clearly identified. Map scale must be specified and the location of the facility must be provided with respect to Township, Range and Section.

4. Has the facility ever conducted operations which involved the generation, manufacture, processing, transportation, treatment, storage or handling of "hazardous substances" as defined by the Illinois Environmental Protection Act? Yes ___ No ___ If the answer to this question is "yes" generally describe these operations.

5. Has the facility generated, stored or treated hazardous waste as defined by the Resource Conservation and Recovery Act? Yes ___ No ___ If the answer to this question is "yes" generally describe these operations.

6. Has the facility conducted operations which involved the processing, storage or handling of petroleum? Yes ___ No ___ If the answer to this ~~questions~~ question is "yes" generally describe these ~~operations~~ operation.

7. Has the facility ever held any of the following permits?
a. Permits for any waste storage, waste treatment or waste disposal operation. Yes ___ No ___ If the answer to this question is "yes", identify the IEPA permit numbers.

a. Construction or Operating permit from the Division of Water Pollution Control. Yes ___ No ___

b. Land treatment permit from the Division of Water Pollution Control. Yes ___ No ___ If the answer to this question is "yes", identify the permit number.

c. Construction or Operating permit from the Division of Air Pollution Control. Yes ___ No ___ If the answer to this question is "yes", identify the permit number.

10. How will groundwater at the facility be monitored following completion of the remedy to ensure that the groundwater standards have been attained?

Based on my inquiry of those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true and accurate and confirm that the actions identified herein will be undertaken in accordance with the schedule set forth herein.

Owner/Operator _____ Facility Name _____ Signature of _____

Location of Facility _____ Location of Facility _____
Owner/Operator _____ EPA Operator _____
PA Identification Number _____ Date _____

PART IV: Completion Certification

This certification must accompany documentation which includes soil and groundwater monitoring data demonstrating successful completion of the corrective process described in Parts I-III.

Facility Name _____
Facility Address _____

County _____ Standard Name Facility _____
Address County Standard Industrial Code (SIC) _____ Date _____

Based on my inquiry of those persons directly responsible for gathering the information, I certify that an adequate corrective action, equivalent to a corrective action process approved by the Agency, has been undertaken and that the following restoration concentrations are being met:

Chemical Name _____ Chemical Abstract No. _____ Concentration _____
(mg/l) _____

Facility Name _____ Signature of _____
Owner/Operator _____ Location of Facility _____

Owner/Operator _____ EPA Operator _____
PA Identification Number _____ Date _____

(Source: Amended at 36 Ill. Reg. _____, effective _____)

~~ILLINOIS REGISTER~~

~~POLLUTION CONTROL BOARD~~

~~NOTICE PROPOSED AMENDMENTS~~

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