

9-8-06

15.2.4.2.4

**VARIANCE REQUEST**

Iowa Department of Natural Resources

1. Date: May 15, 2001  
2. Review Engineer: Larry Bryant  
3. Date Received: April 26, 2001  
4. Facility Name: Dyersville WWTP  
5. County Number: 31 (Dubuque)  
6. Program Area: CP (Wastewater Construction)  
7. Facility Type: C04 (Physical Treatment)  
8. Subject Area: 369 (bypass channel screen)  
9. Rule Reference: 567-64.2(9)a  
10. Design Stds Ref: 15.2.4.2.4 (channels)  
11. Consulting Engr: IIW Engineers/Dubuque, IA  
12. Variance Rule: 567-64.2(9)c

13. Decision: *Approved*  
Date: *5/22/01*

14. Appeal:  
Date:

**15. Description of Variance Request:**

A single channel with no bypass is proposed. IA Standard 15.2.4.2.4 states that "Bypass channels shall be provided and equipped with the necessary gates to isolate flow from any single mechanical screening unit. Provisions shall also be made to facilitate dewatering each mechanical unit."

**16. Consulting Engineer's Justifications**

- The mechanical screen provided can be pivoted out of the channel (without dewatering) for maintenance and a removable manually cleaned screen is provided upstream of the mechanical screen that can be installed when the mechanical screen is not in service.
- A trash basket provided in the influent station wet well precedes both the manually cleaned and mechanical screens.

**17. Department's Justifications****Recommend variance approval:**

The proposed arrangement provides equivalent effectiveness for isolation of the mechanical screen. IA 15.2.4.2.4 allows single channels with manually cleaned screens that are removable without dewatering for "small installations". The design AWW<sub>30</sub> flow for the Dyersville WWTP is 0.83 MGD.

**18. Precedents Used**

City of Burlington - Approved 1/30/92

The Cities of Fayette and Mt. Vernon have similar arrangements (screen that can be pivoted out of the channel and no bypass channel) although no formal variance requests/approvals were found.

19. Staff Reviewer: *Larry Bryant*

Date: *5/15/01*

20. Supervisor: *Don J. [Signature]*

Date: *5/15/01*

21. Authorized by: *J. P. [Signature]*

Date: *5/22/01*

### BYPASS CHANNEL ELIMINATION

Item 15.2.4.2.4 of the Iowa Wastewater Facilities Design Standards indicates that bypass channels shall be provided and equipped with necessary gates to isolate flow from any single mechanical screening unit. We are requesting a variance to eliminate the bypass channel.

In Dyersville we have proposed a single channel with no bypass. This single channel transports wastewater to the mechanical screen. When maintenance is required the mechanical screen can be rotated out of the channel. When the mechanical screen is not in service the operator can install a manually cleaned bar screen as specified in the special project requirements of Section 11333 of the project specifications. A bar screen rake is to be provided also. In addition to the removable manually cleaned bar screen a trash basket precedes the influent pumps. Whereas the mechanical screen and the manually cleaned screen can be removed from the channel, we do not believe that a bypass channel will serve any purpose.

We believe that the removable manually and mechanically cleaned screens provide equivalent effectiveness in operation and improved effectiveness in screen maintenance. The elimination of the bypass channel is obviously a significant cost savings to the City of Dyersville.


The ability to bypass the grit removal system will be provided. If cleaning of the channel becomes necessary, the influent pumps can be stopped and wastewater stored in the 24 inch influent sewer and the wet well for a few minutes while the channel is cleaned.

The DNR granted a variance to the City of Fayette for elimination of a bypass channel around their mechanically cleaned screen. In Fayette, as in Dyersville, the screen can be rotated out of the influent channel. Equivalent effectiveness in screening is provided by a wet well trash basket downstream of screening, grit removal and flow measurement facilities. We are advised that the 1/4 inch screen in Mt. Vernon (similar to Dyersville's screen) has no bypass channel.

Thank you for your consideration of these requests for variances. We believe that the proposed facilities in Dyersville will provide appropriate cost effective treatment and easy maintenance. We hope you can agree and approve the variances.

Sincerely,

IIW ENGINEERS & SURVEYORS, P.C.

  
Gary Sejkora, P.E.