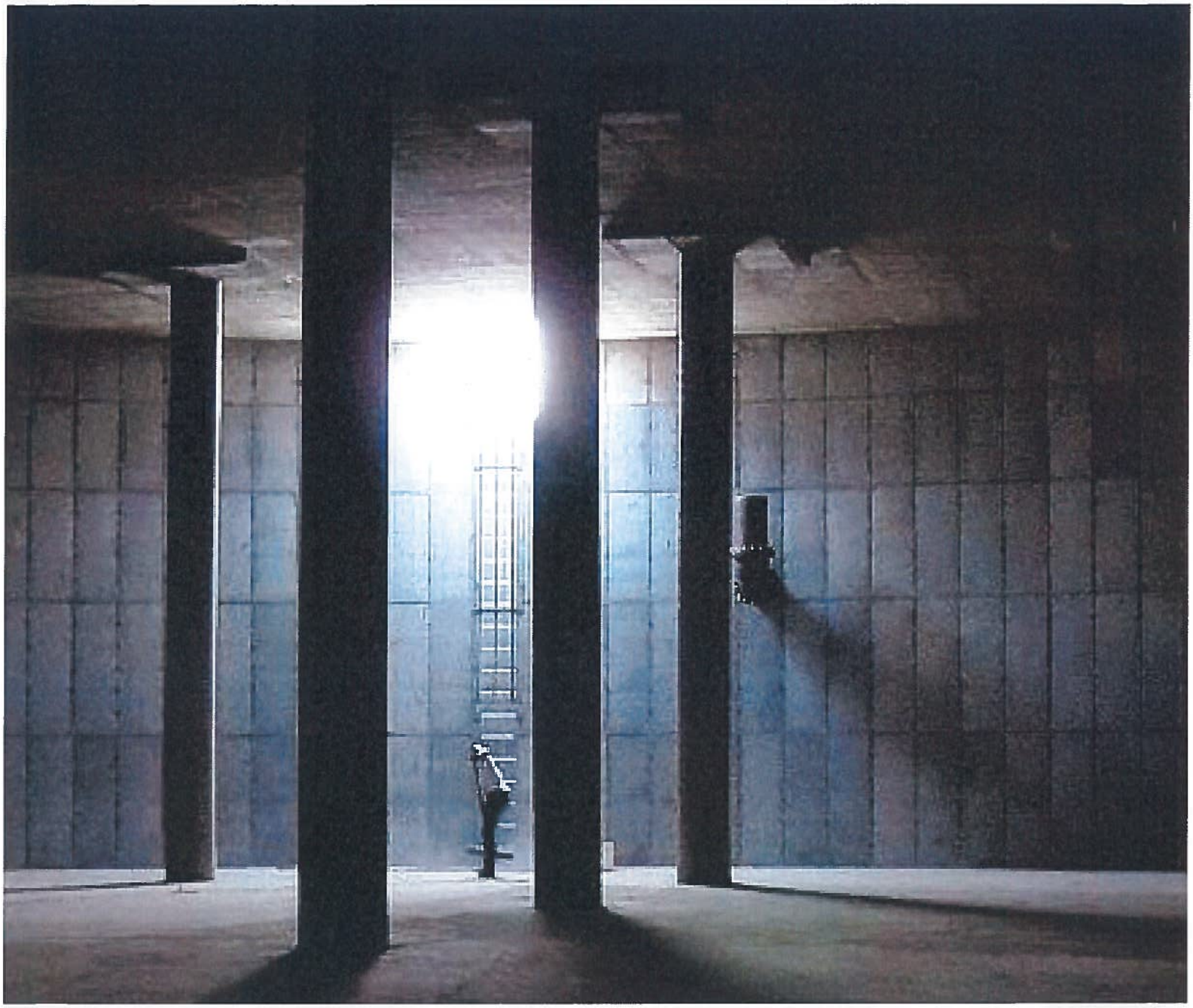


PROPOSAL FOR CLIFF ROSE 2MG CULINARY WATER TANK PROJECT • SEPTEMBER 30, 2015

SUNRISE ENGINEERING

September 30, 2015

Chuck Gillette, P.E.
Public Works Director, Ivins City

Re: Engineering Services for Preliminary and Final Design and Construction Period Services for the Cliff Rose 2 Million Gallon Culinary Water Tank Replacement Project

Dear Chuck and Selection Committee Members,

Thank you for this opportunity! We feel we have developed a good relationship with the City of Ivins and believe that together we can create a winning team that will provide the City with an excellent level of service and engineering quality for your Cliff Rose 2 MG Culinary Water Tank.

Sunrise is highly experienced in water storage services for municipalities. The design of concrete water storage tanks is one of our specialties. We believe there are several strong points in our proposal which highlight our qualifications, which are as follows:

- **We have assembled a highly specialized Team** that has successfully completed the planning, geotechnical, design and construction administration of concrete water storage tanks in southwest Utah for many years. Every member of the proposed project team has been with Sunrise Engineering over seven years and the majority of our work will be performed at our Washington, UT office. AGEC has partnered with Sunrise on tank site evaluation for even longer.

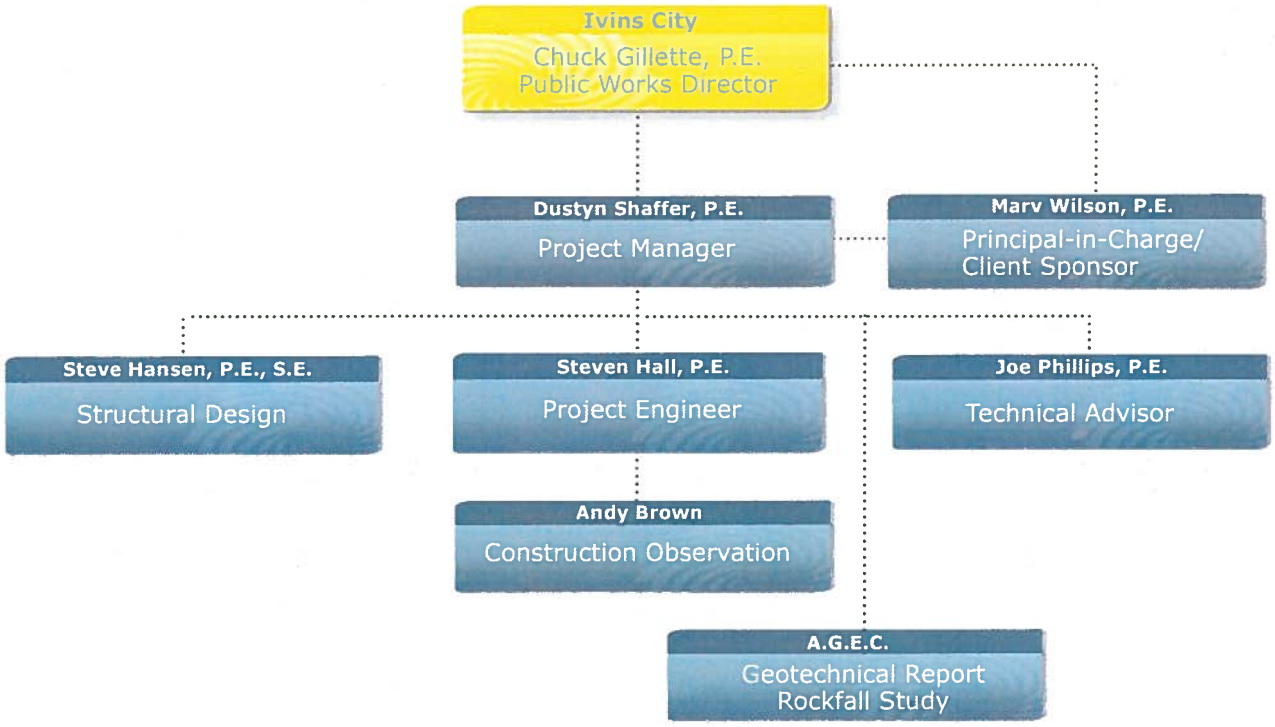
- **Concrete Tank Experience**. Our experience with water tank design rivals any firm in Utah. Two of our tanks are located in Ivins City: The Kayenta 1 MG conventional concrete tank, and the DYK Pre-stressed 2.5 MG Tank that is part of Santa Clara City's water system. Our two 2 MG tanks in Washington City are very similar to the Cliff Rose tank, and may provide a good starting point if conventional tank design is selected.

- **Cost and efficiency.** Through lessons learned in the design of over 20 tanks in the past 15 years, our Team has developed efficiencies in design and analysis methodologies that allows us to design and analyze custom concrete tanks quickly and cost effectively, without sacrificing attention and quality. You will see these efficiencies reflected in our price, and the expertise will be evident in the design, during construction, and through the decades the tank will be in service.

Sunrise Engineering is not only committed to this project, but to continuing our relationship with Ivins City. We believe we can work well together to develop an efficient, quality solution for you. Based on our staff size and current workload we have the ability to proceed without delay. All of the key personnel identified in this proposal are available and committed to exceeding your expectations. We respectfully request your support in our selection and look forward to working with you. Should you have questions, please contact me at 435.652.8450.

Sincerely,

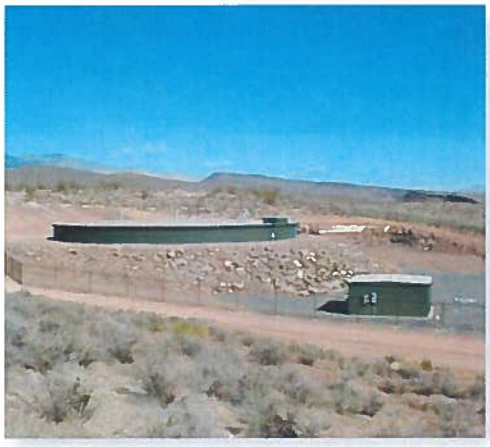
Dustyn Shaffer, P.E.
Principal Engineer
dshaffer@sunrise-eng.com




## PROJECT TEAM

We are committed to meeting your stated goal of completing the design and construction of the Cliff Rose 2 MG Culinary Water Tank by March 2017. A proposed schedule is given later in the proposal but will require input from the City. Dustyn Shaffer 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.

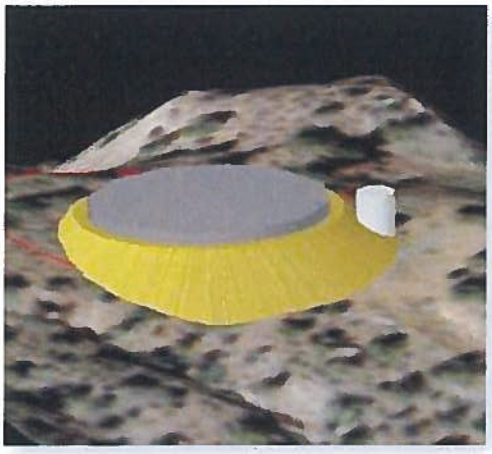
The geotechnical report and rock fall study will be completed by AGEC. Sunrise and AGEC have teamed together on many tank designs. The site investigation report will be as described in the RFP including two 30-foot bore holes. AGEC has completed rock fall studies in nearby Tuacahn and Sentierre. The rock fall analysis will utilize the CRSP (Colorado Rockfall Simulation Program), and Shadow Angle techniques. The study will provide for a runout zone and a berm or trench design to catch the rock fall.



Santa Clara South Hills 1MG tank

## PROJECT APPROACH

With these individuals, we have the skills specifically needed for this project, including geotechnical evaluation, structural design, site design, tank alternatives analysis, and concrete tank design and construction. Dustyn Shaffer, serving as project manager for this project, has experience with more than a dozen concrete tanks of varied sizes, located in all types of challenging sites. Our project team has contributed to even more concrete tanks throughout Utah, Arizona, Nevada, Idaho, and Wyoming. Individual resumes are included in Appendix A. Dustyn will coordinate our team to accomplish the following solutions to critical objectives.



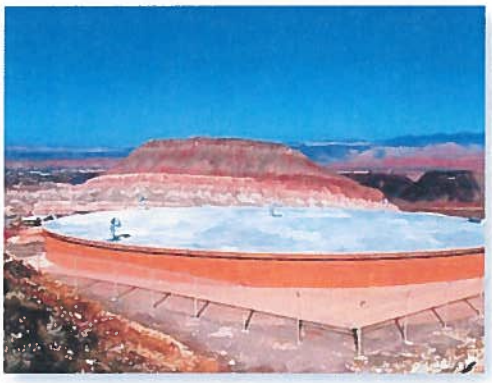
Springdale 1MG Rendering

**1. Objective:** Develop design criteria that will meet the City's objectives for the new 2 MG tank at the desired location and elevation.

**Solution:** The topographical survey from the preliminary design phase will be used to generate a three dimensional model with which we will work closely to determine cuts/fills, earthwork balance, and whether existing site boundaries are adequate to construct the proposed tank. The City will be able to see to what extent the tank can be buried, while maintaining the same elevation as the adjacent tank. We will use this information to develop right-of-way exhibits if it is necessary for the City to negotiate for additional land.

**2. Objective:** Provide analysis and recommendations for tank design and construction alternative methods.

**Solution:** It has been our experience that conventional reinforced concrete design and construction is a more cost effective approach for a tank of this size and smaller, and provides for a quality storage tank. However, we recognize that criteria will be developed during the preliminary design process that may impact the preferred tank solution. We have experience evaluating tank alternatives with Herriman City, Washington City, and Santa Clara City, and were the engineer for the 2.5 MG DYK Pre-stressed Tank for Santa Clara.



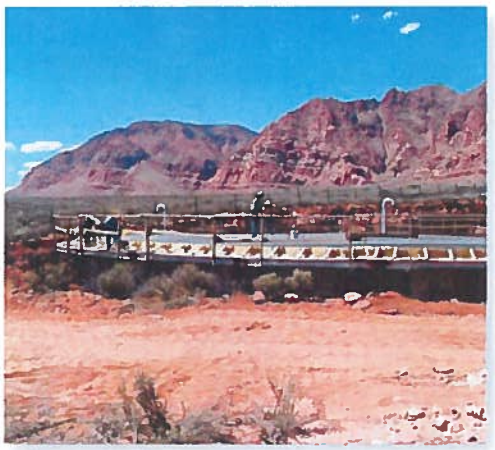
Washington City 2.3 MG tank

**3. Objective:** Complete sound structural design that appropriately balances quality and safety with budgetary constraints.

**Solution:** Tank design must provide for safety, function, and long-term durability. Our structural design will look to optimize strength while efficiently using materials in order to wisely use the City's dollars. We believe that is what engineering is for – so that the money spent up front reduces long term costs of construction and O&M.

**4. Objective:** Maintain coordination continuously with City staff. We expect to get buy-in from those who have a vision for the project, and those who will work with and maintain the project in the coming years.

**Solution:** Sunrise will provide monthly progress reports and budgetary updates to the City. We feel that "the best technical solution is not always the best solution" and will involve City staff in reviewing and "tweaking" 3D modeling of the site, in tank alternatives analysis, and throughout the design process. We will work closely with staff during construction to ensure that the tank and appurtenances are constructed to meet the intended design, and to facilitate good communication with the Contractor.



Kayenta 1MG tank

**5. Objective:** Meet and exceed schedule requirements of the RFP for design, and coordinate with Contractors for innovative construction procedures to expedite construction schedule.

**Solution:** We feel that the preliminary and final design could be completed sooner that the goals stated in the RFP. However, with the tank construction not desired until the following winter, an expedited design may not be critical. Nonetheless, this is an option. Also, our experience with similar tanks suggest that the construction schedule could be less than the stated 6 month period, and the inspection hours (520) could also be reduced. We have contacted one experienced tank contractor who agrees with this assessment. If nothing else, this could reduce construction period engineering costs.

| Project Name | Project Team | Time for Completion | Project Highlights | Client Contact |
|---|---|---|---|---|
|  Red Cliffs 2.3 MG Tank Washington, Utah | Marv Wilson, P.E.<br>Dustyn Shaffer, P.E. | Design 45 days<br>Const. 120 days | • Replacement of existing steel tank<br>• 2.3MG culinary water tank<br>• Geotechnical recommendations for nearby fault line<br>• Partially buried | Michael Shaw<br>Public Works Director<br>435.656.6317 |
|  Washington Fields 2MG Tank Washington, Utah | Dustyn Shaffer. P.E.<br>Marv Wilson, P.E. | Design 90 days<br>Const. 150 days | • BLM R & PP process for tank and access road<br>• Differential settling considerations for site<br>• Partially buried<br>• Match elevation of existing "sister"tank | Michael Shaw<br>Public Works Director<br>435.656.6317 |
|  Kayenta 1MG Tank Ivins, Utah | Joe Phillips, P.E. | Design 90 days<br>Const. unknown | • Reviews and approvals by Ivins City<br>• Buried tank design | Lance Anderson<br>Kayenta<br>435.668.7420 |
|  4MG Tank Ogden, Utah | Cliff Linford, P.E.<br>Steven Hansen, S.E. | Design 150 days<br>Const. 180 days | • 1MG concrete tank, 4MG concrete tank<br>• Booster pump station, PRV station<br>• 3,000 LF -24 inch ductile iron transmission line | Justin Anderson<br>City Engineer<br>801.629.8982 |
|  5 MG Tank Herriman, Utah | Cliff Linford, P.E.<br>Steve Hansen, S.E. | Design 150 days<br>Const. 180 days | • Extensive permitting process<br>• Buried tank design<br>• Inlet/outlet piping | Justun Edwards<br>Director of Water Services<br>801.446.5323 |
|  South Hills 1MG Tank Santa Clara, Utah | Marv Wilson, P.E.<br>Joe Phillips, P.E. | Design 90 days<br>Const. 150 days | • Sodium hypochlorite generation system<br>• SCADA controlled system operation<br>• Environmental analysis | Jack Taylor<br>Public Services Director<br>435.656.4690 |
|  Duck Creek area multiple tanks KCWCD, Utah | Dustyn Shaffer, P.E.<br>Marv Wilson, P.E.<br>Joe Phillips, P.E. | Varied | • 8 concrete storage tanks totalling 2.4MG<br>• Treatment & SCADA monitoring system<br>• Forest Service permitting for tanks and access | Michael Noel<br>Executive Director<br>435.644.3996 |
|  1MG Tank Springdale, Utah | Dustyn Shaffer, P.E.<br>Aaron Averett, P.E.<br>Joe Phillips, P.E. | Design 120 days<br>Const. 150 days | • Environmentally sensitive area adjacent to Zion National Park<br>• Virtual rendering prior to construction<br>• Partially buried tank<br>• Inlet/outlet piping | Rick Wixom<br>Town Manager<br>435.772.3434 |

## FIRM EXPERIENCE

| Representative Tank Projects | Areas of Expertise | | | | | | |
|---|---|---|---|---|---|---|---|
| | Master Planning | Environmental | Geotechnical | Design | Bidding Services | Construction Admin. | Const. Observation |
| Santa Clara, Utah South Hills 1.0 MG Tank | • | • | • | • | • | • | • |
| Santa Clara, Utah 2.5 MG DYK Pre-Stressed Tank | • | • | • | • | • | • | • |
| Washington City, Utah 2.3, 2.0 and 1.0 MG Tanks (7 tanks total) | • | • | • | • | • | • | • |
| Kayenta (Ivins) 1 MG Tank | | | • | • | • | • | |
| Springdale 1MG Tank | • | • | • | • | • | • | • |
| KCWCD, Utah, tank sizes from .250K to 1MG (7 tanks total) | • | • | • | • | • | • | • |
| Orderville, Utah .4 and .5 MG Tanks | • | • | • | • | • | • | • |
| Enterprise, Utah, 200k gallon and 600k gallon | • | • | • | • | • | • | • |
| Herriman Zone 2 North 5.0 MG Tank (AWWA D115) | | • | • | • | • | • | • |
| Ogden North Storage 4.0 and 1.0 MG Tanks | • | • | • | • | • | • | • |
| Payson Dual 2.5 MG Tanks | | • | • | • | | • | • |
| Manila 1.3 MG Tank | • | • | • | • | • | • | • |
| Erda Acres 1.0 MG Tank | • | • | • | • | • | • | • |
| Neola Culinary Water Storage Tank | • | • | • | • | • | • | • |
| Ogden Water Treatment Plant ACH Contact Tank | | | • | • | • | • | • |
| Ogden Water Treatment Plant Neutralization Tank | | | • | • | • | • | • |
| Stockton Emergency Storage Tank | • | • | • | • | • | • | • |
| Manti, Utah 1.0 MG Tank | • | • | | • | • | • | • |
| Herriman, Utah 1.0 MG Tank | • | • | | • | • | • | • |
| Greendale Water Treatment Plant Tank | • | • | • | • | • | • | • |
| Herriman, Utah 3.0 MG Tank (AWWA D110 Type 1) | • | • | | • | • | • | • |
| Hyde Park, Utah 1.5 MG Tank | • | • | • | • | • | • | • |
| White City Water District, Utah 3 MG Tank (AWWA D110 Type 1) | • | | | • | • | • | • |
| Lincoln Culinary Water Association .5 MG Tank | • | • | • | • | • | • | • |
| C.C. Cragin Reservoir Water Treatment Plant tanks (4 tanks) | | • | | • | • | • | • |
| Cortina, Arizona 1.0 MG Tank | • | | | • | • | • | • |
| Driggs, Idaho 1.0 MG Tank | • | • | • | • | • | • | • |
| Victor, Idaho 1.0 MG Tank | • | • | • | • | • | • | • |
| Montpelier, Idaho 1.0 MG Tank | • | | • | • | • | • | • |

Bill Rate/Hours

| PRELIMINARY DESIGN | | |
|---|---|---|
| Team | Billing Rate | Est. Hours |
| Steven Hall | $125.00 | 60 |
| Joseph Phillips | $139.00 | 4 |
| Dustyn Shaffer | $159.00 | 23 |
| Don Leonard | $85.00 | 14 |
| Carole Ingalls | $51.00 | 4 |
| Andy Brown | $119.00 | 8 |
| AGEC (Avg. Rate) | $100.00 | 113 |
| Total Hours | | 226 |
| Mileage | $0.59 | 100 |

| FINAL DESIGN | | |
|---|---|---|
| Team | Billing Rate | Est. Hours |
| Steven Hall | $125.00 | 131 |
| Steve Hansen | $139.00 | 20 |
| Joe Phillips | $139.00 | 14 |
| Dustyn Shaffer | $159.00 | 64 |
| Don Leonard | $85.00 | 76 |
| Carole Ingalls | $51.00 | 16 |
| Total Hours | | 321 |
| Mileage | $0.59 | 120 |

**Sunrise's Quality Control Plan includes the following activities:**

Checking all plans and documents

Training team members in quality control procedures

Integrating design reviews of all work performed by sub-consultants

Filing relevant quality control materials

**Our Quality Control program is based on the philosophy that quality is:**

1. Achieved by individuals carefully performing work
2. Controlled by adequate planning
3. Verified by checking and reviewing activities by individuals not directly responsible for performing the initial work activity
4. Assured by assigning a manger to perform surveillance and auditing of work products and procedures.

## SCOPE OF WORK

In preparing our proposal and reviewing the scope described in the RFP, we feel that most required efforts are covered quite well. In this section we will identify specific tasks we feel should be clarified, might be added, or could be revised. The items stated below are included in our cost summary.

### Preliminary Design

1. To clarify, Task D.2. describes a site topographic survey. Although aerial imagery and topography is being provided by the Town, this topographic survey will be required to balance earthwork for the purpose of burying the tank, for the access road re-alignment, and for matching high water elevation with the adjacent tank. The earthwork balance and final site design will be part of the final design scope.

2. Addendum acknowledges the potential of needed extending the existing site. Our scope will include provision of right-of-way exhibits for the purpose of the City negotiated for additional easement if necessary.

### Final Design

1. We propose to provide updated engineer's opinion of probable cost to the City at both the 60% and 100% review stages.

2. City staff will be involved in evaluating the surface model of the project site as we configure piping, access road, tank elevation, and final site boundaries.

3. The 95% design and review process will include a constructability review to ensure the ability to construct the new tank while keeping the existing 2 MG steel tank in service.

4. When creating the bidding and contract documents we would inquire with reputable tank contractors regarding the required construction schedule. We feel the completion for a 2 MG concrete tank could be has little as 120 days, and have confirmed that with one contractor while preparing this proposal. A tighter schedule may impact when the project goes to bid and will result in lower construction administration costs, if not lower construction costs.

5. Not mentioned in the RFP Scope is QA/QC of the design documents. We understand that a quality design and industry standard of care is the expectation and Sunrise will follow our Quality Control Plan which includes having an independent in-depth review by someone other than the designer.

6. Under Task G, Bid Period Services, will include preparation of a pre-qualification package as required in Addendum #1. We also want to clarify that we would expect to field calls and questions from potential bidders regarding the project bidding documents, on behalf of the City.

| CONSTRUCTION PERIOD SERVICES | | |
|---|---|---|
| Team | Billing Rate | Est. Hours |
| Steven Hall | $125.00 | 182 |
| Dustyn Shaffer | $159.00 | 76 |
| Andy Brown | $79.00 | 532 |
| Don Leonard | $85.00 | 18 |
| Kylie Johnson | $41.00 | 34 |
| Carole Ingalls | $51.00 | 28 |
| Total Hours | | 870 |
| | | |
| Mileage | $0.59 | 4,510 |
| Per Diem | $10.00 | 146 |

Because of the high ratio of construction cost to engineering fees, expertise in tank design and construction oversight will most often pay for itself in construction savings.

"The bitterness of poor quality remains long after the sweetness of low price is forgotten" - Benjamin Franklin

## Construction Period Services

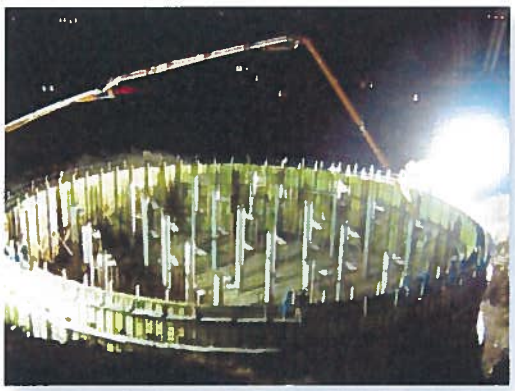
1. We expect field documentation such as daily diaries, quantities, photos, materials testing, etc. will be provided in an electronic, online environment. City staff will have access to documentation real time. Materials tests may be documented with GIS and visually mapped with ArcGIS Server to recorded physical location of tests.

2. Construction observation services are proposed as half time (20 hrs/wk) for a period of 6 months for this proposal. As stated previously, we feel this may be reduced if the construction schedule can be accelerated.

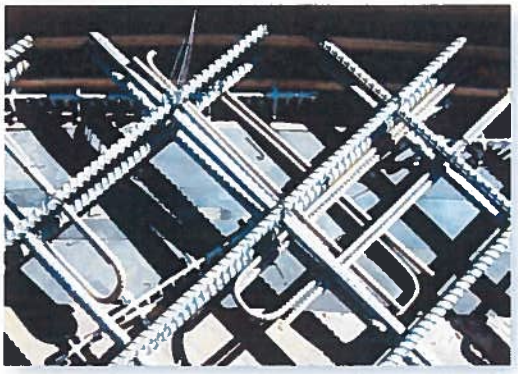
3. Materials testing services are not included in the scope of this RFP. This is an item that can be put as a bid item in the contractor's bid. Although this takes the effort off of the City to arrange a testing firm, we believe this has the potential to bring about a conflict of interest where the contractor is paying the firm that is checking the contractor's work. We recommend that the City contract directly with a materials testing firm to provide these services. Sunrise can also facilitate the materials testing but this is not currently in our scope our cost summary.



Orderville Tank



Washington City Dam Road Tank



Strawberry Valley Tank

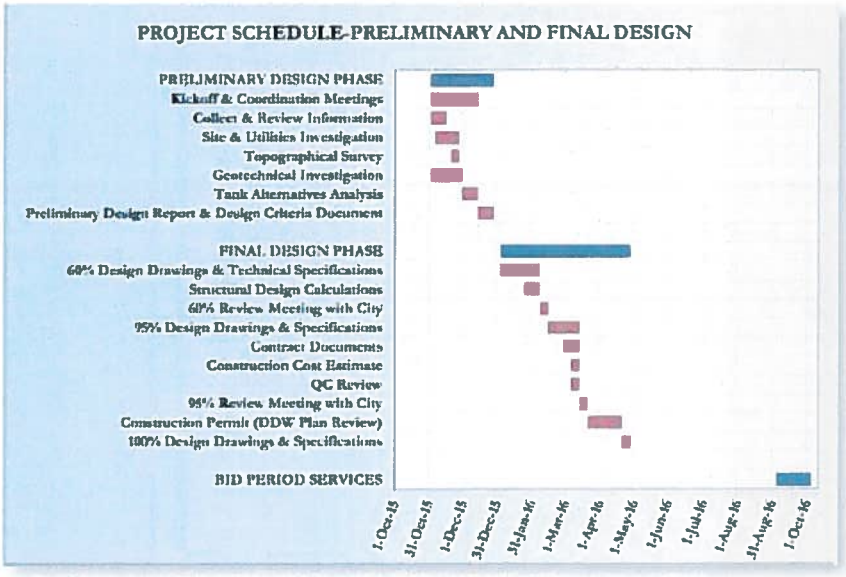


Kayenta 1MG Tank

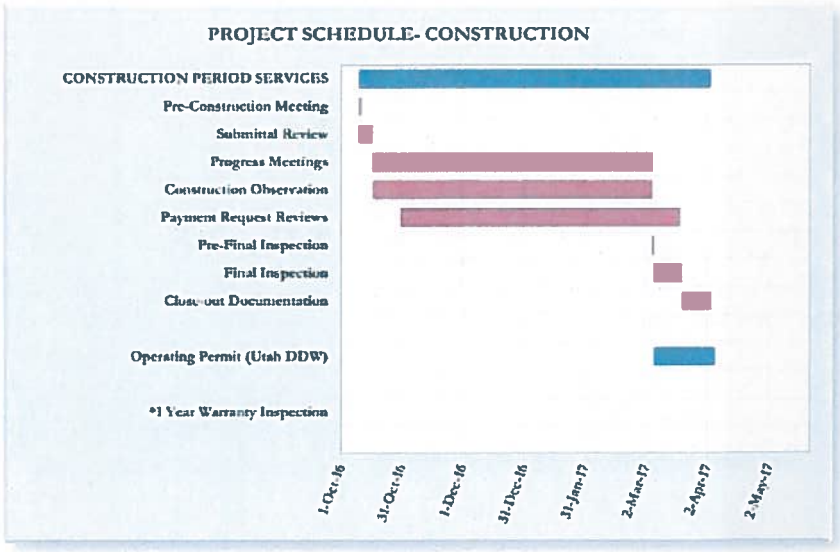
## SCHEDULE

The following proposed schedule is based on the outline expressed in the RFP. However, we are highly flexible to fit your specific needs. In this proposal we include a project schedule for Design, including Preliminary and Final Design, and a schedule for Construction Services. We have split these into two parts because of the gap between design completion and bidding the project to be constructed in Winter 2016.

| Task/Name | Duration |
|---|---|
| | 178 |
| | |
| **PRELIMINARY DESIGN PHASE** | **56** |
| Kickoff & Coordination Meetings | 42 |
| Collect & Review Information | 14 |
| Site & Utilities Investigation | 21 |
| Topographical Survey | 7 |
| Geotechnical Investigation | 28 |
| Tank Alternatives Analysis | 14 |
| Preliminary Design Report & Design Criteria Document | 14 |
| | |
| **FINAL DESIGN PHASE** | **115** |
| 60% Design Drawings & Technical Specifications | 35 |
| Structural Design Calculations | 14 |
| 60% Review Meeting with City | 7 |
| 95% Design Drawings & Specifications | 28 |
| Contract Documents | 14 |
| Construction Cost Estimate | 7 |
| QC Review | 7 |
| 95% Review Meeting with City | 7 |
| Construction Permit (DDW Plan Review) | 30 |
| 100% Design Drawings & Specifications | 7 |
| | |
| BID PERIOD SERVICES | 30 |




| Event/Name | Duration |
|---|---|
| | 178 |
| | |
| **CONSTRUCTION PERIOD** | **176** |
| Pre-Construction Meeting | 1 |
| Submittal Review | 7 |
| Progress Meetings | 140 |
| Construction Observation | 140 |
| Payment Request Reviews | 140 |
| Pre-Final Inspection | 1 |
| Final Inspection | 14 |
| Close-out Documentation | 14 |
| | |
| Operating Permit (Utah DDW) | 30 |
| | |
| *1 Year Warranty Inspection | 7 |
| | |



# Appendix



## DUSTYN W. SHAFFER, P.E.

### Project Manager

Mr. Shaffer has expertise in master planning, permitting, design and construction engineering for water improvements projects, including concrete water storage tanks. He has been the Project Engineer for more than a dozen such tanks and corresponding improvements projects throughout Southern Utah. As Project Manager for the Cliff Rose 2 MG Tank Project he will lead an experienced and capable team, while engaging continuous involvement and input from Ivins City staff. He will manage the project schedule and budget to ensure that intermediate and final deadlines are met.

**Education:** B.S., Civil Engineering, Utah State University, 1998

**Years of Experience:** 16 years

**Professional Engineer:** Utah, Arizona, Nevada

**Relative Experience:**
Washington City Red Cliffs 1 MG and 2.3 MG Concrete Tanks; Enterprise City 600,000 Gallon Concrete Tank; Washington Dam Road 2 MG Concrete Tank; Kane County Water Conservancy District Tanks (Duck Creek Village 150,000 Gallons, Timber Trails 350,000 Gallons, Strawberry 180,000 and 350,000 Gallons, Meadow View Heights 500,000 Gallons, Swains Creek 500,000 Gallons, Long Valley 350,000 Gallons, Zion View 350,000 Gallons); Cannonville 300,000 Gallon Concrete Tank



## MARVIN WILSON, P.E.

### Principal-in-Charge

Mr. Wilson has served in principal roles in planning, design, and construction of numerous civil and environmental engineering projects, including numerous concrete water tanks similar to this project. As Vice President, Mr. Wilson now spends much of his time assisting engineers and project managers produce quality deliverables for various clients and serving as a "Client Sponsor", whom clients can call on for an immediate and direct link to senior corporate management. As Principal-in-Charge on the project, Mr. Wilson's role will be to make sure resources necessary are made available to this project. He will consult with the Project Manager on a weekly basis.

**Education:** B.S., Civil Engineering, Utah State University, 1998

**Years of Experience:** 27 years

**Professional Engineer:** Utah, Arizona, Nevada

**Relative Experience:**
Santa Clara 2.5 MG DYK Pre-stressed Concrete Tank; Washington City Grapevine Pass 1 MG Concrete Tank; Washington City Red Cliffs 1 MG and 2.3 MG Concrete Tanks; Enterprise City 600,000 Gallon Concrete Tank; Kane County Water Conservancy District Tanks (Duck Creek Village 150,000 Gallons, Timber Trails 350,000 Gallons, Strawberry 180,000 and 350,000 Gallons, Meadow View Heights 500,000 Gallons, Swains Creek 500,000 Gallons); Santa Clara South Hills 1 MG Concrete Tank



## STEVEN HALL, P.E.

### Project Engineer

Mr. Hall has broad experience in municipal planning and improvements project. He has been the Project Engineer for several large scale water projects in particular, requiring his expertise in modeling, design, and construction administration. Those who know Steve appreciate his attention to detail and his cutting edge use of technology and analytical tools. As Project Engineer for the Cliff Rose 2 MG Tank Project he oversee plan production and project specifications and contract documents. His experience with overseeing large construction projects over the past 7 years will prove beneficial to this project as well.

**Education:** B.S. Civil Engineering, Brigham Young University, 2008
M.E. Civil Engineering, Colorado State University, 2013

**Years of Experience:** 7 years

**Professional Engineer:** Utah

**Relative Experience:**
Washington City Red Cliffs Pipeline & Tank Site Project; Dixie Deer SSD Water Improvements Project; Washington City East Regional Connection & Pump Station Project; Santa Clara Heights Water Improvements Project; Washington City Culinary Water Master Plan; Santa Clara Culinary Water Master Plan



## JOSEPH PHILLIPS, P.E., W.R.S.

### Technical Advisor/QC

Mr. Phillips has experience in the planning, design and construction of many municipal engineering projects. Much of his experience has come in the form of structural design support for projects such as Cliff Rose 2 MG Tank. He has worked on multiple water storage tanks as well as other related projects such as post-tension concrete for tennis and pickleball facilities. Mr. Phillps' role on this project will be to provide technical support regarding the tank structural design and to perform QC review services prior to 100% plans.

**Relative Experience:**
Santa Clara South Hills 1 MG Concrete Tank; Kane County Water Conservancy District Tanks (Long Valley 350,000 Gallons, Zion View 350,000 Gallons); Gunlock 200,000 Gallon Concrete Tank; Cannonville 300,000 Gallon Concrete Tank; Little Valley Pickleball Courts; Salt Lake City 11th Avenue Tennis Courts; SUU Tennis & Pickleball Courts

**Education:** M.S. Civil Engineering, Brigham Young University, 2001;

**Years of Experience:** 14 years

**Professional Engineer:** Utah, Arizona, Nevada
NV Water Rights Surveyor No. 1262



## STEVE HANSEN S.E., P.E.

### Structural Design

Steve has extensive experience in the design and analysis of water-related structures, such as culinary water reservoirs and wastewater treatment tanks. He has also managed a variety of culinary water projects that includes construction of concrete storage tanks, including the recent 5.0 MG Tank that is currently being constructed for Herriman City. Steve has been a Project Manager or a key member of the design team for the following tank projects in the past five years:

**Relative Experience:**
Herriman Zone 2 North 5.0 MG Water Storage Tank, Neola Water Tank and Culinary Water System Improvements, Ogden North Storage 4.0 MG and 1.0 MG Tanks, Ogden Water Treatment Plant Reconstruction ACH Contact and Neutralization Tanks, Manila 1.3 MG Culinary Water Tank and Culinary Water Improvements, Hyde Park 1.5 MG Culinary Water Tank, C.C. Cragin Reservoir Water Treatment Plant Flocculation, Surface Water, Clarifier and FEQ Tanks, Stockton Emergency Storage Tank, Greendale Water Treatment Plant Tank, Big Park Wastewater Treatment Tanks

**Education:** M.S. Civil Engineering, Brigham Young University, 2004;
B.S. Civil Engineering, Brigham Young University, 2002

**Years of Experience:** 10 years

**Professional Engineer:** Utah, Nevada, California
S.E. Utah



## ANDY BROWN

### Construction Observer

Mr. Brown has over 19 years of experience with Sunrise Engineering. His involvement helps ensure that materials and workmanship in a given project meet the requirements of the contract documents and specifications; this ensures that the Owner receives a quality product.

**Relative Experience:**
Washington Dam Road 2MG concrete tank; Enterprise 600,000 gallon concrete tank; Orderville 400,000 gallon and 200,000 gallon concrete tanks; Santa Clara South Hills 1MG concrete tank; KCWCD miscellaneous tanks

**Years of Experience:** 19 years



## WAYNE ROGERS, P.E.
### Senior Geotechnical Consultant

**Education:** M.S. Civil Engineering, Brigham Young University, 1990

**Years of Experience:** 25 years

**Professional Engineer:** Utah, Arizona

Wayne has been providing geotechnical engineering expertise in the Southern Utah area since 1995. His experience in the area with regards to hazardous and challenging moisture sensitive soils (collapsible and expansive) has provided expertise on many projects. Wayne has focused on the moisture sensitive soil issues throughout his career starting with his Masters Thesis project in which several publications were written, including the award winning ASCE publication. The vast experience and knowledge of the area has provided quality yet economical solutions to the foundation issues.

**Relative Experience:**

(Rockfall Evaluation) Sentierre Resort, Ivins, Utah, 2014-2015, (Rockfall Evaluation) Tuacahn Center for the Arts, expansion and additions, 2015,Kayenta Water Tank, Ivins, Utah 1999, Santa Clara Water Tank, 2006-2007, CHEN-NORTHERN, INC., Salt Lake City, Utah 1990-1991.Delta Center, Salt Lake City, Utah, Hercules, Subscale Recast Facilities, Magna, Utah, Wyoming/ California 900 Mile Gas Pipeline, Microwave Towers, Compressor Stations and Beaver Dam Wash Crossing.

AGEC
Applied GeoTech

## DOUGLAS HAWKES, P.E., P.G.
### Geotechnical Engineer

**Education:** B.S. Civil Engineering, Brigham Young University, 2002

**Years of Experience:** 34 years

**Professional Engineer:** Utah, Colorado, Wyoming

**Professional Geologist:** Utah, Wyoming

Mr. Hawkes duties include supervising the field exploration, laboratory testing, field observation and testing, engineering analysis and report preparation of geologic and geotechnical investigations. He performs the review of environmental site assessments. Projects include the evaluation of earthquake related hazards, landslide and slope stability, debris flow, rockfall and other geologic hazards in areas of proposed development. Geotechnical studies include commercial, retail and residential buildings, roads, highways, utilities, bridges, dams and other development projects.

**Relative Experience:**

Sentierre Resort- Rockfall Study, 2014, Tuacahn Center for the Arts – Rockfall Study 2015, Tuacahn Water Tank Area – Rock fall Study, 2014, Kachina Cliffs Rockfall Study, 2013, Cottam Cove, Rockfall Study, 2013, Foremaster Ridge, R3 property, Rockfall Study, 2015

SUNRISE
ENGINEERING

September 30, 2015

Chuck Gillette, P.E.
Public Works Director, Ivins City

Re: Fee Proposal for Preliminary and Final Design and Construction Period Services for the Cliff Rose 2 Million Gallon Culinary Water Tank Replacement Project

Dear Chuck and Selection Committee Members,

It is our pleasure to submit this proposal to provide engineering services for the Cliff Rose 2 Million Gallon Culinary Water Tank Replacement. Sunrise understands that Ivins City desires a time-expended based fee with an agreed maximum not to exceed value. We have reviewed the City's template contract for professional services that was provided with Addendum No. 2 and are comfortable with the terms and conditions.

The estimated fees for each major task are summarized in the table below and a breakdown of each subtask is detailed in the attached tables (for Preliminary Design, Final Design, and Construction Period Services), including billing rates and estimated hours required.

| Major Task | Estimated Fee |
|---|---|
| Preliminary Design | $25,400 |
| Preliminary Design Engineering ($14,100) | |
| Geotechnical Report ($4,800) | |
| Rockfall Study ($6,500) | |
| Final Design | $38,700 |
| Construction Period Services | $85,200 |

We would like to thank you again for the opportunity to submit this proposal to the City and for your consideration. We look forward to working with you on this project. Please call us at (435) 652-8450 with any questions or concerns.

Sincerely,

Dustyn Shaffer, P.E.
Principal Engineer
dshaffer@sunrise-eng.com

**CLIFF ROSE 2 MG CULINARY WATER TANK REPLACEMENT PROJECT**
**IVINS CITY**
**PRELIMINARY DESIGN**
Sunrise Engineering Inc.
Project Engineer's Estimate of Civil Engineering Services

| SERVICE TYPE | | | | Preliminary Design Phase | | | | | | | | | HOURS PER CLASS | COST PER CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PHASE | | | | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | | |
| TASK | | | | 0001 | 0002 | 0003 | 0004 | 0006 | 0007 | 0004 | 0004 | 0005 | | |
| TASK DESCRIPTION | | | | Coordination Meetings | Collect/ Review Existing Info | Site & Utilities Investigation | Topo Survey & Surface | Tank Alternative Analysis | Preliminary Design Report | Easement Exhibits | Geotechnical Investigation | Rock Fall Study | | |
| CLASS | TEAM | RATE | BUDGET → | $2,400 | $2,500 | $2,100 | $1,900 | $2,000 | $2,200 | $1,000 | $4,800 | $6,500 | | |
| 103 | Steven Hall | $125.00 | Hours | 8 | 10 | 10 | 6 | 10 | 12 | 4 | | | 60 | |
| | | | Cost | $1,000 | $1,250 | $1,250 | $750 | $1,250 | $1,500 | $500 | | | | $7,500 |
| 104 | Joseph Phillips | $139.00 | Hours | | 2 | | | 2 | | | | | 4 | |
| | | | Cost | | $278 | | | $278 | | | | | | $556 |
| 105 | Dustyn Shaffer | $159.00 | Hours | 8 | 4 | 4 | | 2 | 4 | 1 | | | 23 | |
| | | | Cost | $1,272 | $636 | $636 | | $318 | $636 | $159 | | | | $3,657 |
| 403 | Don Leonard | $85.00 | Hours | | 4 | 2 | 2 | 2 | | 4 | | | 14 | |
| | | | Cost | | $340 | $170 | $170 | $170 | | $340 | | | | $1,190 |
| 52 | Carole Ingalls | $51.00 | Hours | 2 | | | | | 2 | | | | 4 | |
| | | | Cost | $102 | | | | | $102 | | | | | $204 |
| 935 | Andy Brown | $119.00 | Hours | | | | 8 | | | | | | 8 | |
| | | | Cost | | | | $952 | | | | | | | $952 |
| | AGEC (avg rate) | $100.00 | Hours | | | | | | | | 48 | 65 | 113 | |
| | | | Cost | | | | | | | | $4,800 | $6,500 | | $11,300 |
| - | Mileage | $0.59 | Miles | 100 | | | | | | | | | - | |
| | | | Cost | $59.00 | | | | | | | | | | $59 |
| - | Per Diem Meals | $35.00 | Days | | | | | | | | | | - | |
| | | | Cost | | | | | | | | | | | |
| TOTAL | | | HOURS | 18 | 20 | 16 | 16 | 16 | 18 | 9 | 48 | 65 | 226 | $25,418 |
| | | | TASK COST | $2,433 | $2,504 | $2,056 | $1,872 | $2,016 | $2,238 | $999 | $4,800 | $6,500 | | $25,418 |
| | | | ROUNDED | $2,400 | $2,500 | $2,100 | $1,900 | $2,000 | $2,200 | $1,000 | $4,800 | $6,500 | | $25,400 |

**CLIFF ROSE 2 MG CULINARY WATER TANK REPLACEMENT PROJECT**
**IVINS CITY**
**FINAL DESIGN**
Sunrise Engineering Inc
Project Engineer's Estimate of Civil Engineering Services

| SERVICE TYPE | | | | Final Design Phase | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PHASE | | | | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | |
| TASK | | | | 0001 | 0002 | 0003 | 0004 | 0005 | 0006 | 0007 | 0008 | 0009 | 0010 | 0011 | 0012 | 0012 | |
| TASK DESCRIPTION | | | | 60% Design Drawings | 60% Technical Specifications | Structural Design Calculations | Review Meeting #1 w/ City | 95% Design Drawings | 95% Technical Specifications | Contract Documents | Construction Cost Estimate | Review Meeting #2 w/ City | QC Review | Permits | Contractor Pre-Qualification | Bid Period Services | HOURS PER CLASS | COST PER CLASS |
| CLASS | TEAM | RATE | BUDGET → | $11,900 | $2,100 | $3,100 | $1,200 | $8,700 | $1,800 | $900 | $400 | $1,200 | $1,700 | $500 | $1,700 | $3,500 | | |
| 103 | Steven Hall | $125 00 | Hours | 40 | 10 | | 4 | 30 | 8 | 4 | 2 | 4 | 1 | 4 | 8 | 16 | 131 | |
| | | | Cost | $5,000 | $1,250 | | $500 | $3,750 | $1,000 | $500 | $250 | $500 | $125 | $500 | $1,000 | $2,000 | | $16,375 |
| 104 | Steve Hansen | $139 00 | Hours | | | 20 | | | | | | | | | | | 20 | |
| | | | Cost | | | $2,780 | | | | | | | | | | | | $2,780 |
| 104 | Joe Phillips | $139 00 | Hours | 2 | | 2 | | 2 | | | | | 8 | | | | 14 | |
| | | | Cost | $278 | | $278 | | $278 | | | | | $1,112 | | | | | $1,946 |
| 105 | Dustyn Shaffer | $159 00 | Hours | 20 | 4 | | 4 | 12 | 4 | 2 | 1 | 4 | 1 | | 4 | 8 | 64 | |
| | | | Cost | $3,180 | $636 | | $636 | $1,908 | $636 | $318 | $159 | $636 | $159 | | $636 | $1,272 | | $10,176 |
| 403 | Don Leonard | $85 00 | Hours | 40 | | | | 32 | | | | | 4 | | | | 76 | |
| | | | Cost | $3,400 | | | | $2,720 | | | | | $340 | | | | | $6,460 |
| 52 | Carole Ingalls | $51 00 | Hours | | 4 | | | | 4 | 2 | | | | | 2 | 4 | 16 | |
| | | | Cost | | $204 | | | | $204 | $102 | | | | | $102 | $204 | | $816 |
| - | Mileage | $0 59 | Miles | | | | 30 | | | | | 30 | | | | 60 | - | |
| | | | Cost | | | | $17 70 | | | | | $17 70 | | | | $35 40 | | $71 |
| - | Per Diem Meals | $35 00 | Days | | | | | | | | | | | | | | - | |
| | | | Cost | | | | | | | | | | | | | | | |
| - | Misc - Contingency | $100 00 | | | | | | | | | | | | | | | - | |
| | | | Cost | | | | | | | | | | | | | | | |
| TOTAL | | | HOURS | 102 | 18 | 22 | 8 | 76 | 16 | 8 | 3 | 8 | 14 | 4 | 14 | 28 | 321 | $38,624 |
| | | | TASK COST | $11,858 | $2,090 | $3,058 | $1,154 | $8,656 | $1,840 | $920 | $409 | $1,154 | $1,736 | $500 | $1,738 | $3,511 | | $38,624 |
| | | | ROUNDED | $11,900 | $2,100 | $3,100 | $1,200 | $8,700 | $1,800 | $900 | $400 | $1,200 | $1,700 | $500 | $1,700 | $3,500 | | $38,700 |

**CLIFF ROSE 2 MG CULINARY WATER TANK REPLACEMENT PROJECT**
**IVINS CITY**
**CONSTRUCTION PERIOD SERVICES**
Sunrise Engineering Inc.
Project Engineer's Estimate of Civil Engineering Services

| SERVICE TYPE | | | | Construction Administration Phase | | | | | | HOURS PER CLASS | COST PER CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PHASE | | | | 001 | 001 | 001 | 001 | 001 | 001 | | |
| TASK | | | | 0001 | 0002 | 0003 | 0004 | 0005 | 0006 | | |
| TASK DESCRIPTION | | | | Pre-construction Meeting | Support Services (PR, CO, submittals) | Progress Meetings | Construction Inspection | Contract Record Drawings | Close-out and Operating Permit | | |
| CLASS | TEAM | RATE | BUDGET → | $2,700 | $16,600 | $14,600 | $44,300 | $2,700 | $4,300 | | |
| 103 | Steven Hall | $125.00 | Hours | 12 | 80 | 64 | | 6 | 20 | 182 | |
| | | | Cost | $1,500 | $10,000 | $8,000 | | $750 | $2,500 | | $22,750 |
| 105 | Dustyn Shaffer | $159.00 | Hours | 6 | 32 | 32 | | | 6 | 76 | |
| | | | Cost | $954 | $5,088 | $5,088 | | | $954 | | $12,084 |
| 352 | Andy Brown | $79.00 | Hours | 2 | | | 520 | 8 | 2 | 532 | |
| | | | Cost | $158 | | | $41,080 | $632 | $158 | | $42,028 |
| 403 | Don Leonard | $85.00 | Hours | | | | | 16 | 2 | 18 | |
| | | | Cost | | | | | $1,360 | $170 | | $1,530 |
| 51 | Kylie Johnson | $41.00 | Hours | 2 | 12 | 12 | | | 8 | 34 | |
| | | | Cost | $82 | $492 | $492 | | | $328 | | $1,394 |
| 52 | Carole Ingalls | $51.00 | Hours | | 12 | 12 | | | 4 | 28 | |
| | | | Cost | | $612 | $612 | | | $204 | | $1,428 |
| - | Mileage | $0.59 | Miles | 30 | 600 | 600 | 3250 | | 30 | - | |
| | | | Cost | $17.70 | $354.00 | $354.00 | $1,917.50 | | $17.70 | | $2,661 |
| - | Per Diem Meals | $10.00 | Days | | 8 | 8 | 130 | | | - | |
| | | | Cost | | $80 | $80 | $1,300 | | | | $1,460 |
| - | Misc. - Contingency | $100.00 | Cost | | | | | | | - | |
| TOTAL | | | HOURS | 22 | 136 | 120 | 520 | 30 | 42 | 870 | $85,335 |
| | | | TASK COST | $2,712 | $16,626 | $14,626 | $44,298 | $2,742 | $4,332 | | $85,335 |
| | | | ROUNDED | $2,700 | $16,600 | $14,600 | $44,300 | $2,700 | $4,300 | | $85,200 |

# SUNRISE ENGINEERING

## FEE SCHEDULE

## EXHIBIT A

| Work Code | Work Classification | Hourly Rate | Work Code | Work Classification | Hourly Rate |
|---|---|---|---|---|---|
| 101 | Engineer Intern (E.I.T.) I | $89 | 404 | CAD Drafter IV | $95 |
| 102 | Engineer Intern (E.I.T.) II | $99 | 451 | Training Specialist I | $77 |
| 103 | Engineer III | $125 | 452 | Training Specialist II | $91 |
| 104 | Engineer IV | $139 | 455 | Training Specialist | $110 |
| 105 | Engineer V | $159 | 456 | Training Manager | $123 |
| 110 | Principal Engineer | $179 | 460 | Training Director | $154 |
| 121 | Electrical Engineer Intern (E.I.T.) I | $103 | 500 | Funding Specialist | $115 |
| 122 | Electrical Engineer Intern (E.I.T.) II | $113 | 510 | Plan Reviewer | $107 |
| 123 | Electrical Engineer III | $130 | 511 | Building Inspector I | $59 |
| 124 | Electrical Engineer IV | $150 | 512 | Building Inspector II | $82 |
| 125 | Electrical Engineer V | $165 | 513 | Building Inspector III | $102 |
| 126 | Principal Electrical Engineer | $185 | 525 | Building Official | $118 |
| 301 | Engineering Tech I | $69 | 604 | GIS Tech | $83 |
| 302 | Engineering Tech II | $85 | 611 | GIS Specialist | $93 |
| 303 | Engineering Tech III | $99 | 51 | Administrative I | $41 |
| 304 | Engineering Tech IV | $121 | 52 | Administrative II | $51 |
| 311 | Electrical Tech I | $79 | 53 | Administrative III | $66 |
| 312 | Electrical Tech II | $89 | 721 | Water Rights Specialist I | $88 |
| 313 | Electrical Tech III | $99 | 722 | Water Rights Specialist II | $99 |
| 314 | Electrical Tech IV | $109 | 723 | Water Rights Specialist III | $113 |
| 315 | Electrical Tech V | $119 | 930 | Survey CAD Tech | $87 |
| 351 | Construction Observer I | $59 | 935 | One Man Survey Crew | $119 |
| 352 | Construction Observer II | $79 | 940 | Survey Manager | $129 |
| 353 | Construction Observer III | $89 | 945 | Registered Surveyor | $142 |
| 354 | Construction Observer IV | $99 | 950 | Principal Surveyor | $160 |
| 401 | CAD Drafter I | $61 | | | |
| 402 | CAD Drafter II | $71 | | | |
| 403 | CAD Drafter III | $85 | | | |

## REIMBURSABLE EXPENSE SCHEDULE

| Expense | Rate | Mark-Up |
|---|---|---|
| Mileage | $0.59 per mile | N/A |
| Field Vehicle (on site) | $50 per day | N/A |
| Per Diem Meals | $35 per day | N/A |
| Troxler Nuclear Density Gauge | $40 per day | N/A |
| High Density Scanner | $150 per hour | N/A |
| Material Testing Lab Work | Actual Cost | 15% |
| Outside Consultants, Aerial Photography, etc. | Actual Cost | 15% |
| Lodging | Actual Cost | 10% |
| Other Expenses incurred | Actual Cost | 10% |

Fee schedule will automatically change once per year in January, and is subject to change on other occasions. Base 05-2015