

CEDAR CITY

2020

WATER REPORT

To The Honorable Mayor

Maile Wilson-Edwards

and

The City Council of Cedar City, Utah

**Transmitted herewith is the City Engineer's
Report on the water used by
Cedar City for the year
2020**

2020 CEDAR CITY WATER REPORT

Table of Contents		Page #
I.	Introduction	3
II.	System Information & Trends	3
III.	Water Rights Information & Trends	5
IV.	Water Usage Information & Trends	6
V.	Pumping Costs Information & Trends	8
VI.	Water Quality Information & Trends	9
VII.	Unaccounted-for Water Information & Trends	11
VIII.	Aquifer Trends	12
IX.	Water Rates	15
X.	Capital Improvement Recommendations	16
XI.	Other	17
XII.	System Map	18
APPENDIX A	System Information	
APPENDIX B	Water Rights	
APPENDIX C	Water Usage	
APPENDIX D	Pumping Costs	
APPENDIX E	Water Quality	
APPENDIX F	Unaccounted-for Water	
APPENDIX G	The Lake at the Hills - Mass Balance Sheets	
APPENDIX H	Water Conveyance Tracking Sheet	

2020 CEDAR CITY WATER REPORT

I. INTRODUCTION

The annual report of the water use and system information for Cedar City, Utah is herewith submitted to all concerned. The information included in this report is an accurate record of water usage and system information for the calendar year of 2020. Also included in this report are water usage and system information trends for previous years.

II. SYSTEM INFORMATION & TRENDS

The present water system serves a population of approximately 34,764 people, covering an area of 23,110.4 acres or 36.11 square miles. The water system (culinary water and pressurized irrigation) has a maximum supply capacity of 21,960,000 gallons per day (GPD) with 18,000,000 GPD from wells, 1,368,000 GPD from springs, and 2,592,000 GPD from surface water.

Of the total supply capacity, 16,056,000 GPD is for culinary water and 5,904,000 GPD is for pressurized irrigation water. No water that is delivered to a property in an irrigation ditch is included in this capacity. The water system's storage is composed of eleven (11) storage tanks with a capacity of 19,602,284 gallons for culinary water, the Lake at the Hills with a capacity of 32,246,000 gallons for irrigation water, and one pond at the golf course with a capacity of 2,914,100 gallons for irrigation water. The water system has a total of **249.7** miles of pipelines that includes **61.7** miles of transmission lines, located out of the City limits, **179.2** miles of pipelines located inside the City limits, and **8.8** miles of irrigation lines.

2020 CEDAR CITY WATER REPORT

SYSTEM INFORMATION TRENDS

Year	Population ¹	Area Served (Sq. Mi.)	Peak Supply Capacity			Storage	
			Total (GPD)	Culinary (GPD)	Irrigation (GPD)	Culinary (Gal.)	Irrigation (Gal.)
2012	29,275	36.01	20,808,000 ²	14,904,000	5,904,000	18,070,000	33,246,000
2013	29,118	36.01	20,808,000	14,904,000	5,904,000	17,570,000 ³	33,246,000
2014	29,162	36.01	20,808,000	14,904,000	5,904,000	19,602,284 ⁴	33,246,000
2015	29,483	36.01	20,088,000	14,184,000 ⁵	5,904,000	19,602,284	33,246,000
2016	30,184	36.04	20,088,000	14,184,000	5,904,000	19,602,284	33,246,000
2017	31,223	36.01	20,088,000	14,184,000	5,904,000	19,602,284	33,246,000
2018	31,806	36.034	20,088,000	14,184,000	5,904,000	19,602,284	33,246,000
2019	33,055	36.048	21,960,000	16,056,000 ⁶	5,904,000	19,602,284	33,246,000
2020	34,764	36.11	21,960,000	16,056,000	5,904,000	19,602,284	35,160,100 ⁷

PIPELINES

Year	Total Miles	Transmission Lines (miles)	Lines in City limits (miles)	Irrigation Lines (miles)
2012	235.7	61.7	165.2	8.8
2013	235.8	61.7	165.3	8.8
2014	236.4	61.7	165.9	8.8
2015	237.4	61.7	166.9	8.8
2016	238.9	61.7	168.4	8.8
2017	240.8	61.7	170.3	8.8
2018	242.2	61.7	171.7	8.8
2019	246.9	61.7	176.5	8.8
2020	249.7	61.7	179.2	8.8

1- Population prior to 2010 is based on estimates from the Utah Governor's Office of Planning and Budget (GOPB). Population for 2010 is based on the official count taken by the U.S. Census Bureau during the 2010 census. Population for 2011 and 2012 was estimated based on Census data for Iron County. Population starting in 2013 is based on the population for Cedar City listed in the Utah Sales Tax Distribution report for December of each year.

2- The change in total supply capacity for 2012 is based on a production loss of 350 gpm at Quichapa Well #1 and a 150 gpm increase in observed production at Quichapa Well #8.

3- The decrease in total culinary storage for 2013 is due to the demolition of the South Concrete Tank.

4- The increase in total culinary storage for 2014 is due to the construction of the new Cedar Canyon Tank.

5- The decrease in culinary capacity for 2015 is due to Quichapa Well #1 not being in use.

6- The increase in culinary capacity for 2019 is due to Quichapa Well #1 being put back in service. Also, the capacity for Enoch Well #1 was increased based on 2019 flow meter data.

7- The increase in irrigation storage in 2020 is due to the new pond at the Golf Course.

2020 CEDAR CITY WATER REPORT

III. WATER RIGHTS INFORMATION & TRENDS

At the end of 2020 the City owned 20,381.16 acre-feet (A.F.) of total water rights including 14,010.87 A.F. of underground water rights, 4,848.70 A.F. of spring water rights, and 1,521.59 A.F. of surface water rights. In 2020, the City acquired 248.10 A.F. of water rights including 248.10 A.F. of underground water rights, -0- A.F. of spring water rights, and -0- A.F. of surface water rights. Appendix B lists the water rights currently owned by Cedar City, as adjudicated by the State Engineer. It is important to note that the State Engineer may reduce the total flow of a water right when it is changed from irrigation use to municipal use. The amount of projected water rights required in 40 years is 2,040 A.F. less than the amount of water rights currently owned by Cedar City.

WATER RIGHTS TRENDS

Year	Ground Water (A.F.)	Surface Water (A.F.)	Springs (A.F.)	Total (A.F.)	40-year Outlook (A.F.) ⁸	40-year Outlook Population
2011	13,249.23	1,345.13	4,778.44	19,372.80	20,256	82,953
2012	13,459.46	1,424.63	4,778.44	19,662.53	17,516	68,885 ⁹
2013	13,489.66	1,425.11	4,778.44	19,693.21	17,495	70,260
2014	13,490.66	1,425.22	4,778.44	19,694.32	18,616	71,635
2015	13,490.66	1,435.30	4,778.44	19,704.40	18,158	73,011
2016	13,682.60	1,424.37	4,847.76	19,954.73	19,586	74,386
2017	13,683.40	1,455.33	4,847.76	19,986.49	19,518	75,761
2018	13,750.87	1,490.11	4,847.76	20,088.74	20,650	77,136
2019	13,762.67	1,530.971	4,848.70	20,142.34	19,315	78,529
2020	14,010.87	1,521.590	4,848.70	20,381.16	22,421	79,887

8- 40-year outlook population and water rights is based on population projection data from the GOPB and the current year's daily water use per person.

9- In 2012, the GOPB revised their population projections for Cedar City downward based on lower growth rates.

2020 CEDAR CITY WATER REPORT

IV. WATER USAGE INFORMATION & TRENDS

In 2020 the City delivered a total of 9,757 A.F. of culinary water and pressurized irrigation water, including 8,420 A.F. of well water, 1,337 A.F. of spring water, and 0 A.F. of surface water. The City’s culinary water system served 9,562 connections and delivered 8,333 A.F. of water, including 6,996 A.F. of well water and 1,337 A.F. of spring water.

The City’s pressurized irrigation system delivered 1,425 A.F. of water. The pressurized irrigation system was supplemented with 4.1 acre-feet of culinary water that was delivered to the Lake at the Hills. The pressurized irrigation system was used for irrigating the Cedar Ridge Golf Course, Cedar High School, Canyon View schools, Bicentennial Park and Soccer Field, the Cemetery, and Southern Utah University.

The average daily culinary and irrigation use per person per day was 251 gallons. August was the peak culinary usage month with 1,251 A.F. of water. July 20, 2020 was the peak culinary usage day with 48 A.F. of water. March 17, 2020 was the minimum culinary usage day with 5 A.F. of water.

The City and the Central Iron County Water Conservancy District (CICWCD) recharge water from Coal Creek during the winter months into recharge ponds near the airport and at Quichapa. The amount of recharge in 2020 was 2,200 A.F. of water.

WATER USAGE TRENDS

Year	Population	Connections	Total Water Usage		Type of Water (AF)		Culinary used in Pressurized Irrigation (AF)	Water Source (AF)			Per Capita (GPD)
			Gallons	AF	Culin.	Irrig.		Ground water	Springs	Surface water	
2012	29,275	8233	2,426,794,699	7448	6878	570	18.7	5595	1738	115	227
2013	29,118	8348	2,362,847,650	7251	6697	554	15.6	5379	1821	51	222
2014	29,162	8499	2,465,196,000	7565	7059	506	21.6	6064	1461	40	232
2015	29,483	8663	2,389,530,100	7333	6855	478	17.7	5825	1508	0	222
2016	30,184	8801	2,589,421,400	7947	7257	690	7.7	6304	1638	5	234
2017	31,223	8985	2,619,740,610	8040	7345	695	3.9	6532	1508	0	230
2018	31,806	9226	2,771,126,900	8504	7744	760	3.2	7174	1330	0	239
2019	33,055	9404	2,649,903,800	8132	7455	677	4.1	6418	1714	0	220
2020	34,764	9562	3,179,367,415	9,757	8,333	1,425	0.6	8,420	1,337	0	251

2020 CEDAR CITY WATER REPORT

WATER USAGE TRENDS, Cont.

Year	Peak Day (Culinary)		Minimum Day (Culinary)		Average Day (Culinary)
	Date	Gallons	Date	Gallons	Gallons
2012	July 5	14,825,900	Mar 24	1,434,200	6,123,443
2013	June 29	14,227,900	Oct 31	1,585,000	5,979,117
2014	July 4	13,369,400	Nov 22	1,099,000	6,301,793
2015	June 27	13,592,700	Dec 21	1,207,400	6,120,059
2016	July 18	14,737,100	Dec 31	1,289,000	6,460,498
2017	July 7	14,729,100	Mar 25	2,077,000	6,557,433
2018	July 2	14,675,200	Nov 17	2,014,200	6,913,446
2019	July 18	14,740,500	Nov 17	1,091,500	6,655,319
2020	10-Jul	15,674,300	17-Mar	1,623,300	7,298,855

COAL CREEK RECHARGE

Year	Recharge using excess water from Coal Creek (ac-ft)
2017	420 ±
2018	448
2019	9,058
2020	2,200 ¹⁰

10- Data for 2020 was obtained from the Central Iron County Water Conservancy District. Recharge breakdown is as follows for 2020: Schmidt pit = 1389 AF; Airport pit = 123 AF; Horse Alley pit = 339 AF; Western Rock pit = 161 AF; Quichapa pit (north of SR-56) = 188 AF.

2020 CEDAR CITY WATER REPORT

V. PUMPING COSTS INFORMATION AND TRENDS

Total power costs for Cedar City’s Water Sources in 2020 was **\$818,670.33**. The average cost to pump 1,000 gallons of water was **\$0.26**. The average cost per kilowatt-hour (kWh) was **\$0.086**. Enoch Well #3 was the most efficient source with an average pumping cost of \$0.200 per 1,000 gallons and Quichapa Well #6 was the least efficient source with an average pumping cost of \$0.430 per 1,000 gallons. Quichapa Well #1 cost the least per kWh at \$0.063 per kWh and 200 North Pump Station cost the most per kWh at \$0.177 per kWh. The revenue from metered water sales in 2020 was \$4,952,627.

PUMPING COST TRENDS

Year	Total Pumping Costs	Average Pumping Costs (per 1,000 gal.)	Average Cost per kWh	Lowest Cost Sources		Highest Cost Sources	
				Cost/1,000 Gal.	Cost/kWh	Cost/1,000 Gal.	Cost/kWh
2012	\$517,056	\$0.28	\$0.071	\$0.19	\$0.07	\$0.37	\$0.15
				Enoch #3	Q Well #8	Northfield & Q Well #6	200 N Pump
2013	\$540,978	\$0.31	\$0.077	\$0.12	\$0.07	\$0.44	\$0.17
				Enoch #3	Q Wells #7 & #8	Q Well #6	200 N Pump
2014	\$651,762	\$0.33	\$0.076	\$0.22	\$0.07	\$0.69	\$0.18
				Cemetery	Q Well #7	Q Well #6	200 N Pump
2015	\$622,472	\$0.31	\$0.078	\$0.22	\$0.07	\$0.54	\$0.10
				Cemetery & Enoch #3	Q Well #6	Q Well #5	Northfield
2016	\$678,278	\$0.33	\$0.078	\$0.19	\$0.07	\$0.47	\$0.10
				Cemetery	Q Well #5	Q Well #6	Northfield
2017	\$668,059	\$0.31	\$0.075	\$0.21	\$0.07	\$0.49	\$0.09
				Enoch #3	Q Well #8	Q Well #6	Northfield & Enoch #1
2018	\$695,834	\$0.30	\$0.070	\$0.18	\$0.07	\$0.44	\$0.09
				Enoch #3	Q Well #5	Q Well #6	Enoch #1
2019	\$647,442	\$0.28	\$0.860	\$0.177	\$0.066	\$0.406	\$0.110
				Enoch #3	Q Well #5	Q Well #6	Enoch #1
2020	\$818,670	\$0.26	\$0.086	\$0.200	\$0.063	\$0.430	\$0.177
				Enoch #3	Q Well #1	Q Well #6	200 N Pump

2020 CEDAR CITY WATER REPORT

METERED WATER REVENUE

Calendar Year	Metered Water Sales
2015	\$3,886,428
2016	\$4,156,131
2017	\$4,223,869
2018	\$4,395,966
2019	\$4,343,018
2020	\$4,952,627

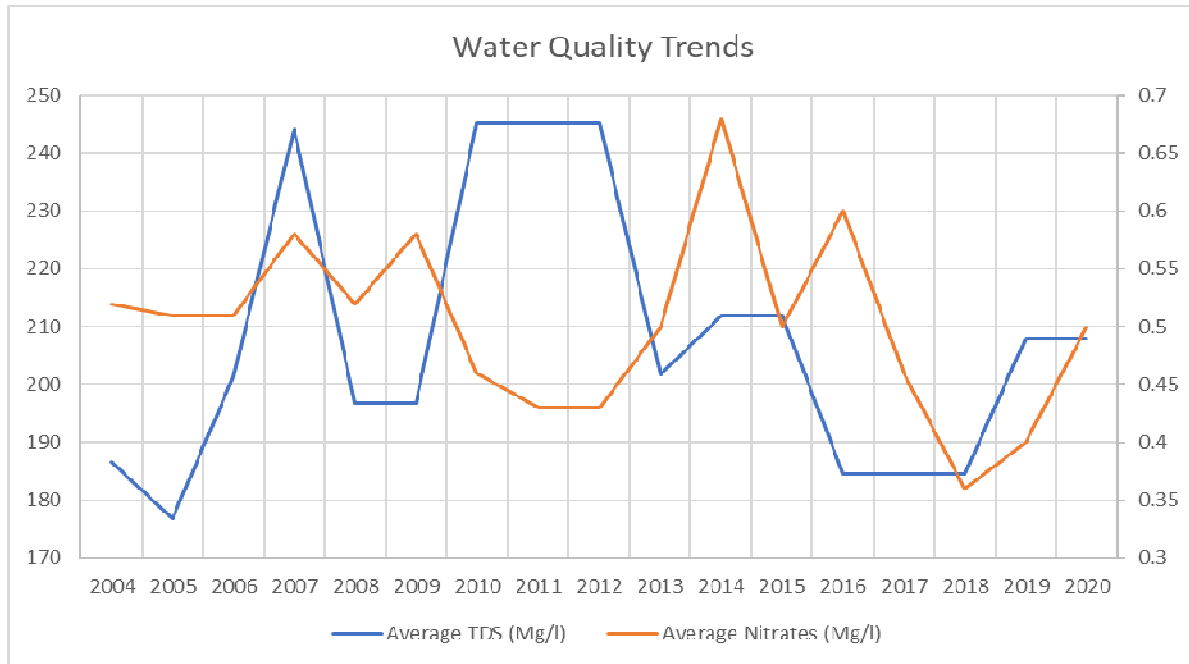
VI. WATER QUALITY INFORMATION AND TRENDS

Water quality for the Cedar City Culinary Water System was well within the standards of the Utah Drinking Water Regulations for all water supplied to the system. The weighted average for Total Dissolved Solids (TDS) and Nitrates was **No Data** and **0.50 mg/L** respectively. Nitrate data will be collected every year for public information.

WATER QUALITY TRENDS

Year	Average TDS (mg/L)	Average Nitrates (mg/L)
2012	No Data	0.43
2013	201.7	0.50
2014	212.0	0.68
2015	No Data	0.50
2016	184.7	0.60
2017	No Data	0.46
2018	No Data	0.36
2019	208.0	0.40
2020	No Data	0.50

2020 CEDAR CITY WATER REPORT



2020 CEDAR CITY WATER REPORT

VII. UNACCOUNTED-FOR WATER INFORMATION AND TRENDS

During the past year, **9.4% of the culinary water produced by the City was unaccounted-for.** Unaccounted-for water includes the following un-metered water uses: leakage, fire-fighting, main flushing, misread meters, un-metered connections, inaccurate meters and City usage. Based on an evaluation of tank level readings, **4.7% of the culinary water produced was lost due to leakage.** The annual average amount of leakage from the Lake at the Hills in 2020 was -0-gal/hour.

UNACCOUNTED-FOR WATER TRENDS

Year	Culinary Water Unaccounted %	Culinary Water Leakage %	The Lake at the Hills Annual Average Leakage (gal/hour)
2011	6.7	5.8	1,023
2012	9.7	2.1	906
2013	11.2	2.0	961
2014	13.0	4.4	543
2015	13.2	6.5	424
2016	12.4	5.0	1,833
2017	5.4	3.5	282
2018	5.3	4.4	0
2019	11.1	10.2	0
2020	9.4	4.7	0
10-year average	9.7	4.9	597

2020 CEDAR CITY WATER REPORT

VIII. AQUIFER TRENDS

The following table and charts provide information concerning trends in the Cedar Valley aquifer, including snowpack, static water level in the aquifer, and City water use.

CEDAR VALLEY AQUIFER TRENDS

Year	Total City Water Use¹¹ (acre-feet)	Average Daily Snowpack at Webster's Flat¹² (inches)	Water Level in aquifer in Quichapa area¹³ (feet below land surface)	Water Level in aquifer in Enoch area¹⁴ (feet below land surface)
2012	7,448	8.3	92.18	68.51
2013	7,251	9.5	95.8	68.55
2014	7,565	5.3	96.34	61.97
2015	7,333	5.0	101.6	68.63
2016	7,947	12.4	104.25	71.70
2017	8,040	13.5	107.65	74.67
2018	8,504	5.1	111.76	74.49
2019	8,132	16.7	114.63	79.17
2020	9,757	17.2	115.03	77.00

11- This column lists the total City water use for the calendar year. This information tracks the effect of the City's usage on the aquifer levels.

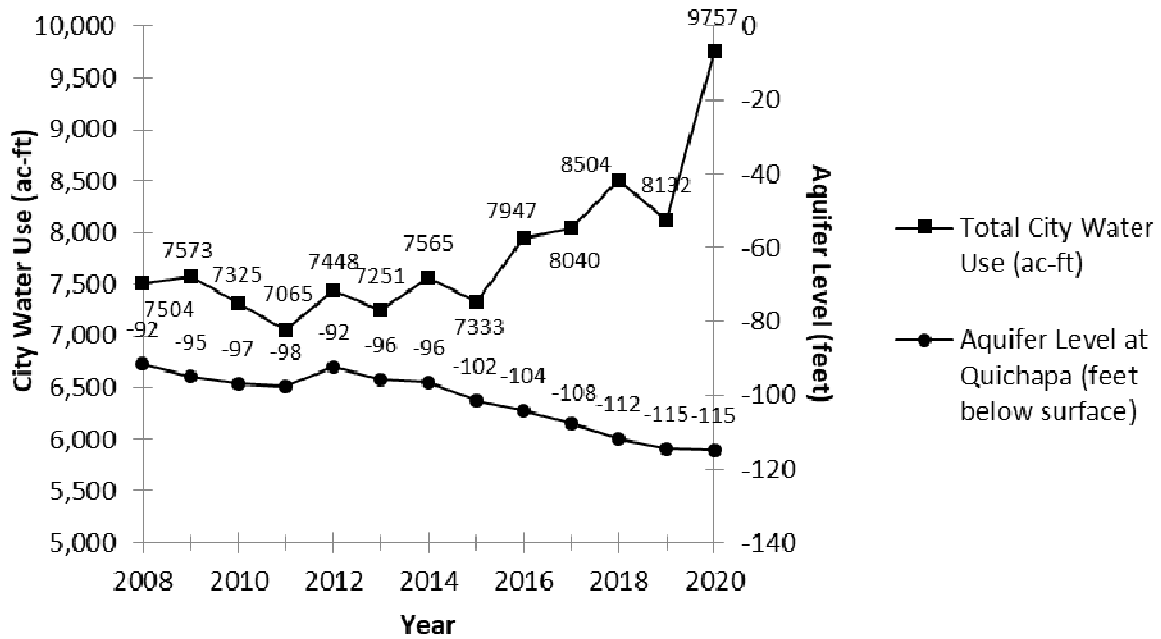
12- This column lists the average daily snowpack (SNWD) on Cedar Mountain at Webster Flat for the water year (Oct 1st – Sep 30th). NRCS SNOTEL Site: Webster Flat, Site Number 853. (<https://wcc.sc.egov.usda.gov/nwcc/site?sitenum=853>)

13- This column lists the measured water level in a USGS monitoring well on the west side of Quichapa Lake that is located at approximately 3200 South 8100 West. The depth in the monitoring well is measured in March of each year by the USGS. The water level data is taken from USGS monitoring well 373742113100801 (C-36-12)35adc- 1. (<https://maps.waterdata.usgs.gov/mapper/index.html>)

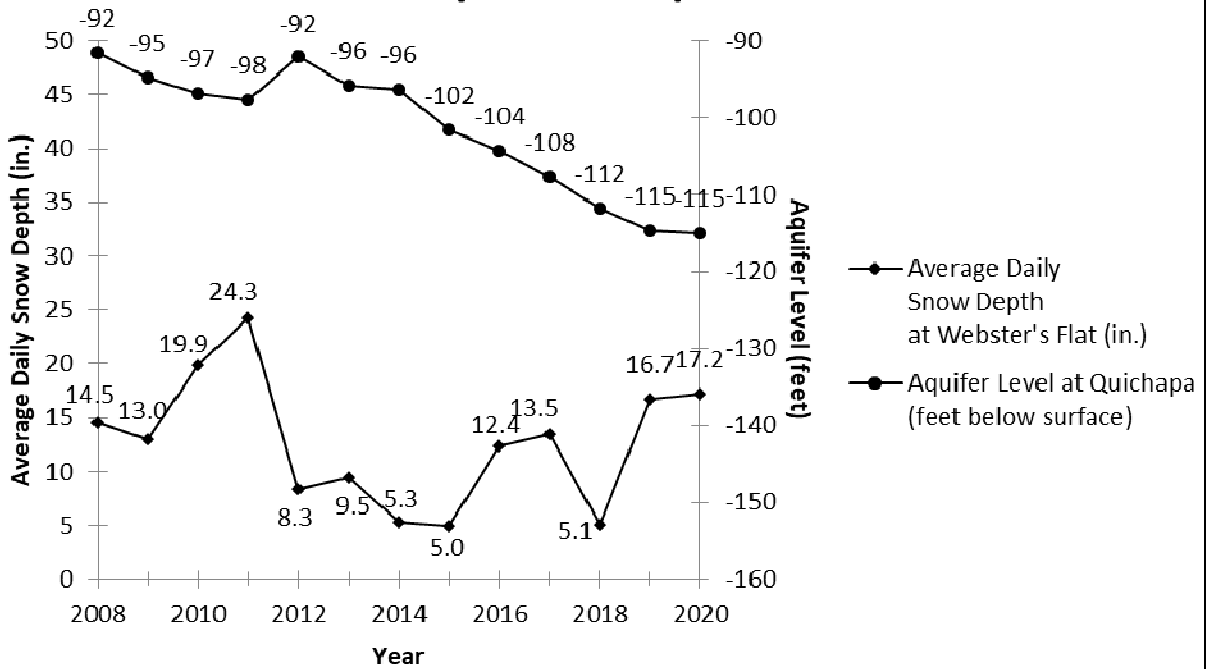
14- This column lists the measured water level in a USGS monitoring well in Enoch that is located at approximately 1000 East Midvalley Road. The depth in the monitoring well is measured by the USGS. The water level data is taken from USGS monitoring well 374554113020801 (C-35-11)12dcd-1. (<https://maps.waterdata.usgs.gov/mapper/index.html>)

2020 CEDAR CITY WATER REPORT

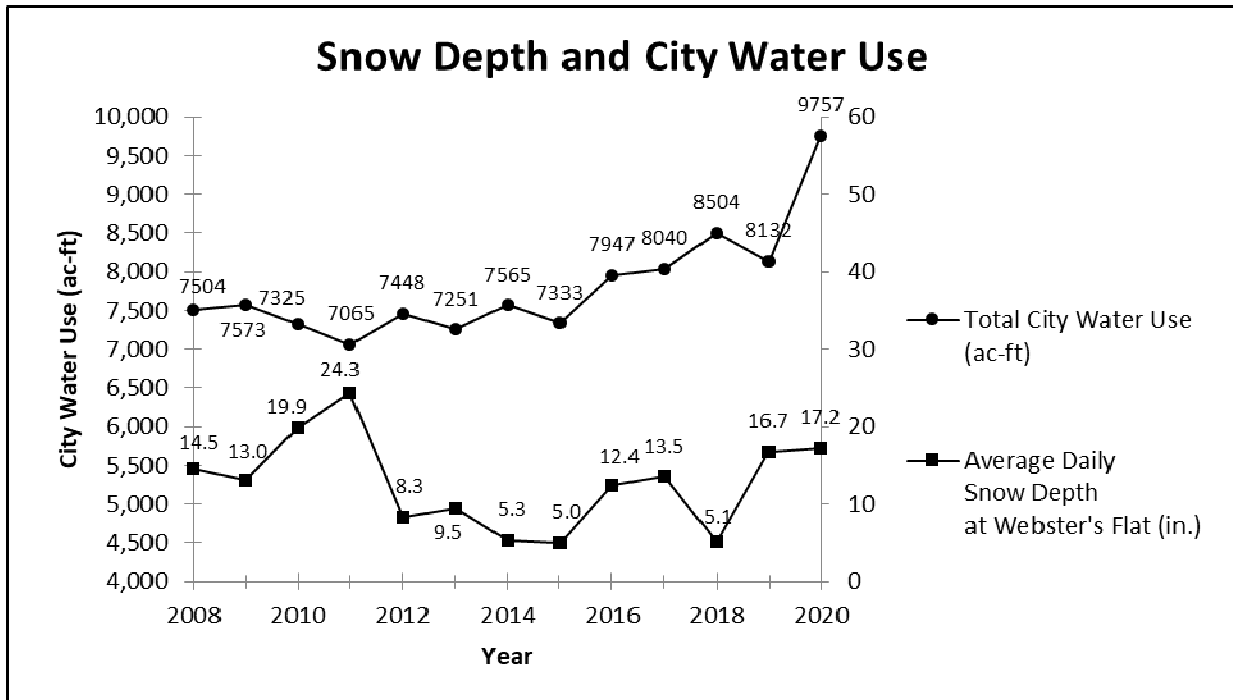
City Water Use and Aquifer Level



Snow Depth and Aquifer Level



2020 CEDAR CITY WATER REPORT



2020 CEDAR CITY WATER REPORT

IX. WATER RATES

A. Fixed Charge.

There is a fixed charge each time a bill is rendered as follows:

Monthly Fixed Charge. \$17.00

B. Quantity Charge for Culinary Water Use.

In addition to the fixed charge, there is a charge for all culinary water used for each 1,000 gallons as follows:

Single-family Residential (Monthly per Account)

Block 1	First 8,000 gallons or any part thereof	\$0.90
Block 2	8,001 to 20,000 gallons or any part thereof	\$1.00
Block 3	20,001 to 35,000 gallons or any part thereof	\$2.00
Block 4	Over 35,000 gallons	\$2.16

Multi-family Residential (Monthly Per Occupied Dwelling Unit)

Block 1	First 5,000 gallons or any part thereof	\$0.90
Block 2	5,001 to 10,000 gallons or any part thereof	\$1.00
Block 3	10,001 to 15,000 gallons	\$2.00
Block 4	Over 15,000 gallons	\$2.16

Non-residential (Monthly Per Account)

All Usage	\$1.00
Excess Irrigation Usage*	\$2.00

C. Quantity Charge for Pressurized Irrigation Water Use.

In addition to the fixed charge, there is a monthly charge for all pressurized irrigation water used for each 1,000 gallons as follows:

All Usage	\$0.68
Excess Irrigation Usage*	\$1.36

*Applies to All Large Irrigation Users as defined.

2020 CEDAR CITY WATER REPORT

X. CAPITAL IMPROVEMENT RECOMMENDATIONS

<u>No.</u>	<u>Capital Item (anticipated year of completion)</u>	<u>Estimated Cost</u>
1	Water Line Upsizing for master-planned water lines	\$385,000
2	Purchase Water Rights	\$100,000
3	16-inch distribution line from Eagle Ridge to South Tank (2021)	\$665,000
4	Bulldog Road 12-inch waterline connection (2021)	\$232,000
5	Risk & Resilience Assessment (2021)	\$65,000
6	Groundwater exploration project – Test Well (2021)	\$200,000
7	Automatic control valves at Quichapa Well #5 (2021)	\$40,000
8	Quichapa South Line Cathodic Protection (2021)	\$206,000
9	Right Hand Canyon Springs surge box (2021)	\$20,000
10	1700 West Waterline Loop/Replacement (2021)	\$255,000
11	Re-coat the Interior of North Tank (2022)	\$700,000
12	Water Rights Assessment (2021)	\$63,000
13	800 South Water Tank Design (2021)	\$175,000
14	New Culinary Well (2022)	\$1,950,000
15	800 South 2.05-million-gallon water tank (2022)	\$2,250,000
16	Aime Ave. Waterline Relocate (2022)	\$28,000
17	500 West Waterline Replacement (2022)	\$345,000
18	Enclose Leak Truck Bay (2022)	\$64,000
19	Update Water Master Plan (2022)	\$90,000
20	Industrial Road Waterlines (2022)	\$261,000
21	College Ave. waterline replacement – Main St. to 400 E. (2022)	\$266,000
22	1045 North waterline – Coal Creek Rd. to N. Cedar Blvd (2022)	\$145,000
23	Spring line replacement	\$30,000 annually
24	Install waterlines per Master Plan/Waterline replacements	\$400,000 annually
25	WWTP Effluent Re-use	TBD
26	Improvements to North end of pressurized irrigation system	\$1,625,000
27	Booster Pump to Cross Hollow Tank (at 800 S. Tank location)	\$800,000
28	Re-coat the Interior of Fiddlers Tank	\$600,000
29	Re-coat the Interior of Redmen Tank	\$600,000
30	Re-coat the Interior of Square Mountain Tank	\$600,000
31	Re-coat the Interior of Cross Hollow Tank	\$600,000
32	CICWCD inter-connection	\$1,750,000

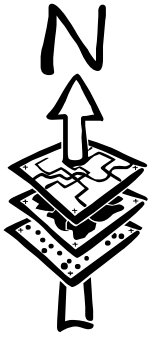
2020 CEDAR CITY WATER REPORT

XI. OTHER

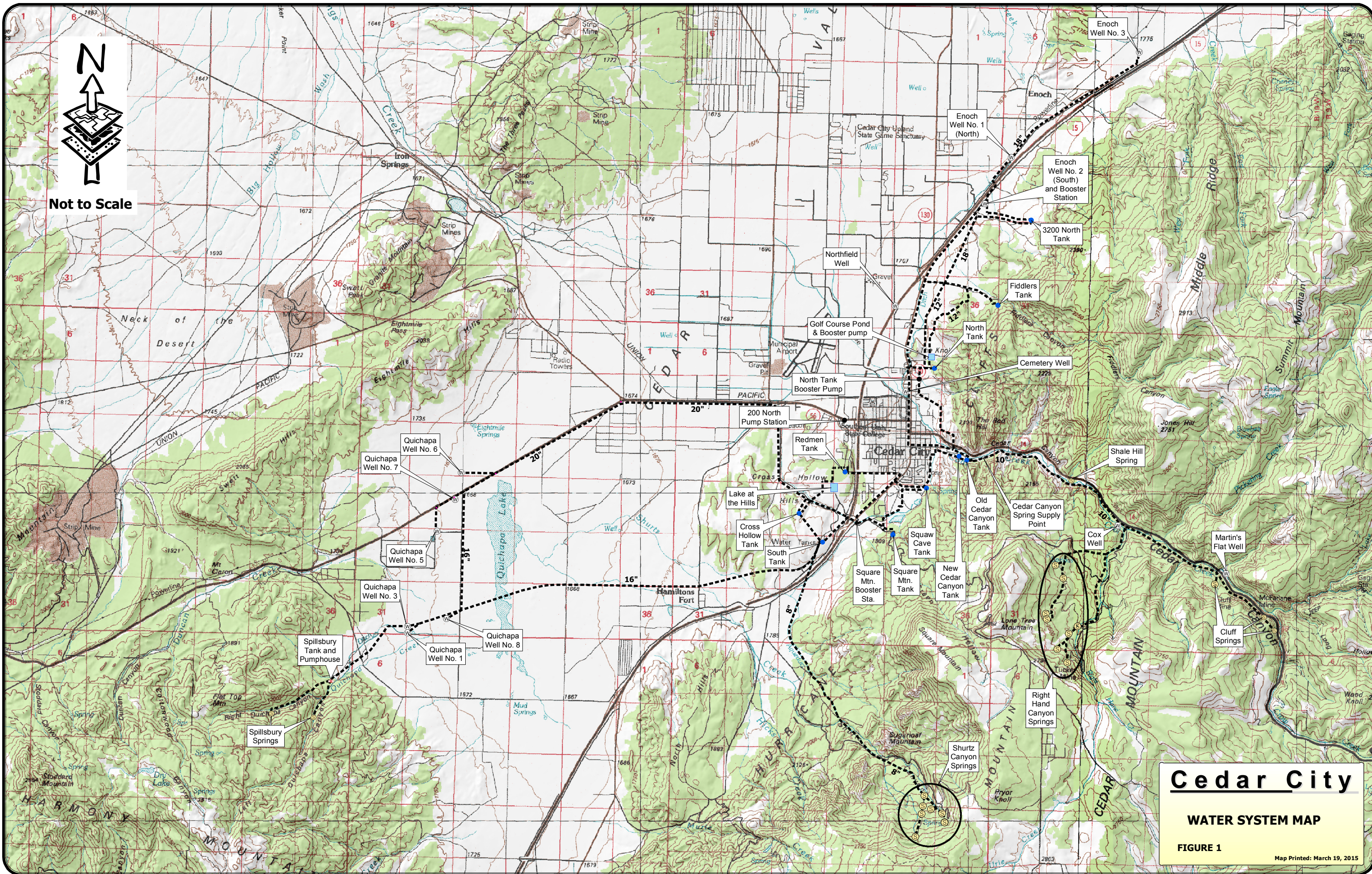
- Construction of the Quichapa Well #1 Replacement (well house and equipment) project was completed in 2020. The project was constructed by Urieco Construction. The project consisted of installing a new concrete foundation, floor slab, waterlines, fittings, vertical turbine pump, 400-HP electric motor, electrical work, HVAC, and moving the existing building over to the new site. The final construction cost paid to Urieco Construction of the project was \$644,448.00.
- The Cedar City Valley Groundwater Management Plan was adopted by the Utah Division of Water Rights and it went into effect on January 11, 2021.
 - The objectives of this groundwater management plan are to ensure groundwater withdrawals do not exceed safe yield, to safeguard the physical integrity of the aquifer, and to protect water quality in the groundwater basin of Cedar City Valley in Iron County. The intent of this plan is to provide specific management guidelines for this area pursuant to Section 73-5-15 of the Utah Code.
 - Studies indicate average annual groundwater withdrawals in Cedar City Valley exceed safe yield, making this groundwater basin a critical management area as defined in Section 73-5-15.1 of the Utah Code. The safe yield for the groundwater basin is estimated to be 21,000 acre-feet per year, while the current average depletion from the groundwater basin is estimated to be 28,000 acre-feet per year. If all groundwater rights that are approved or perfected were to be used the total depletion from the groundwater basin would be approximately 50,000 acre-feet per year. It is estimated that average actual depletion must be reduced by 7,000 acre-feet per year in order to balance recharge and depletion amounts in this groundwater basin.

2020 CEDAR CITY WATER REPORT

XII. SYSTEM MAP



Not to Scale



Cedar City
WATER SYSTEM MAP
FIGURE 1
Map Printed: March 19, 2015

APPENDIX A
SYSTEM INFORMATION

CULINARY SUPPLY DATA

WELL	DEPTH (FT)	CASING DIAMETER (INCHES)	DDW SOURCE CAPACITY ¹ (GPM)	MAXIMUM CAPACITY FOR CONSUMPTION ² (GPM)
Enoch Well #1	875	16	1300	1000
Enoch Well #3	1030	16	1461	1750
Quichapa Well #1	900	16	1100	1100
Quichapa Well #3	697	16	1300	1100
Quichapa Well #5	1006	16	1267	1300
Quichapa Well #6	604	16	1333	1200
Quichapa Well #7	1020	16	1500	1300
Quichapa Well #8	960	16	1391	1450
Shurtz Cnyn. Springs	N/A	N/A	181	350
Cedar Cnyn. Springs	N/A	N/A	441	400
Spilsbury Springs	N/A	N/A	101	200
Total =			11,375	11,150

PRESSURIZED IRRIGATION SUPPLY DATA

WELL OR PUMP STATION	DEPTH (FT)	CASING DIAMETER (INCHES)	FLOW CAPACITY (GPM)	MAXIMUM CAPACITY FOR CONSUMPTION (GPM)
Cemetery Well	670	14	1400	1400
Northfield Well	865	12	900	900
200 North Pump Station	N/A	N/A	1800	1800
Total =			4,100	4,100

Total Supply = 15,250 gpm

¹ This column is the allowable source capacity per the Division of Drinking Water (DDW) minimum sizing requirements. Refer to data submitted by Jonathan Stathis to Chris Martin of DDW by email on January 23, 2020.

² This column is the typical maximum capacity available at each source during peak summer months. Quichapa Well #1 was put back in service in 2019. The capacity for Enoch Well #1 was changed in 2019 from 800 to 1,000 gpm based on flow meter data.

CULINARY WATER TANK DATA

<u>Tank</u>	<u>Volume (gal.)</u>	<u>Base Elevation (ft)</u>	<u>Height (ft)</u>	<u>Overflow Elevation (ft)</u>	<u>Diameter (ft)</u>	<u>Radius (ft)</u>	<u>Circum- ference (ft)</u>
North Tank	2,086,858	5,975.78	32	6,007.78	105.36	52.68	331
Canyon Tank (Old)	1,522,468	5,993.70	30	6,021.70	92.95	46.48	292
Canyon Tank (New)	2,033,472	5,977.80	32	6006.8	104	52	327
Squaw Cave Tank	945,189	6,059.00	35	6,092.00	67.8	33.90	213
Square Mt. Tank	2,159,787	6,262.31	28	6,288.31	114.59	57.30	360
Fiddlers Tank	2,159,787	6,159.78	28	6,185.78	114.59	57.30	360
Cross Hollow Tank	2,159,787	6,154.15	28	6,180.15	114.59	57.30	360
South Steel Tank	2,039,439	6,063.92	36	6,097.92	98.19	49.10	308
Redmen Tank	1,928,325	6,059.00	38	6,095.00	92.95	46.48	292
Spilsbury Tank	105,934	5,792.00	24	5,815.00	28	14.00	88
3200 North Tank	2,461,238	5,993.00	39.5	6,031.00	105	52.50	330
Total =	19,602,284						

IRRIGATION RESERVOIR DATA

<u>Reservoir</u>	<u>Storage Volume (gal.)</u>	<u>Base Elevation (ft)</u>	<u>Overflow Elevation (ft)</u>
The Lake at the Hills	32,246,000	5994	6010
Golf Course Pond	2,914,100	5856	5871
Total =	33,246,000		

Total Storage = 54,762,384 gallons

WATER CONNECTIONS FOR CEDAR CITY

Year	Total Connections	% Change
2012	8,233	0.97
2013	8,348	1.40
2014	8,499	1.81
2015	8,663	1.93
2016	8,801	1.59
2017	8,985	2.09
2018	9,226	2.68
2019	9,404	1.93
2020	9,562	1.68

CULINARY WATER AVERAGE DEMAND (2020 Population = 34,764)

Month	Culinary Water	
	(per person/month)	
	AF	Gallons
January	0.009	2,956
February	0.008	2,740
March	0.009	2,955
April	0.011	3,535
May	0.027	8,807
June	0.032	10,447
July	0.034	11,207
August	0.036	11,730
September	0.031	10,076
October	0.022	7,122
November	0.010	3,344
December	0.010	3,183
Average	0.020	6,509

CULINARY WATER SYSTEM RATES

Single-Family Residence	
1-month base rate	\$17.00
0-8,000 gal	\$0.90/1,000 gal
8-20,000 gal	\$1.00/1,000 gal
20-35,000 gal	\$2.00/1,000 gal
> 35,000 gal	\$2.16/1,000 gal

APPENDIX B
WATER RIGHTS

WATER RIGHTS ACQUIRED IN 2020

Water Right No. or Irrigation Company	Source	Diversion Amount (ac-ft)	Date of Recording Water Right Deed	Date of Report of Conveyance or Certificate Date
73-4254	Brent Hunter	217	10/14/20	11/17/20
73-4226	MJB Cedar City LLC	30	2/28/20	3/24/20
73-4227	MJB Cedar City LLC	1.148	2/28/20	3/24/20
Underground Water Rights subtotal =		248.148		
Surface Water Rights subtotal =		0		
Total Water Rights Acquired in 2020 =		248.148		

2020 WATER RIGHTS ADJUSTMENTS

Water Source	Water Right No. or Irrigation Company	Diversion Amount in 2019 Water Report (ac-ft)	Diversion Amount in 2019 Water Report (ac-ft)	Difference (ac-ft)
Underground	73-4254 ¹	0	217	+217
	73-4226 ²	0	30	+30
	73-4227 ³	0	1.148	+1.148
	Underground Water Rights subtotal =			+248.148
Spring	--	0	0	0
	Spring Water Rights subtotal =			0
Surface	Coal Creek Irrigation Co.	543.762	543.762	0
	Bulldog Ditch Association	98.27	98.27	0
	S & W Field Irr. Co. (South Field)	59.800	59.800	0
	S & W Field Irr. Co. (West Field)	103.005	103.005	0
	North Field Irrigation Co.	198.76	198.76	0
	Old Fort & Old Field Irrigation Co.	27.1875	27.1875	0
	Surface Water Rights subtotal =			0
Total Change in Water Rights in 2020 =				+248.148

¹ Water Right #73-4254 was acquired in a purchase from Brent Hunter.

² Water Right #73-4226 was acquired in a purchase from MJB Cedar City LLC.

³ Water Right #73-4227 was acquired in a purchase from MJB Cedar City LLC.

Cedar City Corporation Municipal Water Rights - Springs								
Water Right No.	Source	Source Name(s)	Flow (ac-ft)	Flow (cfs)	Period of Use	Priority Date	Proof Due Date	Non-Use Expiration
73-434	Elmer Enterprises, LLC		69.32		Mar 1 - Nov 1	1865		31-Jan-2023
73-866	Spillsbury Springs				Combined w/ 73-990	1929		
73-904	Cedar Canyon Springs	Cluff Spring	609.8	1.26	Apr 1 - Nov 30	1870		
73-905	Shurtz Canyon Springs				Covered by 73-1080, 1081, 1082, 1083	1856		
73-956	Cedar Canyon Springs	Upper Barnson Spring	161.4	0.223	Jan 1 - Dec 31	1856		
73-957	Cedar Canyon Springs	Lower Will Williams Spring	48.5	0.067	Jan 1 - Dec 31	1856		
73-958	Cedar Canyon Springs	Dry Spring	40.5	0.056	Jan 1 - Dec 31	1856		
73-959	Shurtz Canyon Springs	Upper Black Rock Spring	32.6	0.045	Jan 1 - Dec 31	1856		
73-960	Cedar Canyon Springs	Barnson Trail Spring	120.9	0.167	Jan 1 - Dec 31	1856		
73-961	Cedar Canyon Springs	Lower Head House Spring	120.9	0.167	Jan 1 - Dec 31	1856		
73-962	Cedar Canyon Springs	Raspberry Spring	48.5	0.067	Jan 1 - Dec 31	1856		
73-963	Cedar Canyon Springs	White Rock Spring	161.4	0.223	Jan 1 - Dec 31	1856		
73-990	Spillsbury Springs	3 spgs (Quichapa stream)	1,922.53	20.0	Jan 1 - Dec 31	1880	31-Oct-2028	
73-1001	Spillsbury Springs	Duncan Leeches Creek			Combined with 73-990	1893	31-Oct-2028	
73-1080	Shurtz Canyon Springs	Upper Posie Spring			Combined w/ 73-2139	1856		
73-1081	Shurtz Canyon Springs	Lower Posie Spring			Combined w/ 73-2139	1856		
73-1082	Shurtz Canyon Springs	West Big Spring			Combined w/ 73-2139	1856		
73-1083	Shurtz Canyon Springs	East Big Spring			Combined w/ 73-2139	1856		
73-1125	Spillsbury Springs	Watson Gulch			Combined w/ 73-990	1856	31-Oct-2028	
73-1133	Spillsbury Springs	Willow Spring Stream			Combined w/ 73-990	1856	31-Oct-2028	
73-1858	Cedar Canyon Springs	Chatterly Spring	260.6	0.36	Jan 1 - Dec 31	Jun-1856		
73-1896	Shurtz Canyon Springs	Urnie Spring	59.0	0.25	Nov 2 - Feb 28	21-Dec-1957		
73-2139	Shurtz Canyon Springs	Birch Spring	1191.81	1.95	Jan 1 - Dec 31	1856		
		Three Ledge Spring No. 1						
		Three Ledge Spring No. 2						
		Three Ledge Spring No. 3						
		Upper Posie Spring No. 2						
Total flow in ac-ft =			4,847.76					

Cedar City Corporation Irrigation Water Rights - Surface Water						
Water Right No.	Source	Source Name(s)	Flow (ac-ft)	Flow (cfs)	Period of Use	Priority Date
73-423	Coal Creek	Coal Creek	448.60	0.38	Apr 1 - Nov 30	1903
73-529	Coal Creek	Coal Creek	Note 1	0.21	Apr 1 - Nov 30	1870
73-1011	Coal Creek	Coal Creek	Note 1	1.92	Apr 1 - Nov 30	1870
73-1390	JDL Investments, Inc. and Cedar Valley Holdings, LLC	Parowan Gap Wash (Note 2)	9.128		Apr 1 - Oct 31	1856
Total flow in ac-ft =			457.73			

Note 1: Water rights #73-423, #73-529, #73-1011, and #73-1924 are limited to a total yearly diversion of 491.36 ac-ft. Refer to the Order of the State Engineer for Change Application #73-423 (a34526).

Note 2: Water rights #73-1390 and #73-387 are supplemental rights forming a group use total of 18.256 acre-feet for 652 ELU's. Refer to e-mail correspondence from the Division of Water Rights dated January 23, 2017.

Cedar City Corporation Irrigation Shares - Surface Water				
Irrigation Company	Shares Owned by Cedar City	Class	Water Yield per Share (ac-ft)	Flow (ac-ft)
South & West Field Irrigation Company - South Field	79.7335	1	0.75	59.800
South & West Field Irrigation Company - West Field	136.77995	1	0.75	102.585
South & West Field Irrigation Company - City Administered	34.108	1	0.75	25.581
Union Field Irrigation Company	0	1	0.75	0
East Extension Irrigation Company	7.5	1 & 2	0.75	5.63
	2.5	3 & 4	0.75	1.88
	0	A	0.75	0
North Field Irrigation Company	112.16	1	0.75	84.12
	119.75	3 & 4	0.75	89.81
	30.47	A	0.75	22.85
Old Fort and Old Field Irrigation Company	36.25	A	0.75	27.188
Bulldog Ditch Association (North West Field Irrigation Company)	131.027	A	0.75	98.27
Coal Creek Irrigation Company	725.0166	B	0.75	543.76
Total flow in ac-ft =				1,061.47

APPENDIX C
WATER USAGE

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1	2481700	3151000	4252000	3031000	7253700	10226200	3063100	11702500	12461400	10950300	4695300	3237900
2	3430100	3273000	4093900	3024600	8793900	11745400	11015000	12682800	12799200	10450200	5036200	2991500
3	3071200	3545000	4021800	2851400	9770400	11142600	11901300	14606700	12523400	11050800	5113600	3885800
4	3009200	3273800	3517100	3694800	11237400	10100200	11638900	12672600	11519100	10476100	3626000	3506900
5	3336700	3181500	3498800	3331900	10309400	11118200	12458200	15316400	11652100	10819900	4178000	3676400
6	3772200	3336700	4709300	2576000	10098100	11066400	13088200	14957100	12200300	9874200	4259600	3517000
7	3291400	3287200	3344000	3892600	10414600	10985900	12754800	11577200	12627200	9661400	3602000	3671800
8	3452100	2947900	2984000	3036900	10229100	11977600	13507400	12460500	13206500	9127400	3923600	3289400
9	3362400	3299800	3564100	2979100	10314900	11513400	13366400	13519800	10019100	10941500	3945900	3723900
10	3375600	3396000	4557100	2953100	9252100	11169200	11027200	14332900	8285800	11754700	3909700	3617500
11	3315200	3108600	3088500	2477300	9483800	11344400	12823400	12131300	8886500	9778100	3450500	3470200
12	3369400	2861800	2521300	2972700	10108300	11185700	12484900	12007400	10174500	9882900	4117200	3617300
13	3503400	3151200	4082900	3195700	9318600	11363400	13142000	12008400	12847000	10157200	4143000	3562000
14	3271600	3494500	2544400	2957100	10125300	11413400	12584200	12516100	12964700	8372700	3813200	3846400
15	3462900	2863600	1946600	3260200	9948500	12166900	14249500	12233800	11409000	7210900	3313900	3594100
16	3173700	3337200	2169800	3184000	10606800	11361200	13164700	13827600	11467000	8017500	4291300	3850700
17	3424700	3211100	1623300	3072000	10582600	11981000	12919400	14456400	12182000	9368400	4070200	4182400
18	3120500	3503900	1848400	4332500	11017100	13484700	13661700	13813900	11524500	8219900	3817400	4107300
19	3328400	3171400	3521800	4625800	9417900	10698100	14511700	13220700	12480200	7667700	3785000	3629500
20	3571300	3262200	3434900	4831800	9351900	11501300	15674300	15227500	12587900	6862100	3573700	4103300
21	3467400	2091900	3211700	4461800	9787900	11491500	14322400	15118200	12874300	8160600	3375000	4261700
22	3370400	3114900	3268900	4341900	9235200	12072800	12659800	12886600	12243200	7503400	3744500	3439600
23	3092400	3246300	3483900	4448900	9308300	12631200	11343400	13318100	12061700	7053800	4210100	3569100
24	3541900	2891700	3308900	4350400	9573800	13182600	12316100	13456100	11784700	6082500	3667700	3223800
25	2929200	3073700	3228100	6037000	10246200	12695600	14649700	11829200	11068800	7878300	3507900	3205400
26	3307900	3971600	4308400	6501800	9638400	12364700	11335800	11900300	10637800	3553700	3298800	3357200
27	3728600	4272700	3494600	6776900	9374800	12790500	13423400	12002900	11186400	2915700	3723200	3337300
28	3247300	4464500	3526400	6889100	9790100	13892700	14878600	12846400	12460100	4527800	3335400	3356100
29	3276200	3472300	3025900	6347100	10671700	13999600	13564800	12868800	11300700	3177200	3599400	3235300
30	3762000	0	3538800	6463800	10589900	12847000	12079400	12990300	10863500	2873700	3138400	3414600
31	2923300	0	3013600	0	10328000	7660100	10003400	13279100	0	3206700	0	3158400
TOTALS	102770300	95257000	102733200	122899200	306178700	363173500	389613100	407767600	350298600	247577300	116265700	110639800

TOTAL IN
GALLONS: 2,715,174,000

WELL: DAILY TOTALS CULINARY

YEAR: 2020

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1					1514700	1656900						
2					1736500							
3					1752400							
4					1914600			75300				
5					1719000			1702400				
6					1712000			1588900				
7					1754700			1518800				
8					1821200			1422700				
9					1860900			1561100				
10					1658200			1765100				
11					1592600			1583500				
12					1717500		2900	1622600				
13					1721400		1038100	1674500				
14					1748400		1676000	1501500				
15					1587600		1704300	1410500				
16					1707800		1671500	1550900				
17					1718700		1631700	1797600				
18					1825700		1550600	1496900				
19					1688400		1631200	1576400				
20					1651100		1804700	1456300				
21					1717200		1562100	1438700				
22					1596400		1700100	249900				
23					1615100		1799200					
24					1659600		1742000					
25					2175800		1444600					
26					1298800		1763400					
27					1298900		1450000					
28					1672000		1547600					
29					1635700		1556500					
30				600	1681900		1587700					
31					1626000		1533100					
TOTALS	0	0	0	600	52380800	1656900	30397300	26993600	0	0	0	0

WELL: ENOCH WELL #1

YEAR: 2020

TOTAL IN
GALLONS: 111,429,200

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1						1413500	1166100	2221200	2433500	2451600		
2						1413600	1166100	2489800	2433400	2226300		
3						2468500	2376700	2817900	2451900	2281700		
4						2468600	2462200	2459800	2334700	2260000		
5						2493300	2581500	2500800	2258400	2316000		
6						2505500	2492100	2398000	2410400	2401700		
7						2600300	2418100	2311500	2448300	1918000		
8						2643000	2532400	2171500	2705900	1918000		
9						2643100	2403400	2392200	1026300	2589300		
10						2577500	2266900	1774900	527200	2510500		
11						2587800	2540900	1775000	1334000	2305500		
12						2467700	2423900		2298000	2336600		
13						2525600	2528500	9200	2582000	2402300		
14						2592400	2400900	2343800	2582000	2525800		
15						2676500	2388000	2199000	2582100	2313500		
16						2676500	1350900	2532400	2421700	2297600		
17						2577400	1350900	2532400	2482800	2323500		
18						2577400	2329200	2532300	2305400	2385900		
19						2353700	2329200	2481400	2466800	1432500		
20						2384400	2329200	2288400	2486200	1125700		
21						2539900	2352100	2201600	2513500	2318100		
22						2540000	628300	1938300	2452300	2414800		
23						2507800		2438300	2417500	1959100		
24						2404200		2620700	2490000	1959100		
25						2458900	1564200	2620800	2329100	2175600		
26						2380700	1564300	2500600	2323800			
27						2370600	2192200	2487300	2517500			
28						2527900	2371900	2487300	2517500			
29						2527900	2390700	2487200	2517600			
30						2380800	656400	2179100	2401000			
31						2410000		2506700				
TOTALS	0	0	0	0	0	75695000	57557200	68699400	69050800	55148700	0	0

WELL: ENOCH WELL #3

YEAR: 2020

TOTAL IN
GALLONS: 326,151,100

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1					1168900	1525400		733400	611100	615900		
2					1365700	1212000	1315800	810000	707000	546200	544000	
3					1475100	626900	1355000	928100	605800	640000	426500	
4					1020200	783000	1416300	804900	472600	468700		
5					646900	703300	1358300	922600	556300	646900		
6					624200		1478100	715000	382800	722600		
7					629400		1478100	715000	740300	647500		
8					593200		1451700	700800	905300	127600		
9					681400		1451600	789700	1138300	954100		
10					610900		1200300	938900	1396700	1374100		
11					718600		1489300	781700	1252100	1244400		
12					1277000		1451200	985200	1268700			
13					1279000		1452500	1110100	1063400			
14					1304900		1215400	1110000	974400			
15					906200		821000	742100	909900			
16					893900	215700	1038600	1162800	834700	998300		
17					812700	1520100	1055800	1162900	1120600	956900		
18				1182400	769500	1330000	853000	1205500	913000	963000		
19				1379500	1098300	1353700	821200	1205500	1360900	1016500		
20				1428500	1358800	1417200	951900	1193600	1415000	949700		
21				1133500	1457900	1573800	738900	1038500	1415000	996700		
22				1133900	1331500	1163600	1029600	929900	1415000	941300		
23				1164200	1378300	1409800	959100	929900	1338200	857100		
24				1101900	1428000	1443900	867100	929900	889800			
25				1133300	1441400	1382900	997600	930100	786100	1132900		
26				1501100	1508200	1298400	621400	1441800	791000	150800		
27				1501200	1508300	1401000	813800	1126800	792400			
28				1449100	1480700	1559700	909000	660100	832900			
29				1449200	1444300	1387500	1010200	620000	634800			
30				1648200	1437900	1357600	902700	643600	624500			
31					1422200		651700	659600				
TOTALS	0	0	0	17206000	35073500	24665500	33156200	28628000	28148600	16951200	970500	0

TOTAL IN
GALLONS: 184799500

WELL: QUICHAPA WELL #1

YEAR: 2020

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1						172000		1230000	1349000	1381000		
2						1561000		1342000	1448000	1240000		
3						1120000		1539000	1482000	1407000		
4					1582000	1413000		1348000	1088000	1317000		
5					1400000	1323000		1439000	1258000	1521000		
6					1423000	1381000		1512000	1380000	596000		
7					1438000	1496000		1033000	1366000	1524000		
8					1335000	1584000		1206000	1547000	1247000		
9					1565000	1429000		1343000	474000	1409000		
10					1370000	1541000		1586000		1571000		
11					1485000	1437000		1324000		1320000		
12					1326000	1415000			35000	1590000		
13					553000	1467000		1016000	1340000	1454000		
14					195000	1453000	152000	981000	1549000			
15					1252000	1604000	1420000	1213000	669000			
16					1376000	1486000	1313000	1358000	1326000			
17					1399000	1229000	1206000	1553000	1326000			
18					1496000	1501000	1232000	1491000	1158000			
19							1349000	1013000				
20							1552000	1237000				
21							1248000	1338000				
22							528000	1204000				
23							294000	1339000	75000			
24							1394000	1533000	1435000			
25							1640000	486000	1308000			
26							1048000		1292000			
27							1340000	210000	1321000			
28							1411000	1272000	1555000			
29							437000	1339000	1404000			
30							842000	1413000	1359000			
31							1077000	1458000				
TOTALS	0	0	0	0	19195000	24612000	19483000	36356000	28544000	17577000	0	0

WELL: QUICHAPA WELL #3

YEAR: 2020

TOTAL IN
GALLONS: 145,767,000

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1			1000800	668100	500	2001600		1521000	1428800	1638500	1134900	2252900
2			1092700	670700	1523300	2175100	1192700	1612500	1723000	1663200	1087000	1939500
3			1625800	1085600	2017100	1503500	1095700	1965400	1632800	1688600	1563100	1504900
4			2134500	1263800	2144800	1849800	1898100	1570200	1543800	1590500	1002000	1070700
5			2290800	892900	1967700	1736500	1862700	1783200	1523100	1651500	1456700	1016800
6			2065900		1953200	1757300	1795000	1782900	1632100	1416600	1472800	997100
7			2066000	723400	2082400	1890900	1795100	1859500	1655800	1697300	1086500	1043300
8			1779000		2048600	1950900	1767700	1321400	1849800	1576700	1190500	907300
9			2362100		1720000	1815600	1737200	1328700	1659600	1644500	1154500	1056500
10			2335800		1456000	1933600	1480600	1352500	1731800	1712000	1404200	1025400
11			1447400		1530100	1807200	1807400	1696900	1602400	1651000	1242200	1002100
12			1260300		1458300	1825400	1739900	2987700	1523400	1800300	1336100	1013600
13			1809400		1401300	1790400	1720400	1335000	1507900	1707300	1446000	1005500
14			1361400		2028500	1860500	1552800	153100	1234500	1503000	1353100	1097900
15			638600		1718700	1956500	1774400		1128800	1716200	968200	1038100
16			662800		1897300	1861600	1763400		1306700	1456100	1216700	1286100
17			600300		1914600	1491100	1542400		1479300	1456100	1264400	1453900
18			842400		2070300	2195300	1563900		1189700	1639900	1133900	1456100
19			2491800		1955600	1841400	1685800	2100	1826100	1888500	1117000	1277500
20			2491900		1818000	1794000	1884900	1886200	1776900	1631900	967100	1417300
21			2255700		1919500	1873700	1596300	1997400	1883500	1679500	914800	1326300
22		1000400	2282900		1817900	1220600	1795500	1659700	1661000	1449900	1000300	952300
23		1000400	2363900		1812000	1542100	1586000	1634100	1647200	1435400	1185500	944900
24		1000400	2363900		1872500	1565000	1714800	1227400	1762900	1421200	1197000	907200
25		1000400	2245100		1894100	1569500	1572500	1062600	1701800	1492200	1075100	883900
26		1000400	2209100		2061500	1339200	825500	1668600	1604600	1492300	993200	934200
27		1000400	1366000		1870800	1589300	1265600	1599100	1659500	1272100	1160000	922700
28		1000400	1018400		1958400	1758400	1581600	1557700	1865600	1272100	1046500	1005500
29		1000400	653400		1901100	1724100	1122200	1651400	1742900		1075800	2016300
30			776300		1885000	1516300	1230100	1697600	1656900		2214400	2260600
31			729800		1855500	1451300	930700	1615300				2049400
TOTALS	0	8003200	50624200	5304500	55554600	54187700	46880900	41529200	48142200	44244400	36459500	39065800

TOTAL IN
GALLONS: 429,996,200

WELL: QUICHAPA WELL #5

YEAR: 2020

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1								1594000	1785000			
2							1821000	1748000	1785000			
3							1815000	2084000	1785000			
4							1949000	1592000	1785000			
5							1306000	1882000	1785000			
6							1307000	1958000	1785000			
7							1705000		1785000			
8							1844000	1457000	1785000			
9							1817000	1623000	1785000			
10							1721000	1807000	1785000			
11							1721000	273000	1785000			
12							1828000	1434000	1785000			
13							1793000	1785000	1785000			
14							1662000	1785000	1785000			
15							1863000	1785000	1785000			
16							1759000	1785000	1785000			
17							1760000	1785000	1785000			
18							1633000	1785000	1785000			
19							1760000	1785000	1785000			
20						544000	1803000	1785000	1785000			
21							1803000	1785000	1785000			
22						1747000	1854000	1785000	1785000			
23						1747000	1886000	1785000	1785000			
24						1747000	1595000	1785000				
25						1820000	2274000	1785000				
26						1890000	1350000	1785000				
27						1732000	1790000	1785000				
28						1849000	1827000	1785000				
29						1901000	1889000	1785000				
30						1802000	1815000	1785000				
31						1903000	1816000	1785000				
TOTALS	0	0	0	0	0	18682000	52766000	51367000	41055000	0	0	0

WELL: QUICHAPA WELL #6

YEAR: 2020

TOTAL IN
GALLONS: 163,870,000

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1			2091200		1706800	1706800		1831200	1957900	1962800		
2			1765200		1706800	1706800	2034800	1992700	2053800	1952000		
3			1098000		1706800	1706800	2005200	2099900	1917800	2067500		
4			148600		1706800	1706800	2102300	2099900	1838700	2064400		
5					1706800	1706800	1960700	2139000	1795500	2064400		
6			1351400		1706800	1706800	2391000	1920500	1928000	1970000		
7					1706800	1706800	2017600	1920500	1960400	895200		
8					1706800	1706800	2124200	1797100	1399500	1320100		
9					1706800	1706800	2125500	1978300	1399600	979500		
10			952300		1706800	1706800	1668100	2101400		1289000		
11			429100		1706800	1706800	2175700	2101400	255600			
12					1706800	1706800	2102000	2047500	807600	924800		
13			1146500		1706800	1706800	1287900	1969300	2058000	1273300		
14					1706800	1706800	1288000	1932400	2246800	1273400		
15					1706800	1706800	1415600	1779600	2013900			
16					1706800	1706800	1415700	1839800	1502500			
17					1706800	1706800	1660500	1839800	1502500	1812100		
18					1706800	1706800	1882700	1951600	1898800			
19					1706800	1706800	2044800	1951700	2025500			
20		123700			1706800	1706800	2256900	1962900	2034000			
21		1032900			1706800	1706800	2035200	1989500	2034000			
22		1122500			1706800	1706800	2072500	1989600	2034000			
23		1193900			1706800	1706800	1946800	2095600	1941200			
24		1130300			1706800	1706800	2091200	2095700	2064200			
25		1331300			1706800	1706800	2236300	2070500	2045900			
26		1940200			1706800	1706800	1921700	1012000	1900200			
27		1957300			1706800	1706800	1952800	1921700	1847200	1974800		
28		2188100			1706800	1706800	1985100	2096900	1933900	2193800		
29		1675900			1706800	1706800	2218900	2065600	1931000	2095400		
30					1706800	1706800	2063500	1990800	2010800	1988200		
31					1706800		568900	1943000	2079200			
TOTALS	0	13696100	8982300	10240800	52910800	53166000	58280900	60311500	52868100	21848500	0	0

WELL: QUICHAPA WELL #7

YEAR: 2020

TOTAL IN GALLONS: 332,305,000

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1	1500700	2065000		1364900	1733800	2161000		1602700	1506100	1996500	2226400	
2	2021100	2197000		1364900	1821600	2007900	1464600	1709800	1722000	1856500	2031200	
3	1885200	2399000		778800	2142000	2007900	1032700	1999400	1754100	1994000	1781000	1485900
4	1988200	2176800		1522000	2142000	2035600		1777500	1637300	1933500	1438000	1492200
5	2161700	2065500		1454000	2142000	1898300	1382000	1896400	1649800	1720100	1514300	1420600
6	2487200	2282700		1498000	2039900	1927800	1382000	1989800	1773000	1879300	1482800	1379900
7	2137400	2190200		2176200	2149300	2077400	1438900	1381900	1801400	2087400	1345500	1444500
8	2259100	1985900		2035900	2063300	2182900	1823400	1431000	2023000	1907000	1497100	1240100
9	2247400	2215800		1948100	2081800	2035900	1817700	1512800	1619300	2002100	1447400	1467400
10	2179600	2206000		1948100	1800200	2137700	1500300	1837100	1904100	2002100	1186500	1368100
11	2227200	2034600		1575300	1911700	1972600	1861100	1686800	1800400	2025200	1294300	1368100
12	2214400	1795800		1923700	1688700	2024800	1816000	1478400	1679800	2025200	1659100	1365700
13	2253400	2127200		2049700	1630100	2004000	2101600	1577300	1574700	2025300	1532000	1355500
14	2158600	2260500		2024100	2165700	2030700	1431100	1281300	1579000	1849500	1452100	1505500
15	2281900	2048600		2268200	1844200	2209100	1763200	1749600	1413300	1953200	1317700	1396000
16	2074700	2237200		2157000	2045000	2066100	1755600	2080700	1496400	2034500	1691600	1424600
17	2274700	2188100		2157000	2141800	1635600	1676100	2080700	1637800	1663800	1552800	1507500
18	2091500	2361900		2164100	2141800	2402200	1645300	1857600	1389600	1948100	1423500	1464200
19	2203400	2102400		2227300	2141800	1961300	1783500	1857600	2001900	1948200	1536000	1364000
20	2332300	2086500		2297300	1965200	1945900	1857700	1860100	2016800	1906800	1382600	1489000
21	2315400			2297300	2081500	2040300	1857800	2043500	2165300	1898300	1371200	1637400
22	2244400			2165000	1941600	1980700	1916800	1775200	1912900	1513400	1494200	1303300
23	2109400			2240700	1971100	1980700	1715300	1653200	1903600	1487200	1725600	1382200
24	2288900			2170500	2039900	1980700	1818000	1559400	2062800	1487200	1492700	1268600
25	1978200			2043900	2118100	709000	1827500	1399200	1943900	1765600	1465800	1210500
26	2202900		1120300	2043900	2118100	1556600	1353500	2094300	1868200	699600	1347600	1290000
27	2465600		1164600	2043900	2118000	1622800	1630100	1532500	2084200	330600	1580200	1278600
28	2144300		1567000	2044200	2116200	897100	2036600	1628400	2084300	2061700	1329900	1054600
29	2182200		1382500	2025100	2069800	1860200	2036600	1768200	2042000	1873200	1534600	
30	2667000		1655500	2025200	2043300	1647800	2036700	1768200	1952900	1712700	0	
31	1865300		1381800		2011500	1618400	1120900	1768300		2012700		
TOTALS	67443300	43026700	8271700	58034300	62421000	58619000	48882600	53638900	53999900	55600500	44133700	35964000

WELL: QUICHAPA WELL #8

YEAR: 2020

TOTAL IN
GALLONS: 590,035,600

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1	712000	798000	680000	719000	623000	924000	1397000	373000	893000	355000	766000	695000
2	1017000	781000	675000	711000	640000	924000	1300000	414000	375000	390000	794000	776000
3	858000	823000	717000	731000	677000	924000	1291000	464000	381000	402000	765000	638000
4	740000	787000	732000	656000	727000	924000	1319000	398000	351000	291000	707000	678000
5	857000	799000	740000	710000	727000	924000	1324000	416000	341000	339000	708000	692000
6	934000	750000	728000	760000	639000	924000	1345000	450000	364000	345000	747000	670000
7	833000	789000	760000	719000	654000	924000	1268000	369000	373000	354000	695000	692000
8	840000	700000	700000	722000	661000	924000	1272000	370000	410000	550000	732000	630000
9	844000	781000	696000	742000	699000	924000	1238000	409000	380000	826000	721000	663000
10	866000	849000	734000	757000	650000	924000	649000	459000	376000	758000	721000	699000
11	789000	773000	733000	656000	539000	924000	463000	400000	355000	725000	664000	656000
12	837000	766000	719000	758000	628000	924000	493000	861000	332000	709000	780000	690000
13	900000	739000	664000	825000	626000	924000	496000	949000	374000	773000	726000	665000
14	810000	950000	705000	662000	612000	924000	438000	926000	410000	784000	730000	695000
15	855000	532000	725000	725000	619000	924000	471000	843000	365000	738000	633000	680000
16	795000	770000	789000	773000	588000	924000	511000	929000	352000	718000	772000	660000
17	835000	767000	735000	646000	598000	924000	397000	1045000	341000	721000	702000	680000
18	744000	827000	717000	716000	580000	924000	422000	914000	381000	743000	703000	655000
19	817000	768000	740000	741000	582000	924000	453000	925000	350000	808000	709000	596000
20	900000	760000	674000	796000	565000	924000	484000	967000	357000	696000	695000	661000
21	836000	770000	693000	743000	582000	924000	452000	836000	378000	820000	620000	738000
22	808000	720000	710000	770000	545000	924000	453000	822000	314000	659000	768000	675000
23	810000	762000	809000	779000	543000	924000	516000	902000	365000	801000	717000	770000
24	819000	456000	682000	802000	557000	1510000	430000	1113000	364000	694000	703000	555000
25	694000	457000	701000	871000	562000	1249000	470000	853000	352000	744000	697000	597000
26	802000	744000	707000	967000	598000	1446000	365000	867000	336000	662000	690000	670000
27	914000	747000	704000	1203000	530000	1363000	395000	874000	357000	734000	681000	667000
28	800000	735000	675000	1336000	554000	1415000	422000	991000	394000	746000	709000	734000
29	793000	533000	710000	757000	977000	1510000	424000	825000	348000	736000	711000	676000
30	791000		797000	608000	1072000	1382000	415000	911000	359000	691000	659000	598000
31	766000		638000		1381000		417000	824000		709000		685000
TOTALS	25616000	21433000	22189000	23361000	20535000	31127000	21790000	22699000	11428000	20021000	21425000	20836000

WELL: CEDAR CANYON SPRINGS

YEAR: 2020

TOTAL IN
GALLONS: 262,460,000

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1	462	225	464	235	821	952	675	2987	3324	1300	531	76
2	515	180	200	1386	6767	5583	5123	1859	3477	1989	173	116
3	105	64	71	884	2515	740	2050	4113	2332	1989	260	59
4	329	71	372	2149	24	1848	7487	3015	2028	1989	197	127
5	705	1366	678	453	9	3851	2368	2652	1709	1989	379	225
6	201	23119	831	345	2510	3518	5638	1386	3049	2282	708	215
7	78	1379	831	853	8166	2498	5080	4219	925	1145	516	60
8	92	3025	831	1193	7004	4773	2769	3481	1318	2794	314	120
9	264	4944	834	541	7004	510	2661	2023	171		224	49
10	266	6062	500	276	7004	2083	4613	1874	1244		204	160
11	230	3298	669	333	7007	1682	2760	2558	130		214	293
12	312	7643	478	225	7333	2266	4508	3135	1496	13	207	262
13	278	1194	1283	758	10285	634	3736	2316	455		142	262
14	107	294	801	695	12696	1736	4631	2018	1280		324	264
15	47	295	1046	4298	5001	1105	1429	7453	113		323	94
16	166	345	1035	646	958	2836	1840	5473	1177		259	218
17	66	311	768	2806	3808	3013	238	3836	446		204	73
18	258	178	887	3136	2393	1418	3602	1965	4920		71	199
19	176	286	822	2430	13259	1957	3895	3080	231		92	150
20	112	8	1477	615	2802	1908	2859	1518	1793		103	267
21	162	256	670	7023	5864	2361	3521	5213	2405	50	82	73
22	88	210	556	996	1103	3618	3975	4382	2220	1359	166	287
23	200	233	433	326	4827	10440	1738	4272	1143	203	66	280
24	412	387	579	2939	5120	2127	1738	2538	2358	1485	74	216
25	897	116	288	1773	2703	2630	1738	1520	1203	394	79	11
26	330	101	460	1147	898	6372	1738	1655	2516	204	51	3
27	137	184	375	1960	7099	3133	1739	1932	2101	519	20	247
28	369	214	211	348	482	3561	3483	1345	3330	266	117	142
29	166	310	325	1165	8303	1061	1361	5321	1155	179	201	86
30	141		257	1607	4089	1940	2612	2454	2295	329	117	250
31	91		333		4878		3356	3762		358		219
TOTALS	7762	56298	19365	43541	152732	82154	94961	95355	52344	20836	6418	5103

TOTAL IN
GALLONS: 636,869

WELL: CLUFF SPRINGS YEAR: 2020
FOR INFORMATION ONLY- ALREADY COUNTED WITH CEDAR CANYON

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1			188000			326000		251000	171000	246000	267000	1000
2			261000			245000	271000	195000	238000	267000	275000	
3			281000			285000	260000	258000	199000	267000	281000	1000
4			237000			302000	215000	189000	170000	267000	191000	
5			182000			302000	216000	256000	193000	268000	221000	284000
6			277000			232000	366000	256000	234000	245000	278000	209000
7			231000			257000	176000	133000	180000	249000	211000	234000
8			232000			305000	270000	249000	240000	233000	199000	253000
9			232000			276000	271000	216000	173000	220000	289000	279000
10			254000			305000	150000	272000	240000	220000	282000	258000
11			203000			297000	258000	159000	208000	220000		179000
12			255000		306000	254000	264000	234000	154000	221000		269000
13			209000		401000	249000	267000	244000	245000	236000	152000	269000
14			198000		364000	244000	261000	173000	239000	158000		271000
15			297000		314000	292000	271000	191000	239000	209000	144000	208000
16			406000		392000	284000	139000	240000	123000	228000	282000	211000
17					291000	283000	273000	248000	241000	161000	283000	280000
18					427000	306000	167000	241000	178000	250000	277000	273000
19					245000	184000	239000	126000	392000	269000	139000	147000
20					287000	256000	270000	228000	386000	239000	276000	280000
21					323000	282000	265000	152000	385000	171000	204000	281000
22					296000	283000	262000	232000	360000	267000	211000	254000
23					282000	279000	213000	206000	293000	215000	277000	207000
24					310000	238000	213000	240000	433000	219000	1000	243000
25					348000	235000	213000	269000	332000	249000	1000	282000
26		3000			347000	233000	213000	181000	241000	275000		207000
27		283000			342000	276000	213000	192000	191000	279000		213000
28		255000			302000	255000	263000	181000	669000	140000		278000
29					270000	297000	250000	182000	221000	277000		282000
30					263000	219000	253000	245000	222000	214000	1000	281000
31					325000	206000	129000	243000		212000		175000
TOTALS	0	541000	3943000	0	6435000	8287000	7091000	6682000	7790000	7191000	4742000	6609000

WELL: QUICHAPA/SPILSBURY SPRINGS YEAR: 2020

TOTAL IN
GALLONS: 59,311,000

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1	269000	288000	292000	279000	506000	500000	500000	345000	326000	303000	301000	289000
2	392000	295000	300000	278000		500000	449000	369000	314000	309000	305000	276000
3	328000	323000	300000	256000		500000	670000	451000	314000	303000	297000	256000
4	281000	310000	265000	253000		653000	277000	358000	298000	284000	288000	266000
5	318000	317000	286000	275000		31000	467000	379000	292000	293000	278000	263000
6	351000	304000	287000	318000		632000	532000	386000	311000	298000	279000	261000
7	321000	308000	287000	274000		672000	458000	335000	317000	289000	264000	258000
8	353000	262000	273000	279000		681000	422000	334000	341000	248000	305000	259000
9	271000	303000	274000	289000		683000	505000	366000	364000	317000	334000	258000
10	330000	341000	281000	248000		681000	391000	439000	325000	318000	316000	267000
11	299000	301000	276000	246000		612000	507000	350000	294000	287000	250000	265000
12	318000	300000	287000	291000		568000	364000	357000	291000	276000	342000	279000
13	350000	285000	254000	321000		599000	457000	339000	317000	286000	287000	267000
14	303000	284000	280000	271000		602000	507000	329000	365000	279000	278000	277000
15	326000	283000	286000	267000		798000	358000	321000	303000	281000	251000	272000
16	304000	330000	312000	254000		451000	447000	349000	319000	285000	329000	269000
17	315000	256000	288000	269000		614000	366000	412000	266000	274000	268000	261000
18	285000	315000	289000	270000		542000	383000	339000	326000	290000	280000	259000
19	308000	301000	290000	278000		551000	415000	297000	272000	305000	284000	245000
20	339000	292000	269000	310000		529000	480000	363000	331000	313000	253000	256000
21	316000	289000	263000	288000		551000	412000	298000	315000	277000	265000	279000
22	318000	272000	276000	273000		571000	420000	301000	309000	258000	271000	255000
23	173000	290000	311000	265000		534000	428000	335000	296000	299000	305000	265000
24	434000	305000	263000	276000		587000	451000	352000	283000	302000	274000	250000
25	257000	285000	282000	282000		446000	410000	353000	270000	319000	269000	232000
26	303000	284000	272000	283000		514000	310000	350000	281000	274000	268000	256000
27	349000	285000	260000	322000		483000	412000	349000	289000	300000	302000	256000
28	303000	286000	266000	353000		506000	412000	350000	348000	308000	250000	284000
29	301000	263000	280000	409000	667000	573000	383000	280000	295000	291000	278000	261000
30	304000		310000	475000	500000	478000	350000	337000	300000	256000	264000	275000
31	292000		264000				385000	340000		273000		249000
TOTALS	9711000	8557000	8723000	8752000	1673000	16642000	13328000	10863000	9272000	8995000	8535000	8165000

TOTAL IN
GALLONS: 113,216,000

WELL: SHURTZ CANYON SPRINGS YEAR: 2020

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1	0	0	0	1061300	1061300	946400	1657100	3215000	3750400	3351200	1330400	82500
2	0	0	0	0	236300	1011400	1659100	3051600	3304900	2949200	1330400	82500
3	0	0	0	49807	985300	607400	1818100	2481100	2882700	2475200	1330400	82500
4	0	0	0	49807	844300	669400	1388500	1745000	3498100	2851600	1330400	82500
5	0	0	0	49807	236300	958400	1280500	1829000	3696000	2820600	1330400	82500
6	0	0	0	49807	1663300	2204500	1395800	1827000	4484300	1970100	1330400	82500
7	0	0	0	49807	573300	2546500	2862600	1832000	2615900	2130100	1330400	82500
8	0	0	0	49807	811300	219500	2708500	2238800	3736000	1258100	1330400	82500
9	0	0	0	49807	1054300	2347500	2600200	3308700	1579500	2155100	572300	82500
10	0	0	0	49807	768300	1428900	2445400	3125800	1024500	1258100	572300	82500
11	0	0	0	49807	1105900	2658500	2915400	2992100	2124500	2384100	572300	82500
12	0	0	0	430807	2416900	2147800	2484300	3322900	2222500	1851100	572300	82500
13	0	0	0	72807	2421100	2176600	2377400	2976200	1119500	1113900	572300	82500
14	0	0	49807	1843807	1518000	2636200	2584400	2927300	1995300	2712300	572300	0
15	0	0	49807	49807	2295600	2409300	2655300	3303700	3461700	2843300	572300	0
16	0	0	49807	480807	2159800	2285000	3037600	4021500	3154300	2257900	572300	0
17	0	0	49807	960807	2532800	2609400	3176400	3789500	2259200	2759000	572300	0
18	0	0	49807	277807	1588500	2335000	3016700	3777700	3351400	2784100	572300	0
19	0	0	49807	49807	1952100	1490300	3014200	4097200	3183800	2441400	82500	0
20	0	0	49807	49807	1872400	2446800	3153700	3695100	3074900	2900200	82500	0
21	0	0	49807	49807	2113800	2804700	3299000	3691600	2234500	2942500	82500	0
22	0	0	49807	161807	2099900	2861300	3086400	3761100	3422200	2354600	82500	0
23	0	0	49807	724807	1596000	2676400	2795100	3056400	3136500	1751900	82500	0
24	0	0	49807	775807	2450300	2588200	3744000	4003600	2244900	1648900	82500	0
25	0	0	49807	988807	2185800	3007500	3417800	3075700	3485200	1238900	82500	0
26	0	0	49807	49807	1930900	2171500	2738900	3795200	3313500	0	82500	0
27	0	0	49807	1845807	1734900	2788700	3287900	3719700	2440800	0	82500	0
28	0	0	49807	905807	1948200	2805700	2478200	3772000	3540700	0	82500	0
29	0	0	49807	49807	1997900	1259400	3545400	4193300	3290400	0	82500	0
30	0	0	49807	730807	3415500	1205000	2203300	2285700	2853300	0	82500	0
31	0	0	0	0	1723700	0	2085500	1217900	0	585000	0	0
TOTALS	0	0	846719	12008896	51294000	60303200	80912700	96129400	86481400	57788400	17356200	1072500

TOTAL IN
GALLONS: 464,193,415

WELL: PRESSURIZED IRRIGATION TOTALS YEAR: 2020

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1	0	0	0	0	825000	798000	991000	1249000	847000	876000	0	0
2	0	0	0	0	0	863000	993000	986000	922000	474000	0	0
3	0	0	0	0	749000	459000	1152000	977000	239000	0	0	0
4	0	0	0	0	608000	521000	1015000	915000	924000	496000	0	0
5	0	0	0	0	0	810000	907000	999000	1139000	496000	0	0
6	0	0	0	0	1427000	858000	989000	997000	1876000	712000	0	0
7	0	0	0	0	337000	1200000	1237000	1002000	0	872000	0	0
8	0	0	0	0	575000	0	1005000	441000	982000	0	0	0
9	0	0	0	0	818000	955000	950000	1241000	0	897000	0	0
10	0	0	0	0	532000	0	985000	890000	0	0	0	0
11	0	0	0	0	868000	1239000	1232000	932000	1100000	1126000	0	0
12	0	0	0	381000	929000	805000	963000	1253000	1198000	593000	0	0
13	0	0	0	23000	898000	802000	985000	890000	95000	0	0	0
14	0	0	0	1794000	0	1203000	1192000	930000	918000	516000	0	0
15	0	0	0	0	991000	976000	985000	604000	1197000	513000	0	0
16	0	0	0	431000	751000	868000	1032000	1159000	916000	0	0	0
17	0	0	0	911000	1041000	1175000	1147000	927000	0	501000	0	0
18	0	0	0	228000	217000	931000	1013000	915000	1197000	500000	0	0
19	0	0	0	0	545000	163000	942000	1213000	930000	0	0	0
20	0	0	0	0	485000	1084000	941000	927000	837000	675000	0	0
21	0	0	0	0	676000	911000	1269000	948000	0	517000	0	0
22	0	0	0	112000	779000	1137000	943000	1057000	1199000	0	0	0
23	0	0	0	675000	230000	952000	243000	266000	919000	513000	0	0
24	0	0	0	726000	1078000	869000	1192000	829000	0	410000	0	0
25	0	0	0	939000	803000	1096000	943000	484000	1096000	0	0	0
26	0	0	0	0	442000	307000	264000	949000	915000	0	0	0
27	0	0	0	1796000	318000	916000	931000	948000	0	0	0	0
28	0	0	0	856000	543000	910000	1234000	946000	975000	0	0	0
29	0	0	0	0	595000	0	1037000	1652000	865000	0	0	0
30	0	0	0	681000	1997000	1205000	957000	1208000	404000	0	0	0
31	0	0	0	0	528000	0	918000	0	0	585000	0	0
TOTALS	0	0	0	9553000	20585000	24013000	30587000	28734000	21690000	11272000	0	0

WELL: CEMETERY - TOTAL

YEAR: 2020

TOTAL IN GALLONS: 146,434,000

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1								1136000	1471600	1217100		
2								1235600	951100	1217100		
3								674100	1211900	1217100		
4									1142300	1097500		
5									1125200	1066500		
6						1198100	33300		1176500			
7						1198100	1252100		1184100			
8						71100	1330000	967800	1322200			
9						1244100	1276700	1237700	147700			
10						1280500	1086900	1405800				
11					1600	1271100	1309900	1230100				
12					1251600	1194400	1147800	1239900				
13					1286800	1226200	1018900	1256200				
14					1281700	1284800	1018900	1167300	52800	1082400		
15					1156200	1284900	1296800	1114800	1240200	1216400		
16					1260400	1268600	1187000	1277600	1213800	1144000		
17					1343400	1286000	1210800	1277600	1234700	1144100		
18					1223100	1255600	1185100	1277800	1129900	1170200		
19					1258700	1178900	1253600	1299300	1229300	1327500		
20					1239000	1214400	1394100	1183200	1213400	1111300		
21					1289400	1227600	1211400	1158700	1210000	1186600		
22					1172500	1058200	1324800	1119200	1198700	1115700		
23					1217600	1058300	1322000	1205500	1193000			
24					1223900	1053100	1321900	1589700	1220400			
25					1234400	1245400	1244700	1006800	1131100			
26					1340500	1198400	1244800	1261300	1140400			
27					1268500	1206600	1126800	1186800	1182700			
28					1256800	1229600	1244200	1394200	1307600			
29					1254500	593300	1278300	1109500	1167300			
30					1270100		1246300	1077700	1191200			
31					1195700		1167500	1217900				
TOTALS	0	0	0	0	25026400	27327300	30734600	32308100	28989100	16313500	0	0

WELL: Northfield Well

YEAR: 2020

TOTAL IN GALLONS: 160,699,000

DATE	January	February	March	April	May	June	July	August	September	October	November	December
1												
2												
3												
4												
5												
6												
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26												
27												
28												
29												
30												
31												
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0

WELL: 200 N. PUMP STATION

YEAR: 2020

TOTAL IN GALLONS: 0

APPENDIX D
PUMPING COSTS

	Cemetery Well		SQUARE MT. PUMP		200 N. PUMP		NORTHFIELD WELL		ENOCH WELL #3		ENOCH WELL #1	
	AVERAGE	TOTAL	AVERAGE	TOTAL	AVERAGE	TOTAL	AVERAGE	TOTAL	AVERAGE	TOTAL	AVERAGE	TOTAL
WATER PUMPED	12,202,833	146,434,000	13,073,175	156,878,096	0	0	12,133,550	145,602,600	27,179,258	326,151,100	12,217,017	146,604,200
POWER COSTS	\$2,795.49	\$30,750.41	\$1,077.49	\$12,929.83	\$345.48	\$4,145.75	\$3,469.79	\$41,637.48	\$5,419.16	\$65,029.93	\$2,788.56	\$33,462.71
COST PER 1000 GALLONS PUMPED	\$0.23		\$0.14		\$0.00		\$0.29		\$0.20	\$0.20	\$0.23	\$0.23
KW-HR USAGE	32,977	395,720	10,450	125,400	1,953	23,440	41,913	502,960	76,113	913,360	29,840	358,080
COST PER KW-HR	\$0.085		\$0.103		\$0.177		\$0.083		\$0.071		\$0.093	

QUICHAPA WELL #8		QUICHAPA WELL #7		QUICHAPA WELL #6		QUICHAPA WELL #5		QUICHAPA WELL #3		QUICHAPA WELL #1	
AVERAGE	TOTAL	AVERAGE	TOTAL	AVERAGE	TOTAL	AVERAGE	TOTAL	AVERAGE	TOTAL	AVERAGE	TOTAL
47,090,892	565,090,700	27,702,392	332,428,700	13,655,833	163,870,000	34,665,442	415,985,300	12,044,833	144,538,000	15,559,025	186,708,300
\$14,135.72	\$169,628.62	\$9,106.85	\$109,282.15	\$5,939.81	\$71,277.69	\$13,935.46	\$167,225.51	\$4,583.48	\$55,001.73	\$4,858.21	\$58,298.52
\$0.30		\$0.28		\$0.43		\$0.40		\$0.36		\$0.31	\$0.31
219,460	2,633,520	133,613	1,603,360	77,613	931,360	203,680	2,444,160	54,310	651,720	77,080	924,960
\$0.064		\$0.068		\$0.077		\$0.068		\$0.084		\$0.063	

ENOCH WELL #1
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	0	0	0	0	1,515,300	52,523,000	32,054,200	30,397,300	30,114,400	0	0	0	12,217,017	146,604,200
POWER COSTS	\$252.77	\$217.96	\$249.79	\$207.22	\$206.58	\$11,018.49	\$4,520.04	\$8,301.15	\$8,029.51	\$121.79	\$125.41	\$212.00	\$2,788.56	\$33,462.71
METER READING DATE	1/3/2020	2/3/2020	3/3/2020	4/1/2020	4/30/2020	6/1/2020	6/30/2020	7/31/2020	8/31/2020	9/30/2020	10/29/2020	12/27/2020		
COST PER 1000 GALLONS PUMPED	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.27	\$0.00	\$0.00	\$0.00	\$0.00	\$0.23	\$0.23
KW-HR USAGE	2,560	2,480	2,480	1,760	1,280	160,720	2,480	93,120	88,400	480	400	1,840	29,833	358,000
COST PER KW-HR	\$0.10	\$0.09	\$0.10	\$0.12	\$0.16	\$0.07	\$1.82	\$0.09	\$0.09	\$0.25	\$0.31	\$0.12	\$0.093	

PUMP NAME - ENOCH WELL #1

PREVIOUS YEARS AVERAGE COSTS:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	Not used	\$0.29	\$0.31	\$0.31	Not used	\$0.28	\$0.28	\$0.26	\$0.36	\$0.23
COST PER KILOWATT-HOUR	No Data	\$0.080	\$0.115	\$0.092	Not used	\$0.092	\$0.092	\$0.087	\$0.110	\$0.093

ENOCH WELL #3
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	0	0	0	0	0	68,376,300	64,875,900	61,526,400	68,787,700	62,584,800	0	0	27,179,258	326,151,100
POWER COSTS	\$227.53	\$233.18	\$168.23	\$150.26	\$5,057.20	\$10,534.89	\$12,168.54	\$12,125.25	\$13,445.56	\$10,486.60	\$200.69	\$232.00	\$5,419.16	\$65,029.93
METER READING DATE	1/31/2020	3/2/2020	3/31/2020	4/29/2020	6/1/2020	6/29/2020	7/30/2020	8/28/2020	9/29/2020	10/28/2020	12/3/2020	12/28/2020		
COST PER 1000 GALLONS PUMPED	\$0.00	\$0.00	\$0.00	\$0.00	\$0.23	\$0.15	\$0.19	\$0.20	\$0.20	\$0.17	\$0.00	\$0.00	\$0.20	\$0.20
KW-HR USAGE	3,040	3,200	1,360	400	57,840	129,200	170,960	169,840	204,480	167,680	2,240	3,120	76,113	913,360
COST PER KW-HR	\$0.07	\$0.07	\$0.12	\$0.38	\$0.09	\$0.08	\$0.07	\$0.07	\$0.07	\$0.06	\$0.09	\$0.07	\$0.071	

PUMP NAME - ENOCH WELL #3

PREVIOUS YEARS AVERAGE COSTS:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	\$0.20	\$0.19	\$0.15	\$0.19	\$0.21	\$0.21	\$0.21	\$0.20	\$0.20	\$0.20
COST PER KILOWATT-HOUR	No Data	\$0.071	\$0.085	\$0.086	\$0.081	\$0.083	\$0.084	\$0.077	\$0.074	\$0.071

QUICHAPA WELL #1
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	0	0	0	14,108,600	19,105,600	24,131,600	41,481,200	28,296,200	27,334,200	23,315,500	8,935,400	0	15,559,025	186,708,300
POWER COSTS	\$112.34	\$106.84	\$90.85	\$3,947.80	\$6,650.73	\$7,722.03	\$12,722.98	\$9,760.09	\$9,713.17	\$5,772.35	\$1,699.34	\$0.00	\$ 4,858.21	\$58,298.52
METER READING DATE	1/22/2020	2/20/2020	3/20/2020	4/20/2020	5/19/2020	6/18/2020	7/20/2020	8/19/2020	9/18/2020	10/19/2020	11/18/2020	12/22/20		
COST PER 1000 GALLONS PUMPED	\$0.00	\$0.00	\$0.00	\$0.28	\$0.35	\$0.32	\$0.31	\$0.34	\$0.36	\$0.25	\$0.19	\$0.00	\$0.31	\$0.31
KW-HR USAGE	2,240	1,840	1,520	78,240	131,520	104,320	186,240	133,680	137,520	114,240	33,600		84,087	924,960
COST PER KW-HR	\$0.05	\$0.06	\$0.06	\$0.05	\$0.05	\$0.07	\$0.07	\$0.07	\$0.07	\$0.05	\$0.05	\$0.00	\$0.058	

PUMP NAME - QUICHAPA WELL #1

PREVIOUS YEARS AVERAGE COSTS:

	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	Not used	Tested Only	Not Used	Not Used	Not Used	Not Used	Not Used	\$0.25	\$0.31
COST PER KILOWATT-HOUR	Not used	\$0.012	Not Used	Not Used	Not Used	Not Used	Not Used	\$0.067	\$0.058

QUICHAPA WELL #3
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	0	0	0	0	17,699,000	23,378,000	6,824,000	35,183,000	31,644,000	29,810,000	0	0	12,044,833	144,538,000
POWER COSTS	\$202.79	\$170.01	\$151.66	\$186.96	\$7,989.61	\$9,058.90	\$6,470.68	\$11,035.85	\$10,468.73	\$8,828.73	\$200.81	\$237.00	\$4,583.48	\$55,001.73
METER READING DATE	1/22/2020	2/20/2020	3/20/2020	4/20/2020	5/19/2020	6/18/2020	7/20/2020	8/19/2020	9/18/2020	10/19/2020	11/18/2020	12/20/2020		
COST PER 1000 GALLONS PUMPED	\$0.00	\$0.00	\$0.00	\$0.00	\$0.45	\$0.39	\$0.95	\$0.31	\$0.33	\$0.30	\$0.00	\$0.00	\$0.36	
KW-HR USAGE	1,480	1,840	1,320	1,440	83,320	103,720	36,880	156,920	141,760	120,120	960	1,960	54,310	651,720
COST PER KW-HR	\$0.14	\$0.09	\$0.11	\$0.13	\$0.10	\$0.09	\$0.18	\$0.07	\$0.07	\$0.07	\$0.21	\$0.12	\$0.084	

PUMP NAME - QUICHAPA WELL #3

PREVIOUS YEARS AVERAGE COSTS:

	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	\$0.31	\$0.28	\$0.36	\$0.32	\$0.34	\$0.27	\$0.28	\$0.36	\$0.36
COST PER KILOWATT-HOUR	\$0.074	\$0.074	\$0.086	\$0.081	\$0.080	\$0.070	\$0.069	\$0.101	\$0.084

QUICHAPA WELL #5
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	0	0	35,379,200	28,552,700	28,862,400	56,408,600	52,560,700	41,061,500	43,943,500	51,027,300	38,053,900	40,135,500	34,665,442	415,985,300
POWER COSTS	\$295.59	\$278.65	\$12,936.10	\$11,354.12	\$14,499.19	\$20,375.29	\$20,901.79	\$17,629.23	\$19,965.03	\$18,833.79	\$14,165.73	\$15,991.00	\$13,935.46	\$167,225.51
METER READING DATE	1/20/2020	2/20/2020	3/20/2020	4/20/2020	5/19/2020	6/18/2020	7/20/2020	8/19/2020	9/18/2020	10/19/2020	11/19/2020	12/21/2020		
COST PER 1000 GALLONS PUMPED	\$0.00	\$0.00	\$0.37	\$0.40	\$0.50	\$0.36	\$0.40	\$0.43	\$0.45	\$0.37	\$0.37	\$0.40	\$0.40	
KW-HR USAGE	3,680	3,200	165,120	133,440	178,400	310,640	324,000	239,360	299,280	311,520	212,960	262,560	203,680	2,444,160
COST PER KW-HR	\$0.080	\$0.087	\$0.078	\$0.085	\$0.081	\$0.066	\$0.065	\$0.074	\$0.067	\$0.060	\$0.067	\$0.061	\$0.068	

PUMP NAME - QUICHAPA WELL #5

PREVIOUS YEARS AVERAGE COSTS:

COST PER 1,000 GALLONS PUMPED
COST PER KILOWATT-HOUR

	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	Not used	\$0.43	\$0.41	\$0.52	\$0.43	\$0.47	\$0.39	\$0.39	\$0.40
COST PER KILOWATT-HOUR	Not used	\$0.116	\$0.074	\$0.083	\$0.070	\$0.072	\$0.066	\$0.066	\$0.068

QUICHAPA WELL #6
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	0	0	0	0	0	0	47,986,000	49,839,000	53,550,000	12,495,000	0	0	13,655,833	163,870,000
POWER COSTS	\$59.60	\$59.60	\$59.60	\$59.60	\$59.60	\$59.60	\$21,097.29	\$21,442.41	\$20,559.08	\$7,702.11	\$59.60	\$59.60	\$ 5,939.81	\$71,277.69
METER READING DATE	1/22/2020	2/21/2020	3/23/2020	4/20/2020	5/19/2020	6/18/2020	7/20/2020	8/19/2020	9/18/2020	10/19/2020	11/18/2020	12/22/2020		
COST PER 1000 GALLONS PUMPED	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.44	\$0.43	\$0.38	\$0.62	\$0.00	\$0.00	\$0.43	
KW-HR USAGE	0	0	0	0	0	0	308,880	325,680	294,960	1,840	0	0	77,613	931,360
COST PER KW-HR	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.07	\$0.07	\$0.07	\$0.00	\$0.00	\$0.00	\$0.077	

PUMP NAME - QUICHAPA WELL #6

PREVIOUS YEARS AVERAGE COSTS:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	\$0.31	\$0.37	\$0.38	\$0.41	\$0.30	\$0.47	\$0.29	\$0.45	\$0.41	\$0.43
COST PER KILOWATT-HOUR	No Data	\$0.068	\$0.070	\$0.095	\$0.070	\$0.097	\$0.083	\$0.074	\$0.074	\$0.077

QUICHAPA WELL #7
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	0	123,700	22,678,400	0	39,256,400	51,204,000	57,514,700	60,013,700	52,056,800	49,581,000	0	0	27,702,392	332,428,700
POWER COSTS	\$ 382.39	\$ 374.96	\$ 11,550.60	\$ 419.96	\$ 14,062.19	\$17,012.93	\$ 17,927.12	\$ 17,259.01	\$ 15,938.70	\$ 13,720.44	\$ 277.85	\$ 356.00	\$ 9,106.85	\$109,282.15
METER READING DATE	1/22/2020	2/20/2020	3/20/2020	4/20/2020	5/19/2020	6/18/2020	7/20/2020	8/19/2020	9/18/2020	10/19/2020	11/18/2020	12/22/2020		
COST PER 1000 GALLONS PUMPED	\$0.00	\$3.03	\$0.51	\$0.00	\$0.36	\$0.33	\$0.31	\$0.29	\$0.31	\$0.28	#DIV/0!	\$0.00	\$0.28	
KW-HR USAGE	5,280	4,640	162,800	3,280	196,480	254,720	278,560	261,280	226,640	201,680	3,120	4,880	133,613	1,603,360
COST PER KW-HR	\$0.07	\$0.08	\$0.07	\$0.13	\$0.07	\$0.07	\$0.06	\$0.07	\$0.07	\$0.07	\$0.09	\$0.07	\$0.068	

PUMP NAME - QUICHAPA WELL #7

AVERAGED ONLY JULY AND AUGUST FOR POWER USED

PREVIOUS YEARS AVERAGE COSTS:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	\$0.28	\$0.29	\$0.28	\$0.27	\$0.26	\$0.29	\$0.29	\$0.28	\$0.28	\$0.28
COST PER KILOWATT-HOUR	No Data	\$0.070	\$0.070	\$0.067	\$0.077	\$0.076	\$0.073	\$0.067	\$0.084	\$0.068

QUICHAPA WELL #8
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	43,794,400	63,109,900	0	41,544,100	57,348,100	58,990,400	51,878,800	50,535,600	49,773,500	58,335,200	44,920,600	44,860,100	47,090,892	565,090,700
POWER COSTS	\$ 16,150.67	\$ 15,323.37	\$ 470.36	\$ 12,514.49	\$16,585.75	\$ 18,038.54	\$ 16,463.04	\$ 16,587.70	\$16,538.19	\$16,745.35	\$ 13,235.16	\$ 10,976.00	\$ 14,135.72	\$169,628.62
METER READING DATE	1/22/2020	2/21/2020	3/24/2020	4/20/2020	5/19/2020	6/18/2020	7/20/2020	8/19/2020	9/18/2020	10/19/2020	11/18/2020	12/22/2020		
COST PER 1000 GALLONS PUMPED	\$0.37	\$0.24	#DIV/0!	\$0.30	\$0.29	\$0.31	\$0.32	\$0.33	\$0.33	\$0.29	\$0.29	\$0.24	\$0.30	
KW-HR USAGE	287,120	263,680	1,760	181,200	252,640	273,360	235,280	237,520	236,240	275,680	200,160	188,880	219,460	2,633,520
COST PER KW-HR	\$0.06	\$0.06	\$0.27	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07	\$0.06	\$0.07	\$0.06	\$0.064	

PUMP NAME - QUICHAPA WELL #8

PREVIOUS YEARS AVERAGE COSTS:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	\$0.27	\$0.27	\$0.33	\$0.30	\$0.26	\$0.31	\$0.30	\$0.28	\$0.28	\$0.30
COST PER KILOWATT-HOUR	No Data	\$0.066	\$0.070	\$0.069	\$0.071	\$0.074	\$0.068	\$0.067	\$0.068	\$0.064

CEMETERY WELL
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	0	0	0	381,000	17,738,000	21,329,000	27,122,000	28,797,000	27,332,000	18,412,000	5,323,000	0	12,202,833	146,434,000
POWER COSTS	\$28.52	\$28.52	\$30.64	\$109.42	\$2,739.09	\$5,280.90	\$6,359.71	\$6,564.32	\$6,165.89	\$2,681.38	\$762.02	\$375.35	\$2,593.81	\$31,125.76
METER READING DATE	1/16/2020	2/14/2020	3/16/2020	4/14/2020	5/15/2020	6/15/2020	7/14/2020	8/13/2020	9/14/2020	10/13/2020	11/12/2020	12/16/2020		
COST PER 1000 GALLONS PUMPED	\$0.00	\$0.00	\$0.00	\$0.29	\$0.15	\$0.25	\$0.23	\$0.23	\$0.23	\$0.15	\$0.14	\$0.00	\$0.21	
KW-HR USAGE	240	240	280	1,760	50,920	61,840	69,680	74,200	67,560	48,320	13,960	6,720	32,977	395,720
COST PER KW-HR	\$0.12	\$0.12	\$0.11	\$0.06	\$0.05	\$0.09	\$0.09	\$0.09	\$0.09	\$0.06	\$0.05	\$0.06	\$0.079	

PUMP NAME - CEMETERY WELL

PREVIOUS YEARS AVERAGE COSTS:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	\$0.20	\$0.21	\$0.22	\$0.22	\$0.21	\$0.20	\$0.20	\$0.24	\$0.26	\$0.23
COST PER KILOWATT-HOUR	No Data	\$0.078	\$0.085	\$0.085	\$0.089	\$0.085	\$0.087	\$0.082	\$0.086	\$0.079

Northfield Well
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	0	0	0	0	0	25,026,400	27,327,300	31,870,600	32,643,700	28,734,600	0	0	12,133,550	145,602,600
POWER COSTS	\$222.90	\$201.94	\$198.94	\$194.13	\$174.85	\$6,761.26	\$6,613.41	\$7,718.35	\$7,435.09	\$7,206.77	\$4,705.45	\$204.39	\$3,469.79	\$41,637.48
METER READING DATE	1/6/2020	2/4/2020	3/4/2020	4/2/2020	5/1/2020	6/2/2020	7/1/2020	8/3/2020	9/1/2020	10/1/2020	10/30/2020	12/3/2020		
COST PER 1000 GALLONS PUMPED	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.27	\$0.24	\$0.24	\$0.23	\$0.25	\$0.00	\$0.00	\$0.29	
KW-HR USAGE	2,560	2,000	1,920	1,360	800	79,120	75,680	102,640	93,760	91,440	50,080	1,600	41,913	502,960
COST PER KW-HR	\$0.087	\$0.101	\$0.104	\$0.143	\$0.219	\$0.085	\$0.087	\$0.075	\$0.079	\$0.079	\$0.094	\$0.128	\$0.083	

PUMP NAME - NORTHFIELD WELL

PREVIOUS YEARS AVERAGE COSTS:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	\$0.55	\$0.37	\$0.27	\$0.32	\$0.44	\$0.32	\$0.30	\$0.33	\$0.25	\$0.29
COST PER KILOWATT-HOUR	No Data	\$0.101	\$0.080	\$0.086	\$0.095	\$0.097	\$0.092	\$0.080	\$0.082	\$0.083

200 N. PUMPSTATION
PUMPING EFFICIENCY
\$/1000 GALLONS

	January	February	March	April	May	June	July	August	September	October	November	December	AVERAGE	TOTAL
WATER PUMPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
POWER COSTS	\$403.12	\$364.24	\$270.95	\$217.92	\$45.55	\$51.38	\$1,766.35	\$331.24	\$297.97	\$173.71	\$112.32	\$111.00	\$345.48	\$4,145.75
METER READING DATE	1/24/2020	2/24/2020	3/24/2020	4/22/2020	5/21/2020	6/22/2020	7/22/2020	8/21/2020	9/22/2020	10/21/2020	11/20/2020	12/21/2020		
1000 GALLONS PUMPED	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
KW-HR USAGE	4,880	4,280	2,840	2,000	280	320	2,120	2,120	1,800	1,080	880	840	1,953	23,440
COST PER KW-HR	\$0.083	\$0.085	\$0.095	\$0.109	\$0.163	\$0.161	\$0.833	\$0.156	\$0.166	\$0.161	\$0.128	\$0.132	\$0.177	

PUMP NAME - 200 N. PUMP STATION

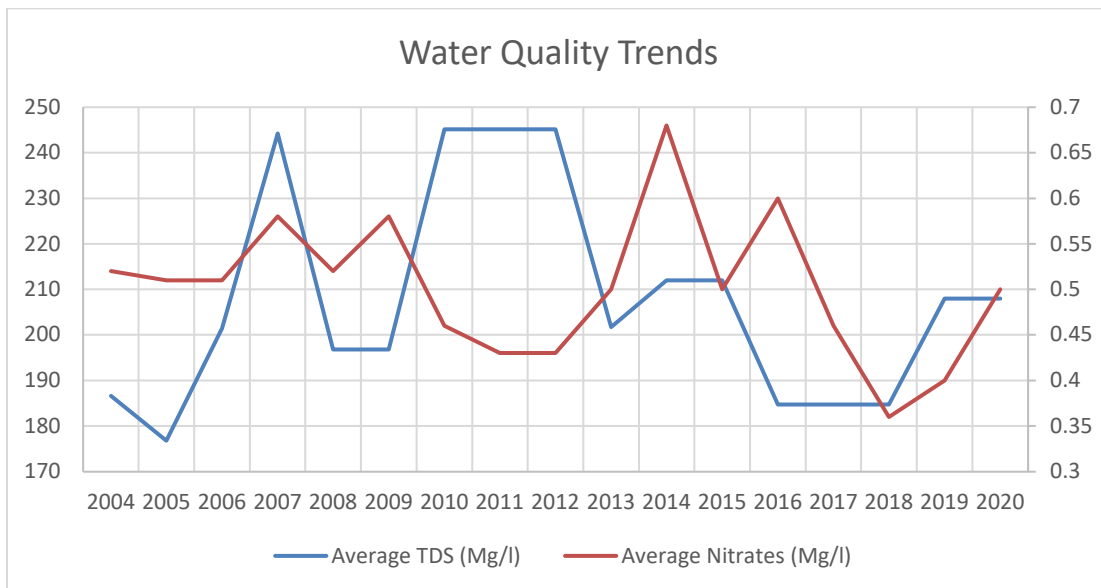
PREVIOUS YEARS AVERAGE COSTS:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
COST PER 1,000 GALLONS PUMPED	Not used	\$0.26	\$0.42	\$0.58	Not used	\$1.47	Not used	Not used	Not used	Not used
COST PER KILOWATT-HOUR	No Data	\$0.151	\$0.173	\$0.178	Not used	\$0.156	Not used	Not used	Not used	Not used

APPENDIX E
WATER QUALITY

WATER QUALITY TRENDS AVERAGES

Year	Average TDS (Mg/l)	Average Nitrates (Mg/l)
2004	186.6	0.52
2005	176.8	0.51
2006	201.4	0.51
2007	244.2	0.58
2008	196.8	0.52
2009	No Data	0.58
2010	245.2	0.46
2011	No Data	0.43
2012	No Data	0.43
2013	201.7	0.5
2014	212	0.68
2015	No Data	0.5
2016	184.7	0.6
2017	No Data	0.46
2018	No Data	0.36
2019	208	0.4
2020	No Data	0.5



WATER QUALITY

NITRATES	2015	2016	2017	2018	2019	2020
Cedar Canyon Springs	0.6	0.7	0.5	0.5	No Data	0.5
Shurtz Canyon Springs	0.4	0.5	0.4	0.4	0.4	0.5
Spilsbury Springs	0.3	0.3	0.3	0.2	0.2	0.2
Quichapa Well #1	*	*	*	*	*	*
Quichapa Well #3	*	*	*	*	*	*
Quichapa Well #5	0.3	0.5	0.2	0.3	0.2	0.2
Quichapa Well #6	*	*	*	*	*	*
Quichapa Well #7	*	*	*	*	*	*
Quichapa Well #8	*	*	*	*	*	*
Enoch Well #1	0.9	1	0.9	0.4	0.8	1.1
Enoch Well #3	*	*	*	*	*	*
Average	0.50	0.60	0.46	0.36	0.40	0.50
Cemetery Well	No Data	No Data	No Data	No Data	No Data	No Data
Northfield Well	No Data	No Data	No Data	No Data	No Data	No Data

T.D.S.	2015	2016	2017	2018	2019	2020
Cedar Canyon Springs	No Data	No Data	No Data	No Data	No Data	No Data
Shurtz Canyon Springs	No Data	No Data	No Data	No Data	No Data	No Data
Spilsbury Springs	No Data	128	No Data	No Data	184	No Data
Quichapa Well #1	*	*	*	*	*	*
Quichapa Well #3	*	*	*	*	*	*
Quichapa Well #5	No Data	194	No Data	No Data	164	No Data
Quichapa Well #6	*	*	*	*	*	*
Quichapa Well #7	*	*	*	*	*	*
Quichapa Well #8	*	*	*	*	*	*
Enoch Well #1	No Data	232	No Data	No Data	276	No Data
Enoch Well #3	*	*	*	*	*	*
Average	No Data	184.7	No Data	No Data	208	No Data
Cemetery Well	No Data	No Data	No Data	No Data	No Data	No Data
Northfield Well	No Data	No Data	No Data	No Data	No Data	No Data

* Beginning in 2005 the data for Enoch 1 & 3 are from the same samples, Quichapa 1 & 3 are from the same samples, and Quichapa 5, 6 & 7 are from the same samples.

NOTE: Beginning in 2008, TDS only required every 3 years.

APPENDIX F

UNACCOUNTED-FOR WATER

Unaccounted-for Water (UAW) Calculations - 2020

Month	Metered Water Usage (gallons)	Water Produced (gallons)
January	91,636,333	102,770,300
February	95,848,333	95,257,000
March	81,562,333	102,733,200
April	109,539,333	122,899,200
May	171,690,333	306,178,700
June	274,304,333	363,173,500
July	385,504,333	389,613,100
August	368,139,333	407,767,600
September	286,975,333	350,298,600
October	316,230,333	247,577,300
November	179,816,333	116,265,700
December	98,838,333	110,639,800
Totals	2,460,085,000	2,715,174,000

% Unaccounted-for Water =

9.4%

Previous years percentage of unaccounted-for water:

2010	12.4
2011	6.7
2012	9.7
2013	11.2
2014	13
2015	13.2
2016	12.4
2017	5.4
2018	5.3
2019	11.1
2020	9.4
10-year average =	9.74

Leakage Calculations - 2020

Night Inflow Data		(from water usage monitoring data)
Night inflow to water distribution system	744,488,193	gallons

Metered Usage Data		
Total annual residential usage	1,604,340,000	gallons
Total annual non-residential usage	855,745,000	gallons
Total Annual Metered Water Usage	2,460,085,000	gallons

Nighttime Usage		
Residential - 16.5% of metered usage	264,716,100	gallons
Non-residential - 41% of metered usage	350,855,450	gallons
Total Annual Nighttime Usage	615,571,550	gallons

Calculated Leakage		
Annual Leakage = Night inflow - Nighttime usage	128,916,643	gallons
Total annual production	2,715,174,000	gallons
% Leakage =	4.7%	

Previous years percentage of leakage:

2010	3.4%
2011	5.8%
2012	2.1%
2013	2.0%
2014	4.4%
2015	6.5%
2016	5.0%
2017	3.5%
2018	4.4%
2019	10.2%
2020	4.7%
10-year average =	4.9%

APPENDIX G

THE LAKE AT THE HILLS MASS BALANCE SHEETS

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: January

Year: 2020

Name of Operator(s): _____

Name of Engineer: DONALD DAVIS

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage-elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>1-3-2020</u>	Start Time	<u>12:00 AM</u>	Start WSE	<u>6009.917</u>
End Date	<u>1-3-2020</u>	End Time	<u>8:00 AM</u>	End WSE	<u>6009.917</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>31,993,110</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>31,993,110</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume.
Time elapsed during test period	<u>8</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume / Time elapsed
Allowable Leakage Rate (ALR)	<u>6,188</u>	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: February

Year: 2020

Name of Operator(s): Kurt

Name of Engineer: Donald Davis

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
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- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>2-1-2020</u>	Start Time	<u>12:00 AM</u>	Start WSE	<u>6009.623</u>
End Date	<u>2-1-2020</u>	End Time	<u>9:00 AM</u>	End WSE	<u>6009.623</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>31,096,419</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>31,096,419</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume
Time elapsed during test period	<u>8</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume / Time elapsed
Allowable Leakage Rate (ALR)	6,188	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: March
Name of Operator(s): KURT
Name of Engineer: DONALD DAVIS

Year: 2020

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage-elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>3-1-2020</u>	Start Time	<u>2:15 AM</u>	Start WSE	<u>6008-818</u>
End Date	<u>3-1-2020</u>	End Time	<u>10:15 AM</u>	End WSE	<u>6008-818</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>28,641,194</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>28,641,194</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume
Time elapsed during test period	<u>8</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume / Time elapsed
Allowable Leakage Rate (ALR)	<u>6,188</u>	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: April

Year: 2020

Name of Operator(s): KURT

Name of Engineer: DOWNARD DAVIS

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>4-5-2020</u>	Start Time	<u>7:00 PM</u>	Start WSE	<u>6009.244</u>
End Date	<u>4-6-2020</u>	End Time	<u>3:00 AM</u>	End WSE	<u>6009.244</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>29,940,481</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>29,940,481</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume.
Time elapsed during test period	<u>8</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume/Time elapsed
Allowable Leakage Rate (ALR)	<u>6,188</u>	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: May

Year: 2020

Name of Operator(s): Kuff

Name of Engineer: _____

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage-elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>5-3-2020</u>	Start Time	<u>12:00 AM</u>	Start WSE	<u>6007.542</u>
End Date	<u>5-3-2020</u>	End Time	<u>9:00 AM</u>	End WSE	<u>6007.542</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>24,834,499</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>24,834,499</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume
Time elapsed during test period	<u>8</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume / Time elapsed
Allowable Leakage Rate (ALR)	<u>6.188</u>	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: June
Name of Operator(s): Kurt
Name of Engineer: DONALD DAVIS

Year: 2020

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage-elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>5-31-2020</u>	Start Time	<u>9:00 AM</u>	Start WSE	<u>6009.949</u>
End Date	<u>5-31-2020</u>	End Time	<u>4:00 PM</u>	End WSE	<u>6009.949</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>32,090,709</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>32,090,709</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume
Time elapsed during test period	<u>8</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume / Time elapsed
Allowable Leakage Rate (ALR)	<u>6.188</u>	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: July
Name of Operator(s): Kurt
Name of Engineer: DONALD DAVIS

Year: 2020

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage-elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>6-29</u>	Start Time	<u>12:00 AM</u>	Start WSE	<u>6010.000</u>
End Date	<u>6-29</u>	End Time	<u>8:00 AM</u>	End WSE	<u>6010.000</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>32,246,257</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>32,246,257</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume
Time elapsed during test period	<u>8</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume / Time elapsed
Allowable Leakage Rate (ALR)	6,188	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: August
Name of Operator(s): KUMF
Name of Engineer: DAVID DAVIS

Year: 2020

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage-elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>8-2-</u>	Start Time	<u>10:00 PM</u>	Start WSE	<u>6009.388</u>
End Date	<u>8-3</u>	End Time	<u>6:00 AM</u>	End WSE	<u>6009.388</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE:
Storage volume at Start WSE	<u>30,379,676</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>30,379,676</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume
Time elapsed during test period	<u>8</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume/Time elapsed
Allowable Leakage Rate (ALR)	<u>6,188</u>	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: Sept.
Name of Operator(s): Kurt
Name of Engineer: DONALD DAVES

Year: 2020

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage-elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>8-30</u>	Start Time	<u>10:45pm</u>	Start WSE	<u>6009.184</u>
End Date	<u>8-31</u>	End Time	<u>6:15 am</u>	End WSE	<u>6009.184</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>29,757,482</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>29,757,482</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume
Time elapsed during test period	<u>7:5</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume/Time elapsed
Allowable Leakage Rate (ALR)	<u>6,188</u>	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer:

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: October
Name of Operator(s): KUMF
Name of Engineer: DONALD DAVIS

Year: 2020

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage-elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>9-27</u>	Start Time	<u>10:30</u>	Start WSE	<u>6009.566</u>
End Date	<u>9-28</u>	End Time	<u>2:30</u>	End WSE	<u>6009.566</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>30,922,571</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>30,922,571</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume
Time elapsed during test period	<u>8</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume / Time elapsed
Allowable Leakage Rate (ALR)	6,188	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: November
Name of Operator(s): Kurt
Name of Engineer: DENNIS DAVIS

Year: 2020

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage-elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>11-1</u>	Start Time	<u>10:00 PM</u>	Start WSE	<u>6009.630</u>
End Date	<u>11-2</u>	End Time	<u>5:00 AM</u>	End WSE	<u>6009.630</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>30,922,571</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>30,922,571</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume
Time elapsed during test period	<u>7</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume / Time elapsed
Allowable Leakage Rate (ALR)	6,188	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

LEIGH HILL RESERVOIR
MASS BALANCE LOG SHEET

Dam #UT53394

Cedar City, Utah

Month: December
Name of Operator(s): Kurt
Name of Engineer: Downard Davis

Year: 2020

PROCEDURE:

- 1 Prior to scheduling the mass balance procedure, check the weather forecast to make sure that there is no potential for rain or snow in the forecast.
- 2 Notify all customers on the pressurized irrigation system at least 24 hours before the study begins.
- 3 Perform the study during the nighttime hours from approximately 10:00 PM to 6:00 AM.
- 4 Turn off all pumps and wells that feed into the pressurized irrigation system.
- 5 If it is open, close the valve on the culinary water system.
- 6 Close the butterfly valve in the observation box to prevent any water from coming in or going out of the reservoir.
- 7 Record the water surface elevation at the beginning of the study period. (The SCADA system should also be monitoring the water levels.)
- 8 Record the water surface elevation at the end of the study period. (The SCADA system should also be monitoring the water levels.)
- 9 At the end of the study period, the valves can be re-opened and the pumps can be turned on again.
- 10 Provide a copy of this completed log sheet to the City Engineer.
- 11 The City Engineering Department will determine the volume of water loss during the study period based on the amount of drawdown.
- 12 The City Engineering Department shall keep a storage-elevation curve for the Leigh Hill Reservoir on file to be used in calculating the volume of water loss.
- 13 The City Engineering Department will send a copy of the mass balance study results to the State Engineer (Dam Safety).
- 14 If the volume of water loss exceeds the threshold stated in the SOP, then remedial actions will be taken based on direction from the State Engineer.

Record information in the following table:

WSE = Water Surface Elevation in Reservoir (read to the nearest 0.001 ft)

Start Date	<u>11-29-2020</u>	Start Time	<u>8:00 pm</u>	Start WSE	<u>6009.411</u>
End Date	<u>11-30-2020</u>	End Time	<u>6:00 AM</u>	End WSE	<u>6009.411</u>

NOTE: Return this sheet to the City Engineering Department after the results are recorded.

The following table is to be completed by the Cedar City Engineering Department:

Elevation difference	<u>0</u>	feet	Elev Difference = Start WSE - End WSE
Storage volume at Start WSE	<u>30,449,825</u>	gallons	Refer to the storage-elevation curve.
Storage volume at End WSE	<u>30,449,825</u>	gallons	Refer to the storage-elevation curve.
Volume of water lost	<u>0</u>	gallons	Water loss = Start WSE volume - End WSE volume
Time elapsed during test period	<u>10</u>	hours	
Water loss per hour	<u>0</u>	gal/hour	Water loss per hour = Total volume/Time elapsed
Allowable Leakage Rate (ALR)	<u>6,188</u>	gal/hour	
Is water loss less than ALR?	<u>Yes</u>	yes or no?	If no, then contact the State Engineer.

NOTE: A copy of this completed sheet should be kept for inclusion in the City's Annual Water Report.

APPENDIX H

WATER CONVEYANCE TRACKING SHEET

(as described in Section 32-6B of the Waterworks Ordinance)

WATER ACQUISITION TRACKING SHEET

Date Approved/Purchased	Development/Sellers Name	Development/Acquisition Type	Area (Acres)	# of Lots	Water Rights Transferred to City (acre Feet)				Conveyed	Deferred Convey	Acquisition Fees Paid	Wet Land (Acres)	Dry Land (Acres)	Agricultural Water Lease Back Area (Acres)	Comments
					Ground Water	Primary Surface	Secondary Surface	Total							
3/14/2006	Stanley	Purchase	N/A	N/A	141.85			141.85	X		N/A	N/A	N/A	N/A	
4/12/2006	Frank Benson	Purchase	N/A	N/A		0.09		0.09	X		N/A	N/A	N/A	N/A	
4/14/2006	Steffensen	Purchase	N/A	N/A		5.625	1.875	7.5	X		N/A	N/A	N/A	N/A	
4/30/2006	Cedar Willows Phase 3	Subdivision	5.16	18		5.161		5.161	X		\$24,525.07	N/A	N/A	N/A	
5/15/2006	Tippetts Annex.	Annexation	493.7	N/A	260.28			260.28	X		N/A	493.70		Agreement with City	
5/25/2006	Hunter Glenn #1	Subdivision	37.66	94	0	0	0	0		X	\$0.00	N/A	N/A	N/A	to be at bldg. Permit
6/6/2006	Hunter Glenn #3	Annexation	40.74		0	0	0	0		X			40.74	N/A	
6/6/2006	Bauer Annex (1600 S W of westview)	Annexation	160.9	0	0	0	0	0		X	\$0.00		160.90	N/A	
6/6/2006	Bauer Annex (1600 S E of westview)	Annexation	7.43	0	0	0	0	0		X			7.43	N/A	
6/19/2006	DeMille Phase 2	Subdivision		6	0	0	0	0	N/A	N/A	\$35,064.00	N/A	N/A	N/A	
6/21/2006	Middleton South I-15 area	Annexation	915.61	N/A	0	0	0	0		X	\$0.00		915.61	N/A	
6/21/2006	Cosmic 4800 W Center	Annexation	242.95	N/A	3.734		80.43	84.164	X		\$0.00	194.00	48.00	N/A	
6/28/2006	Sevy 5200 W 800 N	Annexation	733	N/A	258.22		96.384	354.604	X		\$0.00	733.00		Agreement with City	
6/30/2006	Carmel Canyon Phase 3	Subdivision	15.46	35	0	0	0	0	N/A	N/A	\$111,312.00	N/A	N/A	N/A	
8/7/2006	Trailside PUD	PUD	6.57	92	0	0	0	0		X	\$0.00	N/A	N/A	N/A	to be at bldg. Permit
8/11/2006	Cedar Park Townhomes 1 & 2	PUD	4.51	52	7.47	4.8	3.9	16.17	X		\$0.00	N/A	N/A	N/A	
8/30/2006	H & B Capitol Joel Hansen	Annexation	7.43	N/A	0	0	0	0		X	\$0.00		7.43	N/A	
9/27/2006	Forrest & Ruby Bauer Westview Dr.	Annexation	160.92	N/A	0	0	0	0		X	\$0.00		160.92	N/A	
10/13/2006	Cedar Park Townhomes #2	PUD	4.51	52	5.215	1.345	0.66975	7.22975	X		\$22,904.64	4.51		N/A	
10/13/2006	Crescent Heights PUD	PUD	3.39	24	0	0	0	0	N/A	N/A	\$24,408.00		3.39	N/A	
11/30/2006	Hidden Hills Estates/Hunter	Subdivision	10.37	17	5.185	2.725		7.91	X		\$15,183.36	10.37		N/A	
12/26/2006	Coal Creek Industrial #4	Subdivision	6.64	11	0	0	0	0		X	\$0.00		6.64	N/A	to be at bldg. Permit
1/20/2007	Esplin Ranch	Annexation	1719.6	N/A	0	0	0	0		X	\$0.00		1719.60	N/A	
1/30/2007	Darla and Amy Allen	Purchase	N/A	N/A	31			31	X		N/A	N/A	N/A	N/A	
2/21/2007	Hibler/Whittingham 5600 W U-56	Annexation	132.37	N/A	0	0	0	0		X	\$0.00		132.37	N/A	
2/21/2007	Cottonwood South 3000 N & Bulldog	Annexation	54.67	N/A	0	0	0	0		X	\$0.00		54.67	N/A	
3/1/2007	Bella Monte PUD	PUD	3.03	39	0	0	0	0			\$21,816.00		3.03	N/A	
4/15/2007	Cordero Annex	Annexation	2255.16	N/A	556			556	X			2255.16		N/A	
4/24/2007	Sage Springs 1	Subdivision	2.72	9	1.36	4.78	0	6.14	X		\$0.00	2.72		N/A	
4/25/2007	Heap	Purchase	N/A	N/A	2			2	X		N/A	N/A	N/A	N/A	
4/26/2007	Meadow Crest PUD	PUD	6.3	52	0	0	0	0	N/A	N/A	\$32,161.00		6.30	N/A	
5/10/2007	Hidden Hills Cove 1/Peterson	Subdivision	6.88	24	6.88	0	0	6.88	X		\$0.00	6.68		N/A	
8/14/2007	Cedar Ridge Townhomes PUD	PUD	5.35	40	0	0	0	0			\$30,024.00		5.35	N/A	
8/14/2007	Sycamore Trail PUD 1	PUD	8.01	33	8.013	16		24.013	X		\$0.00	8.01		N/A	
9/24/2007	Paydirt Annex - 1600 N	Annexation	142.9	N/A	95	16.5		111.5	X		\$0.00	142.90		N/A	
10/25/2007	IDR Investment (N of 1600 N,4200 W)	Annexation	20.37	N/A	0	0	0	0		X	\$0.00		20.37	N/A	have not yet received water shares
3/3/2008	Joe Burgess	Purchase	N/A	N/A	7.47	4.944	4.793	17.207	X		N/A	N/A	N/A	N/A	
6/9/2008	Levine	Annexation	42.08	N/A		33.644		33.644	X		\$0.00	42.08		N/A	

Date Approved/Purchased	Development/Sellers Name	Development/Acquisition Type	Area (Acres)	# of Lots	Water Rights Transferred to City (acre Feet)				Conveyed	Deferred Convey	Acquisition Fees Paid	Wet Land (Acres)	Dry Land (Acres)	Agricultural Water Lease Back Area (Acres)	Comments
					Ground Water	Primary Surface	Secondary Surface	Total							
7/2/2008	Hidden Hills Cove Phase 2/Meisner	Subdivision	6.88	31	16.36	8.921	11.97	37.251	X		\$0.00	6.88		N/A	
8/1/2008	Fort Cedar Commerce Cntr. PUD	PUD	3	6	0	0	0	0		X	\$0.00		3.00	N/A	
8/7/2008	Van DeCar	Purchase	N/A	N/A	2			2	X		N/A	N/A	N/A	N/A	
8/27/2008	Benzie Annex	Annexation	21.3	N/A	0	0	0	0		X	?	13.86	7.46	N/A	
2/17/2009	Thatcher	Purchase	N/A	N/A	1.3			1.3	X		N/A	N/A	N/A	N/A	
3/21/2009	Meisner/Judd Annex 3300 W 1900 N	Annexation	57.6	N/A	0	0	28 Shares	0			?		57.60	N/A	COAL CREEK IRRIG.
8/14/2009	Donahue	Purchase	N/A	N/A	3			3	X		N/A	N/A	N/A	N/A	
9/23/2009	Jack Burns	Purchase	N/A	N/A	4		4 Shares	4	X		N/A	N/A	N/A	N/A	COAL CREEK IRRIG.
12/29/2009	Miller Annex.	Annexation	6.4	N/A	3.41		5 Shares	3.41	X		N/A	6.40		N/A	NORTH FIELD IRRIG.
3/17/2010	Endres	Purchase	N/A	N/A	0.85			0.85	X		N/A	N/A	N/A	N/A	
8/13/2010	Kleinschmidt	Purchase	N/A	N/A	5			5	X		N/A	N/A	N/A	N/A	
10/1/2010	Cottonwood Grove (3000 N & Bulldog)	Annexation	31.47	N/A	73.58			73.58	X			31.47		N/A	
11/17/2010	Jett	Purchase	N/A	N/A	19			19	X		N/A	N/A	N/A	N/A	
12/17/2010	Jett	Purchase	N/A	N/A	22			22	X		N/A	N/A	N/A	N/A	
4/12/2011	JDL Investment	Purchase	N/A	N/A	18.706			18.706	X		N/A	N/A	N/A	N/A	
5/2/2011	EID Investments	Purchase	N/A	N/A	37			37	X		N/A	N/A	N/A	N/A	
7/8/2011	Shumway	Purchase	N/A	N/A			.41 S&W	0	X		N/A	N/A	N/A	N/A	S&W FIELD
10/26/2012	Elmer Ent. (Meryl Prince)	Purchase	N/A	N/A	200			200	X		N/A	N/A	N/A	N/A	
1/16/2015	Harold Thompson	Purchase	N/A	N/A			1.135 SHAF	0	X		N/A	N/A	N/A	N/A	S&W FIELD
5/16/2015	Stratton Annexation (Bulldog)	Annexation	18.41	N/A	22.092			22.092				18.41			
8/7/2015	Ruth Melling	Purchase	N/A	N/A			12	12	X		N/A	N/A	N/A	N/A	S&W FIELD
4/13/2016	Talon Pointe 1 & 2 -Brian Peterson	Development	9.01	34	55.75		42 shares	55.75	X		N/A		N/A	N/A	COAL CREEK IRRIG.
10/7/2016	Purchase from MJB	Purchase	N/A	N/A	22.656			22.656	X		N/A	N/A	N/A	N/A	
5/29/2017	2A2N Ltd.	?	N/A	N/A			0.875 shares	0	X		N/A	N/A	N/A	N/A	S&W FIELD
6/10/2017	Alvin L. or Jane A. Statton	Purchase	N/A	N/A			14.45 Shares	0	X		N/A	N/A	N/A	N/A	S&W FIELD
6/16/2017	Alvin L. or Jane A. Statton	Purchase	N/A	N/A			20 Shares	0	X		N/A	N/A	N/A	N/A	COAL CREEK IRRIG.
9/21/2017	Randy L. and Mary Lou Pazaik	Water Meter	N/A	N/A	0.8			0.8	X		\$0.00				
9/25/2017	Leavitt Land & Investment Inc.	?	N/A	N/A			0.95 Shares	0	X		N/A	N/A	N/A	N/A	S&W FIELD
1/18/2018	Guy Weber	Purchase	N/A	N/A			5 Shares	0	X		N/A	N/A	N/A	N/A	OLD FORT/OLD FIELD
1/26/2018	Coca Cola Bottling Company	Purchase	N/A	N/A			31.25 Shares	0	X		N/A	N/A	N/A	N/A	OLD FORT/OLD FIELD
1/26/2018	Coca Cola Bottling Company	Purchase	N/A	N/A			14 Shares	0	X		N/A	N/A	N/A	N/A	S&W FIELD
4/26/2018	Murray Jim & Gay Sorensen	Purchase	N/A	N/A	26.828			26.828	X		N/A	N/A	N/A	N/A	
5/7/2018	Robert L. Stratton	Purchase	N/A	N/A			0.9245	0.9245			N/A	N/A	N/A	N/A	S&W FIELD
5/7/2018	Spencer Jones	Purchase	N/A	N/A			.20 Share	0	X		N/A	N/A	N/A	N/A	S&W FIELD
5/17/2018	MJB Cedar City LLC	Purchase	N/A	N/A	30.635			30.635	X		N/A	N/A	N/A	N/A	
1/18/2019	Sam Dodd	Purchase	N/A	N/A	10			10	X		N/A	N/A	N/A	N/A	
4/11/2019	Mark Meisner Annexation	Annexation	N/A	N/A	6.39			6.39	X		N/A	N/A	N/A	N/A	
3/26/2020	Burgess: Canyon Loft Townhomes	Purchase	N/A	N/A	1.09			1.09	X		N/A	N/A	N/A	N/A	
8/14/2019	Burgess: Northfield Townhomes	PUD	N/A	N/A	4.42			4.42	X		N/A	N/A	N/A	N/A	

Date Approved/Purchased	Development/Sellers Name	Development/Acquisition Type	Area (Acres)	# of Lots	Water Rights Transferred to City (acre Feet)				Conveyed	Deferred Convey	Acquisition Fees Paid	Wet Land (Acres)	Dry Land (Acres)	Agricultural Water Lease Back Area (Acres)	Comments
					Ground Water	Primary Surface	Secondary Surface	Total							
6/26/2019	Mark Meisner Annexation	Purchase	N/A	N/A		28.1		28.1	X		N/A	N/A	N/A	N/A	COAL CREEK IRRIG.
6/26/2019	Burgess: Canyon Loft Townhomes	Purchase	N/A	N/A		0.2		0.2	X		N/A	N/A	N/A	N/A	COAL CREEK IRRIG.
2/19/2019	Burgess: Northfield Townhomes	PUD	N/A	N/A		0.8		0.8	X		N/A	N/A	N/A	N/A	COAL CREEK IRRIG.
4/8/2019	Blake Cozzens	Purchase	N/A	N/A		0.225		0.225	X		N/A	N/A	N/A	N/A	S&W FIELD
12/30/2019	Harold Thompson	Purchase	N/A	N/A		0.195		0.195	X		N/A	N/A	N/A	N/A	S&W FIELD
7/8/2019	Burgess: Canyon Loft Townhomes	Purchase	N/A	N/A		0.14		0.14	X		N/A	N/A	N/A	N/A	NORTH FIELD IRRIG.
7/8/2019	Burgess: Canyon Loft Townhomes	Purchase	N/A	N/A		0.25		0.25	X		N/A	N/A	N/A	N/A	NORTH FIELD IRRIG.
12/24/2018	Burgess: Northfield Townhomes	PUD	N/A	N/A		0.56		0.56	X		N/A	N/A	N/A	N/A	NORTH FIELD IRRIG.
12/24/2018	Burgess: Northfield Townhomes	PUD	N/A	N/A		1.01		1.01	X		N/A	N/A	N/A	N/A	NORTH FIELD IRRIG.
11/17/2020	Brent Hunter	Purchase	N/A	N/A	217			217	X		N/A	N/A	N/A	N/A	
3/24/2020	MJB Cedar City LLC	Purchase	N/A	N/A	30			30	X		N/A	N/A	N/A	N/A	
3/24/2020	MJB Cedar City LLC	Purchase	N/A	N/A	1,148			1,148	X		N/A	N/A	N/A	N/A	
4/10/2021	Northfield Townhomes/Burgess	PUD #2				1.69		1.69	X	\$205.80					NORTH FIELD IRRIG.
4/10/2021	Iron West Subd./ Burgess	Subdivision			3.69	2.043		5.733	X	\$695.16					NORTH FIELD IRRIG.
4/10/2021	Iron West R-3 area/ Burgess	Subdivision			5.69	3.16		8.85	X	\$1,073.40					NORTH FIELD IRRIG.
4/1/2021	Jan Parke	Purchase	N/A	N/A	0.5			0.5	X		N/A	N/A	N/A	N/A	S&W FIELD
4/10/2021	Norma Thompson	Purchase	N/A	N/A	10			10	X		N/A	N/A	N/A	N/A	S&W FIELD
4/10/2021	Chris Grider	Purchase	N/A	N/A	0.2			0.2	X		N/A	N/A	N/A	N/A	S&W FIELD
								0							
								0							
								0							
								0							
		Totals	7383.04	635	1795.883	104.535	200.02175	2100.44			317398.07	3951.735	3360.805		

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Updated: 04/27/2021