ILLINOIS POLLUTION CONTROL BOARD
August 9, 1990

IN THE MATTER OF:	)	
	)	
SAFE DRINKING WATER ACT	)	R88-26
REGULATIONS	)	(Rulemaking)
	)	

FINAL ORDER. ADOPTED RULE

OPINION OF THE BOARD (by J. Anderson):

On May 24, 1990, the Board entered a final Opinion and Order in this matter. As is discussed in greater detail below, the Order allowed time for post-adoption comment from the agencies involved in the authorization process. For the reasons discussed below, the Board is withdrawing the May 24, 1990, Opinion and Order, and is replacing it with this Opinion and Order.

Pursuant to Section 17.5 of the Environmental Protection Act (Act), the Board is adopting regulations which are identical in substance to USEPA regulations implementing the Safe Drinking Water Act (SDWA). This action involves the repeal of much of existing 35 Ill. Adm. Code 604, 605, 606 and 607, and their replacement with a new 35 Ill. Adm. Code 611.

Section 17.5 of the Act provides for quick adoption of regulations which are "identical in substance" to federal regulations; Section 17.5 provides that Title VII of the Act and Section 5 of the Illinois Administrative Procedure Act (APA) shall not apply. Because this rulemaking is not subject to Section 5 of the APA, it is not subject to first notice or to second notice review by the Joint Committee on Administrative Rules (JCAR).

The SDWA program was drawn from 40 CFR 141, 142 and 143 (1989). The proposal was based on the 1987 Edition. For the reasons discussed below, in the adopted rules, the Board has replaced most of these references with a simple reference to the 1989 CFR Edition.

PUBLIC COMMENT

The Board adopted a proposed Opinion and Order on October 5, 1989. The proposal appeared on December 1, 1989, at 13 Ill. Reg. 18690. The Board received, and greatly appreciates, the following public comment following the publication in the Illinois Register:

PC 2 Administrative Code Division, January 8, 1990

PC 3 City of Chicago, Department of Water, January 17, 1990

The Board acknowledges the contributions of Morton Dorothy and Anne Manly in drafting the Opinion and Order.

PC 4 USEPA, February 13, 1990

PC 5 Agency, February 15, 1990

PC 6 Illinois Department of Public Health, March 22, 1990

PC 7 JCAR, January 12, 1990.

PC 1 was a preliminary draft proposal prepared by the Agency, which was Docketed on March 14, 1989, prior to the Board's Proposal.

POST-ADOPTION COMMENT

As noted, on May 24, 1990, the Board adopted a "Final" Opinion and Order, which allowed a post-adoption comment period. As is discussed below, the post-adoption comment period was extended at the request of the Agency. The Board received the following public comment following the May 24, 1990, Opinion and Order:

PC 8 Flo-Systems, July 5, 1990

PC 9 City of Naperville, July 6, 1990

PC 10 Elgin Water Department, July 9, 1990

PC 11 City of Pinckneyville, July 17, 1990

PC 12 USEPA, July 17, 1990

PC 13 City of Evanston, July 17, 1990

PC 14 Agency, July 20, 1990

PC 15 Advanced Polymer Systems, August 2, 1990

This particular rulemaking has presented unusual difficulties because of the number of issues that were not addressed until after the Board adopted the rules, that is, not until the post-adoption comment period. In so saying, we recognize that this is the first proceeding involving "identical in substance" public water supply regulations flowing from the Safe Drinking Water Act, and the Agency's Division that oversees the public water supplies. The cause and effect of the difficulties created, however, in addition to an unfortunate loss of time, do need to be explained so that the development of the rules and the reasons therefore can be tracked for future interpretation.

The "identical in substance" procedures, that are intended to avoid just a problem as occurred here, were first developed in the RCRA program, the first of the fast track "identical in substance" rulemakings (which now include such areas as industrial pretreatment, underground injection control, and underground storage tanks). The Board, the Agency, USEPA Region 5 and the Attorney General informally set up, in writing, a system now called the "RCRA agreement". A key provision states that the participants would comment up-front, during the formal 45 day comment period, on perceived problem areas in

the rules as proposed. It is during this pre-adoption phase that the Board requests comment (now in bold type), and needs responses. If the system is to work, the Board must assume, and so states in its adopting Opinion, that silence means no objection. It was also agreed that, after the Board adopted the rule, it would hold it for up to 30 days before filing it, primarily to make sure that USEPA "headquarters" did not have some problem, and for a final "look-see" by the participants at the Board's adopted language changes in response to the earlier comments. Post-adoption changes seldom occur, and if they do, they are isolated. The purpose of this expedited approach is to comply with legislative adoption, and federal authorization, deadlines. Success depends on avoiding a regulatory "rollover" caused by having to revisit the regulations at the back-end.

This is not what happened in this Docket, and we are at this juncture in the "back-end" phase working on issues that should have been dealt with at the front-end. We certainly understand that the Agency staff was stretched thin and that the potential for subsequent problems, might not have been fully perceived. Indeed, the problems were compounded for both the Board and the Agency because of further unpredicted difficulties with the rules, for which Region 5 has provided comments in its post-adoption comment (PC 12), not in its comments on the proposed rule (PC 4). The Agency post-adoption comment, PC 14, is a massive document, consisting of 67 pages plus appendices. Most, but not all of this comment is directed at language which was present in the initial proposal, where the Board in its accompanying Opinion, we note, made its usual specific requests for comment, set in bold face type.

The effect of all this is that we are dealing at this juncture with three documents consisting of: three orders, one proposed -- and two adopted, the latter replacing the former, and three accompanying Opinions focused on many of the same issues; and two sets of Agency comments on the first two sets of documents. This Opinion attempts to track the issues and the language as they developed. The Opinion will first set out how we addressed the issue in the Proposed Opinion. We will then cite to the Agency's initial comment (PC 5). If the Agency failed to comment, the we will reference to the item in PC 5 which came the closest to the issue. In order to try to further clarify the situation, the we will put "post-adoption" before references to PC 14. If only PC 5 is referenced, then only the proposed and first adopted documents need be referred to.

Finally, we note that on August 6, 1990, three days before the Board meeting, the Agency filed an addtional set of comments, which includes further, more comprehensive, draft language. The Board will not further delay this Docket in order to review these comments. It will defer action on them to another Docket. We believe that the regulations as hereby again adopted are acceptable for authorization purposes, and we will have to deal with problems with our legislative deadlines in a subsequent Docket as they arise.

The initial public comments mainly, and the post-adoption comments in certain respects, raised broad issues which are addressed in general below. Comments addressing specific Sections are addressed with the discussion of the specific Sections.

EXTENSION OF TIME ORDERS

Section 7.2(b) of the Act requires the Board to adopt "identical in substance" rules within one year after adoption by USEPA. If the Board is unable to complete the rulemaking within one year, the Board is to adopt an "extension of time" Order, and publish a notice in the Illinois Register. On August 31, 1989, Board adopted an extension Order, which appeared at 13 Ill. Reg. 18641. On January 11, 1990, the Board entered a second extension Order, which appeared at 14 Ill. Reg. 3285.

In the August 31 Order, the Board noted that it was impossible to literally comply with the time limits in Section 7.2(b) of the Act in initial adoption of an ongoing federal program. The USEPA rules date back to December 24, 1975, long before Section 7.2 or 17.5 of the Act were adopted. However, the Board noted the major USEPA amendments of June 29, 1989, and stated its intent to develop a proposal including them.

In the January 11, 1990, Order, the Board noted that the Agency had requested a 30 day extension of the public comment period. The Board granted the extension, and entered another extension of time Order.

The Agency actually filed PC 5 on February 15, 1990. However, this comment raised issues concerning possible overlapping jurisdiction with the Illinois Department of Public Health (Public Health). The Board wrote to Public Health, requesting comment. A response (PC 6) was received on March 22, 1990. At this point the matter became ready for decision. However, these delays had pushed this decision forward into time needed for the RCRA updates, R89-9 and R90-2, which are subject to the same schedule under Section 7.2(b) of the Act.

The Board entered a final Opinion and Order on May 24, 1990, which allowed the agencies involved in the authorization process to file post-adoption comments through June 25, 1990. However, on June 6, 1990, the Agency filed a request to extend the post-adoption comment period to July 25, 1990. On June 7, 1990, the Board granted an extension, but only through July 17, 1990. On June 21, 1990, the Board entered another "extension of time" Order, citing the Agency's extension as the reason.

As is discussed above, the Agency did not actually file its post-adoption comments until July 20, 1990. However, these comments were incomplete, notably lacking copies of out-of-date publications which the Agency wanted incorporated by reference, and comment on the revisions to existing Parts 604 through 607. The absence of these documents hampered the Board in its effort to revise the Opinion and Order. As noted above, the Agency filed a supplemental comment including these items on August 4, 1990, far too late to aid in the preparation of the Opinion and Order for August 9, 1990.

ABBREVIATIONS

The USEPA rules use a large number of acronyms sporadically. The Board has moved the definitions of these to the definitions, Section 611.101, and used the acronym wherever appropriate. One effect of this is to tighten the use of defined terms. For example, the USEPA rules define "public water

system", or "PWS", but then go on to use many synonyms, such as "supply" or "system", when "PWS" is obviously intended. The Board rules are clearer in that they use the defined acronym, rather than undefined abbreviations. Also, because there are a large number of long phrases which are frequently repeated, the acronyms shorten the rules. However, the number of acronyms in the resulting rules are apt to cause problems until people get used to them. Since the acronyms are used in the Opinion also, the Board has included the following table of acronyms:

Agency	Illinois Environmental Protection Agency
Ai	Inactivation Ratio: Ai = CTcalc/CT99.9
B	The sum of the inactivation ratios, or "total inactivation ratio" is calculated by adding together the inactivation ratio for each disinfection sequence: B = SUM(Ai)
"BAT"	Best available technology
"Board"	Illinois Pollution Control Board
"CAS No"	Chemical Abstracts Services Number
"C"	"RDC" when used in formulas (See below)
"CT" or "CTcalc"	The product of "residual disinfectant concentration" (RDC or C) in mg/L determined before or at the first customer, and the corresponding "disinfectant contact time" (T) in minutes.
"CT99.9"	CT value required for 99.9 percent (3-log) inactivation of Giardia lamblia cysts. (See Appendix B)
"CWS"	Community Water System.
"GC"	"gas chromatography" or "gas-liquid phase chromatography".
"GC/MS"	GC followed by mass spectrometry.
"HPC"	Heterotrophic plate count, measured as specified in Section 611.531(c).
"MAC"	Maximum allowable concentration, the equivalent of an "MCL" in the existing State regulations.
"MCL"	Maximum contaminant level.
"MCLG"	Maximum contaminant level goal.

"MTP"	Maximum Total Trihalomethane Potential
"NTNCWS"	Non-transient non-community water system.
"NPDWR"	National primary drinking water regulation.
"NTU"	Nephelometric turbidity units
"P-A Coliform Test"	Presence-Absence Coliform Test
"pCi"	Picocurie
"PWS"	Public water system.
"Public Health"	Illinois Department of Public Health
"Rem"	The unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A "millirem (mrem)" is 1/1000 of a rem.
"SDWA"	Safe Drinking Water Act, 42 U.S.C. 300f et seq.
"TTHM"	Total trihalomethanes.
"THM"	Trihalomethane.
"TU"	Turbidity units
"USEPA"	United States Environmental Protection Agency
"VOC"	Volatile organic chemical.

GENERAL APPROACH TO STRINGENCY

Section 17.5 of the Act requires the Board to adopt rules which are "identical in substance" with USEPA Safe Drinking Water Act rules. These rules are found mainly a 40 CFR 141.

These rules largely supersede the existing PWS rules in 35 Ill. Adm. Code 604 through 607. The Board has followed a plan of adopting the larger body of USEPA rules in a new Part 611. The more stringent and additional, consistent State rules have been moved into the body of the federal text.

In accomplishing the reformatting, the Board has followed a general approach of following the USEPA rules, and appending additional State requirements to the USEPA structure. It would have been possible to have retained the existing State structure, appending the additional USEPA requirements to it. This would have involved initially a much smaller volume of rulemaking. However, it would have involved a higher degree of review by way of line-by-line comparison of the State and USEPA text. Moreover, it would have produced a set of rules which would be difficult to maintain.

Since it has adopted the USEPA structure as the baseline, the Board will be able to carry out routine updates of the rules based on the Federal Registers. If the State structure were retained, it would be necessary to repeat the line-by-line comparison of the texts with each update.

Most existing State regulations are less stringent than, virtually the same as or inconsistent with the federal, so that there is not a large amount of text to deal with in accommodating the more stringent and additional, consistent State requirements.

The existing State regulations regulate more PWS contaminants than do the federal. For the contaminants regulated in both rule sets, the existing Board regulations are mostly the same or more stringent. An exception are the new federal disinfection requirements and microbial standards. As is discussed below, it is difficult to make direct comparisons of these provisions for stringency.

Most of the MCLs, both federal and State, are associated with sampling, analysis and reporting requirements. The Board has made the stringency, or consistency, determination with respect to the MCL, and then retained the associated sampling and analysis requirement. For example, it would not make sense to adopt the P/A standard, and then go on to require bacterial counts.

Most of the MCLs also have a reporting and notice provisions. The Board has kept the provisions associated with the MCL.

It is a little simpler with respect to the additional MCLs in the Board regulations. The Board has inserted these additional MCLs, along with the associated analytical and reporting requirements, into the body of the federal rules. The Board has used "Board Notes", or other devices, to mark these as additional State requirements.

AGENCY OR BOARD ACTION?

The rules are based mainly on 40 CFR 141. The USEPA rules include many decisions which, in a system administered by USEPA, would be made by the Regional Administrator. In fashioning the State rules from these "pattern rules", the Board has almost always changed "Regional Administrator" to "Agency". However, in some situations "Regional Administrator" has been changed to "USEPA" or "Board". Section 7.2(a)(5) of the Act requires the Board to specify which decisions USEPA will retain. In addition, the Board is to specify which State agency is to make decisions, based on the general division of functions within the Act and other Illinois statutes.

In situations in which USEPA is to retain decision-making authority, the Board has simply replaced "Regional Administrator" with "USEPA".

The USEPA rules are flexible as to the procedural context for most decisions. The SDWA does not require a construction or operating permit of the type required by 35 Ill. Adm. Code 602. The states have been left the option of requiring a comprehensive permit, or of administering the rules through other procedural arrangements. Since, as is discussed below in connection with the Agency comment, Illinois has a pre-existing permit

requirement, the Board has generally placed the requirements of 40 CFR 141 into the procedural context of Agency action on a special exception permit application. The Agency has authority to administer such a permit system under Sections 4 and 39 of the Act.

In a few instances in identical in substance rules, decisions are not appropriate for Agency action pursuant to a permit application. Among the considerations in determining the general division of authority between the Agency and the Board are the following:

1. Is the person making the decision applying a Board regulation, or taking action contrary to ("waiving") a Board regulation? It generally takes some form of Board action to "waive" a Board regulation. For example, the Agency clearly has authority to apply a regulation which says "If A, do X; if not A, do Y". On the other hand, regulations which say "If not A, the state shall waive X" are more troubling.

2. Is there a clear standard for action such that the Board can give meaningful review to an Agency decision?

3. Is there a right to appeal? Agency actions are generally appealable to the Board.

4. Does this action concern a person who is required to have a permit anyway? If so there is a pre-existing permit relationship which can easily be used as a context for Agency decision. If the action concerns a person who does not have a permit, it is more difficult to place the decision into a procedural context which would be within the Agency's initial jurisdiction.

5. Does the action result in exemption from the permit requirement itself? If so, Board action is generally required.

6. Does the decision amount to "determining, defining or implementing environmental control standards" within the meaning of Section 5(b) of the Act? If so, it must be made by the Board.

Once it is determined that a decision must be made by the Board, rather than the Agency, it is necessary to determine what procedural context is best suited for that decision. There are four common classes of Board decision: variance, adjusted standard, site specific rulemaking and enforcement. The first three are methods by which a regulation can be temporarily postponed (variance) or adjusted to meet specific situations (adjusted standard or site specific rulemaking). Note that there are differences in the nomenclature for these decisions between the USEPA and Board regulations. These differences have caused past misunderstandings with USEPA.

A variance is initiated by the operator filing a petition pursuant to Title IX of the Act and 35 Ill. Adm. Code 104. The Agency files a recommendation as to what action the Board should take. The Board may conduct a public hearing, and must do so if there is an objection to the variance.

Board variances are: temporary; based on arbitrary or unreasonable hardship; and, require a plan for eventual compliance with the general regulation. To the extent a USEPA decision involves these factors, a Board variance is an appropriate mechanism.

A variance is not an appropriate mechanism for a decision which is not based on arbitrary or unreasonable hardship, or which grants permanent relief without eventual compliance. To grant permanent relief, the Board needs to grant a site specific regulation or an adjusted standard pursuant to Sections 27 or 28.1 of the Act, and 35 Ill. Adm. Code 102 or 106.

RESPONSE TO GENERAL COMMENTS

The Agency comment (PC 5) included a comprehensive review of the Proposal. However, the Agency raised several issues which are of a global nature, which cannot be easily addressed in the Section-by-Section discussion. The Public Health comment (PC 6) concerns one of the Agency's global issues. The post-adoption comments, including PC 12 and 14, also raise global issues. This section of the Opinion will address the global issues. Comments addressing single Sections will be addressed below in the Section-by-Section discussion.

DEFINITIONS IN ACT

The Agency suggests that the Board change several definitions to conform with definitions in the Act. This includes the definition of "non-CWS", which is discussed below, and which was also the subject of PC 6.

In identical in substance rulemaking there is always an ambiguity when the statute defines terms, and instructs the Board to adopt regulations which include the same terms with different definitions. The Board has long held that, in identical in substance rulemaking, the mandate to adopt identical in substance rules requires that the Board adopt the definitions in the federal rules. To do otherwise would risk adopting a program which would regulate persons and activities other than those regulated by the federal program, in violation of the identical in substance mandate, now defined in Section 7.2(a) of the Act. Furthermore, using the definitions from the Act could change the way the program components fit together, leaving loopholes and contradictory provisions. (R81-22, February 4, 1982, Opinion, p. 17; 45 PCB 317, 333) Therefore, the Board has used the definitions from the USEPA rules.

NON-COMMUNITY WATER SUPPLIES

The Board proposed rules, based on 40 CFR 141, to regulate PWSs, which include both CWSs and non-CWSs. As defined in both the USEPA rules and Act, non-CWSs are small PWSs: systems with fewer than 15 connections, and which regularly serve fewer than 25 persons. The Agency and Public Health pointed out that Public Health regulates non-CWSs. (PC 5 and 6). They argue that the definition of "Non-Community Water Supply" in Section 3.05 of the Act precludes the Board from regulating non-CWSs. The definition reads as follows:

"Non-Community Water Supply" means a public water

> supply that is not a community water supply. The requirements of this Act shall not apply to non-community water supplies. (Ill. Rev. Stat. 1988, ch. 111 1/2, par. 1003.05) (Emphasis added.)

As noted above, the Board has long held that the identical in substance mandate, as defined in Section 7.2 of the Act, requires the Board to adopt the definitions in the USEPA rules, rather than in the Act. However, the underlined portion of Section 3.05 is a substantive provision, limiting the scope of the Act, rather than a part of the definition of "non-CWS".

The commenters are attempting to change the underlined portion of Section 3.05 to read: "Board regulations shall not apply to non-CWSs". However, this is not what Section 3.05 says. Rather, it says: "The requirements of this Act shall not apply to non-community water supplies." The "requirements of this Act" do apply to the Board, and Section 17.5 provides:

> In accordance with Section 7.2, the Board shall adopt regulations which are "identical in substance" to federal regulations or amendments thereto promulgated by the Administrator of [USEPA] to implement Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the [SDWA] ... (Ill. Rev. Stat. 1988 Supp., ch. 111 1/2, par. 1017.5)

Section 7.2 provides that:

> ... "identical in substance" means State regulations which require the same actions with respect to protection of the environment, by the same group of affected persons, as would federal regulations if USEPA administered the subject program in Illinois. ... (Ill. Rev. Stat. 1988 Supp., ch. 111 1/2, par. 1007.2)

The Proposal was drawn from 40 CFR 141, which regulates both CWSs and non-CWSs. As the Board sees it, Section 17.5 of the Act is a mandate to adopt regulations which are "identical in substance" with 40 CFR 141, which includes regulations applicable both to CWSs and non-CWSs. Therefore, Section 17.5 requires the Board to adopt regulations governing non-CWSs, regardless of the provision in Section 3.05 that the Act itself does not apply to them.

Because of the importance of this issue, the Board has gone on to examine two other possible arguments not specifically raised. The first is the possibility that the portions of 40 CFR 141 affecting non-CWSs were adopted under federal authority other than the SDWA Sections listed in Section 17.5 of the Act. The second is the possibility is that the State statutes involved ought to be interpreted as superseding or complementing. The Board has determined that both of these lines of reasoning further support its interpretation that it is to adopt regulations applicable to both CWSs and non-CWSs.

The SDWA defines "public water system", without drawing a distinction

between CWSs and non-CWSs. However, 40 CFR 141.2 defines "PWS", and draws the distinction between a "CWS" and a "non-CWS". 40 CFR 141 then goes on to specifically regulate both "CWSs" and "non-CWSs".

USEPA cites its authority for 40 CFR 141 in the main authority note at the beginning of the Part. This includes the Sections of the SDWA cited in Section 17.5 of the Act, and some others. Unfortunately, USEPA does not specify which Sections of the rules are authorized by which Sections of the SDWA. However, none of the cited Sections include any reference whatsoever to regulation of non-CWSs. Indeed, the Board has been unable to find any references to non-CWSs anywhere in the SDWA. The Board is therefore unable to find any basis in the citation to specific SDWA Sections for the proposition that it should not regulate non-CWSs.

As the Board sees it, the statutory language is clear on its face. There is, therefore, no need to address statutory intent. However, the Board will go on with the second possible argument, which delves into intent.

The second possible argument is that the Illinois statutory provisions should be read as either superseding or complementing each other. In the first situation, suppose P.A. #1 says "do A and B". P.A. #2 says "don't do B". One could read these together and decide that the intent was to "do A". On the other hand, one would reach the opposite conclusion if the order of adoption were reversed: the directive to "do A and B" would have superseded "don't do B".

In the second situation, suppose P.A. #3 tells an agency X to "do A and B", and agency Y to "do B". One might read the statutes as complementing one another so that agency X is to "do A" and Y is to "do B".

These arguments depend on the order in which the various statutes were adopted or amended. The following table summarizes the order of adoption.

ch. 111½ par.	P.A.	Effective	Summary
1003.5	84-1308	8/25/86	Definition of "non-CWS"; limitation on applicability of Act
7459	85-863	9/24/87	Public Health rulemaking authority over non-CWSs
1017.5	85-1048	1/1/89	Board to adopt "identical in substance" rules.

The "identical in substance" mandate of Section 17.5 was adopted last. To the extent pars. 1003.5 and 7459 may be inconsistent, they were superseded.

In the second situation, these provisions would be read together, as complementing one another. However, they were added in three separate Acts over a span of three years. The Board does not see any indication that these separate Acts were a part of a comprehensive plan to divide authority over public water supplies between the Board and Public Health. On the contrary,

it is more likely that Section 17.5 of the Act was added to remedy deficiencies in the prior Acts.

The Agency and Public Health have cited the UIC identical in substance mandate, in Section 13(d) of the Act, as an example of a split of authority to adopt portions of a federal program. Pursuant to Section 13(d) of the Act, the Board adopted UIC regulations applicable only to Class I, III, IV and V wells, leaving the regulation of Class II wells to the Department of Mines and Minerals. (R81-32, Opinion of May 13, 1982, p.9; 47 PCB 95, 103) However, Section 13(c) directs the Board to adopt the entire text of the USEPA UIC rules, without reference to the omission of Class II wells. The reasoning behind the omission of Class II wells is not contained in the R81-32 Opinion. At the same time as R81-32 was pending, Mines and Minerals was in the process of adopting regulations which closely tracked the USEPA rules governing Class II wells, which inject fluids for recovery of petroleum.

In R81-32, the Agency proposed regulations to the Board. The omission of Class II wells was a major component of the Agency's proposal. The Board put the Agency's proposal out for public comment, and no one raised the issue of the statutory basis for excluding Class II wells. R81-32 predated the specific definition of "identical in substance" in Section 7.2 of the Act, and also predated the UST authority, which specifically directed the Board to adopt identical in substance rules to be implemented by an agency other than the Agency. (R88-27, Opinion of April 27, 1989; R89-19, April 26, 1990)

It would be easier to read these statutes as complementing each other if Par. 7459 contained a directive to adopt "identical in substance" rules, or if Public Health in fact had done so. However, Par. 7459 is very different from an identical in substance mandate, and Public Health has not so construed it.

Par. 7459 reads as follows:

> The Department shall promulgate rules for the construction and operation of all non-community and semi-private water supplies. Such rules shall include but need not be limited to: the establishment of maximum contaminant levels no more stringent than federally established standards where such standards exist; the maintenance of records; requirements for the submission and frequency of submission of water samples by suppliers of water to determine the water quality. (Ill. Rev. Stat. 1988 Supp., ch. 111 1/2, par. 7459) (Emphasis added)

The directive to Public Health is to adopt MCLs "no more stringent than federally established standards". This is vastly different than the identical in substance directive of Section 7.2 and 17.5 of the Act to adopt regulations "which require the same actions, by the same persons". Par. 7459 places a cap on MCLs: it requires that they be "no more stringent". It is silent as to the floor. On the other hand, Sections 7.2 and 17.5 establish a floor, by requiring the same MCLs as the federal rule, unless the Board adopts more stringent State requirements.

Section 7.2 also generally requires the Board to adopt the verbatim text of the USEPA rule. Public Health has recently implemented par. 7459 by amending 77 Ill. Adm. Code 900, at 13 Ill. Reg. 12578, effective August 1, 1989. The adoption of federal rules consists mainly of incorporations by reference of 40 CFR 141; for example, see 77 Ill. Adm. Code 900.30. There has been little effort to set out the verbatim text of USEPA rules as applicable to non-CWSs.

The Board interprets Section 17.5 as requiring it to adopt the entire text of 40 CFR 141, as applicable to both CWSs and non-CWSs. The Agency is to implement the portion of the rules applicable to CWSs, Public Health the portion applicable to non-CWSs. The Act clearly contemplates that the Board has authority to adopt regulations with which other agencies must comply. Section 47 provides:

> The State of Illinois, and all its agencies, institutions, officers and subdivisions shall comply with all requirements, prohibitions, and other provisions of the the Act and of regulations adopted thereunder. (Ill. Rev. Stat. 1987, ch. 111 1/2, par 1047(a)).

Furthermore, Section 7.2(a)(5) of the Act, which governs identical in substance rulemaking, provides that, in adopting an identical in substance regulation:

> ...[T]he Board regulation shall specify whether a decision is to be made by the Board, the Agency or some other State agency, based upon the general division of functions within this Act and other Illinois statutes. (Ill. Rev. Stat. 1988 Supp., ch. 111 1/2, par. 1007.2(a)(5)).

As the Board sees it, the General Assembly intended the Board to adopt the verbatim text of 40 CFR 141, as applicable to non-CWSs, to establish the minimum requirements applicable to non-CWSs. The rules are to be implemented by Public Health, which also has the authority to adopt additional, no more stringent requirements. Once the Board rules are adopted, Public Health may elect to replace the general references to federal law in its rules with cross references to the Board's identical in substance rules.

As is discussed above, the Board is moving its "additional requirements" into this Part, so as to afford a complete statement of requirements. However, the additional requirements are clearly applicable only to CWSs. The Board has reviewed the rules to make certain that this is correctly stated with respect to each additional State requirement. The Board has also added to Section 611.100 an introductory provision so stating, so as to provide a general rule to cover any omissions.

Another aspect of Public Health's jurisdiction over non-CWSs concerns permits and other approvals, and reports. It is clear that the statute did not intend to duplicate these requirements for non-CWSs. The Board has reviewed the rules, and inserted "or, for non-CWSs, Public Health" at points

where confusion is likely. However, there are too many of these to change all of them without introducing more confusion into the rules. The Board has also added an introductory provision in Section 611.100 to cover the general situation.

MASTER PERMIT

40 CFR 141 includes in excess of 55 "unless otherwise specified by the State" provisions. In the proposal the Board provided that the Agency was to specify most of these "by permit condition". The Agency objected that, in PWSs, it does not issue a "master permit", but rather issues construction permits for each project. The "operating permit" in 35 Ill. Adm. Code 602.102 is used only to assure that a project has been completed in accordance with the construction permit. (PC 5 and 14) Because there is no "master permit", there would not generally be an outstanding permit or application to form a procedural context for these decisions. Pursuant to the suggestion in the Agency's post-adoption comment, the Board has added Section 611.110, which, as is discussed below, provides for a "special exception permit" as a vehicle by which the Agency makes these decisions.

RETAINING PARTS 604 - 607

The June 29, 1989 disinfection and filtration rules have a number of delayed effective dates. The Agency pointed out that immediately repealing the existing Parts, while adopting the new Parts with delayed effective dates, would deregulate many PWSs during the phase-in of the new rules.

The Agency's suggestion is to drop many aspects of the disinfection rules from this Docket, and to address them in a series of rulemakings as the delayed effective dates approach. However, Sections 7.2 and 17.5 of the Act are keyed to "adoption" or "promulgation" of rules by USEPA, not to the effective dates of the rules. Following this course would run counter to the time requirements of Section 7.2(b) of the Act.

It is arguable that the USEPA rules are presently less stringent, and hence need not be adopted under Section 7.2 of the Act. However, what would then be the trigger for the one year deadline? One could go on to argue that Section 7.2 of the Act requires the Board to initiate identical in substance rulemaking one year prior to, and complete rulemaking just prior to, the effective date of any USEPA rule which would be more stringent than the presently more stringent State rule. However, this is remote from the actual language of Section 7.2.

The Agency's suggested course would involve a series of actions and filings over several years. In the event of an appeal, it would be uncertain whether the Board would be able to carry out the required future filings while jurisdiction was with the Appellate Court.

The Board has construed Section 7.2 of the Act as requiring the Board to adopt the needed rules within one year of USEPA adoption, providing any needed transitional rules at that time. Where the USEPA rule is presently less stringent, the Board will provide that the State rule continues up to the effective date of the more stringent USEPA requirement.

The Board had proposed to repeal all of Parts 604 through 607. We have identified the "presently more stringent" requirements, based on the Agency's comment, and retained them, in their present locations. (PC 5) The Board has added "until the effective date" of the new rule clauses to them. These actions are summarized in a Table at the end of this Opinion.

IEPA TREATMENT REQUIREMENTS

The June 29 USEPA disinfection rules include "treatment requirements". The Agency has "criteria" which specify treatment technique requirements, which the Agency claims are more stringent than the USEPA treatment technique requirements. The criteria include 35 Ill. Adm. Code 652, 653 and 654. Specifically, the new USEPA rules require PWSs using surface water to filter, with some exceptions. The Agency claims that 35 Ill. Adm. Code 654.101(d) requires all surface supplies to filter.

The Agency wants the Board to omit the treatment technique requirements from this rulemaking, and defer to the Agency's criteria. (PC 5) There are several problems with this.

USEPA has adopted these treatment technique requirements. Sections 7.2 and 17.5 of the Act require the Board to adopt "identical in substance" rules. Section 7.2 of the Act provides that the regulations should reflect any "consistent, more stringent regulations adopted pursuant to the rulemaking requirements of Title VII of this Act". This does not authorize retention of more stringent Agency criteria, which have not gone through full Title VII rulemaking.

As is discussed above, Section 5(b) requires the Board to "determine, define and implement the environmental control standards applicable in the State of Illinois". Sections 4(g) and 39 of the Act authorize the Agency to administer permit systems established under the Act or Board rules. Whether the Agency's criteria are valid depends on whether they are ancillary to the Agency's authority to administer the permit system, or are "environmental control standards". The Act does not authorize the Board to subdelegate its rulemaking authority to the Agency. Nor is 35 Ill. Adm. Code 602.115 such a subdelegation.

Under the existing PWS rules, Board regulations set performance standards, including numerical standards for turbidity, chlorine residual and bacteria. The Agency is obligated to issue permits for treatment works designed to meet these performance standards. If the Agency makes a policy decision, as opposed to a decision on an individual permit, that certain treatment methods meet Board standards, Section 3.09 of the APA requires that it promulgate a rule stating the policy. For example, if a Board rule requires the Agency to issue permits requiring PWSs to meet standard X, the Agency might make a policy decision that treatment techniques A, B and C meet standard X. If the Agency makes such a decision as a policy, it should promulgate a rule specifying that the techniques meet the Board standard. Many of the Agency criteria are valid APA rules interpreting Board regulations.

The Agency's criterion requiring filtration, 35 Ill. Adm. Code

654.101(d), is invalid, because it is setting an additional environmental control standard, rather than interpreting Board regulations. For example, consider an applicant who demonstrated that an alternative to "coagulation, clarification, rapid sand filtration or its equivalent" met the requirements of Board regulations. Section 654.101(d) is purporting to give a basis for permit denial for something which meets Board regulations. As such, it is invalid.

In the alternative, it is arguable that the "or its equivalent" provision in the criterion authorizes other methods which meet the Board performance standards, thereby making the criterion valid. (Note, however, that this interpretation is inconsistent with the Agency's basic argument that it already requires "complete treatment".) Under this alternative interpretation of the criterion, the Board must still adopt the USEPA treatment technique requirements. Once the new rules are adopted, the existing Board performance standards would be gone, so that there would be no way to judge whether the alternative was "equivalent". Indeed, alternative treatment techniques must be considered by way of an adjusted standard (a "variance" under Section 1415(a)(3) of the SDWA). (See Section 611.113). Under the alternative interpretation, the Agency criterion is inconsistent with the SDWA.

The USEPA treatment requirements involved in this rulemaking are fundamentally different from the existing Board regulations in that they operate in lieu of performance standards. For example, USEPA requires filtration and disinfection in certain situations regardless of whether the PWS could meet finished water standards without such. (However, there are exceptions.) These treatment requirements are "environmental control standards" which the Board must adopt under Section 5 of the Act.

The result of this is that some surface water supplies in Illinois which presently filter may wind up not having to filter under the SDWA rules, if they qualify for one of the exceptions in the USEPA rule. However, this result appears to be mandated by the Act's requirement of an identical in substance program, and USEPA's adoption of treatment requirements. The problem can be cured if the Agency proposes a more stringent rule to the Board under normal rulemaking procedures.

LAB CERTIFICATION AND ANALYTICAL METHODS

The Agency has authority to certify labs under Section 4(o) of the Act. The proposal deferred to this, and to the Agency's rules on certification. However, this does not mean that the Board should drop the specification of analytical methods from the proposal.

The Agency cited to its lab certification authority in Sections 4(o) and (p) of the Act. Section 4(n) of the Act authorizes the Agency to adopt laboratory standards. Section 4(o) authorizes certificates of competency to labs. Section 4(p) requires the Agency to analyse samples for PWSs. As such, Section 4(p) is not directly related to lab certification. The Board believes that the Agency intended to cite to Sections 4(n) and (o). Of these, Section 4(o) is the one which actually authorizes lab certification.

40 CFR 141 specifies many analytical methods. Section 17.5 of the Act

requires the Board to adopt rules specifying these methods.

More generally, one needs to differentiate laboratory certification from the specification of analytical methods. When the Board, or USEPA, adopts a concentration-based standard, it usually specifies an analytical method for determining compliance. This is part of the definition of the parameter to be regulated. The Agency's role in lab certification is to assure that the laboratory is following the specified method. There is nothing in Section 4(n) of the Act which authorizes the Agency to adopt environmental control standards.

Many standard methods have assumptions and biases built into them. (This is discussed in Standard Methods, 17th Edition, Method 1030B) However, these were accommodated when the standard was adopted, since the data on which the standard was based was measured by the same methods. For example, there may be a systematic error such that 1.0 mg/L X is really 1.2 mg/L X. However, this also means that, after the bias is discovered, the health effects on which standard was based really were occurring at 1.2 mg/L, rather than 1.0, so that the standard continues to protect. If the Agency were to change the measurement method after a standard was adopted, it would effectively be changing the standard. In the example, suppose the Agency substituted a measurement method which eliminated the error. The effect would be to tighten the standard, without any evidence that a tighter standard is needed to protect the public health, or following the procedures to modify the standard. This is why the agency with standard setting authority must specify the measurement methods.

REORGANIZATION

In its post-adoption comments, the Agency is continuing to object to the general organization of the proposal. (post-adoption PC 14, p. 9). The Agency recommends that the organization "follow the CFR format as much as possible". (PC 14, p. 12) However, the Agency goes on to recommend a number specific changes which would destroy the close correspondence between Part 611 and 40 CFR 141. This indicates that the Agency may misperceive the structure of Part 611, and its relation to Part 141. The Board will therefore digress.

40 CFR 141 has the following outline:

General Provisions

MCLs
- Inorganics
- Organics
- Turbidity
- Microbiologicals
- Radioactives

Monitoring and Analytical Requirements
- Microbiologicals
- Turbidity
- Inorganics
- Organics

Radioactives
Miscellaneous Provisions
THMS

Misplaced Appendices

Reporting, Public Notification and Recordkeeping

Special Regulations
Special Monitoring for Organics
Special Monitoring for Sodium and Corrosivity
Special Monitoring for Lead

MCLGs

Revised MCLs
Organics
Inorganics
Microbiologicals

Filtration and Disinfection
General Requirements
Analytical and Monitoring
Reporting and Recordkeeping

Non-Centralized Treatment Devices

USEPA starts out with a simple structure, but then departs from that structure. This appears to have resulted because USEPA has run out of room to insert new provisions. The special monitoring requirements, revised MCLs and treatment requirements have been appended to the end of the outline in an arbitrary order. The Board has simply moved large blocks of USEPA rules into their proper place in the original USEPA outline. The resulting outline is as follows:

General Provisions

Treatment Requirements
Filtration and Disinfection
Point of Use Devices

MCLs and Revised MCLs
Inorganics
Organics
Turbidity
Microbiologicals
Radioactives

Monitoring and Analytical Requirements
Miscellaneous Provisions
Microbiologicals
Turbidity
Inorganics

Organics
THMS
Radioactives

Reporting, Public Notification and Recordkeeping

The structure which the Agency requested represents a drastic departure from the USEPA rules. The Agency has asked the Board to group the MCLs, and monitoring, analytical and reporting requirements for each parameter, as follows: (PC 5, item 59; Post-adoption PC 14, p. 11, 59)

Organics
MCLs and Revised MCLS
Monitoring and Analytical Requirements
Reporting, Public Notification and Recordkeeping

Inorganics
MCLs and Revised MCLS
Monitoring and Analytical Requirements
Reporting, Public Notification and Recordkeeping

Microbiologicals
MCLs and Revised MCLS
Monitoring and Analytical Requirements
Reporting, Public Notification and Recordkeeping

Radioactives
MCLs and Revised MCLS
Monitoring and Analytical Requirements
Reporting, Public Notification and Recordkeeping

THMs
MCLs and Revised MCLS
Monitoring and Analytical Requirements
Reporting, Public Notification and Recordkeeping

There are a number of problems with this structure. The first is that it does not follow the USEPA structure at all. It would be necessary to duplicate and/or rewrite many USEPA rules to accomplish this. Furthermore, it does not track the logical division of functions within a PWS. For example, under the Agency's recommended structure laboratory provisions are scattered throughout the rules. On the other hand, in the Board and USEPA structures, laboratory provisions are in large blocks. Moreover, the Agency structure fundamentally assumes that each analytical and reporting requirement is associated with an MCL, which is not always the case.

Another factor which apparently disturbs the Agency is the Board's Subpart headings. The Subpart headings are intended as broad headings into which related provisions are grouped. The Board believes that its headings closely track the functional groupings of the USEPA rules, and that they represent a complete categorization of drinking water parameters such that any future USEPA rule could be placed into the structure without difficulty. The Board does not see any necessity in creating indefinite Subparts for each

further subdivision of these categories.

Subpart O is entitled "Organics". Since the next Subpart is "THMs", it is not necessary to say "Organics other than THMs". For monitoring, the Board has tracked the basic split in the USEPA rules between THMs and other organics (40 CFR 141.24 and 141.30). As to the other organics, the USEPA rules include many subclassifications: pesticides and three lists of specific organics. (See 40 CFR 141.12, 141.24, 141.40, 141.61). The scattering of these provisions appears to result from USEPA having run out of space, rather than any fundamental regulatory policy.

The Board has also rearranged the USEPA rules at lower levels. First, USEPA tends to append general provisions to the end of a Subpart. The Board has moved the general provisions to the beginning of the Subpart.

Second, the Board has factored large blocks of repeated language of the USEPA rules, and made them general provisions. For example, Section 611.213 is drawn from 40 CFR 141.72(a)(4)(ii), 141.72(b)(3)(ii), 141.74(b)(6)(ii), 141.74(c)(3)(ii), 141.75(a)(2)(vii) and 141.75(b)(2)(iii).

At the subsection level there is also a close correspondence between the Board and USEPA labels. Although the labels correspond, they are not identical. This is for two reasons. First, the long USEPA Sections have generally been broken into Board Sections at the first level of subdivision. Second, the subsection labels required by the Code Division are not the same as in the CFR. For this reason it is necessary to translate subsection labels. The following example illustrates this process:

Section 611.232	40 CFR 141.71(b)
(a)(1)	(1)(i)
(a)(2)	(1)(ii)
...	

This simple translation breaks down at a few points, such as in Section 611.232(b), which corresponds with 40 CFR 141.71(b)(2). The USEPA Section contains a "hanging paragraph", which cannot be simply codified under Code Division regulations.

In some situations a USEPA subsection has no Board counterpart. For example, as is discussed above, some USEPA provisions govern the authorization process. In these cases, the Board left a "hole" in the numbering, in order to preserve the correspondence with USEPA subsection labels, which is necessary to allow cross-reading of the texts. The Agency has persisted in characterizing these as "misnumberings", even though the Board has taken care to note all of them specifically in the Opinion. The Code Division does not allow the Board to insert the word "Reserved" to mark these holes. However, the Board has attempted to respond to the dilemma by inserting an explanation in Section 611.100(e). The Board will cross reference the explanation at the holes. However, this may cause the rules package to be rejected.

The Board has also followed a rule for assigning Section numbers. As noted, the USEPA Sections have been broken at the first level of

subdivision. The Board has "reserved" 10 to 20 numbers for each USEPA Section. The final digits of the Section number indicate the USEPA subsection from which the Section was drawn. For example:

35 Ill. Adm. Code	40 CFR
611.230	141.71, introduction
611.231	141.71(a)
611.232	141.71(b)
611.233	141.71(c)
611.234 - .239	"Reserved"

In some Sections the USEPA subsections are not all long enough to be complete Board Sections. In these situations the Board has lumped USEPA Sections, following the above rule with respect to the first USEPA Section in the lump. For example:

35 Ill. Adm. Code	40 CFR
611.650	141.40(a) - (f)
611.651 - .656	"Reserved"
611.657	141.40(g) - (m)
611.657 - .679	"Reserved"

COMBINING MCLs

40 CFR 141 includes three types of numerical finished water standards: "MCLs", "national revised MCLs" and "MCL goals". In the proposed Opinion the Board asked what the difference was:

> What is the difference between an MCL and a "national revised MCL"? The preamble discusses MCLG's, NPDWR's, MCL's, treatment techniques and BAT's, but never mentions "national revised MCL's". (52 Fed. Reg. 25691, July 8, 1987). The Board assumes that a "national revised MCL" is the same as an "MCL"; but, USEPA is placing into a separate Section MCL's adopted after the 1986 SDWA amendments. This may be in part because of the different "variance" requirements under Sections 1415 and 1416 of the SDWA, and the requirement to specify an MCLG.
>
> Assuming a "national revised MCL" is the same thing as an MCL, is there any need to keep these standards separate in the State regulations? Would it simplify the regulations to consolidate these lists? The Board **solicits comment** on this. (Proposed Opinion, p. 35)

The Board received no direct response to this question. (PC 5, item 60, 61) In the May 24, 1990, Opinion, the Board decided to keep the MCLs separate from the revised MCLs, because of possible differences in the applicability of SDWA variances. (p. 18). Now the Agency has clearly commented to the effect that it wants the MCL and revised MCL tables combined. (post-adoption PC 14,

p. 36) USEPA appears to agree that the Board is to choose the currently enforceable MCL, and adopt only that. (PC 12)

As was discussed in the earlier Opinions, there are other possible ways to read these USEPA rules. The first is that the 1986 amendments to the SDWA were a legislative repeal of the old MCLs, such that the revised MCLs are the only enforceable standards. The Agency and USEPA have still not directly addressed this possibility, but it is fairly clear that they do not agree that this is this case. The second has to do with whether USEPA will repeal the old MCL at the time it adopts a revised MCL for a parameter. Apparently, both the Agency and USEPA believe that USEPA will leave the old MCL in place. (PC 12; post-adoption PC 14, p. 36) If this is to be the case, it is important that the Board combine the MCL tables to avoid possible confusion.

In connection with the MCL/revised MCL question, the Agency has made a comment which appears to reflect a questionable interpretation of the SDWA. The Agency has stated that the "VOCs" in 40 CFR 141.61 and 35 Ill. Adm. Code 611.311 are "new standards, not revised standards". (post-adoption PC 14, p. 38) These are clearly labled "revised MCLs" in 40 CFR 141.61. USEPA appears to use the term "revised MCL" for any MCLs adopted pursuant to the 1986 SDWA, whether they replace an earlier standard or not. These are "revised MCLs" adopted with a specification of BAT and an MCLG.

For its discussion on the difference between MCLs and revised MCLs, the Board researched the following items: The SDWA; USEPA proposed MCLs at 54 Fed. Reg. 22062, May 22, 1989; "The Safe Drinking Water Act Amendments of 1986: Now a Tougher Act to Follow", by K. F. Gray, 16 ERL 10338.

The SDWA was enacted in 1974. Pursuant to this law, USEPA promulgated "MCLs" and "Recommended MCLs".

The SDWA was amended in 1986. USEPA is now required to promulgate "National Revised Primary Drinking Water Regulations". The "revised MCLs" in 40 CFR 141.60 represent MCL's which have been adopted pursuant to the 1986 amendments. At the time it adopts a National Revised Primary Drinking Water Regulation, USEPA also specifies BAT, and adopts an MCLG. The MCLG replaces the Recommended MCL under the 1974 law. In addition to MCLs, USEPA is to adopt treatment technique requirements, such as the filtration and disinfection requirements discussed above.

In the proposed Opinion, the Board suggested that MCLGs were policy goals only, which did not need to be in the State program, and solicited comment. No response was received. (PC 5, item 61) The Board determined that USEPA does not require states to adopt MCLGs. (54 Fed. Reg. 22062, May 22, 1989). In the May 24, 1990, Order, the Board dropped the MCLGs, and specifically requested post-adoption comment. The Agency has stated its support for dropping the MCLGs. (post-adoption PC 14, p. 13)

"MCL" is defined in 40 CFR 141.2. This is the closest USEPA comes to saying that "no PWS shall exceed the MCL". As is discussed below, the Board has moved this prohibition out of the definitions Section and into the body of the rules. (Section 611.121).

RDC, HPC AND 'CONFINED FORMATIONS

The post-adoption comments raised several global issues which involve more than one Section. The Board believes that the comments on these issues arise from what appears to be a misreading of the "no method of measuring HPC" determination of Section 611.213. We construe the applicability of this provision as narrow, as an "exception to an exception" drawn directly from federal rules, and thus not a major issue. As is discussed below, the Board has added introductory language to avoid any future misinterpretation. Although these comments have resulted in only a minor change to the rules, the Board will respond to these comments in detail, so as to clarify the issues. Accordingly these and related issues involving RDC and HPC have been added to this introductory discussion.

IS THE STATE'S EXISTING REQUIREMENT TO MAINTAIN AN ADEQUATE CHLORINE RESIDUAL A CONSISTENT, MORE STRINGENT REQUIREMENT WHICH THE BOARD OUGHT TO RETAIN IN LIEU OF ADOPTING THE NEW USEPA REQUIREMENTS?

As is discussed in general above, Section 7.2(a)(6) requires the Board regulations to reflect consistent, more stringent State regulations. Are the Board's existing requirements more stringent and consistent with the new USEPA disinfection requirements?

USEPA Requirements

The USEPA rules include three disinfection rules. The rules are slightly different depending on whether the supply must filter, but the differences are not germaine to this discussion. The rules are contained in 40 CFR 141.72(a) and (b), which are reflected in 35 Ill. Adm. Code 611.241 and 611.242. The Board will focus on 40 CFR 141.72(a), since this was the focus of the post-adoption comment. The three rules are as follows:

40 CFR 141.72	35 IAC 611.241	Summary
(a)(1)	(a)	99.9% inactivation of G. Lamblia cysts, and 99.99% inactivation of viruses
(a)(3)	(c)	RDC entering the distribution system must not be less than 0.2 mg/L for more than 4 hours.
(a)(4)(i)	(d)(1)	RDC in the distribution system cannot be undetectable in more than 5% of the samples each month, for any two consecutive months. *An HPC count less than 500/ml implies that RDC is "detectable".

40 CFR 141.72 requires disinfection of PWSs which use a surface water or

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*The Agency appears to assert that this provision is not present in the USEPA rules. As is discussed below, we believe that the USEPA rules include this presumption.

"groundwater under the influence of surface water". In other words, it exempts groundwater not "under the influence of surface water" from the disinfection requirement, including chlorination.

In addition, 40 CFR 141.63 (reflected in Section 611.325) sets MCLs for microbiological contaminants. No more than 5% of of samples in any month may be total coliform positive ("P/A Standard").

Existing Board Requirements

In the existing Board rules, Section 604.102 sets total coliform limits, which depend on the method of analysis employed. With the membrane filter technique, the arithmetic mean coliform density cannot exceed 1 count/100 ml. Nor can coliform colonies exceed 4/100ml in any sample. With the fermentation tube method, no more than 10% of samples in any month can show the presence of coliform bacteria.

When bacterial plate counts ("HPC" in the USEPA rules) are taken, Section 604.105 sets a standard of 500 counts/ml, based on the arithmetic average of all samples taken in a month.

Section 604.401 requires that all supplies chlorinate water before it enters the distribution system. Section 604.401(a) requires that all supplies which are required to chlorinate maintain residuals of free or combined chlorine at levels "sufficient to provide adequate protection".

Section 17(b) of the Act requires the Agency to exempt from "any mandatory chlorination requirement of the Board" any CWS which meets certain criteria. A key criterion is that the CWS draw water from "confined geologic formations".

Comparison of Sub-requirements

The USEPA and existing Board requirements constitute "clusters" of related requirements. It is very difficult to make a true comparison of these clusters by comparing related sub-requirements. One reason is that some comparable sub-requirements serve a different function in the two clusters. For example, the "HPC" or "standard plate count" is used in the USEPA cluster in association with the requirement to maintain an adequate RDC. 500/ml implies an adequate RDC. On the other hand, in the existing State cluster, there is a numerical MCL associated with the standard plate count. These happen to be the same number (500/ml), but what does this mean for stringency when the requirements occur in rules which bear a logically different relationship to the overall regulatory schemes?

Another problem with comparison arises from the relationship between a P/A standard and a bacterial count standard. For example, 40 CFR 141.63 requires that no more than 5% of samples be total coliform positive. This is based on Standard Methods, 16th Edition, Method 908E, which uses a 100 ml sample. How does this relate to the coliform count standards of old Section 604.102? While it is possible to compare these standards using statistical methods and a thorough knowledge of the test methods, this would require time for securing documents and doing a thorough analysis, time which is

unavailable in "identical in substance" rulemaking.

An alternative would be to examine the impact of the USEPA rules on a representative sample of Illinois supplies, to determine if the USEPA rules would be "more stringent" as applied. However, this would also take time. Because of these difficulties, it is not possible to conduct a detailed comparison of these sub-requirements in an identical in substance rulemaking. Neither approach would be consistent with the legislative directive of Sections 7.2 and 17.5 of the Act, which contemplate prompt adoption of USEPA requirements. When the rules themselves or subsequent comments do not give a clear answer, the Board will adopt the USEPA requirement and methodology.

Mix and Match Standards

As the Board sees it, the stringency or consistency requirement usually applies to a cluster of interrelated requirements as a unit. An alternative approach, which the Agency appears to favor, involves comparison of sub-requirements within a cluster. (post-adoption PC 14, p. 25) The Board is to compare each sub-requirement, and create a hybrid cluster consisting of the more stringent sub-requirements. There are several problems with this approach.

First, as discussed above, there are problems with making a comparison of the sub-requirements.

Second, as a general rule, a hybrid cluster is going to be, as a whole, more stringent than either the USEPA cluster or the Board cluster.* For example, consider a grocery list with the prices at two different stores. Create a "hybrid list" consisting of the higher price for each item. The sum of the higher prices is going to be greater than the sum of the prices in either store (unless the higher prices are all at the same store, in which case there really is no "hybrid" list.) At the "cluster" level, this would violate the directive of Section 7.2(a) of the Act to adopt a regulations "which require the same actions ... as would federal regulations if USEPA administered the subject program in Illinois."

Third, in terms of protecting public health, if the sub-requirements were combined into a hybrid cluster, there would be no guarantee that they would still work together to accomplish any certain level of protection, and indeed they could conflict.

For these reasons, the Board believes that it is generally more appropriate to make the stringency comparison with respect to the entire cluster of disinfection-related requirements, rather than with respect to each sub-requirement. However, there may be good reasons to make exceptions.

Comparison of Specific Subrequirements

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*For a related discussion in the context of a permit appeal, see IEPA v. Peabody Coal, PCB 78-296, 38 PCB 131, 137, May 1, 1980.

In its post-adoption comments, the Agency appears to accept the USEPA disinfection rules as the baseline. However, it is continuing to argue in favor of a small number of assertedly "more stringent" sub-requirements. These requirements are summarized as follows:

1. While Section 604.401(a) requires a "residual of free or combined chlorine", 40 CFR 141.72(a)(4)(i) requires an "RDC", which is defined more broadly.

2. While Section 604.401(a) requires a residual of free or combined chlorine at levels sufficient to provide "adequate protection", 40 CFR 141.72(a)(4)(i) provides that RDC "cannot be undetectable in more than 5% of the samples each month, for any two consecutive months."

3. While Section 604.401(a) requires "adequate protection", 40 CFR 141.72(a)(4)(i) provides that HPC less than 500/ml implies a "detectable RDC".

4. While Section 17(b) of the Act allows exemption "from any mandatory chlorination requirement of the Board" for CWSs, among other criteria, drawing from "confined geological formations, the 40 CFR 141.72 requires disinfection excepting groundwater not "under the influence of surface water".

Chlorine Residual versus RDC

Section 604.401(a) requires a "residual of free or combined chlorine". On the other hand, 40 CFR 141.72(a)(4)(i) requires an "RDC". As defined in 40 CFR 141.2, "RDC" means the concentration of "disinfectant" in mg/L. "Disinfectant" means "any oxidant, including but not limited to chlorine, chlorine dioxide, chloramines and ozone..." The difference is that the USEPA rule does not specify a residual of "free or combined chlorine".

Although the Agency has argued that the existing chlorine residual requirement is "more stringent", the Agency has failed to recommend any changes to the language of the rules to reflect its argument. (post-adoption PC 14, p. 32) Indeed, the Agency has recommended that the Board retain the critical USEPA language requiring that "RDC in the distribution system ... cannot be undetectable in more than 5% of samples each month." (post-adoption PC 14, p. 28)

A major concern is to keep the Board rules consistent with the USEPA rules. Replacing the "RDC" requirement at each point in Part 611 would involve a massive effort, and would pose continuing difficulties in maintaining the "identical in substance" rules. Therefore, the Board will retain the term "RDC", but will add limiting language to that definition. Because there is currently no alternative to "free or combined chlorine" for meeting the residual requirement, this has no effect on the substance of the regulations.

The terms "disinfectant" and "RDC" also occur in the first two

disinfection requirements (Section 611.241(a) and (c)). The Board has added language to make it clear that the "free or combined chlorine" limitation applies only to the third requirement: to maintain an RDC in the distribution system. (Section 611.241(d)).

"Adequate Protection" versus "Detectable RDC"

While existing Section 604.401(a) requires "adequate protection", 40 CFR 141.72(a)(4)(i) specifies a numerical standard: RDC in the distribution system cannot be undetectable in more than 5% of samples each month. The Board believes that such a narrative standard is inconsistent with the USEPA numerical standard, and is capable of being less stringent.

Measuring RDC by HPC

As is discussed below, the USEPA allow a PWS to measure RDC by way of HPC. 40 CFR 141.72(a)(4)(i) provides that an HPC count less than 500/ml implies a "detectable RDC". As noted above, this is similar to the existing MAC for "bacterial plate count" in Section 604.105, although precise comparison is difficult. The comparable existing Board requirement is again the "adequate protection" standard of Section 604.401(a). The Board believes that such a narrative standard is inconsistent with the USEPA numerical standard, and is capable of being less stringent.

The Board again notes that, although the Agency has argued that the existing chlorine residual requirement is "more stringent", the Agency has failed to recommend any changes to the language of the rules to reflect its argument. (post-adoption PC 14, p. 32) Indeed, the Agency has recommended that the Board retain the critical USEPA language allowing the use of HPC to measure RDC. (post-adoption PC 14, p. 28)

"Confined Geologic Formation" versus "Under the Influence of Surface Water"

Existing Section 604.401(a) provides that all supplies which are required to chlorinate maintain residuals of free or combined chlorine. Section 17(b) of the Act requires the Agency to exempt from "any mandatory chlorination requirement of the Board" any CWS which meets certain criteria. One criterion is that the CWS draw water from "confined geologic formations".

On the other hand, 40 CFR 141.72 requires disinfection of PWSs which use surface water or "groundwater under the direct influence of surface water". In other words, it exempts all groundwater not "under the direct influence of surface water" from the disinfection requirement.

One aspect of the stringency comparison concerns the scope of the two exemptions from the disinfection requirements. Which exemption is "more stringent", or are they the same?

In the Proposed Opinion, the Board suggested that "confined geologic formations" was a narrower, or "more stringent" exemption than "under the direct influence of surface water". This implied that there was a category (#3 in the following list) which would be exempted from disinfection under the USEPA rules, but not under Section 17(b) of the Act. The Board suggested that

the following categories of sources exist:

1. Surface water sources.

2. Groundwater sources under the direct influence of surface water.

3. Groundwater sources not "under the influence", but not into "confined geologic formations"

4. Groundwater sources into "confined geologic formations".

(Proposed Opinion of October 5, 1989, p. 28.)

The Agency did not address the suggested classification in its initial comment. (PC 5, item 50). However, the Agency addressed this issue in its post-adoption comment as follows:

> For purposes of this part, the Agency defines the following categorizations: 1) no surface water sources are located in confined geologic formations; 2) a groundwater supply which is under the direct influence of surface water is not in a confined geologic formation. Item three, described as "Groundwater sources not 'under the influence', but not into 'confined geologic formations'" does not exist. This category should be deleted. (post-adoption PC 14, p. 32)

In other words, the Agency sees only two categories of groundwater: it is either "under the direct influence of surface water" or it is "into confined geologic formations". That is to say, the geologic criterion for exemption under Section 17(b) of the Act and the USEPA rules are the same. The Board accepts the Agency's interpretation.

Although the geologic criterion is the same, Section 17(b) has other criteria, including the size of the system and the adequacy of the cross connection program. Therefore, there is still a category of PWSs who would be exempt from the USEPA disinfection requirement, but who do not qualify for exemption under Section 17(b) of the Act. Section 611.240(g) provides that CWSs drawing water from "groundwater under direct the influence of surface water" must provide disinfection, unless the Agency has granted an exemption under Section 17(b) of the Act. This remains unchanged from the May 24, 1990 Order. The Agency did not recommend any changes in its post-adoption comment. (post-adoption PC 14, p. 31)

IS THERE AN "HPC IMPLIES RDC" PRESUMPTION?

In its discussion, the Agency asserts, incorrectly we believe, that there is no USEPA rule which provides that HPC less than 500/ml implies a detectable RDC. (post-adoption PC 14, p. 25, 32). The Agency does, however, include the provision in its recommended language for inclusion in the Board rules. (post-adoption PC 14, p. 28) 40 CFR 141.72(a)(4)(i) provides as follows:

> Water in the distribution system with a heterotrophic bacteria concentration less than or equal to 500/ml, measured as heterotrophic plate count (HPC) as specified in §141.74(a)(3), is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. (40 CFR 141.72(a)(4)(i) (1989)

CAN HPC BE USED AS THE SOLE MEANS OF MEASURING RDC?

In its post-adoption comments, USEPA stated that "HPC cannot be utilized as the sole means of determining disinfectant effectiveness". (PC 12) However, 40 CFR 141.72(a)(4)(i) very clearly states otherwise. USEPA has by telephone clarified that this statement in its comment was to be read only in conjunction with the "no method of measuring HPC" determination, which is discussed below.

DOES THE 'NO METHOD FOR HPC' SHOWING ALLOW A PWS TO AVOID MEASURING RDC DIRECTLY?

40 CFR 141.72(a)(4)(ii) includes the following provision, which is substantially repeated in 40 CFR 141.72(b)(3)(ii), 141.74(b)(6)(ii), 141.74(c)(3)(ii), 141.75(a)(2)(vii) and 141.75(b)(2)(iii):

> If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified in §141.74(a)(3) and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (a)(4)(i) of this section do not apply to that system. (40 CFR 141.72(a)(4)(ii) (1989))

The Board consolidated the six provisions into Section 611.213, which was back-referenced at the six locations, as the "no method of measuring HPC determination". The Board believes that the extensive comment on this Section derives from a misreading of the consolidated provisions. This will be discussed further below.

In the October 5, 1989, Proposed Opinion, the Board noted that something was wrong with the USEPA rule:

> Section [611.241(d)(2)], derived from 40 CFR 141.72(a)(4)(ii), provides that the detectable RDC requirement does not apply if the PWS has no method for having samples transported and analyzed for HPC, as discussed above in Section [611.213]. There is a possible error in the USEPA rule, which clearly eliminates the entire detectable RDC requirement based on no HPC measurement. Even though a system could not measure HPC, it could measure RDC directly. It is possible that the USEPA rule was intended to reference

> only the portion of 40 CFR 141.72(a)(4)(i) dealing with HPC. However, this would seem to render the HPC determination moot, since HPC measurements are optional in the first place. The Board **solicits comment.** (Proposed Opinion of October 5, 1989, page 30. Citations changed to agree with current numbering.)

The Agency did not initially comment, and its recommended language was precisely the same as the Board's Proposal. (PC 5, items 43 and 50) Nor did USEPA comment on this matter. (PC 4) On May 24, 1990, the Board adopted the rule as proposed. This appears to be the principal issue in the post-adoption comment. USEPA has stated that "The intent ... is not to allow a supply which is unable to have a sample analyzed for [HPC] to be absolved of the responsibility to measure [RDC] in the distribution system..." (PC 12) Apparently the Agency agrees. (post-adoption PC 14, p. 28)

Both USEPA and the Agency have actually taken the position that this was an error made by the Board in interpreting the USEPA text, rather than an error in the USEPA text itself. The Agency has stated that the error occurred because the Board moved and consolidated the HPC determinations. (post-adoption PC 14, p. 27) However, the Agency's recommended language in its earlier comment also split out the "No HPC" determination in precisely the same manner. (PC 5, items 43 and 50) The Proposal was consistent with the USEPA language, and the Board noted in the Proposed Opinion the apparent error in the text. The Board has carefully examined the USEPA text, and believes that the Proposal was in agreement with the text.

The following is the Agency's interpretation of the USEPA provisions, as best the Board can glean it from the comments (PC 12 and 14, pages 25 through 30):

> The USEPA rules include a requirement that no more than 5% of RDC samples have "no detectable RDC" in any month. The USEPA rule intends to require all PWSs to first attempt to measure RDC. The PWS may measure HPC for compliance purposes if, and only if, a certain sample shows no detectable RDC. If the HPC count is less than 500/ml, that sample counts as an RDC detectable. In other words, the HPC presumption arises only to avoid a "no detectable RDC" result.
>
> The no method of measuring HPC ("no HPC") determination enters the picture as a post-hoc excuse in the event that, following a failure to detect RDC in a given sample, the PWS is unable to follow up with an HPC count. If the Agency grants the "no HPC", then the attempted RDC measurement does not count toward the 5% undetectable requirement.

This interpretation makes sense out of these provisions, and is consistent with the USEPA preamble at 54 Fed. Reg. 27495. It is also consistent with "a sample" as used in the USEPA rule. However, it is

otherwise remote from the language in the USEPA rule. In 40 CFR 141.72(a)(4)(i), there is no requirement to first attempt to measure RDC; nor is an attempted RDC measurement a condition prerequisite to the HPC measurement. Indeed, the formula includes a specific entry for "number of instances when RDC is not measured and HPC>500/ml". In other words, high HPC counts go into the compliance formula even though no RDC measurement was undertaken. This appears to contradict the above interpretation. Moreover, the standard for the "no HPC" determination in 40 CFR 141.72(a)(4)(ii) does not appear to allow post-hoc excuses to be used. Worse yet, the effects of the "no HPC" determination include: complete exemption from the "detectable RDC" requirement for "that system" (40 CFR 141.72(a)(4)(i)); and exemption from the requirement to even measure RDC (40 CFR 141.74(c)(3)(ii)).

The Board has considered attempting to rewrite the USEPA language so that it says what the Agency apparently believes it says. However, this would involve multiple changes at each of the six locations where the "no HPC" determination appears. The Board cannot characterize this as a USEPA typographical error which could be corrected under Section 7.2(a)(7) of the Act. The Board will therefore adopt this language as it is in the USEPA rules. If the Board is misconstruing the language, the Board requests clarification in another Docket. The Board can adapt USEPA language to reflect clear statements of intent.

CONDITIONS FOR THE NO HPC DETERMINATION

"No method of measuring HPC" is something of a misnomer. The Agency grants the determination if the PWS: (1) has no method of measuring HPC; and (2) "is providing adequate disinfection in the distribution system". (40 CFR 141.72(a)(4)(ii) or Section 611.213)

In its post-adoption comment, the Agency asked the Board to add a third condition: that the system cannot maintain a disinfectant residual in the distribution system. (post-adoption PC 14, p. 28) The Agency did not cite any source for this condition. By telephone, the Agency indicated that it is drawn from the Preamble, at 54 Fed. Reg. 27495, 3rd column, second paragraph, first sentence, first clause. Based on this citation, the Board is prepared to add this as Section 611.213(c).

By telephone, the Agency has also asked the Board to add to the third condition recommended in the post-adoption comment the following: "for the sampling location where no chlorine residual is detected on a single sampling date". The Agency justified this, based on the "adequate residual" requirement of existing Section 604.401. First, as noted above, the Board does not believe that the existing requirement is "more stringent". Second, the Board does not understand the nexus of this requirement to the "adequate residual" provision.

The Board believes that the post-adoption comments arose from a fundamental misreading of the "No HPC" determination in its consolidated form. The Board has made two modifications to avoid future misreadings.

Apparently the commenters are reading Section 611.213 as stating some consequence of the "no HPC" determination, i.e. that the PWS doesn't have to

measure HPC, and hence RDC. However, this is not what is stated. Rather, Section 611.213 is just the criteria for the determination. The consequences are in Section 611.241 et seq., at the six locations where the HPC determination is repeated in the USEPA regulations. Although the language appears clear, the Board has added a front reference to the effect that the "no HPC" determination is made only in the context of the six locations. Also, the Board has added language corresponding more closely to the USEPA introductory language: "If the State determines, based on site-specific considerations..." (PC 12)

USE OF "MAY" VERSUS "SHALL"

A number of times in the Agency comments, the Agency has requested the the Board not substitute "shall" for the "may" used in the USEPA rules. (See e.g. post adoption P.C. 14, pp. 43 [§611.521], 52 [§611.533], 56 [§611.648(h)(3)], 63 [§611.731], 64 [§611.851]). The Agency's comments on Section 611.521 (p. 43) essentially expresses its rationale. The Agency states:

> The rule also requires the Agency to reduce the monitoring frequency specified in the table for CWS serving 25 to 1,000 consumers if that supply meets the specified conditions. Federal language states that the State may reduce the monitoring frequency. The Agency prefers retention of the determination to reduce frequency on a case-by-case basis, as other circumstances may need to be taken into account, such as maintenance of a cross-connection program, employment of a properly certified operator or registered person, or other pertinent conditions.

We decline to change the word "shall" to "may" as requested by the Agency. We do not construe the use of the word "may" in the USEPA rule as empowering the Agency, in its discretion, to consider more factors than those articulated in the rule as a basis for its determination. In order to make this clear, the word "shall" is used in Illinois rulemaking.

The Agency is essentially requesting discretion to rewrite the rule, case-by-case. If rules are to have meaning as rules, i.e. be legally enforceable, then what is required for compliance, including showings necessary for relief, must be discernable in the rule; what is not there cannot be imposed.

In other rulemakings we have similarly dealt with what we believe is a loose rule-writing tendency of the USEPA to use the word "may" in such circumstances, (see, e.g. the RCRA regulations). Except for situations such as where true options are articulated, the use of "may", and certainly the use of it as the Agency would have us do to here, is unacceptable rulemaking under Illinois administrative law. Also, we see nothing in the language of the rule that requires a construction other than as an allowed exception, based upon certain articulated showings, to the otherwise applicable rule; if the showing is made, then the Agency shall allow it. It is obvious that the Agency believes, in this and the other instances, that there should be a more

stringent showing; if so, it will heed to separately propose them in a "regular" rulemaking. In so saying, we do not wish to imply that we here are prejudging the limitations substantively of the rules at issues.

We do not want to imply that language expressing federal requirements are always to be found in the rules themselves. As we know, requirements are often found in the preambles or referenced guidance documents, and assuring that they are correctly reflected in the Board's rules is not an easy task for all concerned. Here, however, the conditions are found in the federal rule, and it is those conditions that control.

We also recognize that much of the interaction between the Agency and the public water supplies reflects a long history of institutional oversight activities and use of technical documents (including those of DPH before the Agency was created). Under todays APA, we believe that these need to be better integrated into the Board's rules, or we run a high risk of having them not withstand challenge. We will place a high priority on any Agency regulatory proposal to cure the problem. We note that the problem here is more daunting than with the RCRA program. RCRA started off at the outset in a regulatory context, so the institutional activities were not as affected, in a historical sense, by that "identical in substance" rulemaking start-up as is the case here.

MAJOR DELETIONS FROM PROPOSAL

Pursuant to the Agency comment (PC 5), the Board deleted three large blocks of text from the Proposal. As was discussed above, the Board has deleted the MCLGs, which were proposed in Section 611.380 et seq. In addition, pursuant to post-adoption comments, the Board has moved the Revised MCLs into the same Subpart as the MCLs. (post-adoption PC 14)

The Board has also deleted the USEPA rules requiring special monitoring for corrosivity (Section 611.621 et seq.), and for lead (Sections 611.126(a)(2), 611.861 et seq. and Appendix A, item 13). According to the Agency, the USEPA rules for corrosivity and lead monitoring required one shot monitoring and reporting, which has been done in Illinois. (PC 5) The Board has dropped the rules, since they have no prospective effect.

FEDERAL BASE TEXT

The Board based the proposal on the 1987 CFR Edition, as amended through June 30, 1989. The Board noted in the Proposed Opinion that this was equivalent to the 1989 edition, which includes amendments through June 30, 1989, but which was not yet available. The Board used the 1987 Edition, rather than the 1988 Edition, since the Board actually has the 1987 Edition in electronic form. Using the 1987 Edition more closely tracked the process by which the Proposal was actually assembled, making it easier to track potential errors. In the Proposed Opinion, the Board suggested that it might change all references to the 1989 Edition on adoption.

As is discussed above, the June 29, 1989, Federal Register includes major amendments with delayed effective dates. The 1989 CFR shows both the "before" and "after" text. A simple reference to the 1989 Edition is therefore

ambiguous. For the amendments involved in the June 29, 1989, Federal Registers, the Board will cite to the 1989 Edition, "as amended".

SUMMARY OF FEDERAL ACTIONS

As noted above, the base text is drawn from 40 CFR 141, 142 and 143 (1987), as amended through June 30, 1989. Although the Board has replaced most of the Federal Register citations in the rules with references to the 1989 Edition, the following is a summary of the federal actions since the 1987 Edition:

52 Fed. Reg. 25712	July 8, 1987	Synthetic organic chemicals; monitoring for unregulated contaminants
52 Fed. Reg. 41546	Oct. 28, 1987	Public notification
53 Fed. Reg. 5142	Feb. 19, 1988	Analytical techniques
53 Fed. Reg. 25109	July 1, 1988	Correction to 52 Fed. Reg. 25712
53 Fed. Reg. 37410	Sept. 26, 1988	Indian tribes
54 Fed. Reg. 15188	April 17, 1989	Public notification
54 Fed. Reg. 27526	June 29, 1989	Disinfection and filtration
54 Fed. Reg. 27562	June 29, 1989	Total Coliform MCL

SECTION-BY-SECTION DISCUSSION

The following is a Section-by-Section discussion of the adopted rules:

GENERAL PROVISIONS

Section 611.100

This Section is derived from 40 CFR 141.1 and 141.3 (1989). It has been largely rewritten to state the purpose, scope and applicability of the State program. This Part is intended to satisfy the requirement of Section 17.5 of the Act that the Board adopt regulations which are identical in substance with federal regulations promulgated by USEPA pursuant to the SDWA. This Part includes both national primary drinking water regulations, and additional, more stringent State requirements, which have been moved from old Parts 604 through 607.

This Part mainly applies to "PWSs", which are defined below. As is discussed in general above, PWSs include CWSs and non-CWSs. The regulations governing CWSs are administered by the Agency; those governing non-CWSs by the Illinois Department of Public Health. For CWSs, the Board has added a cross reference to the Agency permit requirement in Part 602; for non-CWSs, the Board has added a reference to the Public Health rules in 77 Ill. Adm. Code 900.

As is discussed in general above, the Board has moved its "additional requirements" into this Part so as to afford a complete statement of requirements applicable to PWSs. The "additional requirements" are specifically marked in the text of the rules. These are applicable only to CWSs. Section 611.100(d) so provides. The Board has reviewed the "additional requirements" to attempt to make certain that all are worded as applicable only to CWSs. However, the preamble will cover any inadvertent omissions.

Similarly, the Board intends that non-CWSs obtain permits or other approvals from Public Health, and that they file all reports with Public Health. Again, the Board has edited the rules to specify "or, for non-CWSs, Public Health" wherever confusion is likely, but will rely on the general statement as a back stop.

40 CFR 141.3 includes a limitation on the scope of the SDWA rules. This was proposed as Section 611.110. However, it has been moved to Section 611.100(d), since it is an introductory limitation on the scope of the Part.

40 CFR 141.3 is entitled "Coverage", which is somewhat misleading. Actually it is a narrow exemption for systems which consist only of distribution and storage, which obtain all their water from a PWS, which do not sell water and which are not interstate carriers. The Board solicited comment, but received no response, as to whether this last provision is appropriate in the State program, since interstate carriers are going to be federally regulated anyway.

As is discussed in general above, the Board has added Section 611.100(e) to explain why some subsection labels are deliberately omitted. The Board will cross-reference this Section where the labels are omitted. (post-adoption PC 14)

This Section is related to existing 35 Ill. Adm. Code 604.405.

Section 611.101

This is the definitions Section. The Board has added definitions of "Act", "Agency" and "Board", shortened forms of commonly used State terms. Note that the USEPA rules use "Act" to mean "SDWA". The Board has defined and used the latter acronym for the federal Act.

The Board has added a "Board Note" after each federally derived definition. This will make it easier to find the sources of these definitions, many of which have recently been added or amended.

The USEPA rules include a definition of "BAT". The SDWA requires USEPA to specify BAT when it adopts a revised MCL. The USEPA definition specifies factors which USEPA considers when it specifies BAT: "efficacy under field conditions", and "at least as effective as granular activated carbon". This definition is really specifying how USEPA will adopt regulations. Section 7.2(a)(1) provides that the Board is not to adopt rules governing actions to be taken by USEPA, and Section 7.2(a)(5) provides that the Board is to specify if USEPA intends to retain decisional authority. The Board has deleted the substantive aspects of the definition to avoid implying that the Board will be specifying BAT. (PC 4, 12) Rather, the Board has defined "BAT" as that specified in Subpart G.

"BAT" enters the regulations by way of Section 611.111, the variances pursuant to Section 1415 of the SDWA. Under Section 611.111(b)(2), the PWS has to demonstrate that it has applied BAT. Under the definition above, which the Board believes is consistent with USEPA requirements, the issue would be whether the PWS had applied the BAT specified with the revised MCL. The Board

would not undertake an independent review to determine if the technology indeed met the generic definition.

The USEPA rules adopted at 54 Fed. Reg. 27526, June 29, 1989, include a definition of "CT", meaning the product of "RDC" times "disinfectant contact time". This, and related definitions, are important for determining compliance with the new disinfection standard in Section 611.241 below, which requires 99.9% removal or inactivation of G. lamblia cysts.

The definition of "CT" includes two subsidiary definitions which have been factored out and stated separately for greater clarity. These are "CT99.9" and "inactivation ratio". These have been placed in quotes to make it clear that they are defined elsewhere, and their Board Notes indicate that their origin is in the definition of "CT".

The definition of "CT", and derived definitions, include subscripts and formulas which are difficult to place into the format required by the Administrative Code Unit. The literal text of the USEPA definition would have to be moved to an appendix, which would be unsatisfactory for an important definition. The Board has therefore broken the definition up, and changed the format of the formulas, so as to comply with Code Unit requirements.

"CT99.9" is the value for "CT" which achieves 99.9% removal or inactivation of G. lamblia cysts. These values are found in Appendix B.

The Board has moved the definition for "community water system" ("CWS") back from the entry for "PWS", where it was consolidated in the Proposal.

The definition of "CWS" is taken from the federal regulations, rather than from the similar term defined in Section 3.05 of the Act. As was discussed in general above, the identical in substance mandate requires the Board to adopt the definitions in the federal rules, rather than the Act. As was also discussed in general above, these rules apply both to CWSs and to non-CWSs. (PC 5, 6)

The definition of "contaminant" is taken from the federal regulations, rather than from the similar term defined in Section 3.06 of the Act. As was discussed in general above, the identical in substance mandate requires the Board to adopt the definitions in the federal rules, rather than the Act. (PC 5)

The Board has broken up the definition of "disinfectant contact time" in order to comply with Code Division requirements. The Board has substituted "RDC" for "C" in the text of the definition. Generally, the Board has used "RDC" as the abbreviation for "residual disinfectant concentration" in the text, and "C" in the formulas.

The Board has defined "GC" and "GC/MS", which are undefined acronyms used in the USEPA rules. "GC" means "gas chromatography", which is actually an abbreviation for "gas-liquid phase chromatography", since column temperatures are generally kept below the boiling point of the material being analyzed. "GC/MS" is GC, followed by mass spectrometry.

The Board solicited comment as to the need for a definition of "groundwater supply survey". The Agency provided a general definition. (PC 5). The problem with the suggested definition is that, while the USEPA rule apparently contemplates a definite document, the general definition would allow PWSs to use privately developed surveys, meeting the general definition, to meet the requirement of the rules. As is discussed in connection with Section 611.657(c), the Board has determined that there is no need for a global definition.

The definition of "halogen" is drawn from the USEPA rules. Note that it excludes a common halogen, fluorine.

The Board has added a definition for "HPC", or "heterotrophic plate count". This is defined by reference to its measurement method. This definition avoids having to repeat "heterotrophic plate count, measured as specified in Section 611.531(c)" many times in the body of the regulations.

The definition of "inactivation ratio" is derived from the definition of "CT" as discussed above. The inactivation ratio is a measure of the success of a single disinfection operation. The inactivation ratio is:

Ai = CT/CT99.9

The "total inactivation ratio" of a series of disinfection operations is:

B = SUM (Ai)

The Board has defined shorter symbols for the inactivation ratio and total inactivation ratio. It is impossible to meet Administrative Code Unit requirements with the symbols used in the USEPA rules. It is evidently impossible for the USEPA to work with them also, as evidenced by 54 Fed. Reg. 27534, in which the text of 40 CFR 141.74 collapses into utter chaos, partly because of the problems these symbols cause.

The Agency suggested a definition of "lead free". (PC 5) In that this term is used only in Section 611.126, the Board sees no need for a global definition.

40 CFR 141.2 includes a definition of "Maximum Contaminant Level". A portion of the definition is that the MCL is the "maximum permissible level". This is as close as USEPA comes to saying that the PWS has to comply with the MCL. As is discussed in general above, Board has moved the requirement out of the definitions, to Section 611.121.

40 CFR 141.2 also includes a definition of "maximum contaminant level goal" ("MCLG"). As is discussed in general above, the Board has deleted the MCLGs from the proposal, since they have no effect on PWSs. (PC 5)

The Board has added a definition for "non-CWS". This definition is derived from the USEPA definition of "PWS", but has been stated separately for greater clarity. As is discussed in general above, PWSs are either CWSs or non-CWSs. The latter are subject to additional regulations adopted by Public Health. (PC 5, 6)

The Board has added acronyms for "nephelometric turbidity unit" ("NTU"), "national primary drinking water regulation" ("NPDWR") and "Presence-Absence coliform test ("P-A coliform test"). These acronyms are used in the USEPA rules, but not defined. (PC 5)

The definition of "person" is taken from the federal regulations, rather than from the similar term defined in Section 3.26 of the Act. As was discussed in general above, the identical in substance mandate requires the Board to adopt the definitions in the federal rules, rather than the Act. (PC 5) Adopting the definition urged by the Agency would exclude federal agencies, which are specifically included in the USEPA definition. As the Board understands the USEPA rules, the State is expected to regulate federal agencies which own PWSs.

The USEPA definition of "person" includes "municipality". The Board has replaced this with "unit of local government", the comparable term defined by the Illinois Constitution of 1970.

The USEPA definition of "point of disinfectant application" is not grammatically correct. The Board has corrected the errors (Section 7.2(a)(7) of the Act).

The Agency commented on this definition as follows:

> "Point of disinfection application" is confusing as rewritten by the Board, as it presents wording which is awkward. The two conditions governing where the disinfectant is applied are much more clearly stated in the federal rule. The Agency recommends that the definition be adopted exactly as written in 40 CFR 141.2 ...[R]einterpreting this definition does not clarify the term, nor does it correct a grammatical error. The Board's comment that the federal wording is grammatically incorrect is inaccurate. (post-adoption PC 14, p. 14)

The USEPA definition reads as follows:

> "Point of disinfectant application" is the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff. (sic) (40 CFR 141.2)

This is two sentences connected with an "and". It is especially confusing because the subject changes from "point of..." to "water" in the middle. The Board has changed this into one sentence, as follows:

> "Point of disinfectant application" is the point at which the disinfectant is applied and downstream of which water is not subject to recontamination by surface water runoff.

The Agency may have a deeper point here. As the Agency sees this

"definition", it a is substantive limitation on the location of the "point", rather than a a definition. If so, it really ought to be made a separate Section. However, the Board is reluctant to do so at this late stage in this proceeding.

A "PWS" is a system with at least 15 service connections, which serves at least 25 individuals on a daily basis for at least 60 days out of the year.

The definition of "PWS" is taken from the federal regulations, rather than from the similar term defined in Section 3.28 of the Act. As was discussed in general above, the identical in substance mandate requires the Board to adopt the definitions in the federal rules, rather than the Act. To do otherwise would change the scope of the identical in substance regulations, violating the mandate of Section 7.2(a) of the Act that the Board regulate the same activities and persons as would the USEPA program. (PC 5)

There is no obvious substantive difference between the USEPA definition of "PWS" and "public water supply" in the Act. The main difference is the use of "system" in the federal definitions, and "supply" in the Act. The proposal was not consistent in this usage, mainly because the USEPA rules actually use the terms interchangeably, and because "supply" was retained in many additional State requirements. The Board has reviewed the proposal, and used "system", or "PWS", "CWS", etc., instead of "supply".

The "system"/"supply" question illustrates why it is necessary to use the federal definitions in an identical in substance program. Where USEPA really means "supply", it means the source of water. For example, the "groundwater supply survey" in Section 611.657.

As was also discussed above, non-CWSs are also subject to regulations adopted by the Illinois Department of Public Health. (PC 5, 6)

In the text of 40 CFR 141, USEPA defines "PWS" and "CWS", but then uses a large number of synonyms, such as "supply" and "system". The Board attempted to change all of these to "PWS", "CWS", "non-CWS" or "NTNCWS", whichever is appropriate. This makes the rules clearer and shorter, and avoids ambiguities which arise from the use of the undefined synonyms. The Board solicited comment as to whether it had correctly construed the USEPA rules, but received no direct response.

The USEPA rules define "supplier of water" as the owner or operator of a PWS. However, this term is almost unused in the rules. Rather, the USEPA rules use undefined synonyms, such as "owner or operator of the system". More often, USEPA uses "public water system" as a synonym for "supplier of water". This usage is contrary to the definition of "public water system", which, as defined, is the physical plant, rather than the owner or operator.

In developing the proposal, the Board noted the incorrect usage of the term "public water system", and the various terms for the "owner or operator". The Board suggested that, in the USEPA rules, the term "public water system" is actually used to mean the owner or operator. The Board generally changed all of the various synonyms for "owner or operator" to "PWS", or to "CWS", etc., as appropriate. The Board solicited comment as to

this interpretation, but received no response.

In connection with its review of the comments, the Board recognized that the USEPA rules actually include a definition of the seldom used term, "supplier of water". In the final Order, the Board has shortened this to "supplier", and has used it in the rules where the USEPA rule appears to be referring to the owner or operator, rather than the system itself. This includes both situations in which USEPA uses an undefined synonym and in which it misuses "public water system". This has resulted in the removal of most of the occurrences of "PWS" in the proposal.

"Supplier" includes the owner or operator of the various types of PWS, including CWSs, non-CWSs and NTNCWSs. Where appropriate, the Board has used "CWS supplier", etc. to indicate that a provision applies only to a limited type of owner or operator. Where a limited applicability is clear, the Board has used "supplier" as a shortened term. (For example: "This Section applies to CWS suppliers. ... Suppliers shall file a form.) Where a USEPA rule is specific that it applies to all PWSs, the Board has simply used "supplier".

The Agency has indicated that it encountered problems with enforcement of older Board rules which omitted the "official custodian" from the comparable definition. (post-adoption PC 14, p. 15) As discussed above, the Board is bound by the USEPA definitions. However, the Board believes the "offical custodian" is an "owner or operator" within the meaning of the USEPA rules. The Board has added a line to the definition so stating.

As is discussed in general above, the Board has added language to the definition of "RDC" to make it clear that, in Illinois, for purposes of the requirement in Section 611.241(d) of maintaining a detectable RDC in the distribution system, "RDC" means a residual of free or combined chlorine. (post-adoption PC 14).

In the Proposed Opinion, the Board noted that the USEPA rules use "TU" and "NTU" for turbidity units. The Board asked if there was any difference, and indicated that if there was none, it would use just one acronym. (Proposed Opinion, p. 8) In its initial comment the Agency stated:

> "NTU" means nephelometric turbidity unit as used in 40 CFR 141.22(a). "TU" means turbidity unit, as used in 40 CFR 141.22(b). The terms should not be interchanged. (PC 5, item 15)

In the May 24, 1990, Order, the Board added separate definitions, and used two terms, as requested by the Agency. However, in its post-adoption comment, the Agency stated:

> The term "turbidity units" is meaningless without the proper indication of Jackson turbidity units (JTU) or nephelometric turbidity units (NTU). The Agency recommends deleting this abbreviation and using only NTU throughout... (post-adoption PC 14, p. 14)

The Board has therefore deleted this definition and changed the related

rules in accordance with the Agency's current thinking.

The USEPA rules include definitions for "trihalomethanes" ("THM") and "total trihalomethane" ("TTHM"). These definitions are rather strange, in that "TTHM" appears to redefine "THM" in a more restrictive manner. The definition of "THM" is a generic definition, three halogens on a methane. However, "TTHM" redefines "THM" with a list of the possible THMs formed with only chlorine and bromine, omitting the iodine THMs. As noted above, fluorine is omitted from the definition of "halogen". Probably the iodine THMs do not occur in PWSs, since the chlorine and fluorine added in treatment would replace the iodide. The Board therefore believes that this was an intentional omission, and has combined the two definitions of "THM" into a single definition. The Board has also moved a misplaced modifier in "TTHM".

The Agency suggested a definition of "unreasonable risk to health". (PC 5) This term is used only in the SDWA variances discussed below in Section 611.111. The Board will adopt a local definition in that Section.

The Board has added an acronym for "VOC", which is used in the USEPA rules without definition. This appears to mean "volatile organic chemical". (PC 5)

The USEPA rules make repeated references to "wellhead protection programs developed under Section 1428" of the SDWA. This term is used in Section 611.212, 611.232, 611.325 and 611.524. The Board requested comment as to what this means. The Agency provided a general definition in its comment. (PC 5) The problem with the suggested definition is that it would allow PWSs to use data collected by private consultants in surveys meeting the general definition. The USEPA rules, on the other hand, appear to be referring to a certain program.

Section 17.1 of the Act provides for a "groundwater protection needs assessment". In R89-5 the Board is proposing to adopt in 35 Ill. Adm. Code 615 through 620 a set of groundwater protection regulations. The Agency will seek approval of a "wellhead protection program", including these components, under Section 1428 of the SDWA. The Board has added a "Board Note" referencing users of the rules to these components of the wellhead protection program, which is not yet approved.

Section 611.102

This is the incorporations by reference Section. 40 CFR 141 contains more than 43 incorporations by reference.

The Illinois Administrative Procedure Act (APA), and derived regulations, restrict the use of such references in rules. (Ill. Rev. Stat. 1987, ch. 127, par. 1006.02) An Illinois agency may incorporate such standards or guidelines into a rule without publishing the standard or guideline in full if:

1. The standard is from a federal agency or a nationally recognized organization.

2. The rule contains the address of the agency or organization for purposes of ordering the standard.

3. The agency or organization makes copies readily available to the public.

4. The rule includes the date of the standard.

5. The rule states that it does not include later editions or amendments.

6. The agency maintains a copy of the standard in its files for public inspection and copying.

Incorporations by reference have been a major issue in several identical in substance rulemakings, including the underground storage tank program adopted in R88-27 (April 27, 1989; 13 Ill. Reg. 9519, effective June 12, 1989.

Section 7.2(a)(4) authorizes the Board to incorporate USEPA rules by reference where it is possible to do so without causing confusion to the public. Section 7.2(a)(4) concerns "normal" incorporations by reference, in which the Board references a USEPA rule rather than adopting the verbatim text. "Normal" incorporations are usually placed at the appropriate point in the verbatim text. Section 611.102 concerns "abnormal" incorporations by reference. These mainly consist of technical documents which are referenced in the body of the verbatim text. "Abnormal" incorporations also include USEPA rules which are referenced in the verbatim text, but which are not a part of the program the Board is supposed to adopt. For example, as is discussed below, in the drinking water rules, USEPA cites to analytical standards for wastewater.

The APA requirements on incorporation by reference are "enforced" by way of JCAR review of the documents during the first and second notice periods pursuant to Section 5 of the APA. Because Section 17.5 of the Act provides that Section 5 of the APA does not apply to identical in substance rulemaking, the Board is not required to obtain JCAR prior approval of these documents. However, Section 17.5 does not include a specific exemption from the APA limitations on incorporation by reference.

There is a potential conflict between the requirements of the APA and the identical in substance mandate if a USEPA rule cites to a document which the APA prohibits. In such a situation the Board balances the requirements of the APA and the Act. The Board considers: whether the reference is really necessary to the identical in substance program; whether the APA violation amounts to a due process question; and, whether there are alternative ways, such as setting forth the substance of the standard in the rule.

The problem with the standards in 40 CFR 141 mainly has to do with the requirement that the agency or organization which produces the standard has to make it available to the public. Most of the documents referenced in 40 CFR 141 are out of print, and therefore not "publicly available." As is discussed in greater detail below, the Board has referenced newer editions of documents

wherever possible.

The references in 40 CFR 141 are so out of date as to cast doubt on whether USEPA actually relies on the documents itself. It is quite possible that, in actual practice, USEPA interprets these references as being to the latest edition. Alternatively, the Board notes that, in 40 CFR 141.24 and 141.40, USEPA cites to the laboratory approval standards in 40 CFR 136. These include updated editions of most of references cited in Part 141. It may be that USEPA certifies laboratories only if they use the Part 136 methods. However, by its own terms, Part 136 applies only wastewater laboratories. The Board solicited comment on this possibility, but received no response.

As is discussed in general above, in connection with lab certification, the Agency has a set of laboratory certification rules in 35 Ill. Adm. Code 183. These rules are specifically applicable to PWS labs. The rules appear to be drawn from 40 CFR 136, rather than 141. This further butresses the conclusion that the Agency and USEPA regard Part 136 as in fact controlling.

When a government agency incorporates a private standard by reference, it may be creating a "technical barrier" to international trade. For example, laboratory standards may be forcing PWSs to buy American-made equipment. Incorporations by reference are therefore subject to the General Agreement on Tariffs and Trade (GATT). This is codified in the Trade Agreements Act of 1979, 19 USC 2531, which requires federal agencies to use internationally recognized standards, unless there is some good reason not to. USEPA needs to review these references for compliance with GATT. Using internationally recognized standards would make it easier for the Board to obtain the referenced standards also. To the extent that the Board's readoption of these references places the Board in violation of the "sense of Congress" directive of 19 USC 2533, the Board notes that its action is required by the SDWA and USEPA's implementing regulations.

The Board has assembled the incorporations by reference into this Section, in a manner similar to that employed in many other identical in substance rulemakings. This will allow the Board to use an abbreviated form of reference in the remainder of the regulations, making the rules much shorter and clearer. This will also allow it to periodically update the references without having to repropose the substantive regulations.

Many of the materials which are incorporated by reference into this Part have very long titles. Section 611.102(a) contains a list of abbreviated names, which are used in the ensuing Sections. For example, "Standard Methods for the Examination of Water and Wastewater" has been shortened to "Standard Methods". This subsection also serves to cross reference from name of document into name of publisher, by which the next subsection is arranged. For example, Standard Methods is available from the American Waterworks Association.

The incorporations by reference fall into six major categories:

1. ASTM Standards

2. Standard Methods for the Examination of Water and Wastewater.

3. Other nationally recognized organizations

4. Government publications, including USEPA and USGS Test Methods

5. Journal articles

6. Miscellaneous.

The ASTM standards are the easiest to deal with. The problem is that USEPA is referring to out-of-date standards. An example is the use of ASTM D1067-70B, used in 40 CFR 141.42. The final two digits indicates the 1970 edition. ASTM updates its standards on a five year cycle, so that this reference is probably three or four revisions out of print. It is very difficult to locate old ASTM standards. Furthermore, it is doubtful whether they meet the "publicly available" criterion under the APA, since a member of the public cannot simply order a copy of the out-of-print standard.

In the October 5, 1989 Proposal, and in the May 24, 1990 Final Order, the Board utilized the current editions of the ASTM standards, from the 1989 Annual Book of ASTM standards. The Board solicited comment from USEPA and others as to whether any of the older standards are actually necessary for the rules:

> The Board has proposed to utilize the current editions of the ASTM standards, from the 1989 Annual Book of ASTM standards. The Board **solicits comment** from USEPA and others as to whether any of the older standards are actually necessary for the rules. (Proposed Opinion, p. 10)

In response, the Agency stated: "USEPA needs to respond to the acceptability of using the current edition of ASTM standards." (PC 5, item 25) USEPA did not respond. (PC 4)

The Agency has still not directly addressed this question. However, in its post-adoption comments, the Agency has asked that certain of the ASTM references be changed to earlier editions. (post-adoption PC 14, p. 19) The Board has attempted to make the changes requested by the Agency.

The ASTM standards are available either as individual standards or through the annual book. The Board has followed the course of incorporating the individual standards, rather than entire annual books. This avoids incorporating extraneous material. It will also simplify the routine updating of standards as they are revised. Note that most of the current referenced standards will appear in the 1990 and 1991 annual books, but all will eventually be replaced by revised standards.

Another problem has to do with references to specific methods within an ASTM method. This is usually indicated by a letter following the date designation. The Board has generally dropped these subdesignations, on the assumption that they are no longer valid with respect to the newer editions. The Board solicited comment as which submethods need to be specified, but

received no response. For certain references, the Agency has apparently requested that submethods be specified. (post-adoption PC 14, p. 19) The Board has attempted to follow the Agency comment for these.

Following are specific problems with individual ASTM standards.

ASTM D992-71 is a method for determination of nitrate. This standard has been replaced with ASTM D3867, which is also cited in the USEPA rules. (40 CFR 141.23 and Section 611.606) The Board has readded this method at the request of the Agency. (post-adoption PC 14, p. 19)

ASTM D2459, "Gamma Spectrometry in Water", was discontinued in 1988. The Board has cited to the most recent edition. This reference is used in Section 611.720. The Agency did not comment on this reference. (post-adoption PC 14, p. 19, 62)

The Board proposed to add references to ASTM methods for the additional State contaminants. The Board has modified these pursuant to the Agency's post-adoption comments. (post-adoption PC 14, p. 19)

The USEPA rules cite to the 13th through 16th Edition of "Standard Methods for the Examination of Water and Wastewater." The 17th Edition became available during the public comment period. In the proposal, the Board cited to the 17th Edition, and solicited comment as to whether certain Methods had to be referenced to the older works:

> The USEPA rules use at least three editions of "Standard Methods for the Examination of Water and Wastewater." The 17th Edition is expected very soon. The Board has proposed to reference this Edition. Again, it is doubtful whether editions earlier than the 16th are still "publicly available", since members of the public could not order them. Again, the Board **solicits comment** as to whether certain methods have to be referenced to the older works. (Proposed Opinion, p. 11)

In response to the proposal, USEPA noted that the 17th Edition used new numbers. (PC 4) The Agency did not respond. (PC 5, items 25 through 27) Therefore, pursuant to the USEPA comment, the Board corrected the numbers to properly reference the 17th Edition. However, in its post-adoption comment, the Agency indicated that USEPA required the States to cite to the same methods as 40 CFR 141. (post-adoption PC 14, p. 17) USEPA joined in this comment. (PC 12) The Board will make the changes.

Section 611.531(e) is drawn from 40 CFR 141.74(a)(5), which requires the use of the "Indigo Method" for measuring ozone. The USEPA rule makes a forward reference to the 17th Edition of Standard Methods, which was not yet available. Because of the ambiguity of this reference, the Board used the term "Indigo Method", which was defined in Section 611.102(a). When the 17th Edition became available, the Board cited to the proper 17th Edition number in the definition. The Agency has objected to this reference. (post-adoption PC 14, p. 49) However, USEPA headquarters has instructed the Board to cite to

the 17th Edition.

The Agency comment includes a number of errors, which the Board has attempted to correct. (post-adoption PC 14, p. 19) In Section 611.606(o)(2), "14th Edition, Method 413D" should probably be "16th Edition, Method 412D", which is what is cited in 40 CFR 136. (post-adoption PC 14, p. 20) Also, the citation to "Section 611.145" should probably be to "Section 611.645". (post-adoption PC 14, p. 21)

The Agency did not deliver copies of these older documents to the Board in time to aid in drafting the Order. It is very difficult to correct these references without having the references in front of you. If necessary the Board will fix these in a correcting rulemaking.

Standard Methods is co-published by the American Waterworks Association (AWWA), which is a member of the American National Standards Institute (ANSI). Although Standard Methods itself is not an American National Standard, the Board believes that AWWA's participation in ANSI, together with USEPA's use of its standards, establishes it as a "nationally recognized organization".

The third category is to standards of other nationally recognized organizations. This included only AWWA C-400, a standard for asbestos-cement pipe. However, this reference occurred in proposed Section 611.623, which has been dropped for the reasons discussed below, in connection with that Section.

The fourth category of incorporations by reference is government publications, including the USEPA and USGS documents. The APA authorizes the use of federal government publications under similar conditions to private documents. The main problem is whether the documents are publicly available.

There are three major sources from which Government documents can be purchased: The National Technical Information Service (NTIS); the Government Printing Office (GPO); and, the agency itself. To order the documents, one needs to know the stock number. The information provided in the USEPA rules is nowhere near sufficient to order these documents. Moreover, it appears that most of these documents are simply out of print.

Two of the USEPA documents (THM Methods) are apparently present as an Appendix to 40 CFR 141, although the Appendix is not cited in the body of the rules. Similarly, "Inductively Coupled Plasma-Atomic Emission Spectrometric Method..." is apparently present as 40 CFR 136, Appendix C. The Board has cross referenced into these CFR cites, which are incorporated by reference in subsection (c). The Board solicited comment as to whether these are indeed the cited methods, but received no response.

The Board has added a reference to the USEPA Guidance Manual for the filtration and disinfection requirements discussed below. This is used in the determinations of Section 611.201 et seq.

The USEPA documents include "Methods for the Determination of Organic Compound in Drinking Water" ("Organic Methods"). This is cited in Section

611.648(j), which is drawn from 40 CFR 141.24(g)(10). The Board has cited to the 1988 Edition, rather than the 1986 Edition cited in the USEPA rule. The Agency has made a comment which could be construed as objecting to this (post-adoption PC 14, p. 57) However, USEPA headquarters has instructed the Board to use the 1988 Edition.

The USGS publications are confirmed as out of print by the GPO. The Board has deleted the GPO stock numbers, which are given at 40 CFR 141.23 and 141.24, since they are no longer valid. The Board has replaced GPO with USGS as the source of this document, since GPO was unable to find a more current version. Note that similar sounding, more recent USGS publications are cited in 40 CFR 136.

Another Government publication is NBS Handbook 69, which is involved in interpreting radiological standards. This is now available as NCRP Report Number 22, from the National Council on Radiation Protection.

NBS Handbook 69 is cited in 40 CFR 141.2, the definition of "man-made beta particle and photon emitters", and in 40 CFR 141.16. The latter indicates that the document is "as amended August 1963". However, both the National Bureau of Standards and the NCRP indicate that the most recent edition is June 5, 1959, which the Board has cited.

The fifth category is Journal articles. These relate to two articles concerning Coliform tests in the ASM journal "Applied and Environmental Microbiology". These are referenced in 40 CFR 141.21(f) (Section 611.526). The APA does not authorize incorporation by reference of journal articles. In the Proposed Opinion, the Board expressed hope that the contents of these will be in the 17th Edition of Standard Methods. They do not appear to be present. The Board indicated that if standard methods were not available, the Agency or USEPA would need to obtain permission from the authors and publisher to reprint the articles in the rules. No one obtained permission.

These journal articles are reporting the results of field trials of new methods. The articles do not include the details of the methods themselves, such that a person read the articles and carry out the method. As such, they are not "standards or guidelines" which can be incorporated pursuant to Section 6.02(a) of the APA.

The USEPA rule indicates that these journal articles are available from the AWWA. The Board called AWWA. They had never heard of them. The journal is in fact published by the American Society for Microbiology, ASM Publications Department, 1913 I St., N.W., Washington, D.C. 20006 (202) 833-9680. They make reprints available, but in minimum orders of 100 copies.

54 Fed. Reg. 29998, July 17, 1989, appears to be the only USEPA action during the first update period for these rules. (July 1 through December 31, 1989.) This adds to this reference additional journal articles, which suffer the same flaws. The Board requested clarification of the agencies' position during the final comment period, but received no response.

The sixth category are items which appear to be proprietary. This category in the Proposal included: Amco Standards; HASL Procedure Manual,

SPE Test Method; Indigo Method; and, Technicon Methods. The Board addressed these in the Proposed Opinion as follows:

> Although the Board has not conducted a detailed investigation of these items, on their face they do not appear to be publicly available. The Board has included them in the proposal for the purposes of comment, but intends to strike them on final adoption, unless commenters show that the items are "available to the public". An alternative would be to set them forth at length, for which commenters would need to obtain permission from the authors and publishers. (Proposed Opinion, p. 14)

The Board did not receive any public comment indicating a need to retain the proprietary methods. However, as noted above, USEPA headquarters indicated informally that the Indigo Method is now present as Standard Method 4500-03 B. The Board referenced this Method instead of the proprietary method. In the May 24, 1990, Order, the Board dropped the other methods.

In its post-adoption comments, the Agency indicated that the proprietery methods should be included in the rules. The Board has followed the Agency's suggestion of avoiding a direct incorporation by reference of these documents. Rather, the Board will reference the USEPA incorporation by reference. (post-adoption PC 14, p. 13) However, the Agency did not recommend any changes to the text of the rules. The Board believes that it has found all of the occurrences of these references, and has reinserted them into the rules:

Standard	Proposal	40 CFR	Comment
AEPA-1 Polymer	611.560	141.22(a)	
HASL Procedure Manual	611.720(b)(2)	141.25	
SPE Test Method	611.645	141.24(e)	
Indigo Method	611.531(c)(1)	141.74(a)	Cite to Standard Methods
Technicon Methods	611.606(j)(4)	141.23(f)	

In a letter dated July 27, 1990, Advanced Polymer Systems provided the Board with a corrected name, address and telephone number for the "AMCO AEPA-1 Polymer". They also provided the Board with a copy of ASTM D1389-88a, which includes an objective description of the polymer. The Board has added an incorporation by reference of the ASTM standard, and a cross reference from the entry for AEPA-1.

Section 611.102(c) references federal regulations. These include "abnormal" incorporations by reference, i.e. federal rules other than the rules which have to be adopted as identical in substance rules. These are grouped here in order to ease the problem of routine updating of the references.

40 CFR 141.136, Appendix B is cited in 40 CFR 141.24 and 141.40. It sets laboratory approval standards.

40 CFR 141.136, Appendix C, and 40 CFR 141, Subpart C, Appendix C contain analytical methods which are discussed above. Note that the latter may be a "normal" incorporation, which should be moved into the body of the rules. However, it seems to be floating in the body of 40 CFR 141 without any mention of it in the text of the rules proper.

As is discussed above, the Board has added incorporations by reference corresponding to the USEPA references to the proprietery methods.

Section 611.103

The Board has added a severability clause. (PC 5)

Section 611.108

This Section provides that the Agency may subdelegate portions of its functions to units of local government pursuant to Section 4(r) of the Act. The Agency objected to this Section on the grounds that Section 4(r) was self-implementing. (PC 5) The Board agrees that Section 4(r) is self-implementing. However, this Section is a dummy Section intended only to hold the reference to Section 4(r). This allows the Board to use a shorter form of reference in the body of the rules. Also, in the event Section 4(r) of the Act is renumbered, it will be possible to correct the rules with a three-line amendment in the Illinois Register. Because the reference occurs several times in the rules, the alternative direct citation to the Act would require a 10 page proposal to correct.

Section 611.109

This Section is derived from 40 CFR 141.22(e) (1987), as amended at 54 Fed. Reg. 27526, from 40 CFR 141.23(a)(4), as amended at 53 Fed. Reg. 5146, February 19, 1988, and from numerous similar provisions scattered throughout 40 CFR 141. These all provide that an MCL is enforceable, and that the results of required monitoring may be used in an enforcement action. This is obvious as a matter of Illinois law. The numerous provisions have been consolidated into a single Section to make the regulations more readable.

Section 611.110

As is discussed in general above, the Board has, pursuant to the Agency's post-adoption comment, added a "special exception permit" as a vehicle by which the Agency will make the many decisions included in the USEPA rules. (post-adoption PC 14, p. 6)

The "special exception permits" will be subject to appeal to the Board. The Board notes that, in the event the Board fails to reach a decision on the permit appeal within the 120 day time limits, Section 40 of the Act provides for a mandamus, rather than a "deemed issued" default, only for RCRA, UIC and NPDES permits, not SDWA, air permits or non-hazardous waste permits. The Board notes that a default permit does not excuse the permittee from

compliance with the Act or Board regulations; enforcement is precluded only insofar as operating without a permit (Marquette Cement v. PCB (1980), 84 Ill. App. 3d 434, 405 NE 2d 512; Illinois Power v. PCB (1983), 112 Ill. App. 3d 457, 462, 445 NE 2d 820, 824.) The Board also notes that, pursuant to Section 39 of the Act, failure of the Agency to timely act regarding RCRA permits has been construed by the Board as not leading to a default, in part based on the Board's "identical in substance" mandate. (Marathon v. IEPA, PCB 88-179; July 27, 1989) The Board requested comment on this matter, but received no response.

Section 611.111

This Section is derived from 40 CFR 141.4 (1987), as amended at 54 Fed. Reg. 27562, June 29, 1989; it is intended as a State equivalent of Section 1415(a)(1)(A) of the SDWA. Section 611.111(a) provides procedural guidelines to the PWS in filing a variance petition pursuant to 35 Ill. Adm. Code 104. Section 611.111(b) discusses the findings the Board must make before allowing a variance. The PWS must demonstrate that it cannot meet an MCL because of source water characteristics; that it has applied BAT; and, that a variance will not impose an unreasonable health risk. Subparts (c) and (d) detail the compliance and implementation schedules to be issued by the Board. Subpart (e) provides for a public hearing on the merits of the request. Subpart (f) specifies situations when the Board will not grant a variance.

The Section 1415, and 1416 variance discussed below, are referenced into 40 CFR 141.4. Rather than adopt a reference in Board regulations, the Board has adopted text which is equivalent to the SDWA provisions.

There is a question as to whether the Board has authority to adopt State equivalents of these provisions of the SDWA. Section 17.5 of the Act authorizes the Board to adopt regulations which are identical in substance to certain USEPA regulations implementing certain sections of the SDWA. Sections 1415 and 1416 of the SDWA are not listed in Section 17.5 of the Act. Nor has USEPA adopted regulations implementing them. However, the regulations which the Board is required to adopt include citations into sections 1415 and 1416. The question is whether to adopt rules with these citations, or whether to set forth the text of the cited sections.

The references are similar to incorporations by reference in that they defer to another document for the standard for decision. Section 6.02 of the Administrative Procedure Act neither authorizes nor prohibits this type of reference to a federal statute. However, in that these references are just like incorporations by reference, they have the same problems: the reference would leave the regulation incomplete to the reader, and would subdelegate State rulemaking authority to Congress in the event of future amendments.

These variances pose a basic question as to whether they ought to be granted by the Agency or the Board. A general discussion of the demarcation of Board and Agency authority appears above. In summary, these decisions must be taken by the Board, since they amount to a "waiver" of requirements appearing in Board rules. Variances are appropriate mechanisms for the Section 1415 and 1416 variances, since they are temporary variances, based on a hardship showing, and include compliance plans. The Board received no

adverse comment to its proposal to handle these as variances.

There is ample precedent for the Board granting variances from State MCLs which are the same as the USEPA MCLs, consistent with Section 1415 of the SDWA. (Geneva v. IEPA, PCB 86-225; 79 PCB 45, 60, July 16, 1987.)

If the Board were to simply cite the SDWA provisions, the Board rules would fail to inform the public that the SDWA variances are to be granted pursuant to a Board variance. The Board has had cases in the past dealing with federal variances which, at a minimum, would have been simpler if the federal variance and federal/State interaction were dealt with explicitly in the regulations. (Stepan Chemical v. IEPA, PCB 79-161; 39 PCB 130, 416, July 24 and September 4, 1980)

Section 1415(a)(1) speaks of the State granting "one or more" variances to "one or more" PWSs. The Board's implementing language is worded in the singular. However, under the Board's general procedural rules a PWS with multiple problems could combine them into a single variance petition, or could file a separate petition with respect to each MCL. Likewise, PWSs with similar problems could request that the Board consolidate their petitions.

Section 1415(a)(1) also requires the Administrator to "promulgate" his findings of BAT with respect to each MCL. There are several BAT findings in the USEPA rules reflected in Section 611.300 et seq. (For example, see Section 611.311(b)). It is possible that USEPA has also specified BAT by way of guidance documents. If this is the case, these should be incorporated into the regulations by reference to make this variance procedure work. The Board solicited comment as to whether this might be the case, but received no response.

In its post-adoption comment USEPA asked about the omission of "treatment techniques or other means deemed available by the Administrator". (PC 12) The Board rule uses just "BAT". The "treatment techniques ..." are included in the definition of "BAT" in Section 611.102.

Section 1415(c) of the SDWA requires the State to act "within a reasonable time" after receiving a "variance" request. As noted above, the Board has required the use of its variance procedures to consider such requests. Section 38(a) of the Act requires the Board to act within 120 days on a variance petition. This is almost certainly a "reasonable period". However, the Board notes that Section 38 of the Act provides for a one year default variance if the Board fails to act within the time period. The Board also notes that no special legislative provisions are included for the variances for the RCRA, UIC or NPDES programs. The Board solicited comment, but received no response, as to whether the variance procedures would result in a decision "within a reasonable time", and as to whether the possibility of a default was a problem with SDWA variances.

Section 35(a) of the Act allows the Board to grant variances upon a finding of "arbitrary or unreasonable hardship". The Board construes the SDWA standards for granting Section 1415(a)(1)(A) and 1416 variances as a lesser type of hardship which goes into the arbitrary or unreasonable hardship finding under State law.

The wording of Sections 1415, and 1416, of the SDWA are difficult to understand. The Board solicited comment, especially from USEPA, as to an alternative interpretation of the Section 1415 variance. It appears that the basic 1415 standard, "because of the basic characteristics of the raw water sources which are reasonably available", is a hardship standard. (Section 1415(a)(1)(A)) It also appears to require a compliance plan and eventual compliance with the general regulations. (Section 1415(a)(1)(i) and (ii)) However, these could be read as asking for an alternative MCL, and a plan for complying with the alternative. This interpretation is more consistent with the requirement that the PWS meet BAT before applying. How could the PWS comply with the general MCL if it has already used BAT and failed? If this "variance" is to lead to an alternative MCL, an adjusted standard would be more appropriate. However, these variances are discussed at 52 Fed. Reg. 25692, July 8, 1987. This appears to say that compliance with the MCL is ultmately required, consistent with the variance procedure.

A part of the showing for the Section 1415 variance is that the variance "will not result in an unreasonable risk to health" ("URTH"). The Agency offered a definition of this term. (PC 5, item 22) The Agency offered a global definition. However, the Board has adopted this as a local definition, since it appears to apply only to these Sections. The definition appears at Section 611.111(g).

The Agency's definition is drawn from the Guidance Manual for Compliance with the Filtration and Disinfection Requirements. Although this definition is not contained in the USEPA regulations, it does include a "rule" which USEPA evidently expects the Agency and PWSs to abide by.

The Board has adopted a definition similar to that proposed by the Agency. The Board has corrected a number of grammatical problems. Also, the Agency's definition starts as a definition of "URTH level", but is phrased in terms of "amount" of a contaminant. The Board has changed this to "concentration", to be consistent with "URTH level". It is clear from the considerations going into the URTH that the Agency intended a "concentration".

The Agency's definition includes a presumption that a "risk to health is presumed to be unreasonable unless there are costs involved which clearly exceed the health benefits to be derived." This leaves open the question of the burden of proof. The Board has placed this into a more standard form for a presumption (McCormick on Evidence, §342). As adopted, the entire definition reads:

> As used in this Section, "unreasonable risk to health level" ("URTH level") means the concentration of a contaminant which will cause a serious health effect within the period of time specified in the variance or exemption requested by a supplier seeking to come into compliance by installing the treatment required to reduce the contaminant to the MCL. URTH determinations are made on the basis of the individual contaminant, taking into account: the degree by which the level exceeds the MCL; duration of exposure;

> historical data; and, population exposed. A risk to health is assumed to be unreasonable unless the supplier demonstrates that there are costs involved which clearly exceed the health benefits to be derived.

40 CFR 141.4 provides that the State cannot grant an SDWA variance with respect to the MCL for total coliform or the filtration and disinfection requirements, which are in Subpart B below. The USEPA rule does not specify whether a Section 1415 or 1416 variance is intended. Board has repeated this in this and the following Section, so as to get both. The Board solicited comment as to whether this was the intent of the USEPA rule, but received no response.

Although USEPA and the Agency did not answer any of the the Board's questions about this Section, USEPA did ask two unrelated questions:

> It is not clear how a Section 1415 Variance ties in with the IPCB current Variance From Restricted Status? Under what authority does IPCB and/or the IEPA have to enforce either or both variances? (PC 4)

Existing 35 Ill. Adm. Code 602.106 allows the Agency to impose "restricted status" on a PWS if it determines, pursuant to permit action, that a PWS may no longer be issued a construction permit without causing a violation of the Act or regulations. The effect of restricted status is a ban on new construction in the area served by the PWS. This "additional State requirement" is not required by the SDWA, and is not affected by this rulemaking. However, if a PWS were in violation of the SDWA requirements in this new Part, the Agency should, under existing Section 602.106, impose restricted status.

Pursuant to Section 35 of the Act, the Board may grant a variance from Section 602.106 to allow construction in spite of the restricted status. To obtain a variance, the PWS and/or builder would have to demonstrate "arbitrary or unreasonable hardship", and would have to have a plan to bring the PWS into compliance. Board variances are temporary, and may be extended only if "satisfactory progress is shown". (Section 36(b) of the Act).

The variance from restricted status is a variance from restricted status only: i.e. it authorizes new connections to the system in spite of the violation of the regulations. The restricted status variance is not a variance from the regulatory requirements themselves. The PWS remains subject to an enforcement action for violation of the standard. If a PWS wants a variance from the SDWA-driven requirements in Part 611, the PWS would have to meet the conditions of Sections 611.111 or 611.112, i.e. Sections 1415 or 1416 of the SDWA.

The Agency has objected to one of the foregoing paragraphs. But, it is far from clear what the objection is. The Agency states that "the Agency does impose restricted status upon any [PWS] which is in violation of any [S]tate or federal drinking water requirements, including the SDWA." (post-adoption PC 14, p. 21) This appears to be consistent with the foregoing paragraphs.

The second portion of the USEPA question in PC 4 deals with the authority to enforce variances. A variance is a Board Order, which generally includes conditions, including a compliance plan and a certificate of acceptance. If the PWS fails to comply with the conditions, any person, including the Agency and the Attorney General, may bring an enforcement action before the Board, pursuant to Title VIII of the Act. The complainant may allege violation of the conditions of the variance and/or violation of the underlying regulations.

Section 1415(a)(3) of the SDWA contains what appears to be a second "variance" procedure which requires an adjusted standard. This is discussed in Section 611.113.

Section 611.112

This Section is intended as a State equivalent of Section 1416 of the SWDA. Subsection (a) provides procedural guidelines to the PWS in applying for an "exemption". Subsection (b) discusses the findings the Board must find before allowing a variance. The Board must find that the PWS is unable to comply with an MCL or treatment requirement "because of compelling factors (which may include economic factors)". This "variance" is available only to a PWS which was in operation before the MCL, or which has no other "reasonable alternative source" of raw water. Subsection (c) details the compliance and implementation schedules to be issued by the Board. Subsection (d) provides for extensions on the variance. Subsection (e) is a public hearing provision. Subsection (f) notes the USEPA shall be notified of all petitions and shall notify the Board of requests that do not meet the requirements of the Section. Subsection (f) specifies situations when the Board will not grant a variance.

The Section 1415 and 1416 variances are very similar. The following are differences:

1. While the 1415 variance depends on raw water characteristics, the 1416 variance depends on economic factors.

2. The 1415 variance is available only to a PWS which has applied BAT.

3. The 1416 variance is available only to existing PWSs, or to those with "no reasonable alternative source" of raw water.

4. While the 1415 variance requires compliance "as expeditiously as possible", the 1416 variance has definite time limits.

5. A 1416 variance is subject to USEPA review. (see below).

Section 611.112(d) generally limits compliance schedules to a maximum of 12 months. Subsections (d)(1) and (d)(2) allow extensions under certain conditions. These are derived from Section 1416(a)(2)(B) and (C). Subsection (d)(1) is a general three year extension for PWSs which need to make capital improvements. Subsection (d)(2) is for small PWSs which need improvements.

At the end of Section 1415(a)(2)(B)(iii) is a requirement that the PWS take "all practicable steps to meet the standard." There is a question as to

whether this modifies only subsection (iii), or subsections (i) through (iii). In the version of the SDWA the Board is working from, the text returns to the preceding level of indentation, as though this was a (one line) "hanging" paragraph, at the (a)(2)(3) level, modifying all three subsections. The Board has followed this reading, which makes more sense than the limited reading. However, "hanging" paragraphs are prohibited by the Code Unit. This condition has therefore been moved up to (d)(1) level, so that it governs Section 611.112(d)(1)(A) through (C).

Section 1416(c) and (d) of the SDWA require the State to notify the Regional Administrator of Section 1416 variances, and create a system by which USEPA is to review variances, with possible revocation. Most of this applies to USEPA, and should not be adopted as a State regulation. (Section 7.2(a)(1)) However, the Board has fashioned a procedure which carries out the State's obligations under these provisions. (Section 7.2(a)(3) of the Act.)

Section 611.112(f) requires the Agency to send USEPA a copy of each variance. The Board may reconsider and modify a grant of variance, or variance conditions, if the Administrator notifies the Board of a finding pursuant to Section 1416 of the SDWA.

Section 611.113

As is discussed below, USEPA regulates some contaminants by establishing an MCL, and others by requiring a certain treatment technique. Section 1415(a)(3) of the SDWA allows the Administrator to approve alternatives to treatment technique requirements upon a showing that an alternative technique is "at least as effective in lowering a contaminant" as the required technique. The Board has used the adjusted standard mechanism of Section 28.1 of the Act and 35 Ill. Adm. Code 106. Variances are not appropriate since the PWS is not expected to come into eventual compliance.

Section 1415(c) of the SDWA appears to specify that this procedure can be delegated to the States. The Board solicited comment as to whether the Section 1415(a)(3) "variance" is delegatable, but received no response. The Board also noted that, if this procedure to be retained by USEPA, there needs to be a Board rule so specifying, so that PWSs will know where to send the form. (Section 7.2(a)(5)).

Although USEPA did not answer the Board's question, it made the following comment:

> There is no definition of an "adjusted standard". As this paragraph stands, it is not equivalent to Section 1415(a)(3) of the SDWA. (PC 4)

As cited in the rule, adjusted standards may be granted pursuant to Section 28.1 of the Act and 35 Ill. Adm. Code 106.701 et seq. These rules were adopted in R88-5, July 10, 1989, and appeared on July 21, 1989, at 13 Ill. Reg. 12094.

Section 1415(a)(3) of the Act refers to this as a "variance". The Board cannot use its variance procedures to grant this "variance", since, as noted

above, the PWS is not expected to come into compliance with the general treatment requirement. Rather, the appropriate State procedure is called an "adjusted standard".

Section 1415(a)(3) imposes two requirements: the standard for issuing the variance, "at least as effective"; and a requirement that the variance be conditioned on use of the alternative method. These are both present in the Board rule. The Board is at a loss to understand why this Section is "not equivalent" to the SDWA.

USEPA has renewed its objection to calling this Section an "adjusted standard" instead of a "variance". (PC 12) As the Board understands it, USEPA's problem is a nomenclature problem stemming from its lack of familiarity with State procedures. As discussed above, if the Board were to call this a "variance", it would be forced to follow State procedural requirements which are inconsistent with the SDWA.

Section 611.114

This Section is derived from 40 CFR 141.5 (1989). This is a regulation restricting the location of new PWS structures in locations subject to earthquakes, floods or other disasters.

The USEPA rule merely requires notification of the State before construction. The Board has referenced the construction permit requirement of Section 602.101.

The USEPA rule includes restrictions on the location of structures below high tide marks. For geographical reasons these are not applicable in Illinois. (Section 7.2(a)(1))

The USEPA rules also require the PWS to avoid locating at a site which is subject to a significant risk from earthquakes, "to the extent practicable". The Board solicited comment, but received no response, as to whether this provision ought to be deleted as geographically inappropriate for the Illinois program. Large areas of Southern Illinois are subject to a significant risk of earthquakes. However, unlike California earthquakes, these are from deep faults which are not associated with small areas of especially high risk at the surface. The effect of this provision seems to be just to establish a presumption against new construction in the southern third of the State. However, the PWS regulations fundamentally assume that a water system will be built in each community, and expanded as necessary to serve the community's needs. In the final rule, the Board has added a definition of "significant risk" to make it clear that this provision is talking about a greater risk of locating the new or expanded facility in one part of the service area versus another.

The final sentence of this Section provides that USEPA will not seek to override State or local land use decisions. The Board has deleted this, because it governs actions to be taken by USEPA. The Board solicited comment, but received no direct response, as to the alternative interpretation that this is a pattern rule which the states are supposed to adopt, after shrinking it to State size.

While Agency or Board actions do not in and of themselves "seek to override" local land use decisions, they can have the practical effect of superseding the exercise of local land use decisions. For example, pursuant to Board regulations, the Agency is required to place a water system on restricted status, thus disallowing construction of water main extensions, for non-compliance with State standards. As another example, the Agency and Board are in the process of implementing the State's Groundwater Protection Act, which includes restrictions on the location of certain facilities within set-back zones around wellheads.

The Agency indicated that the siting requirements are currently being implemented by way of Agency criteria in 35 Ill. Adm. Code 653.101. (PC 5, item 36) This sets out an application process for someone seeking to locate within a less suitable area. The validity of Agency criteria is discussed in general above. 35 Ill. Adm. Code 653.101 would be a valid Agency rule interpreting and implementing the basic siting requirements in this Section. However, since it does not reflect a portion of the USEPA rules or existing Board rules, the Board does not have a basis for including it in Part 611.

Section 611.115

This Section includes existing State requirements governing raw water quantity. (Section 604.502) This has been moved from proposed Section 611.131(e) - (g). (PC 5)

Section 611.120

This Section is derived from 40 CFR 141.6 and 141.60 (1989). The USEPA rules list past effective dates for many of the USEPA provisions. The Board has deleted these since they all are past. PWSs will be required to comply with these provisions, as State regulations, upon the date these regulations are filed. Note that many of these requirements actually have earlier effective dates under old Parts 604 through 607. Also, federal enforcement remains possible for past violations under 40 CFR 141.

The newer USEPA provisions include effective dates with the provisions, and are contained in other Sections of 40 CFR 141. Section 141.60 is a dead letter now that USEPA specifies effective dates with each Section.

The Agency asked the Board to adopt a phase-in schedule in this Section. As is discussed in general above, the adoption of identical in substance rules is keyed to the date of adoption, rather than the effective date of delayed provisions. The Board has to presently adopt rules which say: "until date, do X; after date, do Y". To the extent the Board does this in this rulemaking, it will follow USEPA's current practice of attaching the delay provisions to the individual Sections, rather than constructing a table.

Section 611.121

This Section is drawn from the definition of "maximum contaminant level" in 40 CFR 141.2. As was discussed above, in the general discussion, and in connection with the definitions, the USEPA rules do not state that compliance

with the MCLs is required, except by inference from the definition. The Board has moved the requirements from the definitions to a substantive Section.

The "definition" in 40 CFR 141.2 reads as follows:

> "Maximum contaminant level" means the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system, except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

This starts out attempting to define "MCL". But, it then moves on to tell how to measure the contaminant level, rather than the MCL. (The MCL itself is determined by USEPA's regulatory process, based on toxicological considerations.) Then it excludes from the definition of "MCL", "contaminants added ... by the user". (Does this mean that there is no MCL for lead if a user adds lead?) The Board has attempted to fix these problems.

Section 611.121(a) contains the requirement to comply with the MCLs. This is inferred from the phrase "maximum permissible" in the definition. It has been worded in the "No person shall cause or allow..." format found in the Act and other Board rules.

As is discussed in the general discussion section above, the USEPA rules actually have two types of MCLs: "MCLs" and "revised MCLs". As is discussed above, the Board has collapsed these into a single "MCL" for each contaminant. (PC 12, 14, p. 37)

Most of the text of the definition specifies measurement points for MCLs. This is stated as a rule in subsection (b). The Board notes that there is at least one inconsistent point of measurement rule in the USEPA rules. See 40 CFR 141.24(g)(1). The Board has therefore added an "except as otherwise specified" to the general measurement rule. USEPA has asked the Board to omit the general measurement rule, noting the exception. (PC 12) However, the Board is required to somehow acknowledge the USEPA "definition" of "MCL" in its rules. Omission would leave no way to measure most contaminants. The "unless otherwise specified" provision will allow measurement points to be specified for individual contaminants.

Section 611.121(c) provides that there is no violation of the MCL for contaminants added by the user. This is implied by the final sentence of the USEPA definition.

Section 611.124 (Not adopted)

The Board proposed to move the prohibition on cross connections from existing 35 Ill. Adm. Code 607.104. This Section is subject to major revision in an Agency proposal in R87-37. The Agency has expressed a preference for

leaving the Section in its current location (PC 5), which has been done.

Section 611.125

The Board has moved the mandatory fluoridation requirement from 35 Ill. Adm. Code 604.405. This is an additional State requirement. The Board solicited comment as to whether it should retain this provision in the regulations, since mandatory fluoridation is enforced by the Department of Public Health. The Board received no response.

Section 611.126

This Section is derived from 40 CFR 141.43 (1989). It prohibits the use of lead pipes, flux or solder in a PWS, and in connected private plumbing. This has been moved to the front of the regulations, since it is a prohibition which any member of the public could violate.

40 CFR 141.43(a)(2) requires PWSs to give a one-time notification of corrosivity and lead content, which has been accomplished in Illinois. This has been dropped from the proposal, since it has no prospective effect. (PC 5, post-adoption PC 14, p. 66)

FILTRATION AND DISINFECTION

This Subpart addresses filtration and disinfection. It is drawn from 40 CFR 141.70 et seq, as adopted on June 29, 1989. This Subpart establishes mandatory equipment and operating regulations which function as MCLs. These have been moved toward the front of the Part in that they establish requirements which logically precede the MCLs.

Section 611.201 et seq.

The following Sections addresses several Agency determinations which are referenced at several points in the USEPA rules, but which are not explicitly stated. The Board has collected these together to efficiently specify the standards and procedural context for Agency action. As suggested by the Agency, the Board has broken these determinations into separate Sections. (PC 5) The standards are drawn from the body of the federal rules, from the preamble to the federal rules and from USEPA guidance documents. The Guidance Document is incorporated by reference in Section 611.102.

This Subpart includes other determinations which appear only once, or a few times. These remain in the body of the regulations. Most of these are determinations which are subsidiary to the determinations which are addressed in these regulations. For example, in Section 611.232, the Agency may determine that, as a part of a determination as to whether filtration is required, that a failure of disinfection equipment was "caused by circumstances which were unusual and unpredictable."

The rules allow the Agency make these determinations, consistent with the general discussion above. These determinations include specific standards. The Agency has authority, pursuant to Section 39 of the Act, to apply these standards in the context of special exception permit issuance, subject to

Board review.

As is discussed in general above, pursuant to post-adoption comment, the Board has added Section 611.110, creating a "special exception permit" as a vehicle for all of the decisions the Agency makes in this Part. These determinations will also be made pursuant to a "special exception permit. Therefore, the Board has deleted the general procedural requirements which are now addressed in Section 611.110.

In its final version, Section 611.201 requires the Agency to trigger these determinations in line with USEPA requirements. The Agency must give sufficient notice to the PWS to collect the required data.

Section 611.202

The Agency will make the determinations pursuant to a "special exception permit" (Section 611.110).

Section 611.211

As is discussed below, the new federal disinfection rules emphasize filtration as a means of achieving microbial quality in water, discouraging the use of disinfectant on unfiltered water. Section 611.211 is the determination as to whether filtration is required. This depends on eight criteria for avoiding filtration which are set forth in detail in Section 611.231 and 611.232, which are drawn from 40 CFR 141.71. These include: coliform and turbidity standards in source water; adequate disinfection; a watershed control program; annual inspection; absence of disease outbreaks; and, compliance with the total coliform and THM MCLs in the distribution system.

The filtration determination is back-referenced at numerous points in the June 29, 1989 Federal Register. 40 CFR 141.71 is entitled "Criteria for Avoiding Filtration". However, the USEPA rule does not ever get around to saying: "The State shall determine that filtration is required based on the following criteria..." Rather, this is stated in the preamble at 54 Fed. Reg. 27505. Fortunately, the preamble references into the body of the rules. The Board has placed a "Board note" after the text of Section 611.211 indicating that it is drawn from the Preamble, rather than the rules.

Where the USEPA rules back-reference the filtration determination, they repeat the following litany: "... determined, in writing pursuant to Section 1412(b)(7)(C)(iii) (of the SDWA), that filtration is required." For example, see the preamble to 40 CFR 141.71. The cited SDWA Section merely confers jurisdiction on the Administrator and authorized states to make the determination; it does not specify any standards for the determination. The Board has omitted this reference since it is confusing and irrelevant at the State level. At the back-reference points the Board has cited instead to Section 611.211. Also, the "in writing" requirement is replaced with the special exception permit action requirement in Section 611.201, and stated only once.

Section 611.212

The disinfection rules, discussed below, generally require filtration of surface water sources and "groundwater sources under the direct influence of surface water". The Board has added Section 611.212 to specify the criteria which the Agency is to use to make this determination. Again, the federal rules make numerous back references to the determination, but fail to state the criteria. The term "groundwater under the direct influence of surface water" is defined in 40 CFR 141.2. However, the preamble has additional, and more specific criteria. (54 Fed. Reg. 27489). The preamble also refers to a Guidance Manual. The Board has consolidated the criteria in the definition and preamble into Section 611.212.

The definition in 40 CFR 141.2 includes two main criteria: significant occurrence of insects, algae or large-diameter pathogens, such as G. lamblia; or significant and relatively rapid shifts in in water characteristics, such as turbidity, temperature, conductivity or pH, which correlate with climatological or surface characteristics. The determination is to be based on site-specific measurements of water quality or documentation of well construction characteristics and geology. The preamble, 54 Fed. Reg. 27489, adds two other criteria, which have been added to the Board regulations. The determination may consider structural modifications to eliminate the direct influence of surface water and prevent G. lamblia cyst contamination. (Section 611.212(c)). Also, the potential for contamination by small-diameter pathogens, such as viruses or bacteria, does not alone render the source "under the direct influence." (Section 611.212(h)).

The Guidance Manual has a number of other criteria, and is more specific as to the criteria above. The Board has adopted language which places all of the decisional criteria into the regulations, but without being overly specific. The Section has been worded as "The Agency shall determine ... based upon ...", in order to allow the Agency freedom to weigh these factors to make an overall evaluation of whether a source is "under the influence".

The Guidance Manual is written from the point of view of a cost-effective decision tree, so that the State can determine obvious cases without requiring the collection of immaterial data. For example, the process starts with observing whether the source is a lake. If so, there is no point in collecting further data. The Board has tried to preserve this hierarchy in the order in which criteria are presented, but without setting out the full complexity of the decision process. The major headings of the criteria address, in the following order: physical characteristics; well construction; water quality records; rapid shifts in water quality; correlation with surface conditions; and particulate analysis. The sources of the criteria are summarized as follows:

Section 611.212	40 CFR 141.2 "Groundwater ..."	Preamble 54 Fed. Reg.	Guidance Manual Page
(a)	---	---	2-4
(b)	3rd Sentence	---	2-5
(c)	---	27489	2-12
(d)	3rd Sentence	---	2-5

(e)	---	---	2-6, 11
(f)	(2)	---	2-10
(g)	(1)	---	2-7
(h)	---	27489	2-2

The Agency has objected to using the Guidance Manual and Preamble as a source for the additional criteria. (post-adoption PC 14, p. 23) The additional criteria of the preamble and Guidance Manual are certainly consistent with the definition on 40 CFR 141.2. However, their status as independent criteria can be illustrated by Section 611.212(e) and (f). The latter involves changes in water characteristics which closely correlate with climatological or surface water conditions. This criterion is drawn from the definition. However, Section 611.212(e) contains numerical limits on temperature and turbidity fluctuations which, according to the Guidance Manual, are indicative of surface influence, regardless of whether they correlate with surface conditions.

The Guidance Manual specifies a range of 0.5 to 1 NTU and 15 to 20% (in degrees F) of temperature change as indicative of surface influence. There are problems with these standards. First, does this mean that sources with even larger changes are not under the influence? Second, what does it mean for sources within the range? The Board has avoided these problems by adopting a regulation which uses the lower value of the range as indicative of surface influence. This is probably what USEPA means. The Board proposed to use values based on the lower end of the ranges, and solicited comment, but received no response.

The Draft Guidance Document had a worse problem, in that it failed to specify the units on which the "15 to 20%" temperature range was to be based. The Board noted that the range depended on the units, and proposed to adopt a rule based on degrees Celsius. The final version specifies Fahrenheit. The Board has therefore revised the proposed rule to reflect the final Guidance. Assuming that groundwater is around 60°F, a 15% change would be 9 Fahrenheit degrees, which the Board has used in the final rule.

Section 611.212(d) has been rewritten for clarity. (post-adoption PC 14, p. 24) The Board also feels that, apart from this, the comments suggest there is still a need to compare in detail the text of this rule with the Guidance Manual. The Board has therefore conducted a detailed comparison of the rule with the final version of the Guidance Manual. This has not revealed any material changes between the final and draft versions, except that the method of measuring "particulates" is now given in the Guidance Manual, instead of by reference to Standard Method, Method 912K. The Board has revised Section 611.212(g) accordingly.

In its comments, the Agency suggested that the Board simply adopt the text of the definition of "groundwater under the direct influence of surface water" from 40 CFR 141.2. (PC 5, item 42) However, the Agency did not explain its position. In its post-adoption comments, the Agency again requested that the Board just adopt the text of the definition, without the additional criteria in the preamble and Guidance Manual. The Agency states the additional information "need not be included at all, as these are options which the Agency may use to make its determination." (post-adoption PC 14, p.

23)

The second sentence of the definition of "groundwater under the influence of surface water" provides that "Direct influence must be determined for individual sources in accordance with criteria established by the State". (40 CFR 141.2) The Board construes this as a directive to the State to establish criteria. (Section 7.2(a)(3))

The Section 3.09 of the Illinois Administrative Procedure Act provides that "'Rule' means each agency statement of general applicability that implements, applies, interprets, or prescribes law or policy..." The criteria which the Agency will use to determine whether groundwater is "under the influence" are clearly a "rule" under the Illinois APA. Sections 17.5 and 7.2(a)(3) of the Act require that the Board adopt the rule.

In many situations the preamble and Guidance Manual merely serve to amplify or explain the contents of a USEPA rule. The Board may simply incorporate the documents by reference. However, for the "under the influence" determination, it is apparent that the preamble and Guidance Manual contain additional decisional criteria which are at most remotely related to the definition in 40 CFR 141.2. To meet the directive in 40 CFR 141.2, the requirements of the Illinois APA, and the mandates of Sections 7.2 and 17.5 of the Act, it is necessary that the Board adopt a rule with sufficient criteria to enable the Agency to act consistently with the Guidance Manual.

It is important to re-emphasize that Section 611.212 is written as a set of criteria which the Agency considers in making the "groundwater under the influence of surface water" determination. It excludes much of the detail in the Guidance Manual, and does not include any "formula" which forces the Agency to any conclusion. Rather, the Agency considers these criteria, along with the Guidance Manual, in making an overall determination as to whether groundwater is "under the influence of surface water".

In its post-adoption comment, USEPA asked where the regulatory requirement of determining whether a groundwater system is influenced by surface water was located. (PC 12) USEPA is correct that Section 611.212 is merely a listing of criteria which the State will use. The list is required by the second sentence of the definition of "groundwater under the influence of surface water" in 40 CFR 141.2. The requirement that the PWS make the demonstration is triggered by Agency notification pursuant to Section 611.201. The Board has reviewed 40 CFR 141, and Part 611, and cannot find any hard rules as to when the demonstration must be made. The Board suggests that the timing of the demonstrations should be the proper subject of the MOA between the Agency and USEPA.

Section 611.213

The new disinfection regulations, which are discussed below, include requirements that a PWS maintain a measurable residual disinfectant concentration (RDC) in the distribution system. RDC is measured either directly, or by a heterotrophic bacteria plate count (HPC). An HPC less than 500/ml implies a measurable RDC. (See Section 611.241(d)). HPC samples must be refrigerated and analysed within a limited time. (Standard methods, Method

907A) Several of the regulations below include an exemption from HPC sampling if the PWS has no means of analyzing for HPC and is providing adequate disinfection. For example, see 40 CFR 141.72(a)(4)(ii). The Board has collected these determinations into Section 611.213, which is back-referenced instead of repeating the lengthy federal language at each point.

The "no HPC" determination was the subject of extensive post-adoption comment. Most of the discussion has been moved to the general discussion above.

The USEPA rules do not give any criteria for making the HPC determination. The criteria are discussed in the preamble at 54 Fed. Reg. 27495. Section 611.213 is largely based on the preamble.

The HPC determination has two major components: the inability to measure; and, maintenance of adequate RDC in the distribution system. The former has been phrased in terms of the inability to measure with time and temperatures specified in Standards Methods. It would be easy to go on and state the time and temperature conditions. However, the Board has avoided doing this out of fear that these might change in the future. Citing to Standard Methods avoids this problem, since the Board will routinely update the incorporations by reference Section to include revised methods.

The time and temperature showing includes consideration of transportation time to the nearest certified laboratory. (Section 4(o) of the Act) In addition, the Agency is to consider whether, based on the size of the PWS, it ought to establish in-house laboratory facilities. See the preamble at 54 Fed. Reg. 27495. This is not further elaborated.

The second portion of the showing includes a demonstration that the PWS is providing adequate disinfection in the distribution system. Note that the RDC level in the distribution system may not correlate with the RDC at the point of disinfection, since the former also depends on: the presence of organic material in the finished water; the residence time in the distribution system; and contamination from cross connections. In making the disinfection portion of the determination, the Agency is to consider: other measurements which show the presence of RDC in the distribution system; the size of the system; and the adequacy of the cross connection control program. See 54 Fed. Reg. 27495.

As is discussed in general above, the Board has added a third condition, that the PWS cannot maintain a disinfectant residual in the distribution system. This is drawn from the Preamble at 54 Fed. Reg. 27495. (post-adoption PC 14, p. 28)

Section 611.220

This Section is derived from 40 CFR 141.70 (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. It sets forth the general requirements for filtration and disinfection. These apply to PWSs using a surface water source or a groundwater source under the direct influence of surface water. The PWS must achieve a 99.9% removal or inactivation of G. lamblia cysts, and a 99.99% removal or inactivation of viruses, as between the raw water source and the

first customer. A PWS is considered to be in compliance if it either meets the requirements for avoiding filtration, or if it meets the specific filtration and disinfection requirements discussed below.

40 CFR 141.70(c) requires that each PWS using a surface water source or groundwater under the direct influence of surface water be operated by personnel who meet requirements specified by the State. The Board has referenced the existing certification requirements of 35 Ill. Adm. Code 603.103. The Board has also added a reference to the statutory requirement in ch. 111 1/2, par. 501 et seq. (PC 5)

Section 611.230

This Section is derived from the preamble to 40 CFR 141.71, as adopted at 54 Fed. Reg. 27526, June 29, 1989. It specifies times by which PWSs must meet the filtration requirements. Dates depend upon when the Agency determines that filtration is required, or that a groundwater source is under the direct influence of surface water. As is discussed in general above, the phase-in of these requirements must be coordinated with the phase-out of the existing requirements in Parts 604-607. (PC 5)

Section 611.231

This Section is derived from 40 CFR 141.71(a) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. It specifies the source water quality conditions which the Agency considers in determining, pursuant to Section 611.211, that filtration is required. The conditions are that the source water must be less than 20 fecal coliform bacteria per 100 ml, or less than 100 total coliform per 100 ml, and have a turbidity less than 5 NTU.

Section 611.231(b)(1) includes an exception from the turbidity condition if the Agency determines that the event was caused by "circumstances which were unusual and unpredictable". This determination would be made subsidiary to the determination as to whether filtration is required. (Section 611.211)

Section 611.231(c) and (d) are drawn from existing Sections 601.501(a) and (b). The proposed Section included several additional provisions concerning source water quantity, drawn from existing 35 Ill. Adm. Code 604.502(a-c). These have been moved to Section 611.115. (PC 5)

Section 611.232

This Section is derived from 40 CFR 141.71(b) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. It sets forth the "site-specific conditions" by which a PWS may avoid filtration. This is a part of the showing which the PWS must make pursuant to Section 611.211.

The Agency asked that this Section be deleted, in favor of the "more stringent" Agency criteria in 35 Ill. Adm. Code 654.101(d). (PC 5) As is discussed in general above, Section 17.5 of the Act requires the Board to adopt this Section.

As provided by Section 611.232(a), a system which wants to avoid filtration must meet the disinfection requirements in Section 611.241, subject to certain exceptions. These Agency determinations are subsidiary to the filtration determination in Section 611.211. The disinfection requirements are: inactivation of cysts and viruses; redundant disinfection equipment; an RDC of 0.2 mg/L entering the distribution system; and, a detectable RDC in the distribution system. (Section 611.242(a) - (d))

As provided by Section 611.232(b), system which wants to avoid filtration must maintain a watershed control program which minimizes the potential for contamination by G. lamblia cysts and viruses in the source water. This includes a requirement that the PWS acquire land or control rights in the watershed.

40 CFR 141.71(b)(2) includes a determination as to the adequacy of the program, which is made subsidiary to the filtration determination in Section 611.211. This includes a restatement of the purpose of the program to minimize cysts and viruses. The Board has deleted the second statement, and placed the final sentence into active voice.

As provided by Section 611.232(c), a system which wants to avoid filtration must have an annual on-site inspection to assess the disinfection process and watershed control program. This includes two subsidiary demonstrations.

The USEPA rules require that either the State "or a party approved by the State" perform the on site inspections (40 CFR 141.71(b)(3)). It is not obvious how this approval is to be given in Illinois. The Board has cited to Section 611.108, which allows units of local government to enter into delegation agreements pursuant to Section 4(r) of the Act.

40 CFR 141.71(b)(3) also requires that the inspection "indicate to the State's satisfaction" that the watershed control program and disinfection process are adequately designed and maintained. The Board has replaced this with "demonstrate" to avoid implying an unusual burden of proof or subjective standard.

In the Proposal, the text of Section 611.132(c) was repeated. The excess has been removed. (PC 4)

As provided by Section 611.232(d), a system which wants to avoid filtration must not have been identified as a source of a waterborne disease outbreak. The system can continue to avoid filtration by modifications to prevent another such occurrence. The phrase "as determined by the State" has been deleted as redundant, in that this determination is made as specified in Section 611.211.

As provided by Section 611.232(e), system which wants to avoid filtration must meet the total coliform MCL of Section 611.325. This MCL involves a demonstration of the absence of colform bacteria, rather than a count standard. This includes an exemption by way of a subsidiary demonstration that the violation was not caused by a deficiency of treatment.

As provided by Section 611.232(f), system which wants to avoid filtration must meet the MCL for TTHM in Section 611.310. Note that filtration would remove organic material which interferes with disinfection and produces unnecessary THM.

This Section is related to existing 35 Ill. Adm. Code 604.501(a,b,d).

Section 611.233

This Section is derived from 40 CFR 141.71(c) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. This states the treatment technique rule, which may be the subject of a violation. Under Section 611.233(a), a PWS violates the treatment technique requirement if it fails to install filtration by the date specified in Section 611.230, and either the Agency has determined that filtration is required, or the PWS fails to meet one of the above criteria for avoiding disinfection. Note that Section 611.230 allows time for installation of equipment after the Agency makes the determination.

Under Section 611.233(b), a PWS also may violate the treatment technique requirement if the source water turbidity exceeds 5 NTU, or if the system is a source of a waterborne disease outbreak.

The Agency suggested rewriting this Section, and consolidating related prohibitions. (PC 5) Although the Agency's suggestion has merit, it would make the routine updating of the rules difficult.

This Section is related to existing 35 Ill. Adm. Code 604.203(e,1 a-e)

Section 611.240

This Section is derived from 40 CFR 141.72 preamble (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989 This Section specifies effective dates for the disinfection requirement. These run through 1991 and 1993 for various sources, or 18 months after Agency determinations regarding filtration or groundwater influence. As is discussed in general above, the phase in of these requirements must be coordinated with the phase out of the existing requirements. (PC 5)

Section 611.240(c) allows the Agency to set interim disinfection requirements applicable between the time filtration is required and installed. This will be done by special exception permit, as part of the filtration determination discussed above.

This Section is related to existing 35 Ill. Adm. Code 604.401(a), (b), (d), 604.402(b), 604.403(a) - (h), 604.404, 604.501(e), and 605.101.

The Agency commented to the effect that its criteria in 35 Ill. Adm. Code 654.101(d) are more stringent. (PC 5, item 50) As is discussed on general above, Sections 7.2 and 17.5 of the Act do not allow the Board to defer to these Agency criteria.

The Agency also urged the Board to defer to the Agency criteria in, 35 Ill. Adm. Code 653.604(a), which the Agency says requires systems to maintain

a higher combined residual. (PC 5, item 50) Again, for the reasons discussed in general, the Board cannot defer to the Agency criteria.

The post-adoption comments addressed the question of whether the Board's existing disinfection requirements might constitute consistent, more stringent requirements which ought to be retained. (post-adoption PC 14, p. 25, 32) As is discussed in general above, the Board believes that the the new USEPA disinfection requirements as a whole are more stringent than the existing State requirements, and in some ways are inconsistent. The comments also questioned the Board's classification of groundwater and discussion of the relative stringency of the USEPA "groundwater not under the direct influence of surface water" exclusion versus the "confined geologic formation" standard of Section 17(b) of the Act. (post-adoption PC 14, p. 31) This discussion has also been moved forward to the front of the Opinion. In summary, the Board agrees with the Agency's position that the geologic standards are equivalent. This results in no change to the text Section 611.240(g) as set forth in the May 24, 1990, Order.

Proposed Section 611.240(g) is set out below. There was an error in the citation to Section 17(b), which the Board has corrected in the following quotations.

> All CWSs shall provide disinfection pursuant to Section 611.241 or 611.242, unless the Agency has granted the supplier an exemption pursuant to Section [17(b)] of the Act.
>
> BOARD NOTE: This is an additional State requirement.

The Agency commented as follows:

> Subsection (g) ... should be deleted since the conditions of the chlorination exemption are already prescribed in Section 17(b) of the Act and expressly preclude any surface water supply from receiving an exemption. (PC 5, item 50)

USEPA commented as follows:

> How does "Section [17(b)] of the Act" apply to a Section 1416 Variance (Section 611.112)? It is not clear to what authority these requirements apply. (PC 4)

If the Board omitted the reference to Section 17(b), the rules would be ambiguous as to how and whether the exemption fits into the federally-mandated rules. Section 7.2(a)(6) of the Act provides that identical in substance regulations should reflect any consistent, more stringent Board regulations. As is discussed above, the "confined geologic formation" standard of Section 17(b) is equivalent to the "groundwater not under the influence of surface water" exemption in the USEPA rules. However, in Illinois PWSs must continue to disinfect until the Agency makes the complete Section 17(b) determination.

The Board has merely referenced Section 17(b) of the Act. The Board has not sought to restate or modify its requirements.

The Proposal was worded as an additional State requirement applicable to all CWSs, even though it really impacted only the few groundwater sources exempt from the USEPA disinfection requirement. This wording posed a procedural question raised by USEPA: the relationship of the Section 1416 variance to the Section 17(b) exemption. To avoid confusion on this matter, the Board has added language narrowing Section 611.240(g) so that it applies only to groundwater sources not under the direct influence of surface water. Therefore, the Section 17(b) exemption is available only to groundwater sources not subject to the USEPA disinfection requirement.

Regarding variances, in response to a USEPA comment (PC 4), the Board had referenced the availability of Section 1416 variances, overlooking 40 CFR 141.4 and Section 611.112(g), which prohibit variances from the disinfection requirement for surface water and groundwater sources under the influence of surface water. (PC 12, 14, p. 35) The Agency actually cited to "40 CFR 141.64", which is unrelated.

The text of Section 611.240(g), as adopted, is as follows:

> CWS suppliers using groundwater which is not under the direct influence of surface water shall provide disinfection pursuant to Section 611.241 or 611.242, unless the Agency has granted the supplier an exemption pursuant to Section 17(b) of the Act.
>
> BOARD NOTE: This is an additional State requirement.

Section 611.241

This Section is derived from 40 CFR 141.72(a) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. This specifies the disinfection requirement for PWSs which do not provide filtration. The system must meet the general disinfection standard discussed above, i.e. inactivation or removal of 99.9% of cysts and 99.99% of viruses. These are calculated as specified in Section 611.241 and Appendix B.

Section 611.241(a)(1), derived from 40 CFR 141.72(a)(1), provides that, if a system uses a disinfectant other than chlorine, which is the disinfectant addressed by the larger tables in Appendix B, the PWS:

> ... may demonstrate to the Agency, through the use of an Agency-approved protocol for on-site disinfection challenge studies or other information, that ... values other than those specified in Appendix B ... or other operational parameters are adequate to demonstrate that the system is achieving minimum inactivation rates ...

This provision allows the Agency to approve an alternative method of demonstrating compliance with the inactivation standard specified in the Board

regulation. The Board has eliminated subjective language from the USEPA rule (information "satisfactory to the Agency"). So modified, the regulation sets an objective standard which the Agency may apply in the context of special exception permit issuance or modification, subject to Board review. The Board has added Section 611.241(a)(2) to so provide.

Section 611.241(b) requires that a PWS which does not provide filtration must have either redundant disinfection components, or an automatic shutoff of water in the event the RDC falls below 0.2 mg/L. The latter alternative is not allowed if automatic shutoff would "cause an unreasonable risk to health or interfere with fire protection."

Section 611.241(c) requires that, in a PWS which does not provide filtration, the RDC in water entering the distribution cannot fall below 0.2 mg/L for more than four hours.

Section 611.241(d) governs the RDC in the distribution system. Measurement is specified in Section 611.531 and 611.532 below. RDC must not be undetectable in the distribution system in more than 5% of samples in two consecutive months. RDC can either be measured, or inferred from an HPC bacteria count less than 500/100ml.

The Agency asked that the Board delete this Section, since 35 Ill. Adm. Code 654.101(d) requires everybody to filter anyway. (PC 5) As discussed in general above, Sections 7.2 and 17.5 of the Act require the Board to adopt this Section.

RDC in the distribution system, and its relationship to the existing Board requirement and to the "no HPC" determination was the subject of extensive post-adoption comment, which is discussed in general above. In summary, the Board believes that the USEPA residual disinfectant requirement is more stringent, and in some ways inconsistent with the existing Board requirements. The Board has modified the "no HPC" provision to add an additional condition, reflected in Section 611.213.

Section 611.242

This Section is derived from 40 CFR 141.72(b) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. This Section specifies requirements for systems which do provide filtration. These differ from the requirements for those which do not filter mainly in that the filtered system is not required to have redundant disinfection components or an automatic shut-off of water in the event of disinfection failure.

This Section also contains the "HPC implies RDC" and "no HPC" language which is discussed in general above.

Section 611.250

This Section is derived from 40 CFR 141.73 (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. This Section specifies requirements for systems employing filtration. The standards differ depending on whether the system uses direct filtration, slow sand filtration, diatomaceous earth filtration or

other technologies. These methods must achieve a turbidity level of 0.5 or 1 NTU, depending on the method. The Agency may allow as much as 5 NTU under various showings related to efficiency of disinfection at the higher turbidity levels. The Board has specified that these are to be made by way of special exception permit.

The Agency asked that the Board delete slow sand filtration and diatomaceous earth filtration as acceptable filtration treatment. (PC 5, item 54) For the reasons discussed in general above, Sections 7.2 and 17.5 of the Act require the Board to adopt this "identical in substance" rule.

Section 611.261

This Section is derived from 40 CFR 141.75(a) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. It specifies reporting and recordkeeping requirements for unfiltered PWSs.

Section 611.261 and 611.262 contain the "no HPC" language which is discussed in general above. The formula in 40 CFR 141.75(a)(2)(viii)(D), reflected in Section 611.261(b)(3)(D), has an error which the Board has corrected. The Board has changed "the RDC" to "no RDC" to agree with the formula at the other three locations.

Section 611.262

This Section is derived from 40 CFR 141.75(b) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. It specifies reporting and recordkeeping requirements for filtered PWSs.

The Board has corrected a number of cross-reference errors in this Section. (PC 4)

As proposed, Section 611.262(b)(4), derived from 40 CFR 141.75(b)(2)(iv), allowed the Agency to reduce reporting to an annual report. The Agency indicated that it wanted monthly reports. (PC 5, item 56) Consistent with existing State requirements reflected in Section 611.831, the Board has deleted the provision allowing annual reports.

Section 611.271

This additional State requirement is drawn from 35 Ill. Adm. Code 607.101. It requires the PWS to protect the system to prevent contamination during repair, reconstruction or alteration. The text has been reworded to conform with the usage of terms in this Part.

The Agency has asked that this, and the following Section be moved forward to the general requirements of the Part. (PC 5, item 57) The Agency's rationale is that these requirements apply to all PWSs, not just those which have to disinfect. However, the Board does not read the applicability of this Subpart as so limited. Rather, this Subpart includes all disinfection requirements, including these requirements for repairs.

The Agency also noted a number of problems with the language of the

Proposal. These are tied in with the discussion of the definition of "PWS" above, specifically the difference between the "supplier" and the "PWS" itself. The Board has corrected these in line with the earlier discussion.

The Agency also suggested a standard for determining when a repaired portion has been satisfactorily disinfected. (PC 5, item 57) One problem is that the Agency is specifying certain microbial tests, but is failing to cite to specific methods which are incorporated by reference. The Board believes that it is better to retain language similar to the existing Board regulation in 35 Ill. Adm. Code 607.101, and allow the Agency to place the specifics in special exception permits, following its criteria in 35 Ill. Adm. Code 652.201.

Section 611.272

This Additional State requirement is drawn from 35 Ill. Adm. Code 607.102. It requires the PWS to disinfect following repairs. The existing rule requires Agency approval of the disinfection procedure, and allows the PWS to follow the plan until the Agency notifies it that the procedure is no longer satisfactory. The Board has simply made this a special exception permit. Having done this, there is no need for a specific modification procedure.

During the post-adoption comment, the Agency objected to the use of the "master permit" to approve disinfection procedures. (post-adoption PC 14, p. 35) As is discussed above, the Board has changed this to a "special exception permit". However, the Agency's objection seems to be a broader objection to any form of prior approval of disinfection procedures, suggesting that a special exception permit application would need to be submitted each time the system needed repair. This is not the intent of the rule. Rather, the Agency should give advance approval to generic disinfection procedures. The PWS would have to come back for further approval only if it needed to depart from the previously approved procedure. This is exactly what existing Section 607.102 provides, except that the Board has placed the decision into the new "special exception permit" vehicle. The Agency can use its rules in 35 Ill. Adm. Code 652.203 as standard conditions.

During the post-adoption comment, the Agency also noted that, while the existing Board rule requires disinfection of equipment, the new rule referred to disinfection of water within the system. (post-adoption PC 14, p. 35) The Board has corrected this error.

NON-CENTRALIZED TREATMENT DEVICES

Section 611.280

This Section is derived from 40 CFR 141.100 (1987), as amended at 52 Fed. Reg. 25712, June 8, 1987, and at 53 Fed. Reg. 25109, July 1, 1988. This Section concerns "point-of-entry devices", such as activated charcoal filters at residences. If these are used to meet MCLs, then it is the PWS' responsibility to operate and maintain the devices.

40 CFR 141.100(c) requires the PWS to have a State-approved monitoring

plan before installing point-of-entry devices. The Board has required that this plan be approved as a special exception permit.

40 CFR 141.100(c)(2) provides that "In addition to the VOCs, monitoring must include physical measurements ..." As discussed above, the Board has defined "VOC" as "volatile organic chemical", which is presumably what is intended here. This makes some sense in that one might want to monitor an activated carbon unit by measuring VOCs. However, the rule applies to other types of treatment. The Board solicited comment on this, but received no response.

The Agency has opposed the adoption of this and the following Section, on the grounds that approving POEs or POUs would be too resource intensive, and would require PWSs to employ licensed plumbers. (PC 5, item 58) However, Section 17.5 of the Act requires the Board to adopt this identical in substance rule. A PWS wishing to rely on these devices will have to pay the cost.

Section 611.290

This Section is derived from 40 CFR 141.101 (1989). It allows the use of bottled water or "point of use" devices to achieve compliance with an MCL only on a temporary basis.

MAXIMUM CONTAMINANT LEVELS (MCLs)

As is discussed in general above, the Board has consolidated the USEPA MCLs and revised MCLs into a single Subpart. Also, the Board has omitted the MCLGs from the State rules.

Section 611.300

This Section is derived from 40 CFR 141.11 (1989). This Section contains the MCLs for inorganic chemicals.

This Section is related to existing 35 Ill. Adm. Code 604.202 and 604.203(a) and (b). The existing State MACs are generally the same as the USEPA MCLs. However, the State regulations include MACs for the following additional parameters: copper, cyanide, iron, manganese and zinc. These have been placed in the same table as the federal MCLs, but have been marked with an asterisk as additional State requirements.

As is discussed in general above, the identical in substance regulations apply both to CWSs and non-CWSs, which are also subject to Public Health regulations. (PC 5, 6) However, the additional State requirements apply only to CWSs. The Board has added language to the introduction of this and the following Sections to make it clear that the additional State requirements apply only to CWSs.

According to 35 Ill. Adm. Code 604.202, the State MAC for fluoride is 1.8 to 2.0 mg/L. However, Section 17.6 of the Act requires that the State MAC be the same as the USEPA MCL for this parameter. The more stringent State MAC is therefore void. Section 17.6 mandates the same MCLs for barium and radium

also. However, these standards are the same in the 40 CFR 141 and 35 Ill. Adm. Code 604 anyway.

40 CFR 141.11(c) specifies an MCL of 4.0 mg/L for fluoride. However, fluoride is subject to a revised MCL, in 40 CFR 141.62, also of 4.0 mg/L. As is discussed in general above, the Board has collapsed these into a single entry in the table in Section 611.300(b).

The Agency commented with respect to Section 611.607 that the Board needed to adopt the 2.0 mg/L "secondary standard" for fluoride in 40 CFR 143. (PC 5, item 84) This is coupled with what appears to be a mandatory notice requirement in 40 CFR 143.5. However, the general introduction to 40 CFR 143 states that the regulations "are not federally enforceable, and are intended as guidelines for the States. (40 CFR 143.1) The Board declined to adopt these provisions pending clarification. USEPA has confirmed that the Board is supposed to adopt the secondary fluoride standard. (PC 12) The secondary standard therefore appears at Section 611.300(c). The secondary standard is not, strictly speaking, an MCL. However, the Board has placed it with the MCLs since it is closely related, and there is no other logical place to put it.

40 CFR 141.11(d) allows the State to raise the nitrate MCL for non-CWSs to 20 mg/L under certain conditions, including a demonstration that water will not be available to small children. As is discussed in general above, non-CWSs are small PWSs subject to regulation by Public Health. In the Proposal, the Board omitted the optional provision, based on a lack of an existing Board regulation exercising the option. However, in light of the Public Health jurisdiction, the Board has added language recognizing any exercise of this option by Public Health. As of the present, the Public Health rules do not allow increased nitrate levels. (77 Ill. Adm. Code 900.50, amended on April 13, 1990, at 14 Ill. Reg. 5457.) However, the Board has incorporated the USEPA rule by reference, and added language allowing any Public Health exemptions which are consistent with federal law.

Section 611.300(c) and (d) were missing from the Proposal since it appeared that 40 CFR 141.11(c) and (d) needed no State equivalents. The Board left holes in the subsection numbering so as to avoid confusing the additional State requirements with the identical in substance provisions. However, as is discussed above, they are both in now, and the holes are filled. (PC 4)

Section 611.300(e) is an exception for the additional State requirements for iron and manganese. This is drawn from existing 35 Ill. Adm. Code 604.203(b). This limits the iron and manganese MCLs to CWSs serving a population over 1000 or more than 300 service connections.

Section 611.300(e)(2) allows the Agency to approve levels of iron and manganese which are higher than the State MCLs.

Section 611.310

This Section is derived from 40 CFR 141.12 (1989). It establishes MCLs for organic chemicals. These include pesticides and trihalomethanes (THM or TTHM)

The USEPA rule includes chemical names for many of the pesticides. It is difficult to produce a table meeting Administrative Code Unit format rules with the long names in it. The Board has therefore added Appendix C, which defines the shortened names by reference to the long names. The federal rule also redefines "trihalomethanes" inside the table. This is already defined in the definitions in 40 CFR 141.2 (Section 611.101)

This Section is related to existing 35 Ill. Adm. Code 604.202 and 604.203(d)(2).

35 Ill. Adm. Code 604.202 sets MCLs for six additional pesticides. These have been inserted into the Table, and have been marked as additional State requirements. The existing State MAC for 2,4-D, 0.01 mg/L, is also more stringent than the USEPA standard of 0.1 mg/L. The Board has inserted the more stringent State MAC into the Table, and similarly marked it.

The State MACs for pesticides are expressed by common names, without full chemical names. The Board has added full chemical names in Appendix C.

The preamble to 40 CFR 141.12 provides that the THM MCL applies only to CWSs which serve over 10,000 individuals and which add a disinfectant. 35 Ill. Adm. Code 604.202 and 604.203(d)(2) set the same standard for the same size "supply", but without qualification as to whether disinfection is applied. In R84-12, during the pendency of this proposal, the Board amended Section 604.203 and 605.104 to remove the 10,000 persons served limitation from this MAC, and to prescribe a new method of measuring the parameter. (R84-12, December 2, 1989; 14 Ill. Reg. 689, effective January 2, 1990) The THM MAC is therefore a more stringent requirement which the Board has retained, and marked with an asterisk. The Board standard is presently more stringent, since it applies regardless of whether disinfection is applied. After 1991, it will also apply to CWSs serving under 10,000 persons. (PC 4)

The Agency recommended language codifying R84-12. (PC 5, item 61) The Agency added a provision to the effect that the TTHM standard does not apply to groundwater supplies serving fewer than 10,000 individuals. Although groundwater sources are allowed reduced monitoring under R84-12, they are not exempt from the standard itself. Monitoring is addressed below in connection with Section 611.680 et seq.

Section 611.311

This Section is derived from 40 CFR 141.61 (1987), as amended at 52 Fed. Reg. 25712, June 8, 1987. This Section contains the "national revised MCLs" for "VOCs", as the Agency prefers to call them. These are also referred to as the "list of eight" organic chemicals.

This Section was proposed in a separate Subpart. As is discussed in general above, the Board has collapsed the MCLs and revised MCLs into a single Subpart.

The Agency has asked the Board to consolidate these into a single Section with the other organic MCLs. (PC 5, item 61; post-adoption PC 14, p. 37) The Board has instead moved these to a separate Section adjacent to the other

organics. This table has a different format from that employed in the other Section. Because of the necessity of specifying CAS numbers and BAT, it would be difficult to meet Code Division margin requirments if this were a subsection.

In the Proposed Opinion and the May 24, 1990, Opinion, the Board pointed out a number of problems with the wording of 40 CFR 141.61. The Agency is adamant that these are called "VOCs":

> All USEPA rulemaking, technical publication information, professional industry publications and water supply personnel use the terminology adopted by USEPA to describe the groupings given. In order to avoid confusion and to be consistent with federal regulations, the Board should also adopt this terminology. (post-adoption PC 14, p. 37)

The Board has changed the name to that preferred by the Agency. However, the Board must take issue with the Agency's assertion that this is the terminology used by USEPA. The term "VOC" is not used at all in 40 CFR 141.61, which contains the list and USEPA MCLs. Subsection (a) calls these "organic contaminants". Subsection (b) calls them "synthetic organic chemicals". The term "VOCs" appears only in the associated monitoring requirements in Section 611.648. The term "VOC" is undefined, but presumably means "volatile organic chemicals". (PC 5, item 23) The preamble also refers to these as "VOCs" (52 Fed. Reg. 25691, July 8, 1988).

The term "VOC" is also used at two other points in the USEPA rules. 40 CFR 141.24(g)(8)(iv)(D) and 141.100 refer to "VOCs". These are reflected in Section 611.648(h)(4)(D) and 611.280. Within the federal regulations it is not clear whether these references are intended to be to "VOCs" in the general sense, or to the "list of eight". Under the Agency's reading, which the Board has above adopted, "VOC" becomes a narrowly defined term. This may have the effect of restricting the meaning of "VOC" in the other Sections. For example, in the vulnerability assessment, Section 611.648(h), the Agency is restricted to considering the "list of eight", instead of any VOCs in the generic sense.

The Agency's post adoption comment, states that: "The Board questions USEPA's groupings of volatile organic chemicals and synthetic organic chemicals, noting that not all of the chemicals are volatile". (post-adoption PC 14, p. 37) This is a serious mischaracterization of the October 5, 1989, and May 24, 1990 Opinions. First, there is no mention in either Opinion as to whether the list of eight is or is not volatile. Second, the Board did not "question USEPA's groupings". Rather, the Board noted that USEPA apparently had three names for one list. The Board was forced to choose the best name. The discussion was as follows:

> There are obvious problems with having three names for a list of chemicals, especially if two are undefined. The Board has therefore replaced the terms "synthetic organic chemicals" and "VOCs" with the best term, "organic contaminants". "Synthetic organic

> contaminants" is not a very good descriptor, since one of these chemicals, benzene, is a naturally occurring feedstock from oil and coal. "VOCs" is not very good either, since these compounds are not a drinking water problem because of their volatility, but rather because of their carcinogenicity. The term "VOC" would be misleading if non-volatile organics with similar toxicity were added to the list. (Proposed Opinion, p. 35; May 24, 1990, Opinion, p. 59)

Again, the Board is prepared to use the Agency's terminology. However, the terminology is not that used in the USEPA rules.

Section 611.320

This Section is derived from 40 CFR 141.13 (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. Note that the turbidity standards will, at least to some extent, be replaced by the new disinfection rules as the compliance dates for those rules pass.

This Section is related to existing 35 Ill. Adm. Code 604.202 and 604.203(e). These appear to be largely the same as the USEPA rules. They have been entirely replaced with the USEPA language.

As is discussed in general above, it is necessary to establish phase out/phase in rules for the existing Board rules and the new filtration-disinfection rules. In the case of turbidity, USEPA has established a phase out/phase in rule within its own rules. The Agency has suggested that it would be simpler for the regulated community to follow if the Board retained its existing requirement, and phased it out. (PC 5, item 62) However, this would be inconsistent with the general approach to stringency discussed above. The Board would fail to follow the "identical in substance" mandate pending phase in of the new requirements.

The USEPA rules use both "NTU" and "TU" as turbidity units. These are defined in Section 611.101 above. As is discussed in connection with the definitions in Section 611.101, the Board has replaced "TU" with "NTU". (post-adoption PC 14, p. 14)

The USEPA rule allows the State to approve turbidity limits from one to five TU if the PWS demonstrates that the higher level does not: interfere with disinfection; prevent maintenance of an effective residual; and, interfere with microbial determinations. The Board construes this as a case-by-case "waiver" provision, since it requires an individual supplier to make the demonstration. The Board has inserted language to make it clear that this is to be done by way of special exception special exception permit application. As is discussed in general above, the Agency has authority pursuant to Sections 4 and 39 of the Act to make these determinations in the context of special exception permit issuance. The regulation allows the Agency to set a numerical limit within a range set by Board regulation, pursuant to an objective standard which is subject to Board review.

An alternative reading of this provision is that it allows a PWS to

establish an after-the-fact defense in the event it is charged with exceeding the turbidity standard. The Board proposed to reject this interpretation, and received no adverse comment. 40 CFR 141.13(a) appears to be setting a prospective design standard which a PWS should comply with in designing equipment. It contains no factors, such as equipment malfunction, which one would expect to see in an Section which created an after-the-fact defense to enforcement.

Section 611.325

This Section is derived from 40 CFR 141.63, as adopted at 54 Fed. Reg. 27562, June 29, 1989. As is discussed in the introduction to this Subpart and in general above, the Board has collapsed the MCLs and revised MCLs into a single Subpart. Since there are no MCLs for microbiological contaminants, this invlolves simply moving the text of 40 CFR 141.63 into the appropriate point. The Board has inserted it after the turbidity standards, since this is the most closely related parameter.

This Section sets a presence-absence (P-A) standard for total coliform. A PWS is in compliance if no more than 5.0% of 100 ml samples are coliform positive in a month. Systems which take fewer than 40 samples are allowed one positive sample. Sampling frequency is governed by Section 611.521. Analytical methods are prescribed in Section 611.526.

This Section is related to old 35 Ill. Adm. Code 604.102, which sets numerical limits for total coliform. As is discussed in general above, the existing standards appear to be less stringent than the new USEPA P/A standard. Section 7.2(a)(6) allows the Board to retain only those more stringent regulations which are more stringent than and consistent with USEPA rules.

Section 611.330

This Section is derived from 40 CFR 141.15 (1989). This is the standard for radium and gross alpha particle activity.

This Section is related to existing 35 Ill. Adm. Code 604.301, which sets the same standards. In addition, Section 17.6 of the Act requires that the Board have identical standards.

The Agency has asked the Board to defer action on the radiological standards, pending USEPA amendments expected in 1991. (PC 5, item 63) This would be inconsistent with the general approach to stringency discussed above.

Section 611.331

This Section is derived from 40 CFR 141.16 (1989). This is the standard for beta and photon radiactivity from man-made radionuclides.

This Section is related to existing 35 Ill. Adm. Code 604.302. This is the same as the USEPA Section.

REVISED MCLs

Section 611.340 et seq. (Not Adopted)

For the reasons discussed above, the revised MCLs have been consolidated with the MCLs above.

MCL GOALS

Section 611.380 et seq. (Not adopted)

This Subpart sets MCL goals (MCLGs). As is discussed in general above, these are really policy statements required of USEPA by the SDWA. Since they would serve no function as State rules, the Board has dropped them from the proposal.

GENERAL MONITORING REQUIREMENTS

Section 611.480

This Section is derived from 40 CFR 141.27 (1989), which allows USEPA to approve alternate analytical techniques which are substantially equivalent in "both precision and accuracy". This Section is related to existing 35 Ill. Adm. Code 605.110, which says pretty much the same thing. The Board has allowed the Agency to approve alternate analytical techniques, on a case-by-case basis, by way of special exception permit. The Board has provided that the Agency may not grant such conditions without the concurrence of USEPA.

An alternative reading of 40 CFR 141.27 is that it authorizes the State to adopt regulations specifying alternative analytical requirements, in which case USEPA approval would come through the program approval process. The Board requested comment as to which reading is correct, but received no direct response.

The Agency commented that it was opposed to allowing alternative analytical techniques by way of special exception permit. Instead, it wanted a reference to laboratory certification authority pursuant to Sections 4(o) and (p) of the Act. (PC 5, item 68) This is related to the general discussion above concerning laboratory certification. As is discussed in general above, many analytical methods have a bias which is reflected in the standard. Changing the analytical method could eliminate the bias, and would therefore be equivalent to changing the standard. Specification of analytical methods is therefore equivalent to setting environmental control standards, a power reserved to the Board by Section 5 of the Act. In laboratory certification, the Agency is to certify labs which are correctly using the analytical methods specified by Board rule.

The question in this Section is somewhat complex. In this Section the State must approve alternative analytical techniques. Approval of alternative analytical techniques could conceivably come by several procedures. Specific approval could be granted by the Board by variance or adjusted standard, or by the Agency in a special exception permit action (as proposed). Generic approval could be granted by way of laboratory certification (as suggested by

the Agency), by Board rule or by Agency criterion.

Not all PWSs have certified laboratories. Indeed, certification could be granted to a commercial laboratory to which PWSs send samples. Therefore, the laboratory and the owner and operator of the PWS are not necessarily the same person.

Board regulations specify MCLs and analytical techniques. PWSs are required to comply with the MCLs; and compliance is judged by the analytical methods. The PWS has a right to have its compliance judged by the specified methods. The Agency cannot specify an alternative in a separate action with a commercial laboratory, and then impose the method on the PWSs without giving them notice and the opportunity to object. For this reason, the basic mode for approval of alternative methods must come in a process which includes notice to the PWS. If the PWS is using a commercial lab, it would notify the lab that the alternative had been approved. If the lab demonstrated to the Agency that it was able to analyse samples in accordance with the alternative method, the Agency should certify the lab to run the alternative.

The Board has not insisted on a variance or adjusted standard mechanism for approval of alternatives. As is discussed in the general portion of this Opinion, entitled "Agency or Board Action", this is an appropriate situation for Agency special exception permit action. The rule specifies an objective standard for Agency action: "substantially equivalent to the prescribed test in both precision and accuracy".

Generic approval of a standard could come by way of a Board regulation. Alternatively, if the Agency determines as a matter of policy that it will always accept, in permit applications, an alternative to a specified method, it has made a "rule" within the meaning of the APA. It should publish the rule for public comment in accordance with the APA.

In summary, the Board has left this rule as proposed. The Board rule is specifying a standard for an Agency special exception permit action, rather than a laboratory approval standard. The Agency should certify laboratories, pursuant to its authority under Section 4 of the Act, if they are able to run alternative analyses as specified.

Section 611.490

This Section is derived from 40 CFR 141.28 (1989), which requires analyses to be performed in laboratories approved by the State. In the Proposal, the Board cited to the Agency's laboratory certification authority in Section 4(o) of the Act, and solicited comment as to whether the Agency has adopted implementing regulations appropriate for this type of certification.

As is discussed in general above, the Agency referred the Board to its "joint laboratory certification standards", with Public Health, in 35 Ill. Adm. Code 183. (PC 5, item 68) The Board has not referenced these standards in the rules, for two reasons. First, as was discussed above, Part 183 is specifying analytical methods which the Board is now required to adopt. Second, the definition of "non-CWS" in Section 3.05 of the Act casts doubt on the authority for joint lab standards applicable to non-CWSs. The Agency has

indicated that changes to Part 183 will be forthcoming. The Board will consider referencing them following amendment. In the adopted rule, the Board has referenced only to Section 4(o) of the Act, and to the Public Health authority in ch. 127, par. 55.11.

In the Proposal, the Board noted that 40 CFR 141.28 and the proposed Section would not allow analyses at USEPA-approved labs. The Board solicited comment as to whether there was a need to allow USEPA-approved labs.:

> The proposed formulation would not allow analyses to be used in Illinois if performed by a laboratory certified only by USEPA. The Board **solicits comment** as to whether there was a need for such a provision. (Proposed Opinion, p. 36)

The Agency did not respond. Indeed, it recommended language which also excluded USEPA-certified labs. (PC 5, item 68) However, in its post-adoption comment, the Agency states that: It is important that laboratories certified by USEPA be allowed to complete analyses for compliance purposes. (post-adoption PC 14, p. 39) The Board has revised the rule to allow USEPA analyses.

The USEPA Section also allows that certain simple measurements, such as pH, may be made by "any person acceptable to the State". The Board proposed to allow any person under the supervision of a certified operator to make these measurements. The Board solicited comment on this, but received no response. (Proposed Opinion, p. 36; PC 5, item 68) However, in its post-adoption comment, the Agency has pointed out that this would work a hardship on PWSs which are exempted from operator certification, and claimed that the provision would prevent laboratory personnel from performing the tests. (post-adoption PC 14, p. 40) As to the latter claim, the rule is quite clear that the certified laboratory can also perform the simple tests.

The Agency has recommended that the simple tests may be performed: "under the supervision of a certified operator, registered person or other person approved by the Agency". (post-adoption PC 14, p. 41) However, the Agency has offerred no definition of "registered person", and no procedures for approval of "other persons". The Board cannot add this provision without explanation.

This Section is related to existing 35 Ill. Adm. Code 605.101(c) and 607.105(b). The former provides that it is the duty of the PWS to have compliance samples analyzed either at a its own or another certified laboratory. This is an obvious requirement which may be missing in the USEPA rules. It has been moved to Section 611.490(c). 35 Ill. Adm. Code 607.105(b) says the same thing as Section 611.490(a)

The Agency asked the Board to redraft Section 611.490(c) to better reflect the usual situation, in which the PWS has the Agency analyse the samples. (PC 5, item 68) The Board has done so.

Section 611.491

This Section is drawn from 35 Ill. Adm. Code 607.105(a) and (c). This requires each PWS to have adequate laboratory equipment to perform operational tests, and allows control tests to be performed at an uncertified laboratory. These provisions appear to be additional, consistent State requirements.

In its intial comments, the Agency commented only on a misspelled word in this Section. (PC 5, item 69) However, in its post-adoption comment, the Agency has claimed that the existing Board rule refers to equipment which for the most part is not "laboratory equipment". (post-adoption PC 14, p. 41) The Board has checked the existing rule, and this is the term used.

Section 611.492 and 611.493 (Renumbered to 611.602 and 611.603)

The contents of these proposed Sections appears to apply only to inorganic monitoring. They have been moved to Section 611.602 and 611.603.

Section 611.500

This Section is derived from 40 CFR 141.29 (1989). It allows the Agency to modify, by special exception permit, monitoring requirements for consecutive PWSs, to the extent their interconnection justifies treating them as a single PWS. The Agency cannot issue such a special exception permit without concurrence from USEPA.

This Section is related to existing 35 Ill. Adm. Code 604.204, 604.402(a) and 605.109(a), which say pretty much the same thing.

MICROBIOLOGICAL MONIORING

This Subpart specifies the requirements for microbial monitoring. As is discussed in general above, the Board has determined stringency and consistency with respect to the MCLs and required treatment techniques. After determining whether State or federal law is controlling at this level, the Board has adopted the monitoring and notice requirements associated with the controlling law, without further comparison of stringency.

The Board has above determined that the new USEPA microbiological MCLs and treatment requirements are "more stringent". The Board has therefore followed the federal rules with respect to microbiological monitoring. Attached to the Opinion is a cross-reference table showing the relationship with existing Board monitoring requirements. However, the Board has not undertaken any detailed comparison at this level in the Opinion.

The monitoring requirements include a large number of "waiver" provisions. Generally the Board has specified that any "waivers" are to be addressed by way of special exception permit. As provided in Section 611.110, a special exception permit will necessarily be in writing and signed by a responsible Agency official. Therefore, the Board has dropped as unnecessary many detailed requirements as to the form these "waivers" must take.

A few of the monitoring "waivers" appear to represent emergency response situations. For example, some provisions require resampling in response to MCL exceedances, except in certain situations. These "waivers" the Board has allowed the Agency to handle outside the permit system.

Some "waivers" seem to occupy an intermediary position between a design change which should be approved by permit, and an emergency response. For example, a provision which requires resampling within 30 hours, unless the PWS cannot resample within that time. One way of looking at this is that each PWS is to take steps from the time of special exception permit issuance to be prepared to resample within 30 hours should the need arise. If there is something about the system which will prevent such resampling, the PWS needs to specify in a special exception permit application, so that the Agency can specify an alternative. A second way of looking at this is that it is intended to allow "waivers" after the 30 hour resampling is required, based on unanticipatable events, in which case it is an emergency action. A third possibility is that the provision is an after-the-fact excuse provision which would create a defense in an enforcement action. Wherever possible the Board has followed the first alternative, to place these decisions squarely into the Agency's permit authority. The Board solicited as to whether another sense is intended, but received no response.

Section 611.521

This Section is derived from 40 CFR 141.21(a) (1987), as amended at 54 Fed. Reg. 27562, June 29, 1989. This Section specifies the frequency of monitoring for total coliform.

40 CFR 141.21(a)(1) requires a "written sample siting plan. These plans are subject to State review and revision". For the reasons discussed in general above, in Section 611.521(a) the Board has required a written plan, which "must be approved as a special exception permit."

40 CFR 141.21(a)(2) includes the table of required monitoring frequencies for CWSs. This is almost the same as under existing 35 Ill. Adm. Code 605.102. The Agency and USEPA have indicated that it is necessary to specify population ranges in the table. (PC 12; post-adoption PC 14, p. 43) In addition, a footnote was missing from the adopted table. The Code Division requires that tables fit within the margins of the preceding text, and sometimes 5 spaces inside. They also prohibit the use of footnotes in the main body of the rules. Therefore the Board has moved the table to Table A, which will appear at the end of the Order. This allows the use of wider margins, and footnotes if necessary. They Agency can move this Table to a more convenient location in the printed version of the rules.

40 CFR 141.21(a) includes numerous references to the determination that groundwater is under the influence of surface water. The Board has referenced Section 611.212 for this determination.

Section 611.521(b) is derived from 40 CFR 141.21(a)(2). The paragraph following the table allows the State to reduce the monitoring frequency for CWSs serving 25 to 1000 persons, if a sanitary survey shows that the system is supplied solely by a protected groundwater source and is free of sanitary

defects. The Agency has asked the Board to drop this procedure, since it is "less stringent" than existing sampling requirements in Section 605.101(a)(1) and 605.102. While the existing rules always require at least a monthly sample, the USEPA rules allow a reduction to a quarterly sample. The Agency questions the wisdom of the USEPA rule, since the most serious risk of contamination occurs in the distribution system. (PC 5, item 73)

In its post-adoption comment, the Agency has suggested additional considerations as a basis for determination. (post-adoption PC 14, p. 43) The Board believes that the Agency can properly consider only those showings that flow from the standard in the USEPA rule. The use of "shall" and "may" is discussed in general above.

The Board's approach to stringency is discussed in general above, and in the introduction to this Subpart. The Board judges stringency with respect to the MCLs, and adopts the monitoring requirements associated with the more stringent MCL. The Board has determined that the new filtration and disinfection rules are more stringent than the existing Board rules, and has therefore adopted the USEPA rules. It would be unacceptable to retain the monitoring requirements associated with the old standards.

Section 7.2 and 17.5 of the Act require the Board to adopt an equivalent of the USEPA rule regardless of its wisdom. The Board notes, however, that the Agency cannot allow the reduction in monitoring unless it determines that the PWS is "free of sanitary defects".

Section 611.521(c) includes specific monitoring requirements for non-CWSs. As is discussed in general above, and in connection with Section 611.100, these are regulated by the Department of Public Health. (PC 5, item 73) The Board has corrected the proposal to reference Public Health procedures.

Section 611.521(e) includes an intermediate type of "waiver" provision discussed in general at the beginning of the Microbial Monitoring Subpart. This allows the Agency to "waive" a 30 hour resample requirement if the PWS cannot have the sample analyzed "for logistical reasons outside the PWSs control". The Board adopted this as a special exception permit type waiver which must be granted in advance, but solicited comment. The Board received no direct response.

The Agency asked the Board to delete Section 611.521(e), since it applies only to surface sources, etc. which do not have to filter, and the Agency believes all must filter. (PC 5, item 73) As is discussed in general above, Sections 7.2 and 17.5 of the Act require the Board to adopt these rules.

Section 611.522

This Section is derived from 40 CFR 141.21(b) (1987), as amended at 54 Fed. Reg. 27562, June 29, 1989. It governs repeat coliform monitoring, which is required following a coliform positive sample.

This Section includes many "waivers". Most of these appear to arise within the context of a "boil order". The Board has adopted most of these as

Agency actions outside the permit system, but solicited comment as to whether procedures need to be specified. The Board received no direct response.

Section 611.522(b) is drawn from 40 CFR 141.21(b)(2). USEPA has indicated that this is to be a case-by-case waiver of the requirement to obtain upstream and downstream repeat samples if a coliform positive was collected at the last, or next to last, connection. (PC 4) The Board has reformulated the proposal in line with USEPA's comment.

Section 611.522(e)(1), drawn from 40 CFR 141.21(b)(5)(i), deals with sanitary surveys following a coliform positive sample. The USEPA rule allows the State to delegate this authority, but prohibits delegation to the PWS itself. The proposal allowed units of local government to perform the survey, so long as it was not done by the PWS. The Agency objected to this on the general grounds discussed above in connection with Section 611.108: that the Board did not have authority to regulate the delegation process. (PC 5, item 74) The Agency has now explained that it does not wish to delegate this to local government at all. (post-adoption PC 14, p. 44) In that the delegation provision is optional with the State, the Board has dropped it. With it gone, there is no need to limit the possible delegates.

Section 611.523

This Section is derived from 40 CFR 141.21(c) (1987), as amended at 54 Fed. Reg. 27562, June 29,1989. This Section governs the invalidation of total coliform samples. 40 CFR 141.21(c)(1)(iii) allows the State to invalidate a sample if "the State has substantial grounds to believe" that a positive result is due to a circumstance which does not reflect water quality in the distribution system. In Section 611.523(a)(3) the Board has replaced this with "the Agency determines", so as to avoid specifying a subjective standard or unusual standard for proof. Note that, under the federal rule as written, the question on review would be, "what did the Agency believe?" Whether the result was in fact positive or negative would be irrelevant.

Section 611.524

This Section is derived from 40 CFR 141.21(d) (1987), as amended at 54 Fed. Reg. 27562, June 29, 1989. This Section requires "sanitary surveys" of CWSs which collect fewer than 5 routine coliform samples per month. Under Section 611.521, this would be systems with fewer than 4100 persons served. The initial survey is required in 1994 for CWSs, and in 1999 for non-CWSs. The survey must be repeated every five years thereafter, except for "non-CWSs using only protected and disinfected groundwater, as defined by the State". As a definition, the Board has used the "not under the direct influence of surface water" determination in Section 611.212. The Board solicited comment on this, but received no response.

Section 611.524(a)(2) allows the use of data collected in developing and implementing a "wellhead protection program". This term is defined above.

40 CFR 141.21(d)(2) requires that the sanitary survey be performed by the State "or an agent approved by the State." The Board proposed to allow delegated units of local government to conduct the surveys, and solicited

comment. The Agency is opposed to allowing units of local government to conduct the sanitary survey. (PC 5, item 75) The Board has therefore deleted this option.

The final sentence of 40 CFR 141.21(d)(2) provides that "the system is responsible for ensuring that the survey takes place." This is reflected in the final sentence of Section 611.524(b). The City of Chicago has suggested that this responsibility "should belong" to the Agency instead. (PC 3) However, the Board cannot modify the substance of the USEPA regulations.

In the May 24, 1990, Opinion and Order, the Board inadvertently attributed this comment to USEPA. (PC 12, post-adoption PC 14, p. 46)

Section 611.525

This Section is derived from 40 CFR 141.21(e) (1987), as amended at 54 Fed. Reg. 27562, June 29, 1989. If a sample is coliform positive, the system must reanalyze the culture to see if fecal coliform or E. coli are present.

Section 611.525(b) allows the Agency to allow a PWS, on a case-by-case basis, to forgo fecal coliform or E. coli testing, if it assumes that a coliform positive sample is also positive for these parameters. This would then constitute a violation of the MCL.

The Board has inserted a provision to the effect that the PWS need not provide notice if an original sample was analyzed by the Agency. This was requested by the Agency. (PC 5, item 76)

Section 611.526

This Section is derived from 40 CFR 141.21(f) (1987), as amended at 54 Fed. Reg. 27562, June 29, 1989. This Section specifies the analytical methods to be used for microbiological analysis. Note that the text uses abbreviated names for sources, which are set out at length in the incorporations by reference Section.

40 CFR 141.21(f)(5) modifies certain "EPA approved methods" The Board construes this as a back reference to the references in the preceding paragraph which are published by USEPA, i.e. "Microbiological Methods for Monitoring ...". Section 611.526(e)(2) has been worded to reference "Microbiolgical Methods" directly. However, it is possible that the USEPA provision is intended to modify all of the preceding references, including the ASTM and Standard Methods. The Board solicited comment on this, but received no direct response.

USEPA indicated that the June 29, 1989, Federal Register indicated that additional analytical methods would be forthcoming, but that no subsequent notice had been issued as of the comment. (PC 4) The Board notes that additional methods were approved on July 17, 1989, at 54 Fed. Reg. 29998. These concern the MTF and MMO-MUG test, discussed above in connection with Section 611.102.

As is discussed in connection with Section 611.102, the Board proposed to

change the analytical methods to the current 17th Edition of Standard Methods. USEPA advised the Board to correct the numbers. (PC 4) The Agency did not comment. (PC 5) However, in their post-adoption comments, both the Agency and USEPA asked the Board to change the numbers back to the earlier editions. (PC 12; post-adoption PC 14, p. 47) The Board has done so.

Section 611.527

This Section is derived from 40 CFR 141.21(g) (1987), as amended at 54 Fed. Reg. 27562, June 29, 1989. The PWS has to report a coliform violation on the next business day, and report to the public as specified in Subpart T.

Section 611.531

This and the following Sections are drawn from 40 CFR 141.74, which specifies the analytical methods for compliance with the filtration and disinfection rules. These have been included with the microbiological methods, to which they are closely related. Note, however, that they do specify methods for measurement of non-biological parameters also.

This Section is derived from 40 CFR 141.74(a) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989 40 CFR 141.74 provides for alternate methods "otherwise approved by the EPA". The Board proposed to allow alternate methods approved by the Agency under Section 611.480. The Board solicited comment, but received no direct response. However, the Agency recommended language which omitted mention of "alternate methods". (PC 5, item 78) The Board construes the authority to approve alternate methods as non-delegatable.

The Board also proposed to allow simple measurements, such as pH or RDC, to be conducted by a certified operator. More complicated analyses, including bacterial, must be performed by a certified laboratory. The Agency suggested language specifying that these simple analyses could be done "under the supervision" of the operator. (PC 5, item 78) The Board adopted language similar to that recommended by the Agency. However, in its post-adoption comments, the Agency raised the problem of possible hardship for PWSs exempt from having a certified operator. (post-adoption PC 14, p. 49) The same issue was discussed above in connection with Section 611.490 above. In summary, the rules clearly allow the simple analyses to be conducted by a certified laboratory. Before the Board can adopt a rule allowing these analyses to be performed by "registered" and other "approved" persons, the Board will need definitions and procedures for approval.

Pending recertification pursuant to new standards, any laboratory certified for total coliform is deemed certified for fecal coliform and HPC (heterotrophic plate count). Again the Board has assumed that all of this will be delegated, and the the Agency will take over laboratory certification for this program, and solicited comment. The Board again received no direct response. However, the Agency recommended alternative language which included Agency certification. (PC 5, item 78) However, the Agency omitted the "deemed certified" provision, without explanation. In its post-adoption comment, the Agency explained that it has already adopted the needed certification criteria. (post-adoption PC 14, p. 50) The Board has therefore dropped this sentence as unnecessary.

Section 611.532

This Section is derived from 40 CFR 141.74(b) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. This specifies the monitoring requirements for PWSs which do not provide filtration.

Because this Section applies only to PWSs which do not filter, the Agency recommended its deletion. (PC 5, item 79) As is discussed in general above, Sections 7.2 and 17.5 of the Act require the Board to adopt these identical in substance rules. As a practical matter, this Section will have little impact since all PWSs required to filter already do so.

This Section is closely linked to the Agency determinations in Section 611.201 et seq., which have been referenced instead of repeating the standards for the determinations.

40 CFR 141.74(b)(2) allows a PWS to use continuous turbidity monitoring "using a protocol approved by the State". The Board, in Section 611.532(b), has placed this in the special exception permit issuance process as a case-by-case decision.

40 CFR 141.74(b)(3) et seq. govern the measurement of the inactivation ratio at the point of disinfection. Note that the tables listing CT99.9 have been moved to Appendix B. Note also that the text at 54 Fed. Reg. 27534 is scrambled. As is discussed above, the Board has avoided typing problems by shortening the symbols used in the formulas.

USEPA has asked what "3B" means in Section 611.532(d)(3). (PC 4) "B" is defined in the definition of "inactivation ratio" in Section 611.101, and in the introductory portion of this Opinion, along with all the other abbreviations and symbols. "B" is also defined in Section 611.532(d)(1)(B)(ii). "B" is the sum of the inactivation ratios for each disinfection step.

As discussed in Subpart B above, the USEPA rules include a treatment requirement which requires 99.9% removal or inactivation of G. lamblia cysts. To demonstrate compliance with this standard the PWS has to measure pH, temperature, contact time and RDC concentration for each disinfection process. The PWS measures these, and calculates the total inactivation ratio pursuant to this Section.

The values in Appendix B are mainly for chlorine. Section 611.532(c)(5) allows a PWS using an alternative disinfectant to establish altenative protocols. The Board has referenced the alternatives in Section 611.241, instead of repeating similar language here. Those Sections require alternatives to be specified by special exception permit.

Section 611.533

This Section is derived from 40 CFR 141.74(c) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. It governs monitoring by systems which use filtration. The monitoring requirements are less strict than for PWSs which

do not filter.

As is discussed above, the table in this Section has been moved to Table C to meet margin and format requirements. (post-adoption PC 14, p. 51) The use of "shall" and "may" is discussed in general above. (post-adoption PC 14, p. 52)

TURBIDITY MONITORING

Section 611.560

This Section is derived from 40 CFR 141.22 (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. This Section governs turbidity monitoring. Note that there are additional turbidity monitoring requirements with the microbiological monitoring requirements. Those requirements appear to replace this Section after the dates disinfection and filtration are required.

40 CFR 141.22(a)(2) allows calibration of the turbidimeter either according to cited references, or by use of a commercially available calibration styrene divinylbenzene polymer standard. This is discussed above in connection with incorporations by reference in Section 611.102.

40 CFR 141.22(e) authorizes the State to initiate enforcement. This has been made a global rule in Section 611.109.

INORGANIC MONITORING

This Subpart governs inorganic monitoring. Unlike the preceding Subparts, there are additional State MCLs for inorganic contaminants. (Section 611.300) These include: copper, cyanide, iron, manganese and zinc. There may be additional State requirements governing monitoring for these parameters which should be preserved according to the general approach discussed above. However, for the sake of simplicity, if the existing State rule is very similar to the federal rule for all inorganic MCLs, the Board has simply extended the USEPA rule to cover the additional parameters. Some general State monitoring rules have been retained in Section 611.480 et seq. More specific rules are contained in this Subpart.

Section 611.601

This Section is derived from 40 CFR 141.23(a) through (e) (1987), as amended at 53 Fed. Reg. 5146, February 19, 1988. This specifies the monitoring requirements for inorganic chemicals.

This Section is related to existing 35 Ill. Adm. Code 604.203 and 605.103. The latter establishes a schedule for "chemical analysis" of raw and finished water from CWSs. Surface water sources are to monitor annually, while groundwater sources are to monitor every three years. Fortunately this is the same as the federal rule. (Section 611.601(a)(1) and (2)) The Board has added a note to make it clear that the general federal rule applies to the additional State MCLs.

As discussed in connection with Section 611.300, the USEPA MCL of 10 mg/L

for nitrate is the same as the existing Board MAC in 35 Ill. Adm. Code 604.202. The Board has therefore based the rule on the USEPA MCL, and hence also the monitoring requirement. However, 40 CFR 141.23(a)(3) allows the State to set nitrate monitoring frequencies for non-CWSs. Nitrate monitoring is governed by existing 35 Ill. Adm. Code 604.203 and 605.103. The latter applies only to CWSs. As was discussed above in connection with the MCL, non-CWS monitoring may be subject to exceptions promulgated by Public Health.

40 CFR 141.23(a)(4) has been made a global rule on enforcement in Section 611.109.

40 CFR 141.23(b) and (c) specify additional sampling, averaging and reporting rules for inorganic parameters. These are basically the same as existing 35 Ill. Adm. Code 604.202, which is stated in general in Section 611.492. The Board has therefore made the USEPA derived rule applicable to the additional State parameters, and has dropped a note to that effect.

40 CFR 141.23(c) includes a reference to monitoring schedules as a condition of a "variance, exemption or enforcement action". The comparable State procedures are referenced in Section 611.601(c). These are variance, adjusted standard, site-specific rule and enforcement action.

40 CFR 141.23(e) has been omitted, since it was a transitional rule allowing the use of pre-existing data when the USEPA rule was first adopted.

Section 611.602

This and the following Section were proposed as Section 611.492 et seq. In its post-adoption comments, the Agency pointed out that they are derived from existing Board rules which apply only to inorganic monitoring. (post-adoption PC 14, p. 42) The Board has therefore moved them to the Subpart on inorganic monitoring.

This Section is drawn from 35 Ill. Adm. Code 604.204. This contains a general averaging rule, and reporting and notification requirements. It has been retained to state a general rule on what to do about a violation of the State MCLs, which have above been added to the federal. Language has been added to the effect that this Section applies only to additional State requirements for which no specific monitoring, reporting or public notice requirements are specified.

Section 611.603

This Section is drawn from 35 Ill. Adm. Code 605.103. It specifies the frequency of monitoring for additional State MCLs, in the absence of a more specific rule.

Section 611.606

This Section is derived from 40 CFR 141.23(f) (1987), as amended at 53 Fed. Reg. 5146, February 19, 1988. It specifies analytical methods. Note that the Board rule uses abbreviated names which reference into Section 611.102, incorporations by reference.

This Section is related to existing 35 Ill. Adm. Code 604.104, which includes a broadside reference to methods approved by USEPA or the Agency. It is doubtful whether this would be acceptable to JCAR under the current APA. The Board therefore added test methods for the additional State parameters, and solicited comment as to whether these are correct, or whether additional methods need to be referenced. The Board received no direct response.

In Section 611.606(g), the Board has cited to Standard Methods, 14th Edition, Methods 419C, 419D and 605, various methods for measuring nitrates. These Methods have no equivalents in the 16th and 17th Editions.

Section 611.607

This Section is derived from 40 CFR 141.23(g) (1987), as amended at 53 Fed. Reg. 5146, February 19, 1988. It governs fluoride monitoring.

This Section is related to existing 35 Ill. Adm. Code 604.202 and 604.203. However, in that Section 17.6 of the Act mandates that the Board follow the USEPA standard, the Board has followed the USEPA monitoring rules.

The provisions of the USEPA rule include a number of "waiver" provisions. The Board has generally placed these into the context of Agency special exception permit actions, which will necessarily be formal, written determinations. The Board has omitted the requirement of Agency notice of these decisions to USEPA, since this can be provided for in the memorandum of agreement between the agencies.

40 CFR 141.23(g)(4) limits laboratories to those which have successfully analyzed "performance evaluation samples" within the last 12 months. This provision is evidently referencing into a body of laboratory certification rules. The Board requested comment as to the identity of these rules, but received no direct response. However, the Board has identified the apparent correct reference as 35 Ill. Adm. Code 183.125(c)(3), which has been inserted into the rules.

Section 611.610

This Section is derived from 40 CFR 141.41 (1989). This Section requires special monitoring and reporting concerning sodium. Note that there is no MCL for sodium. This Section just requires monitoring, and special public notification if the level is excessive. Sodium is associated with high blood pressure. The notification allows people with restricted sodium intact to seek alternative water sources.

This and the following USEPA rules are applicable to "suppliers of water for community public water systems", an extreme example of USEPA's frequent apparent deviation from the use of defined terms. The Board has replaced this with "CWSs" or "CWS suppliers". The Board solicited comment on this, but received no response.

40 CFR 141.41(b) requires the CWS to report at the end of the required monitoring period, "or as stipulated by the State". In Section 611.610(b), Board has referenced the monitoring frequencies specified by special exception

permit.

40 CFR 141.41(c) requires notification of "the appropriate local and State public health officials". In Section 611.610(c), Board has required notification of the Agency and local health officials. The Board solicited comment, but received no response, as to whether there might be other appropriate State agencies, and as to whether their might be a more specific reference to the local official entitled to notice. In addition, the USEPA rule allows the State to assume the local notification responsibility. The Board solicit comment, but received no response, as to whether it should exercise this option, by requiring the Agency to give this notice.

Section 611.621 et seq. (Not adopted)

This Section is derived from 40 CFR 141.42(a) and (b) (1989). This required one shot monitoring for corrosivity charcteristics, which has been accomplished in Illinois. (PC 5, item 86) There was no MCL associated with this monitoring. The CWS just had to monitor and report. Since this USEPA rule has no prospective effect, the Board has dropped it from the Proposal.

ORGANIC MONITORING

This Subpart deals with organic monitoring. Note that there are both MCLs (for pesticides) and revised MCLs for (other) organics, in Section 611.310 and 611.311. As is discussed above, with respect to the MCLs, the existing Board regulations include more stringent MCLs and additional parameters. Monitoring is therefore subject to considerations similar to the inorganics, as is discussed above.

Section 611.641

This Section is derived from 40 CFR 141.24(a) through (d) (1987), as amended at 53 Fed. Reg. 5146, February 19, 1988. This specifies the monitoring frequencies for the pesticides in Section 611.310.

40 CFR 141.24(a)(1) and (2) appear to defer to the State as to the required frequencies for pesticide monitoring. The Board has therefore drawn on the existing general provision of 35 Ill. Adm. Code 605.103, which requires CWSs to monitor annually for surface supplies, and every three years for groundwater. The Board has dropped a note to provide that this pre-existing requirement applies also to the additional State requirements.

In its initial comment, the Agency asked that this Section be deleted pending future USEPA rulemaking. Alternatively, the Agency opposed action by way of special exception permit. (PC 5, item 89) As is discussed in general above, Sections 7.2 and 17.5 of the Act require the Board to adopt these rules. The alternatives to special exception permits are variances and adjusted standards.

In its post-adoption comments, the Agency stated as follows:

> The Board has inaccurately interpreted USEPA's intention to "defer to the State as to the required

> frequencies for pesticide monitoring." Federal requirements will be promulgated in December, 1990 as a part of the Phase II regulations. If the Board wants to promulgate groundwater pesticide sampling requirements at this time, a new rulemaking proceeding separate from identical in substance adoption should be used. It is counterproductive for this activity to occur, however, since federal regulations will be promulgated in December 1990. (post-adoption PC 14, p. 54)

There are presently two sets of pesticide MCLs: the existing MACs drawn from Section 604.102, and the USEPA MCLs drawn from 40 CFR 141.12. These standards are to be combined in Section 611.310. The existing monitoring requirement for the MACs is in Section 605.103. This requires an annual analysis for surface water sources, and once every three years for groundwater sources. The monitoring requirement for the MCLs is in 40 CFR 141.24(a)(1) and (2). For surface water sources, analyses must be repeated "at intervals specified by the State, but no less frequently than at three year intervals." For groundwater sources, analyses must be "completed by those systems specified by the State." Existing Section 605.103 specifies annual monitoring for surface sources, and triannual for all groundwater sources. This is wholly consistent with 40 CFR 141.24(a), so that the existing State monitoring requirement can be carried over into the MCLs, avoiding the necessity of the Board "specifying" some other monitoring scope or frequency.

This is not a new monitoring requirement. It is drawn from the existing MACs and existing monitoring requirements. While it is possible that, under the USEPA rules, the Agency has "specified" another monitoring frequency or scope for the MCLs for Illinois groundwater sources, the Agency has not informed the Board of this. The Board must therefore rely on the existing rule.

As is discussed in general above, Section 17.5 of the Act requires the Board to adopt these rules. The Board cannot defer action pending anticipate USEPA amendments.

Section 611.645

This Section is derived from 40 CFR 141.24(e) and (f) (1987), as amended at 53 Fed. Reg. 5146, February 19, 1988. This specifies the analytical methods for the pesticides. The Board solicited comment, but received no response, as to whether the methods cited include methods for the additional State requirements in Section 611.310.

The Agency asked that the Board defer to 35 Ill. Adm. Code 183 for analytical methods. (PC 5, item 90) As was discussed in general above, Sections 7.2 and 17.5 of the Act require the Board to adopt this rule.

Section 611.648

This Section is derived from 40 CFR 141.24(g) (1987), as amended at 52 Fed. Reg. 25712, July 8, 1987, and 53 Fed. Reg. 25109, July 1, 1988. This Section governs monitoring for the "VOCs" in the revised MCLs in Section 611.311.

The Agency has asked the Board to reorganize the sampling rules. (PC 5, item 91) This is addressed in general above. At this point the organization tracks the USEPA organization closely, so that the Agency's suggested reorganization would make it much more difficult to maintain the identical in substance rules.

As is discussed above, 40 CFR 141.61 refers to these contaminants by two names: "organic contaminants" and "synthetic organic contaminants". However, 40 CFR 141.24(g), the source of this Section, uses a third name: "VOCs". The Board has changed all of these to "VOC", which, as is discussed above, is the Agency's choice.

The revised MCL in Section 611.311 applies to CWSs and NTCWSs The Board has therefore used these terms in stating the general monitoring requirement, in place of the various synonyms used in the federal rule. NTCWSs are subject to additional Public Health regulations. As is provided in Section 611.100, NTCWSs are to follow the equivalent procedures specified by Public Health, rather than the Agency procedures specified in these rules. The Agency did not explain why it sought to expand this Section to include "all PWSs", inconsistent with its general position discussed above. (PC 5, item 91)

Section 611.648(d) is drawn from 40 CFR 141.21(g)(4), which establishes a phase in schedule for this monitoring, depending on the number of "people" served. The Board has collapsed the past compliance dates into a single "monitor now" provision in subsection (d)(1). A January 1, 1991, date remains for systems serving fewer than 3300 "people". This term is unsatisfactory, since it is not defined. The Agency asked the Board to change this to "individuals". (PC 5, item 91) However, there is no compelling reason to depart from the USEPA terminology to use another undefined term.

As provided in Section 611.648(e), if a sample exceeds the VOC MCL, the CWS has to take three more samples within one month. The four samples are averaged to determine compliance with the MCL.

40 CFR 141.24(g)(5) also allows the State or USEPA to require confirmation samples for positive or negative results. The Board has looked to existing 35 Ill. Adm. Code 604.203 for a rule on confirmation of positive results. The Board is not aware of any existing State rules on negative confirmation, and therefore proposed not to exercise this option. The Board requested comment on this (Proposed Opinion, p. 46), but received no response. (PC 5, item 91) However, in its post-adoption comment, the Agency stated as follows:

> Section 611.648(e) is not accurate. The rule states that "the CWS or NTCWS supplier shall initiate three additional analyses at the same sampling point within

> one month." This is inaccurate. The Agency may require repeat sampling immediately. Sampling must then be performed quarterly, according to 52 [Fed. Reg.] 25713 (July 8, 1987), 141.24(g)(5) and (g)(9). (post-adoption PC 14, p. 56)

The Board construes this as addressing the confirmation question. The Agency goes on to recommend that Section 611.643(e) be modified to provide that the supplier "may be required by the Agency to take a confirmation sample immediately". (post-adoption PC 14, p. 58) This raises a lot of questions which the Board is reluctant to address at this late stage. The first relates to the "shall v. may" general discussion above. If the Agency is going to decide whether to require confirmation samples on a case-by-case basis, some standard needs to be stated, along with a procedural context for the decision (for example, by "special exception permit"). An alternative would be to require confirmation samples in all cases by rule. Which ever way the Board proceeds, "immediately" needs to be defined. When does the time start: from the receipt of the original analysis or notification by the Agency? How quick is "immediately": seconds, hours, days, weeks? The Board invites further comment on this in a later Docket.

40 CFR 141.24(g)(6) allows the States to require surface water supplies to sample for vinyl chloride. The Board did not exercise this option, but solicited comment, which went unanswered.

40 CFR 141.24(g)(7) authorizes the State, or a group of CWSs to composite up to five samples. If any organic contaminant is detected, the individual sources must be resampled and analyzed separately. Apparently this procedure is intended to save analytical costs. The Board has proposed an equivalent in Section 611.648(g).

There appears to be a major typographical error in the text of 40 CFR 141.24(g)(7) (1989): The text uses both "organic contaminant" and "VOC", but is not grammatically correct. As is discussed above, the Board has used the Agency's preferred term "VOC". However, it is conceivable that the USEPA rule is intended to require only a generic VOC analysis of the composite, to be followed by GC/MS if VOCs are detected. The Board solicited comment as to whether its reading was correct, but received no response.

The Agency requested deletion of Section 611.648(g). The Agency questions the wisdom of compositing samples, and also indicates that it will adopt the details of the rule in 35 Ill. Adm. Code 183. (PC 5, item 91) However, as is discussed in general above, Sections 7.2 and 17.5 of the Act require the Board to adopt this subsection.

Section 611.648(h) authorizes the Agency, by special exception permit, to reduce monitoring frequency based on certain conditions. 40 CFR 141.24(g)(8)(ii)(A) provides that, if the first year of sampling is negative, repeat monitoring for these organic contaminants is "only required at State discretion". In that there are no existing State standards for these contaminants, the Board has not exercised this discretion, but solicited comment, which went unanswered. (Section 611.648(h)(2)(A)).

Section 611.648(h)(3) requires the Agency, by special exception permit, to reduce the frequency of organic contaminant monitoring if levels are "consistently less than the MCL for three consecutive years." The use of "shall" and "may" is discussed in general above.

The Agency wants to be able to reduce this monitoring through some method other than special exception permit. (PC 5, item 91) As is discussed in general above, the alternatives are variances and adjusted standards, which would be rather onerous to all concerned.

Section 611.648(h)(4) sets a standard for "vulnerability" for a groundwater system, which is used in some of the monitoring decisions. A portion of this is the proximity to use, disposal or storage of "Volatile Synthetic Organic Chemicals". As is discussed above, the Board has replaced this with "VOCs", the term preferred by the Agency. (post-adoption PC 14, p. 57)

"VOCs" refers to the "list of eight" in Section 611.311. However, limiting the compounds to those listed may be removing an aspect of the USEPA standard: the Agency is not able to consider unlisted compounds which might be precursers to the listed compounds. The Board solicited comment, which went unanswered, as to whether it should add a reference to parent compounds.

Section 611.648(j) et seq., drawn from 40 CFR 141.24(g)(10) et seq., govern laboratory certification, etc. The Agency opposes adoption, asking that the Board defer to 35 Ill. Adm. Code 183. (PC 5, item 91) However, as is discussed in general above, Sections 7.2 and 17.5 of the Act require the Board to adopt these subsections.

The Board has back-referenced Section 611.490 for approval of alternative methods. The Board has edited the certification requirements on the assumption that the Agency will be delegated this responsibility. As is discussed above, Section 611.490 allows USEPA certification.

The Board has cited to 35 Ill. Adm. Code 183.125(c)(3) for "performance evaluation samples".

Section 611.650

This Section is derived from 40 CFR 141.40(a-f) (1987), as amended at 52 Fed. Reg. 25712, July 8, 1987, and at Fed. Reg. 25109, July 1, 1988. It requires special monitoring for 36 organic chemicals. Note that there are no MCLs directly associated with this monitoring. However, a few of the parameters are involved with MCLs: for example, chloroform is a component of the THM standard in Section 611.310.

The Agency has asked the Board to establish a Subpart for "unregulated contaminants". (PC 5, item 92) This illustrates a major problem with the Agency's suggested reorganization of the Part, as discussed in general above. The perceived advantage of placing the MCLs together with the associated monitoring conditions is based on the assumption that for each MCL there is a monitoring requirement, and that there are no monitoring

requirements for contaminants for which there are no MCLs. Both of these assumptions are false. As is illustrated by this Section, the Agency's organization requires a separate Subpart for any monitoring requirement which is not associated with an MCL. As it happens, all of these are organics. However, if there were also additional monitoring for inorganic and microbial parameters, the Part would get really confusing.

The list of chemicals is presented in the same order as in the USEPA rule. This appears to be arbitrary. It would be much easier to find items in the list if it were alphabetized. However, this would make comparison with the USEPA rule more difficult. The Board solicited comment as to whether an alphabetical list would be better, but received no response. (PC 5, items 92 and 93) However, in its post-adoption comment, the Agency expressed a preference for the disorganized list. (post-adoption PC 14, p. 60)

40 CFR 141.40(d) allows the State to require confirmation samples for positive or negative results. This is similar to existing 35 Ill. Adm. Code 604.203, and to Section 611.648(e) above. As noted above, there is no tradition for negative confirmation samples in the Board's existing rules. Moreover, in this situation there is no MCL: any detection is a "positive". The language of the existing 35 Ill. Adm. Code 604.203 would not apply. The Board has therefore not exercised this discretion, but solicited comment, which went unanswered.

Section 611.657

This Section is derived from 40 CFR 141.40(g-m) (1987), as amended at 52 Fed. Reg. 25712, July 8, 1987, and at 53 Fed. Reg. 25109, July 1, 1988. This specifies the analytical requirements for the special monitoring in the preceding Section

40 CFR 141.40(j) authorizes the States to require monitoring for 15 additional parameters. In that there is no existing requirement for this, the Board has not exercised this discretion, but solicited comment, which went unanswered. A hole was left at Section 611.657(d), to preserve the equivalences of subsection lables with the USEPA rules. The Agency did point out that this subsection was missing, with no indication as to whether it ought to have been included. (PC 5, item 93)

40 CFR 141.40(i) includes the only use of the term "groundwater supply survey". The Board proposed a definition in Section 611.101, and solicited comment. The Agency proposed a general definition. (PC 5, item 12) The problem with the Agency's general definition is that, while the USEPA rule appears to be referencing a certain document, the Agency's definition would allow the PWS to meet the requirements with any document meeting the general description. The Board requested telephone clarification of PC 5. The Agency indicated that this reference was intended to be to the vulnerability determination in Section 611.648(h)(4). In the May 24, 1990, Order, the Board therefore replaced the term with a cross reference. However, in its post-adoption comment, the Agency reversed its position again. (post-adoption PC 14, p. 61) The "Groundwater Supply Survey" indeed does refer to a certain document prepared for USEPA prior to 1985. However, the Agency has still not provided the Board with an adequate reference to include this in the rule.

The Agency has, however, recommended allowing the use of any data collected since January 1, 1983, provided the monitoring was consistent with this Section. (post-adoption PC 14, p. 61) The Board has used this language.

THM MONITORING

This Subpart governs THM monitoring. This is related to foregoing organic monitoring, in that THMs are organic compounds. It is also related to the disinfection and microbial standards, in that THMs are produced when chlorine is used as a disinfectant.

As discussed above, the Board's existing THM rules are in 35 Ill. Adm. Code 605.104. At the time of the proposal, these were the same as the USEPA rules. However, in R84-12 the Board has adopted a proposal to remove the 10,000 persons limitation on this standard, which would be a more stringent regulation. This is coupled with changes to the monitoring requirements. The Board has revised this Subpart to reflect the new requirements before final adoption.

There are two aspects of the stringency comparison: the Illinois THM standard applies regardless of whether disinfectant applies; and, it applies to CWSs with under 10,000 individuals served. This first aspect may be unimportant, since the Agency has indicated that virtually all Illinois CWSs disinfect, so they are subject to the federal standard. The major division is between CWSs serving more or less than 10,000 individuals. As is further discussed below, the Board has adopted the USEPA language for the larger CWSs, and added the State language for the smaller CWSs.

Section 611.680

This Section is derived from 40 CFR 141.30(a) and (b) (1989). The first federal subsection consists of three unrelated rules in a single paragraph, which the Board has broken out into three subsections. The second consists of three subsections, without introductory material. The Administrative Code prohibits this format. The Board has therefore added headings to group the two subsections.

The second sentence of 40 CFR 141.30(a) authorizes the State to group multiple wells drawing water from the same aquifer for the purpose of determining the minimum number of samples. The Board has added language making it clear that this is to be done by special exception permit. Note that the "same aquifer" determination is a question of fact which requires evaluation of well construction and geology.

40 CFR 141.30 has a lot of passive voice and unnecessary words. The Board has edited these more extensively than the rest of the rules. This allows the Board to specify "by special exception permit action" more easily. The Board has also replaced repeated standards with cross references to avoid having to say things more than once.

For the larger CWSs the existing rules and USEPA rules say pretty much the same thing, except that the USEPA rule is more detailed. Consistent with the general approach discussed above, the Board has retained the USEPA rules

for the larger CWSs, modified only to remove the limitation concerning addition of disinfectants.

For the smaller CWSs, the Board has added the new State requirements. The Board has modified the language to use terms as defined in this Part.

Section 611.683

This Section is derived from 40 CFR 141.30(c) (1989). This allows CWSs using groundwater sources a reduced monitoring frequency for THMs, if the CWs shows current compliance with the THM standard, and that it is unlikely to exceed the standard. The CWS is then allowed to monitor on the basis of a single annual sample at the point in the system reflecting maximum residence time.

As is discussed above, Board has generally broken this Section into subsections, placed it into active voice, deleted unnecessary words and specified that these actions are to be taken by special exception permit action.

Section 611.684

This Section is derived from 40 CFR 141.30(d) (1989). It specifies a twelve month running average for THM.

This Section is related to existing 35 Ill. Adm. Code 604.203(d), which appears to say pretty much the same thing.

Section 611.685

This Section is derived from 40 CFR 141.30(e) (1989). It specifies analytical methods. Note that the methods are set forth at length in 40 CFR 141.30, Appendix C. The Board has instead referenced to the same thing in USEPA Methods, as outlined in the incorporations by reference Section.

Section 611.686

This Section is derived from 40 CFR 141.30(f) (1989). This Section prohibits unauthorized modification of a CWS to achieve compliance with THMs. Note that this arises out of the tension between the requirement to disinfect and achieve compliance with microbial standards on the one hand, and avoid THMs on the other.

This Section is to some extent surplusage in the Illinois system, in that the CWS would have to obtain a construction permit and modified operating permit to make any such changes. However, it has been retained in that it sets out relevant information which the CWS should provide in such an application.

40 CFR 141.30(f)(4), reflected in Section 611.686(d), requires "standard plate count analyses" for CWSs going to chlorine dioxide or related disinfectants. This term is undefined. The Board solicited as to what this means, but received no response. This appears to be an old term for the HPC

count specified in Standard Methods, Method 907A. The Board has replaced this with a cross reference to Section 611.531.

RADIOLOGICAL MONITORING

This Subpart addresses radiological monitoring. As is discussed above in connection with the MCLs in Section 611.330 and 611.331, the existing Board MACs are basically the same as the USEPA MCLs. Under the general approach discussed above, the Board has adopted the USEPA monitoring requirements associated with its standards. This ought to have been straightforward. However, these requirements have many provisions which are "recommended", or left to State discretion. Since the Board's existing monitoring requirements were drawn from these same rules, there is usually a precedent for deciding which way to go on these. Therefore, the following discussion winds up drawing heavily from the existing rules.

The Agency asked the Board to defer action on this Subpart pending future USEPA rulemaking, and to defer to the Agency's laboratory criteria. (PC 5, item 98, 99) As is discussed in general above, Sections 7.2 and 17.5 of the Act require the Board to adopt these rules.

Section 611.720

This Section is derived from 40 CFR 141.25 (1989). This Section specifies analytical methods.

Section 611.731

This Section is derived from 40 CFR 141.26(a) (1989). It specifies the requirements for monitoring for gross alpha particle activity. This usually arises because of naturally occurring radium in the water. If alpha particle activity exceeds a certain level, the CWS is required to analyze for radium 226 and 228.

This Section is related to existing 35 Ill. Adm. Code 605.105 and 605.106.

This Section has a basic question as to applicability. The MCLs in 40 CFR 141.15 and 141.16 apply to all PWSs. However, the monitoring requirement uses terms which are closely akin to "CWS". It is conceivable that the MCL applies the PWSs, but the monitoring is required only of CWSs. Existing 35 Ill. Adm. Code 604.302 and 605.106 clearly apply to CWSs. The Board substituted "CWS" into the radiological monitoring rules, and solicited comment, which went unanswered.

40 CFR 141.26(a)(1)(i) "recommends" that the State require "radium-226 and/or radium-228" analysis when gross alpha exceeds 2 pCi/L and radium-228 may be in the water. The Board has implemented this consistent with existing 35 Ill. Adm. Code 605.105(b). Section 611.731(a)(1) is specific that the Agency is to "require" the monitoring by special exception permit. Also, as is discussed above, the Board has replaced "and/or" with the equivalent "or".

40 CFR 141.26(a)(2) is a transitional rule which is not reflected in the rules. Section 611.731(b) is omitted to reflect this.

Under Section 611.731(c) [40 CFR 141.26(a)(3)], CWSs are required to monitor at least once every four years, apparently meaning to take the required four quarterly samples in one year out of four. This is subject to a number of provisos.

40 CFR 141.26(a)(3) provides that, at the discretion of the State, if the results of one year's analyses gives a value less than one half the MCL, the CWS may substitute a single annual sample for quarterly monitoring. Consistent with existing 35 Ill. Adm. Code 605.106, in Section 611.731(c), the Board has required the Agency to reduce the monitoring frequency by special exception permit. The use of "shall" and "may" is discussed in general above. (post-adoption PC 14, p. 63)

40 CFR 141.26(a)(3)(i) through (v) talk of alternative monitoring "when ordered by the State". None of these appear to be emergency situations similar to a "boil order". Rather, they are typical embellishments on the general monitoring rule, which the Agency should address by way of special exception permit modification. However, there are drafting problems in rephrasing each of these into special exception permit language. [Section 611.731(c)(1) - (5)] The Board solicited comment as to whether they capture the meaning of the USEPA rule, but received no response.

Section 611.732

This Section is derived from 40 CFR 141.26(b) (1989). This governs monitoring for "manmade radioactivity", which is generally associated with beta particle (electron) and photon emissions.

This Section is related to existing 35 Ill. Adm. Code 605.107 and 605.108.

40 CFR 141.26(b)(1) requires CWSs over serving 100,000 persons and such other CWSs "as are designated by the State" to monitor for manmade radioactivity. Existing 35 Ill. Adm. Code 605.107(a) has this as a case-by-case decision to be made by the Agency. The Board has followed this interpretation, specifying that the decision is to be made in the context of special exception permit issuance.

40 CFR 141.26(b)(1)(ii) and (iii) contain "order" type provisions which, consistent with the above discussion, have been rendered into special exception permit language.

40 CFR 141.26(b)(2) is a transitional rule which is not reflected in the rules.

40 CFR 141.26(b)(4) provides that a CWS "designated by the State as utilizing waters contaminated by effluents from nuclear facilities" must "initiate" monitoring for gross beta, iodine-131, strontium-90 and tritium. In Section 611.732(d), the Board has adopted this as a case-by-case decision to be made by the Agency by special exception permit, consistent with existing

35 Ill. Adm. Code 605.108(b) through (f).

REPORTING AND PUBLIC NOTIFICATION

This Subpart specifies the requirements governing reporting to the Agency, notification of the public and recordkeeping. As is discussed in general above, the Board has generally determined stringency with respect to the MCLs, and has retained the reporting requirements associated with the more stringent MCL. However, the State reporting requirements are mainly general requirements which are not associated with a particular parameter. And, they say pretty much the same thing as the federal requirements. If the Board were to follow through on the general plan, it should separate notification requirements for the federal and State MCLs.

For example, under the general plan, a PWS might have a malfunction which resulted in violations of both a federal and a State MCL. The PWS might have to give notices in different newspapers on different time schedules for the State and federal violations. This would certainly be much more burdensome than following either set of rules.

Having two sets of general notification requirements would produce a very complex set of rules which wouldn't be appreciably different from just making the general portion of the federal notification requirements applicable to everything. The Board therefore followed the latter course. The Board received no adverse comment on this.

The State MACs have only general notification requirements associated with them. On the other hand, the federal MCLs have detailed health effects notices prescribed by rule. Under the foregoing approach, a violation of a State MCL will be governed by general language, while the federal MCL will have detailed requirements.

This Subpart has an applicability problem associated with the one in the previous Subpart. Most of the requirements are made applicable to "the owner or operator of the PWS". As is discussed in general above, the Board has substituted the term "supplier".

Section 611.830

This introductory Section provides that the general notification requirements apply to both the federal and State MCLs.

Section 611.831

This Section is drawn from existing 35 Ill. Adm. Code 606.101. It requires a monthly operating report. This appears to be separate from the federal notification requirements, which are triggered by violations of MCLs and other requirments.

Section 611.832

This Section is drawn from 40 CFR 141.32(g), as well as existing 35 Ill. Adm. Code 606.205. It authorizes the Agency to give public notices for the PWS. However, it is still the PWSs responsibility to get the notice done.

Section 611.833

This Section is drawn from existing 35 Ill. Adm. Code 606.102(d), and from Section 17(b)(5) of the Act. It requires a PWS which is exempt from disinfection to report monthly on its efforts to educate customers on preventing contamination of the distribution system. As is discussed in general above, the existing rules were superseded by Section 17(b) of the Act. However, 35 Ill. Adm. Code 606.102(b) appears to be consistent with Section 17(b)(5). The Board therefore proposed to retain it, and solicited comment.

The Agency has asked the Board to defer action on this Section to R87-37, concerning cross-connections. (PC 5, item 100) As is discussed in connection with proposed Section 611.124, the Board intends to retain the existing cross-connections rules in place pending action on R87-37. However, this Section is a disinfection reporting Section which only incidently relates to cross connections. The Board has therefore retained it as proposed.

Section 611.840

This Section is derived from 40 CFR 141.31 (1987), as amended at 54 Fed. Reg. 27562, June 29, 1989. This is the general reporting requirement.

This Section is related to existing 35 Ill. Adm. Code 606.101 and 606.102(a) through (d) and 606.204(a) and (b).

40 CFR 141.31(a) requires the PWS to report to the State by the tenth of the month following the analysis, or within ten days after the end "of the required monitoring period as stipulated by the State", whichever is shorter. The Board has implemented this by reference to the monitoring period required by special exception permit. The alternative would be to specify an alternative time period.

40 CFR 141.31(b) requires reporting to the Agency within 48 hours after any failure to comply with an NPDWR. Because these reporting requirements will apply equally to additional State requirements, the Board has substitute "this Part".

40 CFR 141.31(c) provides:

> The supplier of water is not required to report analytical results to the State in cases where a State laboratory performs the analysis and reports the results to the State office which would normally receive such notification from the supplier. 40 CFR 141.31(c) (1989)

This is similar to existing 35 Ill. Adm. Code 605.102(b). Because in Illinois the same agency, IEPA, performs analyses and receives reports, the Board proposed to drop the contingency from the rule, so that the proposed rule read as follows:

> The PWS is not required to report analytical results to the Agency in cases where an Agency laboratory performs the analysis. (Proposed Order, Section 611.840(c))

This would mean that there would be no PWS reporting of Agency analytical results. The Board solicited comment. (Proposed Opinion, p. 54) The Agency did not respond directly, but recommended language which was consistent with no reporting of Agency analytical results. (PC 5, item 101) The Board adopted the rule substantially as proposed. However, in its post-adoption comment, the Agency stated as follows:

> The Board states that, "Because in Illinois the same agency, IEPA performs analyses and receives reports, the Board has dropped the contingency" [requiring the PWS to report to the Agency] "from the rule." This is not accurate. The [Act] has established a laboratory fee requirement; [PWSs] may choose not to pay this fee, choosing to have there analyses performed at a certified laboratory. Thus, the language must be included. (post-adoption PC 14, p. 63)

The Agency comment is off-point because it is assuming that "the contingency" is "requiring the PWS to report to the Agency". This is false. "The contingency" is the possibility that another State agency would perform the analysis and report the result to the Agency. As written, the rule requires duplicate reporting in such a case. This is based on the Board's assumption that there is no other State agency performing these analyses and reporting to the Agency. If such an agency exists, it should be included in the rule, to eliminate the duplicate reporting. The Board invites comment in another Docket.

If a PWS chooses to use a private lab, the analysis is not performed by the Agency. Therefore, subsection (c) does not apply. Section 611.840(a) requires that the result be reported.

The Agency asked the Board to combine subsections (a) and (c). (PC 5, item 101) The Board is not convinced that combining the subsections would clarify the rule. However, it would introduce a chronic problem of maintaining the identical in substance rules, since it would destroy the correspondence of subsections.

This is a good place to stop and explain the consequences of the change the Agency is requesting. The first problem stems from the lack in the Federal Register of a "strike and underline" format indicating what is being changed. If the Agency's organization were adopted, the first time this Section was amended, the Assistant drafting the proposal would assume that the contents of subsection (c) was being added to the federal rule. The result

would be the repetition of the contents in both subsections (a) and (c). If subsection (c) were then amended, the requirement would be present in the Section in two different versions. A similar error in the UIC rules required expedited Board action to correct. The second problem is cross-references into this Section. The entire Part would have to be initially reviewed for references into subsection (c). Thereafter, any USEPA amendment would have to be reviewed for cross-references into this subsection.

Existing 35 Ill. Adm. Code 607.103 specifies the details of "boil orders" when microbial standards are exceeded. The Board proposed to omit this because the Board adopted the USEPA microbial standards. The USEPA notification rules require a similar type notice. The Board solicited comment as to whether portions of Section 607.103 need to be retained (Proposed Opinion, p. 54), but received no response. (PC 5, items 101 and 102) However, in its post-adoption comment, the Agency asked that Section 607.103 be retained. (post-adoption PC 14, p. 67) The Board will do so. The Board will consider moving the text into Part 611 in a later Docket.

Section 611.851

This Section is derived from 40 CFR 141.32(a) (1987), as amended at 52 Fed. Reg. 41546, October 28, 1987, at 54 Fed. Reg. 15188, April 17, 1989, at 54 Fed. Reg. 27526, June 29, 1989, and at 54 Fed. Reg. 27562, June 29, 1989.

This Section is related to existing 35 Ill. Adm. Code 606.201, 606.202 and 606.203.

40 CFR 141.32(a)(1)(iii)(A) requires prompt radio and tv notice for MCL violations which pose an acute hazard to human health, as "specified by the State". This raises a question as to whether this should be specified by regulation or on a case-by-case basis. Some of the MCLs are above specified as posing an acute hazard. However, the Board does not have a basis on which to specify others in this identical in substance rulemaking. The Board has therefore provided, in Section 611.851(a)(3)(A), that prompt notice is to be given for any violations specified in this Part, or as specified by the Agency on a case-by-case basis, but solicited comment, which went unanswered. The following subsections list nitrate and total coliform violations as being acute.

40 CFR 141.32(a)(1)(ii) allows the State to waive notive to customers if a PWS corrects a violation within 45 days. Section 611.851(a)(2) provides that "notice is not required if the Agency determines that the PWS in violation has corrected the violation ..." In its post-adoption comments, the Agency requested the "waiver" language, and the use of "may". (post-adoption PC 14, p. 64) The use of "shall" and "may" is discussed in general above. However, in this Section the Board is able to avoid the term "waive", which also has problems discussed in general above.

40 CFR 141.32(a)(1)(iii) provides that "For violations of the MCLs of contaminants that may pose an acute risk to human health ..." the PWS must give public notice within 72 hours. Subsection (A) then provides that acute violations include "Any violations specified by the State as posing an acute risk ..." In Section 611.851(a)(3) the Board has provided 72 hour notice for

violations of MCLs that pose an acute risk to health. In subsection (A) the Board has provided that acute violations include those "specified in this Part or as determined by the Agency on a case-by-case basis." In its post-adoption comment, the Agency has claimed that "the Board would require public notice only for those contaminants which are proved to pose an acute risk to human health". (post-adoption PC 14, p. 65) On the contrary, the Board rule does not specify any extraordinary burden of proof. If the Agency makes the determination that a contaminant poses an acute risk, then the PWS must give the notice. In that "risk" is probabilistic concept, the Agency is not required to find that adverse health consequences would necessarily follow. To the extent the Agency wants the discretion to either require the notice without making the determination, or to waive the notice even after it has determined that the violation poses an "acute risk to human health", these would be patently absurd provisions.

Section 611.851(a)(3)(D) is drawn from 40 CFR 141.32(a)(1)(iii)(D). This was mislabelled as (a)(4) in the Proposal. It requires the PWS to give public notice of:

> Occurrence of a waterborne disease outbreak, as defined in §141.2, in an unfiltered system subject to the requirements of Subpart H of this part, after December 30, 1991 (see §141.71(b)(4)). (40 CFR 141.32(a)(1)(iii)(D) (1989))

This appeared in the Proposal as Section 611.851(a)(3)(d), as follows:

> Occurrence of a waterborne disease outbreak, as defined in Section 611.101, in an unfiltered system subject to the requirements of Subpart B, after December 30, 1991 (see Section 611.232(d)).

The Agency asked that the Board reword this Section so that the notice requirement applies to any treatment technique violation. (PC 5, item 102) Apparently this is related to the Agency's position, rejected above, that all supplies should be required to filter. Even if the Board accepted the Agency's position, this would still impose an additional notice requirement beyond that required by the USEPA rules. This is not authorized by Sections 7.2 and 17.5 of the Act.

In its post-adoption comment, the Agency stated as follows:

> Section 611.851(a)(3)(D) requires the supply to provide notice of a waterborne disease outbreak only if that outbreak occurs due to inadequate treatment. This leaves a waterborne disease outbreak caused by a cross-connection ... without a requirement for public notice. (post-adoption PC 14, p. 65)

The Board does not understand how this notice is limited to outbreaks caused by inadequate treatment. The notice is not conditioned on the cause of the outbreak.

The Agency may be objecting to the delayed effective date of this notice requirement. In Illinois, this could be construed as delaying pre-existing notification requirements. USEPA has indicated that its rule should not be construed as mandating such a delay. (PC 12) The Board has therefore dropped the conditions on this notice, so that the PWS is required to give notice of any waterborne disease outbreak immediately.

Section 611.852

This Section is derived from 40 CFR 141.32(b) (1987), as amended at 52 Fed. Reg. 41546, October 28, 1987.

40 CFR 141.32(b) requires notice, among other things, if the PWS is subject to "a variance granted under Section 1415(a)(1)(A) or 1415(a)(2) of the (SDWA), or is subject to an exemption under Section 1416 of the (SDWA)" The Board has referenced the variance and adjusted standards provisions discussed above at Section 611.111 et seq. Note, however, that the USEPA language is using different terminology here. In the Proposed Opinion, the Board asked whether this is intended to refer to the "variance" under Section 1415(a)(1)(A), the "variance" under Section 1416 and the "exemption" under Section 1415(a)(3). The Board received no response. The Board has inserted cross-references to Sections 611.111 et seq.

40 CFR 141.32(b)(4) allows States to require less frequent notice for "minor monitoring violations, as defined by the State". The Board proposed to allow the Agency to specify reduced frequency by permit condition, and solicited comment. The Agency indicated that it opposed doing this by permit condition, but didn't indicate how this would be otherwise specified. (PC 5, item 103) On the other hand, USEPA indicated that 40 CFR 141.32(b)(4) requires the State to define "minor violations". (PC 4) Absent such a definition in either the existing State regulations or the USEPA regulations, there is no way to resolve this in an "identical in substance" rulemaking. Since the Board doesn't have a clue, it has dropped this option from the proposal. If the Agency wishes, or some other person wishes the Agency, to exercise this authority, it will have to come up with a definition in a "regular" rulemaking.

Section 611.853

This Section is derived from 40 CFR 141.32(c), as amended at 52 Fed. Reg. 51546, October 28, 1987. It requires copies on notices to go to new billing units.

Section 611.854

This Section is derived from 40 CFR 141.32(d) (1987), as amended at 52 Fed. Reg. 41546, October 28, 1987. This specifies the general content of the public notice. Most of the federal MCLs now have specific information set out below in Appendix A. However, the additional State requirements have no such specific notice requirements. (post-adoption PC 14, p. 65) This Section is comparable to existing 35 Ill. Adm. Code 606.204.

Section 611.855

This Section is derived from 40 CFR 141.32(e) (1987), as amended at 52 Fed. Reg. 41546, October 28, 1987, and at 54 Fed. Reg. 27526, June 29, 1989, and at 54 Fed. Reg. 27562, June 29, 1988. The text of the mandatory notices have been moved to Appendix A.

40 CFR 141.32(e) includes a statement that the mandatory health effects subsection does not apply if language for the particular contaminant is not specified at the time the notice is given. This is reflected in the final sentence of Section 611.855. USEPA says the sentence is unclear. (PC 4) However, it appears to track the USEPA language exactly. As new mandatory language is adopted by USEPA, the Board will add the language to Appendix A.

Section 611.856

This Section is derived from 40 CFR 141.32(f) (1987), as amended at 52 Fed. Reg. 41546, October 28, 1987. The contents of the public notice for fluoride are specified in 40 CFR 143.5. Rather than reference this Part, the Board has set forth the text of the notice in Appendix A below.

40 CFR 141.32(g) has been addressed as a global rule in Section 611.832 above.

Section 611.858

As is discussed in connection with Section 611.300(c), the Board has added a secondary standard of 2.0 mg/L for fluoride. If a sample exceeds the secondary standard, the notice requirement of 40 CFR 143.5 is triggered. The Board has placed this provision next to the notice requirement for biolation of the MCL. (post-adoption PC 14, p. 3, 37)

Section 611.860

This Section is derived from 40 CFR 141.33 (1989).

This Section is related to existing 35 Ill. Adm. Code 607.106.

Section 611.861 et seq (Not adopted)

This Section of the Proposal was derived from 40 CFR 141.34 (1987), as amended at 52 Fed. Reg. 41546, October 28, 1987. This was the mandatory public notice of possible lead contamination. The Agency initially commented as follows:

> Sections 611.861, 611.863, 611.Appendix A(13). The Agency recommends that these sections be deleted. Sections 611.861, 611.863, 611.Appendix A(13) will require Illinois public water supplies to again issue public notice for lead. The [SDWA] amendments ...required all public water supplies to issue this notice no later than 24 months after enactment of Section 109 of that law. Illinois supplies have

> complied with this legislative mandate, and have been recognized as being in compliance by USEPA. (PC 5, item 105)

USEPA apparently agreed with this position. (PC 4) In accordance with these comments, the Board deleted Section 611.861. However, in its post-adoption comment, the Agency stated as follows:

> The Board has misinterpreted the Agency's initial comment. The corrosivity study was a one-time monitoring requirement. Lead is one of the inorganic contaminants requiring monitoring under Section 606.202 of the existing rules, and is included in Section 611.300(b) of the adopted rules. (post-adoption PC 14, p. 66)

The Board has first reviewed the Agency's initial comment to see if there may have been a "misinterpretation". There was none. The comment unambiguously asked the Board that these provisions be "deleted". (PC 5, item 105) Moreover, the language of 40 CFR 141.34 is clearly oriented toward this one-shot notice. Most of it would be inappropriate for violations of the MCL in the distribution system. The Board has therefore not re-inserted these provisions.

Completion of the one-shot notice does not, of course, excuse the PWS from ongoing monitoring for lead. If a violation of the MCL is found, the PWS is required to give public notice under Section 611.851.

Section 611.870

This Section is derived from 40 CFR 141.35 (1987), as amended at 52 Fed. Reg. 25712, July 8, 1987. This is a notice concerning the additional organic contaminants which are monitored under Section 611.650, but for which there is no MCL.

40 CFR 141.35(c) is not a pattern rule. Rather, it is a regulation which applies to the states pending adoption of equivalent regulations. No equivalent has been adopted. The Board has added a reference to Section 611.100(d). (post-adoption PC 14, p. 66)

Section 611.Appendix A

This Section is derived from 40 CFR 141.32(e) (1987), as amended at 52 Fed. Reg. 41546, October 28, 1987, and at 54 Fed. Reg. 27526, June 29, 1989, and at 54 Fed. Reg. 27562, June 29, 1988; and from 40 CFR 143.5 (1989). This is the text of the mandatory health effects information which must be published.

40 CFR 141.34(d) (1987), as amended at 52 Fed. Reg. 41546, October 28, 1987, requires mandatory health effects information for lead. As was discussed above, this was a one-time notice, which has been accomplished. (PC 5, item 105) (post-adoption PC 14, p. 66)

Section 611.Appendix B

This Section is derived from 40 CFR 141.74(b) (1987), as amended at 54 Fed. Reg. 27526, June 29, 1989. This contains the tables for CT values for 99.9 percent inactivation of G. lamblia cysts by various disinfectants at various values of RDC, pH and temperature.

There are a number of apparent typographical errors in the federal tables at 54 Fed. Reg. 27532. All of the tables refer to "Free Residual" except Table 1.1, which is "Residual". In that Table, while the first entry under "Residual", and the headings for pH 6.0 and 9.0 are "less than", in all other tables the values are "less than or equal". In all of the tables, what value do you use if the pH is greater than 9.0?

The Agency wants these Tables deleted from the rules, since they apply only to systems which do not filter. (PC 5, item 106) As is discussed in general above, Sections 7.2 and 17.5 of the Act require the Board to adopt these rules.

Section 611.Appendix C

This Section is derived from 40 CFR 141.30 (1989). This is a list of common names of organic chemicals, which have been moved here to prevent clutter in the MCL tables.

40 CFR 141.30 includes both a common name and a long name for the pesticides. Existing 35 Ill. Adm. Code regulates additional parameters which have also been moved into Section 611.310. However, the existing Board rule has only the common name. The Board has provided a Chemical Abstracts Services (CAS) Registry Number and the Chemical Abstracts name for each regulated parameter, whether from the CFR or existing Board rule. Note that in most cases the long name in the CFR is different from the CAS name. The Board has generally substituted the preferred CAS name. The CAS names and numbers are drawn from the hazardous waste rules at 40 CFR 262, Appendix VIII, or 35 Ill. Adm. Code 721.Appendix H.

Section 611.Tables A through C

Various tables have been moved from the body of the rules in order to avoid having to meet Code Division margin and format requirements. The Agency may wish to place these in a more convenient location in the printed rules.

PHASE-IN/PHASE-OUT PROVISIONS

As is discussed in general above, the Board will retain certain of its existing requirements pending the delayed effective dates for the USEPA filtration and disinfection requirements. The Board has added phase-out provisions at the beginning of each retained provision. Whenever a given PWS becomes subject to the filtration and disinfection requirements, it will no longer be subject to the old Board rules.

These actions are summarized in the following Table. Sections which are not mentioned are simply repealed immediately. The Table lists only those

Sections which are retained, or which are repealed, but are subject to some question.

Sections		Comment
604.101-	604.105	Existing Board rules specifying bacteriological quality temporarily retained.
604.202-	604.203	MAC's and related exemptions repealed at once. Note that Part 611 includes a temporary turbidity rule pending phase in of filtration and disinfection requirements.
604.401		Chlorination requirement temporarily retained.
604.402-	604.404	Chlorination exemptions repealed and replaced with reference to statutory exemption.
605.101-	605.102	Frequency of bacteriological sampling temporarily retained.
606		Entire Part repealed. Persons who are still operating under the temporary rules will report pursuant to Part 611.
607.103		Existing boil order provisions will remain.
607.124		Cross connections rule will remain pending future rulemaking.

STATE TO FEDERAL TABLE

35 Ill. Adm. Code	40 CFR
611.100(a-c)	141.1
611.100(d)	141.3
611.101	141.71(b)
611.101	141.2
611.102	141.App C
611.103	*
611.108	*
611.109	141.22(e)
611.109	141.23(a)(4)
611.110	*
611.111	141.4
611.112	141.4
611.113	SDWA, 1415(a)(3)
611.114	141.5
611.115	*
611.120	141.60
611.120	141.6
611.121	141.2
611.125	

611.126	141.43
611.201	*
611.202	*
611.211	141.71
611.212	141.2
611.213	141.72(a)(4)(ii)
611.220	141.70
611.230	141.71
611.231(a), (b)	141.71(a)
611.231(c), (d)	*
611.232	141.71(b)
611.233	141.71(c)
611.240(a-f)	141.72
611.240(g)	*
611.241	141.72(a)
611.242	141.72(b)
611.250	141.73
611.261	141.75(a)
611.262	141.75(b)
611.271	*
611.272	*
611.280	141.100
611.290	141.101
611.300(a)-(d)	141.11
611.300(e)	*
611.310(a),(b)	141.12
611.310(c),(d)	*
611.320	141.13
611.330	141.15
611.331	141.16
611.340	141.61
611.350	141.62
611.360	141.63
611.480	141.27
611.490(a),(b)	141.28
611.490(c)	*
611.491	*
611.500	141.29
611.521	141.21(a)
611.522	141.21(b)
611.523	141.21(c)
611.524	141.21(d)
611.525	141.21(e)
611.526	141.21(f)
611.527	141.21(g)
611.531	141.74(a)
611.532	141.74(b)
611.533	141.74(c)
611.560	141.22
611.601	141.23(a-d)
611.602	*
611.603	*
611.606(a)-(j)	141.23(f)

611.606(k)-(o)	136.003
611.607	141.23(g)
611.610	141.41
611.641	141.24(a-d)
611.645	141.24(e,f)
611.648	141.24(g)
611.650	141.40(a-f)
611.657	141.40(g-m)
611.680(a),(b)	141.30(a,b)
611.680(c),(d)	*
611.683	141.30(c)
611.684	141.30(d)
611.685	141.30(e)
611.686	141.30(f)
611.720	141.25
611.731	141.26(a)
611.732	141.26(b)
611.830	*
611.831	*
611.832	141.32
611.833	*
611.840	141.31
611.851	141.32(a)
611.852	141.32(b)
611.853	141.32(c)
611.854	141.32(d)
611.855	141.32(e)
611.856	141.32(f,g)
611.858	143.5
611.860	141.33
611.870	141.35
611.AppA	143.005
611.AppA	141.32(e)
611.AppB	141.74(b)
611.AppC	261.App H
611.AppC	141.30
611.TabA	141.21(a)(2)
611.TabB	141.74(b)(1)
611.TabC	141.74(b)(5)
611.TabC	141.74(c)(2)

FEDERAL TO STATE TABLE

35 Ill. Adm. Code	40 CFR
611.606(k)-(o)	136.003
611.100(a-c)	141.1
611.212	141.2
611.121	141.2
611.101	141.2
611.100(d)	141.3
611.111	141.4
611.112	141.4

611.114	141.5
611.120	141.6
611.300(a)-(d)	141.11
611.310(a),(b)	141.12
611.320	141.13
611.330	141.15
611.331	141.16
611.521	141.21(a)
611.TabA	141.21(a)(2)
611.522	141.21(b)
611.523	141.21(c)
611.524	141.21(d)
611.525	141.21(e)
611.526	141.21(f)
611.527	141.21(g)
611.560	141.22
611.109	141.22(e)
611.109	141.23(a)(4)
611.601	141.23(a-d)
*	141.23(e)
611.606(a)-(j)	141.23(f)
611.607	141.23(g)
611.641	141.24(a-d)
611.645	141.24(e,f)
611.648	141.24(g)
611.720	141.25
611.731	141.26(a)
611.732	141.26(b)
611.480	141.27
611.490(a),(b)	141.28
611.500	141.29
611.AppC	141.30
611.680(a),(b)	141.30(a,b)
611.683	141.30(c)
611.684	141.30(d)
611.685	141.30(e)
611.686	141.30(f)
611.840	141.31
611.832	141.32
611.851	141.32(a)
611.852	141.32(b)
611.853	141.32(c)
611.854	141.32(d)
611.AppA	141.32(e)
611.855	141.32(e)
611.856	141.32(f,g)
611.860	141.33
*	141.34
611.870	141.35
611.650	141.40(a-f)
611.657	141.40(g-m)
611.610	141.41
*	141.42

611.126	141.43
*	141.50
*	141.51
*	141.52
611.120	141.60
611.340	141.61
611.350	141.62
611.360	141.63
611.220	141.70
611.230	141.71
611.211	141.71
611.231(a), (b)	141.71(a)
611.232	141.71(b)
611.101	141.71(b)
611.233	141.71(c)
611.240(a-f)	141.72
611.241	141.72(a)
611.213	141.72(a)(4)(ii)
611.242	141.72(b)
611.250	141.73
611.531	141.74(a)
611.AppB	141.74(b)
611.532	141.74(b)
611.TabB	141.74(b)(1)
611.TabC	141.75(b)(5)
611.533	141.74(c)
611.TabC	141.74(c)(2)
611.261	141.75(a)
611.262	141.75(b)
611.280	141.100
611.290	141.101
*	141.App A
*	141.App B
611.102	141.App C
611.AppA	143.5
611.858	143.5
611.AppC	261.App H
611.113	SDWA, 1415(a)(3)

This Opinion supports the Board's Order of this same day.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion was adopted on the 9th day of August, 1990, by a vote of 6-0.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board