



State of Utah

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Governor

GREG BELL
Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF DRINKING WATER
Kenneth H. Bousfield, P.E.
Director

September 11, 2013

Evan D. Miller
Powder Mountain Ski Resort
P.O. Box 270
Eden, UT 84310

Dear Mr. Miller:

Subject: **Conditional Plan Approval**, Summit at Powder Mountain PRUD Phase 1 (DS001 Distribution System), and **Exception to R309-105-9** Pressure Requirements, System #29028, File #9318

On August 6, 2013, the Division of Drinking Water (the Division) received the plans and specifications for the distribution system for Phase 1 of the Summit at Powder Mountain PRUD from your consultant, Ryan Cathey, P.E., of NV5, Inc. Also received on this date was the updated Hydraulic Model for Phase 1 only, and an exception request to water distribution system pressure requirement in R309-105-9. The Division received the preliminary engineer design plans for the distribution system and draft Hydraulic Model Report on March 18, 2013. The Division provided review comments on these documents in a letter dated July 17, 2013 from Bob Hart, P.E. Mr. Cathey provided a response to the review comments in a letter dated August 8, 2013.

The Summit Group's Master Plan shows the development of 2,500 estate homes, condos, town houses, and cabins at the Powder Mountain Resort. The Phase 1 of the Summit at Powder Mountain PRUD has the potential for 154 connections to the water system. The following water infrastructure being developed by the Summit Group will become part of the Powder Mountain Water and Sewer District:

- The distribution system serving Phase 1 of the Summit at Powder Mountain PRUD (154 connections) is reviewed under File #9318.
- The drilling of the Hidden Valley PWS Well (WS008) to provide water to Phase 1 of the Summit at Powder Mountain PRUD is being reviewed under Project #9428.
- The construction of the Hidden Lake 415K Gallon Tank (ST004) and the well equipping of the Hidden Lake PWS Well (WS008) (Project #9319) were approved by the Division in a letter dated July 22, 2013.

Our understanding of the project for the Phase 1 distribution system is the installation of a 16-inch water line in the Summit Pass roadway, which will become a county road, to deliver water to four areas in Phase 1 of the Summit at Powder Mountain PRUD. There are five sets of drawings that were submitted:

1. Summit at Powder Mountain Phase 1 – Summit Pass & Spring Park
2. Summit at Powder Mountain Phase 1A – Horizon Run
3. Summit at Powder Mountain Phase 1B – Heartwood Drive
4. Summit at Powder Mountain Phase 1C – Copper Crest Road
5. Summit at Powder Mountain Phase 1D – Meridian Ave., Daybreak Ridge, and Rolling Drive

There will be one pressure reducing valve station in the Summit Pass roadway. The piping for the distribution system will be approximately 23,500 feet of HDPE pipe. The water lines in the four areas are mostly 10-inch and 12-inch HDPE pipe. Approximately 30 fire hydrants will be installed.

We have completed our review of the plans and specifications, stamped and signed by Ryan Cathey, P.E., and dated July 30, 2013, and find they basically comply with the applicable portions of Utah's Administrative Rules for Public Drinking Water Systems in R309. **We hereby approve the proposed plans to construct the distribution system (DS001) for Phase 1 of the Summit at Powder Mountain PRUD subject to the following conditions:**

1. The waterline plans for six lots (**1, 2, 3, 4, 9, and 10**) were not included in the plans that were submitted. These lots will be served with a branch waterline in the common driveway serving these lots. Per the hydraulic model, the drop in elevation will require a pressure reducing valve. **The waterline plans for these lots shall be submitted to the Division for review and approval prior to construction.**
2. The waterline plans to serve 15 nest cabins on lot 35 off Heartwood Drive were not included in the plans that were submitted. **The waterline plans for the 15 nest cabins shall be submitted to the Division for review and approval prior to construction.**
3. The waterline plans to serve 20 nest cabins on lot 116 off Daybreak Ridge Drive were not included in the plans that were submitted. **The waterline plans for the 20 nest cabins shall be submitted to the Division for review and approval prior to construction.**

Ryan Cathey, P.E., requested that the Director, per State of Utah Administrative Rules for Public Drinking Water Systems *R309-500-4*, titled Authority grant an exception to Rule *R309-105-9* Minimum Water Pressure. This rule requires all new water systems shall be designed and shall meet the following minimum water pressures at points of connection:

- (a) 20 psi during conditions of fire flow and fire demand experienced during peak day demand;
- (b) 30 psi during peak instantaneous demand; and,
- (c) 40 psi during peak day demand.

The hydraulic model shows that lots 24-34 for single family homes and lot 35 which will have 15 nest cabins cannot meet the 40 psi minimum peak day demand for all operating conditions. If the storage tank is full, 46.0 psi pressure is provided to these lots during peak day demand, but at the lowest operating level of the tank (only the 250,000 gallons of fire storage left in the tank); only 38.0 psi pressure is provided to these lots during peak day demand. If the storage tank was essentially empty, 34.0 psi is provided to these lots during peak day demand. The condition where peak day demand would be less than the required 40 psi would be unusual and temporary. The water system meets the minimum pressure requirements in all scenarios of peak instantaneous demand and peak day demand with fire flow. There is not a site to locate the storage tank at a higher elevation without going a considerable distant. Due to the conditions of the earthwork at the Hidden Lake 415K Gallon Tank site, the cost associated with raising the tank elevation is cost prohibitive. The water system is proposing to build the tank as designed in the Hidden Lake 415K Gallon Tank project (File #9319).

The Division concurs with your evaluation of the pressure provided to the single family homes on lots 24-34 and the 15 nest cabins on lot 35. There would be minimal improvement to the protection of public health, if any, from modifying the tank design to a higher elevation. The proposed design of the distribution system and the storage tank elevation meets the intent of the rule in providing adequate pressure to all connections. The cost to correct the slight decrease to under 40 psi during peak demand and the unusual condition of the tank being at its lowest operating level, is not justified by any improvement to protection of the public health for this water system. On this basis, **an exception to R309-105-9 Minimum Water Pressure is hereby granted for the single family homes on lots 24-24 and the 15 nest cabins on lot 35.**

This approval pertains to construction only. **An operating permit must be obtained from the Director before the distribution system (DS001) for Summit at Powder Mountain PRUD Phase 1 may be put into service.** A checklist outlining the items required for operating permit issuance is enclosed for your information.

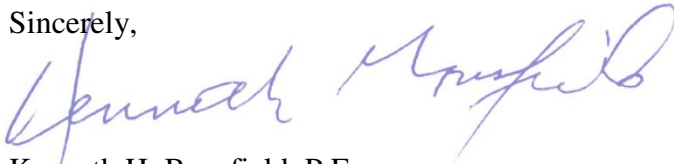
Approvals or permits by local authority or county may be necessary before beginning construction of this project. As the project proceeds, notice of any changes in the approved design, as well as any change affecting the quantity or quality of the delivered water, must be submitted to the Division. We may also conduct interim and final inspections of this project. Please notify us when actual construction begins so that these inspections can be scheduled.

This approval must be renewed if construction has not begun or if substantial equipment has not been ordered within one year of the date of this letter.

Evan D. Miller
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If you have any questions regarding this letter, please contact Bob Hart, of this office, at (801) 536-0054, or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,



Kenneth H. Bousfield, P.E.
Director

REH

Enclosure — Operating Permit Checklist

cc: Louis Cooper, Env. Director, Weber-Morgan Health Department, lcooper@co.weber.ut.us
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DDW-2013-009235

Division of Drinking Water Checklist for Issuing Operating Permits

Water System Name: _____ System Number: _____

Project Description: _____ File Number: _____

The following items must be submitted and found to be acceptable for operating permit issuance with the exception of distribution lines without booster pumps and/or pressure-reducing valves. *[Waterline projects without booster pumps and/or pressure-reducing valves may be placed into service prior to submittal of all items or the Division's issuance of an operating permit if: (1) the water system has officially designated a professional engineer (P.E.) responsible for the entire water system; and, (2) if this designated P.E. has received a "Certification of Rule Conformance" statement issued by a P.E. and evidence of satisfactory bacteriological sample result. In this case, a public water system will submit all items needed for obtaining an operating permit for each distribution system project even after the new waterlines have been placed into service as determined by the water system's designated P.E.]*

- Utah Registered Engineer's Certification of Rule Conformance that all conditions of plan approval (including conditions set forth by the Division Director in any conditional approval letter) have been accomplished
- Utah Registered Engineer's statement of what plan changes, if any, were necessary during construction and a Certification of Rule Conformance that all of these changes were in accordance with applicable Utah Administrative Code, *R309-500 through R309-550, Drinking Water Facility, Construction, Design, and Operation Rules*
- As-built drawings have been received at the Division (unless no changes were made to the previously submitted and approved pre-construction drawings)
- Confirmation that the record drawings have been received by the water system (unless no changes were made to the previously submitted and approved pre-construction drawings)
- Evidence of proper flushing and disinfection in accordance with the appropriate ANSI/AWWA Standards
 - ANSI/AWWA C651-05 AWWA Standard for Disinfecting Water Mains
 - Two consecutive sample sets (each 1200 feet, end-of-line, each branch, etc.), none positive, at least 24 hours apart
 - ANSI/AWWA C652-02 AWWA Standard for Disinfection of Water-Storage Facilities
 - One or more samples, none positive
 - ANSI/AWWA C653-03 AWWA Standard for Disinfection of Water Treatment Plants
 - Two consecutive samples per unit, none positive, no less than 30 minutes apart
 - ANSI/AWWA C654-03 AWWA Standard for Disinfection of Wells
 - Two consecutive samples, none positive, no less than 30 minutes apart
- Water quality data, where appropriate *[Guidance: Include appropriate raw and finished water data that demonstrate the performance of the new treatment facility. Storage tank water should be analyzed for residual volatile organic compounds after tank interior painting or coating.]*
- Confirmation that the water system owner has received the O&M manual for the new facility
- Location data of new storage tank, treatment facility, or source, if applicable