



State of Utah

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Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF DRINKING WATER
Marie E. Owens, P.E.
Director

April 24, 2017

Robert Thomas
General Manager
Wolf Creek Water and Sewer Improvement District
P.O. Box 658
Eden, Utah 84310

Subject: **Feasibility Evaluation**, Drinking Water Service to Trappers 8 Subdivision from the Wolf Creek Water & Sewer Improvement District, Water System #29013, File #10814

This is not Plan Approval for construction.

Dear Mr. Thomas:

The Division of Drinking Water (the Division) received your request concerning the capacity of the Wolf Creek Water & Sewer Improvement District (The District) to provide drinking water service to the Trappers 8 Subdivision on April 5, 2017. This feasibility evaluation is solely based on the information we received from the District and the existing records available in the Division's database.

The Division's estimate is based on:

- The present number of equivalent residential connections (ERC's) the District is obligated to serve – The District indicated in the attached Project Notification Form (PNF), which we received on April 5, 2017, that the District currently is obligated to serve 1,089 ERC's, and the proposed Trappers 8 Subdivision will add 18 new residential connections (18 ERC's). Therefore, our estimate is based on 1,107 ERC's (i.e. 1089 plus 18 ERC's);
- No Irrigated acreage — which was provided by the District in their last sanitary survey and verified on April 11, 2017 by the Division; and
- Fire flow required by local fire code officials.

This evaluation is courtesy technical assistance, and is not meant to be a detailed or accurate engineering analysis. The Division does not track or verify the number of obligated connections or the status of the obligated connections. It is the responsibility of the District and Weber County to verify all information for planning purposes.

Per Utah Administrative Rule *R309-510* Minimum Sizing Requirements, the number of connections served by a public water system is affected by:

- Source water capacity;
- Storage capacity; and
- Available water rights.

Among these three components, the one with the least capacity determines the allowable number of connections for a public water system. The Division of Drinking Water's feasibility evaluation addresses only the first two components (i.e., source and storage capacities).

The Division of Water Rights is the authority for water rights related regulations. Please consult with the Division of Water Rights directly for verification and interpretation regarding water rights.

The requirements related to indoor water use for these components are:

- The District was granted a reduction in required source capacity on August 27, 2012 (File #9042), which resulted in a requirement to provide **391 gallons per day (gpd) per (ERC) from its water source(s)**;
- A public water system must be able to provide **400 gallons per ERC of storage**;

Furthermore:

- If a public water system provides water for irrigation use, additional source capacity, storage capacity and water rights are required.
- If a public water system provides water for fire suppression, additional storage capacity is required.

Source Capacity

Based on the Division records and the information provided by the District, the District has the following approved drinking water sources and safe yields:

Source Number	Water Source Name	Safe Yield (gpm)
WS001	Wolf Creek Spring	30
WS002	Warm Springs Well	400
WS003	Highland Well – Proposed	0
WS004	Eden Hills Well	45
	Total	478

From the table above, the Division estimates the District's water source capacity to be 478 gallons per minute (gpm).

The attached capacity calculation work sheet estimates the minimum source capacity required for the District is 300.6 gallons per minute (gpm) based on indoor water use only.

It appears that the District has 177.4 gpm excess source capacity, and **has adequate source capacity to serve the Trappers 8 Subdivision.**

Storage Capacity

Based on the Division records and the information provided by the District, the District has the following approved storage tanks in service:

Storage Tank Number	Source Name	Volume (gallons)
ST001	Snowflake Tank	55,000
ST002	Wolf Creek Tank	250,000
ST003	Highland Tank	400,000
ST004	Eden Hills Tank	50,000
ST006	Retreat Tank – Proposed	0
	Total	755,000

From the table above, the Division estimates the District’s water storage capacity to be 755,000 gallons.

The attached capacity calculation work sheet estimates the minimum storage capacity required for the District is 562,800 gallons based on indoor water use only.

It appears that the District has 192,200 gallons excess storage capacity, and **has adequate storage capacity to serve the Trappers 8 Subdivision.**

Summary

Based on information made available to the Division, it appears that at the present time the District has sufficient source and storage capacities to provide drinking water service to the proposed Trappers 8 Subdivision.

The District submitted a Project Notification Form for the subject project on Trappers 8 and was granted a plan review waiver by the Division, which allows the construction of this subdivision to proceed once approval is granted by Weber County.

If you have any questions regarding this letter, you can contact Kelly Casteel at (801) 536-4265 or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,



Marie E. Owens, P.E.
Director

KDC/ym/dg/hb

Enclosure — Wolf Creek Water & Sewer Improvement District Capacity Calculation – April 12, 2017

- cc: Louis Cooper, Env. Director, Weber-Morgan Health Department, lcooper@co.weber.ut.us
- Sean Wilkinson, Weber County Planner, swilkinson@co.weber.ut.us
- Jared Andersen, P.E., Weber County Engineer, jandersen@co.weber.ut.us
- Dan White, Gardner Engineering, dan@gecivil.com
- Tyler Nielson, Gardner Engineering, tyler@gecivil.com
- Kelly Casteel, Division of Drinking Water, kcasteel@utah.gov
- Ross Hanse, Regional Engineer, Division of Water Rights, rosshansen@utah.gov

Division of Drinking Water – Water System Capacity Calculation Sheet (Last Update 3/30/2017)

Enter the green cells only

System Name **Wolf Creek Water & Sewer improvement District**

System Number **29013**

1.1 Indoor Water Use

Convert "Number of other connections" (Cell E9) to ERCs here. [ERCs of other connections = peak day demand of other connections in gal per day / 800 gpd]

Number of residential connections -----

1,089

Number of other connections --- **18**

ERCs of other connections

18.0

(Example: water use of 2 factories equals to water use of 55 homes.)

Enter number of non-residential connections, e.g., 2 industrial connections.

Total Equivalent Residential Connections (ERCs) **1,107.0**

MIN. REQUIREMENTS FOR INDOOR WATER USE			
Source		Storage	
gpd/ERC	Total (gpm)	Gallons/ERC	Total (gallons)
391	300.6	400	442,800

1.2 Outdoor Water Use

Is the drinking water used for outdoor irrigation?

Yes No

Residential ERCs using drinking water for irrigation -----

0

Percentage of Residential ERCs using DW for irrigation -----

0%

Average irrigated acreage per residential connection -----

0.00

Total irrigated acreage of other connections (park, school, etc.) -----

0.00

Irrigation zone

3

Enter estimated irrigated acre

Enter total irrigated acres of other connections here.

Select Irrigated Zone # from the pick list. See "Irrigation Demands & Map" tab on the bottom of the screen.

(Enter notes here regarding whether and what % of irrigation water is supplied by PWS.)

MINIMUM REQUIREMENTS FOR IRRIGATION USE			
Source		Storage	
gpd/ERC	Total (gpm)	Gallons/ERC	Total (gallons)
0	0.0	0	0

1.3 Fire Flow Water Use

Does the water system provide fire protection?

Yes No

Maximum fire flow demand (in gpm) for water system or pressure zone -----

1,000

Maximum fire suppression duration (in hours) for water system or pressure zone -----

2

Required Fire Suppression Storage (in gallons) -----

120,000

Enter fire flow in gpm.

Enter duration in hours.

(*Verify req'd fire flow and duration with local fire code officials.* Enter notes here, e.g. fire official contact info or comments.)

2. Summary of Water System Capacity Requirements

MIN. REQUIREMENTS FOR WATER SYSTEM			
Source (indoor + outdoor)		Storage (indoor + outdoor + fire)	
gpd/ERC	Total (gpm)	Gallons/ERC	Total (gallons)
391	300.6	400	562,800

2.1 Does this system have adequate source capacity (per R309-510-7)?

This source capacity assessment is a general overall system calculation. It may not reflect the variations in individual areas or pressure zones.

Required Source Capacity 300.6 gpm

Existing Source Capacity 478.0 gpm

Source Capacity Deficit None gpm

Existing % of Total Req'd 159.0%

Autolink to 2 "Total Source" cell above.

Autolink to 4.2 "Total Existing Source Capacity" cell below.

Source deficit indicates that: (1) additional source capacity is needed, and (2) source deficiency should be assessed.

Less than 100% indicates: (1) additional source capacity is needed, and (2) source deficiency should be assessed.

2.2 Does this system have adequate storage capacity (per R309-510-8)?

This storage capacity assessment is a general overall system calculation. It may not reflect the variations in individual areas or pressure zones.

Total Required Storage	562,800	gal	Autolink to 2 "Total Storage" cell above.
Existing Storage Capacity	755,000	gal	Autolink to 4.3 "Total Existing Storage Capacity" cell below.
Storage Capacity Deficit	None	gal	Storage deficit indicates that: (1) additional storage volume is needed, and (2) storage deficiency should be assessed.
Required Fire Storage	120,000	gal	
Is storage deficiency solely due to fire storage?	Not Applicable		If NO, answer one of question set 2.01 to 2.05 in ESS. If YES, answer one of question set 2.06 to 2.10 in ESS.
Existing % of Total Req'd	134.2%		Less than 100% indicates: (1) additional storage capacity is needed, and (2) storage deficiency should be assessed.

3. Transient PWS Indoor Water Use — ERC Calculation (See R309-510, Tables 510-1, 2, & 4 for other facility types.)

Facility Type	MINIMUM REQUIREMENTS FOR INDOOR USE		Storage		ERC/site or pad	Total # of sites/pads	ERCs
	Source	Storage	Gallon/person	Gallon/site or pad			
Modern Recreation Camp	GPD/person*	GPD/site or pad					
Modern Recreation Camp	60	0	30	0	0.00		0.0
Semi-Developed Camp w/ flush toilets	20	0	10	0	0.00		0.0
Semi-Developed Camp w/o flush toilets	5	0	2.5	0	0.00		0.0
RV Park	N/A	100	N/A	50	0.13		0.0
Number of people per camp site							
Roadway Rest Stop w/ flushometer valves	7	3.5	8.8		0.0		

If applicable, enter number of people per camp site here.

If applicable, use this number in cell 18 or cell 19 on Page 1.

4. Data Input for Calculating ERCs, Source and Storage

Wolf Creek Water & Sewer improvement Di

4.1 Projected ERCs Calculation (optional)

Total Projected ERCs	1,107
Existing Residential Connections	1089
Obligated Future ERCs (enter below)	18
Trappers 8 Subdivision	18

Use this number in Cell 18 ("Number of residential connections") on Page 1 to calculate PROJECTED demand & req'ts (including both existing & future connections).

Diaphragm or air pressure tanks shall NOT be considered effective storage volume for (1) community systems, or (2) NTNC with significant demand UNLESS an exception has been granted.

file #9042 Granted reduction of source capacity requirement, reduced to 391 gpd

4.2 Summary - Existing Sources (enter in green cells below)

Total Existing Source Capacity (in gpm)		478
WS001	Wolf Creek Spring	30
WS002	Warm Springs Well	400
WS003	Highlands Well - Proposea	0
WS004	Eden Hills Well	48
Maximum ERCs (assuming indoor use only)		860.4

4.3 Summary - Existing Storage Tanks (enter below)

Total Existing Storage Cap. (in gallons)		755,000
ST001	Snowflake Tank	55,000
ST002	Wolf Creek Tank	250,000
ST003	Highland Tank	400,000
ST004	Eden Hills Tank	50,000
ST006	Retreat Tank - Proposed	0