Plumbing Board
c/o Department of Labor and Industry
443 Lafayette Road North
St. Paul, MN 55155-4344
www.dli.mn.gov

Plumbing Board
Request for Interpretation

PRINT IN INK or TYPE

NAME OF SUBMITTER	Rule(s) to be interpreted (e.g., 4714.0330)
Anita Anderson	4714.0204 - Building Supply

The Minnesota Plumbing Code (MN Rules, Chapter 4714) is available at www.dli.mn.gov/CCLD/PlumbingCode.asp
Has a request for interpretation been submitted to Department of Labor and Industry (DLI) staff, either as a verbal request or a written request? ☑ Yes ☐ No

If "No," contact DLI staff at 651-284-5898. The DLI is responsible for administration and interpretation of the Minnesota Plumbing Code, and all requests must be processed and provided a DLI interpretation before being referred to the Plumbing Board. This form is intended to be used to request an interpretation from the Plumbing Board only as a resolution of dispute with DLI interpretation.

Code/Rule to be interpreted:	Name of DLI employee gave interpretation:	Date interpretation originally requested:
Definition of Building Supply, Section 204.0	Mike Westemeier	2/18/25

Provide a copy of the DLI interpretation with this request (a copy must be provided as reference).

Is there a local dispute with an Inspector of other official?	If Yes, state the name or type of official
☐ Yes ☑ No	

State the circumstances of the initial dispute:

Dispute
In their Report on Plumbing Plans for Plan No. PB-R2408-0019, DLI disallowed the use of PVC piping/fittings in a water treatment system, citing Section 604.1 and the definition of Building Supply within the Plumbing Code.

In contrast, in their Report on Plumbing Plans for Plan No. PB-R2303-0177, DLI allowed the use of PVC piping/fittings in a water treatment system, siting Section 611.1.1, and approving it only for cold water applications.

Finally, in their Report on Plumbing Plans for Plan No. PB-R2405-0119, DLI did not call out the materials used for the water treatment system, but said the Minnesota Department of Health should be contacted regarding requirements for the lake source water system and the water treatment system.

It is therefore unclear, in situations where there may be multiple pressure tanks or water meters, where building supply ends and water distribution begins and what materials are allowed for use in water treatment systems. The interpretation of this transition point is currently left to individual DLI plan review staff, making it confusing for system designers, MDH plan review engineers, and public water system owners and operators. As shown in the examples above, in some instances, DLI has rejected plumbing plans because PVC plumbing was proposed downstream of their interpreted building supply end point. In other cases, PVC plumbing is accepted.

Explain what you disagree with the interpretation given to you by DLI staff:

MDH believes the interpretation of this definition should not be left to interpretation by individual reviewers. Currently, some noncommunity public water systems (NPWS) are delaying installation of treatment required to protect public health because they are not sure which interpretation of building supply and therefore allowable materials will be made upon plan submittal. In some of these cases, the systems are only replacing a small portion of the treatment system. If the plan is reviewed by a reviewer who interprets treatment piping as water distribution, they may require PVC to be removed from the entire treatment system, not just the replacement section, increasing project cost and causing delay in installation.

MDH does not believe that the definition of Building Supply requires DLI to consider the first instance of a water meter or pressure tank to mark the end of Building Supply and the beginning of Water Distribution Pipe. Furthermore, MDH believes that such an interpretation is unnecessarily restrictive and does not provide a public health benefit when used to evaluate allowable plumbing materials within a water treatment system or anywhere before the entry point to the distribution system. In any case, the inconsistency in acceptance is not workable.

What is your interpretation of the language:

Our interpretation is that building supply ends after any central water conditioning or treatment equipment and/or after the last pressure tank prior to the piping that takes water to water heaters, fixtures or other water outlets, thus allowing the use of PVC pipe and fittings for water conditioning and treatment equipment and cold-water atmospheric storage tanks.

It should be noted that this interpretation is consistent with 4714.0611 that requires wetted surface materials used in water conditioning equipment to comply with ANSI/NSF 61 standards.

List any other information you would like the Board to consider:

Background
The Minnesota Department of Health (MDH) has the authority to review plans for public water systems under Minnesota Rules, Chapter 4720. Public water systems are classified as either community public water systems (CPWS), serving year-round residents, or noncommunity public water systems (NPWS). NPWS include facilities such as restaurants, campgrounds, and manufacturing facilities.

The source of water supply for NPWS can either be a public water supply well or a surface water source. Groundwater well sources may require treatment to have the water quality meet the standards of the Safe Drinking Water Act (SDWA) (e.g., arsenic or nitrate removal or chlorine disinfection). Surface water sources always require filtration and disinfection treatment to meet requirements of the SDWA. Other NPWS install water conditioning equipment to remove aesthetic contaminants such as hardness or iron.

The treatment systems at NPWS are often located in a building that houses other portions of the facility (e.g., in the basement of a lodge at a resort), although sometimes they may be in a separate building that houses only the treatment

Information regarding submitting this form:

- Submit any supporting documentation to be considered electronically to DLI.CCLDBOARDS@state.mn.us. Once your Request For Interpretation form has been received, it will be assigned a file number. Please reference this file number on any correspondence and supplemental submissions.

Information for presentation to the Committee:

- You will be notified with the date of the Committee Meeting in which your Request For Interpretation will be heard.
- Limit presentations to 5 minutes or less.
- Be prepared to answer questions regarding the Code, the circumstances that led to the dispute and please bring copies of any documentation.

What you can do if you disagree with the Board's determination:

- You may appeal the Board's determination pursuant to Minn. Stat. Chapter 14.

Submitted by:

NAME	FIRM NAME	
Anita Anderson	Minnesota Department of Health	
ADDRESS	CITY STATE ZIP CODE	
11 E. Superior Street Suite 290	Duluth, MN 55802	
PHONE	SIGNATURE (original or electronic)	DATE
218-302-6143	Anita C. Anderson	4/3/25

Office Use Only

RFI File No.	Date Received by DLI	Dated Received by Board	Date of Board Meeting
PB0196	4/7/2025	4/8/2025	4/15/2025
Title of RFI PB0196.RFI.Definition of Building Supply	By: Lyndy Logan		

This material can be made available in different forms, such as large print, Braille or on a tape. To request, call 1-800-342-5354 (DIAL-DLI).

For assistance or questions on completing this form, please call 651-284-5898 or 651-284-5889.

Mailing address:

Plumbing Board
c/o Department of Labor and Industry
443 Lafayette Road North
St. Paul, MN 55155-4344

***** Please remember to attach all necessary explanations and supporting documentation*****

DEPARTMENT OF LABOR AND INDUSTRY

Division of Construction Codes and Licensing

REPORT ON PLUMBING PLANS

PROJECT: Glenmore Resort's Water Treatment Plant, 1017 Glenmore Road, Greenwood Township, St. Louis County, Minnesota, *Plan No. PB-R2303-0177*

OWNERSHIP: Glenmore Resort c/o Paul Hrvol, 1017 Glenmore Drive, Tower, MN 55790
SUBMITTER: Midwest Water Engineering, 19406 East Bethel Boulevard, East Bethel, MN 55011

Plans Dated: May 2, 2023; Signed by Engineer of Record: May 9, 2023
Initial Date Received: March 23, 2023
Last Date Received: May 10, 2023
Date Approved: May 11, 2023

This review is limited to the provisions of the Minnesota Plumbing Code, Minnesota Rules, Chapter 4714 and assumes the data on which the design is based are correct. Approval is contingent upon meeting the requirements listed below. **A copy of the approved plans and this report must be retained at the project location.**

INSPECTIONS: The Minnesota Department of Labor and Industry (DLI) will be inspecting the plumbing for this project, including utility installations. Please contact Brad Jensen at 218/290-1591 for all plumbing inspections. No plumbing work may be covered prior to inspection. The installer must verify that the required inspection fee has been submitted before scheduling. A separate permit may be required for interior plumbing and site utilities. For additional information, visit our website at: http://www.dli.mn.gov/business/plumbing-contractors/plumbing-inspections

1. All plumbing shall be installed in accordance with Chapter 4714. All pipe, fittings, traps, fixtures, materials, and devices shall be listed or labeled by a third-party listing agency and comply with the applicable standards referenced in the code (see Sections 301.2 and 1701.1).

2. Verify that the existing water supply and waste systems are sized for any additional loads/losses (see Sections 610.7 through 610.12 and 703.0). The re-use of existing fixtures is prohibited unless the fixtures conform to the current Minnesota Plumbing Code (see part 4714.0101, subparts 3 and 4).

3. No fitting, fixture and piping connection, appliance, device, or method of installation shall be used that obstructs or retards the flow of water unless it is indicated as acceptable or is approved in accordance with Section 301.1 of this code. Verify the treatment system isolation valves/fittings, injection unit, flow sensors, meters, sample points, etc. do not obstruct or impede the flow to an extent detrimental to the system.

4. Potable and nonpotable water distribution systems and outlets must be identified per Section 601.3.

5. The water treatment installations appear manufactured as a complete system or assembled as such per Section 611.1.1. All wetted surface materials must comply with ASNI/NSF 61 and/or equipment shall comply with the applicable NSF standards as listed in Table 1701.1. Code-complying labeling of all equipment must be per Section 611.1.2.

6. The potable water supply tanks, interior tank coatings, and/or liners must comply with NSF 61. The pressurized tanks shall be provided with a listed pressure-relief valve installed in accordance with the manufacturer's installation instructions and discharged per Section 608.5 (see Section 607.2 through 607.5).

7. The atmospheric tanks used for the potable water supply shall be tightly covered and vented in accordance with the manufacturer's installation instructions. Such vents must open downward and be screened with a corrosion-resistant material of not less than #24 mesh. The vent opening must not be in an environment that can contaminate the water supply. The tanks must have an overflow pipe opened downwards with the same screen requirements. The overflow pipe shall be sufficient diameter to permit discharge via air gap of surplus water exceeding the maximum filling rate (see Sections 607.3 through 607.4).

8. The receptor or fixture receiving indirect discharge from the conditioning equipment and/or storage tanks must always maintain air gap, be located in the same room, approved by this office, and have shape and capacity to prevent splashing or flooding (see Sections 802.1 and 804.1).

9. Indirect waste pipes 5 to 15 feet in length from appliances, devices, or equipment not regularly classed as plumbing fixtures, but which are equipped with drainage outlets, must be trapped, but the traps need not be vented (see Section 803.3). Traps on indirect wastes longer than 15 feet must be vented and such vents may not combine with sewer-connected vents. Indirect wastes less than 15 feet in length may not be smaller than the equipment outlet or ½-inch, whichever is larger.

10. Water conditioning equipment must discharge to the drainage system by an air gap per Table 603.3.1, or an air gap device per Table 603.2, NSF 58, or IAPMO PS 65 (see Section 611.2). Pipe and tubing used in water conditioning installations must comply with NSF Standard 14, 42, 44, 53, 55, 58, 62, or the appropriate material standard in Table 1401.1 (see Section 611.3).

11. Readily accessible isolation valves installed by a licensed plumber are required for all water conditioning installations. Water conditioning contractors may not install isolation valves, pipes larger than 2-inch, or any connection to the existing drainage system without an air gap (see Minnesota Statutes, Chapter 326B.50).

12. Water pressure booster pumps must have a low-pressure cutoff switch within 5 feet from the inlet set at 10 psi minimum (see Section 609.8). A pressure gauge must be located between the shutoff valve and the pump.

13. No water, soil, or waste pipe shall be installed or permitted attics, crawl spaces, exterior walls, or outside a building unless necessary and adequate provisions are made to protect from freezing (see Section 312.6).

14. Full-way gate or ball valves must be provided at all locations described under Section 606.2, including on the discharge side of the water meter and on each unmetered water supply. Unions shall be installed not more than 12 inches from water heating or regulating equipment, water conditioning tanks, and similar equipment requiring service by removal or replacement (see Section 609.5).

15. Pipe hangers and supports shall comply with Section 313.0 and Table 313.3.

16. All materials used in potable water systems must meet the requirements of NSF 61 (see Section 604.1). Pipe and fittings with lead content must not exceed 0.25 percent lead in the wetted surface material (see Section 604.2). Solder and flux shall contain less than 0.2 percent lead. Joints must use ASTM B813 non-corrosive non-toxic paste-type flux (see Section 605.1.4).

17. The details appear to reference the use of Schedule 80 PVC in the water systems. Proposed PVC pipe and fittings may be used only as approved for cold water application and must meet ASTM D1785 and NSF 61 (Section 604.1). If CPVC will be used, it must meet Section 605.2 and Table 604.1:
    a. Pipes must meet ASTM Standards D2846, F441, F442, or CSA B137.6.
    b. Solvent cement must comply with ASTM F493. Solvent cement requiring the use of primer must be orange. Primer must meet ASTM F656 and be colored. Listed one-step yellow or red solvent cement is permitted for ½-inch through 2-inch ASTM D2846 pipes and ASTM F442 ½-inch through 3-inch pipes only.
    c. Push-fit fittings must comply with ASSE 1061.
    d. The installation must include provisions for expansion and contraction (see Section 312.2).

18. The plumbing system shall be tested in accordance with Sections 609.4 and 712.0.

19. The completed water distribution system shall be flushed and disinfected per Section 609.9.

NOTE(S):

1. The scope of this project consists of remodeling an existing facility. The plumbing installation includes a chlorine injection water treatment system with chemical feed/injectors, water filters, flow meters, two pressure potable water storage tanks, two atmospheric potable water storage tanks, and repressurization pumps to the existing water services and distribution systems.

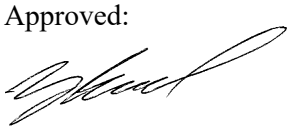
2. This facility is served by an existing on-site septic system and an existing private well.

3. The licensing authority may require additional plans, information and fee. Changes to the plumbing system may result. Any significant plumbing changes must be approved by this office prior to installation. Contact information for the Minnesota Department of Health (MDH) state and local environmental health offices licensing food, beverage, and lodging facilities can be found at: https://www.health.state.mn.us/communities/environment/food/docs/license/locals.pdf

4. The MDH Noncommunity Public Water Supply Unit has reviewed and approved the facility chemical water treatment as a PWS as of March 21, 2023 under Plan No. 230403 and PWSID 5690930.

Authorization may be withdrawn if installation does not begin within one year. Additional requirements may result from changed conditions or additional information.

Approved:



Zachary D. Barnaal
Public Health Engineer
Plumbing Plan Review and Inspections Unit
651/284-5888; Zachary.Barnaal@state.mn.us

cc: Midwest Water Engineering
Cartwright Consulting Co. LLC c/o Peter Cartwright
P & K Plumbing LLC c/o Phil Mauriala
Glenmore Resort c/o Paul Hrvol
File

DEPARTMENT OF LABOR AND INDUSTRY

Division of Construction Codes and Licensing

REPORT ON PLUMBING PLANS

PROJECT: The Harbors LLC Maintenance Building, 1022 E Stanley Road, T52-R11 Township, Lake County, Minnesota, *Plan No. PB-R2405-0119*

OWNERSHIP: John Leupke, 1022 East Stanley Road, Two Harbors, MN 55616
SUBMITTER: Midwest Water Engineering LLC, 19406 East Bethel Blvd NE, Cedar, MN 55011

Plans Dated: Refer to DLI stamped documents
Initial Date Received: May 13, 2024
Last Date Received: October 22, 2024
Date Approved: October 25, 2024

This review is limited to the provisions of the Minnesota Plumbing Code, Minnesota Rules, Chapter 4714 and assumes the data on which the design is based are correct. Approval is contingent upon meeting the requirements listed below. **A copy of the approved plans and this report must be retained at the project location.**

INSPECTIONS: The Minnesota Department of Labor and Industry (DLI) will be inspecting the plumbing for this project, including site utility installations. Please contact Brad Jensen, at 218/290-1591, for all plumbing inspections. No plumbing work may be covered prior to inspection. The installer must verify that the required inspection fee has been submitted before scheduling. A separate permit may be required for interior plumbing and site utilities. For additional information, visit our website at:
http://www.dli.mn.gov/business/plumbing-contractors/plumbing-inspections

REQUIREMENTS:

1. All plumbing must be installed in accordance with the 2020 Minnesota Plumbing Code, Chapter 4714. All pipe, fittings, traps, fixtures, materials, and devices shall be listed or labeled by a third-party listing agency and comply with the applicable standards referenced in the code (see Sections 301.2 and 1701.1).

2. All sanitary drainage piping must be installed with a uniform slope of at least ¼-inch per foot (see Sections 708.1 and 718.1). Where site conditions preclude this, a slope of ⅛-inch per foot minimum may be used for piping 4 inches and larger.

3. Changes in direction in drainage piping must be made by appropriate use of wyes and bends (see Section 706.0). Sanitary tees are not allowed for vertical to horizontal or horizontal to horizontal direction changes.

4. Floor drains serving as a receptor must be individually vented (see Section 1002.2). A 2-inch trap must be located within 5 feet of its vent, a 3-inch trap must be located within 6 feet of its vent, and a 4-inch or larger trap must be located within 10 feet of its vent (see Table 1002.2).

5. Trench drains must comply with ASME A112.6.3, ASME A112.3.1, or be constructed of water-tight material and joints tested by filling with water to the flood level rim (see Section 423.1).

6. Plumbing fixtures receiving indirect discharge must have shape and capacity to prevent splashing or flooding (see Sections 802.1 and 804.1).

7. PEX systems may not exceed 10 feet per second for cold water or 8 feet per second for hot water (see Appendix I). The hot water distribution branch serving two clothes washers must be at least ¾ inches in size.

8. The water closet must comply with ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, or CSA B45.5/IAPMO Z124 and may not exceed 1.6 gallons per flush. A dual flush water closet must meet ASME A112.19.14. The closet must have an elongated bowl with an open-front seat or an automatic seat cover dispenser (see Section 411.0).

9. The lavatory must have an ASSE 1070/ASME A112.1070/CSA B125.70 mixing valve or an ASSE 1084 water heater limiting the hot water temperature to 110 degrees Fahrenheit or less. Faucets must limit flow to 0.5 gpm at 60 psi. A metering faucet may not exceed 0.25 gallons per cycle (see Sections 407.2 and 407.3). Accessible lavatories must meet Section 403.0.

10. Water supply connections to fixtures or equipment which have inlets below the spill line must be provided with a code compliant air gap or an approved backflow preventer (see Section 602.3).

11. Equipment used for heating water or storing hot water shall be protected by approved safety devices in accordance with Sections 504.4, 504.5, and 504.6. Discharge piping shall be an approved temperature-rated material the same size as the valve outlet terminating by air gap within 18 inches of the floor or a safe place of disposal (see Section 608.5).

12. A full-way valve must be provided on the cold water supply line to the water heater (see Section 606.2).

13. Unions must be installed not more than 12 inches from water heating or regulating equipment, water conditioning tanks, and similar equipment requiring service by removal or replacement (see Section 609.5).

14. Water hammer arrestors meeting ASSE 1010 or PDI-WH-201 must be installed as close as possible to quick-acting valves where water hammer occurs (see Section 609.10).

15. Where a booster pump is connected to a building supply or underground water pipe, a low-pressure cutoff switch on the inlet side of the pump must be installed not more than 5 feet of the inlet (see Section 609.8). The cutoff switch must be set for no less than 10 psi, and a pressure gauge must be installed between the shutoff valve and the pump.

16. Potable water supply tanks must comply with the requirements of Section 607.0.

17. Pipe hangers and supports must comply with Section 313.0 and Table 313.3.

18. A cleanout is required near the connection of each building drain and each building sewer (see Section 719.1).

19. A cleanout is required at each kitchen sink or urinal regardless of its location in the building (see Section 707.4).

20. Each horizontal drain branch on or below the floor level of the building drain shall be provided with a cleanout at its upper terminal with the following exceptions (see Section 707.4):
    a. A cleanout is not required if the branch is less than five feet unless it serves sinks or urinals.
    b. A cleanout is not required on a drain that is 72 degrees or less from the vertical unless it serves kitchen sinks or urinals.

21. Cleanout openings may not be smaller than required in Table 707.1 (see Section 707.10). A cleanout must be installed where there is an increase in pipe size from 2 inches to 3 inches and from 3 inches to 4 inches.

22. The horizontal distance between cleanouts may not exceed 100 feet (see Section 707.4). A cleanout must be provided for each total change of direction exceeding 135 degrees in any horizontal drainage line.

23. Water supply pipe must be installed at least 10 feet horizontally from any manhole, catch basin, or other sources of contamination, including septic tanks, forcemains, pressurized piping routed to mound systems, and drainfields (see Section 609.6.1). The 10-foot isolation distance must be measured from the outer edge of the pipe to the outer edge of the contamination source.

24. Sewers or drainage piping crossing above or less than 12 inches below water piping must be constructed of materials approved for use within a building (see Sections 609.2, 720.1, and Table 701.2). The water piping should not contain any joints or connections within 10 feet of the crossing.

25. A minimum horizontal separation of 10 feet must be maintained between the water service and any sewer, whenever possible (see Section 721.1 and Table 721.1). Common trench installation must comply with Sections 609.2, 720.1, and Table 701.2. When the sewer material is not approved for use within a building:
    a. The bottom of the water pipe must be at least 12 inches above the top of the sewer.
    b. The water pipe must be on a solid shelf at least 12 inches horizontally from the sewer.

26. Cleanout intervals may not exceed 100 feet for exterior sanitary sewers (see Section 719.1). Manholes at intervals not exceeding 300 feet may be used per Section 719.6.

27. The plans indicate that the water treatment system trench drain has its own building sewer that connects to draintile approximately 150 feet south of the building. The combined drain pipe is daylighted approximately 75 southwest of Building Nos. 25. Sewage or other waste must not be discharged into surface or subsurface water unless it first has been subjected to an acceptable form of treatment approved by the Pollution Control Agency (see part 4714.0100, subpart W). Provisions must be made to isolate the perforated pipe from the trench drain discharge piping so that it can be tested in accordance with Section 723.0.

28. The General Notes on the Raw Water Trench and Potable Water Distribution Plan indicate that directional drilling of water supply piping is allowed if already constructed infrastructure impedes the ability to lay the pipe in an open trench. Additional information must be submitted for review and approved by DLI prior to installation. Each directional drilling location will be considered on a case-by-case basis.

29. All materials used in potable water systems must meet the requirements of NSF 61 (see Section 604.1). Pipe and fittings with lead content must not exceed 0.25 percent lead in the wetted surface material (see Section 604.2).

30. An accessible blue 14 AWG minimum tracer wire suitable for direct bury must be installed for the AWWA C901 polyethylene (PE) water supply piping that is being routed near the maintenance building (see Section 604.10.1). The previous pipe route was approved as a part of Plan No. PB-R2311-0074.

31. Materials used for exterior building sewer piping must comply with Table 701.2.

32. Materials used for water distribution piping must comply with Table 604.1. Cross-link polyethylene (PEX) water distribution systems must meet Section 605.9:
    a. ASTM F876 tubing must be marked with the standard of the fittings to be used.
    b. The fittings must be marked with ASSE 1061, ASTM F877, ASTM F1807, ASTM F1960, ASTM F1961, ASTM F2080, ASTM F2159, ASTM F2735, or CSA B137.5.

33. PVC drain, waste, and vent systems shall meet Table 701.2 and Section 705.6:
    a. Joints must be mechanical or push-on with an ASTM D3212 elastomeric seal, or solvent welded using ASTM F656 **purple** primer and ASTM D2564 solvent cement. Schedule 80 pipe may be threaded.
    b. Support above-ground horizontal pipes at each horizontal branch connection and at least every 4 feet. Above-ground runs must use expansion joints every 30 feet per Table 313.3.1.

34. The plumbing system must be tested in accordance with Sections 609.4 and 712.0. The potable water system must be disinfected per Section 609.9.

NOTES:

1. The scope of this project consists of the construction of a new maintenance building. The plumbing includes the following:
    a. A water heater, five floor drains, a trench drain, two clothes washers, a kitchen sink, a water closet, and a lavatory.
    b. The water supply piping between the lake water pump and the water treatment system in the maintenance building. This 2-inch PEX water supply pipe will be installed inside of a 4-inch PE casing pipe.
    c. Some of the treated water distribution piping that was approved in Plan No. PB-R2311-0074 is being rerouted in concert with the lake water supply piping as a part of this project.

2. This facility will be served by a surface water source and a new on-site sewage treatment system. The water treatment system trench drain has its own building sewer that connects to draintile that is daylighted.

3. The water treatment system includes, at minimum, three 3,000-gallon water storage tanks, a 3,000-gallon backwash storage tank, a 3,000-gallon lake water holding tank, three pressure tanks, three pumps, and filters/chemical injection.

4. Sewage treatment system plans must be reviewed by the appropriate local unit of government for compliance with Minnesota Rules, Chapters 7080 or 7081. An additional permit may be required by MPCA for design flows over 10,000 gallons per day. MPCA may be contacted at 651-296-6300 or 800-657-3864.

5. The licensing authority may require additional plans, information, and fees. Changes to the plumbing system may result. Any significant plumbing changes must be approved by this office prior to installation. Contact information for the state and local environmental health offices for licensing food, beverage, and lodging facilities can be found at:
   https://www.health.state.mn.us/communities/environment/food/docs/license/locals.pdf

   The Minnesota Department of Health should be contacted regarding requirements for the lake source water system and the water treatment system.

6. The water distribution piping throughout the site was approved as Plan No. PB-R2311-0074. The building sewers and interior plumbing for Building Nos. 11 through 20 were approved as Plan No. PB-R2403-0174. The building sewers and interior plumbing for Building Nos. 21, 22, 23, and 45 were approved as Plan No. PB-R2403-0172. The building sewers and interior plumbing for Building Nos. 1 through 10 and 24 through 44 were approved as Plan No. PB-R2403-0175.

7. The current Minnesota Plumbing Code, Chapter 4714, and related information can be found at: http://www.dli.mn.gov/business/plumbing-contractors/2020-minnesota-plumbing-code

Authorization may be withdrawn if installation does not begin within one year. Additional requirements may result from changed conditions or additional information.

Approved:

Scott Sawyer, P.E.
Public Health Engineer
Plumbing Plan Review and Inspections Unit
651/284-5803
scott.sawyer@state.mn.us

cc: Midwest Water Engineering LLC
John Leupke
File

DEPARTMENT OF LABOR AND INDUSTRY

Division of Construction Codes and Licensing

REPORT ON PLUMBING PLANS

PROJECT: Cliff Dweller Water Treatment System, 6452 MN-61, Tofte Township, Cook County, Minnesota, *Plan No. PB-R2408-0019*

OWNERSHIP: Thomas McAleer, 6452 MN-61, Tofte, MN 55615
SUBMITTER: Midwest Water Engineering LLC, 19406 East Bethel Boulevard NE, Cedar, MN 55011

Plans Dated: October 17, 2024
Initial Date Received: December 18, 2024
Last Date Received: February 4, 2025
Date Approved: February 11, 2025

This review is limited to the provisions of the Minnesota Plumbing Code, Minnesota Rules, Chapter 4714 and assumes the data on which the design is based are correct. Approval is contingent upon meeting the requirements listed below. **A copy of the approved plans and this report must be retained at the project location.**

INSPECTIONS: The Minnesota Department of Labor and Industry (DLI) will be inspecting the plumbing for this project, including utility installations. Please contact Brad Jensen at 218/290-1591 for all plumbing inspections. No plumbing work may be covered prior to inspection. A separate permit may be required for interior plumbing and site utilities. The installer must verify that the required inspection fee has been submitted before scheduling. Please see: http://www.dli.mn.gov/business/plumbing-contractors/plumbing-inspections

REQUIREMENT(S):

1. All plumbing shall be installed in accordance with Chapter 4714. All pipe, fittings, materials, and devices shall be listed or labeled by a third-party listing agency and comply with the applicable standards referenced in the code (see Sections 301.2 and 1701.1).

2. The information received January 29, 2025 and February 4, 2025 appears to question the application of the Minnesota Plumbing Code terms “building supply”, “water distribution pipe”, and “potable water” to the proposed work. It appears to contend that the well does not supply potable water and is therefore not subject to the pipe material and installation requirements of the Minnesota Plumbing Code until a point after the proposed filtration system. The Minnesota Well Index (MWI) indicates that unique well no. 663325 was constructed on May 2, 2002 as a non-community public water supply, and its current designation is transient non-community public water supply. It is not identified by the Minnesota Department of Health as a non-potable water source. If it were classed as a non-potable water source, it would not be permitted to supply the building (see Minnesota Plumbing Code, 4714.0100, A).

   The plans indicate a pressure tank near the building supply entrance to the building. The water filtration system is located downstream of this pressure tank which then discharges indirectly to a battery of six 220-gallon gravity water storage tanks. The gravity storage tanks are then connected to a water pressure booster system having a pump and pressure tank.

   The term “building supply” means the *pipe* carrying water from the source of supply to the pressure tank (see Section 204.0). The building supply ends at the first pressure tank in the building, not at a subsequent downstream pressure tank contained in a water pressure booster system. Water conditioning equipment is not within the scope of a building supply pipe. The building supply pipe and water distribution pipes must meet the material requirements of the Minnesota Plumbing Code (see Section 604.1 and Table 604.1). ASTM D1785 PVC is not permitted for water distribution systems and may not be used downstream of the first pressure tank at the building supply entrance to the building (see Table 604.1).

The potable water storage tanks are regulated by the Minnesota Department of Health and by the Minnesota Plumbing Code, Section 607.0 and are subject to the requirements of both. The Minnesota Plumbing Code does not recognize these tanks as part of a water conditioning system. The storage tanks and water pressure booster system are means of additional capacity required by Section 608.1 to remedy inadequate well water supply.

3. Submitted information appears to indicate the existing booster pump has been replaced sometime since 2010 system modifications. This office could find no record of plan review or approval for these modifications. The submitted specification for the current pump indicates a pump output of 27 gallons per minute at 5 feet of suction lift and 50 psi discharge pressure. Using Appendix A and the submitted information, the peak water demand of the plumbing fixtures served is approximately 62 gallons per minute. The booster pump supplies less than half of the peak water demand. Specifications for the pressure tank were not provided. The booster pump must be replaced with a pump that can maintain 15 psi minimum at the controlling fixture during the calculated peak demand (see Section 608.1 and Appendix A). Verify that a low-pressure cutoff switch set at 10 psi minimum is located on the pump suction line within 5 feet of the inlet (see Section 609.8).

4. Water distribution piping must comply with applicable standards in Table 604.1, including the following partial list:
   a. Copper water distribution pipe must meet ASTM B42, B43, B75, B88, B135, B251, B302, or B447 (see Table 604.1). Push-fit fittings must comply with ASSE 1061. Press-connect fittings must meet ASME B16.51. These fittings must be installed per the manufacturer's installation instructions (see Section 605.1.3).
   b. Cross-link polyethylene (PEX) must meet Section 605.9 and Table 604.1:
      i. The tubing must comply with ASTM F876, ASTM F877, or CSA B137.5.
      ii. ASTM F876 tubing must be marked with the standard of the fittings to be used.
      iii. The fittings must be marked with ASSE 1061, ASTM F877, ASTM F1807, ASTM F1960, ASTM F1961, ASTM F2080, ASTM F2159, ASTM F2735, or CSA B137.5.
   c. CPVC water distribution systems must meet Section 605.2 and Table 604.1:
      i. Pipes must meet ASTM Standards D2846, F441, F442, or CSA B137.6.
      ii. Solvent cement must comply with ASTM F493. Solvent cement requiring the use of primer must be orange. Primer must meet ASTM F656 and be colored. Listed one-step yellow or red solvent cement is permitted for ½-inch through 2-inch ASTM D2846 pipes and ASTM F442 ½-inch through 3-inch pipes only.
      iii. Push-fit fittings must comply with ASSE 1061.
      iv. The installation must include provisions for expansion and contraction (see Section 312.2).

5. The plumbing system shall be tested in accordance with Sections 609.4 and 712.0.

6. The water distribution system shall be disinfected per Section 609.9.

NOTE(S):

1. The scope of this project consists of the remodelling of an existing building. The plumbing installation includes water distribution piping to and from water conditioning filters.

2. This facility will be served by an existing water supply well and an individual sewage disposal system.

3. The current Minnesota Plumbing Code, Chapter 4714, and related information can be found at: http://www.dli.mn.gov/business/plumbing-contractors/2020-minnesota-plumbing-code

Authorization may be withdrawn if installation does not begin within one year. Additional requirements may result from changed conditions or additional information.

Approved:

Bradley C. Erickson
Public Health Engineer
Plumbing Plan Review and Inspections Unit
http://www.doli.state.mn.us/business/get-licenses-and-permits/plumbing-plan-review
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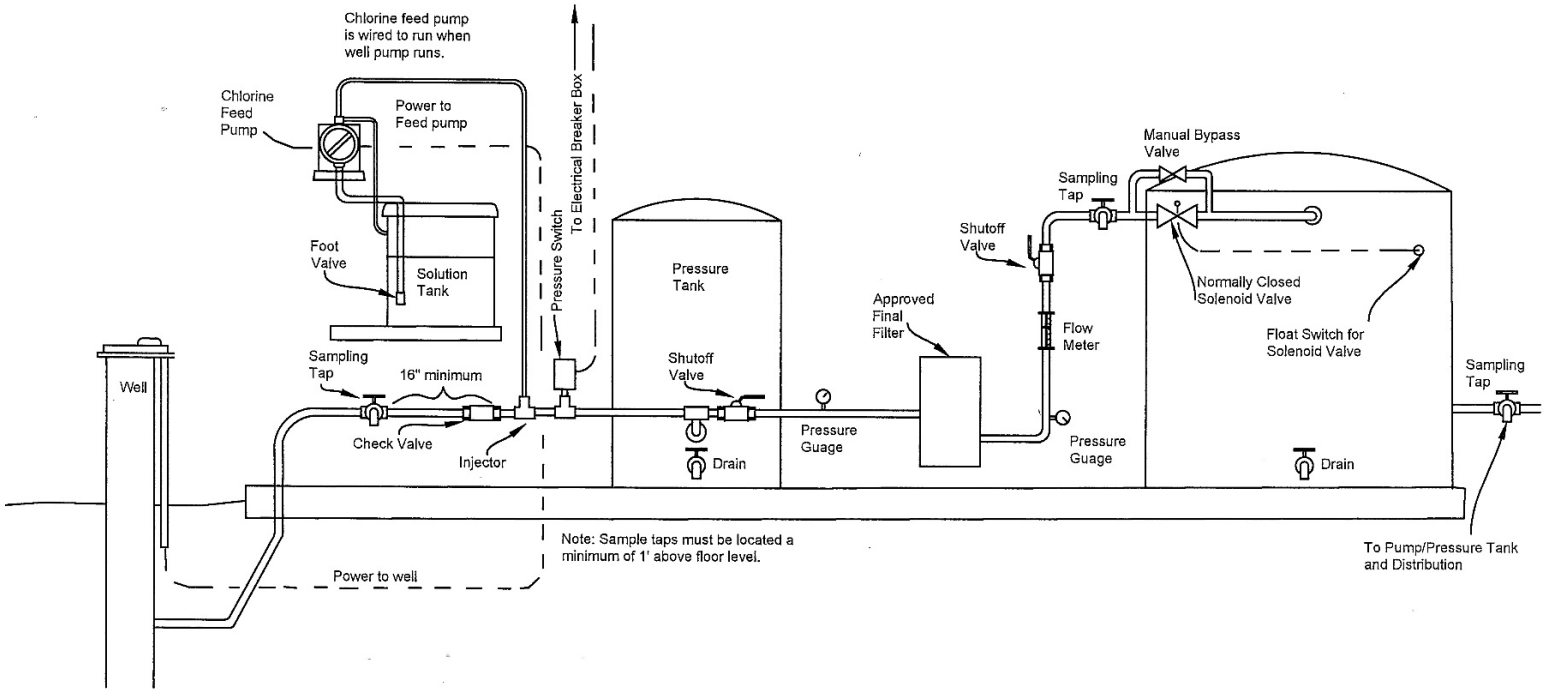
cc: Midwest Water Engineering, LLC
Thomas McAleer
File

Schematic of a Small GWUDI Treatment Plant

EXAMPLE ONLY: NOT FOR CONSTRUCTION



Water is pumped from a well and is treated with chlorine before flowing through filtration and storage. The final filter is rated for the removal of microorganisms. Storage allows for contact time before re-pressurization and service to the distribution system.