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U.S. E.P.A.

31 SCHOOSSETT STREET (Rt 139)
SUITE 207
PEMBROKE, MA 02359

TELEPHONE 781-837-3636
FAX 781-826-5750

ROBERT L. MARZELLI

2007 FEB -5 AM 9:42

ATTORNEY AT LAW

ENVIR. APPEALS BOARD

February 1, 2007

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board
1341 G Street, N.W., Suite 600
Washington, D.C. 20005

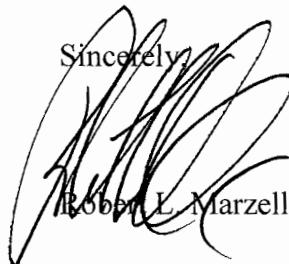
Dear Sir/Madam:

Please find enclosed five (5) copies of the Town of Marshfield and Marshfield Waste Water Treatment Facility's Petition for Review and rof its final NPDES permit.

If you have any questions, please do not hesitate to contact me at the above number.

Sincerely,

Robert L. Marzelli



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U.S. E.P.A.

ENVIRONMENTAL APPEALS BOARD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, DC

2007 FEB -5 AM 9:42

ENVIR. APPEALS BOARD

In re:)
Town of Marshfield and the Town)
Of Marshfield Waste Water)
Treatment Facility,)
NPDES Permit No. MA0101737)

PETITION FOR REVIEW

INTRODUCTION

The Town of Marshfield Waste Water Treatment Facility (Facility or Town), files this Petition requesting that the Environmental Appeals Board (Board) review the allowable level of fecal coliform effluent contained in the final (NDPES) permit issued to the Town on November 9, 2006, which the Town had previously, during the comment period, questioned. The Town contends that the review of the EAB is appropriate in this case as a matter of policy because (1) the Environmental Protection Agency (EPA) assigned a fecal coliform limit based on incorrect information submitted to it by the Division of Marine Fisheries relative to the propriety of shellfishing in the area of the outfall pipe and the fecal coliform level associated therewith; (2) the area in which the outfall pipe discharges effluent is more than one-half mile from the growing beds, as provided by the maps prepared by Division of Marine Fisheries; (3) the EPA incorrectly attributed the fecal coliform condition to state 401 Water Quality Certification (State

Certification); (4) even if the State Certificate could somehow be interpreted as containing a reduced effluent level, the State's failure to comply with the federal regulations renders the State unable to make that change; (4) the procedural deficiencies in the State Certificate warrant the E.A.B. setting aside the Certificate; (5) the EPA did not adequately respond to the Town's comments on the reduced fecal coliform effluent level.

BACKGROUND

The Town of Marshfield owns and operates the Marshfield Waste Water Treatment Facility, at 200 Joseph Driebeck Way, Marshfield, MA. See EPA Fact Sheet. The Facility has been in operation since 1980 under various permits. The Facility provides secondary treatment to the waste and is designed to treat an average flow of 2.1 million gallons per day with a peak flow of 5.7 mgd. *Ex. I, E.P.A. Fact Sheet, p. 3.* The discharge from the Facility consists of domestic waste, with a small percentage originating from other neighboring towns. *Ex. I, p. 1.* The Facility also receives a significant amount of inflow and infiltration during wet weather. *Id.* The Facility has a grease pretreatment system that enables it to accept grease from local restaurants. *Id.* The treatment processes used by the Facility include headworks, aeration basins and final clarifiers. *Id. at 3.* Disinfection is performed by ultraviolet light. Aerobically digested liquid sludge is thickened by a Somat Vertical Thickening Unit and hauled offsite by a private contractor to either the Upper Blackstone Regional Wastewater Treatment Facility in Massachusetts or to the Cranston, Rhode Island Wastewater Treatment Facility for disposal. *Ex. I, p. 3.*

The Facility discharges effluent by means of an outfall pipe located approximately 2,900 feet off-shore into Massachusetts Bay. *See Ex. 1, p. 2.* The pipe is located above ground at an elevation of approximately 1.5 feet. The pipe utilizes a twelve-port diffuser, with the first port located at 2,900 feet and the last at 3,140 feet. *Ex. 1, p. 2.* The EPA's model indicated that dilution occurred at seventeen feet from the discharge ports. *Id.*

On July 7, 2005, the EPA transmitted a packet of material to the Chief Operator, Kevin Silva, of the Waste Water Treatment Facility for him to reapply for the NPDES permit. The existing permit had an expiration date of September 7, 2006. The Town prepared the requisite paperwork and transmitted same to the applicable agencies. As part of the application, and as set forth by state and federal regulation, the Town was required to submit documentation for a Federal Consistency Certification to the Massachusetts Office of Coastal Zone Management (MCZM), identifying what MCZM policies were applicable to the operation of the WWTF and how the Town proposed to demonstrate consistency with these policies. On April 4, 2006, MCZM indicated that it intended to commence review.

On August 16, 2006, the EPA transmitted a draft permit to the Town that it prepared concurrently with the Massachusetts Department of Environmental Protection (DEP). *See Draft Permit at Ex. 2, p. 1.* The EPA requested that the Massachusetts Department of Environmental Protection (MADEP) certify the draft permit pursuant to Section 401 of the Clean Water Act. The draft permit contained several significant changes to the prior permit, including that at issue here, the permissible levels of fecal coliform. The basis for such changes, as identified in the Fact Sheet prepared by the

EPA, was the change in the designation of the receiving water body from one not designated for shellfishing to one that is designated for such activity. *EPA Fact Sheet*, p. 4. As a result, the effluent levels were changed from the previous permit which allowed 200 colony forming units (cfu)/100 ml monthly average and 400 cfu/100 ml maximum daily to 14 cfu/100 ml, monthly average and 43 cfu/100ml (maximum daily) in the draft permit. *See 2001 Permit at Exhibit 7B.* Under the new permit conditions, the Town experienced a ninety (90) percent reduction in its allowable levels of fecal coliform within the effluent.

On October 31, 2006, MADEP sent to the EPA a one paragraph letter purporting to be a 401 Water Quality Certificate ("State Certificate"). DEP failed to transmit the State Certificate at that time or any other, in direct contravention of the state 401 Water Quality Certificate regulations. On November 9, 2006, the EPA and DEP issued a joint final NPDES permit. It contained several significant changes from the prior permit. Relevant to this appeal was the change in the allowable fecal coliform levels. The previously stated maximum daily allowable level of fecal coliform dropped from 400 cfu/100 ml in the previous permit to 43 cfu/100ml, in the draft permit, to 28 cfu/100ml in the final permit. The EPA attributed the last change down to 28 cfu/100 ml as a requirement of the State Certificate. The State Certificate attached does not contain this condition. The Town received the new permit on November 16, 2006.

ARGUMENT IN SUPPORT OF PETITION FOR REVIEW

I. Standard of Review

While the Board does not generally grant review of petitions filed under 40 C.F.R. 124.19, it will do so to address clearly erroneous findings of fact or important policy

considerations which warrant the Board's intervention and review. 40 C.F.R. 124.19; *In re Carlota Copper Co.*, 11 E.A.D. 692, 708 (EAB 2004). The Town contends that the Board's review of the current permit is warranted by both of these considerations. The EPA has made erroneous findings of fact based upon incorrect information provided to it by the Massachusetts Division of Marine Fisheries (Marine Fisheries), and by incorporating into the final permit terms that were not specifically contained in the State Certificate, yet attributing such conditions to the State Certificate. Further, as a matter of policy, the failure of the State Certificate to contain any of the items required by both state and federal regulations and the further failure on the part of DEP to even provide the Town with notice of the Certificate both violate the Town's fundamental due process rights. Finally, the fact that the drastically reduced allowable fecal coliform in the effluent is based on the protection of shellfish beds that are not located in the area of the outfall pipe and are in no demonstrable way impacted by the outfall pipe is yet another basis warranting Board review.

II. Because the National Shellfish Sanitation Program Has Identified the Area of the Outfall Pipe as an Area Prohibited for Shellfishing, the EPA Erred In Assigning the Effluent Level for An Area Approved For Shellfishing.

The Board should review the fecal coliform limits contained in the final NPDES permit because they are based upon a significant piece of misinformation provided by Marine Fisheries. As mandated by the National Shellfish Sanitation Program (NSSP), the Division of Marine Fisheries created a so-called Sanitary Survey which, in part, identified and classified "growing areas" for local shellfish, along with areas in which various levels of shellfishing, under specific conditions, is permissible. The NSSP establishes five levels or classifications for various water bodies. The highest level, approved, has

the most stringent levels of allowable bacteria. The Massachusetts Bay as a whole carries this designation. Other classifications are as follows; conditionally approved, restricted, conditionally restricted and prohibited. NSSP assigns each level with increasingly high allowable levels of fecal coliform, but greater monitoring, sampling and more stringent management plans. The Prohibited classification, however, has no allowable fecal coliform levels associated with it because there is no threshold for which shellfishing would be allowed in such waters. *See NSSP, Model Ordinance IV, @.03 at Exhibit 3.*

According to the map that accompanies the survey and is provided on the Division of Marine Fisheries website (*attached as exhibit 5*), much of the coastline in Marshfield's area of Brant Rock is cross-hatched green, categorizing it as "approved" for shellfishing, with one significant exception. There is a parallelogram-shaped area, almost a mile wide and more than a mile long that juts out of the area by Brant Rock that is located in the vicinity of the outfall pipe.¹ Marine Fisheries has shaded this area red, designating it as an area in which shellfishing is prohibited. Under the NSSP's model ordinance, cited by Marine Fisheries for its allowable fecal coliform levels in an approved area, "**all growing areas which have a sewage treatment plant outfall or other point source outfall of public health significance within or adjacent to the growing area shall have an area in the prohibited classification established adjacent to the outfall.**" *Ex. 3, Model Ordinance IV @.03 Growing Areas Classification (2)(b)(2003).* NSSP elaborates in its definition of what constitutes a "prohibited classification", stating, "**Except for the harvest of shellstock for the gathering of seed for aquaculture or the depletion of the areas classified as prohibited, the Authority**

¹ The parallelogram runs due east from the coastline with the origin of the outfall pipe located in the center, however, the pipe itself runs northeast. *See Ex. 6.* This appears to be a technical error that can be corrected by Marine Fisheries.

shall (a) not permit the harvest of shellstock from any area classified as prohibited; and (b) ensure that shellstock removed from any growing area classified as prohibited is effectively excluded from human consumption." *Ex. 3, at E(2).* Further, the ordinance mandates as part of the prohibited classification that areas adjacent to each sewage outfall be designated and that the size of the area shall be determined by (1) volume flow rate, location and performance of the plant; (2) decay rate of contaminants; (3) dispersion and dilution; (4) location of shellfish resources and classification of adjacent water.

While much of the area around the outfall pipe does have an "approved for shellfishing classification", as is set forth in the NSSP, the area of the outfall pipe does not, it carries the appropriate "prohibited" designation. In fact, the outfall pipe origination point is located appropriately in the center of the prohibited area. However, it appears that Marine Fisheries is under the impression that the pipe runs due east, when it in fact runs due north east. *Ex. 4.* As a result, Marine Fisheries has inadvertently misclassified the area of the northeasterly portion of the pipe. Relocation of the Prohibited area is a far more appropriate response than splitting the outfall pipe into Approved and Prohibited, especially whereas the portion of the pipe that actually diffuses is not the portion in the Prohibited area.

While Marine Fisheries attributes the reduced daily allowable maximum fecal coliform to the NSSP, the NSSP in fact does not contain that requirement for the Prohibited areas, and in fact contains no limits for such areas. Marine Fisheries indicated that the NSSP mandated that the fecal coliform level for the area of the outfall pipe be reduced to 28cfu/100 ml, daily maximum. The NSSP contains no such requirement. The

NSSP actually *prohibits* shellfishing in the area of an outfall pipe. *See Ex. 4.* Despite its decision to implement the category system set forth in the NSSP, Marine Fisheries informed the EPA that the NSSP mandated that the surrounding water meet the highest possible classification requirements of the approved category. In other words, Marine Fisheries erred in urging the EPA to adopt fecal coliform levels consistent with the highest classification for an area that in fact falls into the lowest, where shellfishing is strictly prohibited.

III. The Map Generated by Marine Fisheries Clearly Depicts the Shellfish Growing Areas and They are Nowhere Near the Outfall Pipe Diffusers.

Setting aside the fact that shellfishing is actually prohibited in the area of the outfall pipe, the Sanitary Survey maps (*See Survey and maps at Ex 5*) prepared by Marine Fisheries show, by means of a thick black line, where the shellfish growing areas are along the coastline. In this case, they are right along the coastline of Brant Rock. *See Map at Ex. 5.* The EPA Fact Sheet clearly states that the outfall pipe is more than three thousand feet long and does not begin diffusing effluent into the water until it is more than 2,900 feet offshore. The Fact Sheet further indicates that dilution is achieved at seventeen feet. Based on this uncontested data, the Town says that the assertion the growing areas of shellfish are impacted by unacceptably high fecal coliform from effluent diffusing nearly one-half a mil away cannot be supported under the facts or applicable regulations.

IV. In the Final Permit, the EPA Incorrectly Attributed the Fecal Coliform Level to the State Certificate.

Since the State Certificate did not contain a single condition upon which the EPA could have based its decision to modify the permissible levels of fecal coliform effluent, the Board's review is appropriate. To the extent that the EPA relied on the State Certificate for establishing standards for appropriate effluent levels, such reliance is misplaced and not supported by the plain language of the State Certification. The Clean Water Act (CWA) requires states to create water quality standards for all water bodies within their jurisdiction. CWA §303, 33 U.S.C. §1313. The standards have three parts: (1) identify designated uses for each body of water; (2) developing water quality criteria, which consist of what would be allowable numerical concentration of effluent without impairing the designated use of the body of water; and (3) an antidegradation provision, which essentially prohibits backsliding in limits. *See* CWA §303(c)(2)(A), 33 U.S.C. §1313(c)(2)(A).

Pursuant to its federal authorization, Massachusetts has developed water quality standards in its Code of Regulations, as well as designated permissible uses for receiving water bodies, here the Massachusetts Bay. *See* 314 CMR 4.05. Specifically, the State has designated Massachusetts Bay in its entirety as an SA water body designated for shellfishing, thus entitling it to the highest level of protection, and lowest level of permissible effluents, in the State. These standards are to be incorporated into a NPDES permit by means of a Section 401 Water Quality Certification, the issuance of which is a precondition to a final NPDES permit. This Certificate falls woefully short in all regards. The State "Certification" in its entirety, is as follows:

"Your office has requested the Massachusetts Department of Environmental Protection to issue a water quality certification pursuant to Section 401(a) of the federal Clean Water Act ("the Act") and 40 CFR 124.53 for the above-referenced NPDES permit. The Department has reviewed the proposed permit and has

determined that the conditions of the permit will achieve compliance with section 208(e), 301, 302, 303, 306, and 307 of the Federal Act, and with the provisions of the Massachusetts Clean Waters Act, M.G.L.c. 21, §§26-53, and regulations promulgated thereunder. The permit conditions are sufficient to comply with the antidegradation provisions of the Massachusetts Surface Water Quality Standards [314 CMR 4.04] and the policy [October 6, 1993] implementing those provisions.

The Department hereby certifies the referenced permit."

While the rule of thumb that "challenges to permit limitations and conditions attributed to state certification will not be considered by the Agency," this not a case where this rule applies. *See In Re General Electric Company, Hooksett, New Hampshire, NPDES Appeal No. 91-13* at 4. First, the rule only applies to conditions attributed to state certification. The Board has recognized that "permit conditions are attributable to State certification when, *inter alia*, the State indicates (in writing) that these conditions are necessary in order to comply with State law and cannot be made less stringent and still comply with State law." *In re City of Fitchburg, Massachusetts*, 5 E.A.D. 93, 98 (EAB 1994). "Where ambiguity exists, the permit terms cannot be found to be attributable to state certification. *In re Boise Cascade Corp.*, NPDES Appeal No. 91-20, at 10-11, n.7 (EAB 1993). The State Certification contains not the smallest detail of what is required by the federal regulations, yet the EPA, in its final permit, seems to read into the Certification a reduction in permissible effluent levels that simply are not there. Specifically, in the comments section of the final permit, Marine Fisheries proposes a further reduction in the allowable maximum daily fecal coliform effluent level from 43cfu/100 ml to 28cfu/100 ml. *See attached Ex. 7A, Comment A.1.* In response, the EPA and State agreed, stating, "The Requirement is a condition of the state Section 401 Water Quality Certification." The EPA simply overlooks the lack of conditions in the State Certificate, instead choosing on its own initiative to adopt the lower effluent level as part

of the final permit. The State Certificate appears to consist only of generic language that is in no way specific to the Facility and its operation. As the condition that is the subject of this appeal is not mentioned or provided for in the State Certificate, Board review is appropriate

V. The State Certificate, On Its Face, Omits All Relevant Information Mandated By the Federal Regulations, Causing At a Minimum a Waiver of the Specified Condition.

The Code of Federal Regulations contains exacting requirements of what information must be included in the State Certificate in order for any of its terms to be incorporated into the final permit. The regulations require that the Certification contain “a statement of the extent to which each condition of the draft permit can be made less stringent without violating the requirements of State law, including water quality standards.” 40 C.F.R. 124.53(e)(3) (2006). Clearly this is a case in which the draft permit could be less stringent. The map generated by Marine Fisheries clearly depicts a carved out area from the otherwise “approved” water body in the area of the outfall pipe, as is appropriate under the NSSP. The State’s omission of this statement is telling because there is clearly a way that the fecal coliform limits imposed by the draft and final permit could be modified and still comply with the mandates of the NSSP as adopted by Marine Fisheries.

In addition, the federal regulations require that the State send notice of its action including a copy of the Certification, to the applicant. 40 C.F.R. 124.53(d) (2006). It did not do so. The Town had no notice that the State Certificate had issued until the EPA provided it as part of the NPDES permit. In light of the fact that the EPA attributes a not insignificant effluent level change to the State Certificate, this omission was damaging to

the Town, who ultimately received it with only five days left on the administrative appeal. The State Certificate also failed to comply with federal regulations by not identifying conditions which it deems necessary to assure compliance with the applicable provisions of the CWA (citation omitted) and with appropriate requirements of State law. 40 C.F.R. 124.53(e)(1). The State Certificate contains no such conditions and is entirely silent on any requirements for the Facility whatsoever.

IV. Even If An Argument Could Be Made That the State Certificate Somehow Reduced the Allowable Fecal Coliform Levels Below That Set Forth In The Regulations, The State Is Barred By Federal Regulations From Making Such a Change.

The draft permit issued in August set the permissible fecal coliform effluent level at 14 cfu/100 ml monthly average and 43 cfu/100 ml maximum daily. *See Draft Permit*, Part A.1. This was consistent with the state regulations for bacteria at that time. 314 C.M.R. 4.05 (4)(a)(4).² During the comment period, the Massachusetts Division of Marine Fisheries interjected, unbeknownst to the Town, and stated that the National Shellfish Sanitation Program required the maximum daily number be reduced to 28 cfu/100 ml. *See Ex. 7A, Comment Section*. The EPA responded that such a requirement (the 28 cfu/100 ml) “is a condition of the state Section 401 Water quality certification.” Setting aside the actual, contrary, provisions of the NSSP, not only did the State Certificate not contain such a condition, the condition that ultimately made its way into

² During the entire time that the EPA was preparing the permit and receiving comments, the MADEP Surface Water Quality Regulations provided that water suitable for shellfishing had a permissible fecal coliform level of 14cfu/100 ml monthly average and 43 cfu/100ml maximum daily. Nearly two months after the EPA and the State issued the permit to the Town, MADEP amended the surface water regulations relative to the maximum daily amount from 43cfu/100 ml down to 28cfu/100 ml. Such change did not take effect until December 29,2006. *See attached Massachusetts Register and regulations at Exhibit 8.*

the final NPDES permit exceeded the requirements under the state regulations in effect at that time. Under those regulations, the maximum daily level of fecal coliform for an approved water body was 43cfu/100 ml, yet between the NSSP and regulations that were being contemplated, the Town found itself handed a final NPDES permit with an exceedingly high compliance level. The inherent unfairness in this is illustrated by another requirement for State Certification contained in the federal regulations. “State certification must include “any conditions more stringent than those in the draft permit which the State finds necessary to meet (the requirements of state law). For each more stringent condition, the certifying State agency shall cite the CWA or State law referenced upon which that condition is based. *Failure to provide such a citation waives the right to certify with respect to that condition.*” (emphasis added). 40 C.F.R. 124.53(e)(2) (2006). Thus, to the extent that the EPA contends that the reduction in the allowable maximum daily was a State Certification requirement, the State had no right to make such a change under the federal regulations.

V. The EPA Did Not Adequately Respond to the Issue of Fecal Coliform Effluent Reduction When Raised By the Town And Further Evaluation Is Merited.

The Town fulfilled its obligation to raise an objection and concern to the EPA during the public comment period, but the EPA failed to offer any response related to the issues and facts offered in support. During the public comment period, the Town commented that it thought the nearly 90% reduction in allowable fecal coliform effluent was unreasonable in light of the fact that the water as existing received naturally occurring levels of fecal coliform that were at least that which was allowed under the

prior permit (200cfu/100 ml monthly average, 400 cfu/100 ml maximum daily).

Specifically, the Town stated:

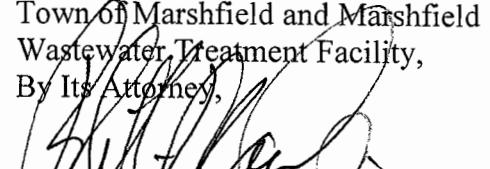
“Though the Marshfield WWTF repeatedly and consistently meets its effluent level for this parameter, we feel that this >90% reduction in discharge limits is unreasonable. The MWWT discharges through an ocean outfall with a significant dilution factor and the limits of the current permit represents less of a fecal coliform indicator loading to the local waters than that created by the local avian and other wildlife present. The Town asks for a re-evaluation of this substantial reduction in discharge limits and return to the limitations of the current NPDES Permit.”

EPA responded as follows: “EPA and MassDEP agree. The requirement is a condition of the state Section 401 Water quality certification. The permit has been changed accordingly.” The EPA offered no response to the Town’s challenge that the new level resulted in an allowable effluent that was a mere fraction of that naturally occurring. It only stated that the new fecal coliform limits were established based upon State regulations for surface water quality, class SA water, open shell-fishing. It then noted that the maximum daily requirement was further reduced from 43 cfu/100 ml to 28 cfu/100 ml based on comments from the Division of Marine Fisheries. It offered no response as to how onerous the new fecal coliform levels were, did not acknowledge the greater than ninety percent reduction, or even acknowledged the substantial cost, in this case nearly \$4 million, the Town would likely have to incur in its efforts to comply. It only referred to the effluent levels as required by the State Certificate. A contention, as seen above, unsupported by the Certificate itself.

CONCLUSION

For all of the foregoing reasons, the Board should grant review of this petition and find that the purposes of the NSSP or Clean Water Act are served by the drastically reduced fecal coliform level.

RESPECTFULLY SUBMITTED,
Town of Marshfield and Marshfield
Wastewater Treatment Facility,
By Its Attorney,


Robert L. Marzelli, BBO#323220
P.O. Box 967
Marshfield, MA 02050
(781) 837-3636
(781) 826-5750 (fax)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND OFFICE
1 Congress Street, Suite 1100 (CMP)
Boston, Massachusetts 02114-2023

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES.

NPDES PERMIT NO.: MA0101737

NAME AND ADDRESS OF APPLICANT:

Town of Marshfield
Department of Public Works
870 Moraine Street
Marshfield, MA 02050

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Marshfield Wastewater Treatment Facility
P.O.Box 268
200 Joseph Driebeck Way
Marshfield, MA 02020

RECEIVING WATER: Massachusetts Bay (South Coastal Watershed, State Code - 94)

CLASSIFICATION: SA

I. Proposed Action, type of facility, and discharge location.

The above named applicant has requested that the U.S. Environmental Protection Agency ("EPA") reissue its NPDES permit to discharge into the designated receiving water. The discharge is from the Town's wastewater treatment plant, which provides secondary treatment. The wastewater flow consists primarily of domestic waste, but also contains a significant amount of inflow and infiltration during wet weather. The facility accepts a small quantity of wastewater (3.1% of total volume) from the adjacent town of Duxbury. The facility also accepts septage from Marshfield, Duxbury, Cohassett, Hanover, Pembroke, and Kingston. The facility has a grease pretreatment system which enables it to accept grease from local restaurants.

Effluent from the wastewater treatment plant discharges at a location approximately 3000 feet offshore, northeast of the tower at Brant Rock. The discharge is through a 12 port diffuser. A

map showing the location of the treatment plant and outfall is shown on Attachment A.

The outfall was repaired and stabilized during 1999. A summary of the outfall characteristics is shown below :

Distance offshore - 2900 feet to diffusers
3140 feet to end of diffuser zone

Number of Diffusers - 12

Spacing between ports - 40 feet between ports on same side
20 feet between alternating ports

Port/Nozzle diameter - 4.8 inches

Total Discharge - 5.7 MGD peak flow
2.1 MGD average design flow

Discharge Port Height - 1.5 feet above bottom

Vertical Discharge Angle - Design - 15 degrees above horizontal

Horizontal Angle - 90 degrees to outfall pipe (0 degrees to feeder pipes)

A dilution model of the discharge prepared by EPA indicates that the dilution factors are approximately 53/1 during average conditions and 44/1 during peak (peak flow, low tide, slack tidal current). The model predicts that this dilution is achieved at a distance of 17 feet (5.2 meters) from the discharge ports. This zone of initial dilution (ZID) is consistent with the recommended sizing of toxic dilution zones contained in EPA's Technical Support Document.

Massachusetts Bay has been classified as an SA water by Massachusetts. The designated uses for a Class SA water are 1) the protection and propagation of fish, other aquatic life and wildlife and 2) for primary and secondary contact recreation.

II. Description of Discharge.

The current discharge from the wastewater treatment facility consists of treated municipal wastewater containing BOD, TSS, fecal coliform, and other pollutants. A summary of effluent data submitted by the Town from November 2003 through November 2005 is shown on Attachment B.

III. Limitations and Conditions.

The effluent limitations of the draft permit and the monitoring requirements may be found in the draft NPDES permit.

IV. Permit Basis and Explanation of Effluent Limitation Derivation

The Marshfield wastewater treatment facility is designed to treat an average flow of 2.1 mgd (million gallon per day) with a peak flow of 5.7 mgd. The treatment processes include head-works, aeration basins and final clarifiers. Disinfection is performed by ultraviolet light. Aerobically digested liquid sludge is thickened by a Somat Vertical Thickening Unit and hauled offsite by private contractor to either the Upper Blackstone Regional Wastewater Treatment Facility in Massachusetts or to the Cranston, Rhode Island Wastewater Treatment Facility for disposal. The annual quantity of sludge is approximately 218 dry metric tons.

POTW Discharges :

EPA is required to consider technology and water quality requirements when developing permit effluent limits. Technology based treatment requirements represent the minimum level of control that must be imposed under Sections 402 and 301(b) of the Clean Water Act (CWA) (see 40 CFR 125 Subpart A). Publicly owned treatment works (POTWs) are required to achieve limits based on secondary treatment [see Section 301(b)(1)(B) of the CWA]. The secondary treatment requirements are set forth at 40 CFR Part 133.

Section 301(b)(1)(C) of the CWA requires NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve federal or state water quality standards.

The Massachusetts Surface Water Quality Standards (314 CMR 4.00) include the requirements for the regulation and control of toxic constituents and also require that EPA criteria established pursuant to Section 304(a) of the CWA shall be used unless site specific criteria are established. The State will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained.

The permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) that is or may be discharged at a level that caused, has reasonable potential to cause, or contributes to an excursion above any water quality criterion. An excursion occurs if the projected or actual in-stream concentrations exceed the applicable criterion. In determining reasonable potential, EPA considers existing controls on point and non-point sources of pollution, variability of the pollutant in the effluent, sensitivity of the species to toxicity and, where appropriate, the dilution of the effluent in the receiving water.

A permit may not be renewed, reissued, or modified with less stringent limitations or conditions

than those contained in the previous permit unless in compliance with the anti-backsliding requirement of the CWA.

EPA's anti-backsliding provisions are found in Section 402(o) and 303(d)(4) of the CWA and at 40 CFR 122.44(l). Anti-backsliding provisions restrict the relaxation of permits, standards, and conditions except under certain specific conditions. Effluent limits based on technology standards as well as those based on BPJ, water quality, and state certification must meet the anti-backsliding provisions.

Conventional Pollutants:

The effluent limitations for BOD and TSS are the same as those limits found in the previous permit. These limits are in accordance with the secondary treatment requirements at 40 CFR 133.102.

The numerical limitations for fecal coliform and pH are based on state certification requirements under Section 401(a)(1) of the CWA, as described in 40 CFR 124.53 and 124.55. The fecal coliform limits in the current permit are based on receiving water criteria for waters not designated for shellfishing. The actual receiving water quality standard is for open shellfishing [SA(O)], which has more stringent criteria. The effluent limits in the draft permit have therefore been set at the more stringent SA(O) criteria of 14 CFU/100 ml (monthly geometric mean) and 43 cfu/100 ml (maximum day). The limitations for pH are set at the SA water quality criteria of 6.5-8.5 standard units (SU) in accordance with the Massachusetts Surface Water Quality Standards.

In addition, EPA has established a monthly monitoring requirement for Enterococci to gather information for determining whether the discharge has the reasonable potential to cause or contribute to exceedances of recently promulgated federal water quality criteria established to protect primary contact recreational uses (see 40 CFR part 131 dated November 16, 2004). No limit is established at this time. EPA will review the results, and if necessary, reopen the permit and impose a limit.

Toxic Pollutants:

Certain metals like copper, nickel, cadmium and zinc can be toxic to aquatic life. EPA has evaluated the reasonable potential for the discharge of these metals to cause or contribute to violations of water quality standards (see below). Based on this evaluation, EPA has determined that there is no reasonable potential, and no need to limit or monitor these metals.

The calculation of reasonable potential for copper, lead, zinc and cadmium was done by calculating the allowable acute and chronic discharge concentration for each metal and comparing those values to the concentrations measured in the discharge. If the actual discharge concentration exceeds the allowable discharge concentration, there is reasonable potential and

the permit must contain an effluent limit for that pollutant. The effluent metals concentrations were taken from the Whole Effluent Toxicity Test Reports for the period from May 2001 to November 2005.

Allowable discharge concentrations were calculated using the following equation:

$$C = WQC \times DF$$

where C = allowable effluent concentration

WQC = water quality criteria for the metal, expressed as total recoverable metal

DF = the dilution factor,

As described earlier, the dilution model run by EPA calculated a dilution factor of 53 under average conditions and a dilution factor of 44 under critical conditions.

The water quality criteria for were obtained from National Recommended Water Quality Criteria:2002 . Since the discharge is to a marine water, the criteria for salt water were used. Each metal has two criteria, one for acute exposure and the other for chronic exposure. Acute criteria are generally used to calculate maximum daily limits and chronic criteria are used to calculate monthly average limits. Therefore, for each metal an allowable chronic exposure concentration limit (C_c) is calculated using the chronic criteria and the average dilution factor(53), and an allowable acute exposure concentration limit (C_a) is calculated using the acute criteria and the critical dilution factor (44).

Total Recoverable Copper:

Chronic Criteria = 3.7 ug/l

Acute Criteria = 5.8 ug/l

$$\begin{aligned} C_c &= WQC \times DF \\ &= 3.7 \times 53 = 196 \text{ ug/l which is greater than the effluent concentration range of 12 -} \\ &\quad 87 \text{ ug/l. So, reasonable potential does not exist.} \end{aligned}$$

$$\begin{aligned} C_a &= WQC \times DF \\ &= 5.8 \times 44 = 255 \text{ ug/l which is greater than the maximum effluent concentration of} \\ &\quad 87 \text{ ug/l. So, reasonable potential does not exist.} \end{aligned}$$

Total Recoverable Lead :

Chronic Criteria = 8.5 ug/l

Acute Criteria = 221 ug/l

$$\begin{aligned} C_c &= WQC \times DF \\ &= 8.5 \times 53 = 450 \text{ ug/l which is greater than the effluent concentration range of 2 - 3} \\ &\quad \text{ug/l. So, reasonable potential does not exist.} \end{aligned}$$

$C_a = 221 \times 44 = 9724 \text{ ug/l}$ which is greater than the maximum effluent concentration of 3 ug/l. So, reasonable potential does not exist.

Total Recoverable Zinc:

Chronic Criteria: 86ug/l

Acute Criteria: 95 ug/l

$C_c = 86 \times 53 = 4558 \text{ ug/l}$ which is far greater than the effluent concentration range of 20 - 70 ug/l. So, reasonable potential does not exist.

$C_a = 95 \times 44 = 4180 \text{ ug/l}$ which is far greater than the maximum effluent concentration of 70 ug/l. So, reasonable potential does not exist.

Total Recoverable Cadmium:

Chronic Criteria: 9.4 ug/l

Acute Criteria: 42.3 ug/l

$C_c = 9.4 \times 53 = 498 \text{ ug/l}$ which is far greater than the reported effluent concentration range of value of 0 to 5 ug/l. So, reasonable potential does not exist.

$C_a = 42.3 \times 44 = 1861 \text{ ug/l}$ which is far greater than the reported effluent concentration of value of 5 ug/l. So, reasonable potential does not exist.

Whole Effluent Toxicity:

National studies conducted by the Environmental Protection Agency have demonstrated that domestic sources contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents and aromatic hydrocarbons among others. The Region's current policy is to include toxicity testing requirements in all municipal permits, while Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts.

Based on the potential for toxicity resulting from domestic sewage, and in accordance with EPA regulation and policy, the draft permit includes acute toxicity limitations and monitoring requirements. (See, e.g., Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants, 50 Fed. Reg. 30,784 (July 24, 1985); see also, EPA's Technical Support Document for Water Quality-Based Toxicity Control). EPA Region I has developed a toxicity control policy. The policy requires wastewater treatment facilities to perform toxicity tests on their effluents. The Commonwealth of MassDEP requires bioassay toxicity testing for state certification. The frequency and the type of WET test depends on the dilution ratio and risk factor.

Pursuant to EPA Region I policy, discharges having a dilution ratio of more than 20 : 1 and

less than 100:1 require acute toxicity testing four times per year with $LC_{50} = 100\%$ with two species. The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) bioavailability of pollutants after discharge is best measured by toxicity testing including any synergistic effects of pollutants; and (3) pollutants for which there are inadequate chemical analytical methods or criteria can be addressed. Therefore, toxicity testing is being used in conjunction with pollutant specific control procedures to control the discharge of toxic pollutants.

The existing permit requires that the permittee conduct acute WET testing for the Outfall 001 effluent four times per year and that each test include the use of Mysid shrimp only. A review of the toxicity test data from January 2001 to September 2005 reveals that test results of LC-50 are consistently equal to or greater than 100% for the species. In a letter dated May 5, 2006, the permittee requested a reduction in the frequency of testing to two per year. Based on the above toxicity results, the frequency is reduced from four per year to two per year. The permittee is required to continue to test Mysid shrimp using the EPA Region I protocol found in permit attachment A.

As a condition of this permit, the testing requirements may be reduced by a certified letter from the EPA. This permit provision anticipates that the permittee may wish to request a reduction in WET testing. After four consecutive WET tests, demonstrating compliance with the permit limits for whole effluent toxicity, the permittee may submit a written request to the EPA seeking a review of the toxicity test results. The EPA will review the test results and pertinent information to make a determination. The permittee is required to continue testing at the frequency and species specified in the permit until the permit is either formally modified or until the permittee receives a certified letter from the EPA indicating a change in the permit conditions.

V. SLUDGE

Section 405(d) of the CWA requires that EPA develop technical standards regulating the use and disposal of sewage sludge. These regulations were signed on November 25, 1992, published in the Federal Register on February 19, 1993, and became effective on March 22, 1993. Domestic sludge which is land applied, disposed of in a surface disposal unit, or fired in a sewage sludge incinerator are subject to Part 503 technical standards. Part 503 regulations have a self implementing provision, however, the CWA requires implementation through permits. Domestic sludge which is disposed of in a municipal solid waste landfill is in compliance with Part 503 regulations provided that the sludge meets the quality criteria of the landfill and the landfill meets the requirements of 40 C.F.R. Part 258.

The draft permit requires that sewage sludge use and disposal practices meet Section 405(d) Technical Standards of the CWA. In addition, the EPA Region I – NPDES Permit Sludge Compliance Guidance document dated November 4, 1999 is available for use by the permittee in determining its appropriate sludge conditions for its chosen method of sludge disposal.

The draft permit requires that sewage sludge use and disposal practices meet the CWA Section

405(d) Technical Standards. In addition, EPA New England has included with the draft permit a 72-page *Sludge Compliance Guidance* document for use by the permittee in determining their appropriate sludge conditions for their chosen method of sludge disposal.

The permittee is also required to submit to EPA an annual report containing the information specified in the *Sludge Compliance Guidance* document for the permittee's chosen method of sludge disposal.

VI. INDUSTRIAL USERS

The permittee is required to identify, in terms of character and volume of pollutants, any significant indirect dischargers into the POTW subject to pretreatment standards under Section 307(b) of the CWA and 40 CFR Part 403.

VII. ANTIDEGRADATION

This draft permit is being reissued with an allowable wasteload identical to the current permit with no change in outfall location. The State of Massachusetts has indicated that there will be no lowering of water quality and no loss of existing water uses and that no additional antidegradation review is warranted.

VIII. ESSENTIAL FISH HABITAT DETERMINATION (EFH)

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 *et seq.* (1998)), EPA is required to consult with NMFS if EPA's action or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat. 16 U.S.C. § 1855(b). The Amendments broadly define essential fish habitat as: waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. 16 U.S.C. § 1802(10). Adversely impact means any impact which reduces the quality and/or quantity of EFH. 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

The following species (see Attachment C) are believed to be present during one or more life stages within the EFH Area, which encompasses the existing discharge site. No "habitat areas of particular concern", as defined under §600.815(a)(9) of the Magnuson-Stevens Act, have been designated for this site. Although EFH has been designated for this general location, EPA has concluded that this activity is not likely to adversely affect EFH or its associated species for the following reasons:

- This is a reissuance of an existing permit;
- The quantity of discharge from the WWTF is 2.1 mgd monthly average; Effluent receives minimum secondary treatment with the activated sludge process;
- Effluent is discharged into the Massachusetts Bay with an estimated dilution factor of 44;
- Chlorine is not used for disinfection;
- Acute toxicity tests will be conducted two times per year. Present toxicity test results are in compliance with the permit limits;
- The permit will prohibit any violation of state water quality standards.

Accordingly, EPA has determined that a formal EFH consultation with NMFS is not required. If adverse impacts to EFH are detected as a result of this permit action, NMFS will be notified and an EFH consultation will be promptly initiated.

IX. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the Massachusetts Department of Environmental Protection with jurisdiction over the receiving waters certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the Massachusetts Department of Environmental Protection has reviewed the draft permit. EPA has requested permit certification by the State pursuant to 40 CFR 124.53 and expects that the draft permit will be certified.

X. PUBLIC COMMENT PERIOD, PUBLIC HEARING, AND PROCEDURES FOR FINAL DECISION

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and a supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, MA Office of Ecosystem Protection, 1 Congress Street, Suite 1100 (CPE) Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing to EPA and the State Agency for a public hearing to consider the draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest in reaching a final decision on the draft permit. The Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston Office. Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the final permit decision, interested parties may petition the Environmental Appeals Board to review any condition of the permit decision. Regulations regarding the appeal of NPDES permits may be found at 40 CFR Part 124.19.

XI. EPA CONTACT

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Suprokash Sarker
MA Office of Ecosystem Protection
U.S. Environmental Protection Agency
1 Congress Street, Suite 1100 (CMP)
Boston, MA 02114-2023
Telephone: (617) 918-1693

Date

Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

Attachment-A



J

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 *et seq.*; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Town of Marshfield

is authorized to discharge from the facility located at

**Marshfield Wastewater Treatment Plant
P.O. Box 268
200 Joseph Driebeck Road
Brant Rock, MA 02020**

to receiving water named

Massachusetts Bay

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on (See ** below)

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on September 7, 2001.

This permit consists of 10 pages in Part I including effluent limitations, monitoring requirements, Attachments A and B, and Part II including General Conditions and Definitions.

Signed this day of

Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

** This permit will become effective on the date of signature if no comments are received during public notice. If comments are received during public notice, this permit will become effective no sooner than 30 days after the date of signature.

PART I

A.1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 001, treated effluent to Massachusetts Bay. Such discharges shall be limited and monitored as specified below.

EFFLUENT CHARACTERISTIC

EFFLUENT LIMITS

MONITORING REQUIREMENTS

PARAMETER	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	MEASUREMENT FREQUENCY	SAMPLE ³ TYPE
FLOW ² - ANNUAL AVERAGE	*****	*****	2.1 MGD	*****	*****	Continuous	Recorder
FLOW ²	*****	*****	Report MGD	*****	Report MGD	Continuous	Recorder
BOD ₅ ⁴	526 lbs/Day	789 lbs/Day	30 mg/l	45 mg/l	Report mg/l	1/Week	24-Hour Composite ⁵
TSS ⁴	526 lbs/Day	789 lbs/Day	30 mg/l	45 mg/l	Report mg/l	1/Week	24-Hour Composite ⁵
pH RANGE ¹	6.5 - 8.5 SU	SEE PERMIT PAGE 4 OF 10, PARAGRAPH 1A.1.b.			1/Day	Grab	
FECAL COLIFORM ^{1,6}	*****	*****	14 cfu/100 ml	*****	43 cfu/100 ml	3/Week	Grab
ENTEROCOCCUS	*****	*****	*****	*****	Report cfu/100ml	1/Month	Grab
WHOLE EFFLUENT TOXICITY SEE FOOTNOTES 7,8 and 9	Acute	LC ₅₀ ≥ 100%			2/Year	24-Hour Composite ⁵	

Effluent Sampling Point : BOD, TSS, pH, Fecal coliform and WET tests are performed at the open effluent channel after ultraviolet disinfection.

Footnotes:

1. Required for State Certification.
2. Report annual average, monthly average, and the maximum daily flow. The limit is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the eleven previous months.
3. All required effluent samples shall be collected at the point specified in Permit. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA.

All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. All samples shall be 24 hour composites unless specified as a grab sample in 40 CFR §136.

4. Sampling required for influent and effluent.
5. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one consecutive 24 hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.
6. Fecal coliform limits and monitoring will be in effect year-round. This is also a State certification requirement. Fecal coliform discharges shall not exceed a monthly geometric mean of 14 colony forming units per 100 ml, nor shall they exceed 43 cfu per 100 ml as a daily maximum.
7. The permittee shall conduct acute toxicity tests two times per year. The permittee shall test the Mysid shrimp only. Toxicity test samples shall be collected during the second week of the months of July and October. The test results shall be submitted by the last day of the month following the completion of the test. The results are due August 31st and November 30th respectively. The tests must be performed in accordance with test procedures and protocols specified in Attachment A of this permit.

Test Dates Second Week in	Submit Results By:	Test Species	Acute Limit LC_{50}	
July October	August 31 st November 30 th	Mysid shrimp See Attachment A	$\geq 100\%$	

After submitting two year and a minimum of four consecutive sets of WET test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.

8. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
9. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in Attachment A Section IV., **DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in Attachment A, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in Attachment A. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment A.

Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
- b. The pH of the effluent shall not be less than 6.5 nor greater than 8.5 at any time, unless these values are exceeded as a result of an approved treatment process.

- c. The discharge shall not cause objectionable discoloration of the receiving waters.
- d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
- e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
- f. The permittee is required, when the average annual flow in any calendar year exceeds 80% of the facilities design flow, to submit a report to MassDEP on how the permittee will remain in compliance with the limitations in the permit, specifically flow.
- g. The results of sampling for any parameter above its required frequency must also be reported.

2. All POTWs must provide adequate notice to the Director of the following:

- a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For purposes of this paragraph, adequate notice shall include information on:
 - (1) the quantity and quality of effluent introduced into the POTW; and
 - (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

3. Prohibitions Concerning Interference and Pass Through:

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

4. Toxics Control

- a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
- b. Any toxic components of the effluent shall not result in any demonstrable harm to

aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

5. Numerical Effluent Limitations for Toxicants

EPA or MassDEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall listed in Part I A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the General Requirements of this permit (Twenty-four hour reporting). [Note: SSO Reporting Form (which includes MassDEP Regional Office telephone numbers) for submittal of written report to MassDEP is available on-line at <http://www.mass.gov/dep/water/approvals/surffms.htm#sso>.]

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Preventative Maintenance Program

The permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

3. Infiltration/Inflow Control Plan:

The permittee shall develop and implement a plan to control infiltration and inflow (I/I)

to the separate sewer system. The plan shall be submitted to EPA and MassDEP within six months of the effective date of this permit (see page 1 of this permit for the effective date) and shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

The plan shall include:

- An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.
- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.
- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.
- An educational public outreach program for all aspects of I/I control, particularly private inflow.
- The permittee shall require, through appropriate agreements, that all member communities develop and implement infiltration and inflow control plans sufficient to ensure that high flows do not cause or contribute to a violation of the permittee's effluent limitations, or cause overflows from the permittee's collection system.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MassDEP annually, by March 31. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.
- A map with areas identified for I/I-related investigation/action in the coming year.

- A calculation of the annual average I/I, the maximum month I/I for the reporting year.
- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

4. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

D. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either the state or federal (40 CFR part 503), requirements.
3. The requirements and technical standards of 40 CFR part 503 apply to facilities which perform one or more of the following use or disposal practices:
 - a. Land application - the use of sewage sludge to condition or fertilize the soil
 - b. Surface disposal - the placement of sewage sludge in a sludge only landfill
 - c. Sewage sludge incineration in a sludge only incinerator
4. The 40 CFR part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (lagoons- reed beds), or are otherwise excluded under 40 CFR 503.6.
5. The permittee shall use and comply with the attached compliance guidance (Attachment B) document to determine appropriate conditions. Appropriate conditions contain the following elements:
 - General requirements
 - Pollutant limitations
 - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)

- Management practices
- Record keeping
- Monitoring
- Reporting

Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year:

less than 290	1 / year
290 to less than 1500	1 / quarter
1500 to less than 15000	6 / year
15000 +	1 / month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.
8. The permittee shall submit an annual report containing the information specified in the guidance by **February 19**. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report by **February 19** containing the following information:

- Name and address of contractor responsible for sludge disposal
- Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

E. MONITORING AND REPORTING

1. Reporting

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the month following the effective date of the permit.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection
Southeast Regional Office - Bureau of Resource Protection
20 Riverside Drive
Lakeville, MA 02347

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

F. STATE PERMIT CONDITIONS

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap.21, §43.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.

**MARINE ACUTE
TOXICITY TEST PROCEDURE AND PROTOCOL**

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- Mysid Shrimp (*Mysidopsis bahia*) definitive 48 hour test.
- Pale Silverside (*Menidia beryllina*) definitive 48 hour test.

Acute toxicity data shall be reported as outlined in Section VIII.

II. METHODS

Methods to follow are those recommended by EPA in:

Weber, C.I. et al. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, Fourth Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH. August 1993, EPA/600/4-90/027F.

Any exceptions are stated herein.

III. SAMPLE COLLECTION

A discharge sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for the chemical and physical analyses. The remaining sample shall be dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual oxidants (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. A thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) should also be run.

All samples held overnight shall be refrigerated at 4°C.

IV. DILUTION WATER

A grab sample of dilution water used for acute toxicity testing shall be collected at a point away from the discharge which is free from toxicity or other sources of contamination. Avoid collecting near areas of obvious road or agricultural runoff, storm sewers or other point source discharges. An additional control (0% effluent) of a standard laboratory water of known quality shall also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a conductivity, salinity, total suspended solids, and pH similar to that of the receiving water may be substituted **AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S)**. Written requests for use of an alternative dilution water should be mailed with supporting documentation to the following address:

Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency-New England
JFK Federal Building (CAA)
Boston, MA 02203

It may prove beneficial to have the proposed dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA New England requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Mysid and Menidia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND RECOMMENDED EFFLUENT TOXICITY TEST CONDITIONS FOR
THE MYSID, MYSIDOPSIS BAHIA 48 HOUR TEST¹

1. Test type	Static, non-renewal
2. Salinity	25ppt \pm 10 percent for all dilutions by adding dry ocean salts
3. Temperature (°C)	20°C \pm 1°C or 25°C \pm 1°C
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml
7. Test solution volume	200 ml
8. Age of test organisms	1-5 days
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration ²	None
14. Dilution water	Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	≥ 0.5
16. Number of dilutions ³	5 plus a control. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.

17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

Footnotes:

1. Adapted from EPA/600/4-90/027F.
2. If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.
3. When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

EPA NEW ENGLAND RECOMMENDED TOXICITY TEST CONDITIONS FOR THE
INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST¹

1. Test Type	Static, non-renewal
2. Salinity	25 ppt \pm 2 ppt by adding dry ocean salts
3. Temperature	20°C \pm 1°C or 25°C \pm 1°C
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration ²	None
14. Dilution water	Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	≥ 0.5
16. Number of dilutions ³	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

1. Adapted from EPA/600/4-90/027F.
2. If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.
3. When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	<u>Minimum Quanti- fication</u>	<u>Level (mg/L)</u>
pH	x	x	---	
Salinity	x	x	PPT (o/oo)	
Total Residual Oxidants* ¹	x	x	0.05	
Total Solids and Suspended Solids	x	x	---	
Ammonia	x	x	0.1	
Total Organic Carbon	x	x	0.5	

Total Metals

Cd	x	0.001
Cr	x	0.005
Pb	x	0.005
Cu	x	0.0025
Zn	x	0.0025
Ni	x	0.004
Al	x	0.02

Superscript:

*¹ Total Residual Oxidants

Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

- Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
- Method 4500-CL G DPD Photometric Method.

or use USEPA Manual of Methods Analysis of Water or Wastes, Method 330.5.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See flow chart in Figure 6 on page 77 of EPA 600/4-90/027F for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 94 of EPA 600/4-90/027F.

VIII. TOXICITY TEST REPORTING

The following must be reported:

- Description of sample collection procedures, site description;
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody; and
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicity test data must be included.
- Raw data and bench sheets.
- All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
- Provide a description of dechlorination procedures (as applicable).
- Any other observations or test conditions affecting test outcome.
- Statistical tests used to calculate endpoints.

DNR DATA & VIOLATIONS REPORT

QL ***** QL *****

NPID	FNMS	CYNM	RWAT	TYPE	SIC2
MA0101737	MARSHFIELD, TOWN OF	MARSHFIELD	MASSACHUSETTS BAY	PUB	4952
DSDG PIPE	FLSD	FLED	ALLP		
001Q QUARTERLY TOXICITY DATA	09/01/01 08/31/06	NNNNNNNNNNNNNNNNNN			
PRAM	LOAV	LQMX	LQUC	LCAV	LCMX
LC50 STAT 48HR ACU MYSID. BAHIA	LOAS	LOKS		DELMON	LCUC
ALLS	---	---		LCAS	LCXS
NNNNNNNNNNNNNNNN	NVIO MVDT	NODI	MQAV	MQMX	MCMX
E00 12/31/03	---	---	---	100	0
E00 03/31/04	---	---	---	100	0
E00 06/30/04	---	---	---	100	0
E00 09/30/04	---	---	---	100	0
E00 12/31/04	---	---	---	100	0
E00 06/30/05	---	---	---	100	0
E00 09/30/05	---	---	---	100	0
DSDG PIPE	FLSD	FLED	ALLP	DC	
001A TREATMENT PLANT EFFLUENT	09/01/01 08/31/06	YYYYYYYYYYYY			
PRAM	LOAV	LQMX	LQUC	LCAV	LCMX
BOD, 5-DAY	(20 DEG. C)	ADDMON	LBS/DY	ADDMON	LCUC
ALLS	LOAS	LOKS		LCAS	LCXS
NNNNNNNNNNNNNNNN	MK	WA		MK	DD
NVIO MVDT	NODI	MQAV	MQMX	MCMX	VOAV
E00 11/30/03	841.9	865.6	84.92	86.50	0
E00 12/31/03	1033	1074	86.95	90.37	0
E00 01/31/04	790.15	830.79	86.92	91.39	0
E00 02/29/04	792.7	863	84.11	90.85	0
E00 03/31/04	940.2	1115	88.77	105.29	0
E00 04/30/04	954	978	87.33	89.56	0
E00 05/31/04	852	973	93.69	107.05	0
E00 06/30/04	851.9	889.3	87.3	91.1	0
E00 07/31/04	871.	893	87.1	89.8	0
E00 08/31/04	882.	882	88.3	92.5	0

DMR DATA & VIOLATIONS REPORT

MV10 MVDT	NODI	MQAV	MQMX	MQMN	MCAV	MCMX	VQAV	VQMX	VCMN	VCAV	VCMX
E00 09/30/04		924.25	1063.3		89.88	103.4	0	0	0	0	0
E00 10/31/04		941	960		90.3	92.1	0	0	0	0	0
E00 11/30/04		836	876		87.16	91.31	0	0	0	0	0
E00 12/31/04		871	901		87	90	0	0	0	0	0
E00 01/31/05		903.8	1010.7		83.4	90.4	0	0	0	0	0
E00 02/28/05		904.4	973.9		85.39	91.95	0	0	0	0	0
E00 03/30/05		940.1	1128.8		91.94	93.07	0	0	0	0	0
E00 05/31/05		1094.8	1654.9		90.38	94.64	0	0	0	0	0
E00 06/30/05		860.6	1050.3		91.23	99.06	0	0	0	0	0
E00 07/31/05		892.3	981.9		89.22	90.02	0	0	0	0	0
E00 08/31/05		940.8	1006.6		92.71	99.29	0	0	0	0	0
E00 09/30/05		862.9	945.7		92.08	98.12	0	0	0	0	0
E00 10/31/05		1326	1991.6		105.64	153.5	0	0	0	0	0
E00 11/30/05		1223.4	1585.2		95.39	98.43	0	0	0	0	0
(20 DEG. C)		526	789	LQDC	LQMN	LCAV	LCMX	LCUC	FRAN	MLOC	
				LQAS	LQXS	LCMS	LCAS	LCXS			
				MK	WA	MK	WA	DD			
MV10 MVDT	NODI	MQAV	MQMX	MQMN	MCAV	MCMX	VQAV	VQMX	VCMN	VCAV	VCMX
E00 11/30/03		19.5	30.4		1.95	3.04	0	0	0	0	0
E00 12/31/03		26.8	30.4		2.16	2.45	0	0	0	0	0
E00 01/31/04		20.36	22.09		2.24	2.43	0	0	0	0	0
E00 02/29/04		18.37	19.86		2.21	2.39	0	0	0	0	0
E00 03/31/04		18.8	20.9		2.27	2.53	0	0	0	0	0
E00 04/30/04		26.4	33.1		2.42	3.03	0	0	0	0	0
E00 05/31/04		21.6	24.8		2.51	2.89	0	0	0	0	0
E00 06/30/04		21.9	24		2.7	3	0	0	0	0	0
E00 07/31/04		23.4	28.4		2.6	3.1	0	0	0	0	0
E00 08/31/04		20.8	22.8		2.49	2.73	0	0	0	0	0
E00 09/30/04		22.99	26.4		2.64	3.03	0	0	0	0	0
E00 10/31/04		30.2	36.1		3.3	3.9	0	0	0	0	0
E00 11/30/04		32.5	43.4		3.0	4.0	0	0	0	0	0
E00 12/31/04		26	28		2.6	2.8	0	0	0	0	0
E00 01/31/05		35	42		3	3.6	0	0	0	0	0
E00 02/28/05		41.7	46.3		3.6	3.9	0	0	0	0	0
E00 04/30/05		43.3	52.8		3.9	4.32	0	0	0	0	0
E00 05/31/05		46.2	64.9		4.2	4.2	0	0	0	0	0
E00 06/30/05		35.3	45.3		3.81	4.04	0	0	0	0	0
E00 07/31/05		36.7	40		3.66	3.9	0	0	0	0	0
E00 08/31/05		34.9	38.4		4	4.17	0	0	0	0	0
E00 09/30/05		33.5	35.2		3.78	3.87	0	0	0	0	0
E00 10/31/05		69.5	126.6		4.86	4.95	0	0	0	0	0

PRAM
BOD, 5-DAY
ALLS
YYYYYYYYYY

QL ***** PAGE: 3 *****

MVIO	MVDT	NODI	MQAV	MQMX	MCMN	MCAV	MCMX	VQAV	VQMX	VCMN	VCAV	VCMX
E00	11/30/05	56.6	68.2		4.02	4.64	4.86	0	0	0	0	0

PRAM

PH

ALLS	YYYYYYYYYY
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MVIO	MVDT	NODI	MQAV	MQMX	MCMN	MCAV	MCMX	VQAV	VQMX	VCMN	VCAV	VCMX
E00	11/30/03				6.7		7.4	0	0	0	0	0
E00	12/31/03				6.5		7.5	0	0	0	0	0
E00	01/31/04				6.7		7.4	0	0	0	0	0
E00	02/29/04				6.62		7.29	0	0	0	0	0
E00	03/31/04				6.7		7.3	0	0	0	0	0
E00	04/30/04				6.9		7.4	0	0	0	0	0
E00	05/31/04				6.7		7.2	0	0	0	0	0
E00	06/30/04				6.6		7.3	0	0	0	0	0
E00	07/31/04				6.7		7.3	0	0	0	0	0
E00	08/31/04				6.5		7.2	0	0	0	0	0
E00	09/30/04				6.8		7.2	0	0	0	0	0
E00	10/31/04				6.7		7.1	0	0	0	0	0
E00	11/30/04				6.8		7.2	0	0	0	0	0
E00	12/31/04				6.6		7.1	0	0	0	0	0
E00	01/31/05				6.9		7.3	0	0	0	0	0
E00	02/28/05				6.5		7.0	0	0	0	0	0
E00	04/30/05				6.5		7.3	0	0	0	0	0
E00	05/31/05				6.5		7.4	0	0	0	0	0
E00	06/30/05				6.5		7.6	0	0	0	0	0
E00	07/31/05				6.7		7.6	0	0	0	0	0
E00	08/31/05				6.7		7.4	0	0	0	0	0
E00	09/30/05				6.6		7.4	0	0	0	0	0
E00	10/31/05				6.5		7.2	0	0	0	0	0
E90	11/30/05				6.3		7.3	0	0	3	0	0

PRAM

SOLIDS, TOTAL	SUSPENDED
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ALLS	YYYYYYYYYY										
LOAS	LOQS			LCMN	LCAV	LCMX	LCUC			FRAN	MLOC
MK	WA			MK	WA	DD				01/07	G

MVIO	MVDT	NODI	MQAV	MQMX	MCMN	MCAV	MCMX	VQAV	VQMX	VCMN	VCAV	VCMX
E00	11/30/03	3060	4775		305.8	477.14	477.14	0	0	0	0	0

QL

MVTO	MVDT	NODI	MQAV	MQMX	MCMN	MCAN	MCMX	MQAV	VQMX	VCMN	VCAV	VCMX
E00	12/31/03		2457	2774	207.4	234.28	234.28	0	0	0	0	0
E00	01/31/04		1784.9	2620.18	196.35	288.23	288.23	0	0	0	0	0
E00	02/29/04		1986	2682	211	285	285	0	0	0	0	0
E00	03/31/04		2400	2971	226.6	280.5	280.5	0	0	0	0	0
E00	04/30/04		2437	2795	223.1	255.8	255.8	0	0	0	0	0
E00	05/31/04		2271	2616	249.9	287.8	287.8	0	0	0	0	0
E00	06/30/04		4485	9520	459.7	975.6	975.6	0	0	0	0	0
E00	07/31/04		2338.	2638.	233.6	163.6	163.6	0	0	0	0	0
E00	08/31/04		1939	2248	195.36	226.5	226.5	0	0	0	0	0
E00	09/30/04		321.32	6067.5	313.23	591.48	591.48	0	0	0	0	0
E00	10/31/04		3409	4277	328	408	408	0	0	0	0	0
E00	11/31/04		3941	4326	410.9	451.2	451.2	0	0	0	0	0
E00	12/31/04		3873	5064	387	506	506	0	0	0	0	0
E00	01/31/05		2314	3090	213.4	284.6	284.6	0	0	0	0	0
E00	02/28/05		2485	4134	234.64	390.32	390.32	0	0	0	0	0
E00	04/30/05		4367	6127	440.06	587.8	587.8	0	0	0	0	0
E00	05/31/05		5938	14450	431.56	794.13	794.13	0	0	0	0	0
E00	06/30/05		3137	3963	332.46	378	378	0	0	0	0	0
E00	07/31/05		3776	4336	380.04	452.63	452.63	0	0	0	0	0
E00	08/31/05		4557	5690	447.48	600	600	0	0	0	0	0
E00	09/30/05		3446	4443	371.17	512.82	512.82	0	0	0	0	0
E00	10/31/05		4204	5329	377.62	593.33	593.33	0	0	0	0	0
E00	11/30/05		3323	5093	254.63	325.25	325.25	0	0	0	0	0
PRAM			LQAV	LQMX	LQUC	LCMN	LCAN	LCMX	LCUC	LCMX	LCUC	LCMX
SOLIDS, TOTAL			526	789	LBS/DY	30	45	ADDMN	MG/L	FRAN	MLOC	01/07 1
ALLS			LOAS	LQXS	LCMS	LCAS	LCXS	DD	DD			
YYYYYYYYYY			MK	WA	MK	WA	MK					
MVTO	MVDT	NODI	MQAV	MQMX	MCMN	MCAN	MCMX	MQAV	VQMX	VCMN	VCAV	VCMX
E00	11/30/03		241.3	256.6	24.11	25.64	25.64	0	0	0	0	0
E00	12/31/03		280.8	335.9	22.60	27.03	27.03	0	0	0	0	0
E00	01/31/04		199.08	259.08	21.9	28.5	28.5	0	0	0	0	0
E00	02/29/04		166	208	20	25	25	0	0	0	0	0
E00	03/31/04		185.7	236.4	22.45	28.57	28.57	0	0	0	0	0
E00	04/30/04		241.2	289.2	22.08	26.47	26.47	0	0	0	0	0
E00	05/31/04		190.4	209.5	21.95	24.39	24.39	0	0	0	0	0
E00	06/30/04		195	232	24	28.6	28.6	0	0	0	0	0
E00	07/31/04		183.3	262.1	20.5	26.2	26.2	0	0	0	0	0
E00	08/31/04		195	218	23.41	26.19	26.19	0	0	0	0	0
E00	09/30/04		165.9	237.4	19.05	27.27	27.27	0	0	0	0	0
E00	10/31/04		221	250	24	27	27	0	0	0	0	0
E00	11/30/04		241	306	22.2	28.2	28.2	0	0	0	0	0
E00	12/31/04		244	277	24.4	27.7	27.7	0	0	0	0	0

QL *****

MVIO	MVDT	NODI	MQAV	MQMX	MCMN	MCAV	MCMX	VQAV	VQMX	VCMN	VCAV	VCMX
E00	01/31/05		228	284		19.5	24.3	24.36	0	0	0	0
E00	02/28/05		77.2	267.4		6.66	23.07	0	0	0	0	0
E00	04/30/05		222.3	296.6		19.59	26.19	0	0	0	0	0
E00	05/31/05		247.8	354.9		20.18	26.66	0	0	0	0	0
E00	06/30/05		267.6	324.2		27.84	28.57	0	0	0	0	0
E00	07/31/05		241.7	267.4		26.3	29.26	0	0	0	0	0
E00	08/31/05		237.1	275		26.35	29.26	0	0	0	0	0
E00	09/30/05		246.1	263.6		27.68	28.41	29.16	0	0	0	0
E00	10/31/05		395.3	613		27.38	28.57	28.57	0	0	0	0
E00	11/30/05		275.6	367.8		19.36	26.08	26.08	0	0	0	0

PRAM FLOW, IN CONDUIT OR THRU TREATMENT PLANT 2.1 ADDMON

ALLS	LOAS	LOQX	LOUC	LCMN	LCAV	LCMX	LCUC	FRAN	MLOC
YYYYYYYYYYYY	1D	DD	MGD	LCMN	LCAS	LCKS		99/99	1

MVIO	MVDT	NODI	MQAV	MQMX	MCMN	MCAV	MCMX	VQAV	VQMX	VCMN	VCAV	VCMX
E00	11/30/03		1.09	1.58				0	0	0	0	0
E00	12/31/03		1.175	2.7469				0	0	0	0	0
E00	01/31/04		1.19	1.28				0	0	0	0	0
E00	02/29/04		1.119	1.195				0	0	0	0	0
E00	03/31/04		1.182	1.154				0	0	0	0	0
E00	04/30/04		1.17	1.90				0	0	0	0	0
E00	05/31/04		1.180	1.204				0	0	0	0	0
E00	06/30/04		1.182	1.180				0	0	0	0	0
E00	07/31/04		1.18	1.3				0	0	0	0	0
E00	08/31/04		1.161	1.155				0	0	0	0	0
E00	09/30/04		1.045	1.55				0	0	0	0	0
E00	10/31/04		1.1	1.4				0	0	0	0	0
E00	11/30/04		1.11	1.7				0	0	0	0	0
E00	12/31/04		1.1	2.1				0	0	0	0	0
E00	01/31/05		1.41	2.1				0	0	0	0	0
E00	02/28/05		1.17	1.95				0	0	0	0	0
E00	04/30/05		1.225	2.219				0	0	0	0	0
E00	05/31/05		1.43	2.43				0	0	0	0	0
E00	06/30/05		1.44	1.41				0	0	0	0	0
E00	07/31/05		1.4	1.287				0	0	0	0	0
E00	08/31/05		1.09	1.47				0	0	0	0	0
E00	09/30/05		1.297	1.423				0	0	0	0	0
E00	10/31/05		1.35	3.65				0	0	0	0	0
E00	11/30/05		1.36	2.95				0	0	0	0	0

PRAM	LOAV	LOQX	LCMN	LCAV	LCMX	LCUC	FRAN	MLOC
COLIFORM, FECAL	GENERAL		200	400	400	# / 100ML	03/07	1

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ALLS	YYYYYYYYYY	LOAS	LOXS	LCMS	LCAS	LCXS
------	------------	------	------	------	------	------

MVIO	MVDT	NODI	MQAV	MQMX	MCMN	MCAN	MQAV	MQMX	VCMN	VCAV	VCMX
E00	11/30/03				3.8	7.0	7.0	0	0	0	0
E00	12/31/03				4.1	6.0	6.0	0	0	0	0
E00	01/31/04				4.4	6.0	6.0	0	0	0	0
E00	02/29/04				4.9	6.0	6.0	0	0	0	0
E00	03/31/04				5.6	8.0	8.0	0	0	0	0
E00	04/30/04				6.5	8	8	0	0	0	0
E00	05/31/04				5.1	7.0	7.0	0	0	0	0
E00	06/30/04				8.9	16	21	0	0	0	0
E00	07/31/04				10.1	15.0	15.0	0	0	0	0
E00	08/31/04				8.3	13	13	0	0	0	0
E00	09/30/04				10.2	15	15	0	0	0	0
E00	10/31/04				5.9	9	9	0	0	0	0
E00	11/30/04				8.8	13	13	0	0	0	0
E00	12/31/04				10.8	17	17	0	0	0	0
E00	01/31/05				10.1	13	17	0	0	0	0
E00	02/28/05				14.6	15.7	19	0	0	0	0
E00	04/30/05				24.9	28	31	0	0	0	0
E90	05/31/05				52.7	114.6	471	0	0	0	18
E00	06/30/05				49.3	64.9	89	0	0	0	0
E00	07/31/05				68.6	79	93	0	0	0	0
E00	08/31/05				48	52.1	59	0	0	0	0
E00	09/30/05				50.1	56.8	63	0	0	0	0
E00	10/31/05				45.1	55.3	57	0	0	0	0
E00	11/30/05				39.1	42.2	47	0	0	0	0

PRAM

BOD, 5-DAY PERCENT REMOVAL

ALLS	YYYYYYYYYY	LOAV	LOMX	LOUC	LCMN	LCAN	LCMX	LCUC	FRAN	MLOC
		LOAS	LOXS		85	DELMON	DELMON	PER-CENT	01/30	K
						LCMS	LCAS	LCXS		
						MEK				

MVIO	MVDT	NODI	MQAV	MQMX	MCMN	MCAN	MQAV	MQMX	VCMN	VCAV	VCMX
E00	11/30/03				97.13		0	0	0	0	0
E00	12/31/03					97.52	0	0	0	0	0
E00	01/31/04					97.4	0	0	0	0	0
E00	02/29/04					97.4	0	0	0	0	0
E00	03/31/04					97.4	0	0	0	0	0
E00	04/30/04					97	0	0	0	0	0
E00	05/31/04					97.3	0	0	0	0	0
E00	06/30/04					97	0	0	0	0	0
E00	07/31/04					97.1	0	0	0	0	0

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MVIO	MVDT	NODI	MQAV	MQMX	MCMN	MCAV	MCMX	VQAV	VQMX	VCMN	VCAV	VCMX
E00	08/31/04				97.18			0	0	0	0	0
E00	09/30/04				97.1			0	0	0	0	0
E00	10/31/04				96			0	0	0	0	0
E00	11/30/04				96.5			0	0	0	0	0
E00	12/31/04				97			0	0	0	0	0
E00	01/31/05				96.3			0	0	0	0	0
E00	02/28/05				95.7			0	0	0	0	0
E00	04/30/05				95.76			0	0	0	0	0
E00	05/31/05				95.79			0	0	0	0	0
E00	06/30/05				95.98			0	0	0	0	0
E00	07/31/05				95.52			0	0	0	0	0
E00	08/31/05				95.79			0	0	0	0	0
E00	09/30/05				95.89			0	0	0	0	0
E00	10/31/05				95.5			0	0	0	0	0
E00	11/30/05				95.69			0	0	0	0	0

PRAM

SOLIDS, SUSPENDED PERCENT REMOVAL

ALLS

YYYYYYYYYY

PRAM	SOLIDS, SUSPENDED	PERCENT REMOVAL	LQAV	LQMX	LQUC	LCMN	LCAV	LCMX	LCUC	FRAN	MLOC	
ALLS	ALLS	ALLS	LQAS	LQKS	LQUC	LCMS	LCAS	LCMX	LCUC	PER- CENT	01/30 K	
YYYYYYYYYY	YYYYYYYYYY	YYYYYYYYYY	MQAV	MQMX	NODI	MCMN	MCAV	MCMX	VQAV	VQMX	VCMN	VCAV
						91.13			0	0	0	0
						88.97			0	0	0	0
						88.6			0	0	0	0
						90.1			0	0	0	0
						89.9			0	0	0	0
						90			0	0	0	0
						90.9			0	0	0	0
						93			0	0	0	0
						97.1			0	0	0	0
						87.98			0	0	0	0
						91.4			0	0	0	0
						92			0	0	0	0
						94.4			0	0	0	0
						93			0	0	0	0
						90.8			0	0	0	0
						91.4			0	0	0	0
						94.76			0	0	0	0
						94.43			0	0	0	0
						91.47			0	0	0	0
						93.03			0	0	0	0
						93.71			0	0	0	0
						91.84			0	0	0	0

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MVIO	MVDT	NODI	MQAV	MQMX	MCMN	MCAV	MCMX	VQAV	VQMX	VCMN	VCAV	VCMX
E00	10/31/05				91.6		0	0	0	0	0	0
E00	11/30/05				92.11		0	0	0	0	0	0

TOTAL QUICK LOOK PRINT LINES:

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National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish 2003

Model Ordinance

IV. Shellstock Growing Areas

Table of Contents

Requirements for the Authority

[Note: The Authority must meet the requirements of this section even if the Authority does not formally adopt this chapter in regulation.]

Additional Guidance - IV. Guidance Documents
[Chapter II.03 Sanitary Survey and the Classification of Growing Waters](#)
[Chapter II.05 Management Plans for Growing Areas in the Conditional Classification](#)
[Chapter II.07 Systematic Random Sampling Monitoring Strategy](#)

@.01 Sanitary Survey.

A.General.

- (1) The sanitary survey is the written evaluation report of all environmental factors, including actual and potential pollution sources, which have a bearing on water quality in a shellfish growing area. The sanitary survey shall include the data and results of:
 - (a) A shoreline survey;
 - (b) A survey of the bacteriological quality of the water;
 - (c) An evaluation of the effect of any meteorological, hydrodynamic, and geographic characteristics on the growing area;
 - (d) An analysis of the data from the shoreline survey, the bacteriological and the hydrodynamic, meteorological and geographic evaluations; and
 - (e) A determination of the appropriate growing area classification.
- (2) The sanitary survey shall be periodically updated through the triennial reevaluation and the annual review in accordance with §C. to assure that data is current and that conditions are unchanged.
- (3) The documentation supporting each sanitary survey shall be maintained by the

Authority. For each growing area, the central file shall include all data, results, and analyses from:

- (a) The sanitary survey;
- (b) The triennial reevaluation; and
- (c) The annual review.

(4) Wherever possible, the Authority shall provide the necessary information to Federal, State, or local agencies which have the responsibility to minimize or eliminate pollution sources identified in the sanitary survey.

(5) The Authority shall maintain a current comprehensive, itemized list of all growing areas, including maps showing the boundaries and classification of each shellstock growing area.

B. Sanitary Survey Required.

- (1) A sanitary survey shall not be required to classify growing areas as prohibited. The findings of a sanitary survey, however, may result in a growing area being classified as prohibited.
- (2) A sanitary survey, including the triennial reevaluation, when available, of each growing area shall be required prior to:
 - (a) The harvest of shellstock for human consumption; and
 - (b) The classification of a growing area as approved, conditionally approved, restricted, or conditionally restricted.

C. Sanitary Survey Performance.

- (1) A sanitary survey of each growing area shall be performed at least once every twelve years and shall include the components in §A. (1).
- (2) When a written sanitary survey report is not completed, the area shall be placed in the closed status.
- (3) The growing area classification and the supporting data from the sanitary survey shall be reviewed at least every three years.
 - (a) This triennial reevaluation shall include:
 - (i) A review in accordance with §C. (5) and (6) of the water quality samples;
 - (ii) Documentation of any new pollution sources and an evaluation of their effect on the growing area;
 - (iii) Reevaluation of all pollution sources, including the sources previously identified in the sanitary survey, as necessary to fully evaluate any changes in the sanitary conditions of the growing area. The reevaluation

may or may not include a site visit;

- (iv) A comprehensive report which analyzes the sanitary survey data and makes a determination that the existing growing area classification is correct or needs to be revised; and
- (v) If the triennial reevaluation determines that conditions have changed based on the information and data collected during the triennial review and that the growing area classification is incorrect, immediate action shall be initiated to reclassify the area.

(b) When a written triennial reevaluation report is not completed, the Authority shall place the growing area in the closed status.

(4) The triennial reevaluation may include:

- (a) Inspection of wastewater treatment plants or collection of additional effluent samples to determine their impact on the growing area;
- (b) Hydrodynamic studies;
- (c) Additional field work to determine the actual impact of pollution sources; and
- (d) Collection of additional water samples.

(5) On an annual basis, the sanitary survey shall be updated to reflect changes in the conditions in the growing area. The annual reevaluation shall include:

- (a) A field observation of the pollution sources which may include:
 - (i) A drive-through survey;
 - (ii) Observations made during sample collection; and
 - (iii) Information from other sources.
- (b) Review, at a minimum, of the past year's water quality sample results by adding the year's sample results to the data base collected in accordance with the requirements for the bacteriological standards and sample collection required in §.02;
- (c) Review of available inspection reports and effluent samples collected from pollution sources;
- (d) Review of available performance standards for various types of discharges that impact the growing area; and
- (e) A brief report which documents the findings of the annual reevaluation.

(6) If the annual reevaluation determines that conditions have changed based on the information and data collected during the annual review and that the growing area classification is incorrect, immediate action shall be initiated to reclassify the area.

D. Shoreline Survey Requirements.

- (1) In the shoreline survey for each growing area, the Authority shall:
 - (a) Identify and evaluate all actual and potential sources of pollution which may affect the growing area;
 - (b) Determine the distance from the pollution sources to the growing area and the impact of each source on the growing area;
 - (c) Assess the reliability and effectiveness of sewage or other waste treatment systems;
 - (d) Determine if poisonous or deleterious substances adversely affect the growing area; and
 - (e) Consider the presence of domestic, wild animal or resident and migrating bird populations for possible adverse effects on growing areas.
- (2) The Authority shall assure that the shoreline survey meets the following minimum requirements:
 - (a) The boundaries, based on the area topography, of each shoreline survey area are determined by an in-field investigation which identifies only the properties with the potential to impact the shellfish waters;
 - (b) Each shoreline survey area is identified by a unique designation which results in identification of all data associated with each shoreline survey by the unique designation;
 - (c) Each shoreline survey area is investigated and pollution sources evaluated by qualified, trained personnel; and
 - (d) Documentation for each pollution source identified by the Authority as affecting a growing area includes:
 - (i) The location of the site on a comprehensive map of the survey area; and
 - (ii) The determination that the pollution source has a direct or indirect impact on shellfish waters: and
 - (e) A written summary of the survey findings.

@.02 Bacteriological Standards.

Additional Guidance - IV. Guidance Documents
Chapter II.01 Total Coliform Standards

Note: The NSSP allows for a growing area to be classified using either a total or fecal coliform standard. The NSSP further allows the application of either standard to different water bodies within the state. The NSSP also allows for two sample collection strategies for the application of the total or fecal coliform standard: adverse pollution condition and systematic random sampling. The 1992 Task Force II recommended that this portion of the Ordinance be codified in two ways: a total coliform strategy and a fecal coliform strategy so that the state may choose sampling plans on a growing area basis. Within each strategy, provisions would appear for use of both systematic and adverse pollution condition sample collection. The Ordinance has been recodified in this manner. For maximum flexibility, a state may wish to adopt the use of both

standards and both sampling strategies for each standard. This codification represents the fecal coliform standards.

A.General. Either the total coliform or fecal coliform standard shall be applied to a growing area.

B.Water Sample Stations. The Authority shall assure that the number and location of sampling stations is adequate to effectively evaluate all pollution sources.

C.Exceptions.

(1) Except for growing areas classified as prohibited, in growing areas where there are pollution sources having an impact on the water quality, a minimum of 30 samples, collected under various environmental conditions, shall be required to classify any growing area not previously classified under §.03.

(2) Except for growing areas classified as prohibited or when the systematic random sampling standard is applied, in growing areas where there are no pollution sources having an impact on the water quality, a minimum of 15 samples shall be required to classify any growing area not previously classified under §.03.

D.Standard for the Approved Classification of Growing Areas in the Remote Status.

(1) Water Quality. The bacteriological quality of every station in the growing area shall meet the fecal coliform standard below.

(2) Fecal Coliform Standard for the Remote Status. The fecal coliform median or geometric mean MPN or MF (mTEC) of the water sample results shall not exceed 14 per 100 ml, and not more than 10 percent of the samples shall exceed an MPN or MF (mTEC) of:

- (a) 43 MPN per 100 ml for a five tube decimal dilution test;
- (b) 49 MPN per 100 ml for a three-tube decimal dilution test;
- (c) 28 MPN per 100 ml for a twelve-tube single dilution test; or
- (d) 31 CFU per 100 ml for a MF (mTEC) test.

(3) Required Sample Collection.

- (a) A minimum of two samples shall be collected annually.
- (b) A minimum of the most recent 15 samples collected shall be used to calculate the median or geometric mean and percentage to determine compliance with the standard established for the approved classification of remote growing areas.

E.Standard for the Approved Classification of Growing Areas Affected By Point Sources.

- (1) Water Quality. The bacteriological quality of every station in the growing area shall meet the fecal coliform standard in §E. (2).
- (2) Fecal Coliform Standard for Adverse Pollution Conditions. The fecal coliform median or geometric mean MPN or MF (mTEC) of the water sample results shall not exceed 14 per 100 ml, and not more than 10 percent of the samples shall exceed an MPN or MF (mTEC) of:
 - (a) 43 MPN per 100 ml for a five tube decimal dilution test;
 - (b) 49 MPN per 100 ml for a three-tube decimal dilution test;
 - (c) 28 MPN per 100 ml for a twelve-tube single dilution test; or
 - (d) 31 CFU per 100 ml for a MF (mTEC) test.
- (3) Required Sample Collection.
 - (a) A minimum of five samples shall be collected annually under adverse pollution conditions from each sample station in the growing area.
 - (b) A minimum of the most recent 15 samples collected under adverse pollution conditions from each sample station shall be used to calculate the median or geometric mean and percentage to determine compliance with this standard.
 - (c) Sample station locations shall be adjacent to actual or potential sources of pollution.

F. Standard for the Approved Classification of Growing Areas Affected by Nonpoint Sources.

- (1) Exception. If the tidal stage increases the fecal coliform concentration, the authority shall use sample results collected during that tidal stage to classify the area.
- (2) Pollution Sources. Growing areas shall be:
 - (a) Impacted only by randomly occurring, intermittent events; and
 - (b) Not impacted by discharges from sewage treatment facilities or combined sewer overflows.
- (3) Water Quality. The bacteriological quality of every station in the growing area shall meet the fecal coliform standard in §E.(2) or §F.(4).
- (4) Fecal Coliform Standard for Systematic Random Sampling. The fecal coliform median (or geometric mean MPN or MF (mTEC) of the water sample results shall not exceed 14 per 100 ml and the estimated 90th percentile shall not exceed an MPN or MF (mTEC) of:
 - (a) 43 MPN per 100 ml for a five tube decimal dilution test;

- (b) 49 MPN per 100 ml for a three-tube decimal dilution test; or
- (c) 31 CFU per 100 ml for a MF (mTEC) test.

(5) Estimated 90th Percentile. The estimated 90th percentile shall be calculated by:

- (a) Calculating the arithmetic mean and standard deviation of the sample result logarithms (base 10);
- (b) Multiplying the standard deviation in (a) by 1.28;
- (c) Adding the product from (b) to the arithmetic mean;
- (d) Taking the antilog (base 10) of the results in (c) to get the estimated 90th percentile; and
- (e) The MPN values that signify the upper or lower range of sensitivity of the MPN tests in the 90th percentile calculation shall be increased or decreased by one significant number.

(6) Required Sample Collection.

- (a) Adverse Pollution Condition Standard. The Authority shall collect samples in the same intensity and frequency as described in §E. (3) for application of the standard under §E.(2).
- (b) Systematic Random Sampling Standard. The requirement for systematic random sample collection shall be met when:
 - (i) Sample station locations are adequate to produce the data to effectively evaluate all nonpoint sources of pollution;
 - (ii) Sample collection is scheduled sufficiently far in advance to support random collection with respect to environmental conditions. Compliance requires that, prior to implementation, the schedule for random sampling shall be documented in the master file for the growing area, and if conditions at the time of scheduled sample collection are believed to be hazardous to the safety of the individuals assigned to collect samples, sample collection shall be rescheduled at a later date as soon as practical;
 - (iii) A minimum of six random samples shall be collected annually from each sample station in the growing area;
 - (iv) A minimum of two random samples shall be collected annually from each sample station in the growing area while in the inactive status. The sample collection frequency of six random samples per station per year specified under @.02F(6)(b)(iii) must resume at least six months before an area is reactivated; and
 - (v) A minimum of the 30 most recent randomly collected samples from each sample station shall be used to calculate the median or geometric mean and 90th percentile to determine compliance with this standard.

(c) Transition from Adverse Pollution Condition Standard to Systematic Random

Sampling Standard. If the Authority:

- (i) Does not have 30 recent randomly collected sample results from each station, then the previous 15 samples collected under adverse pollution conditions may be used with the most recent random samples to meet the minimum 30 sample requirement for a transition period not to exceed three years; and
- (ii) Uses the transition period described in (i), as additional random samples are collected; the random samples shall replace chronologically the samples collected under adverse pollution conditions (e.g. sample 31 replaces sample 1).

G. Standard for the Restricted Classification of Growing Areas Affected by Point Sources and Used as a Shellstock Source for Shellstock Depuration.

- (1) Water Quality. The bacteriological quality of every station in the growing area shall meet the fecal coliform standard in §G. (2).
- (2) Fecal Coliform Standard for Adverse Pollution Conditions. The fecal coliform median or geometric mean MPN of the water sample results shall not exceed 88 per 100 ml and not more than 10 percent of the samples shall exceed an MPN of: (a) 260 MPN per 100 ml for a five tube decimal dilution test; or (b) 300 MPN per 100 ml for a three tube decimal dilution test; or (c) 173 MPN per 100 ml for a twelve tube single dilution test.
- (3) Required Sample Collection. Samples shall be collected in accordance with §E. (3).

H. Standard for the Restricted Classification of Growing Areas Affected by Nonpoint Sources and Used as a Shellstock Source for Shellstock Depuration.

- (1) Exception. If the tidal stage increases the fecal coliform concentration, the Authority shall use samples collected under that tidal stage to classify the area.
- (2) Pollution Sources. Growing areas shall meet the requirements in §F. (2).
- (3) Water Quality. The bacteriological quality of every sample station in the growing area shall meet the fecal coliform standard in §G. (2) or §H. (4).
- (4) Fecal Coliform Standard for Systematic Random Sampling. The fecal coliform median or geometric mean MPN of the water sample results shall not exceed 88 per 100 ml and the estimated 90th percentile shall not exceed a MPN of:
 - (a) 260 MPN per 100 ml for a five tube decimal dilution test; or
 - (b) 300 MPN per 100 ml for a three-tube decimal dilution test.
- (5) Estimated 90th Percentile. The estimated 90th percentile shall be calculated by the same method described in §F. (5).
- (6) Required Sample Collection.

- (a) Adverse Pollution Condition Standard. The Authority shall collect samples in the same intensity and frequency as described in §E. (3) for application of the standard under §G. (2).
- (b) Systematic Random Sampling Standard. The Authority shall collect samples in the same intensity and frequency, and shall apply the sample results in the manner described in §F. (6) for the application of the standard under §H. (4).

@. 03 Growing Area Classification.

A. General. Each growing area shall be correctly classified as approved, conditionally approved, restricted, conditionally restricted, or prohibited, as provided by this Ordinance.

(1) Emergency Conditions. A growing area shall be placed in the closed status under §.03A(5) when pollution conditions exist which were not included in the database used to classify the area. If it is determined that an emergency condition or situation exists, than the growing area will be immediately (within 24 hours) placed in the closed status.

(2) Classification of All Growing Areas. All growing areas which:

- (a) Are not subjected to a sanitary survey every twelve years shall be classified as prohibited;
- (b) Have a sewage treatment plant outfall or other point source outfall of public health significance within or adjacent to the growing area shall have an area in the prohibited classification established adjacent to the outfall in accordance with §E. Prohibited Classification; and
- (c) Are subjected to a sanitary survey shall be correctly classified based on the twelve year sanitary survey, and its most recent triennial or annual reevaluation when available, as only one of the following:

- (i) Approved;
- (ii) Conditionally Approved;
- (iii) Restricted;
- (iv) Conditionally Restricted; or
- (v) Prohibited.

(3) Boundaries. The boundaries of each classified growing area shall be delineated on charts which are:

- (a) Of sufficient scale and detail so as to adequately describe the boundaries; and
- (b) Maintained in the central file by the Authority.

(4) Revision of Classifications.

- (a) Any upward revision of a growing area classification shall be supported by an adequate sanitary survey.
- (b) The appropriate FDA regional office shall be notified of any revision in growing area classification.

(5) Status of Growing Areas. The status of a growing area is separate and distinct from its classification and may be open, closed or inactive for the harvesting of shellstock.

- (a) Open Status. Except for an area in the prohibited classification, any correctly classified growing area, is normally open for the purposes of harvesting shellstock, subject to the limitations of its classification.
- (b) Closed Status. Any classified growing area may be closed for a limited or temporary period because of:
 - (i) An emergency condition or situation;
 - (ii) The presence of biotoxins in concentrations of public health significance; or
 - (iii) Conditions stipulated in the management plan of conditionally approved or conditionally restricted areas; or
 - (iv) Failure of the Authority to complete a written sanitary survey or triennial review evaluation report.
- (c) Reopened Status. A growing area temporarily placed in the closed status as provided in (b) above, shall be returned to the open status only when:
 - (i) The emergency situation or condition has returned to normal and sufficient time has elapsed to allow the shellstock to reduce pathogens or poisonous or deleterious substances that may be present in the shellstock to acceptable levels. Studies establishing sufficient elapsed time shall document the interval necessary for reduction of contaminant levels in the shellstock to pre-closure levels. In addressing pathogen concerns, the study may establish criteria for reopening based on coliform levels in the water; or
 - (ii) The requirements for biotoxins or conditional area management plans as established in §.04 and §.03, respectively, are met; and
 - (iii) Supporting information is documented by a written record in the central file.
- (d) Inactive Status. The authority may place an approved or restricted growing area affected by non-point sources in the inactive status for up to five years when shellstock harvest is suspended or no longer occurring. Shellstock

harvesting shall be closed while an area is in the inactive status. The inactive status must continue for a minimum of one year.

- (i) While in inactive status, the required bacteriological sample collection under @.02F (6)(b)(iii) may be reduced to two water samples per station per year collected under the systematic random sample collection strategy. Sanitary survey reports, triennial reevaluations, and annual updates must be completed as required under @.01C.
- (ii) The sample collection frequency of six random samples per station per year specified under @.02F (6)(b)(iii) must resume at least six months before an area is reactivated.
- (iii) Before an area is reactivated, the results of the most recent 30 samples must be reviewed and comply with the requirements under @.02F.

(e) Remote Status. A growing area may be placed in the remote status if:

- (i) A sanitary survey determines that the area has no human habitation, and is not impacted by any actual or potential pollution sources; and
- (ii) The area is in the approved classification.

(f) Seasonally Remote/Approved Status. A growing area may be placed in a seasonally remote/approved status requiring two water samples per year if the following criteria are met:

- (i) The area is initially classified as approved;
- (ii) The closure time period is defined; and
- (iii) At least one sample be taken upon reopening the area.

B. Approved Classification. Growing areas shall be classified as approved when the following criteria are met.

(1) Survey Required. A sanitary survey finds that the area is:

- (a) Safe for the direct marketing of shellfish;
- (b) Not subject to contamination from human or animal fecal matter at levels that, in the judgement of the Authority, presents an actual or potential public health hazard; and
- (c) Not contaminated with:
 - (i) Pathogenic organisms;
 - (ii) Poisonous or deleterious substances;
 - (iii) Marine biotoxins; or

- (iv) Bacteria concentrations exceeding the bacteriological standards for a growing area in this classification.
- (2) Water Quality. The water quality in the growing area shall meet the bacteriological standards for an approved classification in §.02.

C. Conditional Classifications. Growing areas may be classified as conditional when the following criteria are met:

- (1) Survey Required. The sanitary survey meets the following criteria:
 - (a) The area will be in the open status of the conditional classification for a reasonable period of time. The factors determining this period are known, are predictable, and are not so complex as to preclude a reasonable management approach;
 - (b) Each potential source of pollution that may adversely affect the growing area is evaluated;
 - (c) Bacteriological water quality correlates with environmental conditions or other factors affecting the distribution of pollutants into the growing area.
- (2) Management Plan Required. For each growing area, a written management plan shall be developed and shall include:
 - (a) For management plans based on wastewater treatment plant function, performance standards that include:
 - (i) Peak effluent flow, average flow, and infiltration flow;
 - (ii) Bacteriological quality of the effluent;
 - (iii) Physical and chemical quality of the effluent;
 - (iv) Conditions which cause plant failure;
 - (v) Plant or collection system bypasses;
 - (vi) Design, construction, and maintenance to minimize mechanical failure, or overloading;
 - (vii) Provisions for monitoring and inspecting the waste water treatment plant; and
 - (viii) Establishment of an area in the prohibited classification adjacent to a wastewater treatment plant outfall in accordance with §E. Prohibited Classification;
 - (b) For management plans based on pollution sources other than waste water treatment plants:
 - (i) Performance standards that reliably predict when criteria for conditional

classification are met; and

(ii) Discussion and data supporting the performance standards.

(c) For management plans based on wastewater treatment plant function or pollution sources other than wastewater treatment plants, criteria that reliably predict when an area that was placed in the closed status because of failure to comply with its conditional management plan can be returned to the open status. The minimum criteria are:

- (i) Performance standards of the plan are fully met;
- (ii) Sufficient time has elapsed to allow the water quality in the growing area to return to acceptable levels;
- (iii) Sufficient time has elapsed to allow the shellstock to reduce pathogens that might be present to acceptable levels. Studies establishing sufficient elapsed time shall document the interval necessary for reduction of coliform levels in the shellstock to pre-closure levels. The study may establish criteria for reopening based on coliform levels in the water; and
- (iv) Shellstock feeding activity is sufficient to achieve coliform reduction.

(d) For management plans based on a risk assessment made in accordance with Chapter II, Risk Assessment and Risk Management, criteria that reliably determine when the growing area may be placed in the open status and shellfish may be harvested;

(e) For management systems based on marine biotoxins, the procedures and criteria that reliably determine when the growing area may be placed in the open status;

(f) Procedures for immediate notification to the Authority when performance standards or criteria are not met;

(g) Provisions for patrol to prevent illegal harvest; and

(h) Procedures to immediately place the growing area in the closed status in 24 hours or less when the criteria established in the management plan are not met.

(3) Reevaluation of Conditional Classification.

(a) The classification shall be reevaluated at least once each year. The reevaluation shall include:

- (i) Evaluation of compliance with the management plan;
- (ii) Determination of adequacy of reporting of failure to meet performance standards;
- (iii) Review of the cooperation of the persons involved;
- (iv) Evaluation of water quality in the growing area with respect to the bacteriological standards for its classification;

- (v) Field inspection of critical pollution sources, where necessary; and
- (vi) Written findings, evaluations and recommendations.

(b) Water Sample Collection.

- (i) When the conditional management plan is based on the absence of pollution from marinas for certain times of the year, monthly water samples are not required when the growing area is in the open status of its conditional classification provided that at least three of the water samples collected to satisfy the bacteriological standard for the open status are collected when the growing area is in the open status.
- (ii) When the conditional management plan is based on the operation and performance of a wastewater treatment plant(s); combined sewer overflow(s); or other point sources of pollution, monthly water samples are required when the growing area is in the open status of its conditional classification.
- (iii) If a monthly sample cannot be collected due to environmental constraints, the monthly sampling requirement will be satisfied if an additional water sampling run is conducted the following month.
- (iv) When the conditional management plan is based on the effects of non-point sources of pollution, such as rainfall events, stormwater runoff, and seasonal variations, a minimum of five (5) sets of water samples (when the Adverse Pollution Condition sampling regimen is used) or six (6) sets of water samples (when the Systematic Random Sampling regimen is used) are required. The samples shall be collected when the growing area is in the open status.
- (v) When the conditional management plan is based on the effects of non-point sources of pollution, such as rainfall events or storm water runoff, and the area is in the open status for less than six months a minimum of five (5) sets of water samples are required (Adverse Pollution Condition and Systematic Random Sampling). At least one (1) sample shall be collected each month the area is placed in the open status. This sample shall be collected while the area is open. If closed status samples are used to meet the minimum sample requirements only two (2) sets of samples may be utilized and they must have been taken within five (5) days of when the Authority anticipates that the area will be placed in the open status. For growing areas in the open status less than two (2) months, at least one (1) sample must be collected while the area is in the open status. Samples collected during the closed status to meet the minimum five (5) sets of water samples shall be applied to annual and triennial reevaluations of the area.
- (vi) When the conditional management plan is based on the seasonal opening and closing of the area, and the area is in the open status for a predetermined period of less than six (6) months, a minimum of five (5) sets of water samples are required (Adverse Pollution Condition and Systematic Random Sampling). All samples shall be collected while the

area is in the open status unless the Authority has historical water quality data to demonstrate that the area meets open status criteria while in the closed status. If closed status samples are used to meet the minimum sample requirements they must be collected within thirty (30) days prior to the area being placed in the open status.

(4) Understanding of and Agreement With the Purpose of the Conditional Classification and Conditions of Its Management Plan by All Parties Involved.

(a) The management plan shall be developed by the Authority in coordination with:

- (i) The local shellfish industry;
- (ii) The individuals responsible for the operation of any wastewater treatment plants involved; and
- (iii) Any local or State agencies; and

(b) Failure of any one party to agree shall constitute sufficient justification to deny the application of the conditional classification to a growing area.

(5) Conditional Area Types. There are two types of conditional areas:

- (a) Conditionally approved; and
- (b) Conditionally restricted.

(6) Conditionally Approved Classification. Any growing area in the conditionally approved classification shall:

(a) Meet the requirements for:

- (i) An approved area classification when the conditionally approved classification is in the open status; and
- (ii) A restricted or prohibited classification when the conditionally approved classification is in the closed status; and

(b) If the closed status meets the criteria for the restricted classification, designate in its management plan whether the shellstock may be harvested for relaying or depuration.

(7) Conditionally Restricted Classification. Any growing area in the conditionally restricted classification shall:

(a) Meet the requirements for:

- (i) A restricted classification when the conditionally restricted classification is in the open status; and
- (ii) A prohibited classification when the conditionally restricted classification is in the closed status; and

(b) Designate in its management plan whether the harvested shellstock are to be relayed or depurated.

D. Restricted Classification.

(1) General

- (a) A growing area may be classified as restricted when:
 - (i) A sanitary survey indicates a limited degree of pollution; and
 - (ii) Levels of fecal pollution, human pathogens, or poisonous or deleterious substances are at such levels that shellstock can be made safe for human consumption by either relaying, depuration or low acid-canned food processing.
- (b) The Authority shall have effective controls to assure that shellfish are harvested from restricted areas only:
 - (i) By special license; and
 - (ii) Under the supervision of the Authority.

(2) **Water Quality.** Water quality in the growing area shall meet the bacteriological standards in §.02 for a growing area in the restricted classification if the growing area is used for depuration.

(3) **Shellstock Quality Criteria.** The Authority shall establish shellstock quality criteria for use in placing an area in the restricted classification. Depending on the treatment process to be applied to the shellstock, the criteria shall be established in accordance with:

- (a) Chapter V. Shellstock Relaying; or
- (b) Chapter XV. Depuration.

E. Prohibited Classification.

(1) **Exception.** The prohibited classification is not required for harvest waters within or adjacent to marinas. The Authority, however, may use the prohibited classification

for these waters.

- (2) General. Except for the harvest of shellstock for the gathering of seed for aquaculture or the depletion of the areas classified as prohibited, the Authority shall:
 - (a) Not permit the harvest of shellstock from any area classified as prohibited; and
 - (b) Ensure that shellstock removed from any growing area classified as prohibited is effectively excluded from human consumption.
- (3) Sanitary Survey. A growing area shall be classified as prohibited if:
 - (a) No current sanitary survey exists;
 - (b) A sanitary survey determines:
 - (i) The growing area is adjacent to a sewage treatment plant outfall or other point source outfall with public health significance;
 - (ii) Pollution sources may unpredictably contaminate the growing area;
 - (iii) The growing area is contaminated with fecal waste so that the shellfish may be vectors for disease microorganisms;
 - (iv) The concentration of biotoxin is sufficient to cause a public health risk as identified in §.04. or
 - (v) The area is contaminated with poisonous or deleterious substances causing the shellfish to be adulterated.
- (4) Risk Assessment. A growing area shall be classified as prohibited if a risk assessment performed in accordance with Chapter II, Risk Assessment and Risk Management indicates the shellstock are not safe for human consumption.
- (5) Wastewater Discharges.
 - (a) An area classified as prohibited shall be established adjacent to each sewage treatment plant outfall or any other point source outfall of public health significance.
 - (b) The determination of the size of the area to be classified as prohibited adjacent to each outfall shall include the following minimum criteria:
 - (i) The volume flow rate, location of discharge, performance of the wastewater treatment plant and the bacteriological quality of the effluent;
 - (ii) The decay rate of the contaminants of public health significance in the wastewater discharged;
 - (iii) The wastewater's dispersion and dilution, and the time of waste transport to the area where shellstock may be harvested; and
 - (iv) The location of the shellfish resources, classification of adjacent waters

and identifiable landmarks or boundaries.

@.04 Marine Biotoxin Control.

Additional Guidance - IV Guidance Documents
II.02 Guidance for Developing Marine Biotoxin
Contingency Plans

micrograms per 100 grams of edible portion of raw shellfish; or

(b) For neurotoxic shellfish poisoning (NSP), the harvesting of shellstock shall not be allowed when:

(i) Any NSP toxin is found in shellfish meats; or

(ii) The cell counts for *Karenia brevis* organisms in the water column exceed 5,000 per liter; or

(c) For domoic acid, the toxin concentration shall not be equal to or exceed 20 ppm in the edible portion of raw shellfish.

(2) For any marine biotoxin producing organism for which criteria have not been established under this Ordinance, either cell counts in the water column or biotoxin meat concentrations may be used by the Authority as the criteria for not allowing the harvest of shellstock.

(3) When sufficient data exist to establish that certain shellfish species can be safely exempted from the marine biotoxin contingency plan, the closed status for harvesting may be applied selectively to some shellfish species and not others.

(4) The closed status shall remain in effect until the Authority has data to show that the toxin content of the shellfish in the growing area is below the level established for closing the area.

(5) The determination to return a growing area to the open status shall consider whether toxin levels in the shellfish from adjacent areas are declining.

(6) The analysis upon which a decision to return a growing area to the open status is based shall be adequately documented.

D. Heat Processing. If heat processing is practiced, a control procedure shall be developed. This procedure shall define the following:

(1) Toxicity limits for processing;

(2) Controls for harvesting and transporting the shellstock to processor;

(3) Special marking for unprocessed shellstock;

(4) Scheduled processes; and

(5) End product controls on the processed shellfish.

E. Records. The Authority shall maintain a copy of all of the following records.

(1) All information, including monitoring data, relating to the levels of marine biotoxins in the shellfish growing areas;

(2) Copies of notices placing growing areas in the closed status;

- (3) Evaluation reports; and
- (4) Copies of notices returning growing areas to the open status.

@.05 Marinas.

A. Marina Proper. The area within any marina which is in or adjacent to a shellstock growing area shall be classified as:

- (1) Conditionally approved;
- (2) Conditionally restricted; or
- (3) Prohibited.

B. Adjacent Waters. Waters adjacent to marina waters classified under §A. may be impacted by pollution associated with the marina.

- (1) A dilution analysis shall be used to determine if there is any impact to adjacent waters.
- (2) The dilution analysis shall be based on the volume of water in the vicinity of the marina.
- (3) The dilution analysis shall incorporate the following:
 - (a) A slip occupancy rate for the marina;
 - (b) An actual or assumed rate of boats which will discharge untreated waste;
 - (c) An occupancy per boat rate (i.e., number of persons per boat);
 - (d) A fecal coliform discharge rate of 2×10 fecal coliform per ninth power per day; and
 - (e) The assumption that the wastes are completely mixed in the volume of water in and around the marina.
- (4) If the dilution analysis predicts a theoretical fecal coliform loading greater than 14 fecal coliform MPN per 100 ml, the waters adjacent to the marina shall be classified as:
 - (a) Conditionally approved;
 - (b) Restricted;
 - (c) Conditionally restricted; or
 - (d) Prohibited.
- (5) If the dilution analyses predicts a theoretical fecal coliform loading less than or equal to 14 fecal coliform MPN per 100 ml, the waters adjacent to the marina may be classified as:

- (a) Approved; or
- (b) Conditionally approved.

(6) If the Authority chooses not to determine a specific occupancy per boat rate by investigation in specific areas or sites, the Authority shall assume a minimum occupancy rate of two persons per boat.

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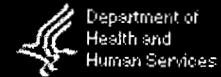
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National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish 2003

Guidance Documents

Chapter II. Growing Areas

.01 Total Coliform Standards

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@.02 Bacteriological Standards

Note: The National Shellfish Sanitation Program (NSSP) allows growing areas to be classified using either a total or fecal coliform standard. The NSSP further allows the application of either standard to different water bodies within the state. Once properly classified applying either standard for classification, the NSSP allows the use of the adverse pollution condition or the systematic random sampling strategy for routine classification monitoring as appropriate to the situation in the growing area. For maximum flexibility, a state may wish to adopt the use of both standards and both monitoring strategies as appropriate with each standard. At the Interstate Shellfish Sanitation Conference's annual meeting in 1992, Task Force II recommended that this portion of the *Model Ordinance* be codified according to the standard used and the monitoring strategy employed. The *Model Ordinance* has subsequently been recodified in this manner. This codification represents the delineation of the standards based on total coliforms. The division of the standards based on fecal coliforms is outlined in the main body of the *Model Ordinance* (Chapter IV).

- A. General. Either the total coliform or fecal coliform standard shall be applied to a growing area.
- B. Sampling Stations. The Authority shall ensure that the number and location of sampling stations is adequate to effectively evaluate all pollution inputs into the growing area.
- C. Exceptions.
 - (1) Except for growing areas classified as prohibited, in any growing area where there are nonpoint pollution sources which impact the water quality, a minimum of 30 samples, collected under various environmental conditions, shall be required to classify a growing area not previously classified under Chapter IV @ .03.

- (2) Except for growing areas classified as prohibited or when systematic random sampling is applied in growing areas where there are no pollution sources having an effect on the water quality, a minimum of 15 samples shall be required to classify any growing area not previously classified under Chapter IV @ .03 when there are no pollution sources impacting the water quality.
- (3) The Authority is not required to apply the total coliform standard if a detailed study verified by laboratory findings demonstrates that the coliforms recovered from the growing area are not of direct fecal origin and do not indicate a public health hazard.

D. Standard for the Approved Growing Area Classification in the Remote Status.

- (1) Water Quality. The bacteriological quality of every station in the growing area shall meet the total coliform standard below.
- (2) Total Coliform Standard for the Remote Status. The total coliform geometric mean MPN of the water sample results for each sampling station shall not exceed 70 MPN per 100 ml; and not more than 10% of the samples shall exceed an MPN of:
 - (a) 230 MPN per 100 ml for a 5-tube, decimal dilution test;
 - (b) 330 MPN per 100 ml for a 3-tube, decimal dilution test; or
 - (c) 140 MPN per 100 ml for the 12-tube, single dilution test.

(3) Required Sample Collection.

- (a) A minimum of 2 samples per sampling station shall be collected annually.
- (b) A minimum of the most recent 15 samples collected per sampling station shall be used to calculate the geometric mean and 10% criteria of the data to determine compliance with the standard established for the approved classification of remote growing areas.

E. Standard for the Approved Classification of Growing Areas Affected by Point Source Pollution.

- (1) Water Quality. The bacteriological quality of every station in the growing area shall meet the total coliform standard in
E §.(2)
- (2) Total Coliform Standard for Adverse Pollution Condition Monitoring. The total coliform geometric mean MPN of the water quality sample results for each sampling station shall not exceed 70 per 100 ml, and, not more than 10 % of the samples shall exceed an MPN of:
 - (a) 230 MPN per 100 ml for a 5-tube, decimal dilution test;
 - (b) 330 MPN per 100 ml for a 3-tube, decimal dilution test; or

(c) 140 MPN per 100 ml for the 12-tube, single dilution test.

(3) Required Sample Collection.

(a) A minimum of 5 samples shall be collected annually under adverse pollution conditions from each sample station in the growing area.

(b) A minimum of the most recent 15 samples collected under adverse pollution conditions from each sample station shall be used to calculate the geometric mean and 10% criteria of the data to determine compliance with this standard.

(c) Sampling station locations shall be adjacent to actual or potential sources of pollution.

F. Standard for the Approved Classification of Growing Areas Affected by Nonpoint Source Pollution.

(1) Exception. If the tidal stage increases the total coliform concentration, the Authority shall use sample results collected during that tidal stage to classify the area.

(2) Pollution Sources. Harvest waters shall be:

(a) Impacted only by randomly occurring, intermittent environmental events; and,

(b) Not impacted by discharges from sewage treatment facilities or combined sewer overflows.

(3) Water Quality. The bacteriological quality of every station in the growing area shall meet the total coliform standard in §F (4) or §F (6) as appropriate to the monitoring strategy being used.

(4) Total Coliform Standard for Systematic Random Sample Monitoring. The total coliform geometric mean of the water sample results for each sampling station shall not exceed 70 MPN per 100 ml and the estimated 90th percentile shall not exceed an MPN of:

(a) 230 MPN per 100 ml for a 5-tube, decimal dilution test;

(b) 330 MPN per 100 ml for a 3-tube, decimal dilution test.

(5) Estimated 90th Percentile. The estimated 90th percentile shall be calculated by:

(a) Determining the geometric mean and logarithmic (base 10) standard deviation for the sample result from each sampling station; then

(b) Multiplying the log standard deviation in (a) by 1.28; and

- (c) Adding the product from (b) to the log mean of sample results, and;
- (d) Taking the antilog of the results in (c) to get the estimated 90th percentile.
- (e) MPN values that signify the upper or lower range of sensitivity of the MPN test used in the 90th percentile calculation shall be increased or decreased by one significant digit.

(6) Total Coliform Standard for Adverse Pollution Condition Monitoring. The total coliform geometric mean MPN of the water sample results for each sample station shall not exceed 70 MPN per 100 ml and not more than 10% of the samples shall exceed an MPN of:

- (a) 230 MPN per 100 ml for a 5-tube, decimal dilution test; or
- (b) 330 MPN per 100 ml for a 3-tube, decimal dilution test; or
- (c) 140 MPN per 100 ml for a 12-tube, single dilution test.

(7) Required Sample Collection.

- (a) Adverse Pollution Condition Monitoring. The Authority shall collect samples at the same frequency as described in §E. (3) for application of the standard under §E. (2).
- (b) Systematic Random Sample Monitoring. The requirement for systematic random sample monitoring shall be met when:
 - (i) Sample station locations are adequate to produce the data to effectively evaluate all nonpoint sources of pollution;
 - (ii) Sample collection is scheduled sufficiently far in advance to support random collection with respect to environmental conditions. Compliance requires that prior to implementation, the schedule for random sampling shall be documented in the master file for the growing area and adhered to. If conditions at the time of scheduled sample collection are hazardous to the safety of the individuals assigned to collect samples, sample collection shall be rescheduled in accordance with provisions in the sampling schedule;
 - (iii) A minimum of 6 random samples shall be collected annually from each sampling station in the growing area; and
 - (iv) A minimum of the 30 most recent randomly collected samples from each sampling station shall be used to calculate the geometric mean and 90th percentile to determine compliance with this standard.
- (c) Transition from Adverse Pollution Condition Monitoring to Systematic Random Sample Monitoring. If the Authority:

- (i) Does not have 30 recent randomly collected sample results from each station, then the previous 15 samples collected under adverse pollution conditions may be used with the most recent random samples to meet the minimum 30 sample requirements for a transition period not to exceed 3 years; and
- (ii) Uses the transition period described in (i), as additional random samples are collected, the random samples shall chronologically replace the samples collected under adverse pollution conditions (e.g. sample 31 replaces sample 1)

G. Standard for the Restricted Classification of Growing Areas Affected by Point Source Pollution and Used as a Shellfish Source for Shellfish Depuration.

- (1) Water Quality. The bacteriological quality of every sample station in the growing area shall meet the total coliform standard in §G. (2).
- (2) Total Coliform Standard for Adverse Pollution Condition Monitoring. The total coliform geometric mean MPN of the water sample results for each station shall not exceed 700 per 100 ml and not more than 10% of the samples shall exceed an MPN of:
 - (a) 2,300 MPN per 100 ml for a 5-tube, decimal dilution test; or
 - (b) 3,300 MPN per 100 ml for a 3-tube, decimal dilution test; or
 - (c) 1,386 MPN per 100 ml for a 12-tube, single dilution test.
- (3) Required Sample Collection. Samples shall be collected in accordance with §E. (3).

H. Standard for the Restricted Classification of Growing Areas Affected by Nonpoint Source Pollution and Used as a Shellfish Source for Shellfish Depuration.

- (1) Exception. If the tidal stage increases the total coliform concentration, the Authority shall use samples collected under that tidal stage to classify the area.
- (2) Pollution Sources. Growing areas shall meet the requirements in §F. (2).
- (3) Water Quality. The bacteriological quality of every sample station in the growing area shall meet the total coliform standard in §H. (4) or §H. (6) as appropriate to the monitoring strategy being used.
- (4) Total Coliform Standard for Systematic Random Sample Monitoring. The total coliform geometric mean MPN of the water sample results for each sample shall not exceed 700 per 100 ml and the estimated 90th percentile shall not exceed:
 - (a) 2,300 MPN per 100 ml for a 5-tube, decimal dilution test; or

- (b) 3,300 MPN per 100 ml for a 3-tube, decimal dilution test.
- (5) Estimated 90th percentile. The estimated 90th percentile shall be calculated by the same method described in §F. (5).
- (6) Total Coliform Standard for Adverse Pollution Condition Monitoring. The total coliform geometric mean MPN of the water sample results for each station shall not exceed 700 MPN per 100 ml and not more than 10% of the samples shall exceed an MPN of:
 - (a) 2,300 MPN per 100 ml for a 5-tube, decimal dilution test; or
 - (b) 3,300 MPN per 100 ml for a 3-tube, decimal dilution test; or
 - (c) 1,386 MPN per 100 ml for a 12-tube, single dilution test.
- (7) Required Sample Collection.
 - (a) Adverse Pollution Condition Monitoring. The Authority shall collect samples at the same frequency as described in §E. (3). for application of the standard under §H. (6).
 - (b) Systematic Random Sample Monitoring. The Authority shall collect samples in the same manner and at the same frequency as specified in §F. (7)(b) for application of the standard under §H. (4).

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TRIENNIAL REPORT FOR MARSHFIELD EAST COASTAL (MB2)
In the Town of Marshfield

Date: June 3, 2005

By: Neil Churchill

Date of Last Sanitary Survey: May 1, 1999

Date of Last Triennial: May 31, 2002

RESPONSES TO RECOMMENDATIONS OF LAST REPORT

A. That classification areas MB2.1 and MB2.3 be reclassified to Approved/Open. *Done*

B. No change for classification area MB2.2 *Done*

C. Increase use of boats will be used to sample more efficiently in and around the outfall area of the WWTP. *Done*

AREA DESCRIPTION
MARSHFIELD EAST COAST MB2

The waters and flats of that portion of Massachusetts Bay in the Town of Marshfield, north of a line drawn due east from the Duxbury/Marshfield Town Marker to the Plymouth County Line; south of a line drawn due east from the Scituate/ Marshfield Town Marker to the Plymouth County Line; southeasterly of a line drawn across the entrance jetties to Green Harbor; and west of the Plymouth County Line (9820 acres).

Current Status of Area:

On February 26, 2004 the below two areas were reclassified due to a change in water quality.

RECLASSIFICATION
CLASSIFICATION: CONDITIONALLY APPROVED
STATUS: OPEN TO THE TAKING OF ALL SHELLFISH
(NOVEMBER 1 – APRIL 30)
[Dates Inclusive]

Marshfield East Coastal
MB2.3

"The waters and flats and all tributaries thereto of Marshfield East Coastal south of a line drawn due east from the end of Jackson Street out to one-quarter mile, north of a line drawn due east from the end of Puritan Street out to one-quarter mile and west of a line drawn between the one-quarter mile markers."

RECLASSIFICATION
CLASSIFICATION: PROHIBITED
STATUS: CLOSED TO THE TAKING OF ALL SHELLFISH

Marshfield East Coastal
MB2.1

"The waters and flats and all tributaries thereto of Massachusetts Bay in the Town of Marshfield, west of a line drawn in a northeasterly direction from the Duxbury-Marshfield Town Line to Green Harbor Point."

CLASSIFICATION: PROHIBITED
STATUS: CLOSED TO THE TAKING OF SHELLFISH

Marshfield East Coastal

MB2.2

"The waters and flats of the outer coast of Marshfield, in the Brant Rock section, south of a line drawn due east from the end of Puritan Street out to one mile and north of a line drawn due east from the end of Reed Street out to one mile and west of a line drawn between the one mile markers"(268 acres).

The rest of the area is classified APPROVED/OPEN (see Figure #1).

PREDOMINANT LAND USE

The shoreline is made up of sections of rocky areas with sandy beaches at the northern and southern ends. A concrete seawall is located between the ocean and buildings along the middle part of the coastline. The one embayment in the area is Green Harbor (MB3) is classified as Prohibited/Closed. Classification area MB2.1 is located in front of the harbor.

The shoreline is made up of year-round and seasonal residences, which are either behind a concrete seawall or from 50 to 100 feet from the ocean. In some sections of the coastline there is a sand berm between the buildings and the ocean. The shoreline in front of the seawall varies between five to fifteen feet of sand and/or rocks at high tide. In the sections without a seawall the beach extends for 50 to 100 feet at high tide.

The study area is completely sewered and is connected to the Marshfield Wastewater Treatment Plant [WWTP]. The shoreline is used for recreational swimming and finfishing. The northern and southern ends of the study area are town beaches.

SHELLFISH RESOURCES

Surf clams (*Spisula solidissima*) are harvested in commercial numbers using hydraulic dredges by medium to large boats. Blue mussels (*Mytilus edulis*) are taken recreationally along the rocky parts of the shoreline (See Figure #2).

SUMMARY OF SHORELINE SURVEY

The shoreline survey was conducted on June 1, 2005. No new sources of pollution (direct or indirect) were noted. One section of the seawall are the process of being rebuilt. There are no marinas, mooring fields, farms or commercial or agricultural/aquaculture operations of any type along the shoreline. The only wastewater treatment plant in the area is operated by the Town of Marshfield (See Appendix B for plant questionnaire). Waterfowl and marine mammals had been seen during regular classification sampling events and do not appear to cause any detectable problems.

METEOROLOGIC AND HYDROGRAPHIC INFLUENCES

Classification sampling was conducted during various hydrographic and meteorologic conditions to assess the possible impact of rain events, tidal stages and currents on the water quality of MB2.

This area is an east facing section of the coastline, which abuts Massachusetts Bay. The area experiences semi-diurnal tides with a mean range of approximately 8 to 12 feet. The area is an open coastal area. There is an offshore current, which runs parallel to the shore from north to south. There is no evidence of local rainfall affecting the water quality.

ANALYSIS OF WATER QUALITY

A. Methods:

Procedures and methods relative to sampling, transport, and analysis of water and shellfish samples are followed according to the guidelines in the National Shellfish Sanitation Program's (NSSP's) Model Ordinance. Water samples were collected in sterile Nalgene bottles and transported in temperature controlled carriers to the Division laboratory at the Pocasset office. Water samples were analyzed using the A-1 modified MPN procedure.

Surface water temperatures were recorded using pocket thermometers with surface salinities being recorded at the Division laboratory using refractometer.

B. Sampling Rationale:

The criterion for this area is to sample under adverse, i.e. after rainfall, during the past 3 hours of ebbing tide conditions. Marshfield East Coastal has six classification stations.

Classification sampling was conducted during various hydrographic and meteorologic conditions to assess the possible impact of rain events, tidal stages and currents on the water quality of the area.

TABLE #1
ANALYSIS OF WATER QUALITY UNDER ALL CONDITIONS ALL YEAR AROUND

Station Number	Location	Geo. Mean	%VAR*	N
1	Blackmans Point	4.3	0.0	15
2	Intersection of Pearl and Bay Streets	3.7	0.0	15
3	Intersection of Joyce and Brook Streets	2.4	0.0	15
4	At the end of Joyce St	3.4	6.6	15
5	At the end of East St	4.3	6.6	15
6	Next to Brant Rock	3.5	0.0	15

* NOTE: For the %VAR column use %>28 for all data collected after 1/1/98; use %>43 for all data collected prior to 1/1/98. See Figure #3 for Station Locations

ANALYSIS OF WATER QUALITY
TABLE #2
ANALYSIS OF WATER QUALITY FOR THE OPEN TIME PERIOD FROM
SEPTEMBER 1 TO JUNE 1 UNDER ALL CONDITIONS

Station Number	Location	Geo. Mean	%VAR*	N
1	Blackmans Point	5.2	13.3	15
2	Intersection of Pearl and Bay Streets	3.8	6.6	15
3	Intersection of Joyce and Brook Streets	2.5	0.0	15
4	At the end of Joyce St	3.4	0.0	15
5	At the end of East St	3.2	0.0	15
6	Next to Brant Rock	3.7	0.0	15

* NOTE: For the %VAR column use %>28 for all data collected after 1/1/98; use %>43 for

DISCUSSION/CONCLUSIONS

All classification stations meet the NSSP guidelines for variability for approved classification under all weather conditions. This is an improved of water quality from the last triennial report. All but one classification station meets the NSSP guidelines for variability for conditionally approved classification under all weather conditions and the failing station (#1) is within a prohibited classified area (MB2.1).

RECOMMENDATIONS

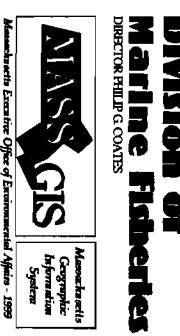
1. No change in classification areas or status.

Figure #1. Area classifications and DMF classification stations

Figure #2. Area Shellfish Resources

Figure #3. Pollution source locations

MASSACHUSETTS DIVISION OF MARINE FISHERIES - DESIGNATED SHELLFISH GROWING AREA
GROWING AREA CODE: MB2 - AREA NAME: MARSHFIELD EAST COASTAL - AREA TOWN(S): DUXBURY/MARSHFIELD



0
 1 mile
 0
 1 kilometer

STATION TYPE

- CLASSIFICATION
- POLLUTION SOURCE
- AD-HOC
- PRIMARY PSP
- SECONDARY PSP
- TERTIARY PSP
- CHEMICAL
- MARINA

BOUNDARY LINES

GROWING AREA

CLASSIFICATION AREA

TOWN

CLASS AREA TYPE

AS OF 07/01/1999

- APPROVED
- CONDITIONALLY APPROVED
- CONDITIONALLY RESTRICTED
- RESTRICTED
- MANAGEMENT CLOSE
- PROHIBITED

This product is for planning and educational purposes only. It is not to be used by itself for legal boundary definition or regulatory interpretation.

Produced: November 30, 1999

6

7

A

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Town of Marshfield

is authorized to discharge from the facility located at

Marshfield Wastewater Treatment Plant
P.O. Box 268
200 Joseph Driebeek Way
Brant Rock, MA 02020

to receiving water named

Massachusetts Bay

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

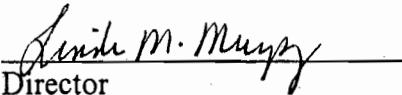
This permit shall become effective on the first day of the calendar month immediately following 60 days after signature.

This permit and the authorization to discharge expire at midnight, five (5) years from last day of the month preceding the effective date.

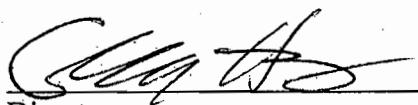
This permit supersedes the permit issued on September 7, 2001.

This permit consists of 10 pages in Part I including effluent limitations, monitoring requirements, Attachments A and B, and Part II including General Conditions and Definitions.

Signed this 9 day of *November, 2006*



Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA



Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

A.1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 001, treated effluent to Massachusetts Bay. Such discharges shall be limited and monitored as specified below.

EFFLUENT CHARACTERISTIC

PARAMETER	EFFLUENT LIMITS			MONITORING REQUIREMENTS			
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	MEASUREMENT FREQUENCY	SAMPLE ³ TYPE
FLOW ² - ANNUAL AVERAGE	*****	*****	2.1 MGD	*****	*****	Continuous	Recorder
FLOW ²	*****	*****	Report MGD	*****	Report MGD	Continuous	Recorder
3OD _s ⁴	526 lbs/Day	789 lbs/Day	30 mg/l	45 mg/l	Report mg/l	1/Week	24-Hour Composite ⁵
TSS ⁴	526 lbs/Day	789 lbs/Day	30 mg/l	45 mg/l	Report mg/l	1/Week	24-Hour Composite ⁵
pH RANGE ¹	6.0 - 8.5 SU SEE PERMIT PAGE 4 OF 10, PARAGRAPH I.A.1.b.						
ECAL COLIFORM ^{1,6}	*****	*****	14 cfu/100 ml	*****	28 cfu/100 ml	1/Day	Grab
INTEROCOCCUS ⁶	*****	*****	*****	*****	Report cfu/100ml	3/Week	Grab
WHOLE EFFLUENT TOXICITY EE FOOTNOTES 7, 8 and 9	Acute	LC ₅₀ ≥ 100%			1/Month	1/Year	Grab 24-Hour Composite ⁵

Effluent Sampling Point : BOD, TSS, pH, Fecal coliform and WET tests are performed at the open effluent channel after ultraviolet disinfection.

Footnotes:

1. Required for State Certification.
2. Report annual average, monthly average, and the maximum daily flow. The limit is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the eleven previous months.
3. All required effluent samples shall be collected at the point specified in the Permit. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA.

All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. All samples shall be 24 hour composites unless specified as a grab sample in 40 CFR §136.

4. Sampling required for influent and effluent.
5. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one consecutive 24 hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.
6. Fecal coliform limits and monitoring will be in effect year-round. This is also a State certification requirement. Fecal coliform discharges shall not exceed a monthly geometric mean of 14 colony forming units (cfu) per 100 ml, nor shall they exceed 28 cfu per 100 ml as a daily maximum. Monthly monitoring for enterococcus shall be performed concurrently with a fecal coliform sample.
7. The permittee shall conduct acute toxicity tests two times per year. The permittee shall test the Mysid shrimp only. Toxicity test samples shall be collected during the second week of the months of July and October. The test results shall be submitted by the last day of the month following the completion of the test. The results are due August 31st and November 30th respectively. The tests must be performed in accordance with test procedures and protocols specified in Attachment A of this permit.

Test Dates Second Week in	Submit Results By:	Test Species	Acute Limit LC ₅₀	
July October	August 31 st November 30 th	Mysid shrimp See Attachment A	≥ 100%	

After submitting **two year** and a **minimum** of four consecutive sets of WET test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.

8. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
9. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A Section IV., DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment A**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A**. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A**.

Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
- b. The pH of the effluent shall not be less than 6.0 nor greater than 8.5 at any time, unless these values are exceeded as a result of an approved treatment process and natural causes.

- c. The discharge shall not cause objectionable discoloration of the receiving waters.
- d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
- e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
- f. The permittee is required, when the average annual flow in any calendar year exceeds 80% of the facilities design flow, to submit a report to MassDEP on how the permittee will remain in compliance with the limitations in the permit, specifically flow.
- g. The results of sampling for any parameter above its required frequency must also be reported.

2. All POTWs must provide adequate notice to the Director of the following:

- a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For purposes of this paragraph, adequate notice shall include information on:
 - (1) the quantity and quality of effluent introduced into the POTW; and
 - (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

3. Prohibitions Concerning Interference and Pass Through:

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

4. Toxics Control

- a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
- b. Any toxic components of the effluent shall not result in any demonstrable harm to

aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

5. Numerical Effluent Limitations for Toxicants

EPA or MassDEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall listed in Part I A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the General Requirements of this permit (Twenty-four hour reporting). [Note: SSO Reporting Form (which includes MassDEP Regional Office telephone numbers) for submittal of written report to MassDEP is available on-line at <http://www.mass.gov/dep/water/approvals/surffms.htm#sso>.]

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Preventative Maintenance Program

The permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

3. Infiltration/Inflow Control Plan:

The permittee's infiltration and inflow (I/I) control plan shall be updated to reflect current

conditions and submitted to EPA and MassDEP **within six months of the effective date of this permit** (see page 1 of this permit for the effective date). The plan shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

The plan shall include:

- An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.
- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.
- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.
- An educational public outreach program for all aspects of I/I control, particularly private inflow.
- The permittee shall require, through appropriate agreements, that all member communities develop and implement infiltration and inflow control plans sufficient to ensure that high flows do not cause or contribute to a violation of the permittee's effluent limitations, or cause overflows from the permittee's collection system.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MassDEP annually, **by March 31**. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.
- A map with areas identified for I/I-related investigation/action in the coming year.

- A calculation of the annual average I/I, the maximum month I/I for the reporting year.
- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

4. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

D. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either the state or federal (40 CFR part 503), requirements.
3. The requirements and technical standards of 40 CFR part 503 apply to facilities which perform one or more of the following use or disposal practices:
 - a. Land application - the use of sewage sludge to condition or fertilize the soil
 - b. Surface disposal - the placement of sewage sludge in a sludge-only landfill
 - c. Sewage sludge incineration in a sludge-only incinerator
4. The 40 CFR part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g. lagoons- reed beds), or are otherwise excluded under 40 CFR 503.6.
5. The permittee shall use and comply with the attached compliance guidance (**Attachment B**) document to determine appropriate conditions. Appropriate conditions contain the following elements:
 - General requirements
 - Pollutant limitations
 - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)

- Management practices
- Record keeping
- Monitoring
- Reporting

Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year:

less than 290	1/ year
290 to less than 1500	1 /quarter
1500 to less than 15000	6 /year
15000 +	1 /month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.
8. The permittee shall submit an annual report containing the information specified in the guidance by **February 19**. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report by **February 19** containing the following information:

- Name and address of contractor responsible for sludge disposal
- Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

E. MONITORING AND REPORTING

1. Reporting

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the **15th day of the month following the effective date of the permit**.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection
Southeast Regional Office - Bureau of Resource Protection
20 Riverside Drive
Lakeville, MA 02347

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

F. STATE PERMIT CONDITIONS

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under Federal and State law, respectively. As such, all the terms and conditions of this Permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap.21, §43.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.

RESPONSE TO PUBLIC COMMENTS

NPDES PERMIT MA0101737

Town of Marshfield

Marshfield, MA

On August 21, 2006, the U.S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection (MassDEP) released for public notice and comment a draft National Pollutant Discharge Elimination System (NPDES) permit pursuant to an application from the Town of Marshfield, Massachusetts for the reissuance of its permit to discharge treated wastewater to the Massachusetts Bay. The public comment period for this draft permit expired on September 19, 2006.

Comments were submitted by the following organizations:

1. The Massachusetts Division of Marine Fisheries
2. The Massachusetts Department of Fish and Game- Riverways Program
3. The Town of Marshfield

After review of the comments received, EPA has made a final decision to issue the permit authorizing the discharge. The following are the comments and EPA's response to those comments. The comment letters are part of the administrative record and are paraphrased herein. A copy of the final permit may be obtained by writing or calling Suproakash Sarker, EPA NPDES Permits Program [CMP], 1 Congress Street, Suite 1100, Boston, MA 02114-2023; telephone: [617] 918-1693.

A. The following comments were received from the Massachusetts Division of Marine Fisheries:

Comment A.1.

"Marine Fisheries recommends that the maximum daily discharge limitation for fecal coliform of 43 cfu/100 ml be changed to 28 cfu/100 ml in order to be consistent with standards established by the National Shellfish Sanitation Program."

Response

EPA and MassDEP agree. The requirement is a condition of the state Section 401 Water quality certification. The permit has been changed accordingly.

B. The following comments were received by the Massachusetts Department of Fish and Game – Riverways Program:

Comment B.1.

"The lower bacteria limits are a welcome addition to the draft permit. Given the Class SA status of the receiving water and the shellfish resource in these waters, bacteria levels are a key component of protection for the Bay. We support the addition of *Enterococcus* monitoring for this facility and the additional bacteria data it will provide. We would like to suggest the permit require the Fecal Coliform bacteria and the *Enterococcus* be sampled simultaneously. Having matched data will help in determining correlations and relationships between the two bacteria types."

Response

We have noted your comments. We agree that fecal coliform and enterococcus sampling should be done concurrently and have changed the permit accordingly.

Comment B.2

"The draft permit calls for a reduction in whole effluent toxicity testing frequency to twice per year. The sampling will be done in July and October. Were these months selected based on the presence of sensitive species or life stages or other reasons?"

Response

WET sampling months were selected based on the MassDEP Watershed permit schedule.

Comment B.3

"The Fact Sheet notes this facility accepts oil and grease wastes from restaurants. Has the effluent been tested for oil and grease concentrations to ascertain the efficiency of the oil and grease pretreatment process? If there should be a malfunction in the grease pretreatment, can grease enter the waste stream? If testing has not occurred and there is a reasonable potential for oil and grease to be present in the effluent above 15 mg/l than we would advocate for an oil and grease testing and reporting requirement."

Response

The grease received is delivered to the WWTF by septic trucks and comes from grease traps at restaurants. The Town has an existing policy that requires all restaurants, whether on septic or sewer, to have an external grease trap. The Town, as well as the Massachusetts State Environmental Code- Title 5 [310 CMR 15.351(2)], also requires that these traps be maintained at regular intervals and records retained by the establishment for inspection and reporting.

Once the receiving tanks at the treatment plant are full, the material is pumped into a dissolved air flotation (DAF) thickener, with a dose of polymer, where the coagulated grease is floated and skimmed from the surface of the vessel. There are two components after processing with the "DAF", concentrated grease and subnatant "liquid". The grease

product is sent to an isolated "concentrated grease tank" and from there is mixed with sludge that is being shipped off-site. The subnatant liquid discharged from the process is fed into a septic receiving tank, which is then fed into the WWTF ahead of the grit chamber. This flow, therefore, goes through the entire WWTF treatment process including skimming in the clarifiers and at the contact chambers.

Because we believe that the treatment facilities ensure the effective removal of oil and grease, we have not included monitoring for oil and grease in the final permit.

C. The following comments are received from the Town of Marshfield :

Comment C.1

"The physical address of the WWTF is now 200 Joseph Driebeek Way. The draft permit states "Driebeck Road". "

Response

We have noted your comment and change the address in the final permit.

Comment C.2

"Page 2 of the draft permit indicates a reduction in effluent fecal coliform limits from 200/400 to 14/43. Though the Marshfield WWTF repeatedly and consistently meets its effluent limits for this parameter, we feel that this >90% reduction in discharge limits is unreasonable. The MWWT discharges through an ocean outfall with a significant dilution factor and at the limits of the current permit represents less of a fecal coliform indicator loading to the local waters than that created by the local avian and other wildlife present. The Town asks for re-evaluation of this substantial reduction in discharge limits and return to the limitations of the current NPDES Permit."

Response

Fecal coliform limits of 14 cfu/100ml monthly average and 43 cfu/100ml maximum daily were established based on MaasDEP regulation on surface water quality standards for class SA water, open shell-fishing. See 314 CMR4.05(4)(a)(4). In addition, the maximum daily requirement was further reduced from 43 cfu/100ml to 28 cfu/100ml based on comments from the Massachusetts Division of Marine Fisheries. See comment and response under A.1.

Comment C.3

"Page 2 of the draft indicates an effluent pH limitation of 6.5-8.5 and Page 4 Part I.A.1. of the draft permit indicates that "excursions aren't allowed unless these values are exceeded as a result of an approved treatment process" The current permit Part I.A.b. states "unless these values are exceeded due to natural causes or as a result of the approved treatment process".

The Town is requesting a reduction in allowable discharge limit from 6.5 to 6.0. The WWTF occasionally experiences pH values less than 6.5 as a result of the approved treatment process. Although this is allowable in the contract language, the Town is requesting this modification to avoid effluent limit violation recordings for these allowable excursions. The Town also requests that the clause for "natural causes" remain in the new permit."

Response

The pH lower limit has been changed to 6.0 standard units. This pH level is acceptable and will result in the achievement of water quality standards outside the initial mixing zone due to the large dilution available at the point of discharge and the buffering capacity of ocean water. The clause for "natural causes" is included in the final permit.

Comment C.4

"Section C3 of the draft permit states a requirement for the Town to develop and implement a plan to control infiltration and inflow (I/I) and submit it to EPA and MassDEP within six months of the effective date of this permit. This was a requirement of the current permit which the Town fulfilled at that time. The Town requests that the language be modified due to the fact that this was performed during that last (current) permit issuance."

Response

We agree that the Town has prepared an I/I control plan in accordance with the requirements of the previous permit. We believe that the plan should be updated to incorporate new projects or initiatives which will be taken during the term of the reissued permit. The first paragraph under Section C3 has been changed as follows:

"The permittee's infiltration and inflow (I/I) control plan shall be updated to reflect current conditions and submitted to EPA and MassDEP **within six months of the effective date of this permit** (see page 1 of this permit for the effective date). The plan shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow."

Information for Filing an Adjudicatory Hearing Request with the Commonwealth of Massachusetts Department of Environmental Protection

Within thirty days of the receipt of this letter the adjudicatory hearing request should be sent to:

Docket Clerk
Office of Administrative Appeals
Department of Environmental Protection
One Winter Street, Second Floor
Boston, MA 02108

In addition, a valid check payable to the Commonwealth of Massachusetts in the amount of \$100 must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The hearing request to the Commonwealth will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver.

The filing fee is not required if the appellant is a city, town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee for a permittee who shows that paying the fee will create an undue financial hardship. A permittee seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

April 17, 2002

/NPDESappeal.wpd

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SECTION A. GENERAL REQUIREMENTS1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

- a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405 (d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.
- b. The CWA provides that any person who violates Section 301, 302, 306 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Sections 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed \$25,000 per day for each violation. Any person who knowingly violates such requirements is subject to a fine of not less than 45,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both. Note: See 40 CFR §122.41(a)(2) for additional enforcement criteria.
- c. Any person may be assessed an administrative penalty by the Administrator for violating Sections 301, 302, 306,308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be

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authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopen clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopen clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Permit modification or revocation will be conducted according to 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

- (1) The name and address of any permit applicant or permittee;
- (2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).
- c. Information required by NPDES application forms provided by the Regional Administrator under §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the

permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180

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days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. Right of Appeal

Within thirty (30) days of receipt of notice of a final permit decision, any interested person, including the permittee, may submit a request to the Regional Administrator for an Evidentiary hearing under Subpart E, or a Non-Adversary Panel Hearing under Subpart E, or a Non-Adversary Panel hearing under subpart F, of 40 CFR Part 124, to reconsider or contest that decision. The request for a hearing must conform to the requirements of 40 CFR §124.74.

10. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

11. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, and local laws and regulations.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operator of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Bypass

a. Definitions

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- (1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs, B.4.c. and 4.d of this section.

c. Notice

(1) Anticipated bypass

If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

(2) Unanticipated bypass

If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

d. Prohibition of bypass

- (1) Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the by-pass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(c) (i) The permittee submitted notices as required under Paragraph 4.c of this section.

(ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects; if the Regional Administrator

determines that it will meet the three conditions listed above in paragraph 4.d of this section

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5. Upset

- a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary non-compliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- c. Conditions necessary for a demonstration of upset.
A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;
 - (3) The permittee submitted notice of the upset as required in Paragraphs D.1.a. and 1.c. (24-hour notice); and
 - (4) The permittee complied with any remedial measures required under B.3. above.

d. Burden of proof

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

SECTION C. MONITORING AND RECORDS

1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this

permit, and records of all data used to complete the application for this permit, for a period of at

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least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.

- c. Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
- d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
- e. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed. After a first conviction of such person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The permittee shall allow the Regional Administrator, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including, or operations regulated or required under this permit; and

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d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. Planned changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); or
- (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies neither to pollutants which are subject to the effluent limitations in the permit nor to the notification requirements at 40 CFR §122.42(2)(1).
- (3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See §122.61; in some cases, modification or revocation and reissuance is mandatory.)

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

- (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Regional Administrator for reporting results of monitoring of sludge use or disposal practices.
- (2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR part 136 unless otherwise specified under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the

data submitted

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- (3) in the DMR or sludge reporting form specified by the Regional Administrator.
- (4) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Regional Administrator in the permit.

e. Twenty-four hour reporting.

- (1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.
A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
- (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
 - a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See §122.41(g).)
 - b. Any upset which exceeds any effluent limitation in the permit.
 - c. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See §122.44(g).)
- (3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e if the oral report has been received within 24 hours.

f. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. Other noncompliance.

The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d, D.1.e and D.1.f of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e of this section.

h. Other information.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit

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application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

- a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See §122.22)
- b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports

Except for data determined to be confidential under Paragraph A. 8 above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for the Section 309 of the CWA.

SECTION E. OTHER CONDITIONS.

1. DEFINITIONS FOR INDIVIDUAL NPDES PERMITS INCLUDING STORM WATER REQUIREMENTS.

For purposes of this permit, the following definitions shall apply.

Administrator means the Administrator of the United States Environmental protection Agency, or an authorized representative.

Applicable standards and limitations means all State, interstate, and Federal standards and limitations to which a "discharge", a "sewage sludge use or disposal practice", or a related activity is subject to, including "effluent limitations", water quality standards, standards of performance, toxic effluent standards or prohibitions, "Best management practices", pretreatment standards, and "standards for sewage sludge use and disposal" under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of CWA.

Application means that the EPA standard national forms for apply for a permit, including any additions, revisions or modifications to the forms; or forms approved by EPA for use in "approved States," including any approved modifications or revisions.

Average - The arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, the average shall be the geometric mean.

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Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

Best Management practices (BMPs) means schedules of activities, prohibitions of practices; maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Professional Judgement (BPJ means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT) or other appropriate technology based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Class I Sludge Management Facility means any POTW identified under 40 CFR §403.8(a) as being required to have an approved pretreatment program (including such POTWs located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10(e)) and any other treatment works treating domestic sewage classified as a "Class I sludge Management Facility" by the Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sludge use or disposal practices to adversely affect public health and the environment.

Coal pile runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample A sample consisting of a minimum of eight grab samples collected at equal intervals during a 24-hour period (lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample continuously collected proportionally to flow over that same time period.

Construction Activities The following definitions apply to construction activities.

- (a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.
- (b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.
- (c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

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(d) Final Stabilization means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117; 33 U.S.C. §§1251 et seq.

Daily Discharge means the "discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant is charged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representatives. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard national form, including any subsequent additions, revisions, or modifications, for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source" or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See "Point Source" definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment

works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

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This term does not include an addition of pollutants by any "indirect discharger."

Discharge Monitoring Report (DMR) means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self monitoring results by permittees. DMRs must be used by "approved states" as well as by EPA. EPA will supply DMRs to any approve State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone" or the ocean.

Effluent limitations guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations."

EPA means the United States "Environmental Protection Agency"

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR part 116 pursuant to Section 311 of CWA.

Indirect Discharge means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a Discharge which alone or in conjunction with a discharge or discharges from other sources, both:

- (a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- (b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SWDA), and the Marine Protection Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

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Large and Medium municipal separate storm sewer system means all municipal separate storm sewer that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "Maximum Concentration or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fractions thereof) prescribed in the Steam electric Guidelines, 40 CFR part 423. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR §122.2, where the two terms of "Maximum Daily discharge" and "Average Daily discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of CWA. The term includes an "approved program."

New discharger means any building, structure, facility, or installation:

- (a) From which there is or may be a "discharge of pollutants";
- (b) That did not commence the "discharge of pollutants" at a particular "site prior to August 13, 1979";
- (c) Which is not a "new source"; "site".
- (d) Which has never received a finally effective NPDES permit for discharges at that "site"

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site"

for

which it does not have a permit; an any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the regional Administrator in the

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issuance of a final permit to be an area of biological concern. In determining whether an area is an area of biological concern, the regional Administrator shall consider the factors specified in 40 CFR §§125.122.(a)(1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New Source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced:

- (a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination System."

Owner or operator means the owner operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge which exists the POTW into Waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State."

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point source means any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrate animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff. (See §122.2)

Pollutant means dredge spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)) heat, wrecked or discarded

equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

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(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (natural Resources Defense Council et al. V. Train, 8 E.R.C. 2129 (D.D.C. 1976, modified 12 E.R.C. 1833 (D.D.C. 1979)); also listed in appendix A of 40 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a "POTW".

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly Owned Treatment Works (POTW) means any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial, wastes of a liquid nature which is owned by a "State" or "municipality."

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator EPA, Region I, Boston, Massachusetts.

Secondary Industry Category means any industry category which is not a "primary industry category."

Second 313 water priority chemical means a chemical or chemical categories which are:

- (1) listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Re-authorization Act (SARA) of 1986);
- (2) present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and
- (3) satisfies at least one of the following criteria:
 - (i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances);

(ii) are listed as a hazardous substance pursuant to section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or

(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

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Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system; or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to solids removed during primary, secondary, or advance wastewater treatment, scum, septage, portable toilet pumping, Type III Marine Sanitation Device pumping (33 CFR part 159), and sewage sludge products. Sewage sludge does not include grit or screening, or ash generated during the incineration of sewage sludge.

Sewage sludge use or disposal practices means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to EPCRA; any chemical the facility is required to report pursuant to EPCRA Section 313; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the Clean water Act (see 40 CFR §110.10 and CFR §117.21) or Section 102 CERCLA (see 40 CFR §302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm Water means storm water runoff, snow melt runoff, and surface runoff drainage.

Storm Water discharge associated with industrial activity means the discharge from any conveyance with is use for collecting and conveying storm water and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. (See 40 CFR §122.26(b)(14) for specifics of this definition).

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants means any pollutant listed as toxic under Section 307(a)(1) or, in the case of "sludge use or disposal practices", any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or system, regardless of ownership (including federal facilities), used in the storage, treatment recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and wastewater from humans or

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household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage", where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

Waste pile means any non-containerized accumulation of solid, non-flowing water that is used for treatment or storage.

Waters of the United States means:

- (b) All waters which are currently used, were used in the past, or may be susceptible to use interstate or foreign commerce, including
- (c) All interstate waters, including interstate "wetlands",
- (d) All other waters such as intrastate lakes, rivers streams (including intermittent streams), mud flats, sand flats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) which are or could be used by interstate or foreign travelers for recreational or other purposes;
 - (2) from which fish or shell fish are or could be taken and sold interstate or foreign commerce; or
 - (3) which are used or could be used for industrial purposes by industries in interstate commerce;
- (e) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (f) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;
- (g) The territorial sea; and
- (h) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

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Wetlands means those areas that are inundated or saturated by surface or ground water at a frequently and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

2. DEFINITIONS FOR NPDES PERMIT SLUDGE USE AND DISPOSAL REQUIREMENTS.

Active sewage sludge unit is a sewage sludge unit that has not closed.

Aerobic digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate dry weight basis) designed:

- (1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and
- (2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel use to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel together. Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e., a flood with a magnitude equaled once in 100 years).

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Bulk sewage sludge is sewage sludge that is not solid or given way in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in to CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publically owned treatments works (POTW), as defined in 40 CFR §403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR §122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environmental adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of an inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mas of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does no include grease removed from a grease trap at

a restaurant.

Domestic Sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e., essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with

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respect to strata on the other side.

Feed crops are crops produced primarily for consumption by animals

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all measurements, taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and a reclamation site located in a populated area (e.g., a construction site located in a city).

Land with a low potential for public exposure is the land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a

strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

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Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian Tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201(e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use, or disposal of sewage sludge.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, or inorganic substance, a

combination or organic and inorganic substances, or pathogenic organism, after discharge and upon exposure, ingestion, inhalation or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirement) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to unit area of land (e.g., kilogram per hectare); or the volume of a material that can be applied to a unit area of land (e.g., gallons per acre).

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Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground-water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground-water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgement regarding ground-water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of the site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of land surface and runs off the land surface.

Seismic impact zone is an area that has a 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.01 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the

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elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100(j).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Island, the Commonwealth of the North Mariana Islands, and an Indian Tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitos, or other

organisms capable of transporting infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degree Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. THE COMMONLY USED ABBREVIATIONS ARE LISTED BELOW

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BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
COD	Chemical oxygen demand
CFS	Cubic feet per second
Chlorine	
Cl ₂	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc)
TRO	Total residual chlorine in marine waters where halogen compounds are present FAC Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e.: flow, temperature, pH, etc.
Cu. M/day or M ³ /day	Cubic Meters per day
DO	Dissolved Oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter

ml/l Milliliter(s) per liter
MGD Million gallons per day

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Nitrogen

Total N	Total nitrogen
NH3-N	Ammonia nitrogen as nitrogen
NO3-N	Nitrate nitrogen as nitrogen
NO2-N	Nitrite nitrogen as nitrogen
NO3-NO2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of alkalinity of a liquid or solid material.
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. Or Turbidity	Turbidity measured by the Nephelometric method (NTU)
ug/l	Micrograms per liter

WET	"Whole Effluent Toxicity" is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	"Chronic (Long-term Exposure Test)-No Observed Effect Concentration". The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation.
A-NOEC	"Acute (Short-term Exposure Test)-No Observed Effect Concentration". See C-NOEC definition.
LC-50	LC-50 is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC-50 = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

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Of 50% of the test population at a specific time of observation. The LC-50 = 100% is defined as a sample of undiluted effluent.

Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

APPEALING AN NPDES PERMIT

If you wish to contest any of the provisions of this permit, you must petition the Environmental Appeals Board (EAB) within thirty (30) days. If you received notice of this permit via certified mail, the 30-day period begins on the date of receipt. If you were served by regular mail, the 30-day period begins the day after the date of mailing of the notice by EPA. Where notice is served by regular mail, note that an additional three days are added to the period within which to appeal in order to compensate for mail delay.

In order to be eligible to petition the EAB, you must have filed comments on the draft permit or participated in any public hearing that may have been held pertaining to this permit. In addition, the issues raised in the appeal must have been raised during the public comment period so long as they were reasonably ascertainable. Any person who failed to file comments or failed to participate in any public hearing on the draft permit may petition for administrative review only to the extent of changes from the draft to the final permit decision.

The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by NPDES regulations and when appropriate, a showing that the condition in question is based on: (i) a finding of fact or conclusion of law which is clearly erroneous or (ii) an exercise of discretion or an important policy consideration which the EAB should review.

Procedures for appealing permits can be found at 40 CFR §§ 124.19, 124.20, and 124.60. Copies of the regulations are below. More information on the appeals process and EAB filing and service requirements can be found on the Internet at <http://www.epa.gov/eab/>. The Practice Manual can be found on the Internet at <http://www.epa.gov/eab/manual.htm>. The EAB website and the Practice Manual should be carefully reviewed prior to filing an appeal.

STAY OF NPDES PERMITS

The effect of a properly filed appeal of an NPDES permit on the conditions and effective date of the permit can be found at 40 CFR §§ 124.16 and 124.60. Copies of these regulations are below.

FREQUENTLY ASKED QUESTIONS

What is the Environmental Appeals Board?

The Environmental Appeals Board (EAB) of the U.S. Environmental Protection Agency (EPA) is the final Agency decisionmaker on administrative appeals under all major environmental statutes that EPA administers. It is an impartial body independent of all Agency components outside the immediate Office of the Administrator. It was created in 1992 in recognition of the growing importance of EPA adjudicatory proceedings as a mechanism for implementing and enforcing the environmental laws. The EAB sits in panels of three and makes decisions by majority vote.

The EAB's caseload consists primarily of appeals from permit decisions and civil penalty decisions. The EAB has authority to hear permit and civil penalty appeals in accordance with regulations delegating this authority from the EPA Administrator. Appeals from permit decisions made by EPA's Regional Administrators (and in some cases, state permitting officials) may be filed either by permittees or other interested persons. A grant of review of a permit decision is at the EAB's discretion. Permit appeals are governed primarily by procedural regulations at 40 C.F.R. Part 124. Appeals of civil penalty decisions made by EPA's administrative law judges may be filed, as a matter of right, either by private parties or by EPA. Penalty appeals are governed primarily by procedural regulations at 40 C.F.R. Part 22.

How can I contact the Board?

The Board's telephone number is (202) 233-0122. The Board's fax number is (202) 233-0121.

Where should I file a pleading in a matter before the Board?

a. EAB Mailing Address

All documents that are sent through the U.S. Postal Service (except by Express Mail) MUST be addressed to the EAB's *mailing address*, which is:

*U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001*

Documents that are sent to the EAB's *hand-delivery address* (below) through the U.S. Postal Service (except by Express Mail) will be returned to the sender and shall not be considered as filed.

b. Hand Delivery Address

Documents that are hand-carried in person, delivered via courier, mailed by U.S. Postal Service Express Mail, or delivered by a non-U.S. Postal Service carrier (e.g., Federal Express or UPS) MUST be delivered to:

*U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board
Colorado Building
1341 G Street, N.W., Suite 600
Washington, D.C. 20005*

Documents that are hand-carried may be delivered to the Clerk of the Board from 8:30 a.m. to 12:00 p.m. and from 1:00 p.m. to 4:30 p.m., Monday through Friday (excluding federal holidays).

Is there a fee for filing a petition or an appeal with the EAB?

No

How many copies of each filing and each exhibit must I file?

The Board requests one original and five copies of any filing. Where exhibits are more than 30 pages, the Board requests that three sets of exhibits be filed.

Is a pleading timely if it is postmarked by the specified filing date or must it be actually received by the Board by the filing date?

The postmark date of a pleading is not determinative. If the pleading has been mailed to the Board, it must be received in the EPA mail room by the specified filing date. The pleading is then date-stamped and forwarded to the Board. If the pleading is hand-delivered directly to the Board, it must be received at the Board's offices by the specified date. If the Board establishes a briefing schedule by order, any date the Board specifies for filing a pleading means the date by which it must be received, unless otherwise specified in the order.

NOTE: As previously stated, documents may be filed by hand-delivery with the Clerk of the Environmental Appeals Board only from 8:30 a.m. to 12:00 p.m. and from 1:00 p.m. to 4:30 p.m. Eastern Time Monday through Friday (excluding Federal holidays).

May I fax my petition for review, notice of appeal, or brief, to the EAB?

No. The Board will not accept petitions for review, notices of appeal, or briefs, for filing by facsimile.

May I fax a motion to the EAB?

Yes. The Board will consider motions that are faxed to the Board. However, if a motion is faxed to the Board, a copy of the motion should be placed in the mail or hand-delivered to the Board within 24 hours of faxing the motion. The copy need not be received by the Board within the 24 hour period. Copies of the motion should also be faxed to other parties.

Is there a required format for a petition for review or notice of appeal?

There is no required format for a petition for review or notice of appeal. However, the Board requests that these documents be typewritten and double-spaced on 8.5 x 11 paper. A petition for review should contain a caption that indicates the name of the case and the permit number. A notice of appeal in an enforcement matter should contain a caption that indicates the name of the case and the docket number. Both documents should contain the name, address, telephone number, and fax number (if any) of the person filing the pleading.

Is there a required format for exhibits?

There is no required format for exhibits. Each exhibit should be clearly marked with consecutive numbers or letters to distinguish it from other exhibits. Exhibits should be clearly referenced in the pleadings. If multiple exhibits are submitted, at least one complete set of exhibits should be rubber banded or clipped together, not spiral or "comb" bound.

Can I find out when the Board will issue a decision in my case?

No. The Board will take under consideration a motion for expedited consideration of a particular matter, based on unusual and compelling circumstances. The motion should clearly state why the party believes the case deserves expedited consideration. However, the Board will not routinely provide information as to when any particular matter will be decided.

Additional Mailing Requirements - Case Name and Case Identifier on Envelope or Outside Packaging.

Any envelope or other packaging containing documents sent to the EAB's mailing address or hand-delivery address, as prescribed above should bear a complete and accurate return address in the upper left hand corner. The envelope or packaging should also clearly state the case name and case identifier in the lower left hand corner.

In all instances, if an appeal has already been filed with the Clerk of the Board, the case name and case identifier are the name and appeal number assigned to the matter by the Clerk. If an appeal has not yet been filed, state the name of the permittee or facility and the permit number (e.g., NPDES Permit No. ID-0000-00). Other filing requirements are contained in the Environmental Appeals Board's Practice Manual.

May I appeal the Board's decision to the Administrator?

No. Decisions of the Board are final and may not be further appealed to the Administrator. However, the parties (other than EPA) have statutory rights of appeal to federal court.

What is the procedure for withdrawing a petition that has been filed with the Board?

The petitioner should file a motion requesting to withdraw the petition.

Whom may I call if I have additional questions that have not been answered here?

The Clerk of the Board is available to answer questions from 8:30 a.m. to 12:00 p.m. and from 1:00 p.m. to 4:30 p.m. Eastern Time Monday through Friday (excluding Federal holidays). Counsel to the Board are also available to answer general questions about the appeals process. Counsel will not discuss the merits or status of any matter before the Board. The Clerk of the Board and Counsel to the Board may be reached at (202) 233-0122.

TITLE 40--PROTECTION OF ENVIRONMENT
CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY (CONTINUED)
PART 124--PROCEDURES FOR DECISIONMAKING--Table of Contents

Subpart A--General Program Requirements

Sec. 124.16 Stays of contested permit conditions.

(a) Stays. (1) If a request for review of a RCRA, UIC, or NPDES permit under Sec. 124.19 of this part is filed, the effect of the contested permit conditions shall be stayed and shall not be subject to judicial review pending final agency action. Uncontested permit conditions shall be stayed only until the date specified in paragraph (a)(2)(i) of this section. (No stay of a PSD permit is available under this section.) If the permit involves a new facility or new injection well, new source, new discharger or a recommencing discharger, the applicant shall be without a permit for the proposed new facility, injection well, source or discharger pending final agency action. See also Sec. 124.60.

(2)(i) Uncontested conditions which are not severable from those contested shall be stayed together with the contested conditions. The Regional Administrator shall identify the stayed provisions of permits for existing facilities, injection wells, and sources. All other provisions of the permit for the existing facility, injection well, or source become fully effective and enforceable 30 days after the date of the notification required in paragraph (a)(2)(ii) of this section.

(ii) The Regional Administrator shall, as soon as possible after receiving notification from the EAB of the filing of a petition for review, notify the EAB, the applicant, and all other interested parties of the uncontested (and severable) conditions of the final permit that will become fully effective enforceable obligations of the permit as of the date specified in paragraph (a)(2)(i) of this section. For NPDES permits only, the notice shall comply with the requirements of Sec. 124.60(b).

(b) Stays based on cross effects. (1) A stay may be

granted based on the grounds that an appeal to the Administrator under Sec. 124.19 of one permit may result in changes to another EPA-issued permit only when each of the permits involved has been appealed to the Administrator and he or she has accepted each appeal.

(2) No stay of an EPA-issued RCRA, UIC, or NPDES permit shall be granted based on the staying of any State-issued permit except at the discretion of the Regional Administrator and only upon written request from the State Director.

(c) Any facility or activity holding an existing permit must:

(1) Comply with the conditions of that permit during any modification or revocation and reissuance proceeding under Sec. 124.5; and

(2) To the extent conditions of any new permit are stayed under this section, comply with the conditions of the existing permit which correspond to the stayed conditions, unless compliance with the existing conditions would be technologically incompatible with compliance with other conditions of the new permit which have not been stayed. [48 FR 14264, Apr. 1, 1983, as amended at 65 FR 30911, May 15, 2000]

Sec. 124.19 Appeal of RCRA, UIC, NPDES, and PSD Permits.

(a) Within 30 days after a RCRA, UIC, NPDES, or PSD final permit decision (or a decision under 270.29 of this chapter to deny a permit for the active life of a RCRA hazardous waste management facility or unit) has been issued under Sec. 124.15 of this part, any person who filed comments on that draft permit or participated in the public hearing may petition the Environmental Appeals Board to review any

condition of the permit decision. Persons affected by an NPDES general permit may not file a petition under this section or otherwise challenge the conditions of the general permit in further Agency proceedings. They may, instead, either challenge the general permit in court, or apply for an individual NPDES permit under Sec. 122.21 as authorized in Sec. 122.28 and then petition the Board for review as provided by this section. As provided in Sec.

122.28(b)(3), any interested person may also petition the Director to require an individual NPDES permit [[Page 272]] for any discharger eligible for authorization to discharge under an NPDES general permit. Any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision. The 30-day period within which a person may request review under this section begins with the service of notice of the Regional

Administrator's action unless a later date is specified in that notice. The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by these regulations and when appropriate, a showing that the condition in question is based on:

- (1) A finding of fact or conclusion of law which is clearly erroneous, or
- (2) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

(b) The Environmental Appeals Board may also decide on its own initiative to review any condition of any RCRA, UIC, NPDES, or PSD permit decision issued under this part for which review is available under paragraph (a) of this section. The Environmental Appeals Board must act under this paragraph within 30 days of the service date of notice of the Regional Administrator's action.

(c) Within a reasonable time following the filing of the petition for review, the Environmental Appeals Board shall issue an order granting or denying the petition for review. To the extent review is denied, the conditions of the final permit decision become final agency action. Public notice of any grant of review by the Environmental Appeals Board under paragraph (a) or (b) of this section shall be given as provided in Sec. 124.10. Public notice shall set forth a briefing schedule for the appeal and shall state that any interested person may file an amicus brief. Notice

of denial of review shall be sent only to the person(s) requesting review.

(d) The Regional Administrator, at any time prior to the rendering of a decision under paragraph (c) of this section to grant or deny review of a permit decision, may, upon notification to the Board and any interested parties, withdraw the permit and prepare a new draft permit under Sec. 124.6 addressing the portions so withdrawn. The new draft permit shall proceed through the same process of public comment and opportunity for a public hearing as would apply to any other draft permit subject to this part. Any portions of the permit which are not withdrawn and which are not stayed under Sec. 124.16(a) continue to apply.

(e) A petition to the Environmental Appeals Board under paragraph (a) of this section is, under 5 U.S.C. 704, a prerequisite to the seeking of judicial review of the final agency action.

(f)(1) For purposes of judicial review under the appropriate Act, final agency action occurs when a final RCRA, UIC, NPDES, or PSD permit decision is issued by EPA and agency review procedures under this section are exhausted. A final permit decision shall be issued by the Regional Administrator: (i) When the Environmental Appeals Board issues notice to the parties that review has been denied; (ii) When the Environmental Appeals Board issues a decision on the merits of the appeal and the decision does not include a remand of the proceedings; or (iii) Upon the completion of remand proceedings if the proceedings are remanded, unless the Environmental Appeals Board's remand order specifically provides that appeal of the remand decision will be required to exhaust administrative remedies.

(2) Notice of any final agency action regarding a PSD permit shall promptly be published in the Federal Register.

(g) Motions to reconsider a final order shall be filed within ten (10) days after service of the final order. Every such motion must set forth the matters claimed to have been erroneously decided and the nature of the alleged errors. Motions for reconsideration under this provision shall be directed to, and decided by, the Environmental Appeals Board. Motions for reconsideration directed to the administrator, [[Page 273]] rather than to the Environmental Appeals Board, will not be considered, except in cases that the Environmental Appeals Board has referred to the Administrator pursuant to Sec. 124.2 and in which the Administrator has issued the final order. A motion for reconsideration shall not stay the effective date of the

final order unless specifically so ordered by the Environmental Appeals Board. [48 FR 14264, Apr. 1, 1983, as amended at 54 FR 9607, Mar. 7, 1989; 57 FR 5335, Feb. 13, 1992; 65 FR 30911, May 15, 2000]

Sec. 124.20 Computation of time.

- (a) Any time period scheduled to begin on the occurrence of an act or event shall begin on the day after the act or event.
- (b) Any time period scheduled to begin before the occurrence of an act or event shall be computed so that the period ends on the day before the act or event.
- (c) If the final day of any time period falls on a weekend or legal holiday, the time period shall be extended to the next working day.
- (d) Whenever a party or interested person has the right or is required to act within a prescribed period after the service of notice or other paper upon him or her by mail, 3 days shall be added to the prescribed time.

SUBPART D—SPECIFIC PROCEDURES APPLICABLE TO NPDES PERMITS

Sec. 124.60 Issuance and effective date and stays of NPDES permits.

In addition to the requirements of Secs. 124.15, 124.16, and 124.19, the following provisions apply to NPDES permits:

(a) Notwithstanding the provisions of Sec. 124.16(a)(1), if, for any offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig which has never received a final effective permit to discharge at a [Page 281] "site," but which is not a "new discharger" or a "new source," the Regional Administrator finds that compliance with certain permit conditions may be necessary to avoid irreparable environmental harm during the administrative review, he or she may specify in the statement of basis or fact sheet that those conditions, even if contested, shall remain enforceable obligations of the discharger during administrative review.

(b)(1) As provided in Sec. 124.16(a), if an appeal of an initial permit decision is filed under Sec. 124.19, the force and effect of the contested conditions of the final permit shall be stayed until final agency action under Sec. 124.19(f). The Regional Administrator shall notify, in accordance with Sec. 124.16(a)(2)(ii),

the discharger and all interested parties of the uncontested conditions of the final permit that are enforceable obligations of the discharger.

- (2) When effluent limitations are contested, but the underlying control technology is not, the notice shall identify the installation of the technology in accordance with the permit compliance schedules (if uncontested) as an uncontested, enforceable obligation of the permit.
- (3) When a combination of technologies is contested, but a portion of the combination is not contested, that portion shall be identified as uncontested if compatible with the combination of technologies proposed by the requester.
- (4) Uncontested conditions, if inseverable from a contested condition, shall be considered contested.
- (5) Uncontested conditions shall become enforceable 30 days after the date of notice under paragraph (b)(1) of this section.

(6) Uncontested conditions shall include: (i) Preliminary design and engineering studies or other requirements necessary to achieve the final permit conditions which do not entail substantial expenditures; (ii) Permit conditions which will have to be met regardless of the outcome of the appeal under Sec. 124.19; (iii) When the discharger proposed a less stringent level of treatment than that contained in the final permit, any permit conditions appropriate to meet the levels proposed by the discharger, if the measures required to attain that less stringent level of treatment are consistent with the measures required to attain the limits proposed by any other party; and (iv) Construction activities, such as segregation of waste streams or installation of equipment, which would partially meet the final permit conditions and could also be used to achieve the discharger's proposed alternative conditions.

(c) In addition to the requirements of Sec. 124.16(c)(2), when an appeal is filed under Sec. 124.19 on an application for a renewal of an existing permit and upon written request from the applicant, the Regional Administrator may delete requirements from the existing permit which unnecessarily duplicate uncontested provisions of the new permit. [65 FR 30912, May 15, 2000]

Attachment - A

**MARINE ACUTE
TOXICITY TEST PROCEDURE AND PROTOCOL**

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **Mysid Shrimp (*Mysidopsis bahia*) definitive 48 hour test.**
- ~~**Japanese Killifish (*Fundulus japonicus*) definitive 48 hour test.**~~

Acute toxicity data shall be reported as outlined in Section VIII.

II. METHODS

Methods to follow are those recommended by EPA in:

Weber, C.I. et al. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, Fourth Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH. August 1993, EPA/600/4-90/027F.

Any exceptions are stated herein.

III. SAMPLE COLLECTION

A discharge sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for the chemical and physical analyses. The remaining sample shall be dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual oxidants (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. A thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) should also be run.

All samples held overnight shall be refrigerated at 4°C.

IV. DILUTION WATER

A grab sample of dilution water used for acute toxicity testing shall be collected at a point away from the discharge which is free from toxicity or other sources of contamination. Avoid collecting near areas of obvious road or agricultural runoff, storm sewers or other point source discharges. An additional control (0% effluent) of a standard laboratory water of known quality shall also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a conductivity, salinity, total suspended solids, and pH similar to that of the receiving water may be substituted **AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S)**. Written requests for use of an alternative dilution water should be mailed with supporting documentation to the following address:

Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency-New England
JFK Federal Building (CAA)
Boston, MA 02203

It may prove beneficial to have the proposed dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA New England requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Mysid and Menidia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND RECOMMENDED EFFLUENT TOXICITY TEST CONDITIONS FOR
THE MYSID, MYSIDOPSIS BAHIA 48 HOUR TEST¹

1. Test type	Static, non-renewal
2. Salinity	25ppt \pm 10 percent for all dilutions by adding dry ocean salts
3. Temperature (°C)	20°C \pm 1°C or 25°C \pm 1°C
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml
7. Test solution volume	200 ml
8. Age of test organisms	1-5 days
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration ²	None
14. Dilution water	Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	≥ 0.5
16. Number of dilutions ³	5 plus a control. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.

17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

Footnotes:

1. Adapted from EPA/600/4-90/027F.
2. If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.
3. When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

EPA NEW ENGLAND RECOMMENDED TOXICITY TEST CONDITIONS FOR THE
INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST¹

1. Test Type	Static, non-renewal
2. Salinity	25 ppt \pm 2 ppt by adding dry ocean salts
3. Temperature	20°C \pm 1°C or 25°C \pm 1°C
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration ²	None
14. Dilution water	Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	≥ 0.5
16. Number of dilutions ³	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability

90% or greater survival of test organisms in control solution.

19. Sampling requirements

For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.

20. Sample volume required

Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

1. Adapted from EPA/600/4-90/027F.
2. If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.
3. When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	<u>Minimum Quanti- fication</u>	<u>Level (mg/L)</u>
pH	x	x	---	
Salinity	x	x	PPT(0/00)	
Total Residual Oxidants* ¹	x	x	0.05	
Total Solids and Suspended Solids	x	x	---	
Ammonia	x	x	0.1	
Total Organic Carbon	x	x	0.5	
Total Metals				
Cd	x		0.001	
Cr	x		0.005	
Pb	x		0.005	
Cu	x		0.0025	
Zn	x		0.0025	
Ni	x		0.004	
Al	x		0.02	

Superscript:

*¹ Total Residual Oxidants

Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

- Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
- Method 4500-CL G DPD Photometric Method.

or use USEPA Manual of Methods Analysis of Water or Wastes, Method 330.5.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See flow chart in Figure 6 on page 77 of EPA 600/4-90/027F for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 94 of EPA 600/4-90/027F.

VIII. TOXICITY TEST REPORTING

The following must be reported:

- Description of sample collection procedures, site description;
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody; and
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicity test data must be included.
- Raw data and bench sheets.
- All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
- Provide a description of dechlorination procedures (as applicable).
- Any other observations or test conditions affecting test outcome.
- Statistical tests used to calculate endpoints.

Attachment - B

EPA REGION I

NPDES PERMIT

SLUDGE COMPLIANCE GUIDANCE

04 NOVEMBER 1999

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1. LAND APPLICATION

This section applies to sewage sludge from the permittee's facility which is applied to the land for the purpose of enriching the soil. The permittee should answer the following questions. The answers to these questions need to be evaluated to determine which permitting scenario for sewage sludge land application applies. After the permitting scenario is determined, the permittee must comply with the directives contained in the chosen scenario.

1.1 Question Algorithm

The permittee should review and answer the following questions. The information gathered from answering these questions will aid the permittee in determine the appropriate land application scenario which applies to the sludge generated at the permittee's waste water treatment facility. The scenario selected will detail which specific Use or Disposal of Sewage Sludge, Part 503, regulations must be complied with for the land application method used by the permittee.

1. What type of land is the sewage sludge being applied to?
If the sewage sludge/material is to be sold or given away, or applied to a lawn or home garden, the sewage sludge MUST meet Class A pathogen reduction requirements.
2. Is all the sludge generated at the facility used in the same manner?
If all the sludge is not used the same way, the permittee needs to determine what amounts are used in what manner. Different scenarios may apply to the different portions.
3. Is the sewage sludge in bulk or is it a bagged material?
Scenario No.1 and No.6 can be applied to bagged materials. All other scenarios apply to bulk sewage sludge only. Bulk material is an amount of sewage sludge greater than one metric ton (2200 lbs).
4. What is the metals content in the sewage sludge for the following metals: arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc?
If any of the concentrations in Table 1 of 40 CFR §503.13 (b)(1) are exceeded on a dry weight basis, the sewage sludge cannot be land applied. Table 1 is summarized:

§503.13 Table 1
Maximum Pollutant Concentrations

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

5. Does the sludge qualify for "exceptional quality" criteria in accordance with Table 3, 40 CFR §503.13(b)(3)) on a dry weight basis? Table 3 is summarized:

§503.13 Table 3
Exceptional Quality Pollutant Concentrations

Arsenic.....	41 mg/kg
Cadmium.....	39 mg/kg
Copper.....	1500 mg/kg
Lead.....	300 mg/kg
Mercury.....	17 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	2800 mg/kg

In addition, Class A pathogen reduction (see Section 4), and achievement of one of the vector attraction reduction alternatives 1 through 8 (see Section 5) must be attained.

NOTHING ELSE QUALIFIES AS EXCEPTIONAL QUALITY

6. What is the level of pathogen reduction achieved, Class A or Class B?

Refer to Section 4, Pathogen Reduction, to select the appropriate method that is used to reduce the pathogens in the sewage sludge produced at the facility.

7. What is the method for vector attraction reduction?

Refer to Section 5, Vector Attraction Reduction, to select the appropriate method that is used to reduce the pathogens in the sewage sludge produced at the facility.

8. What is the amount of sewage sludge used in dry metric tons/365 day period?

This determines the frequency of monitoring (see Section 6) for the pollutants, pathogens and vectors. Use the table below to make the determination:

Sampling Frequency Table

SEWAGE SLUDGE PRODUCED (metric tons per 365 day period)	SAMPLING FREQUENCY
0 < Sludge (tons) < 290	Once per Year
290 ≤ Sludge (tons) < 1500	Once Per Quarter (four times per year)
1500 ≤ Sludge (tons) < 15000	Once per 60 Days (six times per year)
Sludge (tons) ≤ 15000	Once per Month (12 times per year)

1.2 Scenario Determination

After the information is gathered and evaluated from the questions in the preceding section, the permittee can select the appropriate land application scenario.

Land Application Scenario Selection Table

SCENARIO	LAND TYPE	BULK/ BAGGED	POLLUTANT LIMITS ²	PATHOGENS ³	VECTORS ³
No. 1	ANY TYPE	BOTH (EQ)	TABLE 3	CLASS A	1-8 ONLY
No. 2	SEE BELOW ¹	BULK	TABLE 3	CLASS A	9 OR 10
No. 3	SEE BELOW ¹	BULK	TABLE 3	CLASS B	1-10
No. 4	SEE BELOW ¹	BULK	TABLE 2	CLASS A	1-10
No. 5	SEE BELOW ¹	BULK	TABLE 2	CLASS B	1-10
No. 6	ANY TYPE	BAGGED	TABLE 4	CLASS A	1-8 ONLY

1. Land types: Agricultural land, forest, reclamation site, or public contact site
2. Refer to 40 CFR 503.13 Table 2, Table 3 and Table 4
3. The Pathogen Reduction Section (Section 4) and Vector Attraction Reduction Sections (Section 5) are located after the Scenario section.

1.3. Scenarios

This section contains the sewage sludge land application scenarios. One of these scenarios has been selected by the permittee, based on reading and answering the questions in Section 1.2, to regulate their treatment facility's sewage sludge land application.

1.3.1. Scenario No.1

This applies to bulk or bagged sewage sludge and materials derived from sewage sludge meeting the pollutant concentrations at §503.13(b)(3); one of the Class A pathogen reduction alternatives at §503.32(a); one of the vector attraction reduction requirements at §503.33(b)(1) through (b)(8). Materials meeting these characteristics are considered "Exceptional quality" materials and are exempt from the general requirements at §503.12 and the management practices at §503.14. Sludges of this quality may be applied to any type of land.

SLUDGE CONDITIONS

1. Pollutant limitations

- a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 1a. are exceeded.
- c. The monthly average concentration of metals in the sewage sludge shall not exceed the following (dry weight basis):

Arsenic.....	41 mg/kg
Cadmium.....	39 mg/kg
Copper.....	1500 mg/kg
Lead.....	300 mg/kg
Mercury.....	17 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	2800 mg/kg

2. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40CFR §503.32
3. The permittee shall meet one of the vector attraction reduction requirements specified in 40CFR §503.33. The permittee may only utilize alternatives 1 through 8. If the permittee meets one of the vector attraction reduction alternatives 1 through 5, the Class A pathogen requirements must be met either prior to or at the same time as the vector attraction reduction requirement.
4. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 1a, the pathogen density and the vector attraction reduction requirement at the frequency specified in sludge condition 6 of the permit.
5. The permittee shall develop and retain the following information for five years:
 - a. The concentration of each pollutant listed in Paragraph 1a.
 - b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in §503.32(a) and the vector attraction reduction requirements in [insert one of the vector attraction reduction requirements in §503.33 (b)(1) through (b)(8)] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
 - c. A description of how the Class A pathogen requirements are met.
 - d. A description of how the vector attraction reduction requirements are met.
6. The permittee shall report the information in Paragraphs 5a, b, c, and d annually on February 19. Reports shall be

submitted to EPA at the address in the Monitoring and Reporting section of this permit.

7. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in 40CFR §503.8

1.3.2. Scenario No.2

This scenario applies to bulk sewage sludge or materials derived from bulk sewage sludge meeting the following criteria: the pollutant concentrations in §503.13(b)(3); Class A pathogen requirements in §503.32(a); and vector attraction §503.33(b)(9) or (b)(10). Sludge of this quality may be applied to agricultural land, forest land, public contact site or reclamation site. This scenario has specific requirements for the preparer and the applier.

SLUDGE CONDITIONS

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
 - a. Bulk sewage sludge shall not be applied to the land except in accordance with 40 CFR Part 503, Subpart B.
 - b. The permittee shall provide the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
 - c. The person who applies the bulk sewage sludge shall obtain notice and necessary information from the permittee to comply with the requirements of 40 CFR Part 503, Subpart B.
 - d. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage sludge notice and necessary information to comply with 40 CFR Part 503, Subpart B.
 - e. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the preparer notice and necessary information to comply with 40 CFR Part 503, Subpart B.
 - f. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with 40 CFR Part 503, Subpart B.

g. When bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:

- i. The location of each site by either street address or latitude and longitude.
- ii. The approximate period of time the bulk sewage sludge will be applied to each site.
- iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
- iv. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if applicable) for the person who applies the bulk sewage sludge.

2. Pollutant limitations

a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.

c. The monthly average concentration of metals in the sewage sludge shall not exceed the following (dry weight basis):

Arsenic.....	41 mg/kg
Cadmium.....	39 mg/kg
Copper.....	1500 mg/kg
Lead.....	300 mg/kg
Mercury.....	17 mg/kg

Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	2800 mg/kg

3. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40CFR §503.32
4. The person who applies the bulk sewage sludge shall meet either vector attraction reduction requirement 9 or 10 as specified in 40CFR §503.33.
5. The bulk sewage sludge shall be injected below the surface of the land, or incorporated into the soil within 8 hours after discharge from the pathogen treatment process.
6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a and the pathogen density requirements at the frequency specified in sludge condition 6 of the permit.
7. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
 - a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act, or its designated habitat.
 - b. The bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered, or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as defined in 40 CFR 122.2, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act.
 - c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site, or a land reclamation site that is less than 10 meters (33 feet) from waters of the United States, as defined in 40 CFR 122.2.
 - d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.
8. The permittee shall develop and retain the following information for five years:

a. The pollutant concentration for each pollutant listed in Paragraph 2a. of this section.

b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in §503.32(a) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

c. A description of how the pathogen requirements are met.

9. The person who applies the bulk sewage sludge shall develop and retain the following information for five years:

a. The following certification requirement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14 and the vector attraction reduction requirement in either §503.33(b)(9) or (b)(10) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment."

b. A description of how the management practices in §503.14 are met for each site on which the bulk sewage sludge is applied.

c. A description of how the vector attraction reduction requirements are met for each site on which bulk sewage sludge is applied. Including a description of how the requirement in Paragraph 5 is met.

10. The permittee shall report the information in paragraphs 8a, b, and c annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.

11. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40CFR §503.8.

12. The permittee shall supply the following information/requirements to the person who applies the bulk

sewage sludge:

- a. Information in Paragraph 1b.
- b. Requirements in Paragraphs 1f and 5.
- c. Management Practices in Paragraphs 7a through d.
- d. Record keeping requirements in Paragraphs 9a through c.

13. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:

- a. Describe the geographic area covered by the plan;
- b. Identifies site selection criteria;
- c. Describes how sites will be managed; and
- d. Provides for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

1.3.3. Scenario No.3

This scenario applies to bulk sewage sludge meeting the following criteria: pollutant concentrations at §503.13(b)(3); Class B pathogens at §503.32(b); and one of the vector attraction reduction requirements found at §503.33(b). Bulk sewage sludge of this quality may be applied to agricultural land, forest land, public contact site or a reclamation site. There are specific requirements for the preparer and applier.

SLUDGE CONDITIONS

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
 - a. Bulk sewage sludge shall no the applied to the land except in accordance with 40 CFR Part 503 Subpart B.
 - b. The permittee shall provide the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
 - c. The person who applies the bulk sewage sludge shall

obtain notice and necessary information from the permittee to comply with the requirements of 40 CFR Part 503 Subpart B.

- d. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- e. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the person who prepares the bulk sewage sludge notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- vi. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- g. When bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:
 - i. The location of each site by either street address or latitude and longitude.
 - ii. The approximate period of time the bulk sewage sludge will be applied to each site.
 - iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
 - iv. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if applicable) for the person who applies the bulk sewage sludge.

2. Pollutant limitations

- a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.

c. The monthly average concentration of metals in the sewage sludge shall not exceed the following (dry weight basis):

Arsenic.....	41 mg/kg
Cadmium.....	39 mg/kg
Copper.....	1500 mg/kg
Lead.....	300 mg/kg
Mercury.....	17 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	2800 mg/kg

3. The permittee shall meet Class B pathogen requirements utilizing one of the methods specified in 40CFR §503.32
4. The permittee shall meet one of vector attraction reduction requirements specified in 40CFR §503.33
5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density requirements and the vector attraction reduction requirements at the frequency specified in sludge condition 6 of the permit.
6. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
 - a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act, or its designated habitat.
 - b. The bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered, or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as

defined in 40 CFR 122.2, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act.

- c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site, or a land reclamation site that is less than 10 meters (33 feet) from waters to the United States, as defined in 40 CFR 122.2.
- d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.

7. The person who applies the bulk sewage sludge shall insure that the following site restrictions are met for each site on which the bulk sewage sludge is applied:

- a. Food crops with harvested parts that touch the sewage sludge/soil mixture and are not totally above the land surface shall not be harvested for 14 months after application of sewage sludge.
- b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil.
- c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.
- d. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.
- e. Animals shall not be grazed on the land for 30 days after application of sewage sludge.
- f. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.
- g. Public access to land with a high potential for public

exposure shall be restricted for one year after application of sewage sludge.

- h. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.
8. The permittee shall develop and retain the following information for five years:
 - a. The concentration of each pollutant listed in Paragraph 2a of this section.
 - b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirement in §503.32(b) and the vector attraction reduction requirement in insert one of the vector attraction reduction requirements in §503.33(b) (1) through (b) (8), if one of those requirements is metl was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."
 - c. A description of how the Class B pathogen requirements are met.
 - d. When the permittee is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.
9. The person who applies the bulk sewage sludge shall develop and maintain the following information for five years:
 - a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14, the site restrictions in §503.32(b) (5), and the vector attraction reduction requirements in insert either §503.33(b) (9) or (b) (10), if one of those requirements is metl was prepared for each site on which sewage sludge is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant

penalties for false certification including the possibility of fine and imprisonment."

- b. A description of how the management practices in Paragraphs 6a through d are met for each site.
- c. A description of how the site restrictions in Paragraphs 7a through h are met for each site.
- d. When the applier is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirement in either §503.33(b)(9) or (b)(10) is met.

10. The permittee shall report the information in Paragraphs 8a, b, c and d annually on February 19. Reports shall be submitted to the address in the Monitoring and Reporting section of this permit.

11. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40CFR §503.8

12. The permittee shall notify the person who applies the bulk sewage sludge of the following information/requirements:

- a. Information in Paragraph 1b.
- b. Requirement in Paragraph 1f.
- c. Management practices in Paragraphs 6a through d.
- d. Site Restrictions in Paragraphs 7a through h.
- e. Record keeping requirements in Paragraphs 9a through d.

13. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:

- a. Describe the geographic area covered by the plan;
- b. Identifies site selection criteria;
- c. Describes how sites will be managed; and
- d. Provides for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

1.3.4. Scenario No.4

This scenario applies to bulk sewage sludge meeting the following criteria: pollutant concentrations at §503.13(b)(2); Class A pathogen requirements at §503.32(a); and one of the vector attraction reduction requirements found at §503.33(b). Bulk sewage sludge of this quality may be applied to agricultural land, forest land, public contact site or a reclamation site. There are specific requirements for the preparer and the applier.

SLUDGE CONDITIONS

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
 - a. Bulk sewage sludge shall not be applied to the land except in accordance with 40 CFR Part 503 Subpart B.
 - b. Bulk sewage sludge shall not be applied if any of the cumulative pollutant loading rates in Paragraph 2c have been reached on the site.
 - c. The permittee shall provide the person who supplies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
 - d. The person who applies the bulk sewage sludge shall obtain notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
 - e. The person who applies the bulk sewage sludge shall obtain the following information:
 - i. Prior to application of bulk sewage sludge, the person who proposes to apply the bulk sewage shall contact the permitting authority for the state in which the bulk sewage sludge will be applied to determine whether bulk sewage sludge subject to the cumulative pollutant loading rates in §503.13(b)(2) has been applied to the site since July 20, 1993.
 - ii. If bulk sewage sludge subject to the cumulative pollutant loading rates has not been applied to the site, the cumulative amount for each pollutant listed in Paragraph 2c may be applied.
 - iii. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative

amount of each pollutant applied to the site since that date is known, the cumulative amount of each pollutant applied to the site shall be used to determine the additional amount of each pollutant that can be applied to the site such that the loading rates in Paragraph 2c are not exceeded.

- iv. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site since that date is not known, an additional amount of any pollutant may not be applied to the site.
- f. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- g. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the person who prepares the bulk sewage sludge notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- h. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- i. When bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:
 - i. The location of each site by either street address or latitude and longitude.
 - ii. The approximate period of time the bulk sewage sludge will be applied to each site.
 - iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
 - iv. The name, address, telephone number, and National Pollutant Discharge Elimination System permit

number (if applicable) for the person who applies the bulk sewage sludge.

j. The person who applies the bulk sewage sludge shall provide written notice, prior to the initial application of the bulk sewage sludge, to the permitting authority for the State in which the bulk sewage sludge will be applied. The notice shall include:

- i. The location, by either street address or latitude and longitude, of the land application site.
- ii. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) of the person who will apply the bulk sewage sludge.

2. Pollutant limitations

a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.

c. The cumulative pollutant loading rates for each site shall not exceed the following (kilograms per hectare):

Arsenic.....	41
Cadmium.....	39
Copper.....	1500
Lead.....	300
Mercury.....	17
Nickel.....	420
Selenium.....	100
Zinc.....	2800

d. Bulk sewage sludge shall not be applied to a site on which any of the cumulative pollutant loading rates have been reached.

3. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40CFR §503.32
4. The permittee shall meet one of the vector attraction reduction requirements specified in 40CFR §503.33. The permittee may only utilize alternatives 1 through 8. If the permittee meets one of the vector attraction reduction alternatives 1 through 5, the Class A pathogen requirements must be met either prior to or at the same time as the vector attraction reduction requirement.
5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density requirements and the vector attraction reduction requirements at the frequency specified in sludge condition 6 of the permit.
6. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
 - a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act, or its designated habitat.
 - b. The bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered, or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as defined in 40 CFR 122.2, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act.
 - c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site, or a land reclamation site that is less than 10 meters (33 feet) from waters of the United States, as defined in 40 CFR 122.2.
 - d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.
7. The permittee shall develop and maintain the following information for five years:
 - a. The concentration of each pollutant listed in Paragraph 2a in the bulk sewage sludge.

b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirement in §503.32(a) and the vector attraction reduction requirement in Insert one of the vector attraction reduction requirements in §503.33(b)(1) through (b)(8), if one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."

c. A description of how the Class A pathogen requirements are met.

d. When the permittee is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

8. The person who applies the bulk sewage sludge shall develop and retain the following information indefinitely:

- a. The location, by either street address or latitude and longitude, of each site on which bulk sewage sludge is applied.
- b. The number of hectares in each site on which bulk sewage sludge is applied.
- c. The date bulk sewage sludge is applied to each site.
- d. The cumulative amount of each pollutant listed in Paragraph 2a in the bulk sewage sludge applied to each site, including the amount in Paragraph 1e(iii) of this section. (in kilograms)
- e. The amount of sewage sludge applied to each site (in metric tons).
- f. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the requirements to obtain information in §503.12(e)(2) {Paragraphs 1e (i through iv) of this permit} was prepared for each site on which sewage

sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment."

- g. A description of how the requirements to obtain the information in Paragraph 1e (i through iv) are met.
9. The person who applies the bulk sewage sludge shall develop and maintain the following information for five years:
 - a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14 was prepared for each site on which sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
 - b. A description of how the management practices in Paragraphs 6a through d are met for each site.
 - c. When the applier is responsible for meeting the vector attraction reduction requirements, the following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in either §503.33(b)(9) or (b)(10) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
 - d. When the applier is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirement in either §503.33(b)(9) or (b)(10) is met.
10. The permittee shall report the information in Paragraphs 7a, b, c and d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.

11. When 90 percent or more of any of the cumulative pollutant loading rates are reached, the person who applies the bulk sewage sludge shall report the information in Paragraphs 10a through d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.
12. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40CFR §503.8.
13. The permittee shall notify the applier of the following information/requirements:
 - a. Requirements in Paragraphs 1b, 1d, 1e, 1j, 2c and 2d.
 - b. Information in Paragraph 1c.
 - c. The management practices in Paragraphs 6a through d.
 - d. Record keeping requirements in Paragraphs 8a through g and Paragraphs 9a through d.
 - e. Reporting requirements in Paragraph 11.
14. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:
 - a. Describe the geographic area covered by the plan;
 - b. Identifies site selection criteria;
 - c. Describes how sites will be managed; and
 - d. Provides for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

1.3.5. Scenario No.5

This scenario applies to bulk sewage sludge meeting the following criteria: pollutant concentrations at §503.13(b)(2); Class B pathogen requirements at §503.32(b); and one of the vector attraction reduction requirements found at §503.33(b). Bulk sewage sludge of this quality may be applied to agricultural land, forest land, public contact site or a reclamation site. There are specific requirements for the preparer and the applier.

SLUDGE CONDITIONS

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
 - a. Bulk sewage sludge shall not be applied to the land except in accordance with 40 CFR Part 503 Subpart B.
 - b. Bulk sewage sludge shall not be applied if any of the cumulative pollutant loading rates in Paragraph 2c have been reached on the site.
 - c. The permittee shall provide the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
 - d. The person who applies the bulk sewage sludge shall obtain notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
 - e. The person who applies the bulk sewage sludge shall obtain the following information:
 - i. Prior to application of bulk sewage sludge, the person who propose to apply the bulk sewage shall contact the permitting authority for the state in which the bulk sewage sludge will be applied to determine whether bulk sewage sludge subject to the cumulative pollutant loading rates in §503.13(b)(2) has been applied to the site since July 20, 1993.
 - ii. If bulk sewage sludge subject to the cumulative pollutant loading rates has not been applied to the site, the cumulative amount for each pollutant listed in Paragraph 2c may be applied.
 - iii. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site since that date is known, the cumulative amount of each pollutant applied to the site shall be used to determine the additional amount of each pollutant that can be applied to the site such that the loading rates in Paragraph 2c are not exceeded.
 - iv. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site since

that date is not known, an additional amount of any pollutant may not be applied to the site.

- f. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- g. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the person who prepares the bulk sewage sludge notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- h. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- i. When bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:
 - i. The location of each site by either street address or latitude and longitude.
 - ii. The approximate period of time the bulk sewage sludge will be applied to each site.
 - iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
 - iv. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if applicable) for the person who applies the bulk sewage sludge.
- j. The person who applies the bulk sewage sludge shall provide written notice, prior to the initial application of the bulk sewage sludge, to the permitting authority for the State in which the bulk sewage sludge will be applied. The notice shall include:

- i. The location, by either street address or latitude and longitude, of the land application site.
- ii. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) of the person who will apply the bulk sewage sludge.

2. Pollutant limitations

- a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.
- c. The cumulative pollutant loading rates for each site shall not exceed the following (kilograms per hectare):

Arsenic.....	41
Cadmium.....	39
Copper.....	1500
Lead.....	300
Mercury.....	17
Nickel.....	420
Selenium.....	100
Zinc.....	2800

- d. Bulk sewage sludge shall not be applied to a site on which any of the cumulative pollutant loading rates have been reached.
3. The permittee shall meet Class B pathogen requirements utilizing one of the methods specified in 40CFR §503.32
4. The permittee shall meet one of vector attraction reduction requirements specified in 40CFR §503.33
5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density

requirements and the vector attraction reduction requirements at the frequency specified in sludge condition 6 of the permit.

6. The person who applies the bulk sewage sludge shall insure that the following site restrictions are met for each site on which the bulk sewage sludge is applied:
 - a. Food crops with harvested parts that touch the sewage sludge/soil mixture and are not totally above the land surface shall not be harvested for 14 months after application of sewage sludge.
 - b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil.
 - c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.
 - d. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.
 - e. Animals shall not be grazed on the land for 30 days after application of sewage sludge.
 - f. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.
 - g. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge.
 - h. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.
7. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
 - a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the

Endangered Species Act, or its designated habitat.

- b. The bulk sewage sludge shall no be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered, or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as defined in 40 CFR 122.2, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act.
- c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site, or a land reclamation site that is less than 10 meters (33 feet) from waters of the United States, as defined in 40 CFR 122.2.
- d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.

8. The permittee shall develop and maintain the following information for five years:

- a. The concentration of each pollutant listed in Paragraph 2a in the bulk sewage sludge.
- b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirement in §503.32(b) and the vector attraction reduction requirement in insert one of the vector attraction reduction requirements in §503.33(b)(1) through (b)(8), if one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."
- c. A description of how the Class B pathogen requirements are met.
- d. When the permittee is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

9. The person who applies the bulk sewage sludge shall develop and retain the following information indefinitely:
 - a. The location, by either street address or latitude and longitude, of each site on which bulk sewage sludge is applied.
 - b. The number of hectares in each site on which bulk sewage sludge is applied.
 - c. The date bulk sewage sludge is applied to each site.
 - d. The cumulative amount of each pollutant listed in Paragraph 2a in the bulk sewage sludge applied to each site, including the amount in Paragraph 1e(iii) of this section. (in kilograms)
 - e. The amount of sewage sludge applied to each site (in metric tons).
 - f. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the requirement to obtain information in §503.12(e)(2) {Paragraphs 1e(i through iv) of this permit.} was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment."
 - g. A description of how the requirements to obtain information in Paragraphs 1e (i through iv) are met.
10. The person who applies the bulk sewage sludge shall develop and maintain the following information for five years:
 - a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14 was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

- b. A description of how the management practices in Paragraphs 7a through d are met for each site.

- c. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the site restriction in §503.32(b)(5) for each site on which Class B sewage sludge was applied was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment."

- d. A description of how the site restrictions are met for each site.

- e. When the applicator is responsible for meeting the vector attraction reduction requirements, the following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in §503.33(b)(9) or (b)(10) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

- f. When the applicator is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirement in either §503.33(b)(9) or (b)(10) is met.

11. The permittee shall report the information in Paragraphs 8a, b, c and d annually on February 19. Reports shall be submitted to the address in the Monitoring and Reporting section of this permit.
12. When 90 percent or more of any of the cumulative pollutant loading rates are reached, the person who applies the bulk sewage sludge shall report the information in Paragraphs 10a through d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.
13. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40CFR §503.8

14. The permittee shall notify the applier of the following information/requirements:
 - a. Requirements in Paragraphs 1b, 1d, 1e, 1j, 2c and 2d.
 - b. Information in Paragraph 1c.
 - c. The management practices in Paragraphs 7a through d.
 - d. The site restrictions in Paragraphs 6a through h.
 - d. Record keeping requirements in Paragraphs 9a through g and Paragraphs 10a through d.
 - e. Reporting requirements in Paragraph 12.
15. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:
 - a. Describe the geographic area covered by the plan;
 - b. Identifies site selection criteria;
 - c. Describes how sites will be managed; and
 - d. Provides for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

1.3.6. Scenario No.6

This scenario applies to bagged materials sold or given away meeting the annual pollutant loading rates at §503.13(b)(4); one of the Class A pathogen requirements are §503.32(a); and one of the vector attraction reduction requirements at §503.33(b)(1) through (b)(8).

SLUDGE CONDITIONS

1. The permittee and the applier shall meet the following requirements:
 - a. The sewage sludge shall be applied in accordance with 40 CFR Part 503 Subpart B.
 - b. The person who applies the sewage sludge shall obtain the information needed to comply with 40 CFR Part 503 Subpart B.

c. When the permittee provides the sewage sludge to a person who prepares the sewage sludge, the permittee shall provide the person who prepares the sewage sludge notice and necessary information to comply with 40 CFR Part 503 Subpart B.

2. Pollutant limitations

a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.

c. The product of the concentration of each pollutant in the sewage sludge and the annual whole sludge application rate for the sewage sludge shall not cause the annual pollutant loading rate for the pollutant to be exceeded. The annual pollutant loading rates are specified below (kilograms per hectare per 365 day period):

Arsenic.....	2.0
Cadmium.....	1.9
Copper.....	75
Lead.....	15
Mercury.....	0.85
Nickel.....	21
Selenium.....	5.0
Zinc.....	140

d. The annual whole sludge application rate shall be determined in the following manner:

i. Analyze a sample of the sewage sludge to determine the concentration for each pollutant listed in Paragraph 2a.

ii. Using the pollutant concentrations from Paragraph 2d(i) and the annual pollutant loading rates from

Paragraph 2 c, calculate the annual whole sludge application rate using the following equation:

$$\text{AWSAR} = \frac{\text{APLR}}{\text{C} \times 0.001}$$

Where:

AWSAR = Annual whole sludge application rate in metric tons per hectare per 365 day period (dry weight basis)

APLR = Annual pollutant loading rate in kilograms per hectare per 365 day period.

C = Pollutant concentration in milligrams per kilogram of total solids (dry weight basis)

0.001 = Conversion factor

iii. The AWSAR for the sewage sludge is the lowest ASWAR calculated in Paragraph 2 d (ii).

3. Label Requirements

- a. Either a label shall be affixed to the bag or other container in which the sewage sludge is sold or given away or an information sheet shall be provided to any person who receives the sewage sludge.
- b. The label or information sheet shall contain the following information:
 - i. The name and address of the person who prepared the sewage sludge.
 - ii. A statement that application of sewage sludge to the land is prohibited except in accordance with the instructions on the label or information sheet.
 - iii. The annual whole sludge application rate which does not cause the annual pollutant loading rates in Paragraph 2 c to be exceeded.
4. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40CFR §503.32
5. The permittee shall meet one of the vector attraction reduction requirements specified in 40CFR §503.33. The

permittee may only utilize alternatives 1 through 8. If the permittee meets one of the vector attraction reduction alternatives 1 through 5, the Class A pathogen requirements must be met either prior to or at the same time as the vector attraction reduction requirement.

6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density, and the vector attraction reduction requirement at the frequency specified in sludge condition 6 of the permit.
7. The permittee shall develop and retain the following information for five years:
 - a. The annual whole sludge application rate that does not cause the annual pollutant loading rates in Paragraph 2c to be exceeded.
 - b. The concentration of each pollutant in Paragraph 2a in the sewage sludge.
 - c. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practice in §503.14(e), the Class A pathogen requirement in §503.32(a), and the vector attraction reduction requirement in insert one of the vector attraction reduction requirements in §503.33(b)(1) through (b)(8) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."
 - d. A description of how the Class A pathogen requirements are met.
 - e. A description of how the vector attraction reduction requirements are met.
8. The permittee shall report the information in Paragraphs 7a through e annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting Section of this permit.
9. All sewage sludge sampling and analysis procedures shall be in accordance with procedures detailed in 40CFR 503.8.

2. SURFACE DISPOSAL

This section applies to sewage sludge from the permittee's facility which is by surface disposed. The permittee should answer the following questions. The answers to these questions need to be evaluated to determine which permitting scenario for sewage sludge surface disposal applies. After the permitting scenario is determined, the permittee must comply with the directives contained in the chosen scenario. The permittee must also note the run-off from surface disposal units may be subject to stormwater regulations.

2.1. Question Algorithm

The permittee should review and answer the following questions. The information gathered from answering these questions will aid the permittee in determine the appropriate surface disposal scenario which applies to the sludge generated at the permittee's waste water treatment facility. The scenario selected will detail which specific Use or Disposal of Sewage Sludge, Part 503, regulations must be complied with for the land application method used by the permittee.

1. Is the facility regulated under 40 CFR 503?

If the facility disposes of its sludge at a municipal solid waste landfill (MSWLF), 40 CFR 503 regulations do not apply. However, the permittee still has some responsibilities. Permit language is in Scenario No.4.

The 40 CFR 503 regulations also do not apply in the case of storage of sewage sludge. An EPA rule of thumb is sludge stored on the land for longer than two years is defined as surface disposal. If a permittee claims storage, or treatment, the permittee's facility must be specifically equipped to support sewage sludge storage. Further, the permittee must ultimately have a clear, final disposition for the sewage sludge.

2. Does the following situations exist at a permittee's active sewage sludge disposal unit?

- a. The unit is located within 60 meters (200 feet) of a fault that has had displacement in the Holocene time (10,000 years);
- b. A unit located in a unstable area; or
- c. A unit located in a wetland without a Section 402 or 404 permit.

If any of these situations exist, the active sewage sludge unit

should have closed by March 22, 1994. If the active sewage sludge disposal unit is still operating, but one of the previous situations does apply to the unit, that unit must be closed.

3. Can the permittee's sewage sludge disposal unit demonstrate they are designed to withstand seismic impacts? If this demonstration cannot be made, the unit must close. This demonstration should be made prior to permit issuance.
4. Does the facility have a liner and leachate collection system?

The liner must have a hydraulic conductivity of 1×10^{-7} centimeters per second or less. If the liner does not meet the specified hydraulic conductivity, the sludge disposal unit is regulated as an unlined sewage sludge disposal site. There are not pollutant limitations for lined units.

5. What is the distance from the property boundary to the boundary of the active sewage sludge unit? Use the tables below to determine appropriate pollutant limitations for units without a liner or leachate collection on a dry weight basis.

S503.23 TABLE 1
Active Unit Boundary is 150 Meters or More
From Property Boundary

Arsenic.....	73 mg/kg
Chromium.....	600 mg/kg
Nickel.....	420 mg/kg

S503.23 TABLE 2
Active Unit Boundary is Less Than 150 Meters
From Property Boundary

Distance (meters)	Pollutant Concentrations (mg/kg)		
	Arsenic	Chromium	Nickel
0 < Distance < 25	30	200	210
25 < Distance < 50	34	220	240
50 < Distance < 75	39	260	270
75 < Distance < 100	46	300	320
100 < Distance < 125	53	360	390
125 < Distance < 150	62	450	420

6. Does the facility cover the sewage sludge placed in the unit daily?

This practice is considered to achieve both pathogen reduction and vector attraction reduction. If a facility covers the sludge, the permittee must monitor for methane gas.

2.2. Scenario Determination

After the information is gathered and evaluated from the questions in the preceding section, the permittee can select the appropriate surface disposal scenario.

Surface Disposal Scenario Selection Table

SCENARIO	LINED/ UNLINED	DISTANCE TO UNIT BOUNDARY
No.1	Unlined	<150m
No.2	Unlined	0 to 150m
No.3	Lined	NA
No.4	Disposed in Municipal Solid Waste Land Fill	NA

2.3. Scenarios

2.3.1. Scenario No.1

Active sewage sludge unit without a liner and leachate collection system with active sewage sludge unit boundary 150 meters or more from the property boundary.

SLUDGE CONDITIONS

1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
 - a. Sewage sludge shall not be placed in an active sewage sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.

b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.

i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.

ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.

c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

2. Pollutant limitations

a. The maximum concentration of pollutants in the sewage sludge placed in an active sewage sludge unit shall not exceed the following:

Arsenic.....	73 mg/kg
Chromium.....	600 mg/kg
Nickel.....	420 mg/kg

b. Sewage sludge with metals concentrations which exceed the limitations in Paragraph 2a. shall not be placed in a surface disposal unit.

3. The permittee and the owner/operator shall comply with the following management practices:

a. The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.

b. The run-off from an active sewage sludge unit shall

be collected and disposed in accordance with applicable stormwater regulations.

- c. The run-off collection system for an active sewage sludge unit shall have the capacity to control run-off from a 24 hour - 25 year storm event.
- d.
 - i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas during the period that the sewage sludge unit is active.
 - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas during the period that the sewage sludge unit is active.
- e.
 - i. When a final cover is placed on a sewage sludge unit at closure, and for three years after closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas.
 - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas for three years after the sewage sludge unit closes.
- f. A food crop, a feed crop, or a fiber crop shall not be grown on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown on a sewage sludge unit.
- g. Animals shall not be grazed on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed on a sewage sludge unit.

- h. Public access to a surface disposal site shall be restricted for the period that the surface disposal site contains an active sewage sludge unit and for three years after the last sewage sludge unit closes.
 - i. i. Sewage sludge placed in an active sewage sludge unit shall not contaminate an aquifer.
 - ii. The permittee shall demonstrate that sewage sludge placed in an active sewage sludge unit does not contaminate an aquifer by either (1) submission of results of a ground-water monitoring program developed by a qualified ground water scientist; or (2) submission of a certification by a qualified ground water scientist that the sewage sludge does not contaminate an aquifer.
- 4. The following conditions must be documented by the permittee and owner/operator:
 - a. An active sewage sludge unit shall not restrict the flow of a base flood.
 - b. If a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.
 - c. A active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.
 - d. An active sewage sludge unit shall not be located in an unstable area.
 - e. An active sewage sludge unit shall not be located in a wetland.
- 5. If the active sewage sludge unit is not covered daily, the permittee shall meet either Class A or Class B pathogen reduction utilizing one of the methods in Section 4, and one of the vector attraction reduction requirements in Section 5.
- 6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2, the pathogen density, and the vector attraction reduction requirements at the following frequency:

Sampling Frequency Table

SEWAGE SLUDGE PRODUCED (metric tons per 365 day period)	SAMPLING FREQUENCY
0<Sludge(tons)<290	Once per Year
0≤Sludge(tons)<1500	Once Per Quarter (four times per year)
1500≤Sludge(tons)<15000	Once per 60 Days (six times per year)
Sludge(tons)≤15000	Once per Month (12 times per year)

7. When a daily cover is placed on an active sewage sludge unit, the air in the structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the time that the surface disposal site contains an active sewage sludge unit and for three years after the sewage sludge unit closes.
8. The permittee shall develop and retain the following information for five years:
 - a. The concentration of each pollutant listed in Paragraph 2a.
 - b. The following certification statement:

"I, certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in §503.32(a), §503.32(b) (2), §503.32(b) (3) or §503.32(b) (4) when one of those requirements is met and the vector attraction reduction requirements in §503.33(b) (1) through §503.33(b) (8) when one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."

- c. A description of how the pathogen requirements are met.
- d. When the permittee is responsible for the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

9. The owner/operator of the surface disposal site shall develop and retain the following information for five years:

- a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.24 and the vector attraction reduction requirement in insert one of the requirements in §503.33(b)(9) through (b)(11) if one of those requirements is met was prepared under my direct supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
- b. A description of how the management practices in Paragraphs 3a through 3i are met.
- c. Documentation that the requirements in Paragraphs 4a through 4e are met.
- d. A description of how the vector attraction reduction requirements are met, if the owner/operator is responsible for vector attraction reduction requirements.

10. The permittee shall report the information in Paragraphs 7a through 7d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of the permit.

11. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in Section 7.

12. If the permittee is not the owner/operator of the surface disposal site, the permittee shall notify the owner/operator of the following:

- a. The requirements in Paragraphs 1a through 1c;
- b. The management practices in Paragraphs 3a through 3i;
- c. The requirements in Paragraphs 4a through 4e;
- d. The requirement in Paragraph 7; and
- e. The record keeping requirements in Paragraph 9a through 9d.

2.3.2. Scenario No.2

Active sewage sludge unit without a liner and leachate collection system located less than 150 meters from the property line. The permittee is directed to §503.23 TABLE 2, Active Unit Boundary is Less Than 150 Meters From Property Boundary, in order to determine the maximum concentrations pollutants for the appropriate distance to the units boundary.

SLUDGE CONDITIONS

- 1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
 - a. Sewage sludge shall not be placed in an active sewage sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.
 - b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.
 - i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.
 - ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.
 - c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

2. Pollutant limitations

a. The maximum concentration of pollutants in the sewage sludge placed in an active sewage sludge unit shall not exceed the following:

§503.23 TABLE 2
Active Unit Boundary is Less Than 150 Meters
From Property Boundary

Distance (meters)	Pollutant Concentrations (mg/kg)		
	Arsenic	Chromium	Nickel
0 < Distance < 25	30	200	210
25 < Distance < 50	34	220	240
50 < Distance < 75	39	260	270
75 < Distance < 100	46	300	320
100 < Distance < 125	53	360	390
125 < Distance < 150	62	450	420

b. Sewage sludge with metals concentrations which exceed the limitations in Paragraph 2a. shall not be placed in a surface disposal unit.

3. The permittee and the owner/operator shall comply with the following management practices:

a. The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.

b. The run-off from an active sewage sludge unit shall be collected and disposed in accordance with applicable stormwater regulations.

c. The run-off collection system for an active sewage sludge unit shall have the capacity to control run-off from a 24 hour - 25 year storm event.

d. i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in

2. SURFACE DISPOSAL

This section applies to sewage sludge from the permittee's facility which is by surface disposed. The permittee should answer the following questions. The answers to these questions need to be evaluated to determine which permitting scenario for sewage sludge surface disposal applies. After the permitting scenario is determined, the permittee must comply with the directives contained in the chosen scenario. The permittee must also note the run-off from surface disposal units may be subject to stormwater regulations.

2.1. Question Algorithm

The permittee should review and answer the following questions. The information gathered from answering these questions will aid the permittee in determine the appropriate surface disposal scenario which applies to the sludge generated at the permittee's waste water treatment facility. The scenario selected will detail which specific Use or Disposal of Sewage Sludge, Part 503, regulations must be complied with for the land application method used by the permittee.

1. Is the facility regulated under 40 CFR 503?

If the facility disposes of its sludge at a municipal solid waste landfill (MSWLF), 40 CFR 503 regulations do not apply. However, the permittee still has some responsibilities. Permit language is in Scenario No.4.

The 40 CFR 503 regulations also do not apply in the case of storage of sewage sludge. An EPA rule of thumb is sludge stored on the land for longer than two years is defined as surface disposal. If a permittee claims storage, or treatment, the permittee's facility must be specifically equipped to support sewage sludge storage. Further, the permittee must ultimately have a clear, final disposition for the sewage sludge.

2. Does the following situations exist at a permittee's active sewage sludge disposal unit?

- a. The unit is located within 60 meters (200 feet) of a fault that has had displacement in the Holocene time (10,000 years);
- b. A unit located in a unstable area; or
- c. A unit located in a wetland without a Section 402 or 404 permit.

If any of these situations exist, the active sewage sludge unit

should have closed by March 22, 1994. If the active sewage sludge disposal unit is still operating, but one of the previous situations does apply to the unit, that unit must be closed.

3. Can the permittee's sewage sludge disposal unit demonstrate they are designed to withstand seismic impacts? If this demonstration cannot be made, the unit must close. This demonstration should be made prior to permit issuance.
4. Does the facility have a liner and leachate collection system?

The liner must have a hydraulic conductivity of 1×10^{-7} centimeters per second or less. If the liner does not meet the specified hydraulic conductivity, the sludge disposal unit is regulated as an unlined sewage sludge disposal site. There are not pollutant limitations for lined units.

5. What is the distance from the property boundary to the boundary of the active sewage sludge unit? Use the tables below to determine appropriate pollutant limitations for units without a liner or leachate collection on a dry weight basis.

§503.23 TABLE 1
Active Unit Boundary is 150 Meters or More
From Property Boundary

Arsenic.....	73 mg/kg
Chromium.....	600 mg/kg
Nickel.....	420 mg/kg

§503.23 TABLE 2
Active Unit Boundary is Less Than 150 Meters
From Property Boundary

Distance (meters)	Pollutant Concentrations (mg/kg)		
	Arsenic	Chromium	Nickel
0 < Distance < 25	30	200	210
25 < Distance < 50	34	220	240
50 < Distance < 75	39	260	270
75 < Distance < 100	46	300	320
100 < Distance < 125	53	360	390
125 < Distance < 150	62	450	420

6. Does the facility cover the sewage sludge placed in the unit daily?

This practice is considered to achieve both pathogen reduction and vector attraction reduction. If a facility covers the sludge, the permittee must monitor for methane gas.

2.2. Scenario Determination

After the information is gathered and evaluated from the questions in the preceding section, the permittee can select the appropriate surface disposal scenario.

Surface Disposal Scenario Selection Table

SCENARIO	LINED/ UNLINED	DISTANCE TO UNIT BOUNDARY
No.1	Unlined	<150m
No.2	Unlined	0 to 150m
No.3	Lined	NA
No.4	Disposed in Municipal Solid Waste Land Fill	NA

2.3. Scenarios

2.3.1. Scenario No.1

Active sewage sludge unit without a liner and leachate collection system with active sewage sludge unit boundary 150 meters or more from the property boundary.

SLUDGE CONDITIONS

1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
 - a. Sewage sludge shall not be placed in an active sewage sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.

- b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.
 - i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.
 - ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.
- c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

2. Pollutant limitations

- a. The maximum concentration of pollutants in the sewage sludge placed in an active sewage sludge unit shall not exceed the following:

Arsenic.....	73 mg/kg
Chromium.....	600 mg/kg
Nickel.....	420 mg/kg

- b. Sewage sludge with metals concentrations which exceed the limitations in Paragraph 2a. shall not be placed in a surface disposal unit.

3. The permittee and the owner/operator shall comply with the following management practices:

- a. The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.
- b. The run-off from an active sewage sludge unit shall

be collected and disposed in accordance with applicable stormwater regulations.

- c. The run-off collection system for an active sewage sludge unit shall have the capacity to control run-off from a 24 hour - 25 year storm event.
- d.
 - i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas during the period that the sewage sludge unit is active.
 - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas during the period that the sewage sludge unit is active.
- e.
 - i. When a final cover is placed on a sewage sludge unit at closure, and for three years after closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas.
 - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas for three years after the sewage sludge unit closes.
- f. A food crop, a feed crop, or a fiber crop shall not be grown on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown on a sewage sludge unit.
- g. Animals shall not be grazed on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed on a sewage sludge unit.

- h. Public access to a surface disposal site shall be restricted for the period that the surface disposal site contains an active sewage sludge unit and for three years after the last sewage sludge unit closes.
- i.
 - i. Sewage sludge placed in an active sewage sludge unit shall not contaminate an aquifer.
 - ii. The permittee shall demonstrate that sewage sludge placed in an active sewage sludge unit does not contaminate an aquifer by either (1) submission of results of a ground-water monitoring program developed by a qualified ground water scientist; or (2) submission of a certification by a qualified ground water scientist that the sewage sludge does not contaminate an aquifer.

4. The following conditions must be documented by the permittee and owner/operator:
 - a. An active sewage sludge unit shall not restrict the flow of a base flood.
 - b. If a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.
 - c. An active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.
 - d. An active sewage sludge unit shall not be located in an unstable area.
 - e. An active sewage sludge unit shall not be located in a wetland.
5. If the active sewage sludge unit is not covered daily, the permittee shall meet either Class A or Class B pathogen reduction utilizing one of the methods in Section 4, and one of the vector attraction reduction requirements in Section 5.
6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2, the pathogen density, and the vector attraction reduction requirements at the following frequency:

Sampling Frequency Table

SEWAGE SLUDGE PRODUCED (metric tons per 365 day period)	SAMPLING FREQUENCY
0 < Sludge (tons) < 290	Once per Year
0 ≤ Sludge (tons) < 1500	Once Per Quarter (four times per year)
1500 ≤ Sludge (tons) < 15000	Once per 60 Days (six times per year)
Sludge (tons) ≤ 15000	Once per Month (12 times per year)

7. When a daily cover is placed on an active sewage sludge unit, the air in the structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the time that the surface disposal site contains an active sewage sludge unit and for three years after the sewage sludge unit closes.
8. The permittee shall develop and retain the following information for five years:
 - a. The concentration of each pollutant listed in Paragraph 2a.
 - b. The following certification statement:

"I, certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in §503.32(a), §503.32(b) (2), §503.32(b) (3) or §503.32(b) (4) when one of those requirements is met and the vector attraction reduction requirements in §503.33(b) (1) through §503.33(b) (8) when one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."

- c. A description of how the pathogen requirements are met.
- d. When the permittee is responsible for the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

9. The owner/operator of the surface disposal site shall develop and retain the following information for five years:

- a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.24 and the vector attraction reduction requirement in §503.33(b)(9) through (b)(11) if one of those requirements is met was prepared under my direct supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
- b. A description of how the management practices in Paragraphs 3a through 3i are met.
- c. Documentation that the requirements in Paragraphs 4a through 4e are met.
- d. A description of how the vector attraction reduction requirements are met, if the owner/operator is responsible for vector attraction reduction requirements.

10. The permittee shall report the information in Paragraphs 7a through 7d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of the permit.

11. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in Section 7.

12. If the permittee is not the owner/operator of the surface disposal site, the permittee shall notify the owner/operator of the following:

- a. The requirements in Paragraphs 1a through 1c;
- b. The management practices in Paragraphs 3a through 3i;
- c. The requirements in Paragraphs 4a through 4e;
- d. The requirement in Paragraph 7; and
- e. The record keeping requirements in Paragraph 9a through 9d.

2.3.2. Scenario No.2

Active sewage sludge unit without a liner and leachate collection system located less than 150 meters from the property line. The permittee is directed to §503.23 TABLE 2, Active Unit Boundary is Less Than 150 Meters From Property Boundary, in order to determine the maximum concentrations pollutants for the appropriate distance to the units boundary.

SLUDGE CONDITIONS

1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
 - a. Sewage sludge shall not be placed in an active sewage sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.
 - b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.
 - i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.
 - ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.
 - c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

- a. The requirements in Paragraphs 1a through 1c;
- b. The management practices in Paragraphs 3a through 3i;
- c. The requirements in Paragraphs 4a through 4e;
- d. The requirement in Paragraph 7; and
- e. The record keeping requirements in Paragraph 9a through 9d.

2.3.2. Scenario No.2

Active sewage sludge unit without a liner and leachate collection system located less than 150 meters from the property line. The permittee is directed to §503.23 TABLE 2, Active Unit Boundary is Less Than 150 Meters From Property Boundary, in order to determine the maximum concentrations pollutants for the appropriate distance to the units boundary.

SLUDGE CONDITIONS

- 1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
 - a. Sewage sludge shall not be placed in an active sewage sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.
 - b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.
 - i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.
 - ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.
 - c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

2. Pollutant limitations

a. The maximum concentration of pollutants in the sewage sludge placed in an active sewage sludge unit shall not exceed the following:

§503.23 TABLE 2
Active Unit Boundary is Less Than 150 Meters
From Property Boundary

Distance (meters)	Pollutant Concentrations (mg/kg)		
	Arsenic	Chromium	Nickel
0 < Distance < 25	30	200	210
25 < Distance < 50	34	220	240
50 < Distance < 75	39	260	270
75 < Distance < 100	46	300	320
100 < Distance < 125	53	360	390
125 < Distance < 150	62	450	420

b. Sewage sludge with metals concentrations which exceed the limitations in Paragraph 2a. shall not be placed in a surface disposal unit.

3. The permittee and the owner/operator shall comply with the following management practices:

- The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.
- The run-off from an active sewage sludge unit shall be collected and disposed in accordance with applicable stormwater regulations.
- The run-off collection system for an active sewage sludge unit shall have the capacity to control run-off from a 24 hour - 25 year storm event.
- i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in

air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas during the period that the sewage sludge unit is active.

- ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas during the period that the sewage sludge unit is active.
- e. i. When a final cover is placed on a sewage sludge unit at closure, and for three years after closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas.
- ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas for three years after the sewage sludge unit closes.
- f. A food crop, a feed crop, or a fiber crop shall not be grown on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown on a sewage sludge unit.
- g. Animals shall not be grazed on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed on a sewage sludge unit.
- h. Public access to a surface disposal site shall be restricted for the period that the surface disposal site contains an active sewage sludge unit and for three years after the last sewage sludge unit closes.
- i. i. Sewage sludge placed in an active sewage sludge unit shall not contaminate an aquifer.
- ii. The permittee shall demonstrate that sewage sludge placed in an active sewage sludge unit

does not contaminate an aquifer by either (1) submission of results of a ground-water monitoring program developed by a qualified ground water scientist; or (2) submission of a certification by a qualified ground water scientist that the sewage sludge does not contaminate an aquifer.

4. The following conditions must be documented by the permittee and owner/operator:
 - a. An active sewage sludge unit shall not restrict the flow of a base flood.
 - b. If a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.
 - c. A active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.
 - d. An active sewage sludge unit shall not be located in an unstable area.
 - e. An active sewage sludge unit shall not be located in a wetland.
5. If the active sewage sludge unit is not covered daily, the permittee shall meet either Class A or Class B pathogen reduction utilizing one of the methods in Section 4, and one of the vector attraction reduction requirements in Section 5.
6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2, the pathogen density, and the vector attraction reduction requirements at the following frequency:

Sampling Frequency Table

SEWAGE SLUDGE PRODUCED (metric tons per 365 day period)	SAMPLING FREQUENCY
0<Sludge(tons)<290	Once per Year
0≤Sludge(tons)<1500	Once Per Quarter (four times per year)
1500≤Sludge(tons)<15000	Once per 60 Days (six times per year)
Sludge(tons)≤15000	Once per Month (12 times per year)

7. When a daily cover is placed on an active sewage sludge unit, the air in the structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the time that the surface disposal site contains an active sewage sludge unit and for three years after the sewage sludge unit closes.
8. The permittee shall develop and retain the following information for five years:
 - a. The following certification statement:

"I, certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in §503.32(a), §503.32(b) (2), §503.32(b) (3) or §503.32(b) (4) when one of those requirements is met and the vector attraction reduction requirements in §503.33(b) (1) through §503.33(b) (8) when one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."
 - b. A description of how the pathogen requirements are met.
 - c. When the permittee is responsible for the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.
9. The owner/operator of the surface disposal site shall develop and retain the following information for five years:
 - a. The concentration of each pollutant listed in Paragraph 2a.
 - b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.24 and the vector attraction reduction requirement in §503.33(b) (9) through

(b) (11) if one of those requirements is met was prepared under my direct supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

- b. A description of how the management practices in Paragraphs 3a through 3i are met.
- c. Documentation that the requirements in Paragraphs 4a through 4e are met.
- d. A description of how the vector attraction reduction requirements are met, if the owner/operator is responsible for vector attraction reduction requirements.

10. The permittee shall report the information in Paragraphs 7a through 7d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of the permit.

11. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in Section 7.

12. If the permittee is not the owner/operator of the surface disposal site, the permittee shall notify the owner/operator of the following:

- a. The requirements in Paragraphs 1a through 1c;
- b. The management practices in Paragraphs 3a through 3i;
- c. The requirements in Paragraphs 4a through 4e;
- d. The requirement in Paragraph 7; and
- e. The record keeping requirements in Paragraph 9a through 9e.

2.3.3. Scenario No.3

This applies to an active sewage sludge unit with a liner and a leachate collection system.

SLUDGE CONDITIONS

1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
 - a. Sewage sludge shall not be placed in an active sewage

sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.

- b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.
- i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.
ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.
- c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

2. The permittee shall comply with the following management practices:
 - a. The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.
 - b. The run-off from an active sewage sludge unit shall be collected and disposed in accordance with applicable stormwater regulations.
 - c. The run-off collection system for an active sewage sludge unit shall have the capacity to handle run-off from a 24 hour - 25 year storm event.
 - d. The leachate collection system for an active sewage sludge unit shall be operated and maintained during the period the sewage sludge unit is active and for three years after the sewage sludge unit closes.

- e. The leachate shall be collected and disposed of in accordance with applicable regulations during the period the sewage sludge unit is active and for three years after it closes.
- f.
 - i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas during the period that the sewage sludge unit is active.
 - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas during the period that the sewage sludge unit is active.
- g.
 - i. When a final cover is placed on a sewage sludge unit at closure, and for three years after closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas.
 - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas for three years after the sewage sludge unit closes.
- h. A food crop, a feed crop, or a fiber crop shall not be grown on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown on a sewage sludge unit.
- i. Animals shall not be grazed on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed on a sewage sludge unit.
- j. Public access to a surface disposal site shall be restricted for the period that the surface disposal

site contains an active sewage sludge unit and for three years after the last sewage sludge unit closes.

- k. i. Sewage sludge placed in an active sewage sludge unit shall not contaminate an aquifer.
 - ii. The permittee shall demonstrate that sewage sludge placed in an active sewage sludge unit does not contaminate an aquifer by either (1) submission of results of a ground-water monitoring program developed by a qualified ground water scientist; or (2) submission of a certification by a qualified ground water scientist that the sewage sludge does not contaminate an aquifer.
 3. The following conditions must be documented by the permittee and owner/operator:

 - a. An active sewage sludge unit shall not restrict the flow of a base flood.
 - b. If a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.
 - c. An active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.
 - d. An active sewage sludge unit shall not be located in an unstable area.
 - e. An active sewage sludge unit shall not be located in a wetland.
 4. If the active sewage sludge unit is not covered daily, the permittee shall meet either Class A or Class B pathogen reduction utilizing one of the methods in Section 4, and one of the vector attraction reduction requirements in Section 5.
 5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2, the pathogen density, and the vector attraction reduction requirements at the following frequency:

Sampling Frequency Table

SEWAGE SLUDGE PRODUCED (metric tons per 365 day period)	SAMPLING FREQUENCY
0 < Sludge (tons) < 290	Once per Year
0 ≤ Sludge (tons) < 1500	Once Per Quarter (four times per year)
1500 ≤ Sludge (tons) < 15000	Once per 60 Days (six times per year)
Sludge (tons) ≤ 15000	Once per Month (12 times per year)

6. When a daily cover is placed on an active sewage sludge unit, the air in the structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the time that the surface disposal site contains an active sewage sludge unit and for three years after the sewage sludge unit closes.
7. The permittee shall develop and retain the following information for five years:
 - a. The following certification statement:

"I, certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in §503.32(a), §503.32(b)(2), §503.32(b)(3) or §503.32(b)(4) when one of those requirements is met and the vector attraction reduction requirements in §503.33(b)(1) through §503.33(b)(8) when one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."
 - b. A description of how the pathogen requirements are met.
 - c. When the permittee is responsible for the vector attraction reduction requirements, a description of

how the vector attraction reduction requirements are met.

8. The owner/operator of the surface disposal site shall develop and retain the following information for five years:
 - a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.24 and the vector attraction reduction requirement in Insert one of the requirements in §503.33(b)(9) through (b)(11) if one of those requirements is met was prepared under my direct supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
 - b. A description of how the management practices in Paragraphs 2 a through k are met.
 - c. Documentation that the requirements in Paragraphs 3 a through e are met.
 - d. A description of how the vector attraction reduction requirements are met, if the owner/operator is responsible for vector attraction reduction requirements.
9. The permittee shall report the information in Paragraphs 8a through c annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of the permit.
10. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in Section 7.
11. If the permittee is not the owner/operator of the surface disposal site, the permittee shall notify the owner/operator of the following:
 - a. The requirements in Paragraphs 1a through e;
 - b. The management practices in Paragraphs 2a through k;
 - c. The requirements in Paragraph 3a through e;
 - d. The requirement in Paragraph 6; and
 - e. The record keeping requirements in Paragraphs 8a through d.

2.3.4. Scenario No.4

A permittee who dispose of their sludge in a municipal solid waste land fill are regulated under 40 CFR 258.

SLUDGE CONDITIONS

1. The permittee must dispose of the sewage sludge in a landfill which is in compliance with 40 CFR Part 258.
2. Sewage sludge disposed of in a municipal solid waste land fill shall not be hazardous. The Toxicity Characterization Leachate Protocol (TCLP) shall be used as demonstration that the sludge is non-hazardous.
3. The sewage sludge must not be a liquid as determined by the Paint Filter Liquids Test method (Method 9095 ad described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA publication No. SW-846.

3. Incineration

Each facility that incinerates sewage sludge is still subject to Part 503 regulations. Implementation of these regulations are site specific. A facility which incinerates sewage sludge will have specific conditions for that incineration process included in the facility's NPDES permit.

4. Pathogens Reduction

The various pathogen reduction means are listed in this section. The 40 CFR Part 503 section from with each reduction was excerpted is referenced in parenthesis.

4.1 Class A Pathogen Reduction

4.1.1. Class A - Alternative 1 (503.32(a)(3))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).
- ii. The temperature of the sewage sludge that is used or disposed shall be maintained at a specific value for a period of time.
 - a. When the percent solids of the sewage sludge is seven percent or higher, the temperature of the sewage sludge shall be 50 degrees Celsius or higher; the time period shall be 20 minutes or longer; and the temperature and time period shall be determined using equation (3), except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

$$D = \frac{131,700,000}{10^{0.1400t}} \quad (3)$$

Where,

D = time in days.

t = temperature in degrees Celsius.

- b. When the percent solids of the sewage sludge is seven percent or higher and small particles of

sewage sludge are heated by either warmed gases or an immiscible liquid, the temperature of the sewage sludge shall be 50 degrees Celsius or higher; the time period shall be 15 seconds or longer; and the temperature and time period shall be determined using equation (3).

- c. When the percent solids of the sewage sludge is less than seven percent and the time period is at least 15 seconds, but less than 30 minutes, the temperature and time period shall be determined using equation (3).
- d. When the percent solids of the sewage sludge is less than seven percent; the temperature of the sewage sludge is 50 degrees Celsius or higher; and the time period is 30 minutes or longer, the temperature and time period shall be determined using equation (4).

$$D = \frac{50,070,000}{10^{0.1400t}} \quad (4)$$

Where,

D = time in days.

t = temperature in degrees Celsius.

4.1.2. Class A - Alternative 2 (503.32(a)(4))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).
- ii. a. The pH of the sewage sludge that is used or disposed shall be raised to above 12 and shall remain above 12 for 72 hours.
- b. The temperature of the sewage sludge shall be

above 52 degrees Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12.

- c. At the end of the 72 hour period during which the pH of the sewage sludge is above 12, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50 percent.

4.1.3. Class A - Alternative 3 (503.32(a)(5))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).
- ii.
 - a. The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses.
 - b. When the density of enteric viruses in the sewage sludge prior to pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses until the next monitoring episode for the sewage sludge.
 - c. When the density of enteric viruses in the sewage sludge prior to pathogen treatment is equal to or greater than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses when the density of enteric viruses in the sewage sludge after pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the enteric virus density requirement are documented.

- d. After the enteric virus reduction in ii.c. of this subsection is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in ii.c. of this subsection.
- iii. a. The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains viable helminth ova.
- b. When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is less than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova until the next monitoring episode for the sewage sludge.
- c. When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is equal to or greater than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova when the density of viable helminth ova in the sewage sludge after pathogen treatment is less than one per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the viable helminth ova density requirement are documented.
- d. After the viable helminth ova reduction in iii.c. of this subsection is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to viable helminth ova when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in (iii)(C) of this subsection.

4.1.4. Class A - Alternative 4 (503.32(a)(6))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the

density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).

- ii. The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f), unless otherwise specified by the permitting authority.
- iii. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f), unless otherwise specified by the permitting authority.

4.1.5. Class A - Alternative 5 (503.32(a)(8))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella, sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).

- ii. Sewage sludge that is used or disposed shall be treated in one of the Processes to Further Reduce Pathogens described in Section 4.3.

4.1.6. Class A - Alternative 6 (503.32(a)(8))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella, sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).
- ii. Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Further Reduce Pathogens, as determined by the permitting authority.

4.2 Class B Pathogen Reduction

4.2.1. Class B - Alternative 1 (503.32(b)(2))

- i. Seven representative samples of the sewage sludge that is used or disposed shall be collected.
- ii. The geometric mean of the density of fecal coliform in the samples collected in (2)(i) of this subsection shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

4.2.2. Class B - Alternative 2 (503.32(b)(3))

Sewage sludge that is used or disposed shall be treated in one of the Processes to Significantly Reduce Pathogens described in Section 4.3.

4.2.3. Class B - Alternative 3 (503.32(b)(4))

Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Significantly Reduce Pathogens, as determined by the permitting authority.

4.3 Pathogen Reduction Processes

4.3.1. Process to Significantly Reduce Pathogens

1. **Aerobic Digestion** - Sewage sludge is agitated with air or oxygen to maintain aerobic conditions for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 40 days at 20 degrees Celsius and 60 days at 15 degrees Celsius.
2. **Air Drying** - Sewage sludge is dried on sand beds or on paved or unpaved basins. The sewage sludge dries for a minimum of three months. During two of the three months, the ambient average daily temperature is above zero degrees Celsius.
3. **Anaerobic Digestion** - Sewage sludge is treated in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35 to 55 degrees Celsius and 60 days at 20 degrees Celsius.
4. **Composting** - Using either the within vessel, static aerated pile, or windrow composting methods, the temperature of the sewage sludge is raised to 40 degrees Celsius or higher and remains at 40 degrees Celsius or higher for five days. For four hours during the five days, the temperature in the compost pile exceeds 55 degrees Celsius.
5. **Lime Stabilization** - Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 after two hours of contact.

4.3.2. Process to Further Reduce Pathogens

1. **Composting** - Using either the within vessel composting method or the static aerated pile composting method, the temperature of the sewage sludge is maintained at 55 degrees Celsius or higher for three days.

Using the windrow composting method, the temperature of the sewage sludge is maintained at

55 degrees or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees or higher, there shall be a minimum of five turnings of the windrow.

2. **Heat Drying** - Sewage sludge is dried by direct or indirect contact with hot gases to reduce the moisture content of the sewage sludge to 10 percent or lower. Either the temperature of the sewage sludge particles exceeds 80 degrees Celsius or the wet bulb temperature of the gas in contact with sewage sludge as the sewage sludge leaves the dryer exceeds 80 degrees Celsius.
3. **Heat Treatment** - Liquid sewage sludge is heated to temperature of 180 degrees Celsius or higher for 30 minutes.
4. **Thermophilic Aerobic Digestion** - Liquid sewage sludge is agitated with air or oxygen to maintain aerobic conditions and the mean cell residence time of the sewage sludge is 10 days at 55 to 60 degrees Celsius.
5. **Beta Ray Irradiation** - Sewage sludge is irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).
6. **Gamma Ray Irradiation** - Sewage sludge is irradiated with gamma rays for certain isotopes, such as ⁶⁰Cobalt and ¹³⁷Cesium, at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).
7. **Pasteurization** - The temperature of the sewage sludge is maintained at 70 degrees Celsius or higher for 30 minutes or longer.

5. Vector Attraction Reduction

The various vector attraction reduction means are listed in this section. The 40 CFR Part 503 section from which each reduction was excerpted is referenced in parenthesis.

5.1. Alternative 1 (503.33(b)(1))

The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent.

5.2. Alternative 2 (503.33(b)(2))

When the 38 percent volatile solids reduction requirement in §503.33(b)(1) cannot be met for an anaerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. When at the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved.

5.3. Alternative 3 (503.33(b)(3))

When the 38 percent volatile solids reduction requirement in §503.33(b)(1) cannot be met for an aerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent, vector attraction reduction is achieved.

5.4. Alternative 4 (503.33(b)(4))

The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.

5.5. Alternative 5 (503.33(b)(5))

Sewage sludge shall be treated in an aerobic process for

5.11. Alternative 11 503.33(b)(11))

Sewage sludge placed on an active sewage sludge unit shall be covered with soil or other material at the end of each operating day.

6. CLOSURE AND POST CLOSURE PLAN

The closure and post closure plan shall describe how the sewage sludge unit will close and how it will be maintained for three years after closure.

6.1. Minimum Elements

The following items are the minimum elements that that should be address in the closure plan.

6.1.1. General Information

- a. Name, address, and telephone number of the owner/operator
- b. Location of the site including size
- c. Schedule for final closure

6.1.2. Leachate collection system

- a. How the system will be operated and maintained for three years after closure
- b. Treatment and disposal of the leachate

6.1.3. Methane Monitoring

- a. Description of the system to monitor methane within the structures at the site and at the property line
- b. Maintenance of the system

6.1.4. Restriction of public access

- a. Describe method of restricting public access for three years after the last surface disposal unit closes

6.1.5. Other activities

- a. Ground water monitoring
- b. Maintenance and inspection schedules
- c. Discussion of land use after cover

d. Copy of notification to subsequent land owner

6.2. Notification to Land Owner

The notification to the subsequent land owner shall include the following information:

- a. Name, address, and telephone number of the owner/operator of the surface disposal site.
- b. A map and description of the surface disposal site including locations of surface disposal units.
- c. An estimate of the amount of sewage sludge placed on the site and a description of the quality of the sludge.
- d. Results of methane gas monitoring and ground water monitoring
- e. Discussion of the leachate collection system, if appropriate
- f. Demonstration that the site was closed in accordance with closure plan

7. SAMPLING AND ANALYSIS

7.1. Sampling

Representative samples of sewage sludge that is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator shall be collected and analyzed.

7.2. Analytical Methods

The following methods shall be used to analyze samples of sewage sludge.

a. Enteric viruses

ASTM Method D 499-89, "Standard Practice for Recovery of Viruses from Wastewater Sludge", Annual Book of ASTM Standards: Section 11, Water and Environmental Technology, 1992.

b. Fecal Coliform

Part 9221 E or Part 9222 D, "Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992.

c. Helminth ova

Yanko, W.A., "Occurrence of Pathogens in Distribution and Marketing Municipal Sludges", EPA 600/1-87-014, 1987. NTIS PB 88-154273/AS, National Technical Information Service, Springfield, Virginia.

d. Inorganic pollutants

Method SW-846 in "Test Methods for Evaluating Solid Waste", U.S. Environmental Protection Agency, November 1986.

e. Salmonella sp. bacteria

Part 9260 D.1, "Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992; or Kenner, B.B. and H.A. Clark, "Determination and Enumeration of Salmonella and Pseudomonas

aeruginosa", J. Water Pollution Control Federation, 46(9):2163-2171, 1974.

- f. Specific oxygen uptake rate
Part 2710 B, "Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992.
- g. Total solids, fixed solids, and volatile solids
Part 2540 G, Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992.

7.3. Percent Volatile Solids Reduction

Percent volatile solids reduction shall be calculated using a procedure in "Environmental Regulations and Technology- Control of Pathogens and Vectors in Sewage Sludge", EPA 625/R-92/013, U.S. Environmental Protection Agency, Cincinnati, Ohio, 1992.

density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).

- ii. The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f), unless otherwise specified by the permitting authority.
- iii. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f), unless otherwise specified by the permitting authority.

4.1.5. Class A - Alternative 5 (503.32(a)(8))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella, sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).

- ii. Sewage sludge that is used or disposed shall be treated in one of the Processes to Further Reduce Pathogens described in Section 4.3.

4.1.6. Class A - Alternative 6 (503.32(a)(8))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella, sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).
- ii. Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Further Reduce Pathogens, as determined by the permitting authority.

4.2 Class B Pathogen Reduction

4.2.1. Class B - Alternative 1 (503.32(b)(2))

- i. Seven representative samples of the sewage sludge that is used or disposed shall be collected.
- ii. The geometric mean of the density of fecal coliform in the samples collected in (2)(i) of this subsection shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

4.2.2. Class B - Alternative 2 (503.32(b)(3))

Sewage sludge that is used or disposed shall be treated in one of the Processes to Significantly Reduce Pathogens described in Section 4.3.

4.2.3. Class B - Alternative 3 (503.32(b)(4))

Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Significantly Reduce Pathogens, as determined by the permitting authority.

4.3 Pathogen Reduction Processes

4.3.1. Process to Significantly Reduce Pathogens

1. **Aerobic Digestion** - Sewage sludge is agitated with air or oxygen to maintain aerobic conditions for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 40 days at 20 degrees Celsius and 60 days at 15 degrees Celsius.
2. **Air Drying** - Sewage sludge is dried on sand beds or on paved or unpaved basins. The sewage sludge dries for a minimum of three months. During two of the three months, the ambient average daily temperature is above zero degrees Celsius.
3. **Anaerobic Digestion** - Sewage sludge is treated in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35 to 55 degrees Celsius and 60 days at 20 degrees Celsius.
4. **Composting** - Using either the within vessel, static aerated pile, or windrow composting methods, the temperature of the sewage sludge is raised to 40 degrees Celsius or higher and remains at 40 degrees Celsius or higher for five days. For four hours during the five days, the temperature in the compost pile exceeds 55 degrees Celsius.
5. **Lime Stabilization** - Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 after two hours of contact.

4.3.2. Process to Further Reduce Pathogens

1. **Composting** - Using either the within vessel composting method or the static aerated pile composting method, the temperature of the sewage sludge is maintained at 55 degrees Celsius or higher for three days.

Using the windrow composting method, the temperature of the sewage sludge is maintained at

55 degrees or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees or higher, there shall be a minimum of five turnings of the windrow.

2. **Heat Drying** - Sewage sludge is dried by direct or indirect contact with hot gases to reduce the moisture content of the sewage sludge to 10 percent or lower. Either the temperature of the sewage sludge particles exceeds 80 degrees Celsius or the wet bulb temperature of the gas in contact with sewage sludge as the sewage sludge leaves the dryer exceeds 80 degrees Celsius.
3. **Heat Treatment** - Liquid sewage sludge is heated to temperature of 180 degrees Celsius or higher for 30 minutes.
4. **Thermophilic Aerobic Digestion** - Liquid sewage sludge is agitated with air or oxygen to maintain aerobic conditions and the mean cell residence time of the sewage sludge is 10 days at 55 to 60 degrees Celsius.
5. **Beta Ray Irradiation** - Sewage sludge is irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).
6. **Gamma Ray Irradiation** - Sewage sludge is irradiated with gamma rays for certain isotopes, such as ⁶⁰Cobalt and ¹³⁷Cesium, at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).
7. **Pasteurization** - The temperature of the sewage sludge is maintained at 70 degrees Celsius or higher for 30 minutes or longer.

5. Vector Attraction Reduction

The various vector attraction reduction means are listed in this section. The 40 CFR Part 503 section from which each reduction was excerpted is referenced in parenthesis.

5.1. Alternative 1 (503.33(b)(1))

The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent.

5.2. Alternative 2 (503.33(b)(2))

When the 38 percent volatile solids reduction requirement in §503.33(b)(1) cannot be met for an anaerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. When at the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved.

5.3. Alternative 3 (503.33(b)(3))

When the 38 percent volatile solids reduction requirement in §503.33(b)(1) cannot be met for an aerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent, vector attraction reduction is achieved.

5.4. Alternative 4 (503.33(b)(4))

The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.

5.5. Alternative 5 (503.33(b)(5))

Sewage sludge shall be treated in an aerobic process for

14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40 degrees Celsius and the average temperature of the sewage sludge shall be higher than 45 degrees Celsius.

5.6. Alternative 6 (503.33(b)(6))

The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.

5.7. Alternative 7 (503.33(b)(7))

The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials.

5.8. Alternative 8 (503.33(b)(8))

The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.

5.9. Alternative 9 (503.33(b)(9))

- i. Sewage sludge shall be injected below the surface of the land.
- ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

5.10. Alternative 10 (503.33(b)(10))

- i. Sewage sludge applied to the land surface or placed on an active sewage sludge unit shall be incorporated into the soil within six hours after application to or placement on the land unless otherwise specified by the permitting authority.
- ii. When sewage sludge that is incorporated into the soil is Class A with respect to pathogens, the sewage sludge shall be applied to or place on the land within eight hours after being discharged from the pathogen treatment process.

5.11. Alternative 11 503.33(b)(11))

Sewage sludge placed on an active sewage sludge unit shall be covered with soil or other material at the end of each operating day.

6. CLOSURE AND POST CLOSURE PLAN

The closure and post closure plan shall describe how the sewage sludge unit will close and how it will be maintained for three years after closure.

6.1. Minimum Elements

The following items are the minimum elements that should be addressed in the closure plan.

6.1.1. General Information

- a. Name, address, and telephone number of the owner/operator
- b. Location of the site including size
- c. Schedule for final closure

6.1.2. Leachate collection system

- a. How the system will be operated and maintained for three years after closure
- b. Treatment and disposal of the leachate

6.1.3. Methane Monitoring

- a. Description of the system to monitor methane within the structures at the site and at the property line
- b. Maintenance of the system

6.1.4. Restriction of public access

- a. Describe method of restricting public access for three years after the last surface disposal unit closes

6.1.5. Other activities

- a. Ground water monitoring
- b. Maintenance and inspection schedules
- c. Discussion of land use after cover

d. Copy of notification to subsequent land owner

6.2. Notification to Land Owner

The notification to the subsequent land owner shall include the following information:

- a. Name, address, and telephone number of the owner/operator of the surface disposal site.
- b. A map and description of the surface disposal site including locations of surface disposal units.
- c. An estimate of the amount of sewage sludge placed on the site and a description of the quality of the sludge.
- d. Results of methane gas monitoring and ground water monitoring
- e. Discussion of the leachate collection system, if appropriate
- f. Demonstration that the site was closed in accordance with closure plan

7. SAMPLING AND ANALYSIS

7.1. Sampling

Representative samples of sewage sludge that is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator shall be collected and analyzed.

7.2. Analytical Methods

The following methods shall be used to analyze samples of sewage sludge.

a. Enteric viruses

ASTM Method D 499-89, "Standard Practice for Recovery of Viruses from Wastewater Sludge", Annual Book of ASTM Standards: Section 11, Water and Environmental Technology, 1992.

b. Fecal Coliform

Part 9221 E or Part 9222 D, "Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992.

c. Helminth ova

Yanko, W.A., "Occurrence of Pathogens in Distribution and Marketing Municipal Sludges", EPA 600/1-87-014, 1987. NTIS PB 88-154273/AS, National Technical Information Service, Springfield, Virginia.

d. Inorganic pollutants

Method SW-846 in "Test Methods for Evaluating Solid Waste", U.S. Environmental Protection Agency, November 1986.

e. Salmonella sp. bacteria

Part 9260 D.1, "Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992; or Kenner, B.B. and H.A. Clark, "Determination and Enumeration of Salmonella and Pseudomonas

aeruginosa", J. Water Pollution Control Federation, 46(9):2163-2171, 1974.

- f. Specific oxygen uptake rate
Part 2710 B, "Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992.
- g. Total solids, fixed solids, and volatile solids
Part 2540 G, Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992.

7.3. Percent Volatile Solids Reduction

Percent volatile solids reduction shall be calculated using a procedure in "Environmental Regulations and Technology- Control of Pathogens and Vectors in Sewage Sludge", EPA 625/R-92/013, U.S. Environmental Protection Agency, Cincinnati, Ohio, 1992.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

RECEIVED

SEP 13 2001

MARSHFIELD
D.P.W.

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 10, 2001
Mr. Makram H. Megalli, P.E.
Superintendent, DPW
Town of Marshfield
870 Moraine Street
Marshfield, MA 02050

Re: NPDES Permit No. MA0101737

Dear Mr. Megalli:

Enclosed is your final National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to the Clean Water Act (the "Federal Act"), as amended, and the Massachusetts Clean Waters Act (the "State Act"), 21 M.G.L. §§43-45, as amended. The Environmental Permit Regulations, at 40 C.F.R. §124.15, 48 Fed. Reg. 14271 (April 1, 1983), require this permit to become effective on the date specified in the permit.

Also enclosed is a copy of the Massachusetts State Water Quality Certification for your final permit and information relative to hearing requests and stays of NPDES permits. Should you desire to contest any provisions of the permit, your request should be submitted to the Agency as outlined in the enclosure and a similar request should also be filed with the Director of the Office of Watershed Management in accordance with the provisions of the Massachusetts Administrative Procedures Act, the Division's Rules for the Conduct of Adjudicatory Proceedings and the Timely Action Schedule and Fee Provisions (see enclosure).

Please note that due to a typographical error, the frequency of fecal coliform is corrected from 3 per day to 3 per week in page 2 of 9 of the permit.

We appreciate your cooperation throughout the development of this permit. Should you have any questions concerning the permit, feel free to contact Suproakash Sarker of my staff at 617/918-1693.

Sincerely,

A handwritten signature in black ink, appearing to read "John Hackler".

John Hackler, Chief
NPDES Permit Program Unit

Enclosures

cc: MADEP

Toll Free • 1-888-372-7341

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All Interested Parties

Information for Filing an Adjudicatory Hearing Request with
the Commonwealth of Massachusetts
Department of Environmental Protection

Within thirty days of the receipt of this letter the adjudicatory hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of \$100 must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The hearing request to the Commonwealth will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver.

The filing fee is not required if the appellant is a city, town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee for a permittee who shows that paying the fee will create an undue financial hardship. A permittee seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

B

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA", and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Town of Marshfield

is authorized to discharge from the facility located at

Marshfield Wastewater Treatment Plant
P.O. Box 268
200 Town Pier Road
Brant Rock, MA 02020

to receiving water named

Massachusetts Bay

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on the date of signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on April 29, 1996.

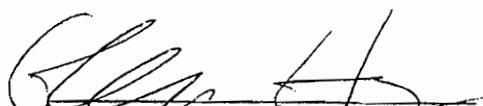
This permit consists of 9 pages in Part I including effluent limitations, monitoring requirements, attachments A and B and 35 pages in Part II including General Conditions and Definitions.

Signed this 7th day of September 2001

Susan Shullian for Linda Murphy

Director

Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA



Acting Assistant Commissioner

Bureau of Resource Protection

Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 001. Such discharge shall be limited and monitored by the permittee as specified below.

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	
Flow	MGD	2.1 ¹	---	Report	Continuous ¹ Recorder
BOD ₅	mg/l	30	45	Report	1/Week ² 24-Hour Comp. ¹
	lb/day	526	789	---	
TSS	mg/l	30	45	Report	1/Week ² 24-Hour Comp. ¹
	lb/day	526	789	---	
pH		(See Condition I.A.1.b. on Page 3)			1/Day Grab
Fecal Coliform Bacteria ⁴	cfu/100ml	200	400	400	3/Week Grab
LC ₅₀ ⁵	%	---	---	> 100	4/Year ⁶ 24-Hr Comp ³

Footnotes:

1. For flow, report maximum and minimum daily rates and total flow for each operating date.

The flow limit is an annual average instead of monthly average. Each month, the permittee shall report the annual average flow using the monthly average flow from the reporting month and the monthly average flows from the preceding 11 months.

2. Sampling required for influent and effluent.
3. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one working day.
4. Fecal coliform limit will apply and monitoring will be required year round. This is a State certification requirement. The average monthly limitation is expressed as geometric mean. One grab sample shall be taken each time during the maintenance period of the UV System. If fecal coliform limits are not met, report the result in accordance with Section D.1.e.(1) of the General Requirements of this permit (Twenty-four hour reporting).
5. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
6. The permittee shall conduct acute toxicity tests four times per year. The permittee shall test the Mysid shrimp only. Toxicity test samples shall be collected on the second week of March, June, September, and December. Results are to be submitted by the 30th day of the next month after the sample i.e. April, July, October, and January. See Permit Attachment A, Toxicity Test Procedure and Protocol.

Part I.A. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
- b. The pH of the effluent shall not be less than 6.5 nor greater than 8.5 at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.
- c. The discharge shall not cause objectionable discoloration of the receiving waters.
- d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
- e. The permittee's treatment facility shall maintain a minimum of 85 percent removal

of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.

- f. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the designed flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
2. All POTWs must provide adequate notice to the Director of the following:
 - a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and
 - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - c. For purposes of this paragraph, adequate notice shall include information on:
 - (1) the quantity and quality of effluent introduced into the POTW; and
 - (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
3. Prohibitions Concerning Interference and Pass-Through:
 - a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
 - b. If, within 30 days after notice of an interference or pass through violation has been sent by EPA to the POTW, and to persons or groups who have requested such notice, the POTW fails to commence appropriate enforcement action to correct the violation, EPA may take appropriate enforcement action.
4. Toxics Control
 - a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
 - b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

5. Numerical Effluent Limitations for Toxicants

EPA or DEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

B. PRETREATMENT

1. Limitations for Industrial Users:

a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

C. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from outfalls listed in Part I A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the General Requirements of this permit (Twenty-four hour reporting).

D. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Preventative Maintenance Program

The permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

3. Infiltration/Inflow Control Plan:

The permittee shall develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer system. The plan shall be submitted to EPA and MA DEP within

six months of the effective date of this permit (see page 1 of this permit for the effective date) and shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

The plan shall include:

- An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.
- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows
- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.
- An educational public outreach program for all aspects of I/I control, particularly private inflow.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MA DEP annually, by the anniversary date of the effective date of this permit. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year
- A map with areas identified for I/I-related investigation/action in the coming year.
- A calculation of the annual average I/I, the maximum month I/I for the reporting year.
- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

3. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

E. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either the state or federal (40 CFR part 503), requirements.
3. The requirements and technical standards of 40 CFR part 503 apply to facilities which perform one or more of the following use or disposal practices.
 - a. Land application - the use of sewage sludge to condition or fertilize the soil
 - b. Surface disposal - the placement of sewage sludge in a sludge-only landfill
 - c. Sewage sludge incineration in a sludge only incinerator
4. The 40 CFR part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill and is in compliance 40 CFR Part 258. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g. lagoons- reed beds), or are otherwise excluded under 40 CFR 503.6.
5. The permittee shall use and comply with the attached compliance guidance document (see attachment B) to determine appropriate conditions. Appropriate conditions contain the following elements.
 - General requirements
 - Pollutant limitations
 - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
 - Management practices
 - Record keeping
 - Monitoring
 - Reporting
6. Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.
6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector

attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year:

less than 290	1/ year
290 to less than 1500	1 /quarter
1500 to less than 15000	6 /year
15000 +	1 /month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8
8. The permittee shall submit an annual report containing the information specified in the guidance. Reports are due annually by February 19. Reports shall be submitted to the address contained in the reporting section of the permit.

F. MONITORING AND REPORTING

1. **Reporting**

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the month following the effective date of the permit.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection
Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

G. STATE PERMIT CONDITIONS

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MA DEP pursuant to M.G.L. Chap. 21, §43.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.

are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Permit modification or revocation will be conducted according to 40 CFR 55122.62, 122.63, 122.64 and 124.5.

Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee

from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

- a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information", on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).
- b. Claims of confidentiality for the following information will be denied:
 - (1) The name and address of any permit applicant or permittee;
 - (2) Permit applications, permits, and effluent data as defined in 40 CFR 52.302(a)(2).
- c. Information required by NPDES application forms provided by the Regional Administrator under §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant

(9/1/93)

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19. Section 124.60 is revised to read as follows:

Sec. 124.60 Issuance and effective date and stays of NPDES permits.

In addition to the requirements of Secs. 124.15, 124.16, and 124.19, the following provisions apply to NPDES permits:

(a) Notwithstanding the provisions of Sec. 124.16(a)(1), if, for any offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig which has never received a final effective permit to discharge at a "site," but which is not a "new discharger" or a "new source," the Regional Administrator finds that compliance with certain permit conditions may be necessary to avoid irreparable environmental harm during the administrative review, he or she may specify in the statement of basis or fact sheet that those conditions, even if contested, shall remain enforceable obligations of the discharger during administrative review.

(b)(1) As provided in Sec. 124.16(a), if an appeal of an initial permit decision is filed under Sec. 124.19, the force and effect of the contested conditions of the final permit shall be stayed until final agency action under Sec. 124.19(f). The Regional Administrator shall notify, in accordance with Sec. 124.16(a)(2)(ii), the discharger and all interested parties of the uncontested conditions of the final permit that are enforceable obligations of the discharger.

(2) When effluent limitations are contested, but the underlying control technology is not, the notice shall identify the installation of the technology in accordance with the permit compliance schedules (if uncontested) as an uncontested, enforceable obligation of the permit.

(3) When a combination of technologies is contested, but a portion of the combination is not contested, that portion shall be identified as uncontested if compatible with the combination of technologies proposed by the requester.

(4) Uncontested conditions, if inseverable from a contested condition, shall be considered contested.

(5) Uncontested conditions shall become enforceable 30 days after the date of notice under paragraph (b)(1) of this section.

(6) Uncontested conditions shall include:

(i) Preliminary design and engineering studies or other requirements necessary to achieve the final permit conditions which do not entail substantial expenditures;

(ii) Permit conditions which will have to be met regardless of the outcome of the appeal under Sec. 124.19;

(iii) When the discharger proposed a less stringent level of treatment than that contained in the final permit, any permit conditions appropriate to meet the levels proposed by the discharger, if the measures required to attain that less stringent level of treatment are consistent with the measures required to attain the limits proposed by any other party; and

(iv) Construction activities, such as segregation of waste streams or installation of equipment, which would partially meet the final permit conditions and could also be used to achieve the discharger's proposed alternative conditions.

(c) In addition to the requirements of Sec. 124.16(c)(2), when an appeal is filed under Sec. 124.19 on an application for a renewal of an existing permit and upon written request from the applicant, the Regional Administrator may delete requirements from the existing permit which unnecessarily duplicate uncontested provisions of the new permit.

mission for applications to be submitted later than the expiration date of the existing permit.)

9. Right of Appeal

Within thirty (30) days of receipt of notice of a final permit decision, any interested person, including the permittee, may submit a request to the Regional Administrator for an Evidentiary Hearing under Subpart E, or a Non-Adversary Panel Hearing under Subpart F, of 40 CFR Part 124, to reconsider or contest that decision. The request for a hearing must conform to the requirements of 40 CFR 5124.74.

10. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

11. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, state, and local laws and regulations.

SECTION II. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

Used to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

3. Bypass

a. Definitions

(1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass Not Exceeding Limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Paragraphs B.4.c and 4.d of this section.

c. Notice

(1) Anticipated bypass.

If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least ten days before the date of the bypass.

(2) Unanticipated bypass.

The permittee shall submit notice of an unanticipated bypass as required in Paragraph D.1.e (24-hour notice).

d. Prohibition of bypass.

(1) Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(9/1/93)

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(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(c) (i) The permittee submitted notices as required under Paragraph 4.c of this section.

(ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in Paragraph 4.d of this section.

Under

a. **Definition.** "Upset" means an exceptional incident in which there is unintentional and temporary non-compliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph B.5.c of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. **Conditions necessary for a demonstration of upset.**

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly

signed, contemporaneous operating logs, or other relevant evidence that:

- (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
- (2) The permitted facility was at the time being properly operated;
- (3) The permittee submitted notice of the upset as required in Paragraphs D.1.a and 1.e (24-hour notice); and
- (4) The permittee complied with any remedial measures required under B.3. above.

d. **Burden of proof.**

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

SECTION C. MONITORING AND RECORDS

1. **Monitoring and Records**
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.
 - c. Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;

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- (2) The individual(s) who performed the sampling or measurements;
- (3) The date(s) analyses were performed;
- (4) The individual(s) who performed the analyses;
- (5) The analytical techniques or methods used; and
- (6) The results of such analyses.

4. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
5. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

6. Inspection and Entry

The permittee shall allow the Regional Administrator, or an authorized representative (including an authorized contractor acting as a representative of the Administrator) upon presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

- (2) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. Planned changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
 - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 5122.29(b); or
 - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject to the effluent limitations in the permit, nor to the notification requirements under 40 CFR 5122.42(a)(1).
 - (3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, permit addition or change may justify the application of existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See §122.61; in some cases, modification or revocation and reissuance is mandatory.)

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d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Regional Administrator for reporting results of monitoring of sludge use or disposal practices.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 116 or, in the case of sludge use or disposal, approved under 40 CFR Part 116 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Administrator.

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Regional Administrator in the permit.

e. Twenty-four hour reporting.

(1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance, and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See S122.41(9)).

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(b) Any upset which exceeds any effluent limitation in the permit.

(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See S122.44(g).)

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

f. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. Other noncompliance.

The Permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d, D.1.e and D.1.f of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e of this section.

h. Other information.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See S122.22)

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

Except for data determined to be confidential under Paragraph A.8 above, all reports prepared in accordance with the terms of this Permit shall be available for public inspection at the offices of the State Water Pollution Control Agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

SECTION E. OTHER CONDITIONS.

1. DEFINITIONS FOR INDIVIDUAL NPDES PERMITS INCLUDING STORM WATER REQUIREMENTS

For purposes of this permit, the following definitions shall apply.

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all State, "interstate, and Federal standards and limitations to which a "discharge", a "sewage sludge use or disposal practice", or a related activity is subject to, including "effluent limitations", water quality standards, standards of performance, toxic effluent standards, standards of "management practices", pretreatment standards, "best standards for sewage sludge use and disposal" under Sections 101, 302, 303, 304, 306, 307, 308, 403, and 405 of CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions or modifications to the forms; or forms approved by EPA for use in "approved states," including any approved modifications or revisions.

Average - The arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and *Escherichia coli*, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

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Average weekly discharge limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Professional Judgement (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Class I Sludge Management Facility means any POTW identified under 40 CFR §103.8(a) as being required to have an approved pretreatment program (including such POTWs located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §103.10(e)) and any other treatment works treating domestic sewage classified as a "Class I Sludge Management Facility" by the Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sludge use or disposal practices to adversely affect public health and the environment.

Coal pile runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample - A sample consisting of a minimum of eight grab samples collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportionally to flow, or a sample continuously collected proportionally to flow, over that same time period.

Construction Activities. The following definitions apply to construction activities:

- (a) Commencement of construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final stabilization means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and are not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 51251 et seq.

Daily Discharge means the "discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day..."

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard national form, including any subsequent additions, revisions, or modifications, for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

- (a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or:
- (b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See "Point Source" definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channelled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any "indirect discharger."

Discharge Monitoring Report ("DMR") means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by "approved states" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.

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EFL means Limitations guidelines means a regulation published by the Administrator under Section 204(b) of CWA to adopt or revise "effluent limitations."

EPA means the United States "Environmental Protection Agency."

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample - An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- (a) Inhibits or disrupts the POM, its treatment processes or operations, or its sludge processes, use or disposal; and
- (b) Therefore is a cause of a violation of any requirement of the POM's NPDES Permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Large and Medium Municipal Separate Storm Sewer System means all municipal separate storm sewers that are either: (1) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices P and 40 CFR Part 122); or (2) located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (3) owned or operated by a municipality other than those described in Paragraph (1) or (2) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "Maximum Concentration or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fractions thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 422. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR 5122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under state law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of CWA. The term includes an "approved program."

New discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants";

(b) That did not commence the "discharge of pollutants" prior to August 13, 1979; at a particular "site";

(c) Which is not a "new source"; and

(d) Which has never received a finally effective NPDES permit for discharges at that "site".

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be an area of biological concern. In concern, the regional Administrator shall consider the factors specified in 40 CFR § 125.122. (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced:

(a) After promulgation of standards of performance under Section 306 of CMA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with Section 306 of CMA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination system."

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass-through means a Discharge which exits the port into Waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the Port's NPDES Permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State."

Person means an individual, association, partnership, corporation, municipality, state or Federal agency, or an agent or employee thereof.

Point source means any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill, leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff. (See §122.2)

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §3201 et seq.)), heat, wrecks or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or
 (b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if the state determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NPDC Settlement Agreement (National Resources Defense Council et al. v. Train, 8 Z.R.C. 2120 (D.D.C. 1976),

defined 12 J.R.C. 1833 (P.D.C. 1979); also listed in Appendix A of 4 CFR Part 122.

Privately Owned Treatment Works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a "POTW".

Process Wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly Owned Treatment Works (POTW) means any facility or system used in the treatment (including recycling and reclamation) of domestic sewage or industrial wastes of a liquid nature which is owned by a "state" or "municipality." This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator, EPA, Region 1, Boston, Massachusetts.

Secondary Industry Category means any industry category which is not a "primary industry category."

Section 313 Water Priority Chemical means a chemical or chemical categories which are:

- (1) listed at 46 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-to-Kno Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);

(2) present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements, and

(3) satisfies at least one of the following criteria:

- (1) are listed in Appendix D or 40 CFR Part 122 on either Table II (organic priority pollutant), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances);
- (11) are listed as a hazardous substance pursuant to section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or

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(11) are pollutants for which EPA has published acute or chronic water quality criteria.

Sewage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage Sludge Use or Disposal Practices means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant Materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(4) of CERCLA; any chemical the facility is required to report pursuant to EPCRA Section 313; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

Significant Spills includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under section 311 of the Clean Water Act (see 40 CFR §110.10 and 40 CFR §117.21) or Section 102 of CERCLA (see 40 CFR §302-4).

Sludge-only Facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

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Storm water discharge associated with industrial activity means the discharge from any conveyance with is used for collecting and conveying storm water and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. (See 40 CFR 5122.26.

(b) (14) for specifics of this definition).

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants means any pollutant listed as toxic under Section 107(a)(1) or, in the case of "sludge use or disposal practices", any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a plant or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage", where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

Waste pile means any noncontainerized accumulation of solid, nonflowing waste that is used for treatment or storage.

Waters of the United States means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) All interstate waters, including interstate "wetlands";
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats,

sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds to use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters;

- (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;
- (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
- (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 5423.1(a) which also meet the criteria of this definition) are not waters of the United States.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

2. **DEFINITIONS FOR NPDES PERMIT SLUDGE USE AND DISPOSAL REQUIREMENTS.**
2. **DEFINITIONS FOR NPDES PERMIT SLUDGE USE AND DISPOSAL REQUIREMENTS.**

Active sewage sludge unit is a sewage sludge unit that has not closed.

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Anerobic digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate dry weight basis) designed:

- (1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and
- (2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Basin flood is a flood that has a one percent chance of occurring in any given year (i.e., a flood with a magnitude equalled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR 5141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in ground water to increase when the existing concentration of nitrates in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR 5141.11.

Class I sludge management facility is any publicly owned treatments works (PORTW), as defined in 40 CFR 5501.2, required to have an approved pretreatment program under 40 CFR 5103.8 (a) (including any PORT located in a State that has elected to assume local program responsibilities pursuant to 40 CFR 5403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR 5122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environmental adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of an inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septic is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septic does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight Basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e., essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all measurements, taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and a reclamation site located in a populated area (e.g., a construction site located in a city).

Land with a low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or

authorized Indian tribal organization having jurisdiction over sewage sludge management; or, a designated and approved management agency under section 203 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201(e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use, or disposal of sewage sludge.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge disposal or sewage sludge on a surface disposal site means disposal of sewage sludge on a surface disposal site.

Pollutant as defined in sludge disposal requirements is an organic substance, an inorganic substance, a combination or organic and inorganic substances, or pathogenic organism or that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or

physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit area of land (e.g., kilogram per hectare); or the volume of a material that can be applied to a unit area of land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground-water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground-water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground-water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of the site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has a 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septic; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not

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include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters or the United States, as defined in 40 CFR 5122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge unit boundary and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR 551.100(l)(1).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian Tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Storage or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature. Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Net electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Net scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. THE COMMONLY USED ABBREVIATIONS ARE LISTED BELOW.

BOD
Five-day biochemical oxygen demand unless otherwise specified
Carbonaceous BOD

CBOD
(9/1/93)

APPEALING/CONTESTING PERMITS

If you wish to contest any of the provisions of this permit, you may petition the Environmental Appeals Board, (EAB), within thirty days of receipt of this letter. You may request the EAB to review any condition of the permit decision. In order to be eligible to petition you must have filed comments on the draft permit or participated in any public hearing that may have been held pertaining to this permit. The request should be submitted to the following address.

Environmental Appeals Board, MC1103B
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue N.W.
Washington D.C. 20460

Procedures for appealing permits can be found at 40 C.F.R. §§ 124.19 and 124.21 as amended by regulations effective June 14, 2000. Copies of those regulations are enclosed for your information. The EAB website location and frequently asked questions, (FAQs) are also enclosed

STAYS OF NPDES PERMITS

The effects of a properly filed appeal of an NPDES permit on the conditions and effective date of the permit can be found at 40 C.F.R. §§ 124.16 and 124.60 as amended by regulations becoming effective June 14, 2000. Copies of those are enclosed for your information.

§ 124.16 Stays of contested permits conditions.

(a) *Stay.* (1) If a request for review of a RCRA or UIC permit under § 124.19 or an NPDES permit under § 124.74 or § 124.114 is granted or if conditions of a RCRA or UIC permit are consolidated for reconsideration in an evidentiary hearing on an NPDES permit under §§ 124.74, 124.82 or 124.114, the effect of the contested permit conditions shall be stayed and shall not be subject to judicial review pending final agency action. (No stay of a PSD permit is available under this section.) If the permit involves a new facility or new injection well, new source, new discharger or a recommencing discharger, the applicant shall be without a permit for the proposed new facility, injection well, source or discharger pending final agency action. See also § 124.60.

(2) Uncontested conditions which are not severable from those contested shall be stayed together with the contested conditions. Stayed provisions of permits for existing facilities, injection wells, and sources shall be identified by the Regional Administrator. All other provisions of the permit for the existing facility, injection well, or source shall remain fully effective and enforceable.

(b) *Stay based on cross effects.* (1) A stay may be granted based on the grounds that an appeal to the Administrator under § 124.19 of one permit may result in changes to another EPA-issued permit only when each of the permits involved has been appealed to the Administrator and he or she has accepted each appeal.

(2) No stay of an EPA-issued RCRA, UIC, or NPDES permit shall be granted based on the staying of any State-issued permit except at the discretion of the Regional Administrator and only upon written request from the State Director.

(c) Any facility or activity holding an existing permit must:

(1) Comply with the conditions of that permit during any modification or revocation and reissuance proceeding under § 124.8; and

(2) To the extent conditions of any new permit are stayed under this section, comply with the conditions of the existing permit which correspond to the stayed conditions, unless compliance with the existing conditions would be technologically incompatible with compliance with other conditions of the new permit which have not been stayed.

§ 124.19 Appeal of RCRA, UIC, and PSD permits.

(a) Within 30 days after a RCRA, UIC, or PSD final permit decision (or a decision under § 270.29 to deny a permit for the active life of a RCRA hazardous waste management facility or unit) has been issued under § 124.15, any person who filed comments on that draft permit or participated in the public hearing may petition the Environmental Appeals Board to review any condition of the permit decision. Any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision. The 30-day period within which a person may request review under this section begins with the service of notice of the Regional Administrator's action unless a later date is specified in that notice. The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by these regulations and when appropriate, a showing that the condition in question is based on:

- (1) A finding of fact or conclusion of law which is clearly erroneous, or
- (2) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

(b) The Environmental Appeals Board may also decide on its initiative to review any condition of any RCRA, UIC, or PSD permit issued under this part. The Environmental Appeals Board must act under this paragraph within 30 days of the service date of notice of the Regional Administrator's action.

(c) Within a reasonable time following the filing of the petition for review, the Environmental Appeals Board shall issue an order granting or denying the petition for review. To the extent review is denied, the conditions of the final permit decision become final agency action. Public notice of any grant of review by the Environmental Appeals Board under paragraph (a) or (b) of this section shall be given as provided in § 124.10. Public notice shall set forth a briefing schedule for the appeal and shall state that any interested person may file an amicus brief. Notice of denial of review shall be sent only to the person(s) requesting review.

(d) The Environmental Appeals Board may defer consideration of an appeal of a RCRA or UIC permit under this section until the completion of formal proceedings under subpart E or F relating to an NPDES permit issued to the same facility or activity upon concluding that

(1) The NPDES permit is likely to raise issues relevant to a decision of the RCRA or UIC appeals;

(2) The NPDES permit is likely to be appealed; and

(3) Either: (i) The interests of both the facility or activity and the public are not likely to be materially adversely affected by the deferral; or

(ii) Any adverse effect is outweighed by the benefits likely to result from a consolidated decision on appeal.

(e) A petition to the Environmental Appeals Board under paragraph (a) of this section is, under 5 U.S.C. 704, a prerequisite to the seeking of judicial review of the final agency action.

(f)(1) For purposes of judicial review under the appropriate Act, final agency action occurs when a final RCRA, UIC, or PSD permit is issued or denied by EPA and agency review procedures are exhausted. A final permit decision shall be issued by the Regional Administrator:

(i) When the Environmental Appeals Board issues notice to the parties that review has been denied;

(ii) When the Environmental Appeals Board issues a decision on the merits of the appeal and the decision does not include a remand of the proceedings; or

(iii) Upon the completion of remand proceedings if the proceedings are remanded, unless the Environmental Appeals Board's remand order specifically provides that appeal of the remand decision will be required to exhaust administrative remedies.

(2) Notice of any final agency action regarding a PSD permit shall promptly be published in the FEDERAL REGISTER.

(g) Motions to reconsider a final order shall be filed within ten (10) days after service of the final order. Every such motion must set forth the matters claimed to have been erroneously decided and the nature of the alleged errors. Motions for reconsideration under this provision shall be directed to, and decided by, the Environmental Appeals Board. Motions for reconsideration directed to the administrator, rather than to the Environmental Appeals Board, will not be considered, except in cases that the Environmental Appeals Board has referred to the Administrator pursuant to § 124.2 and in which the Administrator has issued the final order. A motion for reconsideration shall not stay the effective date of the final order unless specifically so ordered by the Environmental Appeals Board.

[48 FR 14284, Apr. 1, 1983, as amended at 54 FR 9607, Mar. 7, 1989; 57 FR 5335, Feb. 13, 1992]

12. Section 124.16 is amended by revising paragraph (a) to read as follows:

Sec. 124.16 Stays of contested permit conditions.

(a) Stays. (1) If a request for review of a RCRA, UIC, or NPDES permit under Sec. 124.19 of this part is filed, the effect of the contested permit conditions shall be stayed and shall not be subject to judicial review pending final agency action. Uncontested permit conditions shall be stayed only until the date specified in paragraph (a)(2)(i) of this section. (No stay of a PSD permit is available under this section.) If the permit involves a new facility or new injection well, new source, new discharger or a recommencing discharger, the applicant shall be without a permit for the proposed new facility, injection well, source or discharger pending final agency action. See also Sec. 124.60.

(2)(i) Uncontested conditions which are not severable from those contested shall be stayed together with the contested conditions. The Regional Administrator shall identify the stayed provisions of permits for existing facilities, injection wells, and sources. All other provisions of the permit for the existing facility, injection well, or source become fully effective and enforceable 30 days after the date of the notification required in paragraph (a)(2)(ii) of this section.

(ii) The Regional Administrator shall, as soon as possible after receiving notification from the EAB of the filing of a petition for review, notify the EAB, the applicant, and all other interested parties of the uncontested (and severable) conditions of the final permit that will become fully effective enforceable obligations of the permit as of the date specified in paragraph (a)(2)(i) of this section. For NPDES permits only, the notice shall comply with the requirements of Sec. 124.60(b).

13. Section 124.19 is amended by revising the section heading, removing the first sentence of paragraph (a) introductory text and adding in its place 4 sentences, revising the first sentence of paragraph (b), revising paragraph (d), and revising the first sentence of paragraph (f)(1) introductory text to read as follows:

Sec. 124.19 Appeal of RCRA, UIC, NPDES, and PSD Permits.

(a) Within 30 days after a RCRA, UIC, NPDES, or PSD final permit decision (or a decision under 270.29 of this chapter to deny a permit for the active life of a RCRA hazardous waste management facility or unit) has been issued under Sec. 124.15 of this part, any person who filed comments on that draft permit or participated in the public hearing may petition the Environmental Appeals Board to review any condition of the permit decision. Persons affected by an NPDES general permit may not file a petition under this section or otherwise challenge the conditions of the general permit in further Agency proceedings. They may, instead, either challenge the general permit in court, or apply for an individual NPDES permit under Sec. 122.21 as authorized in Sec. 122.28 and then petition the Board for review as provided by this section. As provided in Sec. 122.28(b)(3), any interested person may also petition the Director to require an individual NPDES permit for any discharger eligible for authorization to discharge under an NPDES general permit. * * *

(b) The Environmental Appeals Board may also decide on its own initiative to review any condition of any RCRA, UIC, NPDES, or PSD permit decision issued under this part for which review is available under paragraph (a) of this section. * * *

(d) The Regional Administrator, at any time prior to the rendering of a decision under paragraph (c) of this section to grant or deny review of a permit decision, may, upon notification to the Board and any interested parties, withdraw the permit and prepare a new draft permit under Sec. 124.6 addressing the portions so withdrawn. The new draft permit shall proceed through the same process of public comment and opportunity for a public hearing as would apply to any other draft permit subject to this part. Any portions of the permit which are not withdrawn and which are not stayed under Sec. 124.16(a) continue to apply.

(f)(1) For purposes of judicial review under the appropriate Act, final agency action occurs when a final RCRA, UIC, NPDES, or PSD permit decision is issued by EPA and agency review procedures under this section are exhausted. * * *

§ 124.21 Effective date of part 124.

(a) Except for paragraphs (b) and (c) of this section, part 124 will become effective July 18, 1980. Because this effective date will precede the processing of any RCRA or UIC permits, part 124 will apply in its entirety to all RCRA and UIC permits.

(b) All provisions of part 124 pertaining to the RCRA program will become effective on November 19, 1980.

(c) All provisions of part 124 pertaining to the UIC program will become effective July 18, 1980, but shall not be implemented until the effective date of 40 CFR part 146.

(d) This part does not significantly change the way in which NPDES permits are processed. Since October 12, 1979, NPDES permits have been the subject to almost identical requirements in the revised NPDES regulations which were promulgated on June 7, 1979. See 44 FR 32948. To the extent this part changes the revised NPDES permit regulations, those changes will take effect as to all permit proceedings in progress on July 3, 1980.

(e) This part also does not significantly change the way in which PSD permits are processed. For the most part, these regulations will also apply to PSD proceedings in progress on July 18, 1980. However, because it would be disruptive to require retroactively a formal administrative record for PSD permits issued without one, §§ 124.9 and 124.18 will apply to PSD permits for which draft permits were prepared after the effective date of these regulations.

14. Section 124.21 is revised to read as follows:

Sec. 124.21 Effective date of part 124.

(a) Part 124 of this chapter became effective for all permits except for RCRA permits on July 18, 1980. Part 124 of this chapter became effective for RCRA permits on November 19, 1980.

(b) EPA eliminated the previous requirement for NPDES permits to undergo an evidentiary hearing after permit issuance, and modified the procedures for termination of NPDES and RCRA permits, on June 14, 2000.

(c)(1) For any NPDES permit decision for which a request for evidentiary hearing was granted on or prior to June 13, 2000, the hearing and any subsequent proceedings (including any appeal to the Environmental Appeals Board) shall proceed pursuant to the procedures of this part as in effect on June 13, 2000.

(2) For any NPDES permit decision for which a request for evidentiary hearing was denied on or prior to June 13, 2000, but for which the Board has not yet completed proceedings under Sec. 124.91, the appeal, and any hearing or other proceedings on remand if the Board so orders, shall proceed pursuant to the procedures of this part as in effect on June 13, 2000.

(3) For any NPDES permit decision for which a request for evidentiary hearing was filed on or prior to June 13, 2000 but was neither granted nor denied prior to that date, the Regional Administrator shall, no later than July 14, 2000, notify the requester that the request for evidentiary hearing is being returned without prejudice. Notwithstanding the time limit in Sec. 124.19(a), the requester may file an appeal with the Board, in accordance with the other requirements of Sec. 124.19(a), no later than August 13, 2000.

(4) A party to a proceeding otherwise subject to paragraph (c) (1) or (2) of this

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section may, no later than June 14, 2000, request that the evidentiary hearing process be suspended. The Regional Administrator shall inquire of all other parties whether they desire the evidentiary hearing to continue. If no party desires the hearing to continue, the Regional Administrator shall return the request for evidentiary hearing in the manner specified in paragraph (c)(3) of this section.

(d) For any proceeding to terminate an NPDES or RCRA permit commenced on or prior to June 13, 2000, the Regional Administrator shall follow the procedures of Sec. 124.5(d) as in effect on June 13, 2000, and any formal hearing shall follow the procedures of subpart E of this part as in effect on the same date.

§ 124.60 Issuance and effective date and stay of NPDES permits.

In addition to the requirements of § 124.15, the following provisions apply to NPDES permits and to RCRA or UIC permits to the extent those permits may have been consolidated with an NPDES permit in a formal hearing:

(a)(1) If a request for a formal hearing is granted under § 124.75 or § 124.114 regarding the initial permit issued for a new source, a new discharger, or a recommencing discharger, or if a petition for review of the denial of a request for a formal hearing with respect to such a permit is timely filed with the Administrator under § 124.91, the applicant shall be without a permit pending final Agency action under § 124.91.

(2) Wherever a source subject to this paragraph has received a final permit under § 124.15 which is the subject of a hearing request under § 124.74 or a formal hearing under § 124.75, the Presiding Officer, on motion by the source, may issue an order authorizing it to begin operation before final agency action if it complies with all conditions of that final permit during the period until final agency action. The Presiding Officer may grant such a motion in any case where no party opposes it, or, if a party opposes the motion, where the source demonstrates that (i) it is likely to prevail on the merits; (ii) irreparable harm to the environment will not result pending final agency action if it is allowed to commence operations before final agency action; and (iii) the public interest requires that the source be allowed to commence operations. All the conditions of any permit covered by that order shall be fully effective and enforceable.

(b) The Regional Administrator, at any time prior to the rendering of an initial decision in a formal hearing on a permit, may withdraw the permit and prepare a new draft permit under § 124.8 addressing the portions so withdrawn. The new draft permit shall proceed through the same process of public comment and opportunity for a public hearing as would apply to any other draft permit subject to this Part. Any portions of the permit which are not withdrawn and which are not stayed under this section shall remain in effect.

(c)(1) If a request for a formal hearing is granted in whole or in part under § 124.75 regarding a permit for an existing source, or if a petition for review of the denial of a request for a formal hearing with respect to that permit is timely filed with the

Administrator under § 124.91, the force and effect of the contested conditions of the final permit shall be stayed. The Regional Administrator shall notify, in accordance with § 124.75, the discharger and all parties of the uncontested conditions of the final permit that are enforceable obligations of the discharger.

(2) When effluent limitations are contested, but the underlying control technology is not, the notice shall identify the installation of the technology in accordance with the permit compliance schedules (if uncontested) as an uncontested, enforceable obligation of the permit.

(3) When a combination of technologies is contested, but a portion of the combination is not contested, that portion shall be identified as uncontested if compatible with the combination of technologies proposed by the requester.

(4) Uncontested conditions, if inseverable from a contested condition, shall be considered contested.

(5) Uncontested conditions shall become enforceable 30 days after the date of notice under paragraph (c)(1) of this section granting the request. If, however, a request for a formal hearing on a condition was denied and the denial is appealed under § 124.91, then that condition shall become enforceable upon the date of the notice of the Administrator's decision on the appeal if the denial is affirmed, or shall be stayed, in accordance with this section, if the Administrator reverses the denial and grants the evidentiary hearing.

(6) Uncontested conditions shall include:

(i) Preliminary design and engineering studies or other requirements necessary to achieve the final permit conditions which do not entail substantial expenditures;

(ii) Permit conditions which will have to be met regardless of which party prevails at the evidentiary hearing;

(iii) When the discharger proposed a less stringent level of treatment than that contained in the final permit, any permit conditions appropriate to meet the levels proposed by the discharger, if the measures required to attain that less stringent level of treatment are consistent with the measures required to attain the limits proposed by any other party; and

(iv) Construction activities, such as segregation of waste streams or installation of equipment which would partially meet the final permit conditions and could also be used to achieve the discharger's proposed alternative conditions.

(d) If at any time after a hearing is granted and after the Regional Administrator's notice under paragraph (c)(1) of this section it becomes clear that a permit requirement is no longer contested, any party may request the Presiding Officer to issue an order identifying the requirements as uncontested. The requirement identified in such order shall become enforceable 30 days after the issuance of the order.

(e) When a formal hearing is granted under § 124.75 on an application for a renewal of an existing permit, all provisions of the existing permit as well as uncontested provisions of the new permit, shall continue fully enforceable and effective until final agency action under § 124.91. (See § 122.8) Upon written request from the applicant, the Regional Administrator may delete requirements from the existing permit which unnecessarily duplicate uncontested provisions of the new permit.

(f) When issuing a finally effective NPDES permit the conditions of which were the subject of a formal hearing under Subparts E or F, the Regional Administrator shall extend the permit compliance schedule to the extent required by a stay under this section provided that no such extension shall be granted which would:

(1) Result in the violation of an applicable statutory deadline; or

(2) Cause the permit to expire more than 5 years after issuance under § 124.15(a).

Note.—Extensions of compliance schedules under § 124.80(c)(2) will not automatically be granted for a period equal to the period the stay is in effect for an effluent limitation. For example, if both the Agency and the discharger agree that a certain treatment technology is required by the CWA where guidelines do not apply, but a hearing is granted to consider the effluent limitations which the technology will achieve, requirements regarding installation of the underlying technology will not be stayed during the hearing. Thus, unless the hearing extends beyond the final compliance date in the permit, it will not ordinarily be necessary to extend the compliance schedule. However, when application of an underlying technology is challenged, the stay for installation requirements relating to that technology would extend for the duration of the hearing.

(g) For purposes of judicial review under CWA section 509(b), final agency action on a permit does not occur unless and until a party has exhausted its administrative remedies under Subparts E and F and § 124.91. Any party which neglects or fails to seek review under § 124.91 thereby waives its opportunity to exhaust available agency remedies.

19. Section 124.60 is revised to read as follows:

Sec. 124.60 Issuance and effective date and stays of NPDES permits.

In addition to the requirements of Secs. 124.15, 124.16, and 124.19, the following provisions apply to NPDES permits:

(a) Notwithstanding the provisions of Sec. 124.16(a)(1), if, for any offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig which has never received a final effective permit to discharge at a "site," but which is not a "new discharger" or a "new source," the Regional Administrator finds that compliance with certain permit conditions may be necessary to avoid irreparable environmental harm during the administrative review, he or she may specify in the statement of basis or fact sheet that those conditions, even if contested, shall remain enforceable obligations of the discharger during administrative review.

(b)(1) As provided in Sec. 124.16(a), if an appeal of an initial permit decision is filed under Sec. 124.19, the force and effect of the contested conditions of the final permit shall be stayed until final agency action under Sec. 124.19(f). The Regional Administrator shall notify, in accordance with Sec. 124.16(a)(2)(ii), the discharger and all interested parties of the uncontested conditions of the final permit that are enforceable obligations of the discharger.

(2) When effluent limitations are contested, but the underlying control technology is not, the notice shall identify the installation of the technology in accordance with the permit compliance schedules (if uncontested) as an uncontested, enforceable obligation of the permit.

(3) When a combination of technologies is contested, but a portion of the combination is not contested, that portion shall be identified as uncontested if compatible with the combination of technologies proposed by the requester.

(4) Uncontested conditions, if inseverable from a contested condition, shall be considered contested.

(5) Uncontested conditions shall become enforceable 30 days after the date of notice under paragraph (b)(1) of this section.

(6) Uncontested conditions shall include:

(i) Preliminary design and engineering studies or other requirements necessary to achieve the final permit conditions which do not entail substantial expenditures;

(ii) Permit conditions which will have to be met regardless of the outcome of the appeal under Sec. 124.19;

(iii) When the discharger proposed a less stringent level of treatment than that contained in the final permit, any permit conditions appropriate to meet the levels proposed by the discharger, if the measures required to attain that less stringent level of treatment are consistent with the measures required to attain the limits proposed by any other party; and

(iv) Construction activities, such as segregation of waste streams or installation of equipment, which would partially meet the final permit conditions and could also be used to achieve the discharger's proposed alternative conditions.

(c) In addition to the requirements of Sec. 124.16(c)(2), when an appeal is filed under Sec. 124.19 on an application for a renewal of an existing permit and upon written request from the applicant, the Regional Administrator may delete requirements from the existing permit which unnecessarily duplicate uncontested provisions of the new permit.

ENVIRONMENTAL APPEALS BOARD WEBSITE AND FAQS

The website for the EAB is "<http://www.epa.gov/eab/>".

FREQUENTLY ASKED QUESTIONS

(1) What are the Board's telephone number and fax number?

The Board's telephone number is (202) 501-7060.

The Board's fax number is (202) 501-7580.

(2) Where should I file a pleading in a matter before the Board?

By mail:

Environmental Appeals Board,
MC 1103B, U.S. EPA, Ariel Rios Building
1200 Pennsylvania Avenue, N.W.,
Washington, D.C. 20460.

By Hand Delivery

Environmental Appeals Board
607 14th Street, N.W., Suite 500,
Washington, D.C. 20005.

Documents may be filed with the Clerk of the Environmental Appeals Board only between the hours of 8:30 a.m. and 4:30 p.m. Eastern Time Monday through Friday (excluding Federal holidays).

(3) Is there a fee for filing a petition or an appeal with the EAB?

No

(4) How many copies of each filing and each exhibit must I file?

The Board requests one original and five copies of any filing. Where exhibits are more than 30 pages, the Board requests that three sets of exhibits be filed.

(5) Is a pleading timely if it is postmarked by the specified filing date or must it be actually received by the Board by the filing date?

**MARINE ACUTE
TOXICITY TEST PROCEDURE AND PROTOCOL**

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **Mysid Shrimp (Mysidopsis bahia) definitive 48 hour test.**
- ~~**Japanese Silverside (Verdiperla heptaptera) definitive 48 hour test.**~~

Acute toxicity data shall be reported as outlined in Section VIII.

II. METHODS

Methods to follow are those recommended by EPA in:

Weber, C.I. et al. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, Fourth Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH. August 1993, EPA/600/4-90/027F.

Any exceptions are stated herein.

III. SAMPLE COLLECTION

A discharge sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for the chemical and physical analyses. The remaining sample shall be dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual oxidants (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. A thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) should also be run.

All samples held overnight shall be refrigerated at 4°C.

IV. DILUTION WATER

A grab sample of dilution water used for acute toxicity testing shall be collected at a point away from the discharge which is free from toxicity or other sources of contamination. Avoid collecting near areas of obvious road or agricultural runoff, storm sewers or other point source discharges. An additional control (0% effluent) of a standard laboratory water of known quality shall also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a conductivity, salinity, total suspended solids, and pH similar to that of the receiving water may be substituted **AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S)**. Written requests for use of an alternative dilution water should be mailed with supporting documentation to the following address:

Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency-New England
JFK Federal Building (CAA)
Boston, MA 02203

It may prove beneficial to have the proposed dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA New England requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Mysid and Menidia toxicity test conditions and test acceptability criteria:

**EPA NEW ENGLAND RECOMMENDED EFFLUENT TOXICITY TEST CONDITIONS FOR
THE MYSID, MYSIDOPSIS BAHIA 48 HOUR TEST¹**

1. Test type	Static, non-renewal
2. Salinity	25ppt \pm 10 percent for all dilutions by adding dry ocean salts
3. Temperature (°C)	20°C \pm 1°C or 25°C \pm 1°C
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml
7. Test solution volume	200 ml
8. Age of test organisms	1-5 days
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration ²	None
14. Dilution water	Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	≥ 0.5
16. Number of dilutions ³	5 plus a control. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.

17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

Footnotes:

1. Adapted from EPA/600/4-90/027F.
2. If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.
3. When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

**EPA NEW ENGLAND RECOMMENDED TOXICITY TEST CONDITIONS FOR THE
INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST¹**

1. Test Type	Static, non-renewal
2. Salinity	25 ppt \pm 2 ppt by adding dry ocean salts
3. Temperature	20°C \pm 1°C or 25°C \pm 1°C
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration ²	None
14. Dilution water	Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	≥ 0.5
16. Number of dilutions ³	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

1. Adapted from EPA/600/4-90/027F.
2. If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.
3. When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	<u>Minimum Quanti- fication Level (mg/L)</u>
pH	x	x	---
Salinity	x	x	PPT(0/00)
Total Residual Oxidants*1	x	x	0.05
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5

Total Metals

Cd	x	0.001
Cr	x	0.005
Pb	x	0.005
Cu	x	0.0025
Zn	x	0.0025
Ni	x	0.004
Al	x	0.02

Superscript:

*1 Total Residual Oxidants

Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

- Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
- Method 4500-CL G DPD Photometric Method.

or use USEPA Manual of Methods Analysis of Water or Wastes, Method 330.5.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See flow chart in Figure 6 on page 77 of EPA 600/4-90/027F for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 94 of EPA 600/4-90/027F.

VIII. TOXICITY TEST REPORTING

The following must be reported:

- Description of sample collection procedures, site description;
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody; and
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicity test data must be included.
- Raw data and bench sheets.
- All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
- Provide a description of dechlorination procedures (as applicable).
- Any other observations or test conditions affecting test outcome.
- Statistical tests used to calculate endpoints.

Attachment- B

EPA REGION I

NPDES PERMIT

SLUDGE COMPLIANCE GUIDANCE

04 NOVEMBER 1999

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1. LAND APPLICATION

This section applies to sewage sludge from the permittee's facility which is applied to the land for the purpose of enriching the soil. The permittee should answer the following questions. The answers to these questions need to be evaluated to determine which permitting scenario for sewage sludge land application applies. After the permitting scenario is determined, the permittee must comply with the directives contained in the chosen scenario.

1.1 Question Algorithm

The permittee should review and answer the following questions. The information gathered from answering these questions will aid the permittee in determine the appropriate land application scenario which applies to the sludge generated at the permittee's waste water treatment facility. The scenario selected will detail which specific Use or Disposal of Sewage Sludge, Part 503, regulations must be complied with for the land application method used by the permittee.

1. What type of land is the sewage sludge being applied to?
If the sewage sludge/material is to be sold or given away, or applied to a lawn or home garden, the sewage sludge MUST meet Class A pathogen reduction requirements.
2. Is all the sludge generated at the facility used in the same manner?
If all the sludge is not used the same way, the permittee needs to determine what amounts are used in what manner. Different scenarios may apply to the different portions.
3. Is the sewage sludge in bulk or is it a bagged material?
Scenario No.1 and No.6 can be applied to bagged materials. All other scenarios apply to bulk sewage sludge only. Bulk material is an amount of sewage sludge greater than one metric ton (2200 lbs).
4. What is the metals content in the sewage sludge for the following metals: arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc?
If any of the concentrations in Table 1 of 40 CFR §503.13 (b) (1) are exceeded on a dry weight basis, the sewage sludge cannot be land applied. Table 1 is summarized:

§503.13 Table 1
Maximum Pollutant Concentrations

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

5. Does the sludge qualify for "exceptional quality" criteria in accordance with Table 3, 40 CFR §503.13(b)(3)) on a dry weight basis? Table 3 is summarized:

§503.13 Table 3
Exceptional Quality Pollutant Concentrations

Arsenic.....	41 mg/kg
Cadmium.....	39 mg/kg
Copper.....	1500 mg/kg
Lead.....	300 mg/kg
Mercury.....	17 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	2800 mg/kg

In addition, Class A pathogen reduction (see Section 4), and achievement of one of the vector attraction reduction alternatives 1 through 8 (see Section 5) must be attained.

NOTHING ELSE QUALIFIES AS EXCEPTIONAL QUALITY

6. What is the level of pathogen reduction achieved, Class A or Class B?

Refer to Section 4, Pathogen Reduction, to select the appropriate method that is used to reduce the pathogens in the sewage sludge produced at the facility.

7. What is the method for vector attraction reduction?

Refer to Section 5, Vector Attraction Reduction, to select the appropriate method that is used to reduce the pathogens in the sewage sludge produced at the facility.

8. What is the amount of sewage sludge used in dry metric tons/365 day period?

This determines the frequency of monitoring (see Section 6) for the pollutants, pathogens and vectors. Use the table below to make the determination:

Sampling Frequency Table

SEWAGE SLUDGE PRODUCED (metric tons per 365 day period)	SAMPLING FREQUENCY
0 < Sludge (tons) < 290	Once per Year
290 ≤ Sludge (tons) < 1500	Once Per Quarter (four times per year)
1500 ≤ Sludge (tons) < 15000	Once per 60 Days (six times per year)
Sludge (tons) ≤ 15000	Once per Month (12 times per year)

1.2 Scenario Determination

After the information is gathered and evaluated from the questions in the preceding section, the permittee can select the appropriate land application scenario.

Land Application Scenario Selection Table

SCENARIO	LAND TYPE	BULK/ BAGGED	POLLUTANT LIMITS ²	PATHOGENS ³	VECTORS ³
No. 1	ANY TYPE	BOTH (EQ)	TABLE 3	CLASS A	1-8 ONLY
No. 2	SEE BELOW ¹	BULK	TABLE 3	CLASS A	9 OR 10
No. 3	SEE BELOW ¹	BULK	TABLE 3	CLASS B	1-10
No. 4	SEE BELOW ¹	BULK	TABLE 2	CLASS A	1-10
No. 5	SEE BELOW ¹	BULK	TABLE 2	CLASS B	1-10
No. 6	ANY TYPE	BAGGED	TABLE 4	CLASS A	1-8 ONLY

1. Land types: Agricultural land, forest, reclamation site, or public contact site
2. Refer to 40 CFR 503.13 Table 2, Table 3 and Table 4
3. The Pathogen Reduction Section (Section 4) and Vector Attraction Reduction Sections (Section 5) are located after the Scenario section.

1.3. Scenarios

This section contains the sewage sludge land application scenarios. One of these scenarios has been selected by the permittee, based on reading and answering the questions in Section 1.2, to regulate their treatment facility's sewage sludge land application.

1.3.1. Scenario No.1

This applies to bulk or bagged sewage sludge and materials derived from sewage sludge meeting the pollutant concentrations at §503.13(b)(3); one of the Class A pathogen reduction alternatives at §503.32(a); one of the vector attraction reduction requirements at §503.33(b)(1) through (b)(8). Materials meeting these characteristics are considered "Exceptional quality" materials and are exempt from the general requirements at §503.12 and the management practices at §503.14. Sludges of this quality may be applied to any type of land.

SLUDGE CONDITIONS

1. Pollutant limitations

- a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 1a. are exceeded.
 - c. The monthly average concentration of metals in the sewage sludge shall not exceed the following (dry weight basis):

Arsenic.....	41 mg/kg
Cadmium.....	39 mg/kg
Copper.....	1500 mg/kg
Lead.....	300 mg/kg
Mercury.....	17 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	2800 mg/kg

2. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40CFR §503.32
3. The permittee shall meet one of the vector attraction reduction requirements specified in 40CFR §503.33. The permittee may only utilize alternatives 1 through 8. If the permittee meets one of the vector attraction reduction alternatives 1 through 5, the Class A pathogen requirements must be met either prior to or at the same time as the vector attraction reduction requirement.
4. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 1a, the pathogen density and the vector attraction reduction requirement at the frequency specified in sludge condition 6 of the permit.
5. The permittee shall develop and retain the following information for five years:
 - a. The concentration of each pollutant listed in Paragraph 1a.
 - b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in §503.32(a) and the vector attraction reduction requirements in §503.33 (b) (1) through (b) (8) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
 - c. A description of how the Class A pathogen requirements are met.
 - d. A description of how the vector attraction reduction requirements are met.
6. The permittee shall report the information in Paragraphs 5a, b, c, and d annually on February 19. Reports shall be

submitted to EPA at the address in the Monitoring and Reporting section of this permit.

7. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in 40CFR §503.8

1.3.2. Scenario No.2

This scenario applies to bulk sewage sludge or materials derived from bulk sewage sludge meeting the following criteria: the pollutant concentrations in §503.13(b)(3); Class A pathogen requirements in §503.32(a); and vector attraction §503.33(b)(9) or (b)(10). Sludge of this quality may be applied to agricultural land, forest land, public contact site or reclamation site. This scenario has specific requirements for the preparer and the applier.

SLUDGE CONDITIONS

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
 - a. Bulk sewage sludge shall not be applied to the land except in accordance with 40 CFR Part 503, Subpart B.
 - b. The permittee shall provide the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
 - c. The person who applies the bulk sewage sludge shall obtain notice and necessary information from the permittee to comply with the requirements of 40 CFR Part 503, Subpart B.
 - d. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage sludge notice and necessary information to comply with 40 CFR Part 503, Subpart B.
 - e. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the preparer notice and necessary information to comply with 40 CFR Part 503, Subpart B.
 - f. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with 40 CFR Part 503, Subpart B.

g. When bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:

- i. The location of each site by either street address or latitude and longitude.
- ii. The approximate period of time the bulk sewage sludge will be applied to each site.
- iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
- iv. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if applicable) for the person who applies the bulk sewage sludge.

2. Pollutant limitations

a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.

c. The monthly average concentration of metals in the sewage sludge shall not exceed the following (dry weight basis):

Arsenic.....	41 mg/kg
Cadmium.....	39 mg/kg
Copper.....	1500 mg/kg
Lead.....	300 mg/kg
Mercury.....	17 mg/kg

Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	2800 mg/kg

3. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40CFR §503.32
4. The person who applies the bulk sewage sludge shall meet either vector attraction reduction requirement 9 or 10 as specified in 40CFR §503.33.
5. The bulk sewage sludge shall be injected below the surface of the land, or incorporated into the soil within 8 hours after discharge from the pathogen treatment process.
6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a and the pathogen density requirements at the frequency specified in sludge condition 6 of the permit.
7. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
 - a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act, or its designated habitat.
 - b. The bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered, or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as defined in 40 CFR 122.2, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act.
 - c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site, or a land reclamation site that is less than 10 meters (33 feet) from waters of the United States, as defined in 40 CFR 122.2.
 - d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.
8. The permittee shall develop and retain the following information for five years:

- a. The pollutant concentration for each pollutant listed in Paragraph 2a. of this section.
- b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in §503.32(a) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
- c. A description of how the pathogen requirements are met.

9. The person who applies the bulk sewage sludge shall develop and retain the following information for five years:

- a. The following certification requirement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14 and the vector attraction reduction requirement in either §503.33(b)(9) or (b)(10) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment."
- b. A description of how the management practices in §503.14 are met for each site on which the bulk sewage sludge is applied.
- c. A description of how the vector attraction reduction requirements are met for each site on which bulk sewage sludge is applied. Including a description of how the requirement in Paragraph 5 is met.

10. The permittee shall report the information in paragraphs 8a, b, and c annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.

11. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40CFR §503.8.

12. The permittee shall supply the following information/requirements to the person who applies the bulk

sewage sludge:

- a. Information in Paragraph 1b.
- b. Requirements in Paragraphs 1f and 5.
- c. Management Practices in Paragraphs 7a through d.
- d. Record keeping requirements in Paragraphs 9a through c.

13. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:

- a. Describe the geographic area covered by the plan;
- b. Identifies site selection criteria;
- c. Describes how sites will be managed; and
- d. Provides for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

1.3.3. Scenario No.3

This scenario applies to bulk sewage sludge meeting the following criteria: pollutant concentrations at §503.13(b)(3); Class B pathogens at §503.32(b); and one of the vector attraction reduction requirements found at §503.33(b). Bulk sewage sludge of this quality may be applied to agricultural land, forest land, public contact site or a reclamation site. There are specific requirements for the preparer and applier.

SLUDGE CONDITIONS

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
 - a. Bulk sewage sludge shall no the applied to the land except in accordance with 40 CFR Part 503 Subpart B.
 - b. The permittee shall provide the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
 - c. The person who applies the bulk sewage sludge shall

obtain notice and necessary information from the permittee to comply with the requirements of 40 CFR Part 503 Subpart B.

- d. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- e. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the person who prepares the bulk sewage sludge notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- vi. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- g. When bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:
 - i. The location of each site by either street address or latitude and longitude.
 - ii. The approximate period of time the bulk sewage sludge will be applied to each site.
 - iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
 - iv. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if applicable) for the person who applies the bulk sewage sludge.

2. Pollutant limitations

- a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.
- c. The monthly average concentration of metals in the sewage sludge shall not exceed the following (dry weight basis):

Arsenic.....	41 mg/kg
Cadmium.....	39 mg/kg
Copper.....	1500 mg/kg
Lead.....	300 mg/kg
Mercury.....	17 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	2800 mg/kg

- 3. The permittee shall meet Class B pathogen requirements utilizing one of the methods specified in 40CFR §503.32
- 4. The permittee shall meet one of vector attraction reduction requirements specified in 40CFR §503.33
- 5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density requirements and the vector attraction reduction requirements at the frequency specified in sludge condition 6 of the permit.
- 6. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
 - a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act, or its designated habitat.
 - b. The bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered, or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as

defined in 40 CFR 122.2, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act.

- c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site, or a land reclamation site that is less than 10 meters (33 feet) from waters to the United States, as defined in 40 CFR 122.2.
- d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.

7. The person who applies the bulk sewage sludge shall insure that the following site restrictions are met for each site on which the bulk sewage sludge is applied:

- a. Food crops with harvested parts that touch the sewage sludge/soil mixture and are not totally above the land surface shall not be harvested for 14 months after application of sewage sludge.
- b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil.
- c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.
- d. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.
- e. Animals shall not be grazed on the land for 30 days after application of sewage sludge.
- f. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.
- g. Public access to land with a high potential for public

exposure shall be restricted for one year after application of sewage sludge.

h. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

8. The permittee shall develop and retain the following information for five years:

- a. The concentration of each pollutant listed in Paragraph 2a of this section.
- b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirement in §503.32(b) and the vector attraction reduction requirement in §503.33(b)(1) through (b)(8), if one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."
- c. A description of how the Class B pathogen requirements are met.
- d. When the permittee is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

9. The person who applies the bulk sewage sludge shall develop and maintain the following information for five years:

- a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14, the site restrictions in §503.32(b)(5), and the vector attraction reduction requirements in §503.33(b)(9) or (b)(10), if one of those requirements is met was prepared for each site on which sewage sludge is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant

penalties for false certification including the possibility of fine and imprisonment."

- b. A description of how the management practices in Paragraphs 6a through d are met for each site.
- c. A description of how the site restrictions in Paragraphs 7a through h are met for each site.
- d. When the applier is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirement in either §503.33(b)(9) or (b)(10) is met.

10. The permittee shall report the information in Paragraphs 8a, b, c and d annually on February 19. Reports shall be submitted to the address in the Monitoring and Reporting section of this permit.

11. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40CFR §503.8

12. The permittee shall notify the person who applies the bulk sewage sludge of the following information/requirements:

- a. Information in Paragraph 1b.
- b. Requirement in Paragraph 1f.
- c. Management practices in Paragraphs 6a through d.
- d. Site Restrictions in Paragraphs 7a through h.
- e. Record keeping requirements in Paragraphs 9a through d.

13. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:

- a. Describe the geographic area covered by the plan;
- b. Identifies site selection criteria;
- c. Describes how sites will be managed; and
- d. Provides for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

1.3.4. Scenario No.4

This scenario applies to bulk sewage sludge meeting the following criteria: pollutant concentrations at §503.13(b)(2); Class A pathogen requirements at §503.32(a); and one of the vector attraction reduction requirements found at §503.33(b). Bulk sewage sludge of this quality may be applied to agricultural land, forest land, public contact site or a reclamation site. There are specific requirements for the preparer and the applier.

SLUDGE CONDITIONS

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
 - a. Bulk sewage sludge shall not be applied to the land except in accordance with 40 CFR Part 503 Subpart B.
 - b. Bulk sewage sludge shall not be applied if any of the cumulative pollutant loading rates in Paragraph 2c have been reached on the site.
 - c. The permittee shall provide the person who supplies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
 - d. The person who applies the bulk sewage sludge shall obtain notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
 - e. The person who applies the bulk sewage sludge shall obtain the following information:
 - i. Prior to application of bulk sewage sludge, the person who proposes to apply the bulk sewage shall contact the permitting authority for the state in which the bulk sewage sludge will be applied to determine whether bulk sewage sludge subject to the cumulative pollutant loading rates in §503.13(b)(2) has been applied to the site since July 20, 1993.
 - ii. If bulk sewage sludge subject to the cumulative pollutant loading rates has not been applied to the site, the cumulative amount for each pollutant listed in Paragraph 2c may be applied.
 - iii. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative

amount of each pollutant applied to the site since that date is known, the cumulative amount of each pollutant applied to the site shall be used to determine the additional amount of each pollutant that can be applied to the site such that the loading rates in Paragraph 2c are not exceeded.

- iv. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site since that date is not known, an additional amount of any pollutant may not be applied to the site.
- f. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- g. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the person who prepares the bulk sewage sludge notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- h. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- i. When bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:
 - i. The location of each site by either street address or latitude and longitude.
 - ii. The approximate period of time the bulk sewage sludge will be applied to each site.
 - iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
 - iv. The name, address, telephone number, and National Pollutant Discharge Elimination System permit

number (if applicable) for the person who applies the bulk sewage sludge.

- j. The person who applies the bulk sewage sludge shall provide written notice, prior to the initial application of the bulk sewage sludge, to the permitting authority for the State in which the bulk sewage sludge will be applied. The notice shall include:
 - i. The location, by either street address or latitude and longitude, of the land application site.
 - ii. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) of the person who will apply the bulk sewage sludge.

2. Pollutant limitations

- a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.
- c. The cumulative pollutant loading rates for each site shall not exceed the following (kilograms per hectare):

Arsenic.....	41
Cadmium.....	39
Copper.....	1500
Lead.....	300
Mercury.....	17
Nickel.....	420
Selenium.....	100
Zinc.....	2800

- d. Bulk sewage sludge shall not be applied to a site on which any of the cumulative pollutant loading rates have been reached.

3. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40CFR §503.32
4. The permittee shall meet one of the vector attraction reduction requirements specified in 40CFR §503.33. The permittee may only utilize alternatives 1 through 8. If the permittee meets one of the vector attraction reduction alternatives 1 through 5, the Class A pathogen requirements must be met either prior to or at the same time as the vector attraction reduction requirement.
5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density requirements and the vector attraction reduction requirements at the frequency specified in sludge condition 6 of the permit.
6. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
 - a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act, or its designated habitat.
 - b. The bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered, or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as defined in 40 CFR 122.2, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act.
 - c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site, or a land reclamation site that is less than 10 meters (33 feet) from waters of the United States, as defined in 40 CFR 122.2.
 - d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.
7. The permittee shall develop and maintain the following information for five years:
 - a. The concentration of each pollutant listed in Paragraph 2a in the bulk sewage sludge.

b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirement in §503.32(a) and the vector attraction reduction requirement in insert one of the vector attraction reduction requirements in §503.33(b) (1) through (b) (8), if one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."

c. A description of how the Class A pathogen requirements are met.

d. When the permittee is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

8. The person who applies the bulk sewage sludge shall develop and retain the following information indefinitely:

- a. The location, by either street address or latitude and longitude, of each site on which bulk sewage sludge is applied.
- b. The number of hectares in each site on which bulk sewage sludge is applied.
- c. The date bulk sewage sludge is applied to each site.
- d. The cumulative amount of each pollutant listed in Paragraph 2a in the bulk sewage sludge applied to each site, including the amount in Paragraph 1e(iii) of this section. (in kilograms)
- e. The amount of sewage sludge applied to each site (in metric tons).
- f. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the requirements to obtain information in §503.12(e)(2) {Paragraphs 1e (i through iv) of this permit} was prepared for each site on which sewage

sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment."

- g. A description of how the requirements to obtain the information in Paragraph 1e (i through iv) are met.
9. The person who applies the bulk sewage sludge shall develop and maintain the following information for five years:
 - a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14 was prepared for each site on which sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
 - b. A description of how the management practices in Paragraphs 6a through d are met for each site.
 - c. When the applier is responsible for meeting the vector attraction reduction requirements, the following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in either §503.33(b) (9) or (b) (10) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
 - d. When the applier is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirement in either §503.33(b) (9) or (b) (10) is met.
10. The permittee shall report the information in Paragraphs 7a, b, c and d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.

11. When 90 percent or more of any of the cumulative pollutant loading rates are reached, the person who applies the bulk sewage sludge shall report the information in Paragraphs 10a through d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.
12. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40CFR §503.8.
13. The permittee shall notify the applier of the following information/requirements:
 - a. Requirements in Paragraphs 1b, 1d, 1e, 1j, 2c and 2d.
 - b. Information in Paragraph 1c.
 - c. The management practices in Paragraphs 6a through d.
 - d. Record keeping requirements in Paragraphs 8a through g and Paragraphs 9a through d.
 - e. Reporting requirements in Paragraph 11.
14. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:
 - a. Describe the geographic area covered by the plan;
 - b. Identifies site selection criteria;
 - c. Describes how sites will be managed; and
 - d. Provides for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

1.3.5. Scenario No.5

This scenario applies to bulk sewage sludge meeting the following criteria: pollutant concentrations at §503.13(b)(2); Class B pathogen requirements at §503.32(b); and one of the vector attraction reduction requirements found at §503.33(b). Bulk sewage sludge of this quality may be applied to agricultural land, forest land, public contact site or a reclamation site. There are specific requirements for the preparer and the applier.

SLUDGE CONDITIONS

1. The permittee and the applier of the bulk sewage sludge shall comply with the following general requirements:
 - a. Bulk sewage sludge shall not be applied to the land except in accordance with 40 CFR Part 503 Subpart B.
 - b. Bulk sewage sludge shall not be applied if any of the cumulative pollutant loading rates in Paragraph 2c have been reached on the site.
 - c. The permittee shall provide the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.
 - d. The person who applies the bulk sewage sludge shall obtain notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
 - e. The person who applies the bulk sewage sludge shall obtain the following information:
 - i. Prior to application of bulk sewage sludge, the person who propose to apply the bulk sewage shall contact the permitting authority for the state in which the bulk sewage sludge will be applied to determine whether bulk sewage sludge subject to the cumulative pollutant loading rates in §503.13(b)(2) has been applied to the site since July 20, 1993.
 - ii. If bulk sewage sludge subject to the cumulative pollutant loading rates has not been applied to the site, the cumulative amount for each pollutant listed in Paragraph 2c may be applied.
 - iii. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site since that date is known, the cumulative amount of each pollutant applied to the site shall be used to determine the additional amount of each pollutant that can be applied to the site such that the loading rates in Paragraph 2c are not exceeded.
 - iv. If bulk sewage sludge subject to the cumulative pollutant loading rates has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site since

that date is not known, an additional amount of any pollutant may not be applied to the site.

- f. When the permittee provides the bulk sewage sludge to a person who applies the bulk sewage sludge, the permittee shall provide the person who applies the bulk sewage notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- g. When the permittee provides the bulk sewage sludge to a person who prepares the bulk sewage sludge, the permittee shall provide the person who prepares the bulk sewage sludge notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- h. The person who applies the bulk sewage sludge shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
- i. When bulk sewage sludge is applied in another state, the person who prepares the sewage sludge shall provide notice to the permitting authority for the state in which the sewage sludge will be applied. Notice shall be given prior to the initial application and shall contain the following information:
 - i. The location of each site by either street address or latitude and longitude.
 - ii. The approximate period of time the bulk sewage sludge will be applied to each site.
 - iii. The name, address, telephone number and National Pollutant Discharge Elimination System permit number (if applicable) for the person who prepares the bulk sewage sludge.
 - iv. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if applicable) for the person who applies the bulk sewage sludge.
- j. The person who applies the bulk sewage sludge shall provide written notice, prior to the initial application of the bulk sewage sludge, to the permitting authority for the State in which the bulk sewage sludge will be applied. The notice shall include:

- i. The location, by either street address or latitude and longitude, of the land application site.
- ii. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) of the person who will apply the bulk sewage sludge.

2. Pollutant limitations

- a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

- b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.
- c. The cumulative pollutant loading rates for each site shall not exceed the following (kilograms per hectare):

Arsenic.....	41
Cadmium.....	39
Copper.....	1500
Lead.....	300
Mercury.....	17
Nickel.....	420
Selenium.....	100
Zinc.....	2800

- d. Bulk sewage sludge shall not be applied to a site on which any of the cumulative pollutant loading rates have been reached.
3. The permittee shall meet Class B pathogen requirements utilizing one of the methods specified in 40CFR §503.32
4. The permittee shall meet one of vector attraction reduction requirements specified in 40CFR §503.33
5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density

requirements and the vector attraction reduction requirements at the frequency specified in sludge condition 6 of the permit.

6. The person who applies the bulk sewage sludge shall insure that the following site restrictions are met for each site on which the bulk sewage sludge is applied:
 - a. Food crops with harvested parts that touch the sewage sludge/soil mixture and are not totally above the land surface shall not be harvested for 14 months after application of sewage sludge.
 - b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil.
 - c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.
 - d. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.
 - e. Animals shall not be grazed on the land for 30 days after application of sewage sludge.
 - f. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.
 - g. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge.
 - h. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.
7. The person who applies the bulk sewage sludge to the land shall comply with the following management practices:
 - a. The bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the

Endangered Species Act, or its designated habitat.

- b. The bulk sewage sludge shall no be applied to agricultural land, forest land, a public contact site or a land reclamation site that is frozen, snow-covered, or flooded so that the bulk sewage sludge enters a wetland or other water of the United States as defined in 40 CFR 122.2, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act.
- c. Bulk sewage sludge shall not be applied to agricultural land, forest land, a public contact site, or a land reclamation site that is less than 10 meters (33 feet) from waters of the United States, as defined in 40 CFR 122.2.
- d. The whole sludge application rate shall be applied at an agronomic rate designed to (i) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (ii) minimize the amount of nitrogen that passes below the root zone for the crop or vegetation grown of the land into the groundwater.

8. The permittee shall develop and maintain the following information for five years:

- a. The concentration of each pollutant listed in Paragraph 2a in the bulk sewage sludge.
- b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirement in §503.32(b) and the vector attraction reduction requirement in insert one of the vector attraction reduction requirements in §503.33(b)(1) through (b)(8), if one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."
- c. A description of how the Class B pathogen requirements are met.
- d. When the permittee is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

9. The person who applies the bulk sewage sludge shall develop and retain the following information indefinitely:
 - a. The location, by either street address or latitude and longitude, of each site on which bulk sewage sludge is applied.
 - b. The number of hectares in each site on which bulk sewage sludge is applied.
 - c. The date bulk sewage sludge is applied to each site.
 - d. The cumulative amount of each pollutant listed in Paragraph 2a in the bulk sewage sludge applied to each site, including the amount in Paragraph 1e(iii) of this section. (in kilograms)
 - e. The amount of sewage sludge applied to each site (in metric tons).
 - f. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the requirement to obtain information in §503.12(e)(2) {Paragraphs 1e(i through iv) of this permit.} was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment."
 - g. A description of how the requirements to obtain information in Paragraphs 1e (i through iv) are met.
10. The person who applies the bulk sewage sludge shall develop and maintain the following information for five years:
 - a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14 was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

- b. A description of how the management practices in Paragraphs 7a through d are met for each site.
- c. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the site restriction in §503.32(b) (5) for each site on which Class B sewage sludge was applied was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment."
- d. A description of how the site restrictions are met for each site.
- e. When the applicator is responsible for meeting the vector attraction reduction requirements, the following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in insert either §503.33(b) (9) or (b) (10) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
- f. When the applicator is responsible for meeting the vector attraction reduction requirements, a description of how the vector attraction reduction requirement in either §503.33(b) (9) or (b) (10) is met.

11. The permittee shall report the information in Paragraphs 8a, b, c and d annually on February 19. Reports shall be submitted to the address in the Monitoring and Reporting section of this permit.
12. When 90 percent or more of any of the cumulative pollutant loading rates are reached, the person who applies the bulk sewage sludge shall report the information in Paragraphs 10a through d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of this permit.
13. All sludge sampling and analysis shall be in accordance with the procedures detailed in 40CFR §503.8

14. The permittee shall notify the applier of the following information/requirements:
 - a. Requirements in Paragraphs 1b, 1d, 1e, 1j, 2c and 2d.
 - b. Information in Paragraph 1c.
 - c. The management practices in Paragraphs 7a through d.
 - d. The site restrictions in Paragraphs 6a through h.
 - d. Record keeping requirements in Paragraphs 9a through g and Paragraphs 10a through d.
 - e. Reporting requirements in Paragraph 12.
15. If the permittee intends to apply sludge to land application sites not identified at the time of permit issuance, the permittee shall submit a land application plan 180 days prior to initial application at the new site. The plan shall:
 - a. Describe the geographic area covered by the plan;
 - b. Identifies site selection criteria;
 - c. Describes how sites will be managed; and
 - d. Provides for advance public notice as required by state and local laws, and notice to landowners and occupants adjacent to or abutting the proposed land application site.

1.3.6. Scenario No.6

This scenario applies to bagged materials sold or given away meeting the annual pollutant loading rates at §503.13(b)(4); one of the Class A pathogen requirements are §503.32(a); and one of the vector attraction reduction requirements at §503.33(b)(1) through (b)(8).

SLUDGE CONDITIONS

1. The permittee and the applier shall meet the following requirements:
 - a. The sewage sludge shall be applied in accordance with 40 CFR Part 503 Subpart B.
 - b. The person who applies the sewage sludge shall obtain the information needed to comply with 40 CFR Part 503 Subpart B.

c. When the permittee provides the sewage sludge to a person who prepares the sewage sludge, the permittee shall provide the person who prepares the sewage sludge notice and necessary information to comply with 40 CFR Part 503 Subpart B.

2. Pollutant limitations

a. The maximum concentration of metals in the sewage sludge that is applied to the land shall not exceed the following (dry weight basis):

Arsenic.....	75 mg/kg
Cadmium.....	85 mg/kg
Copper.....	4300 mg/kg
Lead.....	840 mg/kg
Mercury.....	57 mg/kg
Molybdenum.....	75 mg/kg
Nickel.....	420 mg/kg
Selenium.....	100 mg/kg
Zinc.....	7500 mg/kg

b. The sewage sludge shall not be applied to the land if any of the pollutant concentrations in Paragraph 2a are exceeded.

c. The product of the concentration of each pollutant in the sewage sludge and the annual whole sludge application rate for the sewage sludge shall not cause the annual pollutant loading rate for the pollutant to be exceeded. The annual pollutant loading rates are specified below (kilograms per hectare per 365 day period):

Arsenic.....	2.0
Cadmium.....	1.9
Copper.....	75
Lead.....	15
Mercury.....	0.85
Nickel.....	21
Selenium.....	5.0
Zinc.....	140

d. The annual whole sludge application rate shall be determined in the following manner:

- i. Analyze a sample of the sewage sludge to determine the concentration for each pollutant listed in Paragraph 2a.
- ii. Using the pollutant concentrations from Paragraph 2d(i) and the annual pollutant loading rates from

Paragraph 2 c, calculate the annual whole sludge application rate using the following equation:

$$\text{AWSAR} = \frac{\text{APLR}}{C \times 0.001}$$

Where:

AWSAR = Annual whole sludge application rate in metric tons per hectare per 365 day period (dry weight basis)

APLR = Annual pollutant loading rate in kilograms per hectare per 365 day period.

C = Pollutant concentration in milligrams per kilogram of total solids (dry weight basis)

0.001 = Conversion factor

iii. The AWSAR for the sewage sludge is the lowest ASWAR calculated in Paragraph 2 d (ii).

3. Label Requirements

- a. Either a label shall be affixed to the bag or other container in which the sewage sludge is sold or given away or an information sheet shall be provided to any person who receives the sewage sludge.
- b. The label or information sheet shall contain the following information:
 - i. The name and address of the person who prepared the sewage sludge.
 - ii. A statement that application of sewage sludge to the land is prohibited except in accordance with the instructions on the label or information sheet.
 - iii. The annual whole sludge application rate which does not cause the annual pollutant loading rates in Paragraph 2 c to be exceeded.
4. The permittee shall meet Class A pathogen requirements utilizing one of the methods specified in 40CFR §503.32
5. The permittee shall meet one of the vector attraction reduction requirements specified in 40CFR §503.33. The

permittee may only utilize alternatives 1 through 8. If the permittee meets one of the vector attraction reduction alternatives 1 through 5, the Class A pathogen requirements must be met either prior to or at the same time as the vector attraction reduction requirement.

6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2a, the pathogen density, and the vector attraction reduction requirement at the frequency specified in sludge condition 6 of the permit.
7. The permittee shall develop and retain the following information for five years:
 - a. The annual whole sludge application rate that does not cause the annual pollutant loading rates in Paragraph 2c to be exceeded.
 - b. The concentration of each pollutant in Paragraph 2a in the sewage sludge.
 - c. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practice in §503.14(e), the Class A pathogen requirement in §503.32(a), and the vector attraction reduction requirement in §503.33(b)(1) through (b)(8) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."
 - d. A description of how the Class A pathogen requirements are met.
 - e. A description of how the vector attraction reduction requirements are met.
8. The permittee shall report the information in Paragraphs 7a through e annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting Section of this permit.
9. All sewage sludge sampling and analysis procedures shall be in accordance with procedures detailed in 40CFR 503.8.

2. SURFACE DISPOSAL

This section applies to sewage sludge from the permittee's facility which is by surface disposed. The permittee should answer the following questions. The answers to these questions need to be evaluated to determine which permitting scenario for sewage sludge surface disposal applies. After the permitting scenario is determined, the permittee must comply with the directives contained in the chosen scenario. The permittee must also note the run-off from surface disposal units may be subject to stormwater regulations.

2.1. Question Algorithm

The permittee should review and answer the following questions. The information gathered from answering these questions will aid the permittee in determine the appropriate surface disposal scenario which applies to the sludge generated at the permittee's waste water treatment facility. The scenario selected will detail which specific Use or Disposal of Sewage Sludge, Part 503, regulations must be complied with for the land application method used by the permittee.

1. Is the facility regulated under 40 CFR 503?

If the facility disposes of its sludge at a municipal solid waste landfill (MSWLF), 40 CFR 503 regulations do not apply. However, the permittee still has some responsibilities. Permit language is in Scenario No.4.

The 40 CFR 503 regulations also do not apply in the case of storage of sewage sludge. An EPA rule of thumb is sludge stored on the land for longer than two years is defined as surface disposal. If a permittee claims storage, or treatment, the permittee's facility must be specifically equipped to support sewage sludge storage. Further, the permittee must ultimately have a clear, final disposition for the sewage sludge.

2. Does the following situations exist at a permittee's active sewage sludge disposal unit?

- a. The unit is located within 60 meters (200 feet) of a fault that has had displacement in the Holocene time (10,000 years);
- b. A unit located in a unstable area; or
- c. A unit located in a wetland **without** a Section 402 or 404 permit.

If any of these situations exist, the active sewage sludge unit

should have closed by March 22, 1994. If the active sewage sludge disposal unit is still operating, but one of the previous situations does apply to the unit, that unit must be closed.

3. Can the permittee's sewage sludge disposal unit demonstrate they are designed to withstand seismic impacts? If this demonstration cannot be made, the unit must close. This demonstration should be made prior to permit issuance.
4. Does the facility have a liner and leachate collection system?

The liner must have a hydraulic conductivity of 1×10^{-7} centimeters per second or less. If the liner does not meet the specified hydraulic conductivity, the sludge disposal unit is regulated as an unlined sewage sludge disposal site. There are not pollutant limitations for lined units.

5. What is the distance from the property boundary to the boundary of the active sewage sludge unit? Use the tables below the determine appropriate pollutant limitations for units without a liner or leachate collection on a dry weight basis.

§503.23 TABLE 1
Active Unit Boundary is 150 Meters or More
From Property Boundary

Arsenic.....	73 mg/kg
Chromium.....	600 mg/kg
Nickel.....	420 mg/kg

§503.23 TABLE 2
Active Unit Boundary is Less Than 150 Meters
From Property Boundary

Distance(meters)	Pollutant Concentrations (mg/kg)		
	Arsenic	Chromium	Nickel
0<Distance<25	30	200	210
25<Distance<50	34	220	240
50<Distance<75	39	260	270
75<Distance<100	46	300	320
100<Distance<125	53	360	390
125<Distance<150	62	450	420

6. Does the facility cover the sewage sludge placed in the unit daily?

This practice is considered to achieve both pathogen reduction and vector attraction reduction. If a facility covers the sludge, the permittee must monitor for methane gas.

2.2. Scenario Determination

After the information is gathered and evaluated from the questions in the preceding section, the permittee can select the appropriate surface disposal scenario.

Surface Disposal Scenario Selection Table

SCENARIO	LINED/ UNLINED	DISTANCE TO UNIT BOUNDARY
No.1	Unlined	<150m
No.2	Unlined	0 to 150m
No.3	Lined	NA
No.4	Disposed in Municipal Solid Waste Land Fill	NA

2.3. Scenarios

2.3.1. Scenario No.1

Active sewage sludge unit without a liner and leachate collection system with active sewage sludge unit boundary 150 meters or more from the property boundary.

SLUDGE CONDITIONS

1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
 - a. Sewage sludge shall not be placed in an active sewage sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.

- b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.
 - i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.
 - ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.
- c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

2. Pollutant limitations

- a. The maximum concentration of pollutants in the sewage sludge placed in an active sewage sludge unit shall not exceed the following:

Arsenic.....	73 mg/kg
Chromium.....	600 mg/kg
Nickel.....	420 mg/kg

- b. Sewage sludge with metals concentrations which exceed the limitations in Paragraph 2a. shall not be placed in a surface disposal unit.

3. The permittee and the owner/operator shall comply with the following management practices:

- a. The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.
- b. The run-off from an active sewage sludge unit shall

- be collected and disposed in accordance with applicable stormwater regulations.
- c. The run-off collection system for an active sewage sludge unit shall have the capacity to control run-off from a 24 hour - 25 year storm event.
- d.
 - i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas during the period that the sewage sludge unit is active.
 - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas during the period that the sewage sludge unit is active.
- e.
 - i. When a final cover is placed on a sewage sludge unit at closure, and for three years after closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas.
 - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas for three years after the sewage sludge unit closes.
- f. A food crop, a feed crop, or a fiber crop shall not be grown on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown on a sewage sludge unit.
- g. Animals shall not be grazed on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed on a sewage sludge unit.

- h. Public access to a surface disposal site shall be restricted for the period that the surface disposal site contains an active sewage sludge unit and for three years after the last sewage sludge unit closes.
 - i.
 - i. Sewage sludge placed in an active sewage sludge unit shall not contaminate an aquifer.
 - ii. The permittee shall demonstrate that sewage sludge placed in an active sewage sludge unit does not contaminate an aquifer by either (1) submission of results of a ground-water monitoring program developed by a qualified ground water scientist; or (2) submission of a certification by a qualified ground water scientist that the sewage sludge does not contaminate an aquifer.
 - 4. The following conditions must be documented by the permittee and owner/operator:
 - a. An active sewage sludge unit shall not restrict the flow of a base flood.
 - b. If a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.
 - c. An active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.
 - d. An active sewage sludge unit shall not be located in an unstable area.
 - e. An active sewage sludge unit shall not be located in a wetland.
 - 5. If the active sewage sludge unit is not covered daily, the permittee shall meet either Class A or Class B pathogen reduction utilizing one of the methods in Section 4, and one of the vector attraction reduction requirements in Section 5.
 - 6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2, the pathogen density, and the vector attraction reduction requirements at the following frequency:

Sampling Frequency Table

SEWAGE SLUDGE PRODUCED (metric tons per 365 day period)	SAMPLING FREQUENCY
0<Sludge(tons)<290	Once per Year
0≤Sludge(tons)<1500	Once Per Quarter (four times per year)
1500≤Sludge(tons)<15000	Once per 60 Days (six times per year)
Sludge(tons)≤15000	Once per Month (12 times per year)

7. When a daily cover is placed on an active sewage sludge unit, the air in the structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the time that the surface disposal site contains an active sewage sludge unit and for three years after the sewage sludge unit closes.
8. The permittee shall develop and retain the following information for five years:
 - a. The concentration of each pollutant listed in Paragraph 2a.
 - b. The following certification statement:

"I, certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in §503.32(a), §503.32(b) (2), §503.32(b) (3) or §503.32(b) (4) when one of those requirements is met and the vector attraction reduction requirements in §503.33(b) (1) through §503.33(b) (8) when one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."

- c. A description of how the pathogen requirements are met.
- d. When the permittee is responsible for the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.

9. The owner/operator of the surface disposal site shall develop and retain the following information for five years:

- a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.24 and the vector attraction reduction requirement in insert one of the requirements in §503.33(b)(9) through (b)(11) if one of those requirements is met was prepared under my direct supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
- b. A description of how the management practices in Paragraphs 3a through 3i are met.
- c. Documentation that the requirements in Paragraphs 4a through 4e are met.
- d. A description of how the vector attraction reduction requirements are met, if the owner/operator is responsible for vector attraction reduction requirements.

10. The permittee shall report the information in Paragraphs 7a through 7d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of the permit.

11. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in Section 7.

12. If the permittee is not the owner/operator of the surface disposal site, the permittee shall notify the owner/operator of the following:

- a. The requirements in Paragraphs 1a through 1c;
- b. The management practices in Paragraphs 3a through 3i;
- c. The requirements in Paragraphs 4a through 4e;
- d. The requirement in Paragraph 7; and
- e. The record keeping requirements in Paragraph 9a through 9d.

2.3.2. Scenario No.2

Active sewage sludge unit without a liner and leachate collection system located less than 150 meters from the property line. The permittee is directed to §503.23 TABLE 2, Active Unit Boundary is Less Than 150 Meters From Property Boundary, in order to determine the maximum concentrations pollutants for the appropriate distance to the units boundary.

SLUDGE CONDITIONS

1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
 - a. Sewage sludge shall not be placed in an active sewage sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.
 - b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.
 - i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.
 - ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.
 - c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

2. Pollutant limitations

a. The maximum concentration of pollutants in the sewage sludge placed in an active sewage sludge unit shall not exceed the following:

§503.23 TABLE 2
Active Unit Boundary is Less Than 150 Meters
From Property Boundary

Distance (meters)	Pollutant Concentrations (mg/kg)		
	Arsenic	Chromium	Nickel
0 < Distance < 25	30	200	210
25 < Distance < 50	34	220	240
50 < Distance < 75	39	260	270
75 < Distance < 100	46	300	320
100 < Distance < 125	53	360	390
125 < Distance < 150	62	450	420

b. Sewage sludge with metals concentrations which exceed the limitations in Paragraph 2a. shall not be placed in a surface disposal unit.

3. The permittee and the owner/operator shall comply with the following management practices:

a. The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.

b. The run-off from an active sewage sludge unit shall be collected and disposed in accordance with applicable stormwater regulations.

c. The run-off collection system for an active sewage sludge unit shall have the capacity to control run-off from a 24 hour - 25 year storm event.

d. i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in

air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas during the period that the sewage sludge unit is active.

- ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas during the period that the sewage sludge unit is active.
- e. i. When a final cover is placed on a sewage sludge unit at closure, and for three years after closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas.
- ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas for three years after the sewage sludge unit closes.
- f. A food crop, a feed crop, or a fiber crop shall not be grown on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown on a sewage sludge unit.
- g. Animals shall not be grazed on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed on a sewage sludge unit.
- h. Public access to a surface disposal site shall be restricted for the period that the surface disposal site contains an active sewage sludge unit and for three years after the last sewage sludge unit closes.
- i. i. Sewage sludge placed in an active sewage sludge unit shall not contaminate an aquifer.
- ii. The permittee shall demonstrate that sewage sludge placed in an active sewage sludge unit

does not contaminate an aquifer by either (1) submission of results of a ground-water monitoring program developed by a qualified ground water scientist; or (2) submission of a certification by a qualified ground water scientist that the sewage sludge does not contaminate an aquifer.

4. The following conditions must be documented by the permittee and owner/operator:
 - a. An active sewage sludge unit shall not restrict the flow of a base flood.
 - b. If a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.
 - c. A active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.
 - d. An active sewage sludge unit shall not be located in an unstable area.
 - e. An active sewage sludge unit shall not be located in a wetland.
5. If the active sewage sludge unit is not covered daily, the permittee shall meet either Class A or Class B pathogen reduction utilizing one of the methods in Section 4, and one of the vector attraction reduction requirements in Section 5.
6. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2, the pathogen density, and the vector attraction reduction requirements at the following frequency:

Sampling Frequency Table

SEWAGE SLUDGE PRODUCED (metric tons per 365 day period)	SAMPLING FREQUENCY
0<Sludge(tons)<290	Once per Year
0≤Sludge(tons)<1500	Once Per Quarter (four times per year)
1500≤Sludge(tons)<15000	Once per 60 Days (six times per year)
Sludge(tons)≤15000	Once per Month (12 times per year)

7. When a daily cover is placed on an active sewage sludge unit, the air in the structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the time that the surface disposal site contains an active sewage sludge unit and for three years after the sewage sludge unit closes.
8. The permittee shall develop and retain the following information for five years:
 - a. The following certification statement:

"I, certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in §503.32(a), §503.32(b) (2), §503.32(b) (3) or §503.32(b) (4) when one of those requirements is met and the vector attraction reduction requirements in §503.33(b) (1) through §503.33(b) (8) when one of those requirements is met was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."
 - b. A description of how the pathogen requirements are met.
 - c. When the permittee is responsible for the vector attraction reduction requirements, a description of how the vector attraction reduction requirements are met.
9. The owner/operator of the surface disposal site shall develop and retain the following information for five years:
 - a. The concentration of each pollutant listed in Paragraph 2a.
 - b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.24 and the vector attraction reduction requirement in §503.33(b) (9) through §503.33(b) (12) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."

(b) (11) if one of those requirements is met was prepared under my direct supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

- b. A description of how the management practices in Paragraphs 3a through 3i are met.
c. Documentation that the requirements in Paragraphs 4a through 4e are met.
d. A description of how the vector attraction reduction requirements are met, if the owner/operator is responsible for vector attraction reduction requirements.
10. The permittee shall report the information in Paragraphs 7a through 7d annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of the permit.
11. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in Section 7.
12. If the permittee is not the owner/operator of the surface disposal site, the permittee shall notify the owner/operator of the following:
 - a. The requirements in Paragraphs 1a through 1c;
b. The management practices in Paragraphs 3a through 3i;
c. The requirements in Paragraphs 4a through 4e;
d. The requirement in Paragraph 7; and
e. The record keeping requirements in Paragraph 9a through 9e.

2.3.3. Scenario No.3

This applies to an active sewage sludge unit with a liner and a leachate collection system.

SLUDGE CONDITIONS

1. The permittee and the owner/operator of an active sewage sludge unit shall comply with the following requirements:
 - a. Sewage sludge shall not be placed in an active sewage

sludge unit unless the requirement of 40 CFR Part 503, Subpart C are met.

- b. An active sewage sludge unit located within 60 meters of a fault that has had displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to section 402 or 404 of the Clean Water Act, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.
- i. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to EPA 180 days prior to the date an active sewage sludge unit closes.
 - ii. The closure plan shall consider the elements outlined in Section 6. If an element is not applicable, the owner/operator shall state the reasons in the plan.
- c. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was place on the site. The notice should include elements outlined in Section 7. A copy of the notification shall be submitted to the EPA.

2. The permittee shall comply with the following management practices:
 - a. The sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.
 - b. The run-off from an active sewage sludge unit shall be collected and disposed in accordance with applicable stormwater regulations.
 - c. The run-off collection system for an active sewage sludge unit shall have the capacity to handle run-off from a 24 hour - 25 year storm event.
 - d. The leachate collection system for an active sewage sludge unit shall be operated and maintained during the period the sewage sludge unit is active and for three years after the sewage sludge unit closes.

- e. The leachate shall be collected and disposed of in accordance with applicable regulations during the period the sewage sludge unit is active and for three years after it closes.
- f.
 - i. When a daily cover is placed on an active sewage sludge unit, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas during the period that the sewage sludge unit is active.
 - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas during the period that the sewage sludge unit is active.
- g.
 - i. When a final cover is placed on a sewage sludge unit at closure, and for three years after closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit, 1.25 percent by volume, for methane gas.
 - ii. The concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit, 5 percent by volume, for methane gas for three years after the sewage sludge unit closes.
- h. A food crop, a feed crop, or a fiber crop shall not be grown on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown on a sewage sludge unit.
- i. Animals shall not be grazed on an active sewage sludge unit. The owner/operator of the sewage sludge unit must demonstrate to EPA that public health and the environment are protected from reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed on a sewage sludge unit.
- j. Public access to a surface disposal site shall be restricted for the period that the surface disposal

site contains an active sewage sludge unit and for three years after the last sewage sludge unit closes.

- i. Sewage sludge placed in an active sewage sludge unit shall not contaminate an aquifer.
 - ii. The permittee shall demonstrate that sewage sludge placed in an active sewage sludge unit does not contaminate an aquifer by either (1) submission of results of a ground-water monitoring program developed by a qualified ground water scientist; or (2) submission of a certification by a qualified ground water scientist that the sewage sludge does not contaminate an aquifer.
 3. The following conditions must be documented by the permittee and owner/operator:
 - a. An active sewage sludge unit shall not restrict the flow of a base flood.
 - b. If a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.
 - c. An active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.
 - d. An active sewage sludge unit shall not be located in an unstable area.
 - e. An active sewage sludge unit shall not be located in a wetland.
 4. If the active sewage sludge unit is not covered daily, the permittee shall meet either Class A or Class B pathogen reduction utilizing one of the methods in Section 4, and one of the vector attraction reduction requirements in Section 5.
 5. The permittee shall monitor the sewage sludge for the pollutants in Paragraph 2, the pathogen density, and the vector attraction reduction requirements at the following frequency:

Sampling Frequency Table

SEWAGE SLUDGE PRODUCED (metric tons per 365 day period)	SAMPLING FREQUENCY
0 < Sludge (tons) < 290	Once per Year
0 ≤ Sludge (tons) < 1500	Once Per Quarter (four times per year)
1500 ≤ Sludge (tons) < 15000	Once per 60 Days (six times per year)
Sludge (tons) ≤ 15000	Once per Month (12 times per year)

6. When a daily cover is placed on an active sewage sludge unit, the air in the structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the time that the surface disposal site contains an active sewage sludge unit and for three years after the sewage sludge unit closes.
7. The permittee shall develop and retain the following information for five years:
 - a. The following certification statement:

"I, certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in [insert §503.32(a), §503.32(b) (2), §503.32(b) (3) or §503.32(b) (4) when one of those requirements is met] and the vector attraction reduction requirements in [insert one of the vector attraction reduction requirements in §503.33(b) (1) through §503.33(b) (8) when one of those requirements is met] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment."
 - b. A description of how the pathogen requirements are met.
 - c. When the permittee is responsible for the vector attraction reduction requirements, a description of

how the vector attraction reduction requirements are met.

8. The owner/operator of the surface disposal site shall develop and retain the following information for five years:

- a. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.24 and the vector attraction reduction requirement in §503.33(b)(9) through (b)(11) if one of those requirements is met was prepared under my direct supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

- b. A description of how the management practices in Paragraphs 2 a through k are met.
 - c. Documentation that the requirements in Paragraphs 3 a through e are met.
 - d. A description of how the vector attraction reduction requirements are met, if the owner/operator is responsible for vector attraction reduction requirements.
9. The permittee shall report the information in Paragraphs 8a through c annually on February 19. Reports shall be submitted to EPA at the address in the Monitoring and Reporting section of the permit.
10. All sewage sludge sampling and analysis procedures shall be in accordance with the procedures detailed in Section 7.
11. If the permittee is not the owner/operator of the surface disposal site, the permittee shall notify the owner/operator of the following:
 - a. The requirements in Paragraphs 1a through e;
 - b. The management practices in Paragraphs 2a through k;
 - c. The requirements in Paragraph 3a through e;
 - d. The requirement in Paragraph 6; and
 - e. The record keeping requirements in Paragraphs 8a through d.

2.3.4. Scenario No.4

A permittee who dispose of their sludge in a municipal solid waste land fill are regulated under 40 CFR 258.

SLUDGE CONDITIONS

1. The permittee must dispose of the sewage sludge in a landfill which is in compliance with 40 CFR Part 258.
2. Sewage sludge disposed of in a municipal solid waste land fill shall not be hazardous. The Toxicity Characterization Leachate Protocol (TCLP) shall be used as demonstration that the sludge is non-hazardous.
3. The sewage sludge must not be a liquid as determined by the Paint Filter Liquids Test method (Method 9095 ad described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA publication No. SW-846.

3. Incineration

Each facility that incinerates sewage sludge is still subject to Part 503 regulations. Implementation of these regulations are site specific. A facility which incinerates sewage sludge will have specific conditions for that incineration process included in the facility's NPDES permit.

4. Pathogens Reduction

The various pathogen reduction means are listed in this section. The 40 CFR Part 503 section from which each reduction was excerpted is referenced in parenthesis.

4.1 Class A Pathogen Reduction

4.1.1. Class A - Alternative 1 (503.32(a)(3))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).
- ii. The temperature of the sewage sludge that is used or disposed shall be maintained at a specific value for a period of time.
 - a. When the percent solids of the sewage sludge is seven percent or higher, the temperature of the sewage sludge shall be 50 degrees Celsius or higher; the time period shall be 20 minutes or longer; and the temperature and time period shall be determined using equation (3), except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

$$D = \frac{131,700,000}{10^{0.1400t}} \quad (3)$$

Where,

D = time in days.

t = temperature in degrees Celsius.

- b. When the percent solids of the sewage sludge is seven percent or higher and small particles of

sewage sludge are heated by either warmed gases or an immiscible liquid, the temperature of the sewage sludge shall be 50 degrees Celsius or higher; the time period shall be 15 seconds or longer; and the temperature and time period shall be determined using equation (3).

- c. When the percent solids of the sewage sludge is less than seven percent and the time period is at least 15 seconds, but less than 30 minutes, the temperature and time period shall be determined using equation (3).
- d. When the percent solids of the sewage sludge is less than seven percent; the temperature of the sewage sludge is 50 degrees Celsius or higher; and the time period is 30 minutes or longer, the temperature and time period shall be determined using equation (4).

$$D = \frac{50,070,000}{10^{0.1400t}} \quad (4)$$

Where,

D = time in days.

t = temperature in degrees Celsius.

4.1.2. Class A - Alternative 2 (503.32(a)(4))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).
- ii. a. The pH of the sewage sludge that is used or disposed shall be raised to above 12 and shall remain above 12 for 72 hours.
b. The temperature of the sewage sludge shall be

above 52 degrees Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12.

- c. At the end of the 72 hour period during which the pH of the sewage sludge is above 12, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50 percent.

4.1.3. Class A - Alternative 3 (503.32(a)(5))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).
- ii.
 - a. The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses.
 - b. When the density of enteric viruses in the sewage sludge prior to pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses until the next monitoring episode for the sewage sludge.
 - c. When the density of enteric viruses in the sewage sludge prior to pathogen treatment is equal to or greater than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses when the density of enteric viruses in the sewage sludge after pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the enteric virus density requirement are documented.

- d. After the enteric virus reduction in ii.c. of this subsection is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in ii.c. of this subsection.
- iii. a. The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains viable helminth ova.
 - b. When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is less than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova until the next monitoring episode for the sewage sludge.
 - c. When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is equal to or greater than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova when the density of viable helminth ova in the sewage sludge after pathogen treatment is less than one per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the viable helminth ova density requirement are documented.
 - d. After the viable helminth ova reduction in iii.c. of this subsection is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to viable helminth ova when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in (iii)(C) of this subsection.

4.1.4. Class A - Alternative 4 (503.32(a)(6))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the

density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).

- ii. The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f), unless otherwise specified by the permitting authority.
- iii. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f), unless otherwise specified by the permitting authority.

4.1.5. Class A - Alternative 5 (503.32(a)(8))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella, sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).

- ii. Sewage sludge that is used or disposed shall be treated in one of the Processes to Further Reduce Pathogens described in Section 4.3.

4.1.6. Class A - Alternative 6 (503.32(a)(8))

- i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella, sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in §503.10(b), §503.10(c), §503.10(e), or §503.10(f).
- ii. Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Further Reduce Pathogens, as determined by the permitting authority.

4.2 Class B Pathogen Reduction

4.2.1. Class B - Alternative 1 (503.32(b)(2))

- i. Seven representative samples of the sewage sludge that is used or disposed shall be collected.
- ii. The geometric mean of the density of fecal coliform in the samples collected in (2)(i) of this subsection shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

4.2.2. Class B - Alternative 2 (503.32(b)(3))

Sewage sludge that is used or disposed shall be treated in one of the Processes to Significantly Reduce Pathogens described in Section 4.3.

4.2.3. Class B - Alternative 3 (503.32(b)(4))

Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Significantly Reduce Pathogens, as determined by the permitting authority.

4.3 Pathogen Reduction Processes

4.3.1. Process to Significantly Reduce Pathogens

1. **Aerobic Digestion** - Sewage sludge is agitated with air or oxygen to maintain aerobic conditions for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 40 days at 20 degrees Celsius and 60 days at 15 degrees Celsius.
2. **Air Drying** - Sewage sludge is dried on sand beds or on paved or unpaved basins. The sewage sludge dries for a minimum of three months. During two of the three months, the ambient average daily temperature is above zero degrees Celsius.
3. **Anaerobic Digestion** - Sewage sludge is treated in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35 to 55 degrees Celsius and 60 days at 20 degrees Celsius.
4. **Composting** - Using either the within vessel, static aerated pile, or windrow composting methods, the temperature of the sewage sludge is raised to 40 degrees Celsius or higher and remains at 40 degrees Celsius or higher for five days. For four hours during the five days, the temperature in the compost pile exceeds 55 degrees Celsius.
5. **Lime Stabilization** - Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 after two hours of contact.

4.3.2. Process to Further Reduce Pathogens

1. **Composting** - Using either the within vessel composting method or the static aerated pile composting method, the temperature of the sewage sludge is maintained at 55 degrees Celsius or higher for three days.

Using the windrow composting method, the temperature of the sewage sludge is maintained at

55 degrees or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees or higher, there shall be a minimum of five turnings of the windrow.

2. **Heat Drying** - Sewage sludge is dried by direct or indirect contact with hot gases to reduce the moisture content of the sewage sludge to 10 percent or lower. Either the temperature of the sewage sludge particles exceeds 80 degrees Celsius or the wet bulb temperature of the gas in contact with sewage sludge as the sewage sludge leaves the dryer exceeds 80 degrees Celsius.
3. **Heat Treatment** - Liquid sewage sludge is heated to a temperature of 180 degrees Celsius or higher for 30 minutes.
4. **Thermophilic Aerobic Digestion** - Liquid sewage sludge is agitated with air or oxygen to maintain aerobic conditions and the mean cell residence time of the sewage sludge is 10 days at 55 to 60 degrees Celsius.
5. **Beta Ray Irradiation** - Sewage sludge is irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).
6. **Gamma Ray Irradiation** - Sewage sludge is irradiated with gamma rays for certain isotopes, such as ⁶⁰Cobalt and ¹³⁷Cesium, at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).
7. **Pasteurization** - The temperature of the sewage sludge is maintained at 70 degrees Celsius or higher for 30 minutes or longer.

5. Vector Attraction Reduction

The various vector attraction reduction means are listed in this section. The 40 CFR Part 503 section from which each reduction was excerpted is referenced in parenthesis.

5.1. Alternative 1 (503.33(b)(1))

The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent.

5.2. Alternative 2 (503.33(b)(2))

When the 38 percent volatile solids reduction requirement in §503.33(b)(1) cannot be met for an anaerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. When at the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved.

5.3. Alternative 3 (503.33(b)(3))

When the 38 percent volatile solids reduction requirement in §503.33(b)(1) cannot be met for an aerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent, vector attraction reduction is achieved.

5.4. Alternative 4 (503.33(b)(4))

The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.

5.5. Alternative 5 (503.33(b)(5))

Sewage sludge shall be treated in an aerobic process for

14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40 degrees Celsius and the average temperature of the sewage sludge shall be higher than 45 degrees Celsius.

5.6. Alternative 6 (503.33(b)(6))

The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.

5.7. Alternative 7 (503.33(b)(7))

The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials.

5.8. Alternative 8 (503.33(b)(8))

The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.

5.9. Alternative 9 (503.33(b)(9))

- i. Sewage sludge shall be injected below the surface of the land.
- ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

5.10. Alternative 10 (503.33(b)(10))

- i. Sewage sludge applied to the land surface or placed on an active sewage sludge unit shall be incorporated into the soil within six hours after application to or placement on the land unless otherwise specified by the permitting authority.
- ii. When sewage sludge that is incorporated into the soil is Class A with respect to pathogens, the sewage sludge shall be applied to or place on the land within eight hours after being discharged from the pathogen treatment process.

5.11. Alternative 11 503.33(b)(11))

Sewage sludge placed on an active sewage sludge unit shall be covered with soil or other material at the end of each operating day.

6. CLOSURE AND POST CLOSURE PLAN

The closure and post closure plan shall describe how the sewage sludge unit will close and how it will be maintained for three years after closure.

6.1. Minimum Elements

The following items are the minimum elements that should be addressed in the closure plan.

6.1.1. General Information

- a. Name, address, and telephone number of the owner/operator
- b. Location of the site including size
- c. Schedule for final closure

6.1.2. Leachate collection system

- a. How the system will be operated and maintained for three years after closure
- b. Treatment and disposal of the leachate

6.1.3. Methane Monitoring

- a. Description of the system to monitor methane within the structures at the site and at the property line
- b. Maintenance of the system

6.1.4. Restriction of public access

- a. Describe method of restricting public access for three years after the last surface disposal unit closes

6.1.5. Other activities

- a. Ground water monitoring
- b. Maintenance and inspection schedules
- c. Discussion of land use after cover

d. Copy of notification to subsequent land owner

6.2. Notification to Land Owner

The notification to the subsequent land owner shall include the following information:

- a. Name, address, and telephone number of the owner/operator of the surface disposal site.
- b. A map and description of the surface disposal site including locations of surface disposal units.
- c. An estimate of the amount of sewage sludge placed on the site and a description of the quality of the sludge.
- d. Results of methane gas monitoring and ground water monitoring
- e. Discussion of the leachate collection system, if appropriate
- f. Demonstration that the site was closed in accordance with closure plan

7. SAMPLING AND ANALYSIS

7.1. Sampling

Representative samples of sewage sludge that is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator shall be collected and analyzed.

7.2. Analytical Methods

The following methods shall be used to analyze samples of sewage sludge.

a. Enteric viruses

ASTM Method D 499-89, "Standard Practice for Recovery of Viruses from Wastewater Sludge", Annual Book of ASTM Standards: Section 11, Water and Environmental Technology, 1992.

b. Fecal Coliform

Part 9221 E or Part 9222 D, "Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992.

c. Helminth ova

Yanko, W.A., "Occurrence of Pathogens in Distribution and Marketing Municipal Sludges", EPA 600/1-87-014, 1987. NTIS PB 88-154273/AS, National Technical Information Service, Springfield, Virginia.

d. Inorganic pollutants

Method SW-846 in "Test Methods for Evaluating Solid Waste", U.S. Environmental Protection Agency, November 1986.

e. Salmonella sp. bacteria

Part 9260 D.1, "Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992; or Kenner, B.B. and H.A. Clark, "Determination and Enumeration of Salmonella and Pseudomonas

aeruginosa", J. Water Pollution Control Federation, 46(9):2163-2171, 1974.

- f. Specific oxygen uptake rate
Part 2710 B, "Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992.
- g. Total solids, fixed solids, and volatile solids
Part 2540 G, Standard Methods for the Examination of Water and Wastewater", 18th edition, American Public Health Association, Washington, D.C., 1992.

7.3. Percent Volatile Solids Reduction

Percent volatile solids reduction shall be calculated using a procedure in "Environmental Regulations and Technology- Control of Pathogens and Vectors in Sewage Sludge", EPA 625/R-92/013, U.S. Environmental Protection Agency, Cincinnati, Ohio, 1992.

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(4) Coastal and Marine Classes

(a) Class SA - These waters are designated as an excellent habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation. In approved areas they shall be suitable for shellfish harvesting without depuration (Open Shellfish Areas). These waters shall have excellent aesthetic value.

1. Dissolved Oxygen -

- a. Shall not be less than 6.0 mg/l unless background conditions are lower;
- b. natural seasonal and daily variations above this level shall be maintained; levels shall not be lowered below 75% of saturation due to a discharge; and
- c. site-specific criteria may apply where background conditions are lower than specified levels or to the bottom stratified layer where the Department determines that designated uses are not impaired.

2. Temperature -

- a. Shall not exceed 85° F (29.4° C) nor a maximum daily mean of 80° F (26.7° C), and the rise in temperature due to a discharge shall not exceed 1.5° F (0.8° C);
- b. natural seasonal and daily variations shall be maintained, there shall be no change from background that would impair any uses assigned to this class including site-specific limits necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms; and
- c. any determinations concerning thermal discharge limitations in accordance with 33 U.S.C. 1251 § 316(a) will be considered site-specific limitations in compliance with 314 CMR 4.00.

3. pH - Shall be in the range of 6.5 through 8.5 standard units and not more than 0.2 standard units outside of the normally occurring range. There shall be no change from background conditions that would impair any use assigned to this class.

4. Fecal Coliform Criteria -

- a. Waters approved for open shell-fishing shall not exceed a geometric mean MPN of 14 organisms per 100 ml, nor shall more than 10% of the samples exceed a MPN of 43 per 100 ml (more stringent regulations may apply under 314 CMR 4.06(1)(d)(4); and
- b. waters not designated for shellfishing shall not exceed a geometric mean of 200 organisms in any representative set of samples, nor shall more than 10% of the samples exceed 400 organisms per 100 ml. This criterion may be applied on a seasonal basis at the discretion of the Department.

5. Solids - These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

6. Color and Turbidity - These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

7. Oil and Grease - These waters shall be free from oil and grease and petrochemicals.

8. Taste and Odor - None other than of natural origin.

(b) Class SB - These waters are designated as a habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation. In approved areas they shall be suitable for shellfish harvesting with depuration (Restricted Shellfish Areas). These waters shall have consistently good aesthetic value.

1. Dissolved Oxygen -

- a. Shall not be less than 5.0 mg/l unless background conditions are lower;
- b. natural seasonal and daily variations above this level shall be maintained; levels shall not be lowered below 60% of saturation due to a discharge; and
- c. site-specific criteria may apply where back-ground conditions are lower than specified levels or to the bottom stratified layer where the Department determines that designated uses are not impaired.

2. Temperature -

- a. Shall not exceed 85° F (29.4° C) nor a maximum daily mean of 80° F (26.7° C), and the rise in temperature due to a discharge shall not exceed 1.5° F (0.8° C) during the summer months (July through September) nor 4° F (2.2° C) during the winter months (October through June);
- b. natural seasonal and daily variations shall be maintained; there shall be no changes from background that would impair any uses assigned to this class including site-specific limits necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms; and
- c. any determinations concerning thermal discharge limitations in accordance with 33 U.S.C. 1251 § 316(a) will be considered site-specific limitations in compliance with 314 CMR 4.00.

3. pH - Shall be in the range of 6.5 through 8.5 standard units and not more than 0.2 units outside of the normally occurring range. There shall be no change from background conditions that would impair any use assigned to this class.

4. Fecal Coliform Bacteria -

- a. Waters approved for restricted shellfishing shall not exceed a fecal coliform median or geometric mean MPN of 88 per 100 ml, nor shall more than 10% of the samples exceed an MPN of 260 per 100 ml (more stringent regulations may apply, see 314 CMR 4.06(1)(d)(4)); and
- b. waters not designated for shell-fishing shall not exceed a geometric mean of 200 organisms in any representative set of samples, nor shall more than 10% of the samples exceed 400 organisms per 100 ml. This criterion may be applied on a seasonal basis at the discretion of the Department.

5. Solids - These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

6. Color and Turbidity - These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

7. Oil and Grease - These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water

course, or are deleterious or become toxic to aquatic life.

8. Taste and Odor - None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.

(c) Class SC - These water are designated as a habitat for fish, other aquatic life and wildlife, and for secondary contact recreation. They shall also be suitable for certain industrial cooling and process uses. These waters shall have good aesthetic value.

1. Dissolved Oxygen -

- a. Shall not be less than 5.0 mg/l at least 16 hours of any 24-hour period and not less than 4.0 mg/l at any time unless background conditions are lower;
- b. natural seasonal and daily variations above these levels shall be maintained; levels shall not be lowered below 50% of saturation due to a discharge; and
- c. site-specific criteria may apply where background conditions are lower than specified levels or to the bottom stratified layer where the Department determines that designated uses are not impaired.

2. Temperature -

- a. Shall not exceed 85° F (29.4° C) nor shall the rise due to a discharge exceed 5° F (2.8° C);
- b. natural seasonal and daily variations shall be maintained, there shall be no change from background conditions that would impair any use assigned to this class, including the site-specific limits necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms; and
- c. any determinations concerning thermal discharge limitations in accordance with 33 U.S.C. 1251 § 316(a) will be considered site-specific limitations in compliance with 314 CMR 4.00.

3. pH - Shall be in the range of 6.5 through 9.0 standard units and not more than 0.5 standard units outside of the naturally occurring range. There shall be no change from background conditions that would impair any use assigned to this class.

4. Fecal Coliform Bacteria - Shall not exceed a geometric mean of 1000 organisms per 100 ml nor shall 10% of the samples exceed 2000 per 100 ml.

5. Solids - These waters shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

6. Color and Turbidity - These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

7. Oil and Grease - These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

8. Taste and Odor - None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.

(5) Additional minimum criteria applicable to all surface waters

(a) Aesthetics - All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

(b) Bottom Pollutants or Alterations - All surface waters shall be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms.

(c) Nutrients - Shall not exceed the site-specific limits necessary to control accelerated or cultural eutrophication (also, see 314 CMR 4.04(5)).

(d) Radioactivity - All surface waters shall be free from radio-active substances in concentrations or combinations that would be harmful to human, animal or aquatic life or the most sensitive designated use; result in radionuclides in aquatic life exceeding the recommended limits for consumption by humans; or exceed Massachusetts Drinking Water Regulations as set forth in 310 CMR 22.09.

(e) Toxic Pollutants - All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife. Where the Department determines that a specific pollutant not otherwise listed in 314 CMR 4.00 could reasonably be expected to adversely effect existing or designated uses, the Department shall use the recommended limit published by EPA pursuant to Section 304(a) of the Federal Act as the allowable receiving water concentrations for the affected waters unless a site-specific limit is established. The Department shall use the water quality criteria for the protection of aquatic life expressed in terms of the dissolved fraction of metals. Recommended limits based on total recoverable metals may be converted to dissolved metals using factors recommended by EPA or methods approved by the Department. Recommended limits for metals may be modified by site specific considerations. Site specific limits, human health risk levels and permit limits will be established in accordance with the following:

1. ~~Site-Specific Limits: Where recommended limits for a specific pollutant are not available or where they are invalid due to site-specific physical, chemical, or biological considerations, then the Department shall use a site-specific limit as the allowable receiving water concentration for the affected waters. In all cases, at a minimum, site-specific limits shall not exceed safe exposure levels determined by toxicity testing using methods approved by the Department.~~

2. Human Health Risk Levels: The human health-based regulation of toxic pollutants shall be in accordance with guidance issued by the Department of Environmental Protection's Office of Research and Standards. The Department's goal shall be to prevent all adverse health effects which may result from the ingestion, inhalation or dermal contact with contaminated waters during their reasonable use as designated in 314 CMR 4.00. When this goal is not attainable, the guidance will specify acceptable excess lifetime cancer risk levels for carcinogens and methodology to be used for their application. The Department may also consider factors of practicability and feasibility when deriving effluent limitations from the human health-based criteria.

3. Accumulation of Pollutants. Where appropriate the Department shall use an additional margin of safety when establishing water quality based effluent limits to assure that pollutants do not persist in the environment or accumulate in organisms to levels that:

a. are toxic to humans or aquatic life; or

b. result in unacceptable concentrations in edible portions of marketable fish or shellfish or for the recreational use of fish, shellfish, other aquatic life or wildlife for human consumption.

4. Public Notice. Where recommended limits or site-specific limits are used to establish water quality based effluent limitations they shall be documented and subject to full intergovernmental coordination and public participation as set forth in 314 CMR 2.00 "Permit Procedures".

<General Materials (GM) - References, Annotations, or Tables>

Mass. Regs. Code tit. 314, § 4.05, 314 MA ADC 4.05

314 MA ADC 4.05



#106

THE COMMONWEALTH OF MASSACHUSETTS

William Francis Galvin
Secretary of the Commonwealth

Regulation Filing *To be completed by filing agency*

CHAPTER NUMBER: 314 CMR 4.00

CHAPTER TITLE: Massachusetts Surface Water Quality Standards

AGENCY: Department of Environmental Protection, Division of Water Pollution Control

SUMMARY OF REGULATION: *State the general requirements and purposes of this regulation.*

The Massachusetts Surface Water Quality Standards designate uses for which the surface waters of the Commonwealth are to be enhanced, maintained and protected; prescribe minimum water quality criteria necessary to sustain the designated uses; and contain requirements to achieve the designated uses and protect water quality.

REGULATORY AUTHORITY: Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26 through 53.

AGENCY CONTACT: Marcia Sherman, Bureau of Resource Protection PHONE: 617/556-1198

ADDRESS: One Winter Street Boston, MA 02108

Compliance with M.G.L. c. 30A

EMERGENCY ADOPTION - *If this regulation is adopted as an emergency, state the nature of the emergency.*

PRIOR NOTIFICATION AND/OR APPROVAL - *If prior notification to and/or approval of the Governor, Legislature or others was required, list each notification, and/or approval and date, including notice to the Local Government Advisory Commission.*

Approval: EOEA 11/30/06, A&F presumptive, DPH 11/07/06, WRC 11/09/06. Notices: 11/15/05 - LGAC/Dept. Housing & Community Development & MA Municipal Assn; Historical Commission; Auditor, Div. Mandates; Commission Interstate Cooperation; Toxics Use Reduction Council; Dept. of Telecommunications & Energy; EOEA/MEPA; Energy Facilities Siting Council; & DPH; 11/14/05 - Office Commonwealth Development.

PUBLIC REVIEW - *M.G.L. c. 30A, §§ 2 and/or 3 requires notice of the hearing or comment period be filed with the Secretary of the Commonwealth, published in appropriate newspapers, and sent to persons to whom specific notice must be given at least 21 days prior to such hearing or comment period.*

Date of public hearing or comment period: Hearings: 01/18/06 & 01/19/06; comments: 12/01/05 - 03/01/06

FISCAL EFFECT - Estimate the fiscal effect of the public and private sectors.

For the first and second year: There may be initial costs to some permittees due to revised bacteria criteria, costs are difficult to quantify as they would be specific to the discharge, site & facility.

For the first five years: Same as above for five year costs, compliance schedules of up to five years are allowable for permittees to comply with new criteria and to spread out any resulting costs.

No fiscal effect: There should be no fiscal effect on public or private sector dischargers without bacteria limits.

SMALL BUSINESS IMPACT - State the impact of this regulation on small business. Include a description of reporting, record keeping and other compliance requirements as well as the appropriateness of performance versus design standards and whether this regulation duplicates or conflicts with any other regulation. If the purpose of this regulation is to set rates for the state, this section does not apply.

The revisions do not contain any new or revised reporting or record keeping requirements. The regulations contain primarily performance versus design standards, which are set forth in the water quality criteria provisions. Potential small business impacts include the fiscal effects noted above, but permittees may be allowed up to five years to comply with revised criteria. The revisions do not duplicate or conflict with other regulations.

CODE OF MASSACHUSETTS REGULATIONS INDEX - List key subjects that are relevant to this regulation:

Surface water quality, water quality criteria, antidegradation, cold water fisheries, public water supplies, outstanding resource waters, water quality certifications.

PROMULGATION - State the action taken by this regulation and its effect on existing provisions of the Code of Massachusetts Regulations (CMR) to repeal, replace or amend. List by CMR number:

Amends various provisions of 314 CMR 4.00

ATTESTATION - The regulation described herein and attached hereto is a true copy of the regulation adopted by this agency. ATTEST:

SIGNATURE: 

DATE: 12/14/06

Publication - To be completed by the Regulations Division

MASSACHUSETTS REGISTER NUMBER: #1068

DATE: 12/29/06

EFFECTIVE DATE: 12/29/06

CODE OF MASSACHUSETTS REGULATIONS

Remove these pages:

Insert these pages:

1 - 4
65 - 160

1 - 4
65 - 160.18

A TRUE COPY ATTEST	
	
WILLIAM FRANCIS GALVIN SECRETARY OF THE COMMONWEALTH	
DATE	<u>12/14/06</u>
CLERK	<u>MNL</u>

314 CMR: DIVISION OF WATER POLLUTION CONTROL

4.04: Antidegradation Provisions

(1) **Protection of Existing Uses.** In all cases existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

(2) **Protection of High Quality Waters.** High Quality waters are waters whose quality exceeds minimum levels necessary to support the national goal uses, low flow waters, and other waters whose character cannot be adequately described or protected by traditional criteria. These waters shall be protected and maintained for their existing level of quality unless limited degradation by a new or increased discharge is authorized by the Department pursuant to 314 CMR 4.04(5). Limited degradation also may be allowed by the Department where it determines that a new or increased discharge is insignificant because it does not have the potential to impair any existing or designated water use and does not have the potential to cause any significant lowering of water quality.

(3) **Protection of Outstanding Resource Waters.** Certain waters are designated for protection under this provision in 314 CMR 4.06. These waters include Class A Public Water Supplies (314 CMR 4.06(1)(d)1.) and their tributaries, certain wetlands as specified in 314 CMR 4.06(2) and other waters as determined by the Department based on their outstanding socio-economic, recreational, ecological and/or aesthetic values. The quality of these waters shall be protected and maintained.

(a) Any person having an existing discharge to these waters shall cease said discharge and connect to a Publicly Owned Treatment Works (POTW) unless it is shown by said person that such a connection is not reasonably available or feasible. Existing discharges not connected to a POTW shall be provided with the highest and best practical method of waste treatment determined by the Department as necessary to protect and maintain the outstanding resource water.

(b) A new or increased discharge to an Outstanding Resource Water is prohibited unless:

1. the discharge is determined by the Department to be for the express purpose and intent of maintaining or enhancing the resource for its designated use and an authorization is granted as provided in 314 CMR 4.04(5). The Department's determination to allow a new or increased discharge shall be made in agreement with the federal, state, local or private entity recognized by the Department as having direct control of the water resource or governing water use; or

2. the discharge is dredged or fill material for qualifying activities in limited circumstances, after an alternatives analysis which considers the Outstanding Resource Water designation and further minimization of any adverse impacts. Specifically, a discharge of dredged or fill material is allowed only to the limited extent specified in 314 CMR 9.00 and 314 CMR 4.06(1)(d). The Department retains the authority to deny discharges which meet the criteria of 314 CMR 9.00 but will result in substantial adverse impacts to the physical, chemical, or biological integrity of surface waters of the Commonwealth

(4) **Protection of Special Resource Waters.** Certain waters of exceptional significance, such as waters in national or state parks and wildlife refuges, may be designated by the Department in 314 CMR 4.06 as Special Resource Waters (SRWs). The quality of these waters shall be maintained and protected so that no new or increased discharge and no new or increased discharge to a tributary to a SRW that would result in lower water quality in the SRW may be allowed, except where:

- (a) the discharge results in temporary and short term changes in the quality of the SRW, provided that the discharge does not permanently lower water quality or result in water quality lower than necessary to protect uses; and

- (b) an authorization is granted pursuant to 314 CMR 4.04(5).

(5) **Authorizations.**

- (a) An authorization to discharge to waters designated for protection under 314 CMR 4.04(2) may be issued by the Department where the applicant demonstrates that:

1. The discharge is necessary to accommodate important economic or social development in the area in which the waters are located;

2. No less environmentally damaging alternative site for the activity, receptor for the disposal, or method of elimination of the discharge is reasonably available or feasible;

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4.04: continued

3. To the maximum extent feasible, the discharge and activity are designed and conducted to minimize adverse impacts on water quality, including implementation of source reduction practices; and
4. The discharge will not impair existing water uses and will not result in a level of water quality less than that specified for the Class.

(b) An authorization to discharge to the narrow extent allowed in 314 CMR 4.04(3) or 314 CMR 4.04(4) may be granted by the Department where the applicant demonstrates compliance with 314 CMR 4.04(5)(a)2. through 314 CMR 4.04(5)(a)4.

(c) Where an authorization is at issue, the Department shall circulate a public notice in accordance with 314 CMR 2.06. Said notice shall state an authorization is under consideration by the Department, and indicate the Department's tentative determination. The applicant shall have the burden of justifying the authorization. Any authorization granted pursuant to 314 CMR 4.04 shall not extend beyond the expiration date of the permit.

(d) A discharge exempted from the permit requirement by 314 CMR 3.05(4) (discharge necessary to abate an imminent hazard) may be exempted from 314 CMR 4.04(5) by decision of the Department.

(e) A new or increased discharge specifically required as part of an enforcement order issued by the Department in order to improve existing water quality or prevent existing water quality from deteriorating may be exempted from 314 CMR 4.04(5) by decision of the Department.

(6) The Department applies its Antidegradation Implementation Procedures to point source discharges subject to 314 CMR 4.00.

(7) **Discharge Criteria.** In addition to the other provisions of 314 CMR 4.00, any authorized discharge shall be provided with a level of treatment equal to or exceeding the requirements of the Massachusetts Surface Water Discharge Permit Program (314 CMR 3.00). Before authorizing a discharge, all appropriate public participation and intergovernmental coordination shall be conducted in accordance with Permit Procedures (314 CMR 2.00).

4.05: Classes and Criteria

(1) **Classes and Uses.** The surface waters of the Commonwealth shall be segmented and each segment assigned to one of the Classes listed in 314 CMR 4.05(3) and (4). Each class is identified by the most sensitive, and therefore governing, water uses to be achieved and protected. Surface waters may be suitable for other beneficial uses, but shall be regulated by the Department to protect and enhance the existing and designated uses.

In accordance with 314 CMR 4.03(4), the Department may designate a partial use subcategory for these Classes. A partial use designation may be appropriate where waters are impacted by combined sewer overflows or stormwater discharges. Partial use is described in 314 CMR 4.06(1)(d)11.

(2) **Criteria.** Minimum criteria for each Class accompany each class description. Additional minimum criteria for all surface waters are listed in 314 CMR 4.05(5). Provided that all existing and designated uses are protected, the Department may establish site specific criteria as alternative minimum criteria. Such site specific numerical criteria shall supersede the otherwise applicable minimum numerical criteria in 314 CMR 4.00. Site specific numerical criteria also may supplement any of the narrative criteria in 314 CMR 4.00. Should the Department develop site specific numerical criteria for any pollutant that is the primary cause of nonattainment of any criteria in 314 CMR 4.00, the Department may determine that such site specific criteria supersede other criteria in 314 CMR 4.00. The Department may establish site specific criteria for a segment or segments of a water, for an entire water, or for a group of waters with similar physical, chemical or biological qualities. The Department may establish site specific hydrologic conditions at which criteria are applied. The Department will adopt any such site specific criteria as revisions to 314 CMR 4.00 in accordance with M.G.L. c. 30A.

Criteria for segments designated for partial use in 314 CMR 4.06 shall be site specific but, to the maximum extent feasible, shall be the same as the criteria assigned to the Class. For segments so designated because of the impacts of CSO or stormwater discharges, criteria may depart from the criteria assigned to the Class only to the extent necessary to accommodate the technology based treatment limitations of the CSO or stormwater discharges.

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(3) Inland Water Classes.

(a) Class A. These waters include waters designated as a source of public water supply and their tributaries. They are designated as excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation, even if not allowed. These waters shall have excellent aesthetic value. These waters are protected as Outstanding Resource Waters.

1. Dissolved Oxygen. Shall not be less than 6.0 mg/l in cold water fisheries and not less than 5.0 mg/l in warm water fisheries. Where natural background conditions are lower, DO shall not be less than natural background conditions. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained.

2. Temperature.

a. Shall not exceed 68° F (20° C) based on the mean of the daily maximum temperature over a seven day period in cold water fisheries, unless naturally occurring. Where a reproducing cold water aquatic community exists at a naturally occurring higher temperature, the temperature necessary to protect the community shall not be exceeded and natural daily and seasonal temperature fluctuations necessary to protect the community shall be maintained. Temperature shall not exceed 83°F (28.3°C) in warm water fisheries. The rise in temperature due to a discharge shall not exceed 1.5°F (0.8°C); and

b. natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms.

3. pH. Shall be in the range of 6.5 through 8.3 standard units but not more than 0.5 units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

4. Bacteria.

a. At water supply intakes in unfiltered public water supplies: either fecal coliform shall not exceed 20 fecal coliform organisms per 100 ml in all samples taken in any six month period, or total coliform shall not exceed 100 organisms per 100 ml in 90% of the samples taken in any six month period. If both fecal coliform and total coliform are measured, then only the fecal coliform criterion must be met. More stringent regulations may apply under the Massachusetts Drinking Water regulations, 310 CMR 22.00 (see 314 CMR 4.06(1)(d)1.);

b. at bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010: where *E. coli* is the chosen indicator, the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 126 colonies per 100 ml and no single sample taken during the bathing season shall exceed 235 colonies per 100 ml; alternatively, where enterococci are the chosen indicator, the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 33 colonies per 100 ml and no single sample taken during the bathing season shall exceed 61 colonies per 100 ml;

c. for other waters and, during the non bathing season, for waters at bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010: the geometric mean of all *E. coli* samples taken within the most recent six months shall not exceed 126 colonies per 100 ml typically based on a minimum of five samples and no single sample shall exceed 235 colonies per 100 ml; alternatively, where enterococci are the chosen indicator, the geometric mean of all enterococci samples taken within the most recent six months shall not exceed 33 colonies per 100 ml typically based on a minimum of five samples, and no single sample shall exceed 61 colonies per 100 ml. These criteria may be applied on a seasonal basis at the discretion of the Department; and

d. consistent with Massachusetts Department of Public Health regulations for bathing beaches, the single sample maximum values in the primary contact recreation bacteria criteria in 314 CMR 4.05(3)(a)4.b. and 4.05(3)(a)4.c. also are for use in the context of notification and closure decisions.

5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

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6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.
7. Oil and Grease. These waters shall be free from oil and grease, petrochemicals and other volatile or synthetic organic pollutants.
8. Taste and Odor. None other than of natural origin.

(b) Class B. These waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment ("Treated Water Supply"). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.

1. Dissolved Oxygen.
 - a. Shall not be less than 6.0 mg/l in cold water fisheries and not less than 5.0 mg/l in warm water fisheries. Where natural background conditions are lower, DO shall not be less than natural background conditions. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained.
2. Temperature.
 - a. Shall not exceed 68°F (20°C) based on the mean of the daily maximum temperature over a seven day period in cold water fisheries, unless naturally occurring. Where a reproducing cold water aquatic community exists at a naturally occurring higher temperature, the temperature necessary to protect the community shall not be exceeded and the natural daily and seasonal temperature fluctuations necessary to protect the community shall be maintained. Temperature shall not exceed 83°F (28.3°C) in warm water fisheries. The rise in temperature due to a discharge shall not exceed 3°F (1.7°C) in rivers and streams designated as cold water fisheries nor 5°F (2.8°C) in rivers and streams designated as warm water fisheries (based on the minimum expected flow for the month); in lakes and ponds the rise shall not exceed 3°F (1.7°C) in the epilimnion (based on the monthly average of maximum daily temperature);
 - b. natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms;
 - c. alternative effluent limitations established in connection with a variance for a thermal discharge issued under 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00 are in compliance with 314 CMR 4.00. As required by 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00, for permit and variance renewal, the applicant must demonstrate that alternative effluent limitations continue to comply with the variance standard for thermal discharges; and
 - d. in the case of a cooling water intake structure (CWIS) regulated by EPA under 33 U.S.C. § 1251 (FWPCA § 316(b)), the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G.L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the CWIS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with narrative and numerical criteria and protection of existing and designated uses.
3. pH. Shall be in the range of 6.5 through 8.3 standard units and not more than 0.5 units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.
4. Bacteria.
 - a. At bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010: where *E. coli* is the chosen indicator, the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 126 colonies per 100 ml and no single sample taken during the bathing season shall exceed 235 colonies per 100 ml; alternatively, where enterococci are the chosen indicator, the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 33 colonies per 100 ml and no single sample taken during the bathing season shall exceed 61 colonies per 100 ml;

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- b. for other waters and, during the non bathing season, for waters at bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010: the geometric mean of all E. coli samples taken within the most recent six months shall not exceed 126 colonies per 100 ml typically based on a minimum of five samples and no single sample shall exceed 235 colonies per 100 ml; alternatively, the geometric mean of all enterococci samples taken within the most recent six months shall not exceed 33 colonies per 100 ml typically based on a minimum of five samples and no single sample shall exceed 61 colonies per 100 ml. These criteria may be applied on a seasonal basis at the discretion of the Department; and
- c. consistent with Massachusetts Department of Public Health regulations for bathing beaches, the single sample maximum values in the primary contact bacteria criteria in 314 CMR 4.05(3)(b)4.a. and 4.05(3)(b)4.b. also are for use in the context of notification and closure decisions.

5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to this Class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.
6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this Class.
7. Oil and Grease. These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.
8. Taste and Odor. None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this Class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.

(c) Class C. These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for secondary contact recreation. These waters shall be suitable for the irrigation of crops used for consumption after cooking and for compatible industrial cooling and process uses. These waters shall have good aesthetic value.

1. Dissolved Oxygen.
 - a. Shall not be less than 5.0 mg/l at least 16 hours of any 24-hour period and not less than 3.0 mg/l at any time. Where natural background conditions are lower, DO shall not be less than natural background conditions. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained.
2. Temperature.
 - a. Shall not exceed 85°F (29.4°C) nor shall the rise due to a discharge exceed 5°F (2.8°C);
 - b. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms;
 - c. alternative effluent limitations established in connection with a variance for a thermal discharge issued under 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00 are in compliance with 314 CMR 4.00. As required by 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00, for permit and variance renewal, the applicant must demonstrate that alternative effluent limitations continue to comply with the variance standard for thermal discharges; and
 - d. in the case of a cooling water intake structure (CWIS) regulated by EPA under 33 U.S.C. § 1251 (FWPCA § 316(b)), the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G.L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the CWIS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with narrative and numerical criteria and protection of existing and designated uses.
3. pH. Shall be in the range of 6.5 through 9.0 standard units and not more than 1.0 standard unit outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

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4. Bacteria. The geometric mean of all *E. coli* samples taken within the most recent six months shall not exceed 630 colonies per 100 ml typically based on a minimum of five samples, and 10% of such samples shall not exceed 1260 colonies per 100 ml. This criterion may be applied on a seasonal basis at the discretion of the Department.
5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to this Class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.
6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this Class.
7. Oil and Grease. These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.
8. Taste and Odor - None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this Class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.

(4) Coastal and Marine Classes

- (a) Class SA. These waters are designated as an excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, excellent habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting without depuration (Approved and Conditionally Approved Shellfish Areas). These waters shall have excellent aesthetic value.

In the case of a water intake structure (IS) at a desalination facility, the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G.L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the IS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with the narrative and numerical criteria and protection of existing and designated uses.

1. Dissolved Oxygen. Shall not be less than 6.0 mg/l. Where natural background conditions are lower, DO shall not be less than natural background. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained.
2. Temperature.
 - a. Shall not exceed 85°F (29.4°C) nor a maximum daily mean of 80°F (26.7°C), and the rise in temperature due to a discharge shall not exceed 1.5°F (0.8°C);
 - b. there shall be no change from natural background that would impair any uses assigned to this class including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms;
 - c. alternative effluent limitations established in connection with a variance for a thermal discharge issued under 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00 are in compliance with 314 CMR 4.00. As required by 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00, for permit and variance renewal, the applicant must demonstrate that alternative effluent limitations continue to comply with the variance standard for thermal discharges; and
 - d. in the case of a cooling water intake structure (CWIS) regulated by EPA under 33 U.S.C. § 1251 (FWPCA § 316(b)), the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G.L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the CWIS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with narrative and numerical criteria and protection of existing and designated uses.
3. pH. Shall be in the range of 6.5 through 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

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4. Bacteria.

- a. Waters designated for shellfishing: fecal coliform shall not exceed a geometric mean Most Probable Number (MPN) of 14 organisms per 100 ml, nor shall more than 10% of the samples exceed an MPN of 28 per 100 ml, or other values of equivalent protection based on sampling and analytical methods used by the Massachusetts Division of Marine Fisheries and approved by the National Shellfish Sanitation Program in the latest revision of the *Guide For The Control of Molluscan Shellfish* (more stringent regulations may apply, see 314 CMR 4.06(1)(d)(5));
- b. at bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010, no single enterococci sample taken during the bathing season shall exceed 104 colonies per 100 ml, and the geometric mean of the five most recent samples taken within the same bathing season shall not exceed a geometric mean of 35 enterococci colonies per 100 ml. In non bathing beach waters and bathing beach waters during the non bathing season, no single enterococci sample shall exceed 104 colonies per 100 ml and the geometric mean of all samples taken within the most recent six months typically based on a minimum of five samples shall not exceed 35 enterococci colonies per 100 ml. These criteria may be applied on a seasonal basis at the discretion of the Department; and
- c. consistent with Massachusetts Department of Public Health regulations for bathing beaches, the single sample maximum values in the primary contact recreation bacteria criteria in 314 CMR 4.05(4)(a)4.b. also are for use in the context of notification and closure decisions.

5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

7. Oil and Grease. These waters shall be free from oil and grease and petrochemicals.

8. Taste and Odor. None other than of natural origin.

(b) Class SB. These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value.

In the case of a water intake structure (IS) at a desalination facility, the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G.L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the IS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with the narrative and numerical criteria and protection of existing and designated uses.

1. Dissolved Oxygen. Shall not be less than 5.0 mg/l. Seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. Where natural background conditions are lower, DO shall not be less than natural background.

2. Temperature.

- a. Shall not exceed 85°F (29.4°C) nor a maximum daily mean of 80°F (26.7°C), and the rise in temperature due to a discharge shall not exceed 1.5°F (0.8°C) during the summer months (July through September) nor 4°F (2.2°C) during the winter months (October through June);

- b. there shall be no changes from natural background that would impair any uses assigned to this class including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms;
- c. alternative effluent limitations established in connection with a variance for a thermal discharge issued under 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00 are in compliance with 314 CMR 4.00. As required by 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00, for permit and variance renewal, the applicant must demonstrate that alternative effluent limitations continue to comply with the variance standard for thermal discharges; and

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- c. alternative effluent limitations established in connection with a variance for a thermal discharge issued under 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00 are in compliance with 314 CMR 4.00. As required by 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00, for permit and variance renewal, the applicant must demonstrate that alternative effluent limitations continue to comply with the variance standard for thermal discharges; and
- d. in the case of a cooling water intake structure (CWIS) regulated by EPA under 33 U.S.C. § 1251 (FWPCA § 316(b)), the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G.L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the CWIS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with narrative and numerical criteria and protection of existing and designated uses.

3. pH. Shall be in the range of 6.5 through 9.0 standard units and not more than 0.5 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.
4. Bacteria. The geometric mean of all enterococci samples taken within the most recent six months shall not exceed 175 colonies per 100 ml, typically based on the five most recent samples, and 10% of such samples shall not exceed 350 enterococci colonies per 100 ml. This criterion may be applied on a seasonal basis at the discretion of the Department.
5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.
6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.
7. Oil and Grease. These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.
8. Taste and Odor. None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this Class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.

(5) Additional Minimum Criteria Applicable to all Surface Waters.

- (a) Aesthetics. All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
- (b) Bottom Pollutants or Alterations. All surface waters shall be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms.
- (c) Nutrients. Unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site specific criteria developed in a TMDL or as otherwise established by the Department pursuant to 314 CMR 4.00. Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses. Human activities that result in the nonpoint source discharge of nutrients to any surface water may be required to be provided with cost effective and reasonable best management practices for nonpoint source control.
- (d) Radioactivity. All surface waters shall be free from radioactive substances in concentrations or combinations that would be harmful to human, animal or aquatic life or the most sensitive designated use; result in radionuclides in aquatic life exceeding the recommended limits for consumption by humans; or exceed Massachusetts Drinking Water Regulations as set forth in 310 CMR 22.09.

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(e) Toxic Pollutants. All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife. For pollutants not otherwise listed in 314 CMR 4.00, the *National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002* published by EPA pursuant to Section 304(a) of the Federal Water Pollution Control Act, are the allowable receiving water concentrations for the affected waters, unless the Department either establishes a site specific criterion or determines that naturally occurring background concentrations are higher. Where the Department determines that naturally occurring background concentrations are higher, those concentrations shall be the allowable receiving water concentrations. The Department shall use the water quality criteria for the protection of aquatic life expressed in terms of the dissolved fraction of metals when EPA's 304(a) recommended criteria provide for use of the dissolved fraction. The EPA recommended criteria based on total recoverable metals shall be converted to dissolved metals using EPA's published conversion factors. Permit limits will be written in terms of total recoverable metals. Translation from dissolved metals criteria to total recoverable metals permit limits will be based on EPA's conversion factors or other methods approved by the Department. The Department may establish site specific criteria for toxic pollutants based on site specific considerations. Site specific criteria, human health risk levels and permit limits will be established in accordance with the following:

1. Site Specific Criteria: Where EPA recommended criteria for a specific pollutant are not available or where the Department determines that they are invalid due to site specific physical, chemical or biological considerations, the Department shall use a site specific criterion as the allowable receiving water concentration for the affected waters. In all cases, at a minimum, site specific criteria shall not exceed safe exposure levels determined by toxicity testing using methods approved by the Department. The Department will adopt any such site specific criteria as revisions to 314 CMR 4.00 in accordance with M.G.L. c. 30A.
2. Human Health Risk Levels. Where EPA has not set human health risk levels for a toxic pollutant, the human health based regulation of the toxic pollutant shall be in accordance with guidance issued by the Department of Environmental Protection's Office of Research and Standards. The Department's goal is to prevent all adverse health effects which may result from the ingestion, inhalation or dermal absorption of toxins attributable to waters during their reasonable use as designated in 314 CMR 4.00. When this goal is not attainable, the Department will use a goal of 10-6 as the acceptable excess lifetime cancer risk level for individual carcinogens.
3. Accumulation of Pollutants. Where appropriate the Department shall use an additional margin of safety when establishing water quality based effluent limits to assure that pollutants do not persist in the environment or accumulate in organisms to levels that:
 - a. are toxic to humans, wildlife or aquatic life; or
 - b. result in unacceptable concentrations in edible portions of marketable fish or shellfish or for the recreational use of fish, shellfish, other aquatic life or wildlife for human consumption.
4. Public Notice. Where EPA recommended criteria are used to establish water quality based effluent limitations, the effluent limitations shall be documented and subject to full intergovernmental coordination and public participation as set forth in 314 CMR 2.00 "Permit Procedures".

4.06: Basin Classification and Maps

(1) Classification. For the purposes of applying 314 CMR 4.00, the surface waters of the Commonwealth are classified as shown in 314 CMR 4.06. The following terms used in the classification tables have the following meanings:

- (a) Boundary, a description of the boundaries of the segment being classified.
- (b) Mile Points, for rivers and streams, the upstream and downstream mile points; it is also used to indicate the point at which a tributary enters the main stem of a river or stream.
- (c) Class, the appropriate water use Class for each segment in accordance with 314 CMR 4.05.
- (d) Qualifiers, indicates special considerations and uses applicable to the segment that may affect the application of criteria or antidegradation provisions of 314 CMR 4.00.