

ILLINOIS POLLUTION CONTROL BOARD
August 15, 1985

IN THE MATTER OF:)
)
PROPOSED AMENDMENTS TO) R85-14
PUBLIC WATER SUPPLY)
REGULATIONS, 35 ILL. ADM.)
CODE 602.105 AND 602.106)

ADOPTED EMERGENCY RULE.

EMERGENCY ORDER OF THE BOARD: (by J. Anderson):

SUMMARY OF TODAY'S ACTION

The Board hereby adopts an emergency rule to be filed and effective August 16 to last a maximum of 150 days, or until January 12, 1986. The rule will allow the Agency to issue permits for water main extensions to about 101 public water supplies presently on restricted status delivering water to their customers containing

- a) fluoride at concentrations less than or equal to 4.0 mg/l,
- b) combined radium 226 and 228 at concentrations less than or equal to 20 pCi/l, and
- c) gross alpha particle activity at concentrations less than or equal to 60 pCi/l.

A three page alphabetical list of these affected communities is attached hereto as Appendix A.

The overwhelming weight of the hearing testimony and documentary evidence presented to the Board in this docket convinces the Board that this regulatory relief can be granted with minimal risk of adverse impact to the health of the consumers of this water. The evidence is also compelling that emergency relief is necessary, since

- a) economic development has halted in these communities to the extent that such development requires permits for extension of water service, and
- b) much of the May 15-November 15 construction season has elapsed, and there is no certainty that a permanent rule could be adopted prior to November 15, and

- c) certain communities will lose previously planned development, and communities in economically depressed areas will be placed at a competitive disadvantage in attracting new development, and
- d) at least one community has been unable to extend water service consistent with its perceived needs for improved fire-fighting capability, and
- e) installation of treatment technologies or development of alternative water sources can be prohibitively costly and difficult or impossible to immediately finance absent expansion of a community's tax base.

The Board finds, within the meaning of Section 27 (c) of the Environmental Protection Act (Act), Ill. Rev. Stat., 1983, ch. 111 1/2, par. 1001 et. seq. that this is a "situation ... which reasonably constitutes a threat to the public interest, safety, [and] welfare." The Board accordingly adopts an emergency rule pursuant to Section 27 (c) and Section 5.02 of the Illinois Administrative Procedures Act (APA), Ill. Rev. Stat., 1983, ch. 27, Section 1001 et. seq.

PRESENT PROCEDURAL POSTURE

On June 13, 1985 the Board authorized first notice publication of an Agency proposal to "suspend" the effects of restricted status to allow Agency issuance of water main extension permits until January 1, 1989 to certain public water supplies. This limited regulatory relief would be afforded to communities whose finished drinking water exceeds federal and state standards for radiological quality and for fluoride because of the nature of the supply's raw water source, provided that the exceedance falls within the limits stated in the proposal. The maximum allowable concentrations (MAC) specified at 35 Ill. Adm. Code Section 604.202, 203, and 301, and the proposed permissible exceedance levels are as follows:

	<u>Existing "Interim" MAC</u>	<u>Proposed Exceedance</u>
Fluoride	1.8 mg/l except that 2.0 mg/l is allowed in specified northern counties of Illinois	4.0 mg/l
Combined Radium 226 and 228	5 pCi/l	20 pCi/l
Gross Alpha Particle Activity	15 pCi/l	60 pCi/l

This proposal was published at 9 Ill. Reg. 10594, July 12, 1985, publication having been delayed until dates for the presentation of Agency testimony in support of the proposal could be proposed. Hearings were held in Springfield on July 30, 1985 and in Springfield on August 2, 1985. The Agency presented the testimony of 10 witnesses in support of its proposal; 10 witnesses who would be favorably affected by grant of the proposed regulatory relief testified to their support of the proposal; and one witness testified in opposition to the proposal. These proceedings generated over 450 pages of transcript and 26 exhibits amounting to a four-inch stack of paper. (A list of these exhibits is attached hereto as Appendix B.) Two written public comments were received in support of the Agency's proposal.

The record in this matter is still open. Pursuant to Section 27(b) of the Act, the Board cannot adopt a proposed regulation until it receives an assessment from the Department of Energy and Natural Resources (DENR) concerning the economic impact of proposed regulations, and holds economic hearings concerning any study submitted. However, pursuant to Ill. Rev. Stat. ch. 96 1/2 par. 7404 (d), the Director of DENR, with the concurrence of DENR's Economic and Technical Advisory Committee (ETAC), may determine that a study is not necessary for specified reasons.

As of this date, the Director of DENR has not advised the Board of any determination in this regard; ETAC meetings are scheduled on or about August 23 and October 15. The Board therefore cannot anticipate when the record will be completed by Board receipt either of a negative declaration of economic impact, or a study to be followed by additional Board hearings. Once the record is complete, however, and any proposal is adopted by the Board, filing of that proposal is delayed for the 45 day review period by the Joint Committee on Administrative Rules as prescribed by the APA.

MOTION FOR EMERGENCY RULEMAKING

At the August 2 hearing, the City of Elmhurst presented a motion for emergency rulemaking. Elmhurst urges the Board to adopt emergency rules pursuant to Section 27 (c) of the Environmental Protection Act and Section 5.02 of the Illinois Administrative Procedures Act. In its motion, Elmhurst alleged that its public water supply is currently on restricted status [having a combined radium concentration of 7.9 pCi/l, 2.9 pCi/l in excess of the standard (R.362)], and that as a result thereof

- "(a) significant private land development beneficial to the public interest cannot proceed; and
- (b) employment creation is precluded, employment retention is threatened and private investment is frustrated; and

- (c) the ability of Elmhurst to provide fire protection and safety for significant commercial and industrial property and the public at large is threatened." (Motion, p. 2-3)

Testimony in support of the motion was presented by Virginia Harmon, a member of the Board of Directors of the Elmhurst Chamber of Commerce (R.347-350), Kathleen Scanlon and Leslie Korman representing would be developers in the Elmhurst area who cannot receive water service (R.351-356); and Deputy Fire Chief John Burn concerning the City's needs for new looped water mains for safety purposes. (R.356-362) The City has 23 building projects which cannot proceed while it is on restricted status. It may lose the two projects described by Mr. Korman if construction cannot begin on or about September 1, with a resulting yearly revenue loss to the City of \$100,000 in real estate taxes and about 400 jobs (R.363, 354-355), and the project described by Ms. Scanlon if construction cannot begin on or about October 1, with a resulting yearly property tax loss of \$900,000 and about 850 jobs (R.352-353).

The action taken by the Board today responds to this motion.

Given the limited time available to the Board to prepare a response to the City of Elmhurst's request, the Board cannot today present an exhaustive survey of the testimony and scientific literature contained in this hearing record; that type of review will be presented in a later supporting Opinion.

The Board has, however, considered all of the exhibits, as well as the testimony and public comments, presented by the following individuals:

Fluoride

Dr. Raymond Kuthy, presently an assistant professor of community dentistry at the Ohio State University College of Dentistry, and formerly (1979-1984) as the chief of the Division of Dental Health, Illinois Department of Public Health (IDPH);

Dr. Gerald Guine, a full time faculty member at Loyola University School of Dentistry, representing the Illinois State Dental Society;

Lisa Watson, director of Fluoridation and Preventive Dentistry Activities for the Council on Dental Health and Health Planninf of the American Dental Association, speaking on behalf of the Agency and the IDPH;

Dr. Gary R. Brenniman, presently an Associate Professor, Department of Environmental and Occupational Health Sciences, School of Public Health, University of Illinois at Chicago, and formerly (1980-1984) Associate Director of that Department.

Radium and Gross Alpha Radioactivity

Richard E. Toohy, Ph.D., a nuclear physicist, and Measurements Group Leader for the Center for Radiobiology (CHR) at Argonne National Laboratory.

Dr. James H. Stebbings, an epidemiologist and Epidemiology Group Leader for the CHR.

Treatment Technology, Disposal of Treatment Wastes, and Costs

Leonard L. Holt, P. E., of Metcalf and Eddy, Inc., a consultant with 25 years of experience in the treatment of drinking water and sewage.

Roger D. Selburg, IEPA, Acting Manager of the Division of Public Water Supplies, who has worked with these supplies in various capacities at the Agency since 1970.

Dorothy L. Bennett, IEPA, Supervisor of the Water Quality Unit of the Division of Public Water Supplies since 1972, chemist and formerly employed for 14 years in the laboratories of the IDPH.

Municipalities and Associations

These witnesses touched upon various aspects of their experience in the above areas and in support of the proposal unless otherwise indicated. In order of appearance:

Darryl R. Bauer, President, Kane County Water Association and speaking on behalf of its 22 member communities; consultant and formerly (1978-1985) Public Works Director for the City of St. Charles.

Kenneth Fiek, representing the Illinois Section of the American Water Works Association and its Legislative Affairs Committee; Director of Marketing for Corus Chemical Co., LaSalle.

Thomas Talsma, Director of Public Works for the City of Geneva.

Ted Bergeson, P. E., Director of community Development for the City of Batavia since 1984; formerly (1956-1984) a consultant.

Kathleen Park, President, Village of Cory, McHenry County.

City of Elmhurst; these witnesses were identified earlier.

Steve Seiver, Village Administrator for the Village of Milan.

Louis E. Marchi, Ph.D., McHenry County Defenders presenting opposition to the proposal; chemist, retired; previous holder of industrial research and teaching positions.

The two public comments received by mail were also read into the hearing record in the context of the Elmhurst Emergency Motion. These comments were by:

PC 1 Korman/Lederer and Assoc.; July 29, 1985

PC 2 JPS Interests; August 1, 1985.

The record indicates some disagreement in the scientific literature with the positions taken by the various Agency witnesses concerning health effects of the "suspension" of restricted status at the proposed doubled MAC levels for fluoride and quadrupled MAC levels for combined radium 226 and 228 and gross alpha particle activity levels. However, the Board finds the overwhelming weight of the evidence supports grant of emergency relief for 150 days, considering the minimal additional risk of adverse effects on the health of water consumers and the major economic and other effects delay in relief would have on the affected communities as noted on p. 1.

Accordingly, the Board adopts, and the Clerk of the Board is directed to file with the Secretary of State, the following emergency amendments:

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

Section 602.105 Standards for Issuance
EMERGENCY

- a) Except as provided in Section 602.105(d), the Agency shall not grant any construction or operating permit required by this Part unless the applicant submits adequate proof that the public water supply will be constructed, modified or operated so as not to cause a violation of the Environmental Protection Act (Ill. Rev. Stat. ~~1981~~ 1983, ch. 111 1/2, pars. 1001 et seq.) (Act), or of this Chapter.
- b) The Agency shall not grant any construction or operating permit required by this Part unless the applicant submits adequate proof that the public water supply facility conforms to the design criteria promulgated by the Agency under Section 39(a) of the Act or Section 602.115 or is based on such other criteria which the applicant proves will produce consistently satisfactory results.
- c) The Agency shall not grant any construction permit required by this Part unless the applicant submits proof that any plan documents required by this Section and Section 602.108 have been prepared by a person qualified under the Illinois Architecture Act (Ill. Rev. Stat. ~~1981~~ 1983, ch. 111, pars.

201 et seq.), the Illinois Professional Engineering Act (Ill. Rev. Stat. ~~1981~~ 1983, ch. 111, pars. 5101 et seq.), the Illinois Structural Engineering Act (Ill. Rev. Stat. ~~1981~~ 1983, ch. 111, pars. 6501 et seq.), or any required combination thereof.

- d) Until January 12, 1986, the Agency shall not deny to any applicant any construction or operating permit required by this Part for the following reasons:
- 1) the public water supply having a fluoride concentration less than or equal to 4 mg/l; or
 - 2) the public water supply having a combined radium 226 and radium 228 concentration less than or equal to 20 pCi/l; or
 - 3) the public water supply having gross alpha particle activity (including radium 226, but excluding radon and uranium) concentration less than or equal to 60 pCi/l.

(Source: Emergency amendment at 9 Ill. Reg., _____ effective August 16, 1985 for a maximum of 150 days.)

Section 602.106 Restricted Status
EMERGENCY


- a) Restricted status shall be defined as the Agency determination, pursuant to Section 39(a) of the Act and Section 602.105, that a public water supply facility may no longer be issued a construction permit without causing a violation of the Act or this Chapter.
- b) Except as provided in Section 602.106(d), the Agency shall publish and make available to the public, at intervals of not more than six months, a comprehensive and, up-to-date list of supplies subject to restrictive status and the reasons why.
- c) The Agency shall notify the owners or official custodians of supplies when the supply is initially placed on restricted status by the Agency.
- d) Until January 12, 1986, the Agency's published list of supplies subject to restricted status shall not include supplies whose only violations are within the parameters stated in Section 602.105(d), nor shall said published list include violations which fall within said parameters.

(Source: Emergency amendment at 9 Ill. Reg. _____, effective August 16, 1985, for a maximum of 150 days.)

IT IS SO ORDERED.

J. D. Dumelle and B. Forcade dissented.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board hereby certify that the above Order was adopted on the 15th day of August, 1985 by a vote of 5-2.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board

FAC NO	REG FACILITY NAME	PARAMETER	MAC	LEVEL	END DATE	VARIANCE	COMMENTS AND ADDITIONAL INFORMATION	Handness Removed (mg/l)	Lagoon Area (Acres)
0950050	SPF ABINGDON	F	2.0	2.4	01-Jan-84				
0950100	SPF ALTONA	F	2.0	2.5	10-Jul-85				
0314030	ELG ARLINGTON HEIGHTS	Ra TOTAL	5	5.6	01-Jan-86	RA226=5.6, RA228<1	7.56	15B	8.4
0894070	ELG AURORA	Ra TOTAL	5	9.5	NONE	RA226=7.3, RA228=2.2	9.70	152	10.5
1090050	SPF BARDOLPH	F	2.0	4.3	NONE				
1090050	SPF BARDOLPH	GR ALPHA	15	31.3	NONE		0.016	360	0.04
0894130	ELG BATAVIA	Ra TOTAL	5	11.1	01-Jan-90	RA226=6.6, RA228=4.5			
0710050	SPF BIGGSVILLE	F	2.0	3.6	NONE				
0710050	SPF BIGGSVILLE	GR ALPHA	15	41.2	NONE		0.03	510	0.12
0710050	SPF BIGGSVILLE	Ra TOTAL	5	13.9	NONE	RA226=13.9, RA228<1			
0955150	SPF BLAKE WTR CO	F	2.0	3.8	03-Dec-86				
1750050	RKD BRADFORD	GR ALPHA	15	16.4	NONE		0.108	140	0.11
1750050	RKD BRADFORD	Ra TOTAL	5	8.9	NONE	RA226=8.9, RA228<1			
1970150	ELG BRAIDWOOD	GR ALPHA	15	27.8	NONE		0.322	308	0.69
1970150	ELG BRAIDWOOD	Ra TOTAL	5	12.8	NONE	RA226=10.2, RA228=2.6			
1430150	SPF BRINFIELD	F	2.0	3.5	20-Nov-85				
0570200	SPF BRYANT	F	2.0	2.8	NONE				
0570200	SPF BRYANT	Ra TOTAL	5	9.9	NONE	RA226=8.1, RA228=1.4	0.015	550	0.06
0570200	SPF BRYANT	GR ALPHA	15	20.9	NONE		0.075	90	0.05
0110100	RKD BUDA	Ra TOTAL	5	8.7	NONE	RA226=8.7, RA228<1			
0110100	RKD BUDA	F	2.0	6.4	NONE				
1090150	SPF BUSHNELL	F	2.0	2.9	NONE				
0730300	RKD CAMBRIDGE	Ra TOTAL	5	8.7	NONE	RA226=5.9, RA228=2.8	0.24	82	0.14
1235100	RKD CAMPBROVE	F	2.0	2.5	NONE				
0630100	ELG CARBON HILL	GR ALPHA	15	18.8	NONE		0.038	130	0.03
0995040	RKD CEDAR POINT	GR ALPHA	15	18.3	NONE				
0995040	RKD CEDAR POINT	Ra TOTAL	5	9.5	NONE	RA226=7.8, RA228=1.7			
0955200	SPF CENTRAL IL UTIL CO	F	2.0	2.6	16-Apr-86				
1970200	ELG CHANNANON	GR ALPHA	15	17.4	NONE		0.008	162	0.01
1130300	CHP CHENOA	F	2.0	2.1	NONE				
0630200	ELG COAL CITY	GR ALPHA	15	17.6	NONE		0.456	253	0.74
0630200	ELG COAL CITY	Ra TOTAL	5	22.6	NONE	RA226=15.8, RA228=6.8			
0570300	SPF CUBA	F	2.0	2.8	NONE				
0570300	SPF CUBA	GR ALPHA	15	45.1	NONE		0.142	386	0.38
0570300	SPF CUBA	Ra TOTAL	5	23.1	NONE	RA226=20.8, RA228=2.3			
0750350	CHP DANFORTH	Ra TOTAL	5	9.2	NONE	RA226=6.5, RA228=2.7	0.063	450	0.2
0110300	RKD DE PUE	Ra TOTAL	5	8.2	NONE	RA226=8.2, RA228<1	0.214	110	0.16
0630250	ELG DIAMOND	GR ALPHA	15	29.7	NONE		0.074	280	0.15
0630250	ELG DIAMOND	Ra TOTAL	5	23.6	NONE	RA226=17.0, RA228=6.6			
0315350	ELG DOMESTIC UTILITIES	Ra TOTAL	5	9.4	NONE	RA226=4.9, RA228=4.5	2.190	222	3.40
0890300	ELG ELBURN	Ra TOTAL	5	12.1	NONE	RA226=5.7, RA228=6.4	0.104	160	0.12
0314400	ELG ELK GROVE	Ra TOTAL	5	6.5	01-Jan-86	RA226=4.4, RA228=4.1	5.65	272	10.75
0430350	ELG ELMHURST	Ra TOTAL	5	7.9	NONE	RA226=3.7, RA228=4.2	4.95	190	6.58
1430300	SPF ELMWOOD	F	2.0	2.1	NONE				
1430300	SPF ELMWOOD	GR ALPHA	15	17.7	NONE		0.17	220	0.26
1050300	CHP ENNINGTON	F	2.0	4.4	NONE				
1930200	MAR ENFIELD	F	1.8	3.3	NONE				
0570450	SPF FAIRVIEW	F	2.0	3.0	NONE				
0570450	SPF FAIRVIEW	GR ALPHA	15	21.9	NONE		0.032	246	0.06
0570500	SPF FARMINGTON	F	2.0	2.9	NONE				
0935150	ELG FOX LAWN	Ra TOTAL	5	7.8	NONE	RA226=4.4, RA228=3.4	0.017	172	0.02
0730450	RKD GALVA	GR ALPHA	15	15.8	NONE		0.52	127	0.46
0630350	ELG GARDNER	GR ALPHA	15	21.5	NONE		0.124	395	0.34
0630350	ELG GARDNER	Ra TOTAL	5	13.6	NONE	RA226=4.4, RA228=9.2	1.80	132	1.66
1430350	SPF GLASFORD	F	2.0	2.8	01-Jan-84				

(34.816)

(45.45)

CHEMICAL AND RADIOLOGICAL MAC VIOLATIONS

AGENCY EXHIBIT #

FAC NO	REG FACILITY NAME	PARAMETER	MAC	LEVEL	VARIANCE	END DATE	COMMENTS AND ADDITIONAL INFORMATION	Handness Removed (cu/yd)	Lagoon Area (Acres)
1430350	SPF GLASFORD	GR ALPHA	15	42.0	NONE				
0315750	ELG GOLF GREENWOOD GARD	Ra TOTAL	5	8	NONE				
1550050	RKD GRANVILLE	GR ALPHA	15	17.3	NONE				
1430400	SPF HANNA CITY	F	2.0	2.6	NONE				
1430400	SPF HANNA CITY	GR ALPHA	15	39.9	22-Jan-86				
1430400	SPF HANNA CITY	Ra TOTAL	5	13.6	NONE				
0314480	ELG HANOVER PARK	Ra TOTAL	5	6.8	30-Nov-86	RA226=12.0, RA228=1.6			
0950250	SPF HENDERSON	F	2.0	2.1	20-Aug-86	RA226=4.2, RA228=2.6			
0311290	ELG HOFFMAN ESTATES	GR ALPHA	15	8.5	01-Jan-86				
1435930	SPF TL YOUTH CTR HANNA CITY	GR ALPHA	15	24.7	NONE				
0570550	SPF IPAVA	F	2.0	3.8	NONE				
0570550	SPF IPAVA	GR ALPHA	15	99.2	NONE				
1975867	ELG JOLIET ARMY AMMO PL	Ra TOTAL	5	11.7	NONE				
0730650	RKD KEWANEE	GR ALPHA	15	28.2	NONE				
0730650	RKD KEWANEE	Ra TOTAL	5	5.9	NONE				
1430450	SPF KINGSTON MINES	F	2.0	2.7	NONE				
1430450	SPF KINGSTON MINES	GR ALPHA	15	19.3	NONE				
0630450	ELG KINGSMAN	Ra TOTAL	5	10.9	NONE				
1870050	SPF KIRKWOOD	F	2.0	2.3	03-Dec-86	RA226=4.3, RA228=6.6			
0950300	SPF KNOXVILLE	GR ALPHA	15	16.1	01-Jan-84				
1750100	RKD LAFAYETTE	F	2.0	2.4	NONE				
1975930	ELG LAKEWOOD SHORES	GR ALPHA	15	21.7	NONE				
1975920	ELG LAKEWOOD SHORES	Ra TOTAL	5	7.9	NONE				
0311620	ELG LENONT	GR ALPHA	15	16.8	01-Jan-84	RA226=5.3, RA228=2.6			
1875050	SPF LITTLE SWAN LAKE	Ra TOTAL	5	18	18-Aug-88	RA226=12.4, RA228=5.6			
1870100	SPF LITTLE YORK	F	2.0	2.4	NONE				
1970950	ELG LOCKPORT	GR ALPHA	15	17.7	NONE				
0990450	RKD LOSTANT	GR ALPHA	15	18.2	NONE				
1335100	COL MAPLE LEAF ESNS	Ra TOTAL	5	13.7	NONE				
1430500	SPF MAPLETON	F	2.0	3.1	NONE				
1430500	SPF MAPLETON	Ra TOTAL	5	10.6	NONE				
0950350	SPF MAQUON	F	2.0	2.4	NONE				
0635145	ELG HEL-KAY MHP	GR ALPHA	15	29.7	NONE				
1610400	RKD HILAN	Ra TOTAL	5	7.3	NONE				
2030400	RKD MINONK	F	2.0	3.2	02-Oct-85	RA226=1.8, RA228=5.5			
0630550	ELG MINODKA	GR ALPHA	15	16.7	NONE				
0315920	ELG MISSION BROOK SAN DIST	Ra TOTAL	5	8.4	NONE				
1870150	SPF NONMOUTH	Ra TOTAL	5	10.8	NONE				
1870150	SPF NONMOUTH	F	2.0	2.1	NONE				
0090050	SPF NONMOUTH STATION	Ra TOTAL	5	8.1	NONE				
1050550	CHP ODELL	F	1.8	2.4	NONE				
1050550	SPF ODELL	GR ALPHA	15	16.6	NONE				
0950400	SPF ONEIDA	Ra TOTAL	5	10.2	NONE				
0930150	ELG OSWEGO	F	2.0	2.3	03-Dec-86	RA226=10.2, RA228<1			
1590250	MAR PARKERSBURG	Ra TOTAL	5	6.7	NONE				
1090400	SPF PRAIRIE CITY	F	1.8	5.4	04-Mar-87	RA226=3.6, RA228=5.1			
1430750	SPF PRINCEVILLE	GR ALPHA	15	33.2	NONE				
1430750	SPF PRINCEVILLE	Ra TOTAL	5	20.1	NONE				
0710350	SPF RARITAN	F	2.0	4.3	NONE				
0710350	SPF RARITAN	Ra TOTAL	5	9.0	NONE				
0710350	SPF RARITAN	GR ALPHA	15	24.8	NONE				
0710350	SPF RARITAN	Ra TOTAL	5	11.7	NONE				

Pumpage (MGD)

Handness
Removed
(cu/yd)

Lagoon
Area
(Acres)

(11.598)

(21.29)

CHEMICAL AND RADIOLOGICAL MAC VIOLATIONS

FAC NO	REG FACILITY NAME	PARAMETER	MAC LEVEL	CONTAM LEVEL	VARIANCE END DATE	COMMENTS AND ADDITIONAL INFORMATION	Hardness Removed (mg/l)	Lagoon Area (Acres)
0950450	SPE RIO	GR ALPHA	2.0	2.5	03-Dec-86		176	3.67
0312730	ELG ROLLING MEADOWS	RA TOTAL	5	16.7	01-Jan-83	RA226=6.6, RA228=2.4	170	0.10
0630650	ELG SOUTH WILMINGTON	RA TOTAL	5	9	NONE	RA226=4.4, RA228=4.6	170	0.26
1570650	COL STEELEVILLE	RA TOTAL	5	6.6	NONE	RA226=4.5, RA228=2.1	110	0.09
0570900	SPE TABLE GROVE	GR ALPHA	15	22.0	NONE		110	0.10
1230250	RKD TOLUCA	GR ALPHA	5	13.6	NONE	RA226=6.0, RA228=7.6	95	0.09
1750150	RKD TOLON	GR ALPHA	15	25.9	NONE		145	0.10
1435150	SPE TRIVOLI	F	2.0	3.0	05-Mar-85	RA226=7.4, RA228<1	215	0.05
1115760	ELG TURBERRY UTIL CO	RA TOTAL	5	7.4	NONE	RA226=5.7, RA228=2.7	145	0.07
1310450	RKD VIOLA	RA TOTAL	5	8.4	NONE		152	0.03
0950600	SPE WATAGA	GR ALPHA	15	19.0	NONE	RA226=10.9, RA228=1.3	140	0.07
1235150	RKD WATUHIYI WTR WKS	GR ALPHA	15	16.7	01-Jan-83	RA226=9.7, RA228=11.0	160	0.08
1234950	RKD WENONA	RA TOTAL	5	20.7	NONE		160	0.47
0950650	SPE WILLIAMSFIELD	F	2.0	3.0	NONE		78	0.10
0730750	RKD WOODHULL	GR ALPHA	15	27.6	NONE	RA226=11.7, RA228<1	129	0.08
1750200	RKD WYOMING	RA TOTAL	5	11.7	NONE		160	0.47
0950700	SPE YATES CITY	GR ALPHA	15	21.3	NONE		160	0.47
0950700	SPE YATES CITY	RA TOTAL	5	7.8	NONE	RA226=5.6, RA228=2.2	160	0.47
0930250	ELG YORKVILLE	RA TOTAL	5	7.8	NONE		160	0.47

(34, 816)

(45.45)

(13, 598)

(21.29)

(4.480)

(5.21)

52.894 MGD

71.95 AC

R85-14 Exhibit List

revised August 13, 1985

- Exh. 1 (Agency) "Prepared Testimony of Dr. Raymond Kuthy on Water Fluoridation", July 30, 1985 (with attachments)
- Exh. 2 (Agency) Prepared Testimony of Dr. Richard E. Toohey, "The Health Effects of Radium: Observed and Assumed", July 30, August 2, 1985 (with attachments)
- Exh. 3 (Agency) Report to Office of Drinking Water USEPA re Psychological/Behavioral Effects of Dental Fluorosis, Dr. Robert E. Kleck, November 17, 1984
- Exh. 4 (Agency)
- Exh. 5 (Agency) "Report of the Task Group on Reference Man", Snyder, et al. (1974)
- Exh. 6 (Agency) "Long Term Retention of Radium in Female Former Dial Workers", Rundo, et al.
- Exh. 7 (Agency) Prepared Testimony of Leonard L. Holt "On the Costs of Removing Radioactivity and Fluorides From Water Supplies" July, 1985
- Exh. 8 (Agency) "Memorandum of Agreement", between IEPA and DNS, September, 1984 (re sludge disposal)
- Group Exh. 9 (AWWA) American Water Works Assn. Resolution of March 19, 1985 (with attached "Report on Radioactivity in Drinking Water)
- Exh. 10 (Agency) Prepared Testimony of Dr. Gerald R. Guine (with attachments)
- Exh. 11 (Geneva) Record in PCB 85-93 (variance proceeding)
- Exh. 12 (Agency) Prepared Testimony of Gary R. Brenniman
- Exh. 13 (Agency) Revised prepared Testimony of Dr. Richard E. Toohey (see Exh. 2)
- Exh. 14 (Agency) Literature re: radionuclides
14A "Radiation Protection -- Limits for Intakes of Radionuclides by Workers", ICRP (1978)

- 14B Retention and Absorption of ^{224}Ra and ^{234}Th and Some Dosimetric Considerations of ^{224}Ra In Human Beings, Maletskos et. al. (1969)
- 14C "Radionuclides in Foods" (1973) p. 8-21
- 14D "Natl. Interim Primary Drinking Water Regulations", EPA-570/9-76-003, p. 48-50
- 14E "Environmental Research Div. Annual Report", Ctr. for Human Radiobiology (1985)
- Exh. 15 (Agency) Prepared Testimony of Dorothy L. Bennett
- Group Exh. 16 (Agency) Computer printout "Chemical and Radiological MAC Violations", 7-30-85
- Group Exh. 17 (Agency) Computer printout "Chemical and Radiological MAC Violations", 7-31-85
- Exh. 18 (Agency) Prepared Testimony of Roger D. Selburg
- Exh. 19 (Agency) Computer printout "Chemical and Radiological MAC Violations", 7-31-85
- Exh. 20 (Agency) Revised Testimony of Leonard L. Holt (see Exh. 7)
- Exh. 21 (Agency) "Association of Leukemia with Radium Groundwater Contamination", Lyman (1985)
- Exh. 22 (Agency) "Mortality from Cancers of Major Sites in Female Radium Dial Workers", Stebbings (1984)
- Exh. 23 (Agency) "Multiple Myeloma, Leukemia and Breast Cancer Among the U. S.. Radium Dial Workers", Stebbings (1983)
- Exh. 24 (Marchi) Article, "Cancer May Be Linked to Bad Water", Chicago Tribune, 8-2-85.
- Group Exh. 25 (Agency) H.R.1650 and S.124, Safe Drinking Water Amendments of 1985.
- Group Exh. 26 (Board)
- 26A "Tapwater Consumption in Canada" (1981)
- 26B "Radium-Induced Malignant Tumors In Man", Finkel et al. (1967)
- 26C "Analysis of Recent Information Relating to EPA's Regulations for Radium in Drinking Water", Cothorn and Lappenbusch

- 26D "An Epidemicologic Approach to Low-Level Radium 226 Exposure", Peterson et al. (1966)
- 26E "Drinking Water and Cancer Incidence in Iowa", Bean et al. (1982)
- 26F "Chronic Radium Intoxication: Radium Osteonecrosis and Cancer in Relation to Radium 226 Burdens", Sharpe (1983)
- 26G "Chronic Radium Intoxication: Clinical and Autopsy Findings in Long Term New Jersey Survivors", Sharpe (1974)