Regulations For Radionuclides Under The Safe Drinking Water Act And 40 CFR 191 Ground Water Requirements

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Introduction

The Environmental Protection Agency's (EPA) third working draft for the repromulgation of 40 CFR Part 191, Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Waste, incorporates by reference the limits in 40 CFR Part 141 on radioactivity in drinking water as ground water protection requirements for a repository.

These requirements would modify those promulgated in the 1985 final rule for 40 CFR 191. This paper will present a summary history of the ground water requirements in 40 CFR 191, discuss the impetus for modifying the 1985 rule (a court remand), describe the 40 CFR 141 drinking water requirements, and enumerate some of the issues which need consideration relative to the appropriateness of the modifications proposed in Working Draft 3.

I. Background

The proposed rule for 40 CFR 191 which EPA published for comment in 1982, contained no separate ground water protection requirements. In response to public comments on the proposed rule, EPA added separate ground water protection requirements to the final rule. These requirements were intended to avoid any significant degradation of important drinking water resources. The limits were similar, but not identical, to those established for the output of community water systems in EPA's Interim Primary Drinking Water Regulations, 40 CFR Part 141. The requirement applied only to Class I sources of ground water which were: (1) inside of or within 5 kilometers of the controlled area; (2) supplying drinking water for thousands of people at the time the site was selected for exploration; and (3) irreplaceable in that no reasonable alternative source of drinking water is available to that population. If preexisting concentrations already exceeded those limits, the limits then applied to the increases in concentrations.

Unfortunately, the lack of opportunity for the public to comment on these new provisions was one of the bases on which a Court vacated the rule.

The Court Remand - In 1987 a court vacated and remanded Subpart B of the rule. NRDC v. EPA, 824 F.2d 1258 (1st Cir. 1987). The bases for this remand were the above-mentioned lack of opportunity for comment on the ground water protection requirements, that EPA did not provide an adequate explanation for selecting a 1,000 year duration for the individual protection requirements, and, most relevant to the issues to be discussed here, the Court found a possible connection between the Safe Drinking Water Act (SDWA) obligations of EPA and the repository standards, which the EPA (and everyone else) had not considered.

The linch-pin of the possible connection between the SDWA and 40 CFR 191, was the underground injection control provisions of the EPA's regulation under the SDWA. Although the SDWA does not directly apply to repositories for radioactive waste disposal, it does contain provisions requiring

EPA to assure that underground sources of drinking water will not be endangered[1] by any underground injection. 42 U.S.C. §300h(b)(3)(c). The SDWA defines underground injection as the "subsurface emplacement of fluids by well injection". 42 U.S.C. §300h(d)(1). Thus the question was raised as to whether the emplacement of waste in a repository is emplacement of fluids by well injection.

Some were surprised when the Court concluded that this was likely the case. The Court's finding on this point is important since it provides the nexus between the SDWA and 40 CFR 191. However, the strength of the Court's finding is somewhat ambiguous. The conclusion of the section of the Court opinion which analyzed whether storage of high level waste (HLW) in underground repositories constitutes underground injection, was

> ...underground repositories, would <u>likely</u> constitute an 'underground injection' under the SDWA." (emphasis added) 824 F.2d at 1271.

This conclusion is less than a finding that repositories <u>are</u> underground injection. However, in a subsequent section of the opinion, the Court's analysis is based on the presumption that repositories are indeed underground injection.

> Assuming, as discussed above, that the planned disposal of HLW in underground repositories amounts to 'underground injection', will such injection, if carried out under the EPA's current HLW standards, 'endanger' underground sources of drinking water? We believe the answer is 'yes'. 824 F.2d at 1271.

The Court's directions to EPA on how to proceed following the remand are clearer.[2] It does not

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1 The SDWA defines "endanger" as: Underground injection endangers drinking water sources if such injection may result in the presence in underground water which supplies or can reasonably be expected to supply any public water system of any contaminant, and if the presence of such contaminant may result in such system's not complying with any national primary drinking water regulation or may otherwise adversely affect the health of persons. 42 U.S.C. §300h(d)(2).

2 The simple fact is that disposal of HLW in the manner here contemplated will very likely amount to an "underground injection." In announcing criteria which, until far in the future, the planned injection must be presently designed to satisfy, the EPA was irrational to establish, without a word of explanation, different and more relaxed criteria than the EPA's co-existing SDWA standard applicable to all other underground injections. By so doing, DOE and other agencies responsible for site selection and design are left in a quandary as to their possible separate responsibilities under the SDWA, since it is known that underground water will likely be encountered and that future contamination is a serious possibility. To be rational, the HLW regulations either should have been consistent with the SDWA standard-thus requiring repositories to be designed so that future emissions into any sources of drinking water will not result in contamination exceeding SDWA standards—or else should have explained that a different standard was adopted and justify such adoption. As matters now stand, the DOE may be encouraged to expend large sums on site selection, design and construction only to discover itself embroiled in a dispute as to whether the EPA's HLW standards excuse it from securing a state underground injection permit based on the EPA's different, more stringent standards. These are matters the EPA, relying on its expertise, should face and clarify in the HLW regulations; otherwise the

require EPA to conform the HLW disposal standards to the SDWA. It gives EPA the choice of either conforming to the SDWA criteria or of explaining why differing standards are justified. Possible justifications suggested by the Court include compliance with the SDWA being impossible, or inconsistent with the goals of the NWPA, or an explanation of why EPA deems the lesser standard in the HLW rules to be adequate to protect the public although it does not find it adequate under the SDWA. 824 F.2d at 1280. The Court urges EPA to clarify in its regulations whether it believes that repositories must meet the SDWA's underground injection control rules.

The conclusion that repositories are likely to be underground injection is based on broad definitions of the terms "fluids" and "well injection" in EPA's regulations.[3]

Working Draft 3 Response - In the supplementary information with Working Draft 3, EPA concludes that geologic repositories do not constitute underground injection and presents its rationale for this conclusion. Reference 1 pg 63. However, in Working Draft 3, EPA does not place any clarifying provisions in its actual regulations as to whether repositories constitute underground injection. Having reached the conclusion that repositories are not underground injection, EPA is not compelled by statute, nor by the Court, to reconcile its repository standards with the SDWA. However, in Working Draft 3 it is proposed to adopt the SDWA primary drinking water regulations anyway, and they are incorporated by reference into the draft.[4] The ground waters now covered by this requirement have been expanded from the portion of "Class I" ground-waters described above to "any under ground source of drinking water ", which includes any aquifer with a quantity of water sufficient to supply a public water system. The requirements are still applied only to undisturbed performance of the repository and for 1,000 or 10,000 years (one option to be chosen). Working Draft 3 would require compliance not only with 40 CFR141 radionuclide limits but with all primary drinking water regulations in 40 CFR 141. While limits such as those for lead and copper might have interesting implications for selection of container materials, only the radionuclide limits will be discussed herein.

HLW regulations will be on a collision course with the SDWA regulations. It is irrational for the EPA, as administrator of both sets of regulations, to ignore the inevitable clash. Rationally, this is the time for the Agency to determine and express its position, since all concerned are entitled to know whether the EPA believes that repositories must meet the SDWA's underground injection control rules as well as the individual protection standards and, if not, the rationale upon which a lessor standard is deemed sufficiently safe. 824 F.2d at 1281.

[3] Fluid is a "material or substance which flows or moves whether in a semi-solid, liquid, sludge, gas or any other form or state." 40 C.F.R. §146.3.

Well injection is the "subsurface emplacement of fluids through a bored, drilled or driven well; or through a dry well, where the depth is greater than the largest surface dimension." 40 C.F.R. §146.3.

[4]See Appendix A.

II. The SDWA Primary Drinking Water Regulations

In 1976 EPA issued the National Interim Primary Drinking Water Regulations which regulated the levels of radionuclides in the output (at the tap) of community water systems to a combined radium-226 and radium-228 at 5 pCi/l, gross alpha particle emitters at 15 pCi/l, and beta particle and photon emitters (also referred to as "man-made" radionuclides) at a total dose equivalent of 4 mrem/year to any organ or whole body. 41 FR 28402. In 1986 EPA published an advance notice of proposed rulemaking for revised, final regulations to replace the interim regulations (51 FR 34836) and on July 18, 1991, published a proposed rule for those revised standards (56 FR 33050). The proposed maximum contaminant levels (MCL) are: radium-226, 20 pCi/l; radium-228, 20 pCi/l; radon-222, 300 pCi/l; uranium 20 μg/l; adjusted gross alpha, 15 pCi/l; and beta and photon emitters, 4 mrem ede/yr. The proposed rule would also establish extensive monitoring, reporting, and public notification requirements for these radionuclides.

Under the SDWA the radionuclide limits have been established using a method which differs from that traditionally used for establishing radiation exposure limits to individuals based on health effects. Under the SDWA process the EPA first establishes a Maximum Contaminant Level Goal (MCLG) and then must set the MCL as close to this level as is feasible, taking into account cost, availability of treatment technologies, and other practical considerations. 51 FR 34836. For group A carcinogens, which includes all radionuclides, the MCLG must be set at zero. "Feasible" means feasible with the use of the best technology, treatment techniques, and other means which the administrator finds available (taking costs into consideration). 56 FR 33052. In the past, EPA has limited cost considerations to whether a treatment technology is affordable by the largest public water systems. 56 FR 33080. In the currently proposed rule, EPA is considering this factor and also cost-effectiveness — but not cost-benefit. 56 FR 33080. Legislative history of the SDWA weights against using cost-benefit considerations.[5]

In deriving the standards for the "man-made radionuclides" (beta and gamma emitters) in the 1976 interim regulations, EPA concluded that the costs involved were zero. The 4 mrem/yr limit was based primarily on consideration of existing levels of radioactive fallout from atmospheric weapons testing. EPA stated that:

> Considering the sum of the deposited fallout radioactivity and additional amounts due to effluent from other sources currently in existence, the total dose equivalent from man-made radioactivity is not likely to result in a total body or organ dose to any individual that exceeds 4 millirem per year. Since present ambient levels of man-made radioactivity are small, EPA does not believe that this standard will result in a need to

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[5] In the floor debates on passage of the conference report for the 1986 amendments to the SDWA, Senator Durenberger stated that the amendments were "not an instruction for the administrator to conduct a cost-benefit analysis to determine the MCL. The law emphatically does not provide that the administrator will set the MCL at a level where benefits outweigh costs, nor does it require EPA to balance costs and benefits in any other way. *Cost only enters into the judgment of the administrator in defining which treatment technologies are to be considered best available technologies.* And availability in this instance is considered only in the context of the largest supply systems." 132 *Cong. Rec.* S6287 (May 21, 1988) as sited at 56 FR 33080.

> remove man-made radioactivity from public water systems, nor subject the public to excessive risk. 40 FR 34325.

No analysis of costs or benefits, or consideration of alternative limits, was undertaken.

In the 1991 proposed revised regulations, EPA proposes retaining the interim limits:

> The Agency regulated the beta and photon emitters as a class in the NIPDWRs with an MCL of 4 mrem per year effective dose equivalent (whole body or any organ), and proposes to retain the interim standard as a final MCL.[6] 56 FR 33103.

In the proposed rule the EPA concluded, that if needed, treatment technologies for the removal of beta-gamma emitters would be available and estimated the per household cost. And EPA estimated the lifetime risk of 4 mrem ede/yr to be approximately 1 x 10^{-4}. Still, the presumed cost of the limits was zero, since no need for treatment was anticipated. 56 FR 33113. Again, no consideration was given to alternative limits.

The SDWA method for deriving limits has had the following results: of the 80,000 water systems which are subject to the regulation (68,000 ground water and 12,000 surface water), EPA estimates that 28,000 systems (35%) will be required to provide treatment or find an alternative source of water.[7] EPA estimates that costs per cancer case avoided will be $2.25 million for radon-222, $10 million for radium-226, $30 million for radium-228, $300 million for uranium, and $28 to $200 million for adjusted gross alpha. EPA estimates that annual residential water bills could increase by up to $800. However, the Association of California Water Agencies, in hearing testimony on September 6, 1991 (Reference 3), indicated that 90% of California wells would require treatment and that costs for individual treatment systems would be three times greater then estimated by EPA. They calculate a cost per cancer saved for radon removal of $71 million or, if considering only non-smokers, of $500 million. In that hearing the city of Riverside, California, based on actual bids they have received for treatment system construction, stated that EPA has underestimated the costs of a system by a factor of 10 to 30 depending on the type of system needed.

EPA has noted that the risk from radon in drinking water occurs when it outguesses into indoor air and is inhaled. Drinking water contributes roughly 5 percent of the total indoor radon exposure. The SDWA regulation would limit the indoor radon concentration contribution to .03 pCi/l. Outdoor background levels of radon in air are about .1 to .5 pCi/l and EPA's action level for total indoor radon (primarily from soil) is 4 pCi/l.

In Congressional testimony on May 10, 1991 and May 17, 1991 (References 4 and 5), Mr. William Reilly, Administrator of the EPA, and LaJuana Wilcher, Assistant Administrator for Water,

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6 The interim limit was "an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year". 40 CFR §141.16 (a). The proposed limit is 4 mrem ede/yr. 56 FR 33126.

7 26,000 for radon-222, 70 for radon-226, 40 for radon-228, 1,500 for uranium and 130 for gross alpha (Reference 2).

stated that as a result of SDWA regulations (in general, not only radionuclides), it is expected that a number of smaller systems may be abandoned or go bankrupt.

These proposed regulations are contentious. Based on hearing testimony, litigation over the final regulations seems likely. Agencies responsible for supplying water are concerned with the high costs or threat of bankruptcy and are requesting higher limits. For example, the Association of California Water Agencies has requested a radon level of 1000 pCi/l and the City of Riverside, California has asked for the limit to be raised to 2,000 pCi/l. They challenge the EPA's cost estimates and the estimates of health effects. The Natural Resources Defense Council believes, inter alia, that EPA's consideration of cost-effectiveness is illegal, that their consideration of a "practical quantitation level" in setting limits is illegal, that the feasibility of lower radium limits has been demonstrated, and that EPA cost estimates are too high. (Reference 3) The final content of these regulations seems uncertain.

III. Are the SDWA Limits Appropriate Repository Ground Water Protection Limits?

Yes

In Working Draft 3, EPA points out the importance of ground water as a source of drinking water in the United States. It notes that monitoring and clean-up of water in the ground is difficult. It states that "From the agencies perspective, it is necessary to protect the resource from contamination in the first place, rather than rely on clean-up after the fact". (Reference 1, pg 65). It notes that a policy in a draft document which has been issued for public review, an EPA Statement of Ground Water Principles, states that "the agency will use Maximum Contaminant Levels under the SDWA as 'reference points' for water-resource protection efforts when the ground water in question is a potential source of drinking water." (Reference 1, pg 66). It also states:

> We think there is merit in the environmental and risk objectives of the ground water protection developed by the Agency under the SDWA. Therefore, divergence from the dose-level requirements in the SDWA regulations is not appropriate. (Reference 1, pg 67).
>
> and,
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> A basic premise of the ground water protection requirements presented in today's proposal is that a release from a radioactive waste management, storage or disposal facility should not cause a present or future community water supplier to have to implement a treatment that was not otherwise necessary. (Reference 1, pg 67).

EPA then states:

> It should also be noted that unless this approach is followed, the management, storage or disposal system is likely to find itself subject to the clean-up requirements under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund). (Reference 1, pg 68).

A further consideration is that in the proposed drinking water radionuclide regulations, EPA concluded that the proposed standards resulted in a lifetime individual risk level in the range of 10^{-4}, which EPA believes appropriate.

However, there are other considerations which weight against the appropriateness of this application of the drinking water limits.

<u>No</u>

The SDWA drinking water regulations are inappropriate for use as repository ground water protection standards because they were derived for an entirely different application, and adequate protection of the public can be provided with less restrictive standards.

The SDWA limits which are proposed for adoption in Working Draft 3 are being derived for an entirely different purpose. They are standards for tap water after using the best feasible technology for treatment. The repository standards are for water in the ground without any treatment. The drinking water standards are being derived considering the cost of treatment, and, for "man-made" radionuclides, were justified assuming the cost to be zero. But, no consideration is being given to the costs involved in applying these standards to other applications such as disposal of high-level or low-level radioactive wastes for which the potential costs are enormous. Further, the drinking water standards are for water actually being drunk, now, by millions of people nationwide. Repository ground water standards would be applied to water deep underground in a single, sparsely inhabited location which is currently unused. If contamination occurs, it would not likely occur until hundreds or thousands of years from now, and in only one location. Since EPA has found water treatment to be feasible, the primary concern must be with burdening future users of the water with the costs of treatment. In this regard, a water treatment system a thousand years from now could be funded with a very few dollars in an interest bearing account now.

EPA's basic premise - that a release from a repository should not cause a present or future community water supplier to have to implement a treatment that was not otherwise necessary - is admirable and desirable. However, it seems the most important underlying purpose for the regulations should be to protect human health, and, another basis premise is that protection of human health should be done in a cost effective manner. It is also illuminating to view EPA's basic premise in the context of the actual situation under consideration, which is, over 35 percent of the existing water systems (28,000) already exceed the limits and will require treatment systems to remove naturally occurring radionuclides.[4] In the unlikely event that both the HLW and TRU repositories necessitate a treatment system at some future time, the net result would be approximately 28,002 radionuclide treatment systems. If special container materials or relocation were needed for the repository to meet the requirements, the costs would be far higher than for a water treatment system. Given this situation, EPA's basis premise is less than essential.

It would seem that there is a high likelihood that a potential repository location could already exceed the limits from naturally occurring nuclides. In that case, depending on the interpretation of the somewhat ambiguous language in Working Draft 3, a repository could be prohibited at that location.

Further, in the newly proposed drinking water standard, the effective dose equivalent allowed for radium-226 and radium-228 combined is approximately eight times the 4 mrem effective dose equivalent per year allowed for the "man-made" beta-gamma emitters, and the risk allowable for radon is twice that for beta-gamma. Thus a repository would be put in the position of having to comply with risk limits far below levels already existing from naturally occurring radionuclides in 35% of the country's drinking water systems.

The drinking water regulations will require all covered drinking water systems to undertake extensive, regular monitoring for radionuclides. Such a requirement will lessen the chances that any water, which might be contaminated by a repository, would be consumed without treatment. Also, this monitoring is used to establish compliance with the MCL's. However, a repository would be expected to establish compliance with these same limits not only now, but for 1,000 or 10,000 years into the future with predictive modeling. The requirements are not being developed with this type of compliance demonstration in mind.

IV Conclusions

The Court decision did not require adoption of the SDWA limits, explanation of differing standards was an acceptable option. Further, EPA has concluded that repositories are not underground injection, thus eliminating the statutory nexus between the SDWA and repositories. The SDWA drinking water regulations are unsettled, contentious, and being derived under a process which differs from those usually used for radiation protection standards. They are intended for an entirely different application and are inappropriate for a repository ground water standard.

What should be done? An all pathways standard provides adequate protection of public health. It is not obvious that there is a compelling technical or health reason to place a separate limit on this particular single pathway but not, for example, on the cow's milk pathway. Indeed, EPA worked on the proposed 40 CFR 191 rule for over six years and issued it in 1982 believing it was adequate without separate limits. Since the drinking water limits are inappropriate, the easiest solution is to return to a standard without separate ground water protection provisions. If, for some good reason, separate limits are retained, they should be based on protection of human health and should be appropriate for the concerns and circumstances attendant to a geologic repository - not the nation's drinking water systems.

References

1. Environmental standards for the Management and Disposal of Spent Nuclear Fuel and Transuranic Radioactive Wastes, Working Draft 3, April 26, 1991, U.S. Environmental Protection Agency.

2. Radionuclides in Drinking Water Fact Sheet, June 1991, U.S. Environmental Protection Agency.

3. Public hearing on Proposed National Primary Drinking Water Regulations; Radionuclides, September 6, 1991, Arlington, Virginia.

4. Testimony of William K. Reilly, Administrator, U.S. Environmental Protection Agency, before the Committee on Energy and Commerce Subcommittee on Health and the Environment, United States House of Representatives, May 10, 1991.

5. Testimony of LaJuana S. Wilcher, Assistant Administrator for Water, U.S. Environmental Protection Agency, before the Subcommittee or Superfund, Ocean and Water Protection of the Committee on the Environment and Public Works, U.S. Senate, May 17, 1991.

Citations

Natural Resources Defense Council v. U.S. Environmental Protection Agency, 824 F.2d 1258 (1st Cir. 1987).

42 U.S.C. §§ 300 f-j, Safe Drinking Water Act.

40 CFR Part 191, Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes.

40 CFR Part 141, Interim Primary Drinking Water Regulations.

40 Fed. Reg. 34324, August 14, 1975, Interim Primary Drinking Water Regulations, Proposed Maximum Contaminant Levels for Radioactivity.

41 Fed. Reg. 28402, July 9, 1976, Interim Primary Drinking Water Regulations; Radionuclides.

47 Fed. Reg. 58196, December 29, 1982, Environmental Standards for the Management and Disposed of Spent Nuclear Fuel, High-level and Transuranic Radioactive Wastes: Proposed Rule.

51 Fed. Reg 34836, September 30, 1986, National Primary Drinking Water Regulations; Radionuclides, Advance Notice of Proposed Rulemaking.

56 Fed. Reg. 33050, July 18, 1991, National Primary Drinking Water Regulations; Radionuclides, Proposed Rule.

APPENDIX A
WORKING DRAFT 3 GROUND-WATER PROTECTION REQUIREMENTS

Subpart C- Environmental Standards For Ground-Water Protection

191.21 Applicability

This Subpart applies to:

(a) radiation doses received by members of the public as a result of activities subject to Subparts A and B of this Part; and

(b) radioactive contamination of underground sources of drinking water in the vicinity of facilities as a result of such activities.

This Subpart does not apply to disposal that occurred before August 15, 1985.

191.22 Management and Storage Standards

(a) Management and storage of radioactive waste shall not cause any increase in the levels of radioactivity in any underground source of drinking water outside the controlled area which may result in a violation of any primary drinking water regulation under 40 CFR Part 141.

191.23 Disposal Standards

OPTION A

(a) Disposal systems for radioactive waste shall be designed to provide a reasonable expectation that 1,000 years of undisturbed performance after disposal shall not cause any increase in the levels of radioactivity in any underground source of drinking water outside the controlled area which may result in a violation of any primary drinking water regulation under 40 CFR Part 141 as in effect at the time of demonsdtrating compliance with §191.15 of this Part.

OPTION B

(a) Disposal systems for radioactive waste shall be designed to provide a reasonable expectation that 10,000 years of undisturbed performance after disposal shall not cause any increase in the levels of radioactivity in any underground source of drinking water outside the controlled area which may result in a violation of any primary drinking water regulation under 40 CFR Part 141 as in effect at the time of demonstrating compliance with §191.15 of this Part.

191.01 Definitions

(kk) "Underground source of drinking water" means an aquifer or its portion which: (1) supplies any public water system; or (2) contains a sufficient quantity of ground water to supply a public water system; and (i) currently supplies drinking water for human consumption; or (ii) contains fewer than 10,000 milligrams of total dissolved solids per liter.

APPENDIX B
DEFINITIONS IN 40 CFR PART 141

"Adjusted gross alpha" is defined as the result of a gross alpha measurement, less radium-226 and less uranium. radon is not included in adjusted gross alpha.

"Community water system" means a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

"Gross alpha particle activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

"Gross beta particle activity" means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

"Man-made beta particle and photon emitters" means all radionuclides emitting beta particles and/or photons listed in Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69, except the daughter products of thorium-232, uranium-235 and uranium-238.

"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.

"Public water system" means a system for the provision to the public of piped water for human consumption. If such system has at least fifteen service connections of regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes (1) any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system, and (2) any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system is either a "community water system" or a "noncommunity water system."