

**Reliability Classification
Worksheet for Sewage Pumping Stations**

Pump Station Name: <u>PS-1</u>
Location: <u>OLD DOMINION VILLAGE, CROZET, VA</u>
Average Daily Design Flow/ Peak Design Flow (MGD/MGD): <u>0.020 MGD / 0.050 MGD</u>

Complete Part I and Part II of this form, and submit this form with your CTC application. All assessments are based on the average daily design flow of the pump station (not peak flow or current flow).

Part I. Reliability Classification Assessment

1. Is the station located in the Dulles Watershed (9 VAC 25-401) or in the Occoquan Watershed (9 VAC 25-410)?
☐ If yes, STOP - Reliability is Class I with special construction requirements (see 9 VAC 25-401 and/or 410).
☒ If no, proceed to Question 2.

2. The default Reliability Classification for all other pump stations within Virginia is Class I. Is the pump station to be constructed to meet Reliability Class I?
☒ If yes, STOP - Reliability is Class I.
☐ If no, proceed to Question 3.

3. Is the design average daily flow to the pump station greater than or equal to 0.5 MGD?
☐ If yes, STOP - Reliability is Class I.
☐ If no, proceed to Question 4.

4. Is the pump station located in the any of the following localities? **Counties** of Accomack, Charles City, Essex, Gloucester, Isle of Wight, James City, King and Queen, King George, King William, Lancaster, Mathews, Middlesex, New Kent, Northampton, Northumberland, Richmond, Southampton, Surry, Westmoreland or York; or **Cities** of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach or Williamsburg.
☐ If yes, STOP - Reliability is Class I.
☐ If no, proceed to Question 5.

5. Is a public water supply surface water intake within 5 miles downgradient of the pump station or within 1 tidal cycle upstream of the pump station?

[Contact the appropriate field office of VDH's Office of Drinking Water <https://www.vdh.virginia.gov/drinking-water/contact-us/>. Provide VDH with latitude/longitude information for the pump station and the average and peak design flows.]
☐ If yes, STOP - Reliability is Class I.
☐ If no, proceed to Question 6.

6. If the pump station were to overflow, is there high probability of public contact with the wastewater? [Is the station close to residential/commercial/institutional areas and/or recreational areas (boat landings, posted swimming/fishing/boating areas, parks) such that an overflow would likely present a public health hazard?]
☐ If yes, STOP - Reliability is Class I.
☐ If no, proceed to Question 7.

7. Is average daily design flow to the pump station < 2000 gpd?
☐ If yes, STOP - Reliability is Class II.
☐ If no, proceed to Question 8.

8. Is there a perennial surface water located within 1500 ft downgradient of the facility? (Perennial stream defined as a solid blue line on USGS quad map or determined from field investigation.)

- ☐ If no, STOP - Reliability is Class II.
☐ If yes, proceed to Question 9.

9. Does the perennial surface water considered in Question 8 above provide less than a 10:1 dilution (7Q10 receiving water flow to average daily design flow); OR is the perennial surface water a 303d listed impaired segment?

- ☐ If yes to either of the questions, STOP - Reliability is Class I.
☐ If no, STOP - Reliability is Class II.

Based on the Part I assessment, the designated reliability classification for this pump station is CLASS I.
Note that DEQ has determined that Reliability Class III is not protective of water quality and is not a valid classification for a new pump station.

Part II. Method of Complying with Reliability Classification

For this pump station, select your method of complying with the reliability class requirements.
Reference 9 VAC 25-790-390 through 420.

Reliability Class I:

☒ Option A: Emergency generator with automatic transfer switch or dual electrical feeds. Class I must monitor main power supply, auxiliary power supply, failure of pump to discharge, and high liquid level in wet/dry wells; a test function must also be provided. On-site audio-visual alarm required with telemetry or autodialer to site manned 24 hours a day.

☐ Option B: Permanently installed engine-driven emergency pump. Wet well storage above the high water alarm equal to or greater than documented response time of owner/service provider (i.e., no overflow is allowed). Automatic transfer in the event of a power failure is preferred. The emergency pump must pass the peak flow and must monitor main power supply, failure of pumps to discharge, and high liquid level in wet/dry wells; a test function must also be provided. On-site audio-visual alarm required with telemetry or autodialer to site manned 24 hours a day. Battery or other acceptable backup for pump controls is required.

☐ Option C: 24 hour emergency storage. Class I must monitor main power supply, failure of pump to discharge, and high liquid level in wet/dry wells; a test function must also be provided. On-site audio-visual alarm required with telemetry or autodialer to site manned 24 hours a day. (24 hour storage based on average daily design flow.)

☐ Option D: Closing the facility to eliminate generation of sewage. On-site audio-visual alarm required with telemetry or autodialer to site manned 24 hours a day. (Only available to facilities that will close during a power outage such as schools, certain industries, some recreational and park areas.)

☐ Option E: Portable Equipment (e.g., pumps and generators). [Only available for facilities to be owned and operated by a locality, utility, or service authority.] Wet well storage above the high water alarm equal to or greater than documented response time of owner/service provider. Owner/Service Provider has sufficient portable equipment (see 9 VAC 25-790.410 for details). Portable pump and/or portable generator hookup provided. Class I must monitor main power supply, failure of pump to discharge, and high liquid level in wet/dry wells; a test function must also be provided. On-site audiovisual alarm required with telemetry or autodialer to site manned 24 hours a day.

☐ Option F: For facilities in the Dulles Watershed Only: In addition to complying with Reliability Class I requirements in 9 VAC 25-790, the facility also complies with 9 VAC 25-401-30.D.

☐ Option G: For facilities in the Occoquan Watershed Only: In addition to complying with Reliability Class I requirements in 9 VAC 25-790, the facility also complies with 9 VAC 25-410-20-F.5.

Reliability Class II:

☐ Option A: Portable/standby generator (manual transfer switch or quick connect). On-site audio-visual high water alarm.

☐ Option B: Emergency pump connection (and access to a portable pump). On-site audio-visual high water alarm.

☐ Option C: Closing the facility to eliminate generation of sewage. On-site audio-visual high water alarm. (Only available to facilities that will close during a power outage such as schools, certain industries, some recreational and park areas.)

Form to be completed and signed by Design Engineer.

Form completed by Timothy Miller (signature)

Printed name TIMOTHY MILLER

**Reliability Classification
Worksheet for Sewage Pumping Stations**

Pump Station Name: PS-2

Location: OLD DOMINION VILLAGE, CROZET, VA

Average Daily Design Flow/ Peak Design Flow (MGD/MGD): 0.150 MGD / 0.375 MGD

Complete Part I and Part II of this form, and submit this form with your CTC application. All assessments are based on the average daily design flow of the pump station (not peak flow or current flow).

Part I. Reliability Classification Assessment

1. Is the station located in the Dulles Watershed (9 VAC 25-401) or in the Occoquan Watershed (9 VAC 25-410)?
☐ If yes, STOP - Reliability is Class I with special construction requirements (see 9 VAC 25-401 and/or 410).
☒ If no, proceed to Question 2.
2. The default Reliability Classification for all other pump stations within Virginia is Class I. Is the pump station to be constructed to meet Reliability Class I?
☒ If yes, STOP - Reliability is Class I.
☐ If no, proceed to Question 3.
3. Is the design average daily flow to the pump station greater than or equal to 0.5 MGD?
☐ If yes, STOP - Reliability is Class I.
☐ If no, proceed to Question 4.
4. Is the pump station located in the any of the following localities? **Counties** of Accomack, Charles City, Essex, Gloucester, Isle of Wight, James City, King and Queen, King George, King William, Lancaster, Mathews, Middlesex, New Kent, Northampton, Northumberland, Richmond, Southampton, Surry, Westmoreland or York; or **Cities** of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach or Williamsburg.
☐ If yes, STOP - Reliability is Class I.
☐ If no, proceed to Question 5.
5. Is a public water supply surface water intake within 5 miles downgradient of the pump station or within 1 tidal cycle upstream of the pump station?

[Contact the appropriate field office of VDH's Office of Drinking Water <https://www.vdh.virginia.gov/drinking-water/contact-us/>. Provide VDH with latitude/longitude information for the pump station and the average and peak design flows.]
☐ If yes, STOP - Reliability is Class I.
☐ If no, proceed to Question 6.
6. If the pump station were to overflow, is there high probability of public contact with the wastewater? [Is the station close to residential/commercial/institutional areas and/or recreational areas (boat landings, posted swimming/fishing/boating areas, parks) such that an overflow would likely present a public health hazard?]
☐ If yes, STOP - Reliability is Class I.
☐ If no, proceed to Question 7.
7. Is average daily design flow to the pump station < 2000 gpd?
☐ If yes, STOP - Reliability is Class II.
☐ If no, proceed to Question 8.
8. Is there a perennial surface water located within 1500 ft downgradient of the facility? (Perennial stream defined as a solid blue line on USGS quad map or determined from field investigation.)

- ☐ If no, STOP - Reliability is Class II.
☐ If yes, proceed to Question 9.

9. Does the perennial surface water considered in Question 8 above provide less than a 10:1 dilution (7Q10 receiving water flow to average daily design flow); OR is the perennial surface water a 303d listed impaired segment?

- ☐ If yes to either of the questions, STOP - Reliability is Class I.
☐ If no, STOP - Reliability is Class II.

Based on the Part I assessment, the designated reliability classification for this pump station is CLASS I
Note that DEQ has determined that Reliability Class III is not protective of water quality and is not a valid classification for a new pump station.

Part II. Method of Complying with Reliability Classification

For this pump station, select your method of complying with the reliability class requirements.
Reference 9 VAC 25-790-390 through 420.

Reliability Class I:

☒ Option A: Emergency generator with automatic transfer switch or dual electrical feeds. Class I must monitor main power supply, auxiliary power supply, failure of pump to discharge, and high liquid level in wet/dry wells; a test function must also be provided. On-site audio-visual alarm required with telemetry or autodialer to site manned 24 hours a day.

☐ Option B: Permanently installed engine-driven emergency pump. Wet well storage above the high water alarm equal to or greater than documented response time of owner/service provider (i.e., no overflow is allowed). Automatic transfer in the event of a power failure is preferred. The emergency pump must pass the peak flow and must monitor main power supply, failure of pumps to discharge, and high liquid level in wet/dry wells; a test function must also be provided. On-site audio-visual alarm required with telemetry or autodialer to site manned 24 hours a day. Battery or other acceptable backup for pump controls is required.

☐ Option C: 24 hour emergency storage. Class I must monitor main power supply, failure of pump to discharge, and high liquid level in wet/dry wells; a test function must also be provided. On-site audio-visual alarm required with telemetry or autodialer to site manned 24 hours a day. (24 hour storage based on average daily design flow.)

☐ Option D: Closing the facility to eliminate generation of sewage. On-site audio-visual alarm required with telemetry or autodialer to site manned 24 hours a day. (Only available to facilities that will close during a power outage such as schools, certain industries, some recreational and park areas.)

☐ Option E: Portable Equipment (e.g., pumps and generators). [Only available for facilities to be owned and operated by a locality, utility, or service authority.] Wet well storage above the high water alarm equal to or greater than documented response time of owner/service provider. Owner/Service Provider has sufficient portable equipment (see 9 VAC 25-790-410 for details). Portable pump and/or portable generator hookup provided. Class I must monitor main power supply, failure of pump to discharge, and high liquid level in wet/dry wells; a test function must also be provided. On-site audiovisual alarm required with telemetry or autodialer to site manned 24 hours a day.

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☐ Option G: For facilities in the Occoquan Watershed Only: In addition to complying with Reliability Class I requirements in 9 VAC 25-790, the facility also complies with 9 VAC 25-410-20-F.5.

Reliability Class II:

☐ Option A: Portable/standby generator (manual transfer switch or quick connect). On-site audio-visual high water alarm.

☐ Option B: Emergency pump connection (and access to a portable pump). On-site audio-visual high water alarm.

☐ Option C: Closing the facility to eliminate generation of sewage. On-site audio-visual high water alarm. (Only available to facilities that will close during a power outage such as schools, certain industries, some recreational and park areas.)

Form to be completed and signed by Design Engineer.

Form completed by Timothy Miller (signature)

Printed name TIMOTHY MILLER