Hildale/Colorado City
WATER
GAS
SEWER
Utility Departments

P.O. BOX 840490 320 E. NEWEL AVE. HILDALE, UTAH 84784 PHONE: 435-874-1160 FAX: 435-874-2603

NOTICE

The Utility Board will meet on Tuesday, May 7th, 2019, at 6:00 p.m. M.D.T.
At 320 East Newel Avenue, Hildale, Utah 84784.

AGENDA:

1. Call to Order
2. Prayer & Pledge of Allegiance
3. Approval of Minutes from Meeting March 26, 2019
4. Public Comment
5. Consideration of Utility Waiver Requests
6. Manager Report
7. Financial Report
8. Consideration of Approval to Pay Bills
9. Consideration and Possible Action on Large Purchases
10. Twin City Water Works Arizona Tax Debt Settlement
11. Director Vehicle Stipend
12. Review of a 2020 Budget
13. Consideration and Possible action on Cost Equipment Change
14. Adjournment

Agenda items and any variables thereto are set for consideration, discussion, approval or other action. The Utility Board may, by motion, recess into executive session which is not open to the public, to receive legal advice from the their attorney(s) on any agenda item, or regarding sensitive personnel issues, or concerning negotiations for the purchase, sale or lease of real property. Board Members may attend by telephone. The Agenda may be subject to change up to 24 hours prior to the meeting. Individuals needing special accommodations should notify the City Recorder at 435-874-2323 at least three days prior to the meeting.

Utility Departments of Hildale/Colorado City

Utility Board Meeting Minutes
320 East Newel Ave, Hildale Utah
March 26, 2019 6:00 P.M.

Present: Utility Board

Board Members:	Present	Absent	Excused
Haven Barlow	X		
Sterling Jessop, Jr.	X		
Ralph Johnson	X		
Arvin Black	X		
Jason Black			X
Nathan Burnham	X(by phone)		
JVar Dutson	X		
Stacy Seay	X		
Michael Cawley	X		

Staff Present: Harrison Johnson, Vincen Barlow, Weston Barlow, Mariah La Corti

Public Present: Richard Holm (this list may be incomplete)

#1 Call to Order
Meeting called to order at 6 p.m. Roll was taken, quorum present.

#2. Prayer & Pledge of Allegiance
Arvin offered the prayer, the crowd joined in the pledge of allegiance.

#3. Approval of Minutes of Previous Meetings

JVar Dutson moved to approve the minutes of the February 26, 2019. Michael Cawley seconded. Roll call vote:

Board Members:	Yes	No	Abstain
Haven Barlow	X		
Sterling Jessop, Jr.	X		
Ralph Johnson	X		
Arvin Black	X		
Nathan Burnham	X		
JVar Dutson	X		
Stacy Seay	X		
Michael Cawley	X		

Motion carried.

#4. Public Comment
None

#5. Consideration of Utility Waiver Requests
None

#6. Manager Report
Harrison Johnson presented. We had a positive net increase in utility accounts for the third month in a row. The technicians recently completed most of the Redwood extension project. The Department is working with the UEP to discuss property line issues currently preventing servicing customers on those streets.

Dominion Energy has discussed a proposal to purchase the natural gas system from Hildale City, Harrison has asked for an official offer and will take this before the City Council for a decision. The impetus would be to get Colorado City natural gas. More information on the real value of the system is needed before anything is done, this is just an introduction to this idea. There was lengthy discussion on advantages and disadvantages of selling the pipeline.
Mayor Allred explained that Colorado City is highly interested in having natural gas across the state line and is in full support of making it happen.

Harrison has been researching retirement systems. Preliminarily the state retirement programs will probably not be efficient for us. They are looking into private retirement providers.

The Department has observed significant discrepancies between customer billings and landfill services rendered. Harrison is in the process of working with Public Works getting all of our customer service policies put in place to align customer service policies to unify procedures among city employees. There is an agreement for Hildale City to provide the billing and collections for the landfill that needs to be reviewed along with the customer service policies.

A proposal was sent to Apple Valley outlining the idea that they develop distribution lines and receive commodity, delivery, payment processing, and system maintenance services from the Utility Department.

#Financial Report
Revenues and expenditures with comparison to budget and invoice register for the month ending February 2019 were provided for the Board to review.

JVar Dutson moved to pay the bills as they become due and the funds become available.
Ralph Johnson seconded. Roll call vote:

Board Members:	Yes	No	Abstain
Haven Barlow	X		
Sterling Jessop, Jr.	X		
Ralph Johnson	X		
Arvin Black	X		
Nathan Burnham	X		
JVar Dutson	X		
Stacy Seay	X		
Michael Cawley	X		

Motion carried.

#9. Service Award Presentation for Weston Barlow
The Rural Water Association of Utah acknowledged Weston Barlow for completing training and certification in the field of Water and Wastewater Management. A plaque recognizing Westons accomplishments was provided. Harrison also recognized Westons diligence, knowledge and innovation, stating that he has been an invaluable source of guidance and leadership.

#10. Consideration and Possible Action on Large Purchases
Harrison presented. There is a discount for buying these items in bulk. Gas meters are fairly common purchases. The other request is for fiber conduit to get fiber to the sewer plant on Uzona Ave. as well as anything else it may be needed for.

JVar Dutson moved to approve the purchase of 100 gas meters and 4 rolls of 2" fiber conduit.
Michael Cawley seconded. Roll call vote:

Board Members:	Yes	No	Abstain
Haven Barlow	X		
Sterling Jessop, Jr.	X		
Ralph Johnson	X		
Arvin Black	X		
Nathan Burnham	X		
JVar Dutson	X		
Stacy Seay	X		
Michael Cawley	X		

Motion carried.

#11. Discussion on Water Remediation

Harrison briefed the Board on the water contamination issue. An official Notice of Violation was received, as our water has double the acceptable amount of radium. An official plan to get into compliance must be in place and to the Division of Drinking Water by June 15, 2019 and we must be in compliance by January 1, 2020. Harrison pointed out that that date will be practically impossible to meet. A draft letter regarding the health implications was sent to the Division of Drinking Water for approval and the approved letter will be sent in the March billing.

Harrison pointed out that this is not a public health emergency and is not an immediate risk, the culinary water is still approved for drinking, cooking and sanitation. There was lengthy discussion on how to resolve this issue.

Harrison has spoken with cities and individuals that have had this issue. The steps we have identified to take are 1. Getting an Engineering firm to do a feasibility study and providing a number of options for remediation. He is estimating a $35,000-36,000 cost for this. 2. Both the City Councils and the Division of Drinking Water will have to approve the option to go with. 3. We do RFP's to implement the plan. There is a lot of discussion to be had, the cities just need to be working together to make the best decision.

JVar presented on the idea of Maxwell Water Sales for commercial businesses. He would like to hear the feelings of the Utility Board Members. Improvements need to be made to the system, he thinks that the commercial companies should help in paying for them. Board members were all in agreement that everything commercial should be charged.

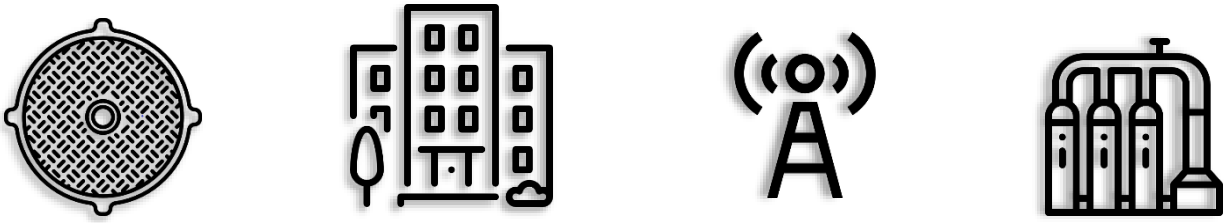
Vincen explained that Hildale City is paying the costs for the water at Maxwell Park, this Board would be deciding if an alternative system can be formed for the commercial use. This topic is not ready for deep discussion, but board members need to be thinking about it.

#12. Adjournment
With no other business, meeting adjourned at 8:00 pm.

Minutes were approved at the meeting on_____.

_____ _____
Vincen Barlow, Hildale City Recorder Vance Barlow, Colorado City Town Clerk

Summary of Board Actions:



Hildale-Colorado City Utility

Manager's Report

Number of accounts billed in March 2019:

Water base rate	873
Sewer	821
Gas base rate	672
WSG Penalties	794

# of shut off notices printed April 15, 2019 226

# of final billed accounts with final bill date in March is 18

# of new connect accounts in March is 19

Gas Department

Nathan Fischer has been hired to replace Nap Jessop, who left us in March, as the new Gas Superintendent. He will be in a trainee role for the first six months of his employment where he will focus on honing his business skills and gain the necessary certifications for the Gas Operation. We are looking at Nathan to increase our community presence, customer base, and our regulatory compliance.

Statement of Qualifications

The Department has received the statement of qualifications for our feasibility study from Jones and Demille, Bowen Collins, and Sunrise Engineering. We are convening a review committee with Harrison Johnson, Zach Renstrom, Christian Kesselring, and Haven Barlow. We will be working to set a date for that review and plan to have it take place in St. George.

Automated Phone System

The Department has implemented an automated phone system to assist with the volume of call received and to help reduce administrative costs on Department employees. The staff report less hectic work schedules and a greater ability to accomplish projects.

Water Treatment Plant

The Department began to turn on wells supplying the Township Water Treatment Plant this month which temporarily caused water to have a brownish tint. After we flushed areas of the system, we believe the water to have returned to acceptable quality.

Director’s Vehicle Stipend

Maintenance, upkeep and fuel costs for the Director to use the current fleet of Department vehicles is too high. There are very few applications where the Director will need to utilized a heavy duty pick-up truck for work applications. However, a Director’s job responsibilities do require frequent travel around town, and to surrounding communities. I believe that the best solution is to adopt a vehicle stipend of $250 a month to cover the costs associated with a Director using their own vehicle to facilitate transportation.

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

2017 JUDGMENT RESOLUTION FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	REVENUES					
63-38-101	TRANSFER FROM GENERAL FUND	.00	22,609.26	88,900.00	66,290.74	25.4
63-38-102	TRANSFER FROM WATER FUND	.00	7,536.44	20,100.00	12,563.56	37.5
63-38-103	TRANSFER FROM WASTEWATER	.00	7,536.44	20,100.00	12,563.56	37.5
63-38-105	TRANSFER FROM GAS FUND	.00	7,536.44	20,100.00	12,563.56	37.5
	TOTAL REVENUES	.00	45,218.58	149,200.00	103,981.42	30.3
	TOTAL FUND REVENUE	.00	45,218.58	149,200.00	103,981.42	30.3

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

2017 JUDGMENT RESOLUTION FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	EXPENDITURES					
63-41-310	PROFESSIONAL & TECHNICAL	3,914.99	42,428.31	129,200.00	86,771.69	32.8
63-41-315	LEGAL - GENERAL	.00	294.23	20,000.00	19,705.77	1.5
	TOTAL EXPENDITURES	3,914.99	42,722.54	149,200.00	106,477.46	28.6
	TOTAL FUND EXPENDITURES	3,914.99	42,722.54	149,200.00	106,477.46	28.6
	NET REVENUE OVER EXPENDITURES	(3,914.99)	2,496.04	.00	(2,496.04)	.0

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

LITIGATION DEFENSE FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	REVENUES					
64-38-101	TRANSFER FROM GENERAL FUND	.00	11,842.37	19,500.00	7,657.63	60.7
64-38-102	TRANSFER FROM WATER FUND	.00	11,842.38	22,700.00	10,857.62	52.2
64-38-103	TRANSFER FROM WASTEWATER	.00	10,285.71	22,700.00	12,414.29	45.3
64-38-105	TRANSFER FROM GAS FUND	.00	11,842.38	22,700.00	10,857.62	52.2
	TOTAL REVENUES	.00	45,812.84	87,600.00	41,787.16	52.3
	TOTAL FUND REVENUE	.00	45,812.84	87,600.00	41,787.16	52.3

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

LITIGATION DEFENSE FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	EXPENDITURES					
64-41-230	TRAVEL	.00	.00	2,700.00	2,700.00	.0
64-41-250	EQUIPMENT SUPPLIES & MAINT	.00	47.82	.00	(47.82)	.0
64-41-310	PROFESSIONAL & TECHNICAL	.00	60.00	.00	(60.00)	.0
64-41-316	LEGAL - LITIGATION DEFENSE	.00	3,435.00	84,900.00	81,465.00	4.1
64-41-911	JUDGMENTS AND LOSSES	6,266.67	62,666.70	.00	(62,666.70)	.0
	TOTAL EXPENDITURES	6,266.67	66,209.52	87,600.00	21,390.48	75.6
	TOTAL FUND EXPENDITURES	6,266.67	66,209.52	87,600.00	21,390.48	75.6
	NET REVENUE OVER EXPENDITURES	(6,266.67)	(20,396.68)	.00	20,396.68	.0

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

JOINT ADMINISTRATION FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	REVENUES					
65-38-102	TRANSFER FROM WATER FUND	.00	152,053.94	214,600.00	62,546.06	70.9
65-38-103	TRANSFER FROM WASTEWATER	.00	141,192.93	278,900.00	137,707.07	50.6
65-38-105	TRANSFER FROM GAS FUND	.00	54,304.97	107,400.00	53,095.03	50.6
	TOTAL REVENUES	.00	347,551.84	600,900.00	253,348.16	57.8
	TOTAL FUND REVENUE	.00	347,551.84	600,900.00	253,348.16	57.8

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

JOINT ADMINISTRATION FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	EXPENDITURES					
65-41-110	SALARIES-PERMANENT EMPLOYEES	.00	185,364.77	298,400.00	113,035.23	62.1
65-41-130	PAYROLL TAXES	61.20	22,269.52	25,200.00	2,930.48	88.4
65-41-140	BENEFITS-OTHER	.00	24,709.61	41,400.00	16,690.39	59.7
65-41-150	STIPENDS - UTILITY BOARD	800.00	9,100.00	11,700.00	2,600.00	77.8
65-41-230	TRAVEL	.00	582.02	.00	(582.02)	.0
65-41-235	FOOD & REFRESHMENT	217.38	1,397.00	4,700.00	3,303.00	29.7
65-41-240	OFFICE EXPENSE & SUPPLIES	.00	21.00	.00	(21.00)	.0
65-41-250	EQUIPMENT SUPPLIES & MAINT	2,695.35	17,787.08	26,500.00	8,712.92	67.1
65-41-257	FUEL	997.29	8,212.68	30,900.00	22,687.32	26.6
65-41-271	MAINT & SUPPLY - OFFICE	.00	2,166.28	2,000.00	(166.28)	108.3
65-41-280	UTILITIES	796.31	9,026.02	5,700.00	(3,326.02)	158.4
65-41-285	POWER	533.64	5,107.18	6,900.00	1,792.82	74.0
65-41-287	TELEPHONE	.00	35.65	.00	(35.65)	.0
65-41-310	PROFESSIONAL & TECHNICAL	56.15	2,031.20	5,300.00	3,268.80	38.3
65-41-330	EDUCATION	.00	1,418.00	2,100.00	682.00	67.5
65-41-510	INSURANCE	6,695.51	62,207.91	98,800.00	36,592.09	63.0
65-41-741	EQUIPMENT - OFFICE	.00	.00	3,200.00	3,200.00	.0
65-41-850	DEBT SERVICE - VEHICLE & EQUIP	.00	15,747.04	11,000.00	(4,747.04)	143.2
65-41-900	AUTOMATIC PAYMENT INCENTIVE	.00	2,075.00	.00	(2,075.00)	.0
65-41-901	SURVEY INCENTIVE PROGRAM	.00	1,875.00	.00	(1,875.00)	.0
65-41-960	TRANSFERS TO RESERVE FUNDS	.00	.00	27,000.00	27,000.00	.0
	TOTAL EXPENDITURES	12,852.83	371,132.96	600,800.00	229,667.04	61.8
	TOTAL FUND EXPENDITURES	12,852.83	371,132.96	600,800.00	229,667.04	61.8
	NET REVENUE OVER EXPENDITURES	(12,852.83)	(23,581.12)	100.00	23,681.12	(23581

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

WATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING REVENUES					
81-37-111	WATER SALES - METERED	.00	237,340.59	288,800.00	51,459.41	82.2
81-37-121	WATER SALES - FLAT RATE	.00	278,075.04	362,400.00	84,324.96	76.7
81-37-331	CONNECTION CHARGES	.00	15,905.00	20,400.00	4,495.00	78.0
81-37-332	CONSTRUCTION	2,455.05	8,844.90	62,400.00	53,555.10	14.2
81-37-411	INTEREST	.00	8,231.63	3,600.00	(4,631.63)	228.7
81-37-412	PENALTIES	(238.10)	82,840.23	60,000.00	(22,840.23)	138.1
81-37-451	IMPACT FEE - UT	.00	.00	34,700.00	34,700.00	.0
81-37-452	IMPACT FEE - AZ	.00	.00	34,700.00	34,700.00	.0
	TOTAL OPERATING REVENUES	2,216.95	631,237.39	867,000.00	235,762.61	72.8
	NON-OPERATING REVENUE					
81-38-102	TRANSFERS FROM R&R RESERVE	.00	.00	46,000.00	46,000.00	.0
81-38-440	SUNDRY NON-OPERATING REVENUE	.00	7,500.00	5,000.00	(2,500.00)	150.0
81-38-999	CONTINGENCY	.00	.00	200,000.00	200,000.00	.0
	TOTAL NON-OPERATING REVENUE	.00	7,500.00	251,000.00	243,500.00	3.0
	TOTAL FUND REVENUE	2,216.95	638,737.39	1,118,000.00	479,262.61	57.1

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

WATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING EXPENDITURES					
81-41-210	BOOKS, SUBSCR, & MEMBERSHIPS	.00	100.00	1,500.00	1,400.00	6.7
81-41-230	TRAVEL	.00	755.46	4,600.00	3,844.54	16.4
81-41-235	FOOD & REFRESHMENT	.00	41.06	600.00	558.94	6.8
81-41-250	EQUIPMENT SUPPLIES & MAINT	.00	1,808.10	1,000.00	(808.10)	180.8
81-41-257	FUEL	.00	.00	200.00	200.00	.0
81-41-260	TOOLS & EQUIPMENT-NON CAPITAL	.00	6,689.60	3,000.00	(3,689.60)	223.0
81-41-273	MAINT & SUPPLY - SYSTEM	168.25	16,268.22	38,000.00	21,731.78	42.8
81-41-285	POWER	778.19	38,129.25	66,200.00	28,070.75	57.6
81-41-311	ENGINEER	.00	1,719.25	2,000.00	280.75	86.0
81-41-314	LABORATORY & TESTING	160.00	7,439.00	4,500.00	(2,939.00)	165.3
81-41-315	LEGAL - GENERAL	.00	.00	1,300.00	1,300.00	.0
81-41-330	EDUCATION	.00	1,951.00	3,500.00	1,549.00	55.7
81-41-340	SYSTEM CONSTRUCTION SERVICES	.00	103.82	2,000.00	1,896.18	5.2
81-41-341	CONST-CUSTOMER'S INSTALLATION	.00	1,917.95	59,000.00	57,082.05	3.3
81-41-431	COMMODITY SUPPLY	.00	69,192.60	165,900.00	96,707.40	41.7
81-41-432	SPECIAL DEPT SUPPLIES	19.20	11,268.80	18,500.00	7,231.20	60.9
81-41-580	RENT OR LEASE	.00	1,156.44	.00	(1,156.44)	.0
	TOTAL OPERATING EXPENDITURES	1,125.64	158,540.55	371,800.00	213,259.45	42.6
	NON-OPERATING EXPENDITURES					
81-42-560	BAD DEBT EXPENSE	.00	.00	2,000.00	2,000.00	.0
81-42-730	IMPROVEMENTS OTHER THAN BLDGS	.00	25,281.02	2,200.00	(23,081.02)	1149.1
81-42-742	EQUIPMENT - FIELD	.00	.00	2,500.00	2,500.00	.0
81-42-780	RESERVE PURCHASES	.00	.00	46,000.00	46,000.00	.0
81-42-815	PRINC. & INT W.RIGHTS LOAN	3,444.16	34,441.60	41,300.00	6,858.40	83.4
81-42-911	TRANSFERS TO JOINT ADMIN FUND	.00	152,053.94	214,600.00	62,546.06	70.9
81-42-912	TRANSFERS TO LITIGATION	.00	11,842.38	29,200.00	17,357.62	40.6
81-42-913	TRANSFERS TO GF ADMIN	10,416.67	104,166.70	125,000.00	20,833.30	83.3
81-42-914	TRANSFERS TO 2017 JMT RES FUND	.00	7,536.44	13,600.00	6,063.56	55.4
81-42-960	TRANSFERS TO RESERVE FUNDS	.00	.00	69,800.00	69,800.00	.0
81-42-999	CONTINGENCY	.00	.00	200,000.00	200,000.00	.0
	TOTAL NON-OPERATING EXPENDITURES	13,860.83	335,322.08	746,200.00	410,877.92	44.9
	TOTAL FUND EXPENDITURES	14,986.47	493,862.63	1,118,000.00	624,137.37	44.2
	NET REVENUE OVER EXPENDITURES	(12,769.52)	144,874.76	.00	(144,874.76)	.0

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

WASTEWATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING REVENUES					
82-37-311	SERVICE CHARGES	.00	530,078.92	710,700.00	180,621.08	74.6
82-37-312	SERVICE CHARGES - CPMCWID	.00	99,792.54	145,000.00	45,207.46	68.8
82-37-331	CONNECTION CHARGES	.00	.00	300.00	300.00	.0
82-37-332	SERVICING CUSTOMER INSTALL	.00	1,320.00	20,000.00	18,680.00	6.6
82-37-411	INTEREST	.00	11,513.22	4,000.00	(7,513.22)	287.8
82-37-412	INTEREST EARNINGS (LOAN)	68.63	686.30	.00	(686.30)	.0
82-37-451	IMPACT FEE	.00	9,000.00	5,000.00	(4,000.00)	180.0
82-37-452	IMPACT FEE - CPMCWID	.00	14,550.00	5,000.00	(9,550.00)	291.0
	TOTAL OPERATING REVENUES	68.63	666,940.98	890,000.00	223,059.02	74.9
	NON-OPERATING REVENUES					
82-38-102	TRANSFERS FROM R&R RESERVE	.00	.00	55,000.00	55,000.00	.0
82-38-440	SUNDRY NON-OPERATING REVENUE	.00	.00	23,000.00	23,000.00	.0
82-38-999	CONTINGENCY	.00	.00	200,000.00	200,000.00	.0
	TOTAL NON-OPERATING REVENUES	.00	.00	278,000.00	278,000.00	.0
	TOTAL FUND REVENUE	68.63	666,940.98	1,168,000.00	501,059.02	57.1

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

WASTEWATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING EXPENDITURES					
82-41-210	BOOKS, SUBSCR, & MEMBERSHIPS	.00	.00	500.00	500.00	.0
82-41-230	TRAVEL	.00	.00	4,600.00	4,600.00	.0
82-41-235	FOOD & REFRESHMENT	.00	22.29	700.00	677.71	3.2
82-41-250	EQUIPMENT SUPPLIES & MAINT	.00	1,905.00	8,000.00	6,095.00	23.8
82-41-257	FUEL	.00	673.18	3,000.00	2,326.82	22.4
82-41-260	TOOLS & EQUIPMENT-NON CAPITAL	.00	5,702.03	5,400.00	(302.03)	105.6
82-41-273	MAINTENANCE & SUPPLY - SYSTEM	4,560.67	8,302.85	53,000.00	44,697.15	15.7
82-41-285	POWER	771.88	17,113.06	36,000.00	18,886.94	47.5
82-41-311	ENGINEER	.00	.00	500.00	500.00	.0
82-41-314	LABORATORY & TESTING	.00	.00	1,000.00	1,000.00	.0
82-41-315	LEGAL - GENERAL	.00	.00	1,000.00	1,000.00	.0
82-41-330	EDUCATION	2,394.00	2,540.00	5,000.00	2,460.00	50.8
82-41-340	SYSTEM CONSTRUCTION SERVICES	.00	.00	5,000.00	5,000.00	.0
82-41-341	CONST-CUSTOMER'S INSTALLATION	.00	325.00	10,000.00	9,675.00	3.3
	TOTAL OPERATING EXPENDITURES	7,726.55	36,583.41	133,700.00	97,116.59	27.4
	NON-OPERATING EXPENSES					
82-42-560	BAD DEBT EXPENSE	.00	.00	1,500.00	1,500.00	.0
82-42-710	LAND	.00	.00	25,500.00	25,500.00	.0
82-42-720	BUILDINGS	.00	108.16	5,000.00	4,891.84	2.2
82-42-742	EQUIPMENT - FIELD	.00	.00	5,400.00	5,400.00	.0
82-42-780	RESERVE PURCHASES	.00	.00	55,000.00	55,000.00	.0
82-42-812	PRINCIPAL ON BONDS - RDA B	.00	2,954.82	33,500.00	30,545.18	8.8
82-42-813	PRINCIPAL ON BONDS - RDA - C	.00	1,119.72	6,400.00	5,280.28	17.5
82-42-816	PRINCIPAL ON BONDS - DWQ	.00	80,000.00	80,000.00	.00	100.0
82-42-822	INTEREST ON BONDS - RDA - B	.00	50,778.32	69,300.00	18,521.68	73.3
82-42-823	INTEREST ON BONDS - RDA - C	.00	9,606.61	13,100.00	3,493.39	73.3
82-42-911	TRANSFERS TO JOINT ADMIN FUND	.00	141,192.93	278,900.00	137,707.07	50.6
82-42-912	TRANSFERS TO LITIGATION	.00	10,285.71	22,700.00	12,414.29	45.3
82-42-913	TRANSFERS TO GF ADMIN	10,416.66	104,166.60	125,000.00	20,833.40	83.3
82-42-914	TRANSFERS TO 2017 JMT RES FUND	.00	7,536.44	20,100.00	12,563.56	37.5
82-42-960	TRANSFERS TO RESERVE FUNDS	.00	.00	92,900.00	92,900.00	.0
82-42-999	CONTINGENCY	.00	.00	200,000.00	200,000.00	.0
	TOTAL NON-OPERATING EXPENSES	10,416.66	407,749.31	1,034,300.00	626,550.69	39.4
	TOTAL FUND EXPENDITURES	18,143.21	444,332.72	1,168,000.00	723,667.28	38.0
	NET REVENUE OVER EXPENDITURES	(18,074.58)	222,608.26	.00	(222,608.26)	.0

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

GAS FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING REVENUES					
84-37-111	GAS SALES - METERED NAT GAS	.00	191,472.16	148,000.00	(43,472.16)	129.4
84-37-112	GAS SALES - METERED PROPANE	149.97	355,977.12	488,700.00	132,722.88	72.8
84-37-113	GAS SALES - CYLINDER	.00	9,074.02	10,600.00	1,525.98	85.6
84-37-114	GAS SALES - CYLINDER EXCHANGE	.00	1,855.79	3,700.00	1,844.21	50.2
84-37-121	NATURAL GAS SALES - FLAT RATE	.00	20,852.87	24,000.00	3,147.13	86.9
84-37-122	PROPANE GAS - FLAT RATE	.00	28,641.44	44,000.00	15,358.56	65.1
84-37-160	CONSTRUCTION REVENUE	.00	10,870.46	125,000.00	114,129.54	8.7
84-37-331	CONNECTION CHARGES	.00	4,220.00	3,000.00	(1,220.00)	140.7
84-37-351	SUNDRY OPERATING REVENUE	3,444.16	34,441.60	47,000.00	12,558.40	73.3
84-37-411	INTEREST	.00	9,555.81	3,500.00	(6,055.81)	273.0
84-37-412	PENALTIES	(46.09)	27,358.43	21,000.00	(6,358.43)	130.3
	TOTAL OPERATING REVENUES	3,548.04	694,319.70	918,500.00	224,180.30	75.6
	NON-OPERATING REVENUES					
84-38-102	TRANSFERS FROM R&R RESERVE	.00	.00	172,300.00	172,300.00	.0
84-38-901	APPROP - UTILITY FUND BALANCE	.00	.00	22,000.00	22,000.00	.0
84-38-999	CONTINGENCY	.00	.00	200,000.00	200,000.00	.0
	TOTAL NON-OPERATING REVENUES	.00	.00	394,300.00	394,300.00	.0
	TOTAL FUND REVENUE	3,548.04	694,319.70	1,312,800.00	618,480.30	52.9

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 10 MONTHS ENDING APRIL 30, 2019

GAS FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING EXPENDITURES					
84-41-140	BENEFITS-OTHER	.00	135.00	3,000.00	2,865.00	4.5
84-41-210	BOOKS, SUBSCR, & MEMBERSHIPS	848.00	1,023.00	2,000.00	977.00	51.2
84-41-230	TRAVEL	.00	.00	4,000.00	4,000.00	.0
84-41-235	FOOD & REFRESHMENT	.00	30.85	600.00	569.15	5.1
84-41-250	EQUIPMENT SUPPLIES & MAINT	.00	3,152.19	2,000.00	(1,152.19)	157.6
84-41-257	FUEL	261.57	1,163.12	1,000.00	(163.12)	116.3
84-41-260	TOOLS & EQUIPMENT-NON CAPITAL	.00	2,526.62	2,000.00	(526.62)	126.3
84-41-273	MAINT & SUPPLY SYSTEM	266.13	6,857.80	11,700.00	4,842.20	58.6
84-41-285	POWER	151.20	1,136.87	1,000.00	(136.87)	113.7
84-41-330	EDUCATION	1,955.00	6,922.71	7,200.00	277.29	96.2
84-41-341	CONST-CUSTOMER'S INSTALLATION	2,296.40	7,118.88	100,000.00	92,881.12	7.1
84-41-431	NATURAL GAS COMMODITY SUPPLY	25,835.46	139,278.29	49,700.00	(89,578.29)	280.2
84-41-432	PROPANE GAS COMMODITY SUPPLY	.00	226,069.90	318,100.00	92,030.10	71.1
84-41-434	NAT GAS COMMODITY TRANSPORT	3,697.96	24,404.47	18,100.00	(6,304.47)	134.8
84-41-580	RENT OR LEASE	100.00	3,812.66	4,200.00	387.34	90.8
84-41-610	MISC. SUPPLIES	.00	.00	5,000.00	5,000.00	.0
84-41-750	SP PROJECTS CAPITAL	32.51	32.51	.00	(32.51)	.0
	TOTAL OPERATING EXPENDITURES	35,444.23	423,664.87	529,600.00	105,935.13	80.0
	NON-OPERATING EXPENDITURES					
84-42-560	BAD DEBT EXPENSE	.00	.00	600.00	600.00	.0
84-42-750	SP PROJECTS CAPITAL	125.59	1,099.03	37,000.00	35,900.97	3.0
84-42-780	RESERVE PURCHASES	.00	18,750.00	172,300.00	153,550.00	10.9
84-42-911	TRANSFERS TO JOINT ADMIN FUND	.00	54,304.97	107,300.00	52,995.03	50.6
84-42-912	TRANSFERS TO LITIGATION	.00	11,842.38	29,200.00	17,357.62	40.6
84-42-913	TRANSFERS TO GF ADMIN	10,416.67	104,166.70	125,000.00	20,833.30	83.3
84-42-914	TRANSFERS TO 2017 JMT RES FUND	.00	7,536.44	13,600.00	6,063.56	55.4
84-42-960	TRANSFERS TO RESERVE FUNDS	.00	.00	98,200.00	98,200.00	.0
84-42-999	CONTINGENCY	.00	.00	200,000.00	200,000.00	.0
	TOTAL NON-OPERATING EXPENDITURES	10,542.26	197,699.52	783,200.00	585,500.48	25.2
	TOTAL FUND EXPENDITURES	45,986.49	621,364.39	1,312,800.00	691,435.61	47.3
	NET REVENUE OVER EXPENDITURES	(42,438.45)	72,955.31	.00	(72,955.31)	.0

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
AA SERVICES, INC. (5033)							
1279	Thermostat for lab shop	03/11/2019	04/11/2019	123.63	03/19	0	65-41-271
Total AA SERVICES, INC. (5033):				123.63			
Aquatronix, LLC (5692)							
391	Water softener services at lab shop	03/02/2019	04/02/2019	110.00	03/19	0	65-41-271
Total Aquatronix, LLC (5692):				110.00			
BASIC AMERICAN SUPPLY (5637)							
191841	Bolts	02/20/2019	03/10/2019	17.52	03/19	0	65-41-250
Total BASIC AMERICAN SUPPLY (5637):				17.52			
BLUE STAKES OF UTAH, INC. (1632)							
UT20190577	BLUE STAKE NOTIFICATIONS	03/31/2019	04/30/2019	56.15	04/19	0	65-41-310
Total BLUE STAKES OF UTAH, INC. (1632):				56.15			
BLUE TARP FINANCIAL (5261)							
42174598	Milwaukee Hand Tools	03/06/2019	04/05/2019	590.23	03/19	0	82-41-260
42258098	Milwaukee Impact Driver	03/21/2019	04/21/2019	477.20	03/19	0	82-41-260
42260765	Northern Tool Membership	03/21/2019	04/21/2019	42.41	03/19	0	82-41-260
Total BLUE TARP FINANCIAL (5261):				1,109.84			
BUCKS ACE HARDWARE (5356)							
305992	Paint for gas meters	03/13/2019	04/10/2019	83.96	04/19	0	84-41-273
Total BUCKS ACE HARDWARE (5356):				83.96			
Codale Electric Supply Inc. (4572)							
S667700..00	2" Fiber Optic Conduit	04/02/2019	05/02/2019	3,300.00	04/19	0	82-41-273
Total Codale Electric Supply Inc. (4572):				3,300.00			
Customer Deposit (5518)							
3.47000.2	3.47000.2 Customer Deposit Refund	03/02/2019	03/31/2019	81.60	02/19	0	81-21350
6.23190.3	6.23190.3 Customer Deposit Refund	03/01/2019	03/31/2019	320.22	03/19	0	81-21350
6.07102.5	6.07102.5 Customer Deposit Refund	03/21/2019	03/25/2019	66.88	03/19	0	81-21350
3.07100.2	3.07100.2 CUSTOMER DEPOSIT REFUND	03/28/2019	04/28/2019	151.84	03/19	0	81-21350
3.20702.6	3.20702.6 CUSTOMER DEPOSIT REFUND	03/28/2019	04/28/2019	200.00	03/19	0	81-21350
3.34600.3	3.34600.3 CUSTOMER DEPOSIT REFUND	03/28/2019	04/28/2019	426.91	03/19	0	81-21350
3.42500.5	3.42500.5 CUSTOMER DEPOSIT REFUND	03/26/2019	04/26/2019	107.17	03/19	0	81-21350
3.48400.5	3.46400.5 CUSTOMER DEPOSIT REFUND	03/25/2019	04/25/2019	68.11	03/19	0	81-21350
3.50580.3	3.50580.3 CUSTOMER DEPOSIT REFUND	03/28/2019	04/28/2019	200.00	03/19	0	81-21350
3.50580.3	3.50580.3 CREDIT FOR GAS IN TANK	03/28/2019	04/28/2019	194.99	03/19	0	84-37-112
3.02404.5	3.02404.5 CUSTOMER DEPOSIT REFUND	04/17/2019	05/17/2019	387.00	04/19	0	81-21350
3.83403.4	3.83403.4 CUSTOMER DEPOSIT REFUND	04/17/2019	05/17/2019	200.00	04/19	0	81-21350
6.17301.3	6.17301.3 CUSTOMER DEPOSIT REFUND	04/23/2019	05/23/2019	37.74	04/19	0	81-21350
6.17601.2	6.17601.2 CUSTOMER DEPOSIT REFUND	04/25/2019	05/25/2019	152.90	04/19	0	81-21350
6.44290.1	6.44290.1 CUSTOMER DEPOSIT REFUND	04/23/2019	05/23/2019	152.90	04/19	0	81-21350
Total Customer Deposit (5518):				2,748.26			
DELL MARKETING L. P. (1711)							
1026798406	Laptop for Harrison	09/10/2018	10/10/2018	1,612.28	03/19	0	81-41-260

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
Total DELL MARKETING L. P. (1711):				1,612.28			
DJB GAS SERVICES, INC. (4750)							
01128335	WELDER Cylinder Rental	02/28/2019	03/30/2019	23.14	02/19	0	82-41-273
01134068	WELDER Cylinder Rental	03/31/2019	04/30/2019	25.03	04/19	0	82-41-273
Total DJB GAS SERVICES, INC. (4750):				48.17			
DOMINION ENERGY (5607)							
5948550000	Natural Gas Transportation	03/05/2019	03/27/2019	33,694.25	03/19	0	84-41-434
5948550000	Natural Gas Transportation	04/03/2019	04/25/2019	3,697.96	04/19	0	84-41-434
Total DOMINION ENERGY (5607):				37,392.21			
GARKANE ENERGY (5057)							
1709902 031	Power Plant Well	03/14/2019	04/03/2019	2,788.51	03/19	0	81-41-285
1717500 031	Lift Station Power	03/14/2019	04/03/2019	691.88	03/19	0	82-41-285
1734500 031	East Water Tank Power	03/21/2019	04/10/2019	61.95	03/19	0	81-41-285
1763000 031	Sewer Sprinkler Pump	03/14/2019	04/03/2019	160.80	03/19	0	82-41-285
1763900 031	Sewer Headworks	03/14/2019	04/03/2019	78.94	03/19	0	82-41-285
1775500 031	Water Treatment Plant	03/21/2019	04/10/2019	615.37	03/19	0	81-41-285
1782300 031	Lab Shop Power	03/14/2019	04/03/2019	439.53	03/19	0	65-41-285
1782500 031	Well #22 Power	03/21/2019	04/10/2019	39.31	03/19	0	81-41-285
1787300 031	Propane Yard	03/14/2019	04/03/2019	140.86	03/19	0	84-41-285
1793900 031	Million Gallon Tank Power	03/14/2019	04/03/2019	31.99	03/19	0	81-41-285
1945500 031	Academy Ave Well	03/21/2019	04/10/2019	36.81	03/19	0	81-41-285
1734500 031	East Water Tank Power	03/21/2019	04/10/2019	.01	03/19	0	81-41-285
1717500 041	Lift Station Power	04/16/2019	05/06/2019	513.13	04/19	0	82-41-285
1763000 041	Sewer Recirc Pump	04/16/2019	05/06/2019	173.78	04/19	0	82-41-285
1763900 041	Sewer Headworks	04/16/2019	05/06/2019	84.97	04/19	0	82-41-285
1782300 041	Lab Shop Power	04/16/2019	05/06/2019	533.64	04/19	0	65-41-285
1787300 041	Propane Yard Power	04/16/2019	05/06/2019	140.28	04/19	0	84-41-285
1793900 041	Million Gallon Tank Power	04/16/2019	05/06/2019	34.40	04/19	0	81-41-285
1734500 041	East Water Tank Power	04/23/2019	05/13/2019	70.60	04/19	0	81-41-285
1775500 041	Water Treatment Plant Power	04/23/2019	05/13/2019	538.50	04/19	0	81-41-285
1782501 041	Well #22 Power	04/23/2019	05/13/2019	96.87	04/19	0	81-41-285
1945500 041	Academy Ave Well Power	04/23/2019	05/13/2019	37.82	04/19	0	81-41-285
Total GARKANE ENERGY (5057):				7,309.95			
GOLD LINE AUTO PARTS (5631)							
38836	Batteries	02/06/2019	03/06/2019	325.34	02/19	0	65-41-250
38838	Battery	02/02/2019	03/02/2019	325.34	02/19	0	65-41-250
38847	Key cutting	02/07/2019	03/07/2019	6.00	02/19	0	64-41-250
38855	Mirror for SxS	02/07/2019	03/07/2019	41.82	02/19	0	64-41-250
38880	Tire guage adapters	02/11/2019	03/11/2019	154.58	02/19	0	65-41-250
39035	Gloves, wire nuts - Redwood street project	03/05/2019	04/05/2019	32.51	04/19	8419	84-41-750
39109	Air Compressor Batteries	03/19/2019	04/19/2019	325.34	04/19	8419	65-41-250
39129	Air fittings for Redwood St. gas project	03/21/2019	04/21/2019	125.59	04/19	8419	84-42-750
39173	Spark plug, battery charger	03/27/2019	04/27/2019	69.25	04/19	0	65-41-250
39194	Torch, Solder, Flux	03/28/2019	04/28/2019	64.45	04/19	0	84-41-273
39251	Relay	04/03/2019	05/03/2019	18.34	04/19	0	65-41-250
Total GOLD LINE AUTO PARTS (5631):				1,488.56			
HIGH DESERT SUPPLY (2141)							
IN00184100	Air Hose Reel	03/21/2019	03/31/2019	446.00	04/19	0	65-41-250

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
IN00184697	Fuel Pump and Nozzle for Pack Tank	04/19/2019	04/29/2019	548.38	04/19	0	65-41-250
Total HIGH DESERT SUPPLY (2141):				994.38			
HILDALE CITY (2160)							
NAT 0219	ENERGY & USE TAX GAS	03/18/2019	04/02/2019	2,773.20	03/19	0	84-21376
NAT 0319	ENERGY & USE TAX GAS	04/05/2019	04/20/2019	1,093.28	03/19	0	84-21376
Total HILDALE CITY (2160):				3,866.48			
HILDALE CITY UTILITIES (2170)							
3.18000.1 02	Lab Shop Utilities	03/11/2019	03/31/2019	2,613.48	02/19	0	65-41-280
3.84110.1 02	Academy Ave Well Yard	03/11/2019	03/31/2019	54.00	02/19	0	65-41-280
6.42870.1 02	Propane Yard Lease	03/12/2019	03/31/2019	100.00	02/19	0	84-41-580
3.18000.1 03	Lab Shop Utilities	04/03/2019	04/18/2019	742.31	04/19	0	65-41-280
3.84110.1 03	Academy Ave Well Yard	04/03/2019	04/18/2019	54.00	04/19	0	65-41-280
6.42870.1 03	Propane Yard Lease	04/03/2019	04/18/2019	100.00	04/19	0	84-41-580
Total HILDALE CITY UTILITIES (2170):				3,663.79			
HOME DEPOT (2220)							
15984	Shovels	03/04/2019	04/03/2019	83.76	03/19	0	84-41-273
2021377	Paint & brushes for gas meter sets	03/12/2019	04/11/2019	82.81	03/19	0	84-41-273
5025229	Tool Box	02/27/2019	03/29/2019	898.00	03/19	0	82-41-260
7220380	Socket and screwdriver set	03/07/2019	04/06/2019	508.18	03/19	0	82-41-260
2026365	Pliers, Oil Absorber	04/11/2019	05/11/2019	74.87	04/19	0	65-41-250
3022821	Shovels	03/21/2019	04/20/2019	50.84	04/19	0	84-41-273
6023840	Solder Kits	03/28/2019	04/27/2019	66.88	04/19	0	84-41-273
Total HOME DEPOT (2220):				1,765.34			
HYDRO SPECIALTIES CO. (5201)							
21572	Water meter through lid kits	03/12/2019	04/12/2019	370.44	03/19	0	81-41-273
Total HYDRO SPECIALTIES CO. (5201):				370.44			
Johnson, Harrison (5663)							
190226	Mileage Claim - Harrison RWAU Conference	02/26/2019	03/26/2019	146.52	02/19	0	65-41-230
190308	Mileage Claim - Harrison meeting with Bowen Collins	03/15/2019	03/30/2019	47.30	03/19	0	65-41-230
190307	Mileage Claim - Harrison meeeting with Bush & Gudgell	03/15/2019	03/30/2019	46.20	03/19	0	65-41-230
Total Johnson, Harrison (5663):				240.02			
LITTLE CREEK MTN. RANCH (4929)							
190322	HAY FOR GOATS (3 Bails)	03/22/2019	03/30/2019	480.00	03/19	0	82-41-273
Total LITTLE CREEK MTN. RANCH (4929):				480.00			
MINERS & PISANI, INC. (2838)							
IN-03710	Meter regulators	03/13/2019	04/12/2019	235.96	03/19	0	84-41-341
Total MINERS & PISANI, INC. (2838):				235.96			
NGL SUPPLY CO. LTD (5605)							
NGL267780	Propane Commodity	03/06/2019	03/16/2019	12,915.42	02/19	0	84-41-432
NGL265745	Propane Commodity	02/18/2019	02/28/2019	15,012.81	03/19	0	84-41-432
NGL266136	Propane Commodity	02/20/2019	03/02/2019	15,015.89	02/19	0	84-41-432
NGL270266	Propane Commodity	03/26/2019	04/05/2019	12,621.60	03/19	0	84-41-432

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
Total NGL SUPPLY CO. LTD (5605):				55,565.72			
NOLAN A BARLOW (5226)							
190228	Temporary office assistance with e-filing system for utilities	02/28/2019	03/08/2019	336.00	02/19	0	65-41-110
Total NOLAN A BARLOW (5226):				336.00			
PINNACLE GAS PRODUCTS (5471)							
106405	Regulators, risers, etc.	04/22/2019	05/22/2019	2,296.40	04/19	0	84-41-341
Total PINNACLE GAS PRODUCTS (5471):				2,296.40			
PIPELINE ASSN. for PUBLIC AWARENESS (5514)							
219124	Liason meeting and excavator mailings	03/05/2019	04/05/2019	1,995.00	02/19	0	84-41-330
219124	Liason meeting and excavator mailings	03/05/2019	04/05/2019	1,995.00-	03/19	0	84-41-330
219124 (2)	Liason meeting and excavator mailings	03/05/2019	04/05/2019	1,955.00	04/19	0	84-41-330
Total PIPELINE ASSN. for PUBLIC AWARENESS (5514):				1,955.00			
PREFERRED PARTS (4694)							
39021	Tire Weights	03/08/2019	04/08/2019	46.95	03/19	0	65-41-250
39263	Wire Brushes	03/14/2019	04/14/2019	13.98	03/19	0	84-41-273
40199	Hydraulic Hoses	04/04/2019	05/04/2019	17.40	04/19	0	65-41-250
40803	Fittings, creeper	04/18/2019	05/18/2019	169.79	04/19	0	65-41-250
40814	Hydraulic Hose fitting	04/18/2019	05/18/2019	4.56	04/19	0	65-41-250
Total PREFERRED PARTS (4694):				252.68			
RELIANCE ELECTRIC (3290)							
5867	Unibit	02/07/2019	02/22/2019	46.00	02/19	0	81-41-273
Total RELIANCE ELECTRIC (3290):				46.00			
ROCKY MOUNTAIN POWER (4202)							
68511976-00	Cathodic Protection Power	02/22/2019	03/24/2019	10.86	02/19	0	84-41-285
68511976-00	Cathodic Protection Power	03/25/2019	04/16/2019	10.92	04/19	0	84-41-285
Total ROCKY MOUNTAIN POWER (4202):				21.78			
ROCKY MOUNTAIN PROPANE ASSOCIATION (5576)							
2754	RMPA & NPGA Mebership Dues	04/02/2019	05/02/2019	848.00	04/19	0	84-41-210
Total ROCKY MOUNTAIN PROPANE ASSOCIATION (5576):				848.00			
RURAL WATER ASSOCIATION OF UT (3391)							
37529396	RWAU 2019 Annual Conference in St. George - Weston, Nap, Harrison, Ralph, Victor, and Todd	02/08/2019	03/10/2019	2,394.00	04/19	0	82-41-330
Total RURAL WATER ASSOCIATION OF UT (3391):				2,394.00			
SCHOLZEN PRODUCTS COMPANY, INC. (3450)							
6364524-00	Pipe for air lines in shop	03/04/2019	04/03/2019	108.16	03/19	0	82-42-720
3021767-00	Chlorine Cylinder Rental	03/21/2019	04/20/2019	17.92	03/19	0	81-41-432
6369770-00	2" water valve and flange adapters	03/25/2019	04/24/2019	459.17	03/19	0	81-41-273
6370595-00	2" Poly water pipe	03/27/2019	04/26/2019	570.00	04/19	0	82-41-273
6375189-00	Nylon Lifting Slings	04/11/2019	05/11/2019	77.50	04/19	0	65-41-250
3022192-00	Chlorine Cylinder Rental	04/24/2019	05/24/2019	19.20	04/19	0	81-41-432

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
Total SCHOLZEN PRODUCTS COMPANY, INC. (3450):				1,251.95			
SOUTHERN UTAH UNIVERSITY (3592)							
S0042031	Bacteriological Water Tests	03/06/2019	04/05/2019	160.00	03/19	0	81-41-314
S0042084	Bacteriological Water Tests (Maxwell Water)	03/18/2019	04/17/2019	40.00	03/19	0	81-41-314
S0042270	Bacteriological Testing	04/03/2019	05/03/2019	160.00	04/19	0	81-41-314
Total SOUTHERN UTAH UNIVERSITY (3592):				360.00			
SUMMIT ENERGY, LLC (4605)							
0219HILD	Natural Gas Commodity-02/19	02/12/2019	03/14/2019	62,189.54	03/19	0	84-41-431
03191HILD	Natural Gas Commodity	04/09/2019	04/29/2019	25,835.46	04/19	0	84-41-431
Total SUMMIT ENERGY, LLC (4605):				88,025.00			
SUU Career Center (5698)							
217	Registration for Harrison at Career & Internship Fair (Spring 2018)	02/14/2019	03/14/2019	100.00	02/19	0	65-41-330
Total SUU Career Center (5698):				100.00			
THOMAS PETROLEUM, LLC. (4814)							
2144877-IN	DEF, Hydraulic fluid	04/18/2019	05/18/2019	531.00	04/19	0	65-41-250
Total THOMAS PETROLEUM, LLC. (4814):				531.00			
TOWN OF COLORADO CITY (3930)							
3	TOCC Litigation Settlement	03/01/2019	03/01/2019	6,266.67	03/19	0	64-41-911
8190	Auto Insurance Premuim Portion	03/01/2019	03/16/2019	6,939.05	03/19	0	65-41-510
8191	DOJ Court Judgement Cost Sharing Roger Carter	03/01/2019	03/16/2019	1,452.31	03/19	0	63-41-310
8195	Utility Field Staff Payroll	03/01/2019	03/16/2019	17,079.28	03/19	0	65-41-110
8195	Utility Field Staff Payroll Taxes	03/01/2019	03/16/2019	2,062.50	03/19	0	65-41-130
8195	Utility Field Staff Payroll Benefits	03/01/2019	03/16/2019	2,773.56	03/19	0	65-41-140
8198	Deisel Fuel Used from Utilities	03/01/2019	03/16/2019	654.24	03/19	0	65-41-257
8198	Gasoline Used from Utilities	03/01/2019	03/16/2019	124.99	03/19	0	82-41-257
8198	Gasoline Used from Utilities	03/01/2019	03/16/2019	173.48	03/19	0	84-41-257
PROST0219	Total Propane Tax	02/28/2019	03/15/2019	6,110.79	03/19	0	84-21371
WAT0219	Total Water Tax	02/28/2019	03/15/2019	948.19	03/19	0	81-21371
4	TOCC Litigation Settlement	04/01/2019	04/01/2019	6,266.67	04/19	0	64-41-911
8214	Auto Insurance Premuim Portion	04/01/2019	04/16/2019	6,695.51	04/19	0	65-41-510
8229	DOJ Court Judgement Cost Sharing Jim Keith	04/01/2019	04/16/2019	2,122.73	04/19	0	63-41-310
8230	DOJ Court Judgement Cost Sharing Roger Carter	04/01/2019	04/16/2019	1,792.26	04/19	0	63-41-310
8234	Diesel used from Public Works	04/01/2019	04/16/2019	997.29	04/19	0	65-41-257
8234	Gasoline Used from Utilities	04/01/2019	04/16/2019	173.21	04/19	8419	84-41-257
8234	Gasoline Used from Utilities	04/01/2019	04/16/2019	88.36	04/19	8419	84-41-257
8232	Utility Field Staff Payroll	04/01/2019	04/16/2019	18,777.56	03/19	0	65-41-110
8232	Utility Field Staff Payroll Taxes	04/01/2019	04/16/2019	2,218.39	03/19	0	65-41-130
8232	Utility Field Staff Payroll Benefits	04/01/2019	04/16/2019	2,497.74	03/19	0	65-41-140
PROST0319	Total Propane Tax	03/31/2019	04/15/2019	1,667.21	03/19	0	84-21371
WAT0319	Total water tax	03/31/2019	04/15/2019	536.40	03/19	0	81-21371
Total TOWN OF COLORADO CITY (3930):				88,418.39			
USABlueBook (4011)							
8311352	Staking flags for gas line extension project	03/06/2019	03/16/2019	78.44	03/19	8419	84-42-750
836657	Hand Truck	03/12/2019	03/22/2019	128.71	03/19	0	82-41-273
863035	Chemical Pump Rebuild Kit	04/09/2019	04/19/2019	665.64	04/19	0	82-41-273
865525	Colitag Test Regents	04/11/2019	04/21/2019	168.25	04/19	0	81-41-273

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
Total USABlueBook (4011):				1,041.04			
UTAH STATE TAX COMMISSION (4221)							
STC 0219	Taxes Collected for Hildale	03/15/2019	04/14/2019	2,228.88	03/19	0	84-21375
STC 0319	Taxes Collected for Hildale	04/11/2019	05/11/2019	760.17	04/19	0	84-21375
Total UTAH STATE TAX COMMISSION (4221):				2,989.05			
Water Law & Policy Seminars (5696)							
190308	Registration for Water Law & Policy Seminar - Harrison Johnson	03/08/2019	03/31/2019	220.00	03/19	0	65-41-330
Total Water Law & Policy Seminars (5696):				220.00			
WHEELER MACHINERY CO. (4441)							
RS00001207	Track hoe rental for line extension	03/20/2019	04/19/2019	895.00	03/19	0	84-42-750
PS00079234	Radio & AC Knob for Skidder	04/08/2019	05/08/2019	204.49	04/19	0	65-41-250
Total WHEELER MACHINERY CO. (4441):				1,099.49			
ZION'S BANK (4470)							
190207 (1)U	Fire Marshall Card	02/07/2019	03/26/2019	70.00	03/19	0	84-41-140
190212 (1)HJ	Facebook Ads	02/12/2019	03/26/2019	25.00	03/19	0	65-41-310
190214 (1)M	Career & Internship Fair - Harrison	02/14/2019	03/26/2019	100.00	03/19	0	65-41-330
190218 (3)M	1811 Folder Maintenance Kit	02/18/2019	03/26/2019	136.58	03/19	0	65-41-271
190220 (1)W	Parts for tire setting machine	02/20/2019	03/26/2019	51.09	03/19	0	65-41-250
190220 (2)HJ	Presentation on Impact fees to Uzona	02/21/2019	03/26/2019	15.00	03/19	0	65-41-330
190223 (3)HJ	Facebook Ads	02/23/2019	03/26/2019	8.98	03/19	0	65-41-310
190228 (2)W	AutoCAD Maintenance Plan - 1 year Renewal	02/28/2019	03/26/2019	1,440.60	03/19	0	65-41-310
190305 (2)U	Tires for Utility Vehicle	03/05/2019	03/26/2019	973.72	03/19	0	65-41-250
190216 (1)ID	Utilities Website	02/16/2019	03/26/2019	132.00	03/19	0	65-41-310
190307 (1)W	Snacks & drinks for field crew	03/07/2019	04/24/2019	144.42	04/19	0	65-41-235
190318 (2)W	Redwood St Gas Project - Lunch	03/18/2019	04/24/2019	18.95	04/19	0	65-41-235
190318 (3)W	Redwood St Gas Project - Lunch	03/18/2019	04/24/2019	15.27	04/19	0	65-41-235
190318 (4)W	Air hoses for utility truck	03/18/2019	04/24/2019	107.14	04/19	0	65-41-250
190320 (5)W	Redwood St Gas Project - Lunch	03/20/2019	04/24/2019	38.74	04/19	0	65-41-235
190328 (1)U	Side by Side Service	03/28/2019	04/24/2019	101.29	04/19	0	65-41-250
Total ZION'S BANK (4470):				3,378.78			
Grand Totals:				318,147.22			

Report GL Period Summary

Vendor number hash:	0
Vendor number hash - split:	0
Total number of invoices:	0
Total number of transactions:	0

Quote From:

QUOTATION

Hydro Specialties Co.

14435 S Center Point Way
Bluffdale, Utah 84065

O: (801) 562-9130
F: (801) 562-9140

Quote # **43587575** Page: 1 of 1
Date: 05/02/19 Date Required:
Terms: Net 30 days.
Freight: No charge customer.
Taxes: If applicable, are not included.
Delivery:

Quote To:

Hildale City
attn: Weston Barlow

Project:

Item	Quantity	Description	Unit Price	Amount
1.	96	5/8" x 3/4" Badger E-Series Meter… > polymer body, U.S. gallons, 6 ft wire lead, Nicor end connection. > Orion ME radio endpoint, Nicor end connection, with thru lid mounting kit.	$ 247.28	23,738.88
2.	4	1" Badger E-Series Meter… > polymer body, U.S. gallons, 6 ft wire lead, Nicor end connection. > Orion ME radio endpoint, Nicor end connection, with thru lid mounting kit.	$ 298.32	1,193.28
			Sub total	$ 24,932.16
			Discount	
			Tax	
			Total	$ 24,932.16

Notes:

Authorization:

Name: Steven Hansen
Date: 05/02/19
Signed: _____

SETTLEMENT AGREEMENT AND RELEASE

This Settlement Agreement and Release (the "Settlement Agreement") is made and entered into by and among the following Parties:

1. The State of Arizona, by and through its agencies the Arizona Attorney General's Office and the Arizona Department of Revenue; and

2. United Effort Plan Trust, and the municipalities of Colorado City, Arizona and Hildale, Utah; and

3. Twin City Water Works, Inc.

RECITALS

A. On June 10, 2015 Twin City Water Works, Inc. entered into a plea agreement with the State of Arizona to resolve Maricopa County Superior Court Case No. CR2015-004812-001. Twin City Water Works, Inc. pleaded guilty to Attempted Knowing Failure to Pay a Tax and agreed to pay a fine of $20,000.00 to the Arizona Attorney General's Office Anti-Racketeering Fund (the "Fine"), and restitution of $370,683.16 to the Arizona Department of Revenue (the "Restitution Order").

B. Since June 10, 2015 the balance due on the Restitution Order has been paid by installments such that the remaining balance owed as of the date of this Settlement Agreement is $277,393.16.

C. On January 9, 2019 The United Effort Plan Trust and Twin City Water Works, Inc. entered into an agreement to resolve civil lawsuit Washington County Utah District Court Civil No. 150500630. In that agreement, United Effort Plan Trust, through its principals the municipalities of Colorado City, Arizona and Hildale, Utah agreed to assume and satisfy the Restitution Order owed by Twin City Water Works, Inc. to the State of Arizona.

D. The Parties to this Settlement Agreement desire to finally and fully resolve all past, present, and potential disputes, claims, and issues relating to or arising out of the Restitution Order. As a result, the Parties have negotiated and entered into this Settlement Agreement in an effort to avoid further expense, inconvenience, and the distraction and uncertainty of periodic payments, and to eliminate the possibility of burdensome litigation. The Parties desire to enter into this Settlement Agreement, which provides for payment in full settlement and discharge of the Restitution Order, upon the terms and conditions set forth below.

AGREEMENT

The Parties agree as follows:

1. Release and Discharge

For One hundred fifty thousand dollars ($150,000.00), the State of Arizona completely releases and forever discharges the other Parties to this Settlement Agreement from any and all past, present, or future claims, demands, obligations, actions, causes of action, and legal theories, whether known or unknown, that have resulted or may result from the Restitution Order. This includes but is not limited to any claims or causes of action for damages, attorneys' fees, costs, or other relief arising out of the Restitution Order.

This release and discharge also applies to all Parties' past, present, and future officers, directors, stockholders, attorneys, agents, servants, representatives, employees, subsidiaries, affiliates, partners, predecessors and successors in interest, insurers, and assigns, and all other persons, firms, or corporations with whom any of the former have been, are now, or may be affiliated. This release constitutes a fully binding and complete settlement between the Parties.

The State of Arizona acknowledges and agrees that the release and discharge set forth above is a general release. State of Arizona further agrees that it accepts payment of the sums specified herein as a complete compromise of all matters involving disputed issues of law and fact. The State of Arizona through its Department of Revenue acknowledges and agrees the release and discharge constitutes complete satisfaction of all corporate income tax liability of Twin City Water Works, Inc. for tax years 1996 to 2013.

The State of Arizona hereby instructs its attorneys to file a notice of satisfaction of the Fine and Restitution Order in Maricopa County Superior Court Case No. CR2015-004812-001.

2. Payments

In consideration of the release set forth above, United Effort Plan Trust, and the municipalities of Colorado City, Arizona and Hildale, Utah jointly and severally agree to pay the sum of $150,000.00, to "Arizona Department of Revenue" noted as payment for Restitution Order in Maricopa County Superior Court Case No. CR2015-004812-001 within thirty (30) days of the date of signature of this Settlement Agreement.

3. Attorney's Fees and Costs

Each Party to this Settlement Agreement shall bear all of its own attorney's fees and costs arising from the actions of its own counsel in connection with the Restitution Order, this Settlement Agreement, and all related matters.

4. Representation of Comprehension of Document

In entering into this Settlement Agreement, the Parties represent that they have relied upon the advice of their attorneys, who are the attorneys of their own choosing, concerning the legal and tax consequences of this Settlement Agreement; that their attorneys have completely read and explained the terms of this Settlement Agreement; and that the Parties fully understand and voluntarily accept the terms of this Settlement Agreement.

5. Warranty of Capacity to Execute Agreement

The Parties represent and warrant that no other person or entity has, or has had, any interest in the claims, demands, obligations, or causes of action referred to in this Settlement Agreement, except as otherwise set forth herein; that the Parties have the sole right and exclusive authority to execute this Settlement Agreement and to pay and receive the sums specified in it; and that the Parties have not sold, assigned, transferred, conveyed, or otherwise disposed of any of the claims, demands, obligations, or causes of action referred to in this Settlement Agreement except as explicitly described herein.

6. Governing Law

This Settlement Agreement shall be construed and interpreted in accordance with the laws of the State of Arizona. The Parties agree that since each party is represented by counsel, any rules or presumptions requiring that any provisions of the document be construed against the drafter do not apply to the interpretation of this agreement in any future dispute.

7. No Admission of Liability

The Parties understand and expressly agree that nothing contained in this Settlement Agreement shall be construed as an admission of liability whatsoever. The Parties acknowledge and agree that the settlement is made in compromise and settlement of the Restitution Order, and that by entering into this Settlement Agreement, the Parties do not intend to admit the correctness of any party's position, nor may this Settlement Agreement or the fact of settlement be used against any Party as res judicata, collateral estoppel, or as an admission of fault or liability.

8. Additional Documents

The Parties agree to cooperate fully and execute any and all supplementary documents and to take all additional actions that may be necessary or appropriate to give full force and effect to the basic terms and intent of this Settlement Agreement.

9. Entire Agreement and Successors in Interest

This Settlement Agreement contains the entire agreement between the Parties with regard to the matters set forth in it and shall be binding upon and ensure to the benefit of the executors, administrators, personal representatives, heirs, successors, and assigns of each.

10. Effectiveness

This Settlement Agreement shall become effective immediately following execution by all Parties.

11. Modification

No oral agreement, statement, promise, undertaking, understanding, arrangement, act or omission of any party, occurring subsequent to the date of its signature may be deemed an amendment or modification of this Settlement Agreement unless reduced to writing and signed by the Parties hereto or their respective successors or assigns.

14. Severability

The Parties agree that if, for any reason, a provision of this Settlement Agreement is held unenforceable by any court of competent jurisdiction, this Settlement Agreement shall be automatically conformed to the law, and the remaining provisions of this Settlement Agreement shall continue in full force and effect.

15. Counterparts

This Settlement Agreement may be executed in multiple counterparts. The counterparts, when signed and attached to this Settlement Agreement, shall have the same force and effect as though the Parties had executed one document. Photocopies, electronic, or facsimile copies of executed copies of this Settlement Agreement may be treated as an original.

[Remainder of this page intentionally left blank]

I HAVE READ THIS SETTLEMENT AGREEMENT AND RELEASE BEFORE SIGNING IT, AND I FULLY UNDERSTAND THE TERMS, WHICH HAVE BEEN EXPLAINED TO ME BY MY ATTORNEYS.

ARIZONA ATTORNEY GENERAL'S OFFICE

_____ Date: _____
Paul Ahler, Assistant Attorney General

ARIZONA DEPARTMENT OF REVENUE

_____ Date: _____
Name

UNITED EFFORT PLAN TRUST

_____ Date: _____
Jeff J. Barlow, Executive Director

COLORADO CITY, ARIZONA

_____ Date: _____
Mayor

HILDALE, UTAH

_____ Date: _____
Donia Jessop, Mayor

TWIN CITY WATER WORKS, INC.

_____ Date: _____
Barry Mitchell, Attorney for TCWW, Inc.

ref#7828601

Tentative Fiscal Year 2020 Budget Narrative

Hildale-Colorado City Utility Department

320 East Newel Avenue, Hildale UT 84784

65- Joint Administration Fund

The Department has been working closely with Hildale City in order to determine an appropriate way for properly allocate costs when using joint funds. To do this it was decided that the Department will not make any transfer to the General Fund in FY 2020 but will bear all of the costs the Department incurs from services and goods used in the General Fund. The other major budget increase to the General Fund will be from the application of a retirement program. The Department and the Cities' administration are in total agreement that employee retirement is key to attracting and maintaining a competent staff.

Budget Shortfall in Water, Sewer and Gas Department Revenues

The Department is anticipating a budget shortfall due to a loss of revenue of $256,000 when expected tax delinquency evictions occur in Colorado City in Fiscal Year 2020. The Department has assumed a six-month turnover of 200 accounts. Please see the attached analysis, which includes an order of increased magnitude for metered water as we assume the larger household accounts have higher water demand.

Water Operating Revenue 81-37

We've increased the connection charges revenue to the perceived number of changeover accounts.

Water Non-Operating Revenue 81-38

The only change is the offset capital funds purchase which covers the Arizona Department of Revenue tax debt from Twin City Water Works. Capital funds purchases like the tax debt are budget neutral as they are transfers from reserve funds.

Water Operating Expenditures 84-41

We've increased power costs on our operating revenues to cover the cost of well power service of the formerly owned TCWW wells. Engineering and Laboratory testing have also been increased in order to facilitate ongoing infrastructure development.

The largest drop in expenditures by far is the commodity supply cost that was previously put aside for TCWW. Without that drop, our budgetary situation would be bordering on critical.

Water Non-Operating Expenditures 84-42

Non-Operating expenditure includes the offset capital expenditure for the Arizona Department of Revenue. This is also where you see the shift from General Fund transfers to Joint Administration, however due to the large infrastructure development project required, we are leaning heavier on other departments to cover the majority of the Joint Administration expenses.

320 East Newel Ave
Hildale, UT 84784

Wastewater Operating Revenues 82-37

The Wastewater Department is hit the worst, by our expected budget shortfall, however we do anticipate that our impact fee revenue will increase with growth primarily in Hildale and Centennial Park.

Wastewater Non-Operating Revenues 82-38

The only change from years previous, is drop of our Sundry Non-Operating Revenue, as of FY 2019 there has been do Sundry Non-Operating Revenue.

Wastewater Operating Expenditures 82-41

Operating revenue has only marginal changes to reflect the reality of FY 2019. We have matched Customer's installation with the operating offset in expenses.

Wastewater Non-Operating Expenditures 82-42

Non-Operating Expenditures will see the greatest shift from the General Fund to the Administration Fund. We are leaning harder on our Wastewater Department and Gas Department due to the need to maintain solvency in the Water Department.

Gas Operating Revenues 84-37

The Gas Department's propane revenue will be the hardest hit as it the tax delinquency evictions will take place in Colorado City. We are however anticipating nominal growth in the metered natural gas department.

Gas Operating Expenditures 84-41

The Gas Department's Operating expenditures are contingent on many market sensitive factors, and are subject to several changes to more accurate numbers as we reflect on FY19.

Gas Non-Operating Expenditures 84-42

The Gas Department's major shift from General Fund to Joint Administration will have an outsized effect here due the same infrastructure and financial concerns for the Water Department.

320 East Newel Ave
Hildale, UT 84784

Water Department

	OPERATING REVENUES	2019 Budget	Adjustment	2020 BUDGET
81-37-111	WATER SALES - METERED	$ 288,800.00	$ (41,521.00)	$ 247,279.00
81-37-121	WATER SALES - FLAT RATE	$ 362,400.00	$ (34,749.00)	$ 327,651.00
81-37-331	CONNECTION CHARGES	$ 20,400.00	$ 4,600.00	$ 25,000.00
81-37-332	CONSTRUCTION	$ 62,400.00	$ -	$ 62,400.00
81-37-411	INTEREST	$ 3,600.00	$ -	$ 3,600.00
81-37-412	PENALTIES	$ 60,000.00	$ (10,000.00)	$ 50,000.00
81-37-451	IMPACT FEE - UT	$ 34,700.00	$ (34,700.00)	$ -
81-37-452	IMPACT FEE - AZ	$ 34,700.00	$ (34,700.00)	$ -
	TOTAL OPERATING REVENUES	$ 867,000.00	$ (151,070.00)	$ 715,930.00

	NON-OPERATING REVENUE	2019 Budget	Adjustment	2020 BUDGET
81-38-440	SUNDRY NON-OPERATING REVENUE	$ 5,000.00	$ -	$ 5,000.00
81-38-450	TRANSFERS FROM RESERVES		$ 150,000.00	$ 150,000.00
81-38-999	CONTINGENCY	$ 200,000.00	$ -	$ 200,000.00
	TOTAL NON-OPERATING REVENUE	$ 205,000.00	$ 150,000.00	$ 355,000.00

	OPERATING EXPENDITURES	2019 Budget	Adjustment	2020 BUDGET
81-41-110	SALARIES-PERMANENT EMPLOYEES	$ -	$ -	
81-41-210	BOOKS, SUBSCR, & MEMBERSHIPS	$ 1,500.00	$ -	$ 1,500.00
81-41-230	TRAVEL	$ 4,600.00	$ -	$ 4,600.00
81-41-235	FOOD & REFRESHMENT	$ 600.00	$ -	$ 600.00
81-41-250	EQUIPMENT SUPPLIES & MAINT	$ 1,000.00	$ -	$ 1,000.00
81-41-257	FUEL	$ 200.00	$ -	$ 200.00
81-41-260	TOOLS & EQUIPMENT-NON CAPITAL	$ 3,000.00	$ -	$ 3,000.00
81-41-273	MAINT & SUPPLY - SYSTEM	$ 38,000.00	$ -	$ 38,000.00
81-41-285	POWER	$ 66,200.00	$ 13,800.00	$ 80,000.00
81-41-311	ENGINEER	$ 2,000.00	$ 3,000.00	$ 5,000.00
81-41-314	LABORATORY & TESTING	$ 4,500.00	$ 3,500.00	$ 8,000.00
81-41-315	LEGAL - GENERAL	$ 1,300.00	$ (300.00)	$ 1,000.00
81-41-330	EDUCATION	$ 3,500.00	$ 500.00	$ 4,000.00
81-41-340	SYSTEM CONSTRUCTION SERVICES	$ 2,000.00	$ -	$ 2,000.00
81-41-341	CONST-CUSTOMER'S INSTALLATION	$ 59,000.00	$ 3,400.00	$ 62,400.00
81-41-431	COMMODITY SUPPLY	$ 165,900.00	$ (165,900.00)	$ -
81-41-432	SPECIAL DEPT SUPPLIES	$ 18,500.00	$ -	$ 18,500.00
	TOTAL OPERATING EXPENDITURES	$ 371,800.00	$ (142,000.00)	$ 229,800.00

	NON-OPERATING EXPENDITURES	2019 Budget	Adjustment	2020 BUDGET
81-42-560	BAD DEBT EXPENSE	$ 2,000.00	$ -	$ 2,000.00
81-42-730	IMPROVEMENTS OTHER THAN BLDGS	$ 2,200.00	$ -	$ 2,200.00
81-42-742	EQUIPMENT - FIELD	$ 2,500.00	$ -	$ 2,500.00
81-42-750	SP PROJECTS CAPITAL	$ -	$ -	
81-42-755	PUBLIC TRUST CONTINGENCY		$ 150,000.00	$ 150,000.00
81-42-760	INVENTORY	$ -	$ -	$ -
81-42-815	PRINC. & INT W.RIGHTS LOAN	$ 41,300.00	$ -	$ 41,300.00
81-42-911	TRANSFERS TO JOINT ADMIN FUND	$ 214,600.00	$ 35,400.00	$ 250,000.00
81-42-912	TRANSFERS TO LITIGATION	$ 29,200.00	$ (11,300.00)	$ 17,900.00
81-42-913	TRANSFERS TO GF ADMIN	$ 125,000.00	$ (125,000.00)	$ -
81-42-960	TRANSFERS TO RESERVE FUNDS	$ 69,800.00	$ -	$ 69,800.00
81-42-999	CONTINGENCY	$ 200,000.00	$ -	$ 200,000.00
	TOTAL NON-OPERATING EXPENDITURES	$ 686,600.00	$ 49,100.00	$ 735,700.00

Water Department Revenues over Expenditures

SUMMARY REPORT	2019 Budget	Adjustment	2020 BUDGET
TOTAL WATER FUND REVENUE	$ 1,072,000.00	$ (1,070.00)	$ 1,070,930.00
TOTAL WATER FUND EXPENDITURE	$ 1,058,400.00	$ (92,900.00)	$ 965,500.00
DIFFERENCE	$ 13,600.00	$ 91,830.00	$ 105,430.00

Wastewater Department

	OPERATING REVENUES	2019 Budget	Adjustment	2020 BUDGET
82-37-311	SERVICE CHARGES	$ 710,700.00	$ (70,435.00)	$ 640,265.00
82-37-312	SERVICE CHARGES - CPMCWID	$ 145,000.00	$ -	$ 145,000.00
82-37-331	CONNECTION CHARGES	$ 300.00	$ 9,700.00	$ 10,000.00
82-37-332	SERVICING CUSTOMER INSTALL	$ 20,000.00	$ -	$ 20,000.00
82-37-411	INTEREST	$ 4,000.00	$ 500.00	$ 4,500.00
82-37-451	IMPACT FEE	$ 5,000.00	$ 5,000.00	$ 10,000.00
82-37-452	IMPACT FEE - CPMCWID	$ 5,000.00	$ 5,000.00	$ 10,000.00
	TOTAL OPERATING REVENUES	$ 890,000.00	$ (50,235.00)	$ 839,765.00

	NON-OPERATING REVENUES	2019 Budget	Adjustment	2020 BUDGET
82-38-102	TRANSFERS FROM R&R RESERVE	$ 55,000.00	$ -	$ 55,000.00
82-38-440	SUNDRY NON-OPERATING REVENUE	$ 23,000.00	$ -	$ -
82-38-999	CONTINGENCY	$ 200,000.00	$ -	$ 200,000.00
	TOTAL NON-OPERATING REVENUES	$ 278,000.00	$ (23,000.00)	$ 255,000.00

	OPERATING EXPENDITURES	2019 Budget	Adjustment	2020 BUDGET
82-41-110	SALARIES-PERMANENT EMPLOYEES	$ -	$ -	$ -
82-41-210	BOOKS, SUBSCR, & MEMBERSHIPS	$ 500.00	$ -	$ 500.00
82-41-230	TRAVEL	$ 4,600.00	$ -	$ 4,600.00
82-41-235	FOOD & REFRESHMENT	$ 700.00	$ (700.00)	$ -
82-41-250	EQUIPMENT SUPPLIES & MAINT	$ 8,000.00	$ -	$ 8,000.00
82-41-257	FUEL	$ 3,000.00	$ (500.00)	$ 2,500.00
82-41-260	TOOLS & EQUIPMENT-NON CAPITAL	$ 5,400.00	$ 1,600.00	$ 7,000.00
82-41-273	MAINTENANCE & SUPPLY - SYSTEM	$ 53,000.00	$ 2,000.00	$ 55,000.00
82-41-285	POWER	$ 36,000.00	$ -	$ 36,000.00
82-41-311	ENGINEER	$ 500.00	$ -	$ 500.00
82-41-314	LABORATORY & TESTING	$ 1,000.00	$ 500.00	$ 1,500.00
82-41-315	LEGAL - GENERAL	$ 1,000.00	$ -	$ 1,000.00
82-41-330	EDUCATION	$ 5,000.00	$ -	$ 5,000.00
82-41-340	SYSTEM CONSTRUCTION SERVICES	$ 5,000.00	$ -	$ 5,000.00
82-41-341	CONST-CUSTOMER'S INSTALLATION	$ 10,000.00	$ 10,000.00	$ 20,000.00
	TOTAL OPERATING EXPENDITURES	$ 133,700.00	$ 12,900.00	$ 146,600.00

	NON-OPERATING EXPENSES	2019 Budget	Adjustment	2020 BUDGET
82-42-560	BAD DEBT EXPENSE	$ 1,500.00	$ -	$ 1,500.00
82-42-720	BUILDINGS	$ 5,000.00	$ -	$ 5,000.00
82-42-742	EQUIPMENT - FIELD	$ 5,400.00	$ -	$ 5,400.00
82-42-760	INVENTORY	$ -	$ -	$ -
82-42-780	RESERVE PURCHASES	$ 55,000.00	$ -	$ 55,000.00
82-42-811	PRINCIPAL ON BONDS - RDA A	$ -	$ -	
82-42-812	PRINCIPAL ON BONDS - RDA B	$ 33,500.00	$ -	$ 33,500.00
82-42-813	PRINCIPAL ON BONDS - RDA - C	$ 6,400.00	$ -	$ 6,400.00
82-42-816	PRINCIPAL ON BONDS - DWQ	$ 80,000.00	$ -	$ 80,000.00
82-42-821	INTEREST ON BONDS - RDA A	$ -	$ -	
82-42-822	INTEREST ON BONDS - RDA - B	$ 69,300.00	$ -	$ 69,300.00
82-42-823	INTEREST ON BONDS - RDA - C	$ 13,100.00	$ -	$ 13,100.00
82-42-911	TRANSFERS TO JOINT ADMIN FUND	$ 278,900.00	$ 181,100.00	$ 460,000.00
82-42-912	TRANSFERS TO LITIGATION	$ 22,700.00	$ (4,800.00)	$ 17,900.00
82-42-913	TRANSFERS TO GF ADMIN	$ 125,000.00	$ (125,000.00)	$ -
82-42-914	TRANSFERS TO 2017 JMT RES FUND	$ -		$ 13,300.00
82-42-960	TRANSFERS TO RESERVE FUNDS	$ 92,900.00	$ -	$ 92,900.00
82-42-999	CONTINGENCY	$ 200,000.00	$ -	$ 200,000.00
	TOTAL NON-OPERATING EXPENSES	$ 988,700.00	$ 64,600.00	$ 1,053,300.00

	SUMMARY REPORT	2019 Budget	Adjustment	2020 BUDGET
	TOTAL WASTEWATER FUND REVENUE	$ 1,168,000.00	$ (73,235.00)	$ 1,094,765.00
	TOTAL WASTEWATER FUND EXPENDITURE	$ 1,122,400.00	$ 77,500.00	$ 1,199,900.00
	DIFFERENCE	$ 45,600.00	$ (150,735.00)	$ (105,135.00)

Gas Department

	OPERATING REVENUES	2019 Budget	Adjustment	2020 BUDGET
84-37-111	GAS SALES - METERED NAT GAS	$ 148,000.00	$ 2,000.00	$ 150,000.00
84-37-112	GAS SALES - METERED PROPANE	$ 488,700.00	$ (108,826.00)	$ 379,874.00
84-37-113	GAS SALES - CYLINDER	$ 10,600.00	$ -	$ 10,600.00
84-37-114	GAS SALES - CYLINDER EXCHANGE	$ 3,700.00	$ (200.00)	$ 3,500.00
84-37-121	NATURAL GAS SALES - FLAT RATE	$ 24,000.00	$ 1,000.00	$ 25,000.00
84-37-122	PROPANE GAS - FLAT RATE	$ 44,000.00	$ (10,000.00)	$ 34,000.00
84-37-160	CONSTRUCTION REVENUE	$ 125,000.00	$ -	$ 125,000.00
84-37-331	CONNECTION CHARGES	$ 3,000.00	$ 2,000.00	$ 5,000.00
84-37-351	SUNDRY OPERATING REVENUE	$ 47,000.00	$ -	$ 47,000.00
84-37-411	INTEREST	$ 3,500.00	$ -	$ 3,500.00
84-37-412	PENALTIES	$ 21,000.00	$ 4,000.00	$ 25,000.00
	TOTAL OPERATING REVENUES	$ 918,500.00	$ (110,026.00)	$ 808,474.00

	NON-OPERATING REVENUES	2019 Budget	Adjustment	2020 BUDGET

84-38-102	TRANSFERS FROM R&R RESERVE	$	172,300.00	$	7,700.00	$	180,000.00
84-38-901	APPROP - UTILITY FUND BALANCE	$	22,000.00	$	-	$	22,000.00
84-38-999	CONTINGENCY	$	200,000.00	$	-	$	200,000.00
	TOTAL NON-OPERATING REVENUES	$	394,300.00	$	7,700.00	$	402,000.00

	OPERATING EXPENDITURES	**2019 Budget**		**Adjustment**		**2020 BUDGET**	
84-41-110	SALARIES-PERMANENT EMPLOYEES	$	-	$	-		
84-41-140	BENEFITS-OTHER	$	3,000.00	$	-	$	3,000.00
84-41-210	BOOKS, SUBSCR, & MEMBERSHIPS	$	2,000.00	$	-	$	2,000.00
84-41-230	TRAVEL	$	4,000.00	$	-	$	4,000.00
84-41-235	FOOD & REFRESHMENT	$	600.00	$	(600.00)	$	-
84-41-250	EQUIPMENT SUPPLIES & MAINT	$	2,000.00	$	3,000.00	$	5,000.00
84-41-257	FUEL	$	1,000.00	$	500.00	$	1,500.00
84-41-260	TOOLS & EQUIPMENT-NON CAPITAL	$	2,000.00	$	3,000.00	$	5,000.00
84-41-273	MAINT & SUPPLY SYSTEM	$	11,700.00	$	-	$	11,700.00
84-41-285	POWER	$	1,000.00	$	-	$	1,000.00
84-41-330	EDUCATION	$	7,200.00	$	800.00	$	8,000.00
84-41-340	SYSTEM CONSTRUCTION SERVICES	$	-	$	-		
84-41-341	CONST-CUSTOMER'S INSTALLATION	$	100,000.00	$	25,000.00	$	125,000.00
84-41-431	NATURAL GAS COMMODITY SUPPLY	$	49,700.00	$	15,300.00	$	65,000.00
84-41-432	PROPANE GAS COMMODITY SUPPLY	$	318,100.00	$	(68,100.00)	$	250,000.00
84-41-434	NAT GAS COMMODITY TRANSPORT	$	18,100.00	$	900.00	$	19,000.00
84-41-580	RENT OR LEASE	$	4,200.00	$	300.00	$	4,500.00
	TOTAL OPERATING EXPENDITURES	$	524,600.00	$	(19,900.00)	$	504,700.00

	NON-OPERATING EXPENDITURES	**2019 Budget**		**Adjustment**		**2020 BUDGET**	
84-42-560	BAD DEBT EXPENSE	$	600.00	$	-	$	600.00
84-42-750	SP PROJECTS CAPITAL	$	37,000.00	$	-	$	37,000.00
84-42-760	INVENTORY	$	-	$	-		
84-42-780	RESERVE PURCHASES	$	172,300.00	$	7,700.00	$	180,000.00
84-42-890	OTHER DEBT SERVICE	$	-	$	-		
84-42-911	TRANSFERS TO JOINT ADMIN FUND	$	107,300.00	$	228,989.00	$	336,289.00
84-42-912	TRANSFERS TO LITIGATION	$	29,200.00	$	(11,300.00)	$	17,900.00
84-42-914	TRANSFERS TO 2017 JMT RES FUND						13600
84-42-913	TRANSFERS TO GF ADMIN	$	125,000.00	$	(125,000.00)		
84-42-960	TRANSFERS TO RESERVE FUNDS	$	98,200.00	$	-	$	98,200.00
84-42-999	CONTINGENCY	$	200,000.00	$	-	$	200,000.00
	TOTAL NON-OPERATING EXPENDITURES	$	769,600.00	$	113,989.00	$	883,589.00

	SUMMARY REPORT	**2019 Budget**		**Adjustment**		**2020 BUDGET**	
	TOTAL GAS FUND REVENUE	$	1,312,800.00	$	(102,326.00)	$	1,210,474.00
	TOTAL GAS FUND EXPENDITURE	$	1,294,200.00	$	94,089.00	$	1,388,289.00
	DIFFERENCE	$	18,600.00	$	(196,415.00)	$	(177,815.00)

Joint Administration

	EXPENDITURES	**2019 Budget**		**Adjustment**		**2020 BUDGET**	
65-41-110	SALARIES-PERMANENT EMPLOYEES	$	298,400.00	$	147,168.00	$	445,568.00
65-41-130	PAYROLL TAXES	$	25,200.00	$	21,094.00	$	46,294.00
65-41-140	BENEFITS-OTHER	$	41,400.00	$	111,202.00	$	152,602.00
65-41-145	Auditor					$	25,000.00
65-41-147	Legal					$	5,000.00
65-41-150	STIPENDS - UTILITY BOARD	$	11,700.00	$	(8,775.00)	$	2,925.00
65-41-160	Merchant Processing					$	30,000.00
65-41-165	Capital Building					$	2,000.00
65-41-170	Capital Equipment					$	3,000.00
65-41-175	Capital Reserve Purchases					$	12,000.00
65-41-235	FOOD & REFRESHMENT	$	4,700.00	$	1,300.00	$	6,000.00
65-41-250	EQUIPMENT SUPPLIES & MAINT	$	26,500.00	$	-	$	26,500.00
65-41-257	FUEL	$	30,900.00	$	(2,900.00)	$	28,000.00
65-41-260	TOOLS & EQUIPMENT-NON CAPITAL	$	-	$	26,000.00	$	26,000.00
65-41-271	MAINT & SUPPLY - OFFICE	$	2,000.00	$	1,000.00	$	3,000.00
65-41-280	UTILITIES	$	5,700.00	$	8,300.00	$	14,000.00
65-41-285	POWER	$	6,900.00	$	6,000.00	$	12,900.00
65-41-310	PROFESSIONAL & TECHNICAL	$	5,300.00	$	20,000.00	$	25,300.00
65-41-330	EDUCATION	$	2,100.00	$	6,900.00	$	9,000.00
65-41-510	INSURANCE	$	98,800.00	$	31,200.00	$	130,000.00

65-41-630	PRE-ACCOUNT HOLDING	$	-	$	-	
65-41-720	BUILDINGS	$	-	$	-	
65-41-741	EQUIPMENT - OFFICE	$	3,200.00	$	-	$ 3,200.00
65-41-780	RESERVE PURCHASES	$	-	$	-	
65-41-850	DEBT SERVICE - VEHICLE & EQUIP	$	11,000.00	$	-	$ 11,000.00
65-41-960	TRANSFERS TO RESERVE FUNDS	$	27,000.00	$	-	$ 27,000.00
	TOTAL EXPENDITURES	$	600,800.00	$	445,489.00	$ 1,046,289.00

	REVENUES	**2019 Budget**		**Adjustment**		**2020 BUDGET**
65-38-102	TRANSFER FROM WATER FUND	$	214,600.00	$	35,400.00	$ 250,000.00
65-38-103	TRANSFER FROM WASTEWATER	$	278,900.00	$	181,100.00	$ 460,000.00
65-38-105	TRANSFER FROM GAS FUND	$	107,400.00	$	228,889.00	$ 336,289.00
	TOTAL REVENUES	$	600,900.00	$	445,389.00	$ 1,046,289.00

Joint Admin Revenues over Expenditures

$ -	$ -	$ -

Total Revenue

$ 3,376,169.00

Total Revenues over Expenditures

$ (177,520.00)

Total Expenditures

$ 3,553,689.00

Statement of Qualifications

for the

Treatment and Source Development Feasibility Study

May 2019

Prepared by:

BOWEN COLLINS & ASSOCIATES

Prepared for:

Hildale/Colorado City WATER GAS SEWER Utility Departments

A. ORGANIZATION OVERVIEW

Bowen, Collins & Associates, Inc. (BC&A) is a Utah-based engineering firm specializing in water, wastewater, storm water, and environmental fields. Our staff is experienced in the study, design, and construction of water resource facilities, including treatment plants, groundwater wells, pump stations, pipelines, reservoirs, and canals. BC&A also specializes in hydrogeologic studies, master planning, and environmental permitting. Our staff have performed numerous project feasibility studies and final designs, and provided construction management services on projects throughout the Intermountain West. Technical expertise and responsive client service has been the foundation of our company since beginning operations in 1997. BC&A currently has 73 employees in three offices located in Draper, St. George, and Boise, Idaho. Questions concerning this Statement of Qualifications can be directed to our Southern Utah (St. George) Office:

Southern Utah Area Office

Location:	20 N. Main Street, Suite 107
Primary Contact:	Todd Olsen, P.E.
Telephone:	(435) 656-3299
Email	tolsen@bowencollins.com

Other Office Locations

Salt Lake Area Office:

Location:	154 E. 14075 S., Draper, Utah 84020
Telephone:	(801) 495-2224

Boise Area Office:

Location:	776 East Riverside Drive, Suite 250, Eagle, Idaho 83616
Telephone:	(208) 939-9561

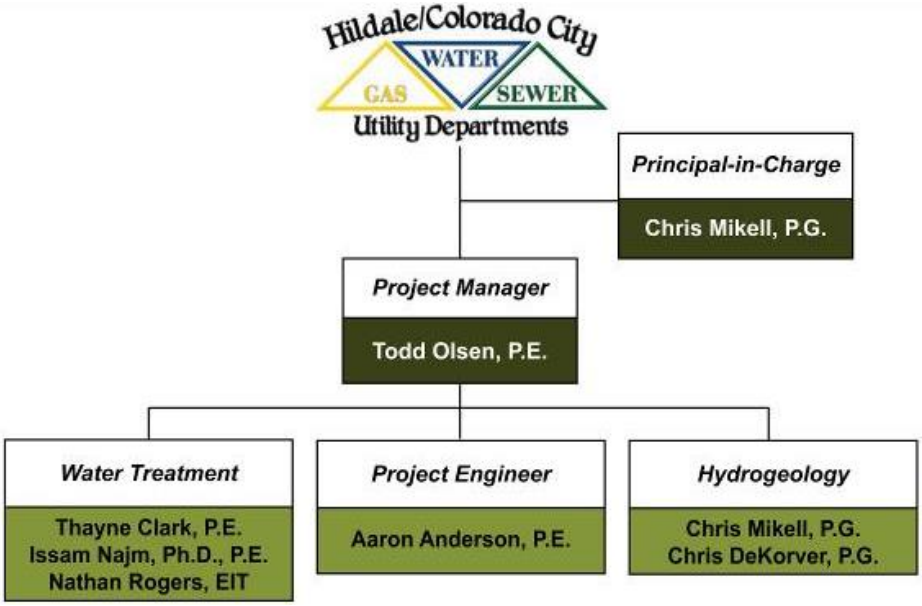
BC&A staff has extensive engineering knowledge developed over many years of working on a variety of challenging projects in the Intermountain West, including the service categories listed below.

- Water treatment plants
- Well drilling and equipping
- Well production and monitoring
- Groundwater modeling
- Reservoirs
- Pump stations
- Pipelines of various materials, up to 120-inch diameter
- Master plans of groundwater, water, wastewater treatment, sewer collection, storm drain, and secondary irrigation systems
- Hydraulic modeling of water systems, including surge analysis
- Diversions and intake structures
- Water rights assistance
- Structural engineering
- Electrical engineering
- SCADA and instrumentation
- Drinking Water Source Protection Plans
- Wastewater treatment plants
- Environmental permitting
- Environmental assessments and restoration

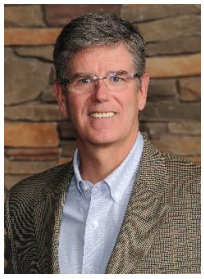
B. PROJECT TEAM

From past experience, we understand that people are the critical element to the successful completion of any project. BC&A has over 50 technical personnel with a wide range of experience and expertise. This section summarizes the education, training, and related project experience of the proposed project team that will complete the Treatment and Source Development Feasibility Study for Hildale City. In addition to our experienced internal project team, BC&A is proposing to team with Water Quality and Treatment Solutions (WQTS), a specialty water quality and water treatment engineering consulting company located in Los Angeles, California. WQTS provides water utilities with innovative and cost effective solutions to water quality and treatment challenges. WQTS will provide invaluable expertise in the evaluation of Hildale's water supply and its treatment alternatives.

The following organization chart illustrates the proposed BC&A project team. Full resumes of the project team members are available upon request. Detailed descriptions of the work experience, training, and qualifications of the project team are included in the following section.



Project Team Members



Chris Mikell, P.G., Principal-in-Charge
B.A., Geology, University of Vermont
M.S. Hydrology, New Mexico Institute of Mining and Technology
Email: cmikell@bowencollins.com; ph: 801-495-2224
Mr. Mikell is a hydrogeologist with over 33 years of experience with the planning, study, permitting, design, and construction management of groundwater and environmental projects. Mr. Mikell has extensive experience in the design and construction management of high yield, large diameter, and artesian water supply wells. He has designed more than 30 municipal production wells along the Wasatch Front. His recent well design experience includes Granger Hunter Well No. 17, North Logan Green Canyon Well, Herriman's Stillman Well, Hill AFB Well 8, West Jordan Well No. 3, and Virgin Valley Water District Well No. 27A. Chris has previous experience working on the Geneva Steel site doing environmental cleanup with CUWCD and is knowledgeable on the hydrogeology, artesian conditions, and shallow groundwater contamination issues on the site. He has conducted or managed more than 80 hydrogeologic characterization projects relating to water supply, wellhead protection, irrigation, artificial groundwater recharge, wetlands, and hazardous waste investigations. His areas of expertise also include waste site assessment, remediation, and management; groundwater flow and solute transport modeling; and RCRA and CERCLA regulations and permitting. He has designed and managed drilling projects in Utah, Idaho, Colorado, New Mexico, Arizona, and Washington. He is knowledgeable in all aspects of auger, core, hydraulic push, and rotary drilling operations, and in a wide variety of soil sampling methods.

Todd Olsen, P.E., Project Manager
B.S., Civil Engineering, Utah State University
Email: tolsen@bowencollins.com; ph: 435-656-3299
Mr. Olsen has over 16 years of engineering experience in the planning, design and construction of water, wastewater, and stormwater facilities. He is licensed in the States of Arizona, Nevada, and Utah. Mr. Olsen served as project manager for water, groundwater, sewer, irrigation, and storm drain master plans for Ivins City, St. George City, Virgin Valley Water District (VVWD), and Ash Creek Special Service District.
Mr. Olsen has worked on the design and construction of culinary water wells from 8-inch to 24-inch in diameter for clients along the Wasatch Front and in southern Utah, including VVWD, Moapa Valley Water District (MVWD), Jordan Valley Water Conservancy District, Parowan City, and Panguitch City. Mr. Olsen also has extensive experience with water and wastewater treatment, including arsenic removal systems for VVWD, onsite chlorine generation for Metropolitan Water District of Salt Lake & Sandy and MVWD, and wastewater treatment plant design for the St. George Regional Water Reclamation Facility. Mr. Olsen's other project experience includes design of over 100,000 linear feet of large diameter pipelines from 36- to 90-inches, culinary water reservoirs up to 48 million gallons, experience with large water intake structures, screening structures, diversion structures, detention basins and dams. Also, in his first year moving to the southern Utah area in 2014, Mr. Olsen was selected as the American Society of Civil Engineer (ASCE) Southern Utah Branch Engineer of the Year.

Thayne Clark, P.E., Water Treatment Engineer
B.S., Civil Engineering, Brigham Young University
M.S., Civil Engineering, Brigham Young University
Email: tclark@bowencollins.com; ph: 801-495-2224
Mr. Clark has over 21 years of engineering experience in planning, design and construction management of water treatment facilities and other water related projects. Mr. Clark has worked as project engineer for numerous new water treatment systems throughout Utah and Nevada, including groundwater treatment design for arsenic removal, TDS, antimony, radium and other contaminants that range in size from 300 gpm to 22 mgd. Mr. Clark served as project engineer for the $23 million VVWD Arsenic Treatment Project in Nevada, which included five separate arsenic treatment plants with a capacity totaling 22 mgd. He has been the engineering consultant on various water treatment upgrade projects for large water supplier clients in Utah, performing chemical system replacement evaluations, design of a new filter aid polymer feed system, and other miscellaneous projects for plants up to as large as 150 MGD. Mr. Clark has extensive experience in water delivery and conveyance systems including pump station design, transmission pipeline design, water system master planning, and hydraulic modeling. He has a working knowledge of State compliance standards and procedures for permitting water system upgrades.

Aaron Anderson, P.E., Project Engineer
B.S., Civil Engineering, Utah State University
M.S., Civil and Environmental Engineering, Utah State University
Email: aanderson@bowencollins.com; ph: 435-656-3299
Mr. Anderson has 5 years of experience in the planning, design and construction of water resource facilities. Mr. Anderson is experienced with a number of computer design and hydraulic modeling programs, including AutoCAD Civil 3D, ArcGIS, InfoWater, InfoSWMM, and HEC-RAS. Mr. Anderson has extensive experience in utility master planning and modeling. Aaron has worked on culinary water, secondary water, wastewater, and storm drain master plans for several clients in Southern Utah and along the Wasatch Front. Aaron is experienced in the development of Impact Fee Facilities Plans, Impact Fee Analyses, and Utility Rate Studies. He is also experienced in hydraulic surge modeling for large diameter pipelines. Along with his planning experience, Mr. Anderson also has extensive experience in design and construction management for a wide range of projects, including wastewater treatment facilities, large storm water collection and conveyance facilities, river restoration and protection projects, and other underground utilities.

Chris DeKorver, P.G., Project Hydrogeologist
B.S., Geological Engineering, University of Utah
Email: CDeKorver@bowencollins.com; ph: 801-495-2224
Mr. DeKorver has over 15 years of experience in planning, designing, permitting, and construction management of environmental, geotechnical and groundwater projects for private, municipal and industrial clients. His experience includes field supervision of drilling and sampling operations for environmental, geotechnical and deep culinary/industrial water well purposes. Mr. DeKorver has performed drilling and pumping test operations within Utah, Nevada, and California. He is knowledgeable in numerous aspects of all types of drilling, including auger, hydraulic/direct push, reverse/direct mud-rotary, direct air-rotary drilling, and horizontal drilling, as well as a wide variety of soil sampling and water sampling techniques. He has managed, interpreted, observed and logged deep borehole (reverse and direct rotary) drilling to depths of 3,000 feet, well installation (up to 24-inch diameter) and aquifer performance testing on groundwater resource projects. Mr. DeKorver has extensive experience with well rehabilitation techniques (chemical and mechanical). His experience also includes hydrogeological studies of brine pond operations in excess of 30,000+ acres to measure brine leakage and potential fresh/brackish water

intrusion. He is HAZWOPER certified, and knowledgeable in water quality, environmental issues, sampling, and contaminant remediation technologies. He has completed the 24-hour MSHA New/Inexperienced Metal/Non-Metal Surface Miners Training (Part 48) and is current. He is also experienced in ArcView/ArcMap GIS and trained in culinary, wastewater, and industrial water treatment facility design and operation.

Nathan Rogers, Water Treatment Engineer.
B.S., Civil & Environmental Engineering, Utah State University
M.S., Civil & Environmental Engineering, Utah State University
Mr. Rogers has engineering experience in equipment design and project management of membrane filtration systems for municipal and industrial applications. With varying surface and ground water sources, Mr. Rogers has helped to design and install treatment systems focused on arsenic removal, iron and manganese removal and ensuring high performance during high turbidity events. Mr. Rogers has worked as project engineer and project manager for various ultrafiltration and reverse osmosis treatment systems ranging in size from 200 gpm to 10 MGD. Recently, Mr. Rogers served as the project engineer for a new 1.4 MGD water treatment plant installation in Southwest Montana using ultrafiltration technology to achieve greater than 99% recovery to help reduce waste volume retention requirements.

Issam Najm, Ph.D., P.E., Water Quality and Treatment Solutions, Inc. (WQTS).
Ph.D., Environmental Engineering, University of Illinois at Urbana-Champaign
M.S., Environmental Engineering, University of Illinois at Urbana-Champaign
B.S., Civil Engineering, University of Beirut, Lebanon
Water Quality & Treatment Solutions is a specialty environmental engineering and science consulting company located in Los Angeles, California. WQTS' mission is to provide innovative and cost effective solutions to water quality and treatment challenges. Dr. Najm, WQTS founder and President, brings extensive knowledge and experience with the full range of water quality, chemistry, and treatment technologies currently in use and under research and development. Dr. Najm's expertise is instrumental in process design optimization and identifying key issues for treatment design, including complex analysis of background chemistry, fate and transport, as well as sensitivity and reliability analyses for treatment options as it relates to potential short and/or long term changes in source and background water quality parameters. Dr. Najm has worked with BC&A and other engineering firms on a number of projects with a specific focus on developing and evaluating treatment options for removing inorganic and organic constituents from water. Issam's experience has also been invaluable to clients in identification and resolution of issues related to waste disposal, permitting, construction, operation and troubleshooting of the treatment facilities. Dr. Najm is an Adjunct Associate Professor at the Civil & Environmental Engineering Department of the University of California Los Angeles. He is also a registered Civil Engineer in California and a Board-Certified Environmental Engineer with the American Academy of Environmental Engineers.

C. APPROACH AND SCOPE OF WORK

Project Approach & Key Issues

BC&A has evaluated the project description outlined in the Request for Statement of Qualifications for Professional Services (RSOQ) and has identified certain key issues that we believe will be critical to the success of this study. Understanding and identifying these key issues now will help to streamline the development of the scope of work, and will also help provide clear project priorities and goals as the work tasks are initiated.

TREATMENT SYSTEM KEY ISSUES

Handling of Treatment System Waste Stream Solids – One of the major issues with water treatment alternatives for a radium removal process is the risk of accumulating radioactive radium in the waste stream. Different types of treatment technologies will accumulate radium in different ways in the waste stream. If the radium is concentrated to a point where it could become a low level radioactive solid, it would require substantial permitting, hauling, and disposal costs.

There are treatment technologies/processes that would allow the radium laden solids to remain at lower radioactive concentrations. Such an alternative may allow the City to discharge the solids produced by the treatment process (all or part) to the municipal sewer system. The sewer system has historically and is currently receiving radium through indoor water use that discharges to the sewer. By keeping the total radium levels in the liquid waste stream near the current levels in the sewer, the City may be able acquire the regulatory allowance to discharge the backwashed solids directly to the sewer system. If this alternative is to be pursued, it may become necessary to develop a plan to implement a secondary water system in the City so that only indoor use water is treated at the plant. If the proposed plant were to treat both indoor water and irrigation water, additional radium solids would be sent to the sewer in excess of what the current sewer system receives through only indoor use.

In the evaluation of treatment alternatives, BC&A will ensure that waste stream issues are taken into consideration and will evaluate how these issues may influence the initial capital costs and O&M costs of the treatment aspect of the project. BC&A will also make it a priority to coordinate these issues with regulators early on in the planning process.

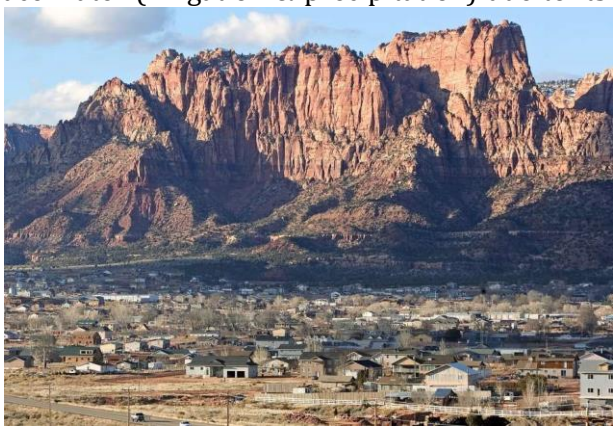
Along with potential solids handling and disposal issues, one additional concern is the development of radon gas in and around the radium treatment process and the waste stream disposal area. Radon is a byproduct of radioactive decay of radium, and it will be important to identify potential issues associated with radon gas in order to plan appropriately from a design and regulatory standpoint.

Integration of the Existing Treatment Plant - It is our understanding that the extraction of groundwater from the local aquifers requires that the City remove iron and manganese at an existing water treatment plant. Based on our experience and our initial review of treatment technologies, there may be one treatment process that is similar to the iron/manganese removal process in terms of both chemistry and plant layout.

Our prioritized task in the evaluation of treatment technologies will be to evaluate if modifications to the existing plant could remove radium in addition to the iron/manganese. This could represent a huge treatment cost savings to the City if the existing plant could be utilized, with only modifications to the chemical feed system and possibly the media. We look forward to meeting with you as the project begins to discuss this alternative in more detail and to understand your existing water treatment and sewer disposal systems.

HYDROGEOLOGIC KEY ISSUES

Alluvial Aquifer (Shallow) - Based on the information provided in the RSOQ and the 2016 Sunrise Engineering report, the alluvial aquifer is currently used for culinary purposes in the system from five well sources. This aquifer is likely under the influence of surface water (irrigation & precipitation) due to its shallow nature. It is our understanding that water from this shallow aquifer contains elevated levels of iron and manganese and that treatment is currently required to meet drinking water standards. The aquifer is a low producer more than likely due to the saturated thickness and fine grained sediments present. This source may potentially be better suited as a secondary irrigation source, though other parameters need to be analyzed to confirm this concept. Further testing and analysis will help the City identify the best use of this aquifer moving forward.



Deep Aquifer (Shinarump Member) - The Shinarump Member of the Chinle Formation underlies the alluvial sediments and the Moenave Formation in the Hildale and Colorado City area and is not exposed. Further to the south, the Shinarump Member is exposed at the surface. This sandstone conglomerate provides nearly 60% of the water supply for the City water system. Wells connected to this aquifer have tested high for levels of radium -226 and -228, and efforts to flush the wells have only increased these contaminant concentrations. The source of radium is likely at the base of the Shinarump Member as evidenced by the mines located in Arizona to the south. Treatment will be required to utilize these wells for drinking water purposes.

Deeper Aquifer (Kaibab Limestone and Coconino Sandstone) - As part of this study, BC&A would propose to carry out additional analysis of the water quality of the deeper aquifer, preferably using the existing abandoned well if it is accessible. BC&A will evaluate the cost effectiveness of video inspection of the well, pump testing, and water quality analysis, potentially in multiple areas of the well. The results would be utilized to determine if this well and/or other new deep aquifer wells are viable sources of drinking water for the City.

Navajo Sandstone Aquifer - The Navajo Sandstone Aquifer is utilized via two spring sources at the base of the formation in Jans and Maxwell Canyons. The current capacity of these springs is approximately 80 gpm. Per the RSOQ, water from the Navajo Sandstone Aquifer does not require any treatment nor does it pose any water quality concerns. BC&A has completed water supply wells in both the Navajo Sandstone and the correlative eolian unit, the Nugget Sandstone, and understands the aquifer properties and yield potential. The main concern with tapping this aquifer is the long-term sustainability of supply. Assessing the age of the water by specialized analysis would provide insight into the sustainability of the aquifer and estimated recharge of the aquifer. This assessment would provide the information needed to justify the construction of a new well(s) in the Navajo formation. It is important to note that the Navajo Sandstone is located on Bureau of Land Management (BLM) land, specifically land designated as BLM Wilderness. Access to these areas may prove to be a considerable hurdle for the project. Acquiring water rights for augmented flow from the Navajo Sandstone may also prove to be a difficult task as protests from the BLM have the potential to slow down or impede the project. This considered, redevelopment of the existing springs may prove to be the most feasible option for producing additional water from this formation, and BC&A has designed multiple spring redevelopment and enhancement projects throughout the State of Utah.

ENVIRONMENTAL PERMITTING AND COORDINATION WITH GOVERNING AGENCIES

One aspect of water system planning, design, and construction that is at times not given adequate attention beforehand is environmental permitting and coordination with governing agencies. Water treatment upgrades or new source development projects in Hildale will require coordination or permitting with a number of government agencies, including the Utah Division of Environmental Quality, Utah Division of Drinking Water, the Environmental Protection Agency, the Bureau of Land Management, the Army Corp of Engineers, and other local, state, and federal agencies. BC&A has extensive experience and knowledge working with these agencies and can help identify the permitting and coordination that will be needed for the different project alternatives identified in the feasibility study. Identifying permits or right-of-way applications that may require long lead times will be critical in the development of project timing and schedules.

BC&A WILL PROVIDE A FRESH, OBJECTIVE VIEW OF THE CITY'S WATER NEEDS

Unlike other engineering firms that focus on a broad range of civil engineering disciplines, BC&A is first and foremost a water resource engineering firm. We employ experts in this field of engineering with an advanced knowledge of water treatment, groundwater, and well design, as well as an understanding of the planning and financial aspects of water projects and water systems. A key aspect of this project is to maintain a wide perspective on what is best for the City, taking into account groundwater sources, water treatment technologies, water system planning, secondary water options, sewer system operation, regulatory requirements, and financial planning. BC&A will bring a fresh perspective to this feasibility study and will provide the City with sound, cost-effective, and innovative solutions to its existing and future water source needs. BC&A has teamed with WQTS for this project. WQTS will provide expert knowledge, experience, and perspective in the realm of drinking water quality and water treatment technologies and will help provide solutions to the unique challenges of Hildale's water supply.

Scope of Work

The following is the list of project objectives outlined in the RSOQ along with a description of BC&A's approach to complete each of these objectives.

I. EFFICACY OF AVAILABLE TREATMENT AND SOURCE DEVELOPMENT OPTIONS.

A. Treatment Alternatives Evaluation Approach. BC&A will review and evaluate the known treatment alternatives that have the capability to bring radium concentrations below the Maximum Contaminant Level (MCL), while also addressing other water quality issues in the City's water sources.

The first step in this evaluation will be to collect water pumping data and water quality data from all the City water sources in order to identify historical trends in water usage and water quality. This information will be used to evaluate the size, capacity, and cost of different treatment processes. There are likely four to five treatment technologies that have the potential to meet the requirements for radium removal; each treatment alternative will be evaluated on the following:

- Efficacy of the radium removal technology, including impacts of existing water quality on the treatment process
- Waste stream and solids handling issues and costs
- Conceptual plant layout and sizing
- Effects of variable (mostly increasing) radium concentrations over time

- Capital and O&M costs
- Potential risks and opportunities

BC&A will evaluate the possibility of adding a new radium treatment process infrastructure to the existing iron/manganese treatment plant facility. This evaluation would include collecting pertinent water quality, design, and operational information for the plant. Based on our findings, it may be possible to utilize the City's existing treatment plant, with minor modifications and additions, to remove radium from the water. The improvements required will all be dependent on the plant's current condition, media, hydraulic capacity, and layout.

An important part of evaluating treatment options is understanding the quantity of the waste stream and its radium concentrations in the solids and how this will impact the existing sewer lagoons. BC&A will evaluate the impacts of radium concentrated solids sent to the sewer system compared to the current radium concentrations discharged to the sewer via indoor water use. BC&A will also investigate other waste disposal alternatives, such as hauling to offsite waste disposal sites.

Other considerations in the treatment process selection include potential development of radon gas in and around the treatment facility and waste stream disposal areas. This information will help guide the regulatory and permitting process for the recommended treatment alternative(s).

The results of this evaluation will yield one or two recommended treatment approaches to remove radium with associated cost ranges. Information gathered and developed in this part of the study will be provided in the overall project report.

B. Source Development Options Approach. The study will include potential source development utilizing sources of water in the Navajo Sandstone Aquifer in the Canyons adjacent to the City and the search for additional drinking water below the Shinarump Aquifer. This process will include hydrogeological characterization, investigation, groundwater modeling, geophysical survey and water quality analyses.

BC&A will evaluate existing well logs from the Utah Division of Water Rights and from Arizona Department of Water Resources. A desktop study will also be performed to compile additional geologic information from published reports. This will include published hydrogeologic studies, geologic studies/maps, well drillers logs, GIS coverages, and water rights information (Utah and Arizona). BC&A will evaluate the information and prepare a technical memorandum on the findings. The report will focus on recommendations for water quality analyses (alluvial/bedrock), pump testing (shallow/deep), spring flow analyses, test drilling program (horizontal/vertical), and conceptual cost estimate for the drilling contractor(s). In addition, any fatal flaws to development of groundwater identified at this point will be included.

A site visit and reconnaissance will be required to visually observe the project site and vicinity to make general observations regarding the site topography, possible well locations, existing well and spring conditions and access to the existing sources for drilling, development and testing equipment.

BC&A is qualified and has performed multiple ground water models in the state of Utah utilizing MODFLOW and modeling platforms. We are unaware of any published model by the UGS/USGS in the area. Refinement of the existing model created by Sunrise Engineering is likely required to optimize its output. BC&A will work with the UGS and USGS in obtaining

representative data on input and output parameters for proper mass balance of the model specifically in the Shinarump and deeper aquifers.

We understand the multiple surficial geophysical techniques available today and have utilized each of them in past projects. Surficial geophysical surveys are a cost effective approach to finding and pinpointing aquifers, prolific zones/layers in both bedrock and alluvial settings. Past projects have utilized the MTD-4 method and the AquaTrack method amongst others available. We would develop an appropriate geophysical approach and identify capable contractors then implement the program for this specific site.

Recent projects involving the age dating of groundwater for source protection and sustainability have been done by BC&A on spring sources. We have worked with local university labs to develop appropriate sampling plans for data gathering and analysis. The methods provide the age, altitude of deposition, amongst others that will provide answers for the potential expansion of the Navajo as a larger drinking water source for the City.

A source that was dismissed by Sunrise in their masterplan and hydrogelogic study was the deep "abandoned" bedrock well drilled to 3,250 feet. The well was completed in two known formations that produce drinking water in other portions of the state. Further investigation of this well is important due to the difficulties of the other options available. BC&A would develop an appropriate downhole geophysical approach to assess the condition of the existing borehole, including a video, geophysical logs (unless completed upon completion of the well), water quality testing and pump testing (yield). BC&A has great relationships with highly technical drilling contractors within Utah and nationally that would be able to provide the level of effort required for specific testing and analysis. BC&A understands the importance of involving the proper contractors and sub-contractors in collecting specific and representative data for proper recommendations.

II. INITIAL CAPITAL COSTS OF TREATMENT AND SOURCE DEVELOPMENT OPTIONS.

Using experience from similar, previously completed projects, BC&A will work with equipment suppliers and local waterworks suppliers to development estimates for the initial capital cost associated with each water treatment and source development project. The estimates will include the costs associated with design, permits, land or right-of way acquisition, construction, and any other foreseeable project costs, providing the City with a comprehensive, "bottom line" initial capital cost for each alternative.

III. ONGOING OPERATION AND MAINTENANCE (O&M) AND ASSOCIATED COSTS.

Similar to our approach to estimating the initial capital costs of the different water treatment and source development alternatives, BC&A will draw on previous project experience as well as the recommendations from equipment suppliers to develop projected O&M costs for the water treatment and source development alternatives. BC&A will also coordinate with other water system

owners that operate similar installations to gather useful information on the frequency and cost of ongoing O&M efforts, providing Hildale with an estimate for the long-term project costs.

IV. ASSESSMENT OF RADIONUCLIDE CONDITIONS THAT AFFECT THE SYSTEM.

A key component of this study will be to investigate the potential sources of radium contamination on the system and whether the contamination is caused by human activity or is naturally occurring. Included in the approach will be an initial paper study and evaluation of the potential sources of the radium contamination utilizing available hydrogeologic/geologic information and maps, identifying nearby mining activities in relation to the hydrogeology, and using other published groundwater information or studies. If the radium is found potentially to be coming from mining activities, BC&A would recommend further in-depth studies into the regional hydrogeology. Mining related radium contamination of the groundwater would allow the City to pursue various types of potential funding that would help with the costs of this and future studies, as well as the costs of mitigation of the groundwater radium issues. BC&A will also investigate the potential tertiary effects associated with radionuclide contamination in groundwater, such as impacts on indoor and outdoor air quality.

V. REGULATORY ASSESSMENT

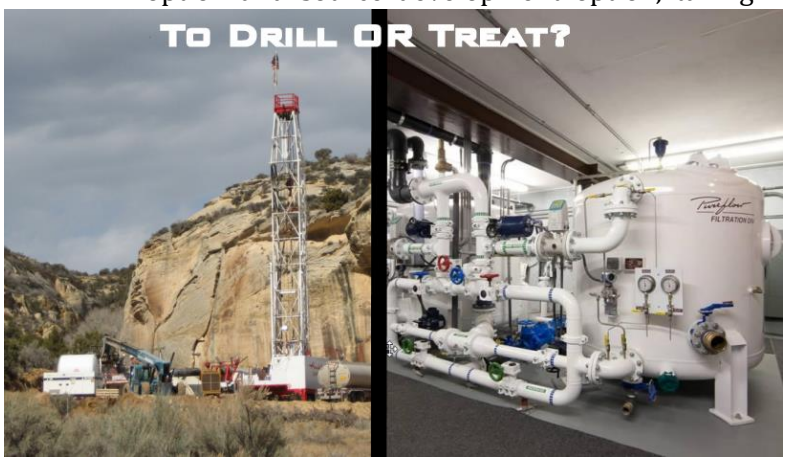
Source development and water treatment projects will require significant coordination with local, state, and federal regulatory agencies. BC&A has extensive experience working with regulatory agencies and will work with Hildale to identify which permits or other assessments will be required for the water treatment and source development alternatives identified in the study. Regulatory requirements have the potential to play a significant role in the feasibility of any water supply project; identifying these regulatory requirements will be a critical aspect of this feasibility study, particularly if there are time constraints on the new source development. Water rights will also play an important role in the feasibility study, particularly with regard to the development of a new source of water. New source development will require the potential transfer of water rights or may require applications for new water rights, which will influence the schedule and overall feasibility of the project.

VI. FINANCIAL ASSESSMENT OF PROPOSED TREATMENT AND SOURCE DEVELOPMENT OPTIONS.

Depending on the available forms of funding, BC&A will provide Hildale with a detailed budget plan for treatment and source development options, identifying the estimated initial capital cost, ongoing operation and maintenance costs, and any other projected expenses, incorporating any grant money or loan payments into the overall plan. This will help Hildale to ensure that existing and future user rates, impact fees, and other sources of revenue are adequate to meet the long-term financial needs of the community.

VII. GRAPHIC ANALYSIS AND TREATMENT/SOURCE DEVELOPMENT RECOMMENDATION.

The results of Project Objectives I - VI will be documented in a final report. The final report will provide a detailed, comprehensive documentation of the water treatment and source development options included in the study. BC&A will provide a professional assessment of each water treatment option and source development option, taking into account the cost, schedule, water quality, sustainability, and overall feasibility of each alternative. Based on the findings of the study, BC&A will provide a recommendation to Hildale of which treatment or source development option (or combination of options) would be most advisable.



If selected, BC&A will coordinate with Hildale to develop a detailed scope of work, including specific items such as project coordination meetings, data collection and sampling, city council presentations, and other items pertinent to the completion of the study.

D. WATER TREATMENT AND SOURCE DEVELOPMENT CAPABILITIES AND PAST EXPERIENCE

Over the past 22 years, Bowen Collins & Associates has expanded and grown not only in size and reach, but also in the types of services we offer. Our staff is experienced in the study and design of water treatment facilities, groundwater wells, hydrogeological studies, pipelines, pump stations, and environmental permitting. Our staff has performed a number of feasibility studies, master plans, and other water resource planning studies. The following is a summary of our firm's experience in water treatment and groundwater source development projects.

Water Treatment Capabilities and Past Experience

Our project team has worked with major treatment system suppliers on numerous treatment plant pilot projects throughout Utah and the Western states. These include treatment alternatives evaluations, process optimizations, and solving residual waste solids handling issues. Waste discharge issues can often drive the ultimate treatment process selection and overall project costs. Our team has extensive experience in evaluating and correctly assessing the range of waste discharge options, impacts, costs and risks. Our treatment expert, Mr. Issam Najm, PhD, is a nationally recognized leader in inorganic contaminant removal and associated waste stream disposal issues. We will provide you with information and guidance to help you make the best treatment and waste handling decision. Below is a summary of key water treatment projects our team members have worked on over the years. Additional data for any of these projects can be provided upon request.

Related Water Treatment Projects

Radium Treatment Alternatives Analysis - Centennial Park Domestic Water Improvement District.
BC&A performed a treatment alternatives analysis for water contaminated with radium for Centennial Park Domestic Water Improvement District. This treatment alternative analysis is similar in scope to what will be provided to Hildale for this proposed project. The analysis included an initial evaluation of water quality data in relation to the various District groundwater sources and the layout of the water system. The analysis also included evaluation of suitable water treatment technology alternatives to remove radium, as well as

high TDS and iron/manganese. The critical issues related to the treatment waste stream disposal and potential regulatory requirements was evaluated and discussed for each alternative. The selected potential treatment technologies were evaluated for treatment effectiveness, capital costs, ease/complexity of operations, waste stream issues, and O&M costs. BC&A and WQTS worked together on this project and provided the owner with a report and recommendations. **Contact: Centennial Park Water Improvement District, 928-875-2600**

Arsenic Removal Study for the Sand Hollow Well Field – Washington County Water Conservancy District (WCWCD). WCWCD retained B&CA to complete a study to identify and evaluate arsenic treatment alternatives for the District's Sand Hollow Well Field (SHWF). The SHWF consists of 13 wells and one artificial spring near the Sand Hollow Reservoir. Arsenic is present in concentrations from one part per billion (ppb) to 15 ppb. Water from the SHWF is blended with water from the Quail Creek Water Treatment Plant (QCWTP) in the Regional Pipeline, but with increasing arsenic concentrations in the wells and future water deliveries for planned for nearby development it became necessary to look at alternatives for reducing arsenic levels from the main wells. The study evaluated options for treating and blending the SHWF wells to meet drinking water standards. BC&A worked closely with WQTS to evaluate a list of treatment alternatives and make recommendations for planning and additional studies. **Contact: WCWCD, 435-637-3617**

Arsenic Removal - Virgin Valley Water District (VVWD). BC&A performed the study, planning and design of arsenic treatment facilities with a total of 22 MGD in treatment capacity at a cost of $23 million. This was one of the largest arsenic treatment projects in the nation, and one of the first of its kind to utilize conventional filtration treatment for arsenic removal. The project included design of filter systems, chemical feed systems, solids handling processes, and instrumentation and SCADA controls for five separate treatment plants designed to remove arsenic from eight groundwater wells using a coagulation/filtration process with chemical addition. BC&A and WQTS together performed an evaluation of current arsenic treatment process technologies and recommended of the most economical and effective process; provided preliminary design and layout for the recommended treatment system; provided an on-site pilot treatment system that included evaluation and optimization of media depth, filter loading rates, chemical addition, and backwash process; assisted in the permitting process and coordinated with state and federal regulating agencies; and assisted the owner in qualifying for and obtaining state and federal funding for the project. The project included five separate plant buildings with a total of 29 vertical steel pressure filters, with a total chemical storage capacity of over 28,000 gallons, with a metering system capable of delivering over 1,200 gallons of chemical per day. Eight booster pump stations and four PRV valve vaults where also designed as part of the overall project. **Contact: Kevin Brown, District Manager, 702-346-5731**

Arsenic Treatment Project – Moapa Valley Water District (MVWD). BC&A performed design and construction management for the project that included creating treatment solutions for four of the MVWD's groundwater supply sources which exceeded the 10 ppb arsenic standard. The work included conducting pre-design alternative analysis study (working with WQTS), obtaining funding, creating preliminary engineering and environmental reports to meet state/federal funding requirements, performing final design/construction of treatment plant facilities at two separate plant sites, and incorporating approximately 3,000 feet of pipe to support blending of the other two sources to meet the Maximum Contaminant Level (MCL) for arsenic. The 8 MGD plants included a total of seven 12-foot diameter vessels designed to remove arsenic using a granular iron media (GIM) adsorption process. BC&A performed evaluations of various treatment system configurations and design optimizations, and assisted in making final design recommendations. BC&A also assisted MVWD in obtaining $10M in grants and loans from Nevada AB198, SRF, and USDA Rural Development funding programs for planning, design and construction of this project.
Contact: Kevin Brown, District Manager, 702-346-5731

Antimony Water Treatment - Town of Alta (Salt Lake County Service Area #3). BC&A provided design and construction management services for a 200 gpm antimony removal plant, located in the existing Bay City Mine shaft building. The project included evaluation of treatment alternatives utilizing a media pilot system that was operated for over nine months and tested four different adsorption medias. BC&A and WQTS together performed the pilot testing coordination and evaluation. The project design included building improvements, mechanical design, instrumentation, and an acid and caustic chemical feed/storage system. The project also included construction engineering and startup/commissioning services. **Contact: Keith Hansen, General Manager, 801-278-9660**

WQTS Project: Bench-Scale Evaluation of Hexavalent Chromium Treatment Technologies - Water Research Foundation, Denver, Colorado.

In 2013, the State of California was considering establishing a drinking water limit for Hexavalent Chromium (Cr6) in drinking water, which would have been the first in the nation. Due to limited information on the effectiveness and cost of water treatment technologies for Cr6 removal from groundwater, WQTS was awarded a $760,000 research grant by the Water Research Foundation (Denver, CO) and 10 water agencies in California, Nevada, and Oklahoma to conduct a fast-track research effort aimed at evaluating Cr6 removal efficiency and cost from a variety of water sources with a wide range of water quality conditions.

Water samples were collected and shipped to WQTS laboratory from all ten participants over a six-month period. Extensive bench-scale testing was conducted on each water using three treatment technologies: Weak Base Anion (WBA) resin, Strong Base Anion (SBA) resin; and Reduction, Coagulation, Filtration (RCF). As part of the project, WQTS also developed detailed budgetary cost estimates for the application of each of the three treatment technologies at different well sizes and to treat waters containing different levels of Cr6. WQTS also developed a dynamic capital and O&M cost model for Cr6 removal from groundwater. The model was then made available online at www.CrVITreatmentCosts.com. In the Summer of 2014, the State of California finalized its Cr6 MCL in drinking water at 10 µg/L.
Contact: Alice Fulmer, Senior Project Manager, 303-347-6109

WQTS Project: On-Call Technical Support Services – Metals Removal from Mining-Influenced Water - Park City Municipal Corporation, Park City, Utah.

One of the primary water sources for Park City, Utah, is water drawn from two tunnel portals of inactive mines, Judge & Spiro, in the surrounding mountains. Depending on water demand, the City uses a portion of the water, while the remaining tunnel flows discharge to local creeks. Unfortunately, both tunnel waters contain elevated levels of various metals including arsenic, thallium, antimony, zinc, cadmium, and others. In addition to treating the drinking water portion to regulatory limits, the State of Utah issued an order for the City to also treat the remaining water flows to newly-developed stream discharge levels. For a number of metals, the stream discharge limits were far lower than the drinking water limits.

In 2013, the City retained the services of WQTS to provide technical support services to help the City identify and evaluate potential treatment technologies that can meet both drinking water and discharge water limits. WQTS participated in a number of planning meetings and conducted bench-scale testing of treatment technologies. The City is currently conducting pilot-scale testing to validate the bench-scale testing results. WQTS is serving as a technical reviewer of the pilot testing results, and will continue to provide technical support to the City during full-scale implementation.

Contact: Roger McClain, Water Engineer, 435-615-5329

Jordanelle Water Treatment Plant Treatment Alternatives Evaluation - Jordanelle Special Service District. BC&A and WQTS provided the initial treatment evaluation for the proposed 2-8 MGD Jordanelle Water Treatment Plant that is slated to treat water from Jordanelle Reservoir. This project included the initial water quality data evaluations and analysis, bench scale testing, development and evaluation of viable treatment configuration alternatives, cost estimates, recommendations for a treatment plant configuration, and recommendations for further study and piloting. This study is the first phase of the planning and design of the treatment plant facilities. **Contact: Ron Phillips, General Manager 435-654-9233**

Huntington Water Treatment Plant – Energy West Mining Company. BC&A provided design, and construction management services for an upgrade of the Castle Valley Special Service District's Huntington Water Treatment Plant to treat flows in the event that the mining operations near the source water contaminate the supply. The project included the addition of a 900 GPM direct filtration package treatment plant, onsite generation chlorination system, upgraded pumping systems for feed, distribution and backwash, and interconnect booster station to service the North Emery Water Users Special Service District. **Contact: Guy Davis, 435-687-4711**

Wendover Water Treatment Plant, Backwash Booster Station and 1.0 Million Gallon Reservoir - Wendover City. BC&A provided process evaluation, design and construction of a 1.0-MGD (expandable to 2.0-MGD) water treatment plant, backwash booster station and 1 million gallon buried concrete reservoir. The project included treatment process selection and design and a 2,800 gpm backwash buried vault type booster station to backwash the plant. BC&A assisted with funding for the project from USDA Rural Development, The State Revolving Fund, and EPA STAG Grant, and obtained required permits from federal, state, and county governments.

Contact: Glenn Wadsworth, Wendover City Administrator, 435-665-7030

Quinns Junction Water Treatment Plant Project Management – Park City Municipal Corporation (PCMC). BC&A provided Project Management on behalf of Park City for the Quinns Junction Water Treatment Plant that included a 3.0 MGD microfiltration membrane with an expansion capability of 9.0

MGD. BC&A provided submittal review, oversaw the design and construction engineering consultants for the project, coordinated permitting for the project and acted as liaison between the City and the project representatives. **Contact: Clint McAffee, Park City Water Manager, 435-615-5339**

Little Cottonwood Water Treatment Plant (LCWTP) Expansion Project – Metropolitan Water District of Salt Lake & Sandy (MWDSLS). BC&A developed a conceptual level design for the expansion of the LCWTP. The project involved an evaluation of existing plant facilities, and the recommendation of upgrades necessary to expand the plant capacity from 113 mgd to 150 mgd. The expansion project provided MWDSLS with a conceptual level design and planning level budget for a new intake structure on Little Cottonwood Creek, a new grit removal and screening facility, a new pre-ozonation facility, a new flash mix facility, modifications to the flocculation and sedimentation processes, and upgrades to yard piping and hydraulic structures required to convey and treat the increased plant capacity. **Contact: Wayne Winsor, Engineering Manager, 801-942-1391.**

Little Cottonwood Water Treatment Plant (LCWTP) Post Treatment Chemical Building - Metropolitan Water District of Salt Lake & Sandy (MWDSLS). BC&A completed the preliminary design, alternatives analysis, final design, and construction management of the LCWTP Post Treatment Chemical Building Project, including a 4,000 lb/day onsite chlorine generation system, and the LCWTP Filter Aid Polymer System Upgrade Project. BC&A performed the final design of Phase I which included building modifications for a new polymer feed area, concrete floor, sump, curbs, containment and drain systems. The mechanical design included integrating existing polymer blend units; neat polymer storage system; polymer solution storage and feed pump system; distribution manifold valving and piping; and associated feed system piping for 20 separate filters. The electrical and instrumentation design included new lighting; instrumentation wiring and control; SCADA system layout and design; PLC and SCADA design and integration; utility and UPS power design; and detailed P&IDs. **Contact: Wayne Winsor, Engineering Manager, 801-942-1391.**

East Canyon Micro-filtration Water Treatment Plant –Summit Water Distribution Company (SWDC). BC&A was contracted to perform the design and construction of a 5.5-MGD (expandable to 22-MGD) microfiltration membrane water treatment plant that included process design, evaluation of taste and odor removal for creek and reservoir source water, and design future GAC equipment installation. The project also included a 2,250 GPM creek intake and booster station to pump the raw water supply to the plant, a 300,000-gallon concrete clear well below the plant building, and 200,000 gallons of process tankage. BC&A worked directly with local, county and state permitting officials to facilitate the required permits for wastewater discharge, stormwater management, drinking water, building construction, excavation, grading and water quality management. **Contact: Van Martin, SWDC General Manager, 435-649-7324.**

Weber Basin Plant No. 3 Expansion – Weber Basin Water Conservancy District (WBWCD). BC&A provided planning, design, and construction services for solids handling facilities and the civil site work and piping for the entire expansion project. Coordination with the plant design consultant was required along with assistance to Weber Basin during the project. **Contact: Mark Anderson, WBWCD Assistant General Manager, 801-771-1677.**

Parleys Canyon WTP Sodium Hypochlorite System Study and Preliminary Design Project – SLCDPU. BC&A was contracted by Salt Lake City Department of Public Utilities to provide engineering services to relocate their aging sodium hypochlorite (SH) generation system at Parleys Water Treatment Plant. The Parleys Plant (40 mgd capacity) has an aging SH generation system and storage and the City desires to relocate and design a new SH generation, storage, and metering system. The project included the evaluation of new locations in the plant to relocate and upgrade the old 1,000 lb/day system, including SH storage and metering systems. The project included preliminary configuration, sizing, and design of a new 1,200 lb/day SH system, including developing new SH room layouts, brine storage system, on-site SH generators, storage tanks, metering systems, and providing general structural and power requirements. A preliminary design memo with design drawings were provided, with an engineer's estimation of cost and project schedule.

Flocculation/Sedimentation Basin Condition Assessment – Metropolitan Water District of Salt Lake & Sandy (MWDSLS). BC&A was contracted to perform a structural and mechanical condition assessment for the main flocculation and sedimentation basins for LCWTP. The 150 MGD plant was constructed in 1960, and has a well-maintained but aging infrastructure. The plant has 10 parallel treatment trains, each of which has its independent sludge collection system. The mechanical condition assessment included the evaluation of each element of the sludge collection system, including motors/drives, gears, sprockets and shafts, chain and flights, guide rails, weir plates, and bearings. BC&A developed budgetary cost estimates for a full replacement of the mechanical and structural systems, and then compared them to the estimated costs of various levels of rehabilitation measures. A final report was developed providing a summary of the assessment findings, option costs, and engineering recommendations. **Contact: Wayne Winsor, Engineering Manager, 801-942-1391.**

Dutch John Water Treatment Plant Upgrades - Daggett County. BC&A performed the design and implementation (programming) of new PLC controls and SCADA system to fully automate the entire 1 MGD water treatment plant that was constructed in the 1950s.

Source Development Capabilities and Past Experience

Our project groundwater team consists of three hydrogeologists who have extensive experience in designing and providing oversight for dozens of water supply wells and spring sources throughout Utah, Nevada and Idaho for municipalities, water districts and private clients. Our experience includes designing and completing wells in alluvial sediments as well as shallow and deep bedrock aquifers utilizing various screen and casing materials to tailor the well to the aquifer conditions. BC&A is also experienced in well redevelopment and enhancement techniques that prove to be beneficial in bedrock aquifers. Below is a summary of key source development projects (wells and springs) that our team has designed and worked on over the years. Additional data for any of these projects can be provided upon request.

RELATED SOURCE DEVELOPMENT PROJECTS

Wells

Well 27A Drilling and Equipping Project - Virgin Valley Water District. BCA was contracted by VVWD for the Well 27A Drilling and Equipping Project. The project consisted of drilling a new well approximately 700 feet deep and equipping the well with a 600 hp, 2,000 gpm vertical turbine linshaft pump controlled by a variable frequency drive. The raw water from the well is pumped to Arsenic Treatment Plant No. 27 (a previously constructed facility designed by BC&A). The project

required extensive coordination with the Mesquite City Public Works Department, an adjacent Home Owners Association, and the Nevada Division of Environmental Protection. **Contact: Kevin Brown, District Manager, 702-346-5731**

Well 1A Drilling, Equipping, and Arsenic Treatment Project - Virgin Valley Water District. BCA was contracted by VVWD for the Well 1A Drilling, Equipping, and Arsenic Removal Project. This project consisted of drilling a new well approximately 300 feet deep and equipping the well with a 150 hp, 1,020 gpm submersible pump. The raw water from the well is routed through a treatment facility consisting of two 9 foot diameter filter vessels filled with media specially designed for arsenic removal. The treated water is then delivered to the transmission system via a 150 hp, 1,020 gpm split-case booster pump. Additional piping and controls are included in the block wall building to pump to waste during startup, backwash the media, and blend the well water with potable water from the VVWD distribution system. In addition to the technical challenges of the project, this project required extensive coordination with the Clark County Building Department, Nevada Department of Transportation, and Nevada Division of Environmental Protection. **Contact: Kevin Brown, District Manager, 702-346-5731**

Southwest Jordan Valley Groundwater Project - Jordan Valley Water Conservancy District. BC&A teamed with Carollo Engineers to provide permitting, design, and construction management services for this significant project. BC&A's scope included permitting, design, and construction management for eight (8) deep aquifer production wells, five (5) shallow aquifer wells, and associated well pump houses and conveyance pipelines. BC&A performed permitting for the wells under the Utah Drinking Water Source Protection rule. An exploratory drilling program was designed and test wells were drilled at three well sites. The wells are constructed of fiberglass reinforced plastic (FRP) well screen and casing, marking some of the first of their kind in Utah. **Contact: Alan Packard, Assistant General Manager, 801-565-4300**

300 East Well – Parowan City. Parowan City wanted a new culinary well capable of 700 gpm completed on a fast track schedule. In addition the City's existing wells are all sand producers that present maintenance costs and challenges. BC&A evaluated existing hydrologic information and test well data and prepared well design plans and specifications for submittal to DDW for approval. BC&A provided construction cost estimates to the City for budget approval. BC&A recommended a 12-inch well completed to 600 feet to meet the City's goals for well yield and funding constraints. The drilling program required a pilot hole to be drilled to confirm aquifer depths and obtain sieve data for final screen and gravel pack selection, followed by reaming the pilot hole to construct the well. BC&A provided construction management services for the pilot borehole drilling and production well construction. Based on the pilot hole information, BC&A recommended the well be deepened to match high yield aquifer zones and the seal be deepened to match the depth of the clay aquitard overlying the aquifer. The completed well is 700 feet deep with 300 feet of screen and produces over 1,500 gpm of sand free water. The well yield and water quality exceed the City's original expectations. The second phase of the project includes the design of all site improvements including well equipping, pump house, and tie into the City's culinary water system and is awaiting City funding. **Contact: Kelly Stones, 435-477-3331**

Panquitch Well Drilling – Panguitch City. The Brian Head fire caused significant damage to a very large area near Brian Head, UT. The results of the fire caused one of the Panguitch City's main spring sources to be taken out of service. With this source out of commission, it became important for the City to develop a redundant water source for the system. BC&A teamed with Jviation, Inc. to design well drilling plans and specifications for the City and provided a final design of the production well based on the results of the well drilling documentation. A 16-inch diameter well was completed to a depth of 700 feet and included 340

feet of stainless steel wire-wrap screen and produces approximately 1,200 gpm of sand free water. **Contact: David Owens, 435-676-8585**

Huite Replacement Well Project - Summit Water Distribution Company. The existing Hiute Well was experiencing decline from adjacent wells completed in Twin Creek Limestone Formation. Additionally, the water quality had begun to decline, specifically TDS. Summit Water Distribution Company requested that BC&A design a well to be completed in the Nugget Sandstone underlying the Twin Creek Limestone as it was important to avoid interference from adjacent wells. Complex geology (folding) in the area created challenges that required the depth of the well to be completed deeper than the initial design. The folding also reduced the penetration into the Nugget Sandstone, therefore reducing yield from the well. Specialized industry techniques were utilized to enhance the target aquifer to increase the yield. The replacement well was completed to a depth of 2,500 feet in the Nugget Sandstone with no observed interference from adjacent wells. The well has been equipped with an oil field style pump at a setting of 1,900 feet capable of 250 gpm. **Contact: Andy Garland, President, 435-649-7324**

Painted Hills Well Rehabilitation and Retrofit - Maeser Water Improvement District. Maeser WID owned the Painted Hills Well, a deep well that was originally drilled to 8000 feet as an exploratory well for oil. The well had been previously equipped as a water supply well, however, high levels of iron, with taste and odor concerns had prevented the District from using the well for potable water supply. BC&A developed a plan for additional testing of the well to determine if it could be rehabilitated and retrofitted to provide water that would meet Utah drinking water standards. BC&A prepared specifications and bid documents for well condition investigation and water quality, well retrofit, and disinfection and redevelopment treatments. Based on the investigative testing, BC&A recommended the lower portion of the well with suspected poor quality water, be plugged and additional perforations be installed higher in the well to improve the yield. The recommendations were implemented and resulted in significant improvements to the well yield and water quality. Disinfection treatment and mechanical swabbing were used to enhancing the well yield. The resulting water quality was acceptable to the District to put the well back online. BC&A designed all improvements to well house including new pumping equipment, electrical supply and controls, and piping. The well was equipped with SCADA and the ability to monitor and control the well from the District's headquarters. BC&A permitted all designs with the Division of Water and obtained an operating permit for the retrofitted well. The well provides 500 gpm of potable water to Maeser WID. **Contact: Dusty McCormick, District Manager, 435-789-2353**

Private Mining Company, Vernal, Utah. A private mining company required fresh water for dust suppression, drinking water and process water and is located in a desolate part of Utah south of Vernal. BC&A was tasked with permitting, contracting, construction oversight, testing and final equipping of a 1,760 ft deep well completed in interbedded sandstones of the Green River Formation located in the Book Cliffs. The well bore was initially drilled to 3,000 feet where poor quality water was encountered in the Wasatch Formation and the lower 1,240 feet was abandoned. The well was equipped with a 200 gpm pump and met all safe drinking water act analysis for a public water source.

Private Mining Company, Ogden, Utah. A private mining company was in search of a fresh water source for process water west of the Great Salt Lake. Very few wells have been completed in the area due to poor quality water encountered that is not suitable for drinking water or irrigation. BC&A was contracted to locate potential fresh water sources in four section parcels. Surface geophysical surveys were utilized to pinpoint the best possible locations for fresh(er) water and high yield wells. A total of three locations were drilled with a test hole and pump tested. One location provided a freshwater source, though low yield, and the other two locations provided high yield wells (500-2,000 gpm) with slightly brackish water. Water production was limited by the size of the well casing and not due to the aquifer. The wells were completed in various lithologies from alluvial sands and gravels to basalt flows and limestone bedrock. The yields and water quality exceeded the client's expectations. Coordination with the BLM and private landowners was required for future conveyance piping to the end use of the water from the point of diversion.

Springs

Big Springs Development Project - Provo City. Provo City contracted with BC&A to design and provide construction oversight of the development of six spring sources in the South Fork of Provo Canyon. Six separate spring boxes and collection systems were designed and installed that created a combined flow of 15 cfs. HDPE conveyance piping was installed from each spring source for approximately 3.5 miles down the South Fork to the existing Provo City conveyance and chlorination infrastructure with a total of 700 feet of head. The conveyance pipeline pressure rating was designed for the potential future installation of a hydroelectric plant at the base of the canyon. These springs are also located on Provo City property that is surrounded by the United States Forest Service (USFS) which required additional coordination and requirements for riparian habitats. **Contact: Shane Jones, Principal Engineer, 801-852-6773**

McGhie Springs Rehabilitation Project - Murray City. BC&A assisted Murray City with rehabilitation upgrades to McGhie Springs. These springs are one of the primary water sources for Murray City and represent a high quality water source with minimal energy requirements. A seismic evaluation was conducted and included assessing seismic risks of the existing horizontal tunnels including magnitude of ground displacement, shaking, and ground accelerations as well as soil load and other structural design parameters. Results of the evaluation were documented in a report and design drawings were prepared to upgrade the springs to meet State requirements. Structural improvements were made to six horizontal tunnels, replacement of one spring box, and replacement of aging ductile iron pipe with HDPE. During construction, improvements to the springs increased spring yield beyond the capacity of some downstream collection pipes, so that additional piping was added to the project**. Contact: Danny Astill, Public Works Director, 801-270-2404**

E. PROFESSIONAL REFERENCES

We have listed five client references that our team has worked with on similar projects. We encourage you to contact these references to inquire of our team's past performance.

Contact	Projects
Kevin Brown, General Manager Virgin Valley Water District Phone: 702-346-5731	Well No. 1A Arsenic Removal Feasibility Study and Treatment Design Well No. 27 Drilling and Equipping Project Virgin Valley Arsenic Removal Project Groundwater Well Sustainability Study Culinary Water Master Plan/System Development Charge Study
Alan Packard, Assistant General Manager Jordan Valley Water Conservancy District Phone: 801-565-4300	Southwest Groundwater Project Central Pipeline Project Central Pipeline Fluoridation Facility JVWTP 12.5 MG Finished Water Reservoir Southwest Aqueduct Reaches 1 and 2 Projects
Ron Thompson WCWCD Phone: 435-673-3617	Sand Hollow Arsenic Removal Study Dammeron Valley WWTP Feasibility Study
Wayne Winsor, Engineering O&M Manager Metropolitan Water District of Salt Lake & Sandy Phone: 801-942-1391	Little Cottonwood WTP Expansion Conceptual Design Little Cottonwood WTP Filter Aid Polymer Feed Project Terminal Reservoir Replacement Project Water System Master Plan District Instrumentation and Telemetry Project
Scott Taylor, Water Services Director City of St. George Phone: 435-627-4850	Culinary, Irrigation, and Sewer Master Plan and Impact Fee Facilities Plan St. George Water Reclamation Facility Headworks and UV Disinfection Project St. George Water Reclamation Facility Expansion Project Mall Drive 24" Waterline Project City Creek Pump Station & Transmission Line POD

F. PROPOSED SCHEDULE

BC&A proposes to complete this feasibility study within a time period of approximately 6 months. While the project schedule will ultimately be a function of the finalized scope of services, Table A provides a breakdown of the estimated amount of time that will be needed to complete each of the objectives in the City's RSOQ.

Hildale Water Treatment and Source Development Feasibility Study

Task	Task Item	Duration (Wks)	Month					
Objective	Objective Description		1	2	3	4	5	6
1	Evaluate Available Treatment and Source Development Options	13						
2	Develop Capital Cost Estimates for Treatment/Source Development Projects	9						
3	Develop O&M Cost Estimated for Treatment/Source Development Projects	9						
4	Assessment of Radionuclide Conditions that Affect the System	9						
5	Regulatory Assessment	9						
6	Financial Assessment of Treatment/Source Development Projects	15						
7	Graphic Analysis and Treatment/Source Deveopment Recommendation	9						

G. BID STATEMENT

BC&A does not plan to bid as the primary contractor to install any of the treatment methods or new source developments.

Salt Lake Area Office:
154 East 14075 South
Draper, Utah 84020
Phone: (801) 495-2224
Fax: (801) 495-2225

Boise Area Office:
776 East Riverside Drive
Suite 250
Eagle, Idaho 83616
Phone: (208) 939-9561
Fax: (208) 939-9571

Southern Utah Area Office:
20 North Main
Suite 107
St. George, Utah 84770
Phone: (435) 656-3299
Fax: (435) 656-2190

BOWEN COLLINS & ASSOCIATES

Hildale CITY

STATEMENT OF QUALIFICATION FOR

RADIUM TREATMENT AND SOURCE DEVELOPMENT FEASIBILITY STUDY

submitted by

Jones & DeMille Engineering

AQUA ENGINEERING

Jones & DeMille Engineering

800.748.5275
www.jonesanddemille.com

infrastructure professionals

CORPORATE
1535 South 100 West
Richfield, UT 84701
435.896.8266

50 South Main, Suite 4
Manti, UT 84642
435.835.4540

1675 South Highway 10
Price, UT 84501
435.637.8266

45 South 200 West (45-13)
Roosevelt, UT 84066
435.722.8267

775 West 1200 North
Suite 200A
Springville, UT 84663
801.692.0219

435 East Tabernacle, Suite 302
St. George, UT 84770
435.986.3622

16 East 300 South
PO Box 577
Monticello, UT 84535
1.800.748.5275

38 West 100 North
Vernal, UT 84078
435.781.1988

Hildale City
320 E. Newell Ave. | PO Box 840490
Hildale, UT 84784

May 3, 2019

Harrison Johnson, Utilities Director (harrisonj@hildalecity.com)
Christian Kesselring, City Manager (manager@hildalecity.com)

Dear Harrison:

Water is essential to life and to the health and maintenance of a thriving community. As Hildale City seeks to improve its municipal water system and bring radium concentration to acceptable levels, Jones & DeMille Engineering (JDE) would love to provide the professional services needed. We appreciate the opportunity to submit our proposal to demonstrate our qualifications and interest in providing professional engineering services to the City.

Our Statement details our qualifications, capabilities, and reasons why JDE would be a good fit to work with the City on this project. They include:

- **Experience Counts!** With our experience in the engineering field and 37 years of civil, water resource and wastewater experience throughout the Intermountain Region, we understand the important elements for these types of projects. Water rights, source availability, storage, delivery and conservation are all areas in which we offer trained technical experts. Our experience includes judgment that comes with team members' long-term tenure, the use of economic analyses, innovative best practices, and alternatives planning expertise.
- **Strong Professional Team.** We have assembled a strong team to work together with JDE to complete the project. Aqua Engineering is an expert in water treatment and will provide the analysis of several options for radium treatment. John Files will provide a hydrogeological survey and analysis to help determine potential source development locations with expected radium levels. With their previous experience and JDE's coordination, we can provide the necessary tools for Hildale City to determine the best mitigation option.
- **Public Infrastructure.** Our specialty is rural public infrastructure. More than 85% of our business is with public municipalities and agencies. Since 1982, our team has developed and implemented a rural-based business model which combines local knowledge with technically sound project delivery teams and strategic funding acquisition abilities. That local knowledge on system functionality and operation guides the entire process.
- **LOCAL and Available NOW.** Our St. George office will lead project efforts with allocation of additional resources and specialties as needed from our Richfield office. Our staff is available now and will be readily accessible to the City. And with our resources available locally, we can provide the needed engineering services while maximizing time and cost savings to Hildale City.

Founded 1982

39+ professional engineers

7 professional land surveyors

111 total employees

79 average number of employees past 5 years

I will be JDE's authorized representative and will bring a strong team of professionals to work with the City. I can always be reached by phone at 801.946.7966, or by email at brady.s@jonesanddemille.com. We look forward to hearing from Hildale City and welcome an opportunity to review our capabilities and services in greater detail. Please let us know if we can provide additional information.

Sincerely,

JONES & DeMILLE ENGINEERING, INC.

Brady Shakespear

Brady Shakespear, PE | Project Manager

Shaping the Quality of Life since 1982

ORGANIZATION OVERVIEW

Working together

A significant challenge facing municipalities throughout the rural Intermountain Region is the need for improved infrastructure. From culinary water and storm water to wastewater and transportation, the need for effective planning, repairs, upgrades and strategic expansion is paramount in maintaining a thriving and vibrant community.

Hildale City is seeking a qualified team to provide professional engineering services to prepare a feasibility study regarding radium treatment and/or source development options for its municipal water system.

Over the years, we have enjoyed serving rural communities through delivering successful, cost-effective projects including culinary water source distribution and storage upgrades, wastewater lagoon upgrades, storm drainage study and system improvements, main street enhancements, pedestrian trails, river flood protection, culinary springs rehabilitation, and street improvements.

We know the path to success in meeting our clients' need to fit anticipated projects within budget constraints, and procure funding for needed improvements, balanced with the desire for affordable projects which blend well into the character and history of the community. As one of the top-ranked firms in the Intermountain Region, JDE has established themselves as the go-to source for infrastructure projects and needs. Additionally, as a member of PSMJ Resources' exclusive Circle of Excellence, which recognizes the top 20% of engineering firms nationwide, we employ a high standard of excellence on each and every project.

Working closely with local and diverse communities has required our firm to become adept at providing a wide variety of professional and specialized services. These IN-HOUSE services include planning, feasibility studies, GIS, survey, design, environmental permitting, preparation and compliance review of plans and specifications, bidding administration, construction management, materials testing, construction observation and documentation, client-to-contractor interface, and project close-out.

We have assembled a comprehensive, specialized team to complete all the elements in researching and evaluating different methods of removing radium contamination from the Hidale-Colorado City Water System. JDE can provide the City with local project management and offer a deep bench of resources with water treatment and source development experience. Our team includes the following:

AQUA/SKM has provided engineering services to public utility clients in several states and has completed over 200 water and wastewater infrastructure projects ranging in size from very small to over 50 million gallons per day. Their capabilities in water and wastewater treatment and electrical and controls engineering goes well beyond textbook designs and is based on years of hands-on experience implementing projects, touring and learning from existing treatment facilities, talking with and listening to operators, and providing operation and maintenance services. The SKM team (purchased by Aqua) possesses the knowledge, training, and hands on experience required to meet electrical, instrumentation and control needs for your facilities. SKM also specializes in developing and maintaining telemetry and SCADA systems, servicing a majority of the water and wastewater treatment systems.

Robert Rousselle will lead Aqua Engineering in analyzing and determining effective alternatives for radium treatment systems. Aqua Engineering brings an extensive background knowledge of water treatment and are well-equipped to help Hildale City.

John Files will lead the source development portion of the feasibility study. John is an expert Geologist/ Hydrogeologist and has extensive experience in developing water sources from the hydrogeologic study, to drilling supervision and long-term monitoring, he understands the process and has played a key role in many source development projects.

Darin Robinson, PE, will serve as Principal-in-Charge with **Brady Shakespear, PE**, as Project Manager, bringing a combined total of over 30+ years of water resources project design, project management, planning, design and construction experience. Our depth and breadth of services will provide Hildale City with a highly-qualified team who understands all facets of public infrastructure.

Brady Shakespear, PE
Project Manager
Jones & DeMille Engineering
435 East Tabernacle, Suite 302
St. George, UT 84770
801.946.7966 (cell)
brady.s@jonesanddemille.com

FIRM QUALIFICATIONS

Our in-house and specialty services

Planning

JDE has broad experience in completing numerous studies and reports with varying scopes from large county-wide master plans to individual system studies, including groundwater radium levels studies to determine the best well locations and mixing or treatment options. We understand the resultant written document must be a useful planning and decision tool for administrators and provide them accurate information needed to make informed decisions. We also understand how important project economic feasibility and practicality is for a community like Hildale.

$560 MILLION procured in state and federal funds for our clients

Funding Procurement

JDE has successfully procured over $560M in funding for hundreds of projects during our 37-year history. Our professional engineers have decades of experience working with various funding entities to allow projects to move forward with feasible funding packages—essentially expanding available resources and increasing project scope and elements.

Hydrology & Hydraulic Modeling

Through previous experience in culinary water and drainage projects, JDE has developed the ability to not only perform modeling using a variety of software, but to automate modeling processes via ArcGIS, AutoCAD, and computer programing. This becomes critical in working with water systems, and allows for data to be used beyond modeling purposes. JDE continually strives to keep up with current modeling software and best practice modeling techniques to enable us to better serve our clients' needs.

Geographic Information Systems

JDE understands the importance of current and accurate infrastructure mapping, data and records. GIS provides a variety of benefits from maintenance of current inventory, a record of existing infrastructure to public utilities systems, planning, asset management, and modeling.

Survey

JDE's Survey Department has extensive field and office experience. We utilize sound surveying practices combined with state-of-the-art equipment to provide quality and timely services for clients. Our firm keeps abreast of the latest advances within the profession and continually provides staff with training on equipment and software for seamless interface from field to finish.

Environmental

Our in-house NEPA and environmental expert has over 16 years of experience with the U.S. Forest Service, BLM, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and private industry involving NEPA, land use planning, project management, and permitting.

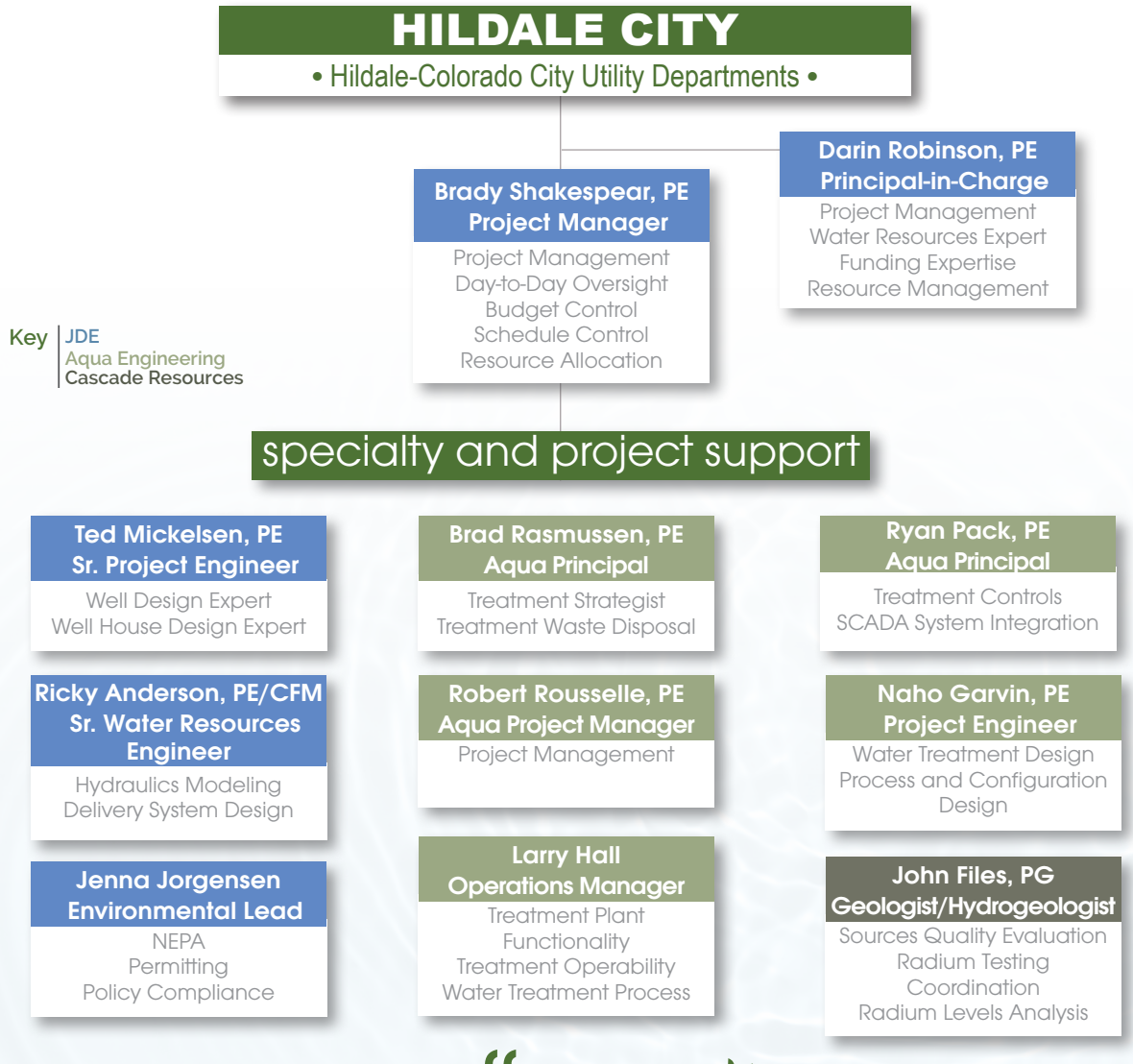
"I have had the opportunity to work with Jones and DeMille Engineering for over fifteen years and have always felt that Kane County's interests and concerns were first priority for any project regardless of the project's size. No matter what size of the project (JDE) has always treated it as if it was the most important project they were working on.

I personally would recommend to any person, company or other entity that is considering utilizing (JDE) that they would be hiring the most professional, trusted, and responsible firm that I have had the opportunity to work with over the past fifteen years. They will strive to maintain a high standard of professionalism and still have the best interest of the projects and are very conscientious of budget shortfall that we are facing today."

Louis L. Pratt
Kane County, Utah
GIS/Transportation Director

PROJECT TEAM

We recognize the most important element for any successful project is the people selected to do the work. Our team is best positioned to maximize efficiency, provide relevant expertise, and to be immediately responsive. JDE provides a technically sound, productive and professional project team which has successfully completed hundreds of local government infrastructure projects. Our employee turnover rate is extremely low, allowing us to maintain a high level of experience, expertise, and judgment as well as develop enduring relationships with our clients.



"The strength of the *team* is each individual member. The strength of each member is the *team*."

UT 368665
BS—
Civil & Environmental Engineering
20 Years' Experience

Darin Robinson, PE

• Principal-in-Charge

Darin has over 20 years of experience in project design, construction engineering and project management. Darin specializes in hydraulics, hydrology, water and agricultural delivery systems, planning, construction engineering, river system enhancement, environmental permitting, water rights changes, agency plan approval processes and FEMA guidelines. Darin works with team members using his experience and judgment in water system analysis, design, constructibility, system functionality, water law, and regulatory compliance to provide leadership, oversight and add value for the client. Darin has extensive water project funding, funds administration and agency coordination experience with the Division of Drinking Water (DDW), Division of Water Quality (DWQ), Permanent Community Impact Board (CIB), Natural Resource Conservation Service (NRCS), Water Resources Board and the USDA Rural Development.

UT 9418687
BS, ME—
Civil & Environmental Engineering
8 Years' Experience

Brady Shakespear, PE

• Project Manager

Prior to joining JDE, Brady worked for UDOT for seven years. He has completed over a dozen design projects with varying scope ranging from pavement preservation, rehabilitation, and reconstruction to signal design, roadside safety and bridge preservation with costs ranging from $100K to $15M. Additionally, he has an in-depth construction background adding value and insight. Brady will oversee the day-to-day activities; provide schedule, budget and quality control; ensure adequate resources are allocated to complete the study within the desired timeframe; oversee all tasks related to the alignment study as well as the overall compilation of the final report and deliverables; and work in close coordination with Hildale City.

UT 270769
BS—
Civil Engineering
23 Years' Experience

Ted Mickelsen, PE

• Senior Project Engineer

Ted is the Northwest Regional Director and heads our Wasatch Front office and brings over 23 years of civil engineering management, analysis, design, planning, funding, and construction services experience. His areas of expertise include local government infrastructure projects including water conveyance facilities such as pipelines, pump stations, water tanks, hydraulic analysis, and modeling; well design and construction; wastewater facilities analysis and design; modeling and designing facilities for large drainage basins; design; and construction cost estimating and construction management.

Ted has served as a senior project manager, project engineer and construction manager for several municipalities, water and wastewater improvement districts and governmental agencies on projects ranging from a few thousand dollars to $1.2 billion. His participation in many large-scale and challenging projects has provided him with experience in innovation for projects requiring unique design and construction needs. He has experience in multi-disciplinary management and coordination and alternative project delivery methods. Ted has worked on the Eagle Mountain Wells, Payson Gladstan Well, and the Central Utah Water Conservatory Pony Exdpress Pump Station.

UT 9302972
MS—
Civil Engineering
8 Years' Experience

Ricky Anderson, PE, CFM

• Senior Water Resources Engineer

Ricky has experience in water resources engineering with expertise in water systems design, hydraulics and hydrology, modeling and automating modeling processes. He has served as a staff engineer on water and storm water master plans, county-wide FEMA projects, roadway drainage design projects, dam hydrologic studies, dam breach emergency action plan studies, and flood inundation studies. This has required an in-depth understanding of hydraulics and hydrology methodology, and the ability to perform modeling using a variety of software. Ricky's expertise includes automation of modeling processes via ArcGIS analysis, AutoCAD, and computer programming. Additionally, Ricky's experience includes distribution systems, pipelines, hydraulic structures, roadway drainage, dams, inundation mapping, sediment transport models, canals and river restoration. He also brings a practical understanding to pipeline and pump design due to four years of experience at a hydraulic laboratory calibrating a wide variety of flow meters and valves and other pipeline components which required the use of calibration equipment such as differential pressure transducers, weigh tanks and pumps.

MS—
Integrative Biology
15 Years' Experience

Jenna Jorgensen

• Environmental Lead

Jenna brings over 15 years of experience with federal agencies involving NEPA, project management, environmental policy compliance, and environmental document preparation. Her responsibilities have included completion of all necessary NEPA documents required for federal permits, preparation of permit applications, and project management. Jenna has served as a team leader for numerous projects, including those documented in categorical exclusions, environmental assessments (EAs), biological assessments (BAs), and environmental impact statements (EISs). Jenna has prepared numerous environmental documents for projects ranging in size from $2,000 to $6 billion in total project costs. Jenna is very proactive in finding the critical path elements for a project's environmental requirements, which will allow her to quickly identify any risks associated with a project.

UT 318716
MS—
Civil Engineering
28 Years' Experience

Brad Rasmussen, PE

• Principal

Mr. Rasmussen, a Principal at AQUA Engineering, has more than 28 years engineering experience, with the majority spent in the design and project management of wastewater treatment facilities for municipalities and industry. Brad has an extensive computer background, modeling water quality in water distribution systems, sewer system modeling, water quality modeling, and process modeling. He is experienced working with regulators, communities and industrial sectors to coordinate project issues. Brad has done extensive facility planning, facility design and is established as an expert in discharge permit negotiations for numerous facilities.

UT 7885569
BS—
Civil Engineering
14 Years' Experience

Robert Rousselle, PE

• Senior Project Engineer/Project Manager

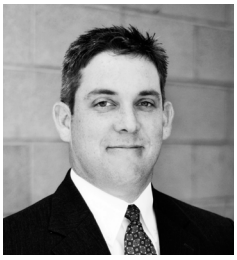
Mr. Rousselle has fourteen years of experience. His early career focused primarily on commercial and residential development along with municipal improvement projects. His current focus has been on municipal civil engineering and all aspects of water resources. Mr. Rousselle works on projects starting at the funding stage all the way through construction. His primary responsibilities are funding, permitting, design, construction documents, and construction management for any given project.

28 Years' Experience

Larry A Hall

• Operations Manager

Mr. Hall has over 28 years' experience in the Water and Wastewater industry. During that time, he has worked in many capacities at a variety of both public and private facilities as well as municipal and industrial treatment plants. Mr. Hall has been an operator, lead operator, facility manager, project manager, department head and consultant in wastewater treatment and collections, as well as drinking water treatment and distribution. He has personally operated and managed many types of wastewater and drinking water systems including: MBR's(Membrane Bio-reactors) including GE Zenon(Zeeweed), Kubota, Polymem, Trickling filters, Rotating Biological Contactors, Air strippers, mixed bed media filters, Granular Activated Carbon (GAC) filters, Reverse Osmosis units, Ultra filtration membrane plants, sodium hypochlorite generators, anaerobic and aerobic digesters, dissolved air floatation units, and treatment lagoons. He has hands-on working knowledge of the Clean Water Act and the Safe Drinking Water Act. He is currently the acting lab director for a small water lab and has set up several labs. He has trained analysts in Utah, Nevada, and Idaho.



UT 5339734
BS—
Electrical Engineering
MBA
16 Years' Experience

Ryan Pack, PE

• Principal

Mr. Pack is an electrical and controls engineer with experience in design, construction oversight, control systems, telemetry and SCADA systems. His experience includes source water, pressure systems, water treatment, industrial and waste water facilities. He has been responsible for the design of many facilities in each of these areas, and most of them he has managed the electrical construction oversight, control testing, programming, startup and maintenance contracts. Mr. Pack has also specified the instrumentation for many of these projects. His experience with controls and SCADA aid his design of complete systems. Mr. Pack has years of experience in electrical engineering, instrumentation and controls. He has designed the power distribution, lighting, motor control, and instrumentation for many complete water and wastewater systems. He has distribution and motor control experience utilizing components such as motor control centers, harmonic filtering, variable frequency drives, soft starts, and emergency power backup. His primary emphasis has been in the water industries, and has strived to meet the requirements of this industry.

Mr. Pack has experience with many components of SCADA and controls. He has worked with controls as simple as relay logic and PID loop controllers thru complex radio controlled SCADA systems. He has worked with many different programmable logic controllers and Operator interfaces including Allen Bradley, Control Microsystems, GE, Koyo, Modicon, Siemens, and others. He has utilized many software packages for human machine interface including Allen Bradley, GE Proficy (Intellution), Wonderware, and National Instruments Lookout. He has designed and installed new systems, replaced old systems, and expanded existing control systems. Mr. Pack has worked with many communications systems including radio, fiberoptics, ethernet, serial, and propri¬etary communications systems such as controlnet and profibus. He has conducted numerous path studies, for both licensed and non-licensed radio communications systems. He has designed and installed radio telemetry systems with over 50 remote sites.

UT 9602085
BS, MS—
Environmental
Engineering
7 Years' Experience

Naho Garvin, PE

• Project Engineer

Ms. Garvin joined AQUA in 2012 with a background in civil/environmental engineering. Her experience with AQUA includes feasibility studies for both municipal and industrial wastewater treatment upgrades, local limit and pretreatment evaluations and document developments, and pretreatment designs for local industrial wastewater. Her responsibilities include facility planning, development of processes, plant configuration, process layout, and construction drawing development. She is also tasked with specifying, procuring, and expediting major owner furnished equipment. She currently is tasked with responsibilities on several major projects including the Provo City, UT headworks HVAC project, Wasatch Resource Recovery Project, and several projects with local industries.

UT 5212127
BS—Geology
30 Years' Experience

John Files, PG

• Geologist/Hydrogeologist

John Files is a professional geologist/hydrogeologist with 30 years of experience in designing, implementing, and managing hydrogeologic and geologic investigations. His strengths include managing all aspects of water resource and environmental projects from inception to long-term monitoring, well siting, well design, drilling supervision, water resource location and hydrogeologic data interpretation, technical reporting and mapping. Furthermore, John's experience includes selection of optimal drilling methods for the specific application, drill rig supervision, monitored and put to use surface water flows, geologic logging of drill hole cuttings and cores, surface and subsurface geologic mapping, data input for computer generated mine models, preparation of comprehensive remedial investigation reports and illustrations, tunnel construction supervision, and environmental audits of mines and mineral exploration properties.

PROJECT EXPERIENCE

Our expertise

JDE's team has broad experience in culinary water source development including challenging water quality issues and treatment approaches. Our clients have learned to rely on our expertise in analyzing, determining, and designing the best and most practical source, treatment, and/or mixing approaches that are operable for small staffs with reasonable maintenance and technical requirements. The following table summarizes some of our team's projects related to Hildale City's current needs:

Client • Project	Capital Facility Planning / Funding Assistance	Hydrogeologic Analysis	Hydraulic Modeling	Well or Pump Station Design	Water Treatment Facility Design	Construction Engineering / Testing/QA
Beaver City Water Study, Radium Analysis System Improvements and Tank Construction	●	●	●	●	●	●
Fremont Waterworks Company – Spring Development and Culinary Water Improvements	●		●			●
Leamington Town Spring Improvements	●		●			●
Torrey Town Birch Spring Development	●		●			●
Monroe City Cold Spring Redevelopment			●			●
North Emery Water Users SSD Spring Developments and Pipeline			●			●
Oak City Springs and Culinary Water System Improvements	●		●			●
Glendale Town 2017 Culinary Water System and Spring Improvements	●		●			●
Lehi City School House Springs Improvements			●			●
Spring City Spring Improvements	●		●			●
Levan Town Culinary Spring Redevelopment and Well Rehabilitation				●	●	●
Boulder Farmstead Water Company Culinary Water System Improvements (Jepsen Spring)	●		●			
Holden Town Springs and Culinary Water System Improvements			●			●
Eagle Mountain City Wells			●	●	●	●
Tropic Town Culinary Water Improvements and Well	●		●	●	●	●
Blanding City Well and Transmission Line			●	●	●	●
Payson City Gladstan Well			●	●		●
San Juan County Spanish Valley SSD Well and Culinary Water System Improvements	●		●	●	●	●
Richfield City Commercial Well	●		●	●	●	●
Monticello City Culinary Water Wells			●	●	●	●
Richfield City Shop Deep Well	●		●	●	●	●

PROJECT EXPERIENCE *continued*

Client • Project	Capital Facility Planning / Funding Assistance	Hydrogeologic Analysis	Hydraulic Modeling	Well or Pump Station Design	Water Treatment Facility Design	Construction Engineering / Testing/QA
Black Canyon Arsenic Water Treatment Plant (AZ)			●		●	
Briggsdale Water Storage Tank and Booster Pump Station (CO)			●	●	●	
Henderson Mill Water Treatment Plant (CO)			●		●	
Lookout Mountain Water District Membrane Filtration Upgrade (CO)			●		●	
Town of Georgetown Water Treatment Facility Improvements (CO			●		●	
United Water & Sanitation District/Brannan Pit Raw Water Pump Station (CO)				●	●	
Alta Water Treatment Plan (UT)	●				●	
American Gourmet Process Water Treatment Plant (UT)			●		●	
Blanding Water Treatment Plant (UT)			●		●	
Boundary Springs Water Treatment Facility (UT)			●		●	
Bountiful City Water Treatment Facility (UT)			●		●	
Day Break Water Treatment Facility (UT)			●		●	
Diamond Ranch Water & Wastewater Facility (UT)			●		●	
Green Hills Water Treatment (UT)					●	
Hill Air Force Base Process Water Treatment Facility (UT)			●		●	
Jordanelle Water Treatment Plant (UT)			●		●	
Rainbow Ranch Water Treatment Facility Capitol Reef Nat. Park (UT)			●		●	
Salt Lake Service Area #3 Water Treatment Plant (UT)			●	●	●	
Tooele Army Dept Process Water Treatment Plant (UT)			●		●	
Wendover Water Treatment Plant (UT)			●		●	
Big Park Water Reclamation Plant (AZ)			●		●	
Chino Valley Water Reclamation Facility (AZ)			●		●	
Inscription Canyon Ranch Water Reclamation Facility (AZ)			●		●	
Parker Water Reclamation Plant (AZ)			●		●	
Ananyu Water Reclamation Facility (UT)			●		●	
Heber Valley Water Reclamation Facility (UT)			●		●	
Leeds Regional Water Reclamation Facility (UT)			●		●	
Oakley Water Reclamation Facility (UT)			●		●	
Orem Water Reclamation Facility (UT)			●		●	
Payson Water Reclamation Facility (UT)			●		●	
Provo Water Reclamation Facility (UT)			●		●	
Richmond Water Reclamation Facility (UT)			●		●	
Spanish Fork Water Reclamation Facility (UT)			●		●	
Springville Water Reclamation Facility (UT)			●		●	
Tooele Valley Water Reclamation Facility (UT)			●		●	

APPROACH & SCOPE OF WORK

Our methodology

The Feasibility Study will be completed by our tenured and proven team of engineers, project managers, and other specialized professionals. We commit to the success of this project while following our company core values which include: (1) Always do the right thing, (2) Proactively shape the quality of life, (3) Create synergy and success through humble, consistent communication, (4) Seek lasting relationships with the best people, (5) Innovatively advance infrastructure, and (6) Pursue an engaged and balanced life. Our team will utilize modern and proven project management and communication practices to deliver the project on time and within budget. We will be proactive in communication with the City and other members of the team to help ensure the most efficient and effective workflows. This project will be managed by the local staff in the St. George JDE Office, while leveraging the expertise of other highly trained team members.

This project consists of two separate, distinct elements that require different expertise with each area listed below:

- Source Development
- Treatment of existing source

Source Development

In order to bring a new source online in this area, it is important to have a detailed understanding of the geohydrology and actual flow needs for Hildale City.

Local Geohydrology

In this geographic area there are 3 feasible aquifers that are targets for production. They are stratigraphically:

1. Navajo Sandstone
2. Shinarump Conglomerate
3. Kiabab Limestone

Figure 1 shows the type section of this area that includes all three potential targets. Each individual aquifer has its own challenges for this geographic area.

Navajo Aquifer

The Navajo would be targeted by horizontal holes after a detailed review of existing data and field mapping by John Files PG. The review of data and field mapping would provide the best chance for success. Horizontal holes can be very expensive and can also be risky as for the long term sustainability given the limited recharge area of the geographic. A water balance for each target area would be conducted to confirm the viability of a sustainable source before any drilling is completed. Existing water rights will also be taken into consideration for options involving additional wells in the Navajo aquifer.

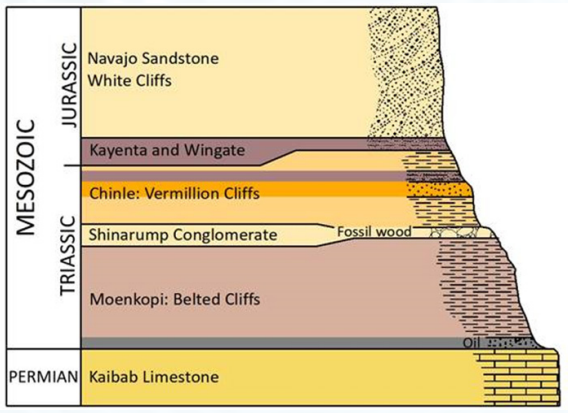
Shinarump Aquifer

Due to elevated radium levels in the existing wells within the Shinarump Aquifer, and with the understanding that these wells are hydrologically connected, the Shinarump would not be targeted at all for a "New Source".

Kiabab Aquifer

The Town currently has a well that was drilled into the Kiabab Aquifer. The log on this well states that the well was drilled to 3200 feet and cased to 2000 feet with the Kiabab contact at 2045 feet. Water level on the log is stated as 1900 feet. It is assumed this was the depth in 1998 when the well was completed.

The log also states that in the Kiabab, circulation was lost and an estimate of production was made of 1000 to 3000 gpm on different locations on the log. Estimated flows on Well Drillers Logs without a pump test where water level is measured are not to be taken as a "sure thing". Though the known karst characteristics of



APPROACH & SCOPE OF WORK *continued*

Our methodology

the Kiabab are known and the drillers comments are positive, without a pump test this target can only be viewed as one with potential for high production with little drawdown.

In a previous review of this well, a option of drilling a 20" well was recommended. This would not be needed; current high efficient submersible pumps are cable of producing 500 to 2000 gpm out of a 12 inch well. The well log also notes a 100 foot seal in the well. Given the local geology with known aquitards over the Kiabab, depth to water, and existence of a 100 foot seal on the log, a waiver could be requested to the DDW for the 100 foot seal. Testing this well would be a stepped approach, which would remain dynamic depending on the data collected in each phase. The steps would be;

1. Video well to ensure the casing is set to 2000 feet and hole is open below 2000 feet in the Kiabab. The video will also ensure the well would be safe to set a pump in the casing.
2. Pump test well. Assuming the well is open to the water table, a pump test of the well would provide aquifer parameters and an opportunity to sample the well. The well could be tested at flows of 10 to 2000 gpm. As we are looking only for an estimation of aquifer parameters, a lower flow would be recommended.
3. If water quality and aquifer parameters are favorable, the video would be analyzed again for any well construction changes. For example, if the open hole is caved at a point below the casing, the hole open hole could be reamed and screen installed into the open hole via a back off tool below the 12 inch casing. If favorable we would move ahead with after the fact approvals for Well Specifications and PER.

As each aquifer is a unique target, a phased approach is recommended, and if one fails we would move onto the next. Based on the data available now, this is how we would prioritize our targets.

1. Existing Kiabab Limesone Well. The existing well could work and at the least a water quality sample should be collected in order to either keep this well as a potential source in the future or it can be taken off the list for all future targets.
2. Horizontal drain holes into the Navajo. As stated above this sort of target does have its limitation due to local recharge (sustainability) and geology. But a safe yield could be estimated for each area based on recharge.

As stated above, this would be a dynamic process and adjustments will always have to be made to the plan as data is collected and evaluated.

Treatment of Existing Source

We think the critical part of any project is interactions with our clients. Communication such as workshops and telephone calls between team members is important to produce an excellent outcome. AQUA's team consists of our sister electrical, controls, and instrumentation design company SKM and AQUA's affiliate Aqua Environmental Services which completes operations, pilot, start-up, and calibration services. AQUA's team would be utilized to determine the most effective treatment alternative. The following is AQUA's approach to the scope of work for treatment.

1. Obtain water system information.
   - » Initially a site visit and project kick-off meeting will be completed to obtain and gather data including, but not limited to; record drawings for the existing water sources, site photos, well logs, water rights, and water quality data. Any reports that have been previously completed related to this project should be reviewed as part the kick-off.
2. Confirm accuracy of radium test results by exploring different testing methods for radium. There was only a single sample provided as part of the RFQ. Any additional sampling that is available will be evaluated. We have used different sampling methods in the past that have shown different levels of contamination. Understanding the sampling data is critical to provide the best treatment alternatives.
   - » Work with the regulatory authorities to determine if there are other accepted testing methods. Different methods may change the outcome of the results.

APPROACH & SCOPE OF WORK *continued*

Our methodology

3. Establish basis of design.
4. Analyze the capital costs; operation and maintenance costs; associated operator health impacts; waste product quantity, concentration, and disposal; regulatory approval process; water quality; and expandability of the different radium treatment options if radium levels were to increase at the source.

Costs will be analyzed based on a 20-year life cycle cost analysis.

There are many different radium treatment alternatives available and some of the different options that we recommend evaluating for the culinary water system are:

» Ion Exchange:
- With this treatment, radium is exchanged for sodium or potassium. When the softener is cleaned, the radium is flushed away with the wastewater into a disposal site such as a leach field or municipal sewer. The problem with this method is the disposal of the wastewater.

» Barium (Radium) Sulfate Precipitation:
- This process adds Barium Chloride to precipitate Barium Sulfate. This results in the co-precipitation of Radium, a close relative of Barium. Because this process requires an excess of Barium and tends to be expensive. It also may result in exceeding the Barium MCL in the treated water. An alternative approach that does not introduce Barium into the treated water is to absorb radium onto a Barium Sulfate impregnated filter media.

» Manganese Dioxide Flocculate (floc) Adsorption, "Hydrous Manganese Oxides" (HMO):
- HMO is used as the media onto which ions of Radium will be adsorbed. The material can be stored in tanks which require replacement every 2 to 4 years.

» Reverse Osmosis (RO):
- Works by the application of hydrostatic pressure to overcome osmotic pressure and drive water molecules through a semi-permeable membrane designed to exclude other molecules (radium would be left on membrane). Reverse osmosis requires fragile and expensive stacks of cellulose-acetate or thin film composite membranes. The recovery of the treated water, as a percentage of feed water, is a function of applied pressure (can be up to 400 psi or greater, depending on the membrane type). This process can tend to be energy-intensive and there is also a need to dispose of the "brine" or reject water from the RO. This process is also slow and may be more suitable for a household rather than a public water system.

» Lime Softening:
- This process is usually used on large water systems to soften water by the addition of calcium hydroxide. Calcium hydroxide raises the pH of the water in turn causing the calcium and magnesium to settle out and form a solid sludge. Radium in the water is then trapped in the sludge, as much as 80 to 90 percent. The sludge is removed by sedimentation and filtration. The problem with this process is it is waste sludge intensive and usually only beneficial if the system also has a hard water problem.

» Coagulation / Filtration with Hydrous Manganese Oxides (HMO) Pretreatment:
- HMO is used as a pretreatment as the media onto which ions of Radium will be adsorbed. Then HMO's along with the adsorbed radionuclides is removed by media filtration. This process can also treat Uranium at the same time with the addition of Iron and/ or Aluminum Salts; however, the Iron must be completely oxidized before the water contacts the HMO.

Finalized Study and Recommendations

1. Select a recommended alternative:
   » This consists of reviewing selection criteria such as initial capital costs, O&M costs, and radium removal efficiency.

APPROACH & SCOPE OF WORK *continued*

Our methodology

2. Funding assessment including grants, loans, user rates, and impact fees:
   - » Review different funding agencies and options available to fund the improvements. Access the impacts to user rates and impact fees associated with the recommended alternatives.
   - » An emphasize will be placed on minimizing user rates while maintaining a safe, sustainable, and cost-effective culinary water system.

There are many different items the City will determine as important values for the culinary water system. We will work with the staff to develop the goals which will ultimately determine the best treatment alternative.

REFERENCES

What our clients are saying

Jason Brown | City Manager
• Beaver City
435.438.2451

Thomas Keefer
• Green Hill Water and Sewer SSD
801.266.2140

Scott Morrison
• Mountain Regional Water SSD
435.940.1916

Scott Christiansen
• Hooper Water Improvement District
801.985.1991

Tom Jacobson
• Courthouse Wash
480.828.8959

"I was directly involved in the selection of Jones and DeMille as our primary consultant on the (Escalante Medical Center) project. We selected Jones and DeMille because the firm (1) had a reputation of high quality structural design and engineering, (2) had substantial successful experience in working with local government in the development of public buildings, (3) had experience in the design and development of medical facilities, (4) had successful experience helping public clients develop project funding packages, and (5) had an excellent reputation in managing architectural and specialty engineering subcontractors.

Through the duration of this project, I found . . . the entire Jones and DeMille team to be consummate professionals, creative, willing to engage with the client, and highly concerned about the quality of the project. . . . I would not hesitate to work again with Jones and DeMille."

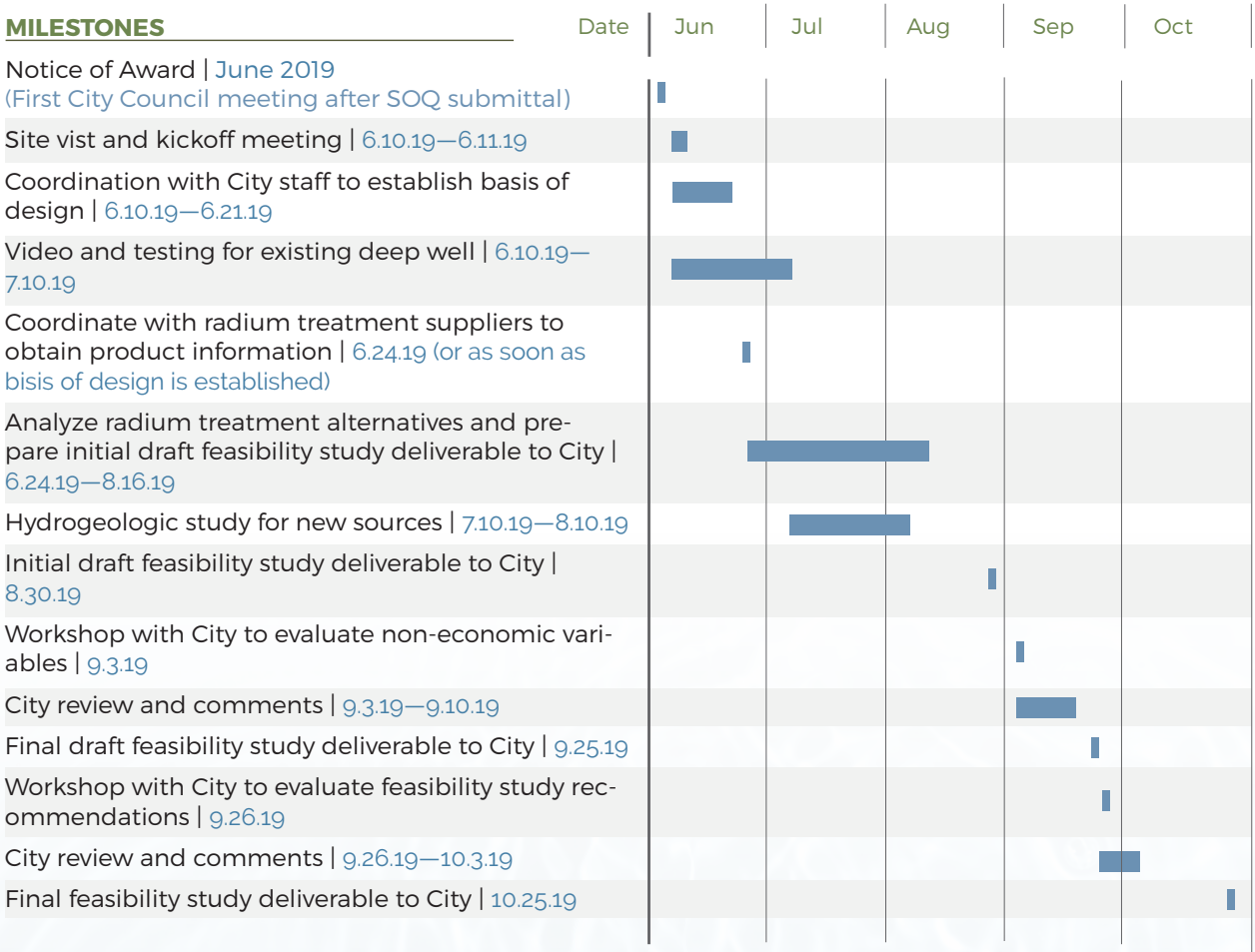
Drew Parkin, Member, Board of Directors
Wayne Community Health Center

"The City of Monticello always considers the firm of Jones & DeMille Engineering our first option. Jones & DeMille has always been available for questions or support of any kind whether it is concerning a large job, or even help with other small projects. Jones & DeMille is always available and willing regardless of the request.

Jones & DeMille's professionalism, expertise, results, and strong commitment to upholding a high standard of ethics and morals, is the reason the City of Monticello, without hesitation, highly recommends the services by the Jones & DeMille Engineering firm."

Doug Allen, Former Mayor | Monticello City

SCHEDULE



BID STATEMENT

Depending on the outcome of the feasibility study, both JDE and AQUA plan to bid to provide services for the selected alternative. We understand the importance of remaining objective throughout the study and are committed to helping provide the best outcome to the residents of Hildale City. The feasibility study will undergo a thorough internal Quality Control / Quality Assurance process and will be verified by others within our company who are competent to review this type of project and are not directly involved in producing the study.

If a source development option is selected, JDE is available and would be interested in providing design and construction engineering services for the project. We have an experienced and efficient team that complete a successful well development project.

If treatment is selected, AQUA recommends piloting the recommended radium treatment alternative. Aqua Environmental Services is available with AQUA's team to provide these services. After the pilot is completed design will commence. It is anticipated that several subcontractors will be used such as geotechnical work, surveying, and possibility structural design. The history AQUA has working on treatment facilities along with our diverse and experienced team will greatly benefit the City.

Jones & DeMille Engineering
435 East Tabernacle, Suite 302
St. George, UT 84770
435.986.3622
www.jonesanddemille.com

Demographic Disruption

Customers		Water	873					Assumed Period of Inactivity			
	200	Sewer	821					6	Months		
		Gas	672								
			Propane	357							
		Description	**FY 19 YTD**	**Per Month Rev**	**Annual Rev Per Cust**	**Disrupted %**	**FY 19 YTD DIS%**	**Dis Eff %**		**Effective Monthly Rev**	**FY20 Rev Loss**
		Metered	$ 237,340.59	$ 24.72	$ 271.87	22.91%	$ 54,373.56		40%	$ 9.89	$ 41,521.63
		Flat Rate	$ 278,075.04	$ 28.96	$ 318.53	22.91%	$ 63,705.62				$ 34,748.52
		Sewer Service Charges	$ 530,078.92	$ 58.70	$ 645.65	27.74%	$ 147,039.92				$ 70,434.58
		Propane Metered	$ 356,132.51	$ 90.69	$ 997.57	56.02%	$ 199,514.01				$ 108,825.82
											$ 255,530.55

c

Water Treatment and Source Development Feasibility Study

Hildale City

May 3, 2019

SUNRISE ENGINEERING

SUNRISE ENGINEERING

St. George Office
11 North 300 West, Washington, Utah 84780 | **TEL** 435.652.8450 | **FAX** 435.652.8416

May 3, 2019

Harrison Johnson
Utilities Director
Hildale-Colorado City Utility Departments
320 East Newell Ave
Hildale, UT 84784

RE: Proposal for Hildale Water Treatment and Source Development Feasibility Study

Dear Mr. Johnson and Selection Committee Members,

Sunrise is pleased to submit this proposal for the Hildale Water Treatment and Source Development Feasibility Study project. We have reviewed the Notice of Violation (NOV) letter sent by the State of Utah Division of Drinking Water and understand that the system must have a plan in place by June 12, 2019, to address the NOV. Having participating in the recent Culinary Water Master Planning and 2016 Water Resource Study, we are also very familiar with the community's water needs and challenges. Considering that this SOQ will be submitted on May 3, and that selection and contracting with a consultant will take place quickly after that, the schedule to provide a plan that can be submitted to the State is very aggressive.

We feel that Sunrise is in the best position to help the City meet the planning schedule and provide sound analysis and recommendations of solutions, based on the following strengths:

- **Experience:** Sunrise has experience and knowledge regarding the Power Plant Well, the community's current treatment facilities, and the Culinary Water Master Plan. This experience and knowledge will expedite the process of reviewing the current information and conditions and would allow us to begin immediately on the analysis of alternatives.
- **Relationship:** Sunrise has an ongoing working relationship with City staff and administration which will lead seamlessly into the close communication required to meet the fast-track schedule of the analysis, recommendations, and implementation of solutions in order to meet the City's drinking water source needs.
- **Experts:** We have a team of experts who have experience with providing source and treatment solutions to drinking water needs just like those of Hildale City and the Town of Colorado City. In addition, most of our team has relevant experience in Hildale and the surrounding communities such as Rockville, Springdale, LaVerkin, and Fredonia.

All other points aside, we understand that we can only succeed as an organization when we are successful at helping you meet your objectives! We know that when your needs are met, you'll continue to use Sunrise as a preferred engineering services provider. That makes your needs our primary interest.

We sincerely hope we'll have the opportunity to partner with you on this project. Please call me at 435.652.8450 with any questions regarding this proposal or any other matter.

Sincerely,

Dustyn Shaffer, PE
Principal Engineer

ABOUT SUNRISE

Sunrise Engineering collaborates with its clients to develop solutions that work well within their project requirements. The result is an optimum balance of cost and operational performance. The majority of our work continues to be performed for repeat clients. These continuing relationships are a reflection of our clients' trust and satisfaction.

Our corporation was established in 1978 and is acknowledged as a regional leader for professional engineering and consulting services. Our multi-disciplinary practice serves both public and private clients in a diverse range of projects across the western United States. Sunrise has extensive experience working with local, state, and federal clients, agencies, and consultants, including the State Revolving Fund, Department of Local Affairs, Federal Emergency Management Agency, and United State Department of Agriculture.

We have established a reputation for budgetary responsibility and engineering excellence, as evidenced by our receipt of the PSMJ National Client Satisfaction Award for eight consecutive years.

For the past 41 years, Sunrise has been led by an Executive Management Team who shares responsibility for the vision and operation of the firm. Their ability to work together and lead by example has brought continued success. Our current staff includes 350 people, 47 of which are licensed engineers with a broad range of experience and diversity of interests. Sunrise's engineers are licensed to practice in 17 states.

Sixteen Sunrise offices throughout Colorado, Utah, Wyoming, Arizona, and Nevada provide construction management, engineering, and related services including:

CIVIL/MUNICIPAL SERVICES
- Water Systems & Resources
- Water Master Planning
- Resource Development
- Treatment
- Hydraulic Modeling
- City Engineering
- Wastewater Systems
- Transportation
- Hydrology & Hydraulics

CONSTRUCTION ADMINISTRATION
- Construction Observation
- Quality Inspection
- Submittal & RFI Review
- Schedule Review

SITE DEVELOPMENT
- School Sites
- Single Family Residential
- Multi Family residential
- Commercial
- Institutional

WATER RIGHTS
- 40-yr Management Plan
- Change Application Preparation
- Water Right Application Analysis
- Water Right Acquisition

ENVIRONMENTAL & ENERGY
- Hydroelectric Design
- Geotechnical
- Environmental
- Renewable Energy

FUNDING ACQUISITION SURVEY & GIS
- Construction Survey
- Boundary Survey
- Mapping
- Asset Management Systems
- Spatial Analysis

PARKS & RECREATION
- Post-Tensioned Court Complexes
- Sports Fields
- Conceptual & Master Planning
- Trails & Natural Areas
- Playgrounds & Facilities
- Site & Grading Design
- Utility Infrastructure

ELECTRICAL ENGINEERING
- Facility Design
- Transmission & Substation
- Instrumentation & Controls
- SCADA
- Cathodic Protection

Our clients can depend on us to carefully administer projects from conceptualization through construction administration. For a more detailed description of our company, please visit our website at *www.sunrise-eng.com*.

SUNRISE ENGINEERING

Point of Contact:

Dustyn Shaffer, PE
Principal Engineer

Washington, Utah
11 North 300 West
Washington, Utah 84780

Tel: 435.652.8450

ADDITIONAL SUNRISE OFFICES

Fillmore, UT 435.743.1118	**Phoenix, AZ** 480.768.8600
Cache Valley, UT 435.563.3734	**Payson, AZ** 928.768.8609
Vernal, UT 435.789.7364	**Tucson, AZ** 520.274.3900
Salt Lake City, UT 801.523.0100	**Prescott, AZ** 928.277.8440
Richfield, UT 435.689.0299	**Las Vegas, NV** 702.830.9180
Utah County, UT 801.704.5220	**Star Valley, WY** 307.885.8500
Cedar City, UT 435.867.8834	**Fort Collins, CO** 970.372.2255
Cheyenne, WY 307.775.9500	

Project Team

Sunrise has the available manpower to complete this project. We can fully commit the required resources to meet the project planning demands and schedule.

A proposed schedule is given later in the proposal but will be subject to input from the City. Steve Hall, PE will be fully available as Project Manager for this project. We commit the efforts of all team members to meet the project intermediate and ultimate deadlines as stated herein. Each member of the team has demonstrated extreme professionalism on previous projects when it comes to going the extra mile and doing what it takes to finish projects on time and with high quality. Also, Sunrise Engineering has several offices located in Utah. If a project deadline is such that additional resources are required, we can get assistance from our excellent staff at our other offices.

STEVE HALL,PE
Project Manager

Steve has extensive experience in water master plans and feasibility studies. He has completed water master plans for a large number of communities in Southern Utah and Nevada. His work with feasibility studies evolved into several large scale and high profile projects.

His involvement with the modeling in Capital Improvements Plans has translated to the design and construction of several major culinary water improvements projects.

PROJECT EXPERIENCE:

- Hildale/Colorado City Culinary Water IFFP/IFA
- Hildale/Colorado City Water Resources Master Plans
- Dixie Deer SSD Water Improvements Feasibility Report
- KCWCD Long Valley Estates Water Improvements Feasibility Report
- KCWCD Zion View Water Improvements Feasibility Report
- Washington City East Regional Connection Feasibility Study/Preliminary Design
- LaVerkin City Water Master Plan
- Washington City Culinary Water Master Plans
- Washington City Secondary Water Master Plans
- Santa Clara City Culinary Water Master Plan
- Dixie Deer SSD Culinary Water Master Plan
- Parowan City Water Master Plan
- Paragonah Town Water Master Plan
- Enoch City Water Master Plan
- Summit Water Master Plan
- Minden Town Water Master Plan
- Moapa Valley Water District Water Master Plan

EDUCATION
BS - Civil Engineering, Brigham Young University
ME - Civil Engineering, Colorado State University

YEARS IN PROFESSION
10; 10 with Sunrise

REGISTRATIONS
Registered PE:
Utah No. 8328781

DUSTYN SHAFFER, PE
Principal-in-Charge and QA/QC

Dustyn has expertise in master planning, modeling, design, and construction engineering for culinary water systems and has been Project Engineer for numerous water improvement projects. He has experience with water rights, well site and spring development, various treatment alternatives, booster station design, transmission line design, and pipeline replacement projects. He has worked with multiple municipalities across Utah.

PROJECT EXPERIENCE:

- Hildale/Colorado City Culinary Water Impact Fee Facilities Plan
- Hildale/Colorado City Water Resources Master Plan
- Washington Culinary Water Master Plan
- LaVerkin Culinary Water Master Plan
- Dixie Deer Special Services District Culinary Water Improvements
- Dixie Deer SSD Culinary Water Master Plan
- Santa Clara Culinary Water Master Plan
- Paragonah Culinary Water Master Plan
- KCWCD User Rate Analysis
- KCWCD Duck Creek Area Culinary Water Projects
- Springdale Culinary Water Master Plan
- Enterprise City Culinary Master Plan
- Fredonia Culinary Master Plan
- Rockville Pipeline Company Culinary Water Master Plan
- Cannonville Town Culinary Water Master Plan
- Washington City Membrane Filtration Plant
- Colorado City Academy Avenue Well Design

EDUCATION
BS - Civil Engineering, Utah State University

YEARS IN PROFESSION
20 years; 20 with Sunrise

REGISTRATIONS
Registered PE:
Utah No. 343921
Arizona No. 38923
Nevada No. 019946

NATE WALLENTINE, EIT

Assistant Project Manager

Nate has valuable and relevant experience with culinary water master planning and improvement projects. He has been involved in the design, funding, and administration of these projects.

He has also worked extensively on model water systems and creating culinary water capital improvement plans.

PROJECT EXPERIENCE:

Culinary Water
- Moapa Valley Water District Swapp Drive Transmission Line
- Moapa Valley Water District Gubler Drive Transmission Line
- Moapa Valley Water District Yamashita Drive Transmission Line
- Pioche Booster Pumps
- Pioche Castleton Water Transmission Line
- Red Hawk Drive Distribution Line
- Springdale Water Treatment Plant
- Red Cliffs 2MG Tank

Master Planning & Capital Improvement
- Santa Clara Culinary Water CIP
- Paragonah Culinary Water CIP
- Summit Culinary Water CIP

Municipal/District Engineering
- Enoch City Culinary Water Master Plan
- Washington City
- Kane County Water Conservancy District
- LaVerkin City

Water Modeling
- Kane County Water Conservancy District Duck Creek Wastewater I

EDUCATION
BS - Civil Engineering, Utah State University

ME - Civil & Environmental Engineering, Utah State University

YEARS IN PROFESSION
1; 1 w/ Sunrise

DAO YANG, PE

Groundwater Specialist

Dao has been involved in a variety of different disciplines over his 36 years of professional experience: including geotechnical engineering, geothermal resource investigations and assessment, hydraulics, hydrology, hydrogeology, environmental assessments and investigations, and groundwater flow and contaminant modeling.

His recent project experience includes comprehensive evaluations and feasibility studies of large-scale hydroelectrical and geothermal resource exploration projects. He also has recent experience in performing environmental assessments.

EDUCATION
MS - Civil and Environmental Engineering, Utah State University

YEARS IN PROFESSION
36, 19 with Sunrise

REGISTRATIONS
Registered PE:
Utah No. 2601202
California No. C 77573

Nevada Certified Environmental Manager: No. 2386

PROJECT EXPERIENCE:
- Hildale/Colorado City Water Source Master Planning & Hydrogeologic Study 2016
- Hydrogeological Site Characterization and Subsequent Monthly Groundwater Flow at Heber Valley Special District's Lagoon Site
- Hydrogeologic Study in Herriman and Adjacent Areas in Southwest Salt Lake County, Utah: 2002-2011
- Groundwater Study and Septic Tank Density Analysis, Upper Kolob Plateau and Oak Valley
- Hydrogeological Study at Jet Fox Reservoir - Manti, Utah
- Subsurface Study for Thayne, Wyoming Leisure Valley Lagoons
- Groundwater Study and Septic Tank Density Analysis, Duck Creek, Strawberry Creek and Swains Creek
- Dewatering Analysis for Fairview Wastewater Treatment Facilities
- Jackson Wyoming Snake River Canyon Ranch Subsurface Investigation and Groundwater Flow and Nitrate Transport Modeling
- Pacificorp Reservoir Study, Utah

ROBERT WORLEY, PE

Treatment Specialist

Robert has 19 years of engineering experience which includes culinary water treatment plants, culinary water pump stations, master plans, and impact fee analyses, wastewater treatment plants, wastewater lift stations, sewer collection, and water and wastewater capital facilities plans. He has been involved with many of these projects from planning, funding, design, and permitting to construction management.

EDUCATION
BS - Civil Engineering, Utah State University

YEARS IN PROFESSION
19; 19 with Sunrise

REGISTRATIONS
Registered PE:
Utah No. 375477
Idaho No. 13336
Arizona No. 375477
Nevada No. 019698
Colorado No. 43670

PROJECT EXPERIENCE:

- Deseret Oasis Arsenic Treatment Plant
- Mammoth Creek Fish Hatchery Treatment Plant
- Garden City Culinary Water Treatment Plant
- Spanish Fork Regional Sewer Lift Station
- Butcher Irrigation Lateral
- Carbon County Irrigation Line
- Centerfield Irrigation
- Deseret Irrigation Company Low Line Canal
- Glenwood Irrigation Improvements
- Salem City Irrigation Project
- Salina City Pressurized Irrigation Pond
- Salina City Pressurized Irrigation Study
- Silver Creek Reservoir Company
- Tropic and East Fork Irrigation Company
- West Panguitch Irrigation Pipeline
- Ogden Water Treatment Plant
- Tridell-Lapoint Water Master Plan
- Tridell-Lapoint Water Improvements
- Nephi City, Culinary Water Master Plan
- Brianhead Water Master Plan
- Holden Water Master Plan
- Panguitch City Culinary Water Improvements Project

MARV WILSON, PE

Technical Advisor

Marv has served in principal roles in the development, design, and implementation of numerous civil and environmental engineering projects. As Vice President, Marv now spends much of his time assisting newer engineers produce quality deliverables for various clients and serving as a QA/QC whom clients can call for an immediate and direct link to senior corporate management. Marv's track record has been one of commitment and service to many communities in the region.

EDUCATION
BS - Civil Engineering, Utah State University

YEARS IN PROFESSION
31; 31 with Sunrise

REGISTRATIONS
Registered PE:
UT No. 176874-2202
NV No. 013197
AZ No. 29750

PROJECT EXPERIENCE:

- Hildale/Colorado City Impact Fee Facilities Plan
- Deseret Oasis Arsenic Treatment Plant
- Fredonia Surface Water Treatment Plant
- Washington Grapevine Wash Well II
- Santa Clara South Hills Transmission Line
- Washington Membrane Filtration Plant
- Washington City Parks & Recreation Impact Fee Analysis
- Washington Culinary Water Master Plan
- Santa Clara Culinary Water Master Plan Update
- Santa Clara Storm Water Master Plan
- Santa Clara Transportation Master Plan
- Coyote Springs - LCCGID Storm Water CIP
- Enterprise Storm Water Master Plan
- LaVerkin Culinary Water Master Plan
- LaVerkin City Storm Water Master Plan
- Tuacahn Wash Detention Pond Dam
- Big Water Road & Drainage Improvements
- Tom's Canyon Flood Prevention
- Washington Dam Road 2.0 MG Tank
- Washington City Red Cliffs #2 2.0 MG Tank
- Ivins Cliff Rose 2.0 MG Tank
- Washington Red Cliffs 1.0 MG Tank
- Sand Hollow 2.0 MG Tank
- Springdale 1.0 MG Tank

JUSTIN ATKINSON
Funding Specialist

For much of his career, Justin has been responsible for project inspection, GIS collection, documentation, project management, materials testing, and other related activities on water, wastewater, utilities, storm drain, natural gas and hydroelectric infrastructure projects.

Recently, Justin has taken on the responsibility of securing funding for various municipal projects. His work in the municipal arena has made Justin well connected to local and state officials.

Justin has provided funding for many clients including:

- Centerfield City
- Fairview City
- Green River
- Hildale City
- Moroni City
- Mt. Pleasant City
- Sanpete County
- Summit Culinary Water
- Wellington City
- Woodland Mutual Water Co.

Justin has assisted numerous clients in acquiring funds through these and other agencies:

- Community Impact Board
- Drinking Water Board
- Division of Water Quality
- Division of Water Resources
- USDA-Rural Development
- UDOT
- Economic Development Administration
- UDOT/Utah Outdoor Recreation Grant
- Community Development Block Grant

Years in Profession:
26; 26 w/ Sunrise

Certifications:
Drinking Water Operator Level II; UDOT: IQP; Partnering Phase 1 & 2; Environmental Control Supervisor Training; Nuclear Density Gauge; Crash Cushion; Traffic Control

EDUCATION
BS - Physiology and Developmental Biology, Brigham Young University

YEARS IN PROFESSION
10 years

MIKE RAU (SUB-CONSULTANT)
Water Chemist

Mike has 10 years of experience in the drinking water industry dealing with "source to tap" water quality. While working for a large drinking water utility, he has worked extensively in source water monitoring and protection, treatment plant design and process optimization, laboratory practices and certification, rules and regulations and drinking water research.

Experience with Sunrise

- Ogden, UT Treatment Plant
- Payson, AZ Treatment Plant

Treatment process evaluations:

- Hildale, UT
- Green River, WY
- Green River, UT
- Springdale, UT

Employment
Water Quality Scientist
Central Utah Water Conservancy District, Orem, UT (April '09-Present)

- Provide scientific/lab support for three drinking water treatment plants
  - Utah Valley Water Treatment Plant - 80 MGD, Orem, UT
  - Duchesne Valley Water Treatment Plant - 8 MGD, Duchesne, UT
  - Ashley Valley Water Treatment Plant - 16 MGD, Vernal, UT
- Coordinate compliance sampling and reporting for all three treatment plants
- Spearheaded jar testing and piloting for UVWTP process improvement project
- Complex piloting plan involving two sources in separate locations

Approach and Scope of Work

We have reviewed the Notice of Violation (NOV) letter sent by the State of Utah Division of Drinking Water and understand that the system must have a plan in place by June 12, 2019, to address the NOV. The NOV also indicates that the radium-228 MCL must be met by January 31, 2020. If mechanical treatment or new source development is the selected alternative to meet the MCL requirement, then design, procurement, and construction will need to begin very soon in order to accommodate lead times for treatment equipment and approval processes for source development.

As time is of the essence, we will hold a project kick-off meeting within a week of the award being finalized. This meeting will include Hildale City and utility system representatives to make certain that our team has an opportunity to understand the expectations, preferences, data, and decision parameters for the study. We commit to communicate regularly with the City through progress meetings and progress reports, along with the ongoing phone and email communications that will be required to jointly accomplish this expedited schedule.

Our approach to meeting the short-term and long-term elements of the SOQ will include the following:

1. Kick-off meeting and communication as described above (estimated 5/13 pending execution of contract)
    A. Address and strategize to accomplish immediate needs of the NOV requirements for a plan of action by 6/12/19, and MCL compliance by 1/31/20.
    B. Define long-term objectives and planning and implementation needs for water resource development.
    C. Review together the data and recommendations from 2016 Water Source Master Planning document and 2015 Culinary Water Impact Fee Facilities Plan.
2. Begin immediately with focused energy to compile information on treatment, blending, and new source alternatives to resolve the radium-228 violation associated with Power Plant Well and anticipated needs to add Academy Avenue Well to the system.
3. Establish scoring criteria and involve City staff with evaluation of alternatives analysis.
4. Hold review meeting to discuss alternatives and scoring and make a joint selection based on engineering recommendations and City needs (6/5).
5. Draft plan to address NOV requirements and submit to State DDW (6/12).
6. Correlate with City on implementation plan and schedule for selected alternative.
    A. Apply for funding and establish financing
    B. Use selected alternative to define design scope and begin detail design
    C. Coordinate with the State to expedite approved process
7. In-depth evaluation, particularly hydrogeological surveying and modeling, will take additional time and effort. We will kick this effort off at the same time as the tasks above, but the work will continue after the draft plan addressing the NOV is submitted to the State.
8. Sunrise will provide graphic analysis and presentation to the Utility Board and City Council. This could be at the time of the alternatives analysis and submittal to the State, when the hydrogeological recommendations are developed, or both.
9. Finalize the scope of work with a written report to the City and Utility Board.

With this approach we commit to deliver the Scope of Services outlined in the RFQ and have identified specific tasks and issues that will be addressed with regard to each of the corresponding tasks below.

TASK #1 - EFFICACY OF AVAILABLE TREATMENT (A) AND SOURCE DEVELOPMENT (B) OPTIONS

(A) Treatment

An important aspect of developing treatment alternatives is knowing what you are treating. We will plot the radium levels based on historical data in order to observe trends of radium in the sources.

Sunrise proposes that the following five treatment methods will be evaluated:

- ***Adsorption Media***– these filters pull contaminate out of the water by the size, shape, and chemical treatment of the adsorptive media. Media must be replaced when it is full of radium. If cation exchange is employed, then iron and manganese must be less than 0.3 ppm to prevent fouling of the resin.
- ***Pressure Filtration*** – uses sands and anthracite, along with Hydrous Manganese Oxide (HMO) to filter contaminants from the water. This process causes contaminants to coagulate and precipitate out of the water. This can work well with existing treatment facilities, but depending on the application and other contaminants, has the potential to have a lower radium removal rate than other methods.
- ***Reverse Osmosis*** – uses a semi-permeable membrane where water is subjected to a pressure greater than the osmotic pressure. This is usually considered the costliest method and also has a continuous waste flow that is higher than other methods.
- ***Lime Softening*** – adds lime to the raw water to precipitate contaminants. A pH correction step is required along with filtration. Lime softening is generally not favorable for lower flow rates and requires a more skilled operator and larger plant footprint. Success can also be impacted by other contaminants outside of radium.
- ***Blending*** – Requires a clean water source (limited contaminants). This option will also be looked at in conjunction with source development in the Navajo sandstone. The Shinarump Wells are expected to also have radium-228 so they may not be helpful with blending. Also, there is currently not adequate flow from current sources in Jans and Maxwell Canyon to blend with Power Plant Well. Therefore, if blending is to be considered as an alternative, the quality of the wells in Colorado City must be known.

The analysis will look at the typical radium removal for each of these alternatives and what would be required to remove enough radium to become compliant with the MCLs. The analysis will also look at the applicability to process the desired range of flows. A summary of the potential plant footprints, amount of waste volume generated, and required operator skill/experience will be presented.

Existing Treatment Plant

Our team will also evaluate the potential use of existing facilities. For example, whether different treatment alternatives become more desirable if existing filtration equipment can be used. Also included in the analysis will be whether the treatment alternative provides treatment benefits outside of radium treatment. Mike Rau, water chemist, has already visited the treatment site with city staff and is familiar with the current treatment process.

We expect that the existing treatment plant located on Richards Street is treating some radium from other sources. Piping water from the Power Plant and Academy Wells directly to the plant may be part of the solution.

We understand that the amount of radiological contaminants in the water appears to have increased year-to-year. We feel increasing radiological contamination is a key component to the study. The ultimate solution should be a solution for the current contamination levels as well as a safeguard against potentially increasing contamination levels.

(B) Source Development

Source development alternatives will be considered for developing sources in the Navajo sandstone aquifer. This shall include hydrological surveying and modeling. The schedule for this task is shown in the SOQ schedule as approximately 150 days. **However, the exact scope of the hydrogeologic survey and model should be established after joint discussion with the City after selection and before contract execution.** It should be noted that the 2016 Water Source Master Plan that Sunrise Engineering completed included a hydrogeologic model. We could easily build on this to include and cover any other areas that the chooses.

Alternatives for new sources include many that have been summarized in the recent Culinary Water Impact Fee Facilities Plan and the 2016 Water Source Master Planning (we will also consider other source options that the City feels would be beneficial). Some of these include:

Each of these new source options include steps that require time. Because to the tight time constraints of the NOV, the timing of implementing new sources may be prohibitive in the short term. We do expect that treatment of Power Plant and Academy Well will be required to meet the MCL requirement by January 31, 2020, and even that will be a challenge, due to equipment lead times and construction schedules.. Regardless, our analysis will include consideration of all the treatment and source options below.

POTENTIAL SOURCE	BENEFITS	REQUIREMENTS
Additional horizontal wells in Jans & Maxwell Canyons	· High quality water · Existing delivery pipe from the canyon to the system	· BLM Permit and environmental clearance · Water rights Delivery to treatment plant if blending with Power Plant and Academy is required
Conversion of irrigation water in Water Canyon	· Good quality surface water · Possible use of existing BLM easement for pipeline	· BLM Permit and environmental clearance · Water rights conversion · Political and legal agreements for exchange of water · Delivery to treatment plant if blending with Power Plant and Academy is required
Deep Well (+3,000 ft)	· Test well drilled in 2001 confirmed water presence	· Risk of drilling a new test hole or equipping the existing hole · Unknown quality, temperature, or volume · Ongoing pumping costs (O&M) will be high for such a deep well (estimated water table about 1900 ft below ground)

TASK #2 - INITIAL CAPITAL COSTS OF TREATMENT AND SOURCE DEVELOPMENT OPTIONS

An Engineer's Opinion of Probable Cost (EOPC) will be completed for each of the alternatives (treatment and source). Each EOPC will include the cost of the treatment plant and/or source development as well as the cost of the waterlines to transport the water to be blended, treated, or conveyed to the system.

In analyzing the alternatives with regards to the initial costs to the City, the long-term health of the community's water will be balanced with the Cities' financial situation.

TASK #3 - ONGOING OPERATION AND MAINTENANCE (O&M) AND ASSOCIATED COSTS

We will work with both treatment equipment suppliers and systems currently running similar treatment equipment in order to provide an accurate estimate of anticipated O&M costs for each alternative.

For treatment and source alternatives, we will look at the required manpower as well as other O&M costs such as power costs. We will also include the anticipated costs to supply appropriate media and the disposal of waste material.

TASK #4 - ASSESSMENT OF RADIONUCLIDE CONDITIONS THAT AFFECT THE SYSTEM

Understandably there is public concern over the radium and its potential effects. Sunrise will provide an evaluation and opinion regarding the cause of the radium contamination and its effects on the water system. We will present any known tertiary effects of radionuclide presence in the groundwater. We will look for direction from the City regarding if this task will be a high-level opinion or to what extent the analysis should provide.

TASK #5 - REGULATORY ASSESSMENT

As outlined in R309-205-7, the State of Utah requires monitoring for gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity in drinking water. The following are MCLs as set forth in R309-200-5(4):

- Gross alpha particle activity – 15 pCi/L
- Combined Radium 226 and Radium 228 – 5 pCi/L

Based on the water quality analysis provided, and the NOV stated running average of radium-228 at 9.4 pCi/L, it is apparent that significant measures would need to be in place to bring the system into compliance with these limits. We will evaluate each treatment/source alternative against the limits established by the State.

We have been in communication with Rachael Cassady at the Utah Division of Drinking Water to discuss the NOV and we understand that there is no leeway on the January 31, 2020, deadline for MCL compliance. This is based on the EPA's scrutiny of the NOV.

TASK #6 - FINANCIAL ASSESSMENT OF PROPOSED TREATMENT AND SOURCE DEVELOPMENT OPTIONS

Each alternative will be considered in order to determine if the alternative has a positive or negative effect on funding and the likelihood of obtaining grants.

We will provide a potential financing plan based on the system's most current financial statements and including the EOPC for the selected alternative. We are currently working with the City to update the Culinary Water Master Plan and will be able to on the information we have from that financing plan.

We will look at several potential funding options for the water system, including the following:

- Drinking Water Board (DWB)
- Rural Development (RD)
- Utah Permanent Community Impact Fund Board (CIB)

Our funding specialist, Justin Atkinson, will work with the various funding agencies in order to determine the best potential funding package in terms of grants and low interest loans for the City. The potential funding package will be presented along with the affect of any additional loan on the estimated required water bill for the system.

TASK #7 - GRAPHIC ANALYSIS AND TREATMENT/ SOURCE DEVELOPMENT RECOMMENDATION

A recommended treatment/source alternative will be determined based on the above information. The decision matrix will be presented in table format. The determining factors listed above will also be displayed in one or multiple tables and/or graphics.

A written report will be prepared which will layout the analysis and the process for which the recommended alternative was determined. Each alternative will be described in a map showing the anticipated improvements for each exhibit. We will utilize information and data from the exhibits in the Culinary Water Master Plan to save money. Six hard copies and PDF copies of the draft and final reports will be provided.

Our team is committed to continuous and appropriate review of the quality of our deliverables. Our QA/QC process is ongoing throughout the project and supports production of a quality product for our clients.

Past Project Experience

WATER TREATMENT & SOURCE DEVELOPMENT EXPERIENCE

Washington City Membrane Filtration Plant
Washington, Utah

Reference:
Michael Shaw
Public Works Director
435.656.6317
mshaw@washingtoncity.org

- Membrane filtration technology
- Accelerated design schedule
- BLM R&PP land acquisition
- 2.5 MGD Membrane filtration technology
- Funding from the State Division of Drinking Water and USDA Rural Development
- Coordination with Washington County Water Conservancy District
- Bidding, construction observation and administration, and project closeout

Construction Cost:
$3,601,000

Project Completion:
November, 2003

Reference:
Daniel Watson
Town Manager
928.643.7241
townmngr@fredonia.net

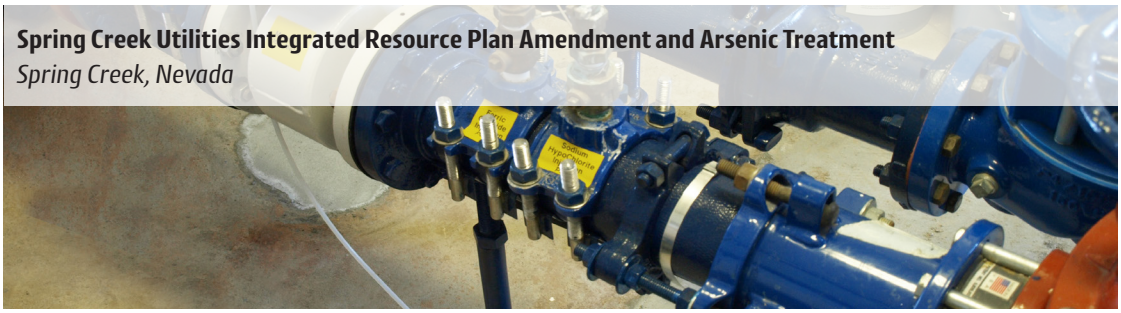
Fredonia Water Treatment Plant
Fredonia, Arizona

Construction Cost:
$6,000,000

Project Completion:
October 2011

- Treatment plant design and SCADA design
- Included 3 pressurized sand filtration vessels with a water production capacity of 1018 gpm
- Gravity pressurized water from a spring source
- Filter water is disinfected by an ultraviolet system
- Designed for a future fourth vessel that can bring the water production capacity up to approximately 1,360 gpm
- Downstream tank levels determine when the plants turn on and off

Spring Creek Utilities Integrated Resource Plan Amendment and Arsenic Treatment
Spring Creek, Nevada



Reference:
Wendy Barnett
Regional Manager
Spring Creek Utility Company
775.727.5575

- Preliminary Engineering Report
- Design of 3 separate site treatment plants
- Design and construction administration of an integrated resource plan, arsenic treatment plant, and well house remodels for three sites
- Arsenic treatment plant included structural, mechanical and electrical engineering, piping, chemical holding tanks, geotechnical investigations, survey GIS data analysis, and storm water pollution protection plans

Construction Cost:
$3,000,000

Project Completion:
December 2011

Reference:

Terry Howick
Fish Culture Specialist
801.538.4808
terryhowick@utah.gov

Mammoth Creek Fish Hatchery Treatment Plant
Hatch, Utah

Construction Cost:
$825,000

Project Completion:
October 2006

- Installed a treatment plant to remove and inactivate Whirling Disease from the two sources that feed the Mammoth Creek Hatchery Plant Treats 3cfs (1350 gpm) of Inflow
- Inlet Box, Two Drum Filters
- Two UV units
- Designed with Redundant Equipment
- Utilizes UV Disinfection

Holliday Treatment Plant
Holladay, Utah

Reference:

Marlin Sundberg
801.277.2893

- Water master plan proposed construction of a microfiltration facility for culinary water treatment
- Provided design and construction administration and inspection for this 2.5 MGD microfiltration treatment plant to treat the spring water

Construction Cost:
$2,750,000

Project Completion:
June 2002

Reference:

Justin Anderson, City Engineer
801.629.8982
janderson@ogdencity.com

Ogden Water Treatment Plant
Ogden, Utah

Construction Cost:
$15,000,000

Project Completion:
August 2015

- Demolish Existing Filter Building
- Construct Membrane Filtration Building
- Replace Black Point Weir
- Construct Mechanical Dewatering Facility
- Water Reuse of 99.9%
- Conference Room Overlooking Treatment Area

GROUNDWATER EXPERIENCE

Hildale/Colorado City Groundwater Study
Hildale, Utah/Colorado City, Arizona

Reference:
Victor Jessop
Operator
435.467.8449

- A need for additional groundwater supply for the community was projected and potential locations for future groundwater development were identified
- Future needs assessment
- Groundwater modeling
- Groundwater resources development
- Cost Estimating of recommended improvements
- Five 20-year transient-state models

Reference:
Scott Wright
Superintendent
435.654.2248

Wes Johnson
Project Manager
Horrocks
435.654.2226

Heber Valley Special Services District Hydrogeologic Study
Heber, Utah

Study Cost:
$82,600

Project Completion:
April 2013

- The Utah Division of Water Quality (DWQ) was concerned there may be a hydrogeologic connection between the RIB site and the Provo River
- Sunrise performed well development, groundwater development, and surface water monitoring
- During the investigation, seven monitoring wells and four staff gauges were installed to observe temporal changes of the shallow groundwater conditions at the RIB and lagoon site

Salina Denmark Well
Salina, Utah

Reference:
Jeff Albrecht
435.529.7304

- Well siting study, PER, well design including construction plans and specifications, test well pumping test, production well step and constant rate pumping tests, and a DWSP plan
- Well is 500 feet in depth, 12 inches in inside diameter, with a yield of 1,600 gpm
- Coordinated with the State Engineer, analyzed cutting samples, sized well screens, supervised pumping tests, and analyzed pumping test data

Reference:

Rick Wixom
Springdale Town Manager
435.772.3434

Springdale Drinking Water Source Protection Plan
Springdale, Utah

- North Fork of Virgin River, Hummingbird Well, and Big Spring
- Prepared DWSP Plan, inventory of potential contamination sources, assessment of potential contamination source hazards, management program for existing and future potential contamination sources, implementation schedule, resource evaluation, record keeping, and volatile organic chemical (VOC) monitoring waivers

Stonegate Groundwater Study
Duchesne County, Utah

Reference:

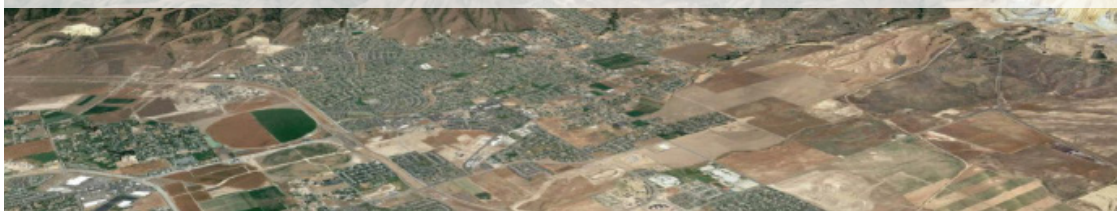
Jordan Mathis
Director/Health Officer
435.247.1177

- Groundwater Modeling
- Water Data Collection and sampling
- Project Planning, cost estimating and potential financing scenarios
- Working with local entities and land owners for project feasibility
- French Drain Concept design

Reference:

Justun Edwards
Water Department
Director
801.446.5324

Herriman Hydrogeologic Study
Herriman, Utah



- Sunrise has been consulting with Herriman City to help the city better manage groundwater resources in the area since 2002
- Water needs at build-out, water deficit, water rights, potential improvements
- Included in the analysis were water level and water quality data analysis, potentiometric surface map, sulfate and TDS concentration contour maps, and a transmissivity distribution map

Professional References

WASHINGTON CITY

ROGER CARTER - CITY MANAGER

111 North 100 East
Washington, Utah 84780

435.656.6300

LAVERKIN CITY

DEREK IMLAY - DIRECTOR OF OPERATIONS

435 North Main Street
LaVerkin, Utah 84745

435.635.2581

KANE COUNTY WATER CONSERVANCY DISTRICT

MICHAEL E. NOEL - EXECUTIVE DIRECTOR

725 East Kaneplex Drive
Kanab, Utah 84741

435.644.3996

MOAPA VALLEY WATER DISTRICT

JOE DAVIS - GENERAL MANAGER

PO Box 257
601 North Moapa Blvd.
Overton, Nevada 89021

702.397.6893

ENOCH CITY

ROB DOTSON - CITY MANAGER

900 East Midvalley Road
Enoch, Utah 84721

435.586.1119

Proposed Schedule

Hildale City: Water Treatment and Source Development Feasibility Study
Project Timeline

Today's Date: 5/1/2019

Event/Name	Start Date *(date)*	End Date *(date)*	Duration *(days)*
Execute Professional Services Agreement	10-May-19	11-May-19	1
Conduct Project Kickoff Meeting	13-May-19	14-May-19	1
Radium Treatment Alternatives Analysis	14-May-19	4-Jun-19	21
Intitial Capital Costs of Treatment	14-May-19	4-Jun-19	21
Ongoing O&M Costs (Treatment)	14-May-19	4-Jun-19	21
Review Meeting #1-Treatment Alternatives Scoring	4-Jun-19	5-Jun-19	1
Draft Compliance Plan to State DDW	**5-Jun-19**	**12-Jun-19**	**7**
Summary of Funding Options	12-Jun-19	19-Jun-19	7
Assessment of Radionucleides on System	14-May-19	28-Jun-19	45
Source Development Alternatives Analysis	14-May-19	11-Oct-19	150
Review Meeting #2-Review Draft Report	12-Oct-19	13-Oct-19	1
Presentation to Council	27-Oct-19	28-Oct-19	1
Items Outside SOQ Scope but Critical to NOV Compliance			
Funding Application Process	*20-Jun-19*	*19-Aug-19*	*60*
Engineering Design	*20-Jun-19*	*19-Aug-19*	*60*
State DDW Plan Review	*19-Aug-19*	*3-Sep-19*	*15*
Advertising, Bidding & Negotiating	*4-Sep-19*	*4-Oct-19*	*30*
Construction	*11-Oct-19*	*31-Jan-20*	*112*
Total	**10-May-19**	**31-Jan-20**	**266**

This schedule assumes timely reviews by external agencies.

Tentative Additional Items are pending a design start date immediately after draft plan is sent to State DDW.

Additional "Fast-Track" bidding and construction options should be evaluated to meet the January 31, 2020 deadline.

Bid Statement

Sunrise has always been focused on working for the interest of our municipal clients. We do very little private development work and no such work within the municipalities that we have contracts with. We have no interest in bidding as a primary contractor to install any of the potential treatment methods or source developments. Our sole involvement will be as a consultant to assist the City in evaluating and implementing the best possible solution to their water resource needs.

Hildale-Colorado City Utility

Professional Services Price Update- Vac-Truck

Vac-Truck

Annual Fixed Costs		
Depreciation	$	30,000.00
Maintenance Cost	$	15,000.00
Fuel Costs	$	1,500.00
	$	46,500.00
Current Variable Costs Per Hour of Operation		
Operator	$	45.00
Capital Reserve Fund Fee	$	75.00
Administrative Cost	$	20.00
	$	140.00
Available Customer Hours		300
Fixed Cost of Customer Hour	$	155.00
Variable Cost of Customer Hour	$	140.00
Total Cost of Customer Hour	$	295.00