

VARIANCE REQUEST

Iowa Department of Natural Resources

1. Date: April 22, 1998
2. Review Engineer: Bill Graham
3. Date Received: April 14, 1998
4. Facility Name: Emmetsburg WWTP
5. County Number: 74, Palo Alto
6. Program Area: CP (wastewater)
7. Facility Type : C04
8. Subject Area : 375
9. Rule Reference: 567-64.2(9)a
10. Design Std Ref: 17.3.2.2.a.1
11. Consulting Engr: DGR Engineers, Rock Rapids
12. Variance Rule: 567-64.2(9)c

13. Decision: *Approved*

Date: *4/23/98*

14. Appeal:

Date:

15. Description of Variance Request:

Design Standard 17.3.2.2.a.1 (Aerobic Sludge Digestion, Air Requirements, Bottom Diffusers) requires that plants employing less than four independent tanks shall be designed to incorporate removable diffusers that can be serviced and/or replaced without dewatering the tank. The city is proposing fixed diffusers which are not removable without dewatering the tank for a two tank aerobic digester.

16. Consulting Engineer's Justifications

1. There will be several times during the year when each of the digesters will be pumped down to a low level. Maintenance can be performed at these times.
2. Aeration capacity will be retained in the existing sludge storage structure which can store two days sludge production if one of the digesters needs to be taken out of service.
3. The facility has lime storage and mixing facilities. Lime can be fed directly into each of the aerobic digesters and mixed with the sludge. The city has their own equipment for land application and owns farmland adjacent to the wastewater treatment plant and can land apply sludge at any time of the year.

17. Department's Justifications

Recommend approval since sludge in a digester requiring aeration maintenance could be limed and mixed while still in the digester. The limed sludge would meet the requirements for land application according to IAC 567-67. Sludge meeting Chapter 67 liming requirements can be applied at any time of the year. Since the city owns its own application equipment and land, sludge in a digester having aeration problems could be limed and land applied in a few days.

18. Precedents Used

City of Tama requested variance for fixed aerators for a single aerobic digester. Request was denied since there was not an alternative means of sludge stabilization and disposal provided.

19. Staff Reviewer: William Graham

20. Supervisor:

21. Authorized by:

Date: April 22, 1998

Date:

4/23/98

Date:

4/23/98



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

LARRY J. WILSON, DIRECTOR

April 27, 1998

David Reit, Utilities Superintendent
City of Emmetsburg
PO Box 417
Emmetsburg, IA 50536

SUBJECT: Sludge Aeration Design Variances
Emmetsburg Aerobic Sludge Digester Project

Dear Mr. Reit:

The Iowa Department of Natural Resources has reviewed a variance request for the City of Emmetsburg wastewater treatment plant's two tank aerobic digester to have fixed diffusers which are not removable without dewatering the tank. Design Standard 17.3.2.2.a.1 (Aerobic Sludge Digestion, Air Requirements, Bottom Diffusers) requires that plants employing less than four independent digester tanks be designed to incorporate removable diffusers that can be serviced and/or replaced without dewatering the tank.

Your request for a variance is approved based on the following:

Sludge in a digester requiring aeration maintenance could be limed and mixed while still in the digester. The limed sludge would meet the requirements for land application according to IAC 567-67. Sludge meeting Chapter 67 liming requirements can be applied at any time of the year. Since the city owns its own application equipment and land, sludge in a digester having aeration problems could be limed and land applied in a few days.

Should you have any questions please call Bill Graham at (515) 281-5917.

Sincerely,

Darrell McAllister, Chief
Water Quality Bureau

cc: DGR Engineering, 315 First Ave., Rock Rapids, IA 51246
Field Office 3