State of Utah

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Department of
Environmental Quality

Amanda Smith
Executive Director

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

March 11, 2015

Val Surrage
Taylor-West Weber WID
2815 W 3300 S
West Haven, UT 84401-9791

Dear Mr. Surrage:

Subject: **Feasibility**, Drinking Water Service from Taylor-West Weber WID for the Winslow Farr Jr. Farm Subdivision, System #29019, File#9877

The Division of Drinking Water (the Division) received your request concerning the capacity of the Taylor-West Weber WID (District) to provide drinking water service to the Winslow Farr Jr. Farm Subdivision in the District. Per the Division's database, the District presently has 1860 residential connections, 7 commercial connections, and 12 agricultural connections. The Winslow Farr Jr. Farm Subdivision will add 74 new residential connections, in addition to the 9 new residential connections with the Blue Acres Subdivision Phase 4. The number of connections that may be served is based on (1) source water capacity, (2) storage capacity, and (3) available water rights. The Drinking Water Rule, *R-109-510* Minimum Sizing Requirements, requires a water system to be able to provide 800 gallons per day per equivalent residential connection (ERC) from its sources to meet peak day indoor demand, to be able to provide 400 gallons per ERC of storage for indoor use, and to be able to provide average yearly indoor demand which is 0.45 acre-feet per ERC based on water rights. Additional source capacity, storage, and water rights are required if the system provides water for outdoor use. The water system component with the least capacity determines the allowable number of connections.

SOURCE CAPACITY

The District has the following approved drinking water sources and approved safe yields:

Source Number	Source Name	Safe Yield gpm
WS001	Big Well	900
WS002	Small Well	500
WS003	Weber Basin WCD Consecutive Connection	2000
	Total	3400

In addition, the District provides outside irrigation water for some of their connections. The attached capacity calculation worksheet estimates the required source capacity is 1095.0 gpm for indoor used and 1419.7 gpm for outdoor use. Based on source capacity, the District has 885 gpm excess source capacity which is adequate to serve the Winslow Farr Jr. Farm Subdivision.

STORAGE CAPACITY

The District has the following approved storage tanks in service:

Storage Tank Number	**Source Name**	**Volume gallons**
ST001	Million Gallon Tank	1,000,000
ST002	2 Million Gallon Tank	2,000,000
ST003	250 K Gallon Tank	250,000
	Total	3,250,000

The attached capacity calculation worksheet estimates the required storage capacity is 1,929,408 gallons. This is based on a reserve of 120,000 gallons of water storage for fire suppression, and the balance of the storage being used for indoor and outdoor use storage. Based on storage capacity, the District has over 1.3 million gallons of excess storage capacity which is adequate to serve the Winslow Farr Jr. Farm Subdivision.

WATER RIGHTS

The District has the following water rights for their sources:

Water Right Number	**Amount (acre-feet)**
35-1613	788.45
35-11723	930.77
Weber Basin WCD	465.3
Total	2184.52

The attached capacity calculation worksheet estimates the required water rights of 1,557.35 acre-feet for indoor and outdoor use. Based on water rights, the District has over 627 acre-feet of excess water rights which are adequate to serve the Winslow Farr Jr. Farm Subdivision.

SUMMARY

There is no limiting component at present, which would prevent the District from providing adequate drinking water service to the Winslow Farr Jr. Farm Subdivision.

The District has submitted a project notification form 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 me either by phone at (801) 536-0054 or e-mail bhart@utah.gov.

Sincerely,

Bob Hart

Bob Hart, P.E.
Environmental Engineer III

Enclosure - Taylor-West Weber WID Capacity Calculation - March 11, 2015

cc: Louis Cooper, Env. Director, Weber-Morgan Health Department, lcooper@co.weber.ut.us
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DDW-2015-004915.docx

Division of Drinking Water Water System Capacity Calculation Sheet (revised June 23, 2011)

Enter the green cells only.

System Name: ***Taylor-West Weber WID March 11, 2015*** **System Number:** ***29019***

1. Indoor Water Use

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

Number of residential connections - *1,952*

Number of other connections - - - *19* ERCs of other connections *19.0* *(Example: water use of 2 factory is equivalent to 30 homes.)*

Enter number of non-residential connections (e.g., 2 factory connections).

Total Equivalent Residential Connections (ERCs) **1,971**

MINIMUM REQUIREMENTS FOR INDOOR WATER USE					
Source		Storage		Water Rights	
Per ERC (gpd/ERC)	Total (gpm)	Per ERC (gallons/ERC)	Total (gallons)	Per ERC (ac-ft/yr)	Total (ac-ft/yr)
800	**1,095.0**	400	**788,400**	0.45	**886.95**

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 - - - - - - - - - - - - - - > > > *470*

Percentage of Residential ERCs using DW for irrigation - - - - - - - - - - - - - - > > > 24%

Average irrigated acreage per residential connection - - - - - - - - - - - - - - > > > *0.75*

Total irrigated acreage of other connections. - - - - - - - - - - - - - - > > > *6.00*

Based on information from Water System Manager during 2013 Sanitary Survey

Enter total irrigated acres of other connections here.

Irrigation zone *4*

Select Irrigated Zone # from the list (see "Irrigation Demands & Map" tab on the bottom of the screen).

MINIMUM REQUIREMENTS FOR OUTDOOR WATER USE					
Source		Storage		Water Rights	
Per ERC (gpd/ERC)	Total (gpm)	Per ERC (gallons/ERC)	Total (gallons)	Per ERC (ac-ft/yr)	Total (ac-ft/yr)
4,277	**1,419.7**	2,136	**1,021,008**	1.40	**670.40**

3. Fire Flow Requirement

Enter fire flow in gpm.

Does the water system provide fire protection? ☑ Yes ☐ No

Maximum fire suppression **demand** for *water system* or *pressure zone* (gpm) 1,000

Maximum fire suppression **duration** for *water system* or *pressure zone* (hours) 2

Required Fire Suppression Storage (gallons) - > > > **120,000**

Weber Fire District has adopted Appendix B of the Fire Code which requires a minimum of 1000 gpm for two hours for fire flow

Enter duration in hours.

Total Water System Requirements (= indoor use + outdoor use + fire flow demand)

MINIMUM REQUIREMENTS FOR WATER SYSTEM					
Source		Storage		Water Rights	
Per ERC (gpd/ERC)	Total (gpm)	Per ERC (gallons/ERC)	Total (gallons)	Per ERC (ac-ft/yr)	Total (ac-ft/yr)
5,077	**2,514.7**	2,536	**1,929,408**	1.85	**1,557.35**

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

IPS points may be assessed for lacking adequate source capacity to meet peak day and/or average yearly flow requirements.

Linked to Cell I99 below.

Linked to Cell C51 above.

Negative number means (1) additional source capacity is needed , and (2) IPS points should be assessed.

Existing Sources:	3,400.0	**gpm**
Required Source Capacity:	2,514.7	**gpm**
% of Req'd Capacity:	**135.2%**	
Difference:	**885**	**gpm**

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

IPS points may be assessed for lacking adequate storage capacity.

Existing Storage:	3,250,000	**gal**
Required Storage Capacity:	1,929,408	**gal**
% of Req'd Capacity:	**168.4%**	
Difference:	**1,320,592**	**gal**

Linked to Cell I118 below.

Linked to Cell E51 above.

Negative number means (1) additional storage volume is needed, and (2) IPS points should be assessed.

Non-Community Water Systems, ERCs for Indoor Water Use (*See R309-510, Tables 510-1, 2, and 4, for other facility type calc.)

	MINIMUM REQUIREMENTS FOR INDOOR USE						
	Source		Storage				
Facility Type	GPD/person*	Calculated GPD/site or pad	GPD/person	Gallon/site or pad	ERC/site or pad	**# of Sites or pads**	**ERCs**
Modern Recreation Camp	60	240	30	120	**0.30**	*8*	2.4
Semi-Developed Camp *w/ flush toilets*	20	80	10	40	**0.10**	*25*	2.5
Semi-Developed Camp *w/o flush toilets*	5	20	2.5	10	**0.03**	*20*	0.5
RV Park	N/A	100	N/A	50	**0.13**	*15*	1.9
*Number of people per camp site	*4*						

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

	Source (GPD/vehicle)	Storage (Gal./vehicle)	ERC/1000 vehicles served	**# of Vehicles served**	**ERCs**
Roadway Rest Stop *w/ flushometer valves*	7	3.5	**8.75**	*800*	**7.00**

Taylor-West Weber WID ***March 11, 2015***

Equivalent Residential Connection Calc.	
Existing Residential Connections	**1,952**
Number of Obligated Future ERCs	**83**
Blue Acres Subdivision	*9*
Winslow Farr Jr Farm Subdivision	*74*
Total Projected Number of ERCs	**2,035**

Linked to Cell I8 above.

If you need to calculate projected future demand (including existing & future connections), insert this number to Cell I8 "Number of residential connection."

(Enter notes here if needed.)

Source		(in gallons per minute)
WS001	*Big Well*	*900*
WS002	*Small Well*	*500*
WS003	*Weber Basin WCD CC*	*2000*
Total Source Capacity		**3400**
Max. ERC allowed (for indoor use only)		*6120*

Storage		(in gallons)
ST001	*Million Gallon Tank*	*1,000,000*
ST002	*2 Million Gallon Tank*	*2,000,000*
ST003	*250 K Gallon Tank*	*250,000*
Total Storage Capacity		**3,250,000**

Diaphragm or air pressure tanks shall not be considered effective storage volume for community systems or NTNC with significant demand.