State of Utah

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

April 26, 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 Fairways 4 & 5 Subdivisions from the Wolf Creek Water & Sewer Improvement District, System #29013, File #10813

**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 Fairways 4 & 5 Subdivisions 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 1,049 ERC's, and the proposed Fairways 4 & 5 Subdivisions will add 40 new residential connections (40 ERC's). Therefore, our estimate is based on 1089 ERC's (i.e. 1049 plus 40 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 very 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 sources;**
- 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 295.7 gpm based on indoor water use only.

It appears that the District has 182.3 gpm excess source capacity, and **has adequate source capacity to serve the Fairways 4 & 5 Subdivisions.**

**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 555,600 gallons based on indoor water use only.

It appears that the District has 199,400 gallons excess storage capacity, and **has adequate storage capacity to serve the Fairways 4 & 5 Subdivisions.**

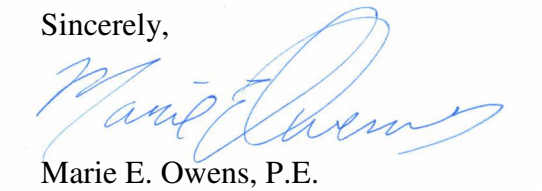
**Summary**

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 Fairways 4 & 5 Subdivisions.

The District submitted a Project Notification Form for the subject project on April 5, 2017 and was granted a plan review waiver by the Division, which allows the construction of Fairways 4 & 5 Subdivisions 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
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# 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 ---------- 1,049

Number of other connections --- 40 ERCs of other connections 40.0 (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) **1,089.0**

| MIN. REQUIREMENTS FOR INDOOR WATER USE | | | |
|---|---|---|---|
| Source | | Storage | |
| gpd/ERC | Total (gpm) | Gallons/ERC | Total (gallons) |
| 391 | **295.7** | 400 | **435,600** |

## 1.2 Outdoor Water Use

Enter estimated irrigated acre

Is the drinking water used for outdoor irrigation? ☑ Yes ☑ No

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

Percentage of Residential ERCs using DW for irrigation ---------- >>> 0%

Average irrigated acreage **per residential connection** ---------- >>>

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

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

Enter **total** irrigated acres of **other connections** here.

Irrigation zone 3

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

| 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

Enter fire flow in gpm.

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**

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

Enter duration in hours.

## 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 | **295.7** | 400 | **555,600** |

***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*** | 295.7 | ***gpm*** |
| ***Existing Source Capacity*** | 478.0 | ***gpm*** |
| ***Source Capacity Deficit*** | **None** | ***gpm*** |
| ***Existing % of Total Req'd*** | **161.7%** | |

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*** | 555,600 | ***gal*** |
| ***Existing Storage Capacity*** | 755,000 | ***gal*** |
| ***Storage Capacity Deficit*** | **None** | ***gal*** |
| *Required Fire Storage* | 120,000 | ***gal*** |
| ***Is storage deficiency solely due to fire storage?*** | **Not Applicable** | |
| ***Existing % of Total Req'd*** | **135.9%** | |

Autolink to 2 "Total Storage" cell above.

Autolink to 4.3 "Total Existing Storage Capcity" cell below.

Storage deficit indicates that: (1) additional storage volume is needed, and (2) storage deficiency should be assessed.

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.

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

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

| | MINIMUM REQUIREMENTS FOR INDOOR USE | | | | | | |
|---|---|---|---|---|---|---|---|
| | Source | | Storage | | | | |
| Facility Type | GPD/person* | GPD/site or pad | Gallons/person | Gallon/site or pad | ERC/site or pad | **Total # of sites/pads** | **ERCs** |
| **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* | | | | | | | |

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

| | Source (GPD/vehicle) | Storage (Gal./vehicle) | ERC/1000 vehicles served | Vehicles served/day | **ERCs** |
|---|---|---|---|---|---|
| **Roadway Rest Stop *w/ flushometer valves*** | 7 | 3.5 | 8.8 | | **0.0** |

If applicable, use this number in cell I8 or cell I9 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 | **1,089** |
| **Existing** Residential Connections | *1049* |
| Obligated **Future** ERCs *(enter below)* | 40 |

| | |
|---|---|
| *Fairways 4 & 5* | *40* |

Use this number in Cell I8 ("Number of residential connections") on Page 1 to calculate PROJECTED demand & req'ts (including both existing & future connections).

**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 - Proposed* | *0* |
| *WS004* | *Eden Hills Well* | *48* |

*Maximum ERCs (assuming indoor use only)* *860.4*

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.

**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* |

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