JORDAN VALLEY WATER CONSERVANCY DISTRICT

REQUEST FOR STATEMENTS OF QUALIFICATIONS TO PROVIDE PROFESSIONAL ENGINEERING SERVICES FOR THE

CASTO SPRINGS WATER TREATMENT PLANT

Project #4336

September 2025

Summary

Jordan Valley Water Conservancy District (JVWCD) invites you to submit a Statement of Qualifications (SOQ) as defined in this request. SOQs shall be submitted in a sealed envelope to JVWCD's project manager, Conor Tyson, at 8215 S.1300 W., West Jordan, UT 84088, no later than 4:00 p.m. on October 14, 2025, for consideration.

Introduction

JVWCD was created under the Water Conservancy Act as a political subdivision of the State of Utah. JVWCD was organized as a regional water supply agency to develop a water supply for rapidly growing areas outside of the Salt Lake City service area. JVWCD currently serves as a wholesale supplier to 17 member agencies and also operates a retail distribution system in several parts of Salt Lake County. In 2024, JVWCD delivered approximately 115,000 acre-feet of municipal and industrial water to its wholesale and retail customers.

Project Background

JVWCD owns perfected water rights at two natural springs in Holladay, Utah. The flows produced from these springs fluctuate seasonally, peaking between May and June, dropping through summer and autumn, and reducing to minimal flows in winter. In previous studies, these springs were found to be under the influence of surface water, thus requiring treatment before being used in the JVWCD distribution system. The existing facilities convey water from the two springs to a central location. At this time, the spring water is being released into an irrigation canal. This project will treat the spring water to meet water quality parameters established by local, State of Utah, and federal agencies, allowing the water to be used in a culinary system.

Specific Project Information

Casto Spring and Dry Creek Spring are two natural springs occurring in Holladay Utah. Both have similar flow patterns. Combined, they produce an average of 5 MGD in May and June, between 1 and 3 MGD in April, July, and August, and less than 1 MGD the rest of the year. However, spring runoff flows can have high fluctuations from year to year,

with some peak season runoffs creating flows between 6 MGD to 9 MGD, while other years flows do not exceed 3 MGD. Likewise, minimum flows in some years maintain above 1 MGD year-round, while other years have zero flow from October through March.

JVWCD desires to construct a new treatment plant at the site where the piping from the two springs converges at our existing reservoir site located in Holladay, Utah. Space at the site is limited but should accommodate a small treatment facility. JVWCD desires to have a water treatment plant that can treat a peak capacity of up to 5 MGD but enable treatment of the lower flows during the remainder of the year. This treatment plant would need to be operatable fully remotely, with staff available for remote monitoring.

This project was selected to receive funding through the WaterSMART Fiscal Year 2025 Drought Response Project Grant Program being administered through the U.S. Bureau of Reclamation and this grant is currently in pre-award status.

Project Objectives

1. Provide analysis and recommendation, with input from JVWCD Staff, to the appropriate treatment method to properly treat the Casto and Dry Creek Springs water. The analysis should consider cost, effectiveness of treatment technologies, maximizing water delivered to the JVWCD's system, ease of operation, the available footprint, and operation and maintenance costs.

2. Design a water treatment plant according to the JVWCD selected treatment method.

3. Deliver a new water treatment plant which is online and operational by May 2028.

Scope of Work

The general scope of work includes evaluating different options for treating the Casto and Dry Creek Springs water to drinking water standards, working with State regulators and JVWCD. Presenting different options to the District with factors such as cost, constructability, ease of operation, waste streams, and District familiarity to allow the District to select the best option. Designing selected option and performing construction management on plant construction.

1. Pre-Design Phase:

A. Evaluate existing water quality and seasonal quantity of Casto and Dry Creek springs' water to help determine treatment requirements and plant sizing.

B. Coordinate with State of Utah early in pre-design phase to ensure final design meets Utah requirements and standards.

C. Coordinate with Bureau of Reclamation to ensure project meets WaterSmart requirements and maintains required schedule.

D. Assist JVWCD Staff with coordination with the Upper Canal Company.

E. Evaluate different options for pre-filters, factoring seasonality, operability, and sizing constraints.

F. Evaluate different options for primary treatment, including cartridge filters (high flow absolute efficiency polypropylene filters), ultrafiltration systems (Pure Aqua, Wigen, etc.), and any other method likely to meet District needs. Factor in available space for treatment, waste streams, ability to be monitored and not constantly manned, and ability to accept variable flows depending on seasonal water availability.

G. Evaluate different options for primary disinfection including UV, on-site chlorine generation, or hypochlorite. Secondary disinfectant will be hypochlorite.

H. Include geotechnical investigation for new treatment building to ensure feasibility.

I. Evaluate condition of existing collection and conveyance system of spring water to ensure compatibility with new treatment plans.

J. Perform hydraulic analysis to ensure water from springs would successfully travel treatment process and enter water operation system.

K. Perform cost-benefit analysis on different plant sizes, from 1 MGD to 6 MGD to help recommend plant sizing.

L. Prepare a preliminary design technical memorandum reviewing treatment options, estimated costs (construction and O&M), supply lead times, construction, operability, State requirements, and other applicable factors.

M. Prepare for and conduct a review meeting to go over report with District staff and help District select treatment plant for design.

2. Design Phase:

   A. Using the findings of the preliminary design report, prepare drawings and specifications for construction of the new facility.

   B. Prepare mechanical, civil, structural, electrical, and instrumentation drawings for the treatment plant.

   C. Prepare plan, profile, and detail drawings, technical specifications, and bid schedule(s) for the treatment plant. Drawings shall be 11 x17 with a scale not to exceed 1" = 80'.

   D. Include corrosion protection design as needed for any new and existing pipeline and associated facilities.

   E. Attend and conduct design workshops with JVWCD at Preliminary Design, 60%, 90%, and 100% completion.

   F. Provide estimates of probable construction costs at both 60% and 100% submittal stage.

   G. The Senior Reviewer shall attend at least two (2) design review meetings with JVWCD in person.

   H. Review and become familiar with JVWCD's bidding documents, General Conditions and Supplemental General Conditions.

   I. Provide drawings and technical specifications to JVWCD for incorporation into the bidding documents. JVWCD will prepare the bidding documents using its standard front-end documents, General Conditions, and Supplemental General Conditions.

   J. Meet with JVWCD personnel and Utah Division of Drinking Water (DDW) staff at the 30% and 90% design stage to verify compliance of the design with applicable water regulations. Respond as needed to comments from DDW staff and submit final drawings and specifications for plan approval.

   K. Provide assistance during the bidding period including conducting a pre-bid site visit, responding to bidders' questions, issuing Addenda, as required, etc.

L. Assist in the bid opening, review the bids, and recommend an award of contract (within three working days).

M. Prepare conformed drawings and specifications incorporating all addenda material into a conformed drawing set for use during construction.

3. Construction Management Phase:

A. Following an award of construction contract, fulfill the duties and responsibilities of the ENGINEER as defined in JVWCD's construction contract documents.

B. Administer the construction contract:

1) Conduct pre-construction meeting.

2) Review and recommend contractor submittals to JVWCD.

3) Review and recommend contractor progress payments to JVWCD.

4) Review contractor's claims.

5) Recommend change orders, if any, to JVWCD.

6) Conduct project close-out at completion of the work.

7) Conduct a comprehensive inspection with the contractor and JVWCD at substantial completion, final completion, and prior to warranty expiration. Prepare and deliver to JVWCD a written list of observed deficiencies.

C. Perform field services

1) Coordinate materials testing services to be completed by an independent testing firm.

2) Designate a representative to attend bi-weekly progress meetings which are conducted by the Contractor, and document content of progress meetings with minutes.

3) Maintain a photograph history of the project and submit periodic photos to JVWCD during construction.

4) The Engineer shall commit a Project Representative to provide on-site inspection of construction activities to verify compliance with the drawings and specifications for an *estimated* 22 weeks of full-time and 30 weeks of part-time inspection.

D. Documentation and Project Close-out

1) Prepare final record drawings using the contractor's record drawings. Record drawings should be prepared according to JVWCD's Guidelines for Engineering Services (Attachment B).

2) Prepare a photographic history at the end of the project according to JVWCD's Guidelines for Engineering Services.

3) Prepare an Operation and Maintenance manual according to JVWCD's Guidelines for Engineering Services.

Sample Preliminary Schedule

Award of Consulting Contract: on or after November 12, 2025.

Contract Preparation:	28 calendar days
Preliminary Design Phase:	150 calendar days
Design Phase:	
60% Design:	110 calendar days
90% Design:	100 calendar days
100% Design:	60 calendar days
DDW Approval:	during design and bidding
Environmental Assessment:	during bidding
Bidding through NTP:	60 calendar days

Construction Phase:	400 calendar days
Warranty Inspection:	11 months after final completion

Proposers may revise this schedule as necessary to match their work plan.

Statement of Qualification Evaluation

SOQs shall not exceed eight (8) pages in length (excluding covers, tabs, resumes, sample drawings, and references). Two (2) of the eight pages can be printed on 11x17 paper, the remaining pages shall be printed on 8.5x11 paper. Provide four (4) hard-copies and one digital copy of the SOQ for review by the evaluation committee.

The SOQ should include the following information:

- Qualifications: Identify the key members of the team listed by name including role and availability to the project in the format of a Project Team Chart. Indicate the education, experience, expertise, and location of each team member (it is acceptable to provide this in resume format in the appendix). Sample drawing(s) from applicable previous projects may be included in the appendix. Include evidence demonstrating compliance with the Minimum Qualifications section of this Request for SOQ.

- Work Plan: Include a detailed work plan which addresses the scope of the work and identifies key issues. A final agreed upon work plan will be incorporated into Schedule A of the Agreement. Include a project schedule of the key tasks and note the availability of project team members with respect to current workload and project start and completion dates.

  Include with the work plan a table showing the number of hours planned for the key positions for each major work task. Include subtotals of all labor hours for the preliminary design, design, and construction management phase. This information will be used to evaluate the work plan and the level of effort in each phase by the team and the key team members. **Do not include any billing rate or cost information in this work plan table**.

- Past Performance: Provide information about past completed projects which satisfy the Minimum Qualifications requirements. Information about additional completed projects which the Proposer feels would be relevant may also be submitted. The past project performance information shall include:

1. Brief description of project and scope of services performed,
2. Name of owner,
3. Owner contact information (direct phone number preferred),
4. Role which proposed Project Team member(s) fulfilled on past project,
5. Original engineering fee amount,
6. Final engineering fee amount,
7. Original construction or equipment purchase contract amount,
8. Final construction or equipment purchase contract amount,
9. Completion date established in the original construction or equipment purchase contract and actual final completion date.

Incomplete projects (on-going work) may be used but may result in a lower grade for this section in the evaluation phase.

Professional Consulting Services Agreement

Comment on the acceptability of the enclosed Professional Consulting Services Agreement (Agreement) (Attachment A) with attached Schedule B-Requirements for Engineering Services (Attachment B). Any suggested changes to the Agreement must be identified with the proposal (as an attachment), although JVWCD reserves the right to reject any suggestions. No changes will be considered after the proposal due date.

Selection Method

Selection of a consultant will be done on the basis of demonstrated competence and qualification for the type of services required in accordance with the State of Utah's Procurement Code for Design Professional Services (Utah Code Title 63G, Chapter 6a, Part 15).

Minimum Qualifications

Proposers are required to meet the following minimum experience requirements to be considered responsive to the Request for SOQs. Teams with more experience or specifically applicable experience (i.e. treatment plants for springs or other ground water, similarly sized plants using membrane technology) will be rated higher.

- The Project Manager shall have successfully functioned as a Project Manager on at least:
    - Two (2) Drinking Water Treatment Plant Designs or Redesigns.

  - At least one (1) of those treatment plants utilizing membrane technology.
  - The District's definition of a Project Manager is one who coordinated multiple disciplines on a project, IE civil, mechanical, electrical, structural, and instrumentation; one who managed legal and accounting efforts; and one who performed a quality control review of the project personally. The Project Manager shall have served as the engineer of record for the project, including stamping applicable drawings and specifications, unless this is not the policy of the engineering firm completing the project.

- The Project Engineer(s) shall have successfully functioned as a Project Engineer on at least:
  - Two (2) Drinking Water Treatment Plant Designs or redesigns.
  - At least one (1) of those treatment plants utilizing membrane technology.
  - The District's definition of a Project Engineer is one who was directly responsible for one or more disciplines on a project, served as the engineer of record for those disciplines, and stamped applicable drawings and specifications for the project, unless this is not the policy of the engineering firm completing the project.

- The Senior Review Engineer(s) shall have successfully functioned as a Senior Review Engineer, a Project Manager, or a Project Engineer on at least:
  - Five (5) Drinking Water Treatment Plant Designs.
  - At least two (2) of those treatment plants utilize membrane technology.

- The Project Manager and Project Engineer(s) shall be licensed as professional engineers in Utah. The Senior Engineer shall be licensed as a professional engineer.

- The Project Representative shall have functioned in this role for at least:
  - Two (2) drinking water treatment plants.
  - One (1) new building construction.
  - The Project Representative is the representative of the Engineer who is assigned to observe and inspect the performance of the construction work. The Project Representative shall be the

authorized representative of the Owner and the Engineer at the site of the work in all onsite relations with the Contractor.

- The project team and proposed work plan are responsive to the needs of the project and include all the disciplines required by the request for SOQ.

Any proposals not meeting the minimum qualifications may be deemed non-responsive and removed from further consideration.

Evaluation Criteria

An evaluation committee appointed by JVWCD's Chief Engineer will convene to consider all responsive SOQs submitted and to rank the SOQs based on each criterion stated in this section.

Evaluation criteria are assigned a maximum number of points for evaluation purposes with a cumulative total of 100 points. Each SOQ will be evaluated based on the following evaluation criteria:

Evaluation Criteria	**Grade**	**Weight**	**Maximum Points**
1. Demonstrated Qualifications to meet the scope of work:			
a. Firm Resources that satisfy the defined minimum qualifications. Demonstrated availability of firm resources to the project team.	0-5	2	10
b. Project Manager and key team members with the education, expertise, and experience necessary as required for the project.	0-5	5	25
c. Availability of Project Manager and key team members to the project. Current workload with the District may be considered.	0-5	1	5
2. Responsiveness of Work Plan:			

a. Clearly written work plan responding to the requirements of this request which indicates an understanding of the key issues and deliverables required for this project. Higher scores may be given to SOQs which show familiarity with District facilities related to this project or which note suggested revisions to the scope of work which would lead to an enhanced outcome.	0-5	5	25
b. Project schedule which identifies completion dates for key milestones and a final completion date.	0-5	1	5
3. Past Performance:			
a. Positive verified past references for the Proposing Firm indicating successful past performance on similar projects, including projects for JVWCD.	0-5	3	15
b. Positive verified past references for the Project Manager and other key team members indicating successful past performance on similar projects, including projects for JVWCD.	0-5	3	15
Total:			100

Each criterion will be graded on a scale of 0-5 with 5 being the highest grade. The grades will be multiplied by the appropriate weight factor to determine the total score. SOQs shall have a level of effort appropriately matching the requirements, including efforts by key positions. SOQs falling short of an appropriate overall effort and/or effort by key positions may be considered non-responsive. JVWCD reserves the right to reject all SOQs.

Fee Proposal Instructions

A fee proposal will be requested from the firm receiving the highest score. The fee proposal will be due 2 days after it is requested by JVWCD. If JVWCD's procurement officer is unable to agree to a satisfactory contract with the highest scoring design professional, at a price the procurement officer determines to be fair and reasonable to the procurement unit, the procurement officer shall formally terminate discussions with that design professional, and undertake discussions with the second highest scoring, qualified design professional. For additional information, see Utah Code Title 63G, Chapter 6a, Part 15, Section 1505.

The fee proposal shall be provided in a spreadsheet format similar to the sample fee proposal template in Attachment C. If the required information is not present, the fee proposal may be considered non-responsive. The hourly billing rate for each position, number of hours per task by position, and any fees for reimbursable expenses and overhead factors shall be clearly indicated. Proposed hourly billing rate increases, if applicable for multi-year projects, should likewise be clearly indicated.

The total proposed fee for the preliminary design and design phases of the project will be considered a maximum not-to-exceed fee amount. The fees submitted for the construction management phase shall be subject to increase/decrease based upon the actual level of effort needed during construction. It has been JVWCD's experience that more detailed designs result in fewer change orders and issues during construction and thus fewer construction management hours.

Upon execution of the Agreement by both parties, the Engineer will receive authorization to proceed with those services identified in the Agreement. The Engineer must receive prior written authorization before performing any services outside the scope and fee amount identified in the Agreement.

For purposes of preparing the fee proposal make the following assumptions:

1. Design Contingency Budget

    a. Increase by 20% the number of hours to be spent on the Pre-design and Design Phases for the purpose of establishing a Design Contingency. The increase shall be proportional for each position.

    b. This 20% increase shall be included as a separate task and released only with written authorization of the District's Engineering Department Manager in accordance with Schedule B – Requirements for Engineering Services.

2. Construction Phase Level of Effort

    a. See Scope of Work, 3. Construction Management Phase. Please provide comments on the adequacy of the estimated inspection hours and suggest any modifications.

CONFIDENTIALITY: All information, documents, records and paperwork, including but not limited to SOQs, bids, exhibits, or brochures (collectively, the "Paperwork") submitted to the District shall not be regarded by the District as secret or submitted in confidence,

except as otherwise provided in a writing signed by the District. Please do not mark your Paperwork with legends such as “confidential,” or “proprietary,” or “not to be disclosed to third parties.” The District is a Utah local district and is subject to the provisions of the Utah Government Records and Management Act (“GRAMA,” Utah Code Ann. (1953) §§63-2-101 et seq.). Paperwork submitted to the District may be subject to disclosure to third parties under the District’s interpretation of the provisions of GRAMA.

Questions or Suggestions

Proposers may ask questions or make suggestions to JVWCD on any element of this Request for SOQs. Questions or suggestions should be submitted to JVWCD’s Project Manager, Conor Tyson, at 565-4300 or conort@jvwcd.gov

ATTACHMENT A

PROFESSIONAL CONSULTING SERVICES AGREEMENT

PROFESSIONAL CONSULTING SERVICES AGREEMENT
FOR _____
(PROJECT NO. _____)

This Agreement is made as of _____, _____ ("Effective Date"), by and between the Jordan Valley Water Conservancy District, a Utah special district ("District"), and _____ a Utah corporation OPTIONAL WORDING: [a Utah _____/ a (State) _____ _____ authorized to do business and doing business in the State of Utah] ("Engineer").

RECITALS:

A. The District desires to obtain professional engineering services relating to the _____;

B. Engineer represents it has the necessary expertise and experience to perform the services requested by the District and that it is properly qualified and licensed in the State of Utah for this work; and,

C. Engineer has submitted a proposal outlining its proposed scope of activities for performance and completion of the services, and the Engineer is willing to perform the services requested by the District, consistent with the terms of this Agreement.

TERMS:

The parties agree as follows:

ARTICLE I
DEFINITIONS

1.1 Unless the context requires otherwise, the terms defined in this Article shall for all purposes of this Agreement and all schedules, have the following meanings:

1.1.1 Agreement: This Professional Consulting Services Agreement, including attachments.

1.1.2 Contract: The agreement between the District and the Contractor for the provision of labor, materials and equipment for the construction of the Project.

1.1.3 Contract Documents: All documents relating to construction of the Project, issued by or through the Engineer, on behalf of the District to the Contractor, or by the District, including the Notice Inviting Bids,

Instructions to Bidders, Bid, Information Required of Bidder, Bid Bond, Agreement Performance Bond, Payment Bond, General Conditions, Supplemental General Conditions, drawings, specifications, all addenda and change orders executed pursuant to the Contract.

1.1.4 Contractor: The party contracting with the District for the provision of labor, materials and equipment for the construction and quality control of the Project.

1.1.5 Contract Time: The projected date for substantial completion of the Contract.

1.1.6 Engineer's Fee: The Engineer's compensation for performing Services.

1.1.7 Phase: A logically separate aspect of the Engineer's Services on the Project which occurs in sequence or concurrently with other such aspects to allow for the orderly progress and management of the Engineer's Services for the Project.

1.1.8 Project: The Project is described on attached Schedule A.

1.1.9 Project Manager: The individual identified in Schedule D who will administer the performance of the Engineer's Services under this Agreement.

1.1.10 Project Representative: The individual identified in Schedule D who will provide observation and inspection of the construction of the Project. The Project Representative is the sole authorized representative of the District in all on-site relations with the Contractor, except as other properly authorized agents are designated by the Engineer and approved by the District.

1.1.11 Reimbursable Expenses: Non-salary expenditures made by the Engineer, its employees or its sub-consultants when performing services for the Project. Reimbursable Expenses include:

1.1.11.1 Reasonable expenses of transportation, subsistence and lodging when traveling in connection with the performance of services for the Project.

1.1.11.2 Reasonable expenses of long distance or toll telephone calls, telegrams, messenger service, field office expenses, and fees paid for securing approval of authorities having jurisdiction over the Project.

1.1.11.3 Reasonable expenses of all reproduction, postage and handling of drawings, specifications, reports or other Project-related instruments of service of the Engineer.

1.1.11.4 Reasonable expense of computer time as described on attached Schedule E.

1.1.11.5 Other reasonable reimbursable expenses to which the parties subsequently agree.

1.1.12 Hourly Billing Rate: The hourly fee which the Engineer charges for the time expended on the Project. The hourly billing rate shall be considered full compensation for time expended on the Project. Specific hourly billing rates for the Project are identified in Schedule E.

1.1.13 Services or Engineer's Services: The Engineer's duties and responsibilities to the District for professional consulting services as set forth in Article II.

1.1.14 Sub-Consultant: Any registered professional engineer, architect or other specialist engaged by the Engineer in connection with the Project.

1.1.15 Task: An independent and defined service or collection of services to be performed by the Engineer during a Phase(s) of the Project(s), such service or services being more particularly set forth in Schedule A.

1.2 Except where the context otherwise requires, words imparting the singular number shall include the plural and vice versa.

ARTICLE II
ENGINEER'S SERVICES

2.1 Basic Services: The Engineer shall provide the following Services on the Project, as more fully described and set out in Schedule A.

2.1.1 Pre-design Phase: Complete applicable investigations, evaluations, analyses, surveys, and reports.

2.1.2 Design Phase: Complete all necessary drawings and technical specifications for bidding the construction of the Project.

2.1.3 Construction Phase:

2.1.3.1 The Engineer shall assist the District during bidding and

contract execution, administer the Contract, provide field observation and inspection of the Project, and provide management and reporting during the construction phase of the Project.

2.1.3.2 The Engineer shall designate the individuals named in Article IV as Project Manager and Project Representative to be the representatives of the District in its relations with the Contractor, subject to the requirements and limitations set out in the Contract Documents and this Agreement. Other personnel of the Engineer shall be designated as needed to administer the Contract, as further set forth in Section 2.2 and this Agreement.

2.1.3.3 The Engineer shall provide Project representation at the site, as described in Schedule A, in order to provide experienced inspection and observation of the quality and progress of the Contract construction work to verify it complies with the requirements of the Contract Documents, and to advise the District of defects and deficiencies. The Engineer shall direct its efforts toward verifying that the means, methods, techniques or procedures that are specified in the Contract Documents are faithfully observed and followed by the Contractor during construction of the Project, and, except as hereafter provided, that the completed Project conforms to the Contract Documents. The Engineer shall not be responsible for any means, methods, techniques, or procedures of construction selected by the Contractor not specified in the Contract Documents, or for safety precautions and programs incident to the work of Contractor.

2.1.3.4 The Engineer shall have the following powers and is hereby directed to exercise them as in its professional judgment are required to accomplish the above tasks, objectives and responsibilities:

Examine, review and investigate all material, equipment, work and workmanship for compliance with the Contract Documents, including the examination and investigation of plant, mill and shop facilities; require that work done in the absence of observation and examination be removed and replaced under the proper observation and examination; make such examination

and tests, as in its professional judgment are required, to verify that the work is being accomplished in accordance with the Contract Documents; reject work which does not meet the specifications of the Contract Documents and require the Contractor remove and replace such work according to the Contract Documents.

2.1.3.5 If disputes between the Contractor and the District arise, and/or if the Contractor shall file a claim or protest against the District during construction of the Project, the Engineer shall investigate and analyze all such disputes, claims and protests, and attempt to resolve them to the mutual satisfaction of the parties, and failing such resolution, recommend a course of action for the District.

2.1.3.6 The Engineer's recommendation of any payment requested in an application for payment by the Contractor will constitute a representation by the Engineer to the District, based on the Engineer's on-site observations of the Contractor's work in progress as an experienced and qualified design professional and on the Engineer's review of the application for payment and the accompanying data and schedules, that the work has progressed to the point indicated, that to the best of the Engineer's knowledge, information and belief the performance and quality of the work is in accordance with the Contract Documents (subject to an evaluation of the work by the Engineer as a functioning Project upon Substantial Completion as defined in the Contract Documents, to the results of any subsequent tests called for in the Contract Documents, and to any qualifications stated in the recommendation), and that the Contractor is entitled to payment of the amount recommended. However, by recommending any such payment, the Engineer will not thereby be deemed to have represented that the Engineer acted or performed to a standard of care higher than that required of the Engineer under this Agreement and the Contract.

2.2 Guidelines for Basic Services: The Engineer shall perform the Services in conformance with the District's Guidelines for Engineering Services, as set forth in Schedule B, and in conformance with such other guidelines imposed by the District during the progress of the Services, so long as such guidelines are in conformance with standard professional consulting services.

2.3 Additional Services: The District and the Engineer recognize and agree that services not set forth in Schedule A are not covered by the Engineer's Fee and are considered to be additional services. No additional services may be provided by the Engineer, and no compensation shall be paid therefore by the District, except upon written confirmation by the District as an amendment to this Agreement.

Upon request by the District, the following additional services shall be provided by the Engineer:

2.3.1 Perform work resulting from changes in design criteria made in writing at the direction of the District, after acceptance of the criteria by the Engineer;

2.3.2 Prepare applications and supporting documents for government review or action, other than those which may be specified in Schedule A;

2.3.3 Provide additional services required as a result of delinquency or insolvency of one or more of the Contractors; or as a result of damage to the Project caused by fire, flood, earthquake, or other acts of God, wherein damage was not a direct or indirect result of Engineer's negligence or within Engineer's control;

2.3.4 Provide additional services required as a result of strikes, walkouts, or other acts of trade or labor unions;

2.3.5 Provide expert witness testimony or litigation support at depositions, trials, court appearances, and other similar judicial proceedings and cooperate in formulating and responding to interrogatories and other similar discovery methods; and,

2.3.6 Perform any other item of work not specifically mentioned above, and requested by the District in writing.

ARTICLE III
TIME TO COMPLETE

The Engineer's Services, as defined in Article II, shall be completed within the timeframe set forth in Schedule C. Notwithstanding any term or provision of this Agreement to the contrary, all of the Services shall be completed within ___ calendar days after the Effective Date of this Agreement.

ARTICLE IV
ENGINEER'S PERSONNEL

The key personnel identified in Schedule D shall perform the Engineer's Services in the assigned capacities, as shown. Any substitution of key personnel and/or changes in assignments from those shown must be approved by the District in writing before such substitution or change may be made by the Engineer.

ARTICLE V
DISTRICT-FURNISHED SERVICES

5.1 Information: Upon the Engineer's request, the District shall provide to the Engineer or make available for review all information and data contained in record drawings, record documents and other records routinely kept by the District pertaining to the design, construction or operation of its facilities. The District does not warrant the accuracy or completeness of such data and information originating from entities or persons other than the District.

5.2 Review of Documents: The District shall review and consider all sketches, drawings, reports, studies, model results, specifications, bids, proposals, contracts, and other documents submitted by the Engineer relative to Engineer's Services. Whenever prompt action is necessary, the District shall within a reasonable time inform the Engineer of its decision regarding the same so as to not unduly delay the Engineer in its performance according to the schedule set forth in this Agreement.

5.3 Engineer Access: The District shall, at its expense, arrange and make provision for the Engineer's entry and access to such property (public and/or private) as may be necessary to enable the Engineer to perform the Services.

5.4 District Representative: The District shall designate in writing an individual who shall be authorized by the District to act as the District's Representative. The Representative shall have authority to receive reports from the Engineer and give instructions to the Engineer.

OPTIONAL 5.4 District Representative: The District hereby designates and authorizes _____ to act as the District's Representative. The Representative shall have authority to receive reports from the Engineer and give instructions to the Engineer.

5.5 Notifications of Defects: The District shall give written notice to the Engineer whenever the District or its Representative becomes aware of any defect or deficiency in the Engineer's Services.

5.6 Construction Right-of-Way: Where, based upon the Engineer's design work, rights-of-way are required for construction, the District will, at its expense, obtain such rights-of-way, including appraisals and title searches, utilizing descriptions and maps provided by the Engineer.

5.7 Consultation with District: Employees of the District shall be available for consultation with the Engineer at all reasonable times.

5.8 Permit Fees: The District shall pay any required permit fees, charges for plan checking, and any other fees charged by any public agency having jurisdiction over any part of the Project, if such charges are made.

5.9 Legal Opinions: The District shall, at its expense, furnish legal opinions on laws and the interpretation thereof which may affect the Project, if such opinions are judged by the District to be necessary.

ARTICLE VI
COMPENSATION

6.1 Basic Services: The District shall pay to the Engineer as compensation for Services attributable to the Project, the hourly billing rates as set forth in Schedule E multiplied by the number of hours expended on the Project, together with reimbursable expenses attributable to the Project multiplied by ___.

6.1.1 Pre-design and Design Phases: In no event shall the total compensation due the Engineer for the Pre-design and Design Phases, including reimbursable expenses, exceed _____ and ___/100 Dollars ($_____).

6.1.2 Construction Phase: The budget authorized for the Engineer's Services and for reimbursable expenses in the Construction Phase is _____ and ___/100 Dollars ($_____). As work in this Phase reaches seventy-five percent (75%) of the authorized budget set forth in Schedule E, the Engineer shall notify the District, and the Engineer and the District shall thereafter mutually review the extent of work already accomplished, the extent of work remaining to be completed and the past and projected expenses related thereto. At that time, the scope of Services and corresponding compensation for Services for the Construction Phase may be adjusted by the District.

6.2 Additional Services: In the event this Agreement is amended to provide for additional services by the Engineer, the Engineer's compensation for additional services shall be the hourly billing rate multiplied by the hours expended for additional services, and reimbursable expenses attributable to the additional services multiplied by ___.

A summary showing estimated cost data for each additional service requested shall be submitted to the District for approval prior to commencement of work on that additional service. The District shall not be obligated to reimburse the Engineer for costs incurred in excess of the estimated cost set forth in that summary, and the Engineer shall not be obligated to continue work or to incur costs in excess of the estimated cost until the District notifies the Engineer in writing that the estimated cost therefore has been increased. Additional sets of Contract Documents and reduced scale drawings shall be charged at actual cost of printing and mailing.

6.3 Format for Invoices: Invoices for the Engineer's Services and expenses shall be reviewed and signed by the Engineer's Project Manager before being sent to the District. Each invoice shall include the following information:

a. Project Name.

b. Time period of Services (beginning of month to end of month).

c. Current invoice charges, separated into Pre-design, Design and Construction Phases, with the following breakdown:

(i) Charges for Services, further described by:

(1) Employee name.

(2) Hours worked.

(3) Rate charged.

(ii) Reimbursable Expenses:

(1) Description.

(2) Cost.

d. Account summary, including:

(i) Total amount authorized for the Pre-design and Design Phases under this Agreement.

(ii) Total invoiced to date for the Pre-design and Design Phases.

(iii) Total amount authorized for the Construction Phase under this agreement.

(iv) Total invoiced to date for the Construction Phase.

6.4 Progress Payments: The Engineer's invoices for Services performed and for reimbursable expenses shall be delivered to the District after the end of the first calendar month following the Effective Date of this Agreement, and monthly thereafter so long as the Engineer's Services shall continue. The compensation requested on any such invoice shall be itemized to show hourly billing rate multiplied by time charged to the Project and reimbursable expenses which actually were incurred in the month identified in the invoice.

6.5 Payment of Invoice: The amount shown on each invoice for the Engineer's Fee and expenses shall be due and payable by the District after its review and acceptance of the Services itemized in the invoice. The Engineer may levy a simple interest charge of eight percent (8%) per annum on invoice amounts accepted for payment by the District and not paid within forty-five (45) days of the date of delivery of the invoice. Late payments made by the District shall be credited first to accrued interest and then to principal.

6.6 Suspension; Termination: In the event the District fails to submit payment on an invoice within sixty (60) days of the date of delivery to the District of such invoice, the Engineer may, at its discretion and upon ten (10) days written notice to the District, suspend its services or terminate this Agreement.

ARTICLE VII
SPECIAL TERMS AND CONDITIONS

7.1 Documents: All completed original reproducible tracings, survey notes, plans, specifications, reports, engineering calculations, and other original documents prepared by the Engineer in the performance of the Engineer's Services shall be the property of the District, and the Engineer shall, upon the request of the District, deliver such documents to the District. The Engineer may retain and use copies of the documents. The District agrees to hold harmless, indemnify and defend the Engineer against all third party damages, claims, expenses and losses arising out of any reuse by the District of the plans, specifications and documents if the District does not obtain the written authorization of the Engineer for their reuse.

7.2 Governmental Immunity: Except for the District’s obligations of indemnification as set forth in paragraph 7.1, nothing in this Agreement shall adversely affect any immunity from suit, or any right, privilege, claim or defense, which the District or its employees, officers and trustees may assert under state or federal law, including but not limited to the Utah Governmental Immunity Act, Utah Code Ann. (1953)

§§ 63-30-1 et seq. (the “Act”). All claims against the District or its employees, officers and trustees are subject to the provisions of the Act, which Act controls all procedures and limitations in connection with any claim of liability.

7.3 Conflict of Interest: The Engineer shall not establish or otherwise continue any conflict of interest created by virtue of this Agreement, prohibited under state or local laws.

7.4 Termination Prior to Completion: This Agreement may be terminated at any time by the District prior to completion of the Engineer's Services upon written notice to the Engineer. Upon receipt of such notice, the Engineer shall immediately stop any further work in progress, and in such event, the Engineer shall be entitled to payment for all of its Services performed by the Engineer and accepted by the District, to the date of cancellation, and for all work required to organize and deliver to the District the materials developed in the course of the Engineer's Services. Payment shall be due to the Engineer within forty-five (45) days after delivery of such materials and receipt of a verified and itemized invoice therefore.

7.5 Construction Estimates: Estimates of contract time, construction costs and quantities prepared by the Engineer or its employees represent their best professional judgment as design professionals and are supplied for the general guidance of the District. The Engineer does not guarantee the accuracy of such estimates as the Engineer has no control over the cost of labor and material, competitive bidding, or market or other conditions.

7.6 Indemnity and Insurance: The Engineer shall indemnify, and hold the District harmless from any claims under the Workers’ Compensation Act, and from any claims, demands, suits, causes of action, costs, fees, judgments, liability for bodily injury and death, and damages to property, real or personal, to the extent caused by or resulting from breach of contract, negligence, recklessness or intentional misconduct by the Engineer or by the negligence of the Engineer’s subconsultants, in the performance of the Engineer's Services under this Agreement. During the course of this Agreement, and for a period of four (4) years following Substantial Completion of the Engineer’s Services under this Agreement, the Engineer shall maintain both professional errors and omissions liability insurance and general commercial liability insurance providing coverage for all liability arising out of the performance of Services in connection with the Project and this Agreement. The liability insurance required shall include "prior acts" coverage for all services rendered for the Project and shall be written with a limit of liability of $500,000.00 per claim and a Project aggregate of $1,000,000.00.

7.7 Interpretation: Except as otherwise noted, releases from liability, indemnification against liability, limitations on liability, assumptions of liability and limitations on remedies which may be expressed in this Agreement, shall apply to all possible claims and/or causes of action, including but not limited to those arising under common law, equity, statute, contract, tort or otherwise.

ARTICLE VIII
GENERAL TERMS AND CONDITIONS

8.1 Standards of Performance: The Engineer shall perform its Services in a manner consistent with the professional skill and care ordinarily provided by other design professionals with the same or similar professional license, providing the same or similar design professional service in the same or similar locality at the same or similar time under the same or similar circumstances.

8.2 Force Majeure: Neither party shall hold the other responsible for damages or delays in performance caused by acts of God, strikes, lockouts, accidents, acts of any governmental entity having jurisdiction over the parties and/or the subject matter of this Agreement (other than those governmental entities named as parties or beneficiaries to this Agreement), or other events beyond the reasonable control of the other or the other's employees and agents. In the event either party claims that performance of its obligation is prevented or delayed by such cause, that party shall promptly notify the other party of that fact and the circumstances preventing or delaying performance.

8.3 Assignment: Neither the District nor the Engineer shall delegate and/or assign their respective duties and/or rights under this Agreement without the prior written consent of the other. The Engineer may subcontract, however, portions of the Services as it deems necessary to efficiently accomplish the Basic Services. Nothing in this paragraph shall release the Engineer from full compliance with the terms and conditions of Article IV.

8.4 Severability; Waiver: In the event a court, governmental agency or regulatory agency with proper jurisdiction determines that any provision of this Agreement is unlawful, that provision shall terminate. If a provision is terminated, but the parties can legally, commercially and practicably continue to perform this Agreement without the terminated provision, the remainder of this Agreement shall continue in effect. One or more waivers by either party of any provision, term, condition or covenant shall not be construed by the other party as a waiver of any subsequent breach of the same by the other party.

8.5 Governing Law: This Agreement shall be governed by, construed and enforced according to the laws of the State of Utah.

8.6 Merger; Amendments: This Agreement and the Contract Documents, including all amendments, represents the entire and integrated agreement between the District and the Engineer, and supersedes all prior negotiations, representations or agreements, whether written or oral, regarding the subject matter contained in this Agreement. The Agreement may be amended only by written instrument executed by all parties.

8.7 Attorney's Fees: In the event of a default or breach of this Agreement, the defaulting party agrees to pay all costs incurred by the non-defaulting party in enforcing this Agreement or in obtaining damages, including reasonable attorney's fees, whether incurred through legal proceedings or otherwise.

8.8 Notice: Any formal notice required to be given under this Agreement shall be deemed given when hand-delivered or when sent by registered or certified mail, return receipt requested, to the parties at their respective addresses stated below or to any other address after notice of such change of address has been given to the parties.

8.9 Third Party Beneficiaries: Nothing contained in this Agreement shall create a contractual relationship with a cause of action in favor of a third party against either the District or the Engineer. The Engineer's Services under this Agreement are being performed solely for the District's benefit, and no other entity shall have any claim against the Engineer because of this Agreement or the performance or non-performance of Services hereunder. The District agrees to use reasonable efforts to include a provision in all contracts with other contractors and other entities involved in the Project to carry out the intent of this paragraph.

"District":	"Engineer":
Jordan Valley Water Conservancy District 8215 South 1300 West West Jordan, Utah 84088	_____ _____ _____
By: _____ Alan E. Packard Its General Manager/CEO	By: _____ [Name] Its _____

SCHEDULE A

SCOPE OF WORK

SCHEDULE B

GUIDELINES FOR ENGINEERING SERVICES

SCHEDULE C

TIME TO COMPLETE

SCHEDULE D

ENGINEER'S PERSONNEL

SCHEDULE E

COMPENSATION

ATTACHMENT B

SCHEDULE B - GUIDELINES FOR ENGINEERING SERVICES

SCHEDULE B
REQUIREMENTS FOR ENGINEERING SERVICES

1. CONTINGENCY FUNDS

A. Design Contingency funds shall not be utilized without prior authorization by the District. The use of Design Contingency funds shall be authorized in writing by District management on a task by task basis.

2. PRE-DESIGN/DESIGN PHASE

B. DRAWINGS

1.1 Computer-Aided Drafting (CAD) shall be used to prepare construction drawings. The drawings shall be delivered to the District in electronic form (AutoCAD 2016 or more recent) and hard copy on 11 x 17 paper.

1.2 Document Format:

a. Electronic documents shall be prepared in the following versions:

i. Spreadsheets in Excel version 2013

ii. Word processing in Word version 2013

iii. Presentations in PowerPoint version 2013

1.3 The cover sheet shall not include approval signatures from the District, although names of District officers may be printed.

1.4 The drawings shall be submitted to the District for its review and comment in accordance with paragraph E of this schedule, “Review of Contract Documents.”

1.5 All drawings shall show the District’s assigned Project number in the lower, right hand corner of the sheet.

2.1 Bidding and Contractual Documents: The Engineer shall provide Project-specific information to the District for completion of the District's standard bidding and contractual documents identified below. The Engineer shall provide the bid schedule to the District in hard copy and electronic format (Microsoft Word). The District shall print the documents. The following paper colors and format shall be used by the District when printing these documents:

2.1.1	Title Page	Single, Sided, White
2.1.2	Table of Contents	Double-Sided, Yellow
2.1.3	Notice Inviting Bids	Double-Sided, White
2.1.4	Instructions of Bidders	Double-Sided, White
2.1.5	Bid	Single-Sided, Blue
2.1.6	Bid Bond	Single-Sided, Blue
2.1.1	Information Required of Bidder	Single-Sided, Blue
2.1.2	Agreement	Double-Sided, White
2.1.3	Performance Bond	Single-Sided, White
2.1.4	Payment Bond	Single-Sided, White
2.1.5	Notice of Award	Single-Sided, White
2.1.6	Notice to Proceed	Single-Sided, White
2.1.7	Payment Application	Single-Sided, White
2.1.8	Change Order	Single-Sided, White
2.1.9	Contractor's Certificate of Substantial Completion	Single-Sided, Purple
2.1.10	Contractor's Certificate of Final Completion	Single-Sided, Purple
2.1.11	Consent of Surety for Final Payment	Single-Sided, Purple
2.1.12	Affidavit of Payment	Single-Sided, Purple

2.2 General and Supplemental Conditions: The District will provide General and Supplemental General Conditions; to be printed on green and yellow paper, respectively.

2.3 Technical Specifications:

2.3.1 The Engineer shall prepare technical specifications in electronic form (Microsoft Word). The technical specifications shall be delivered to the District prior to the bidding in electronic form and single-sided on 8 ½ x 11 white paper.

2.3.2 The draft sets of technical specifications shall be submitted to the District for its review and comment in accordance with paragraph E of this Schedule.

2.3.3 The technical specifications shall include, but not be limited to, the following General "Divisions."

2.3.3.1 General Requirements of the Work.

2.3.3.2 Contract Submittals – Include Submittal procedures requirements for equipment shop-drawings, record drawings, and submission of technical O&M manuals, spare parts lists, etc., prior to final payment.

2.3.3.3 Quality Control, Inspection, Testing.

2.3.3.4 Protection and Restoration of Existing Facilities.

2.3.3.5 Equipment Testing and Startup – Include requirements for testing, startup, certification of installation, and training of District personnel by manufacturer's representative for complex equipment.

2.3.3.6 Project Closeout Procedures and Requirements – These procedures and requirements must match the requirements, in the District's General Conditions.

2.3.3.7 Measurement and Payment – This should be explained in a separate section, or in each work item section of the technical specification.

2.3.3.8 Field Staking and Surveying – Include defining whether the Engineer or Contractor shall be responsible for field surveying and staking.

2.4 Addenda: If addenda are to be issued, each addendum will be prepared by the Engineer. The addendum will be approved, signed, and delivered by the District.

C. DOCUMENT BINDING REQUIREMENTS

3.1 With the exception of 11x17 drawings, all documents produced by the Engineer shall be bound in a three ring binder. This shall include pre-design reports, final reports, operation and maintenance manuals, etc. Drawings may be comb-bound during bidding and construction. As-constructed drawings shall be (1) comb-bound and (2) folded and included in three ring bound operation and maintenance manuals.

D. DESIGN REQUIREMENTS

4.1 All engineering designs shall include the following elements.

4.1.1 Adequate seismic bracing/anchorage of piping and equipment.

4.1.2 Provision of flexibility for differential settlement where buried piping and/or electrical conduit penetrates concrete vaults or basements.

4.1.3 All other standard engineering design issues shall be addressed.

E. REVIEW OF DRAWINGS AND TECHNICAL SPECIFICATIONS

5.1 The Engineer shall prepare one electronic set (PDF) and one photo copy ready paper set of drawings and technical specifications for review by the District.

5.1.1 Review documents shall be provided at the following minimum progress landmarks: ten percent (10%), thirty percent (30%), fifty percent (50%), ninety percent (90%) and one hundred percent (100%). If specified in the Scope of Work (Exhibit A) more landmarks may be required. A two-week minimum review period shall be allowed for review of the drawings and technical specifications at each progress landmark. At each progress landmark the Engineer shall

meet with the District for two to four hours to receive its comments and direction.

5.1.2 The Engineer shall return to the District, with each subsequent specification to be reviewed, all documents reviewed by the District during the previous submittal.

F. RIGHT-OF-WAY DESCRIPTIONS

Unless otherwise specified by the District, the Engineer will prepare legal descriptions for right-of-way to be acquired by the District from ownership plats and deeds, rather than by the actual survey. The District will prepare easement and other documents, utilizing legal descriptions prepared by the Engineer. Legal descriptions shall be in a metes and bounds format acceptable to the local County Recorder, which may record the document(s).

3. CONSTRUCTION SERVICES PHASE

A. PROJECT PERSONNEL

1.1 Engineer: The Engineer shall represent and perform Engineering Services for the District within the scope of authority delegated to it by the District as described in this Schedule B.

1.2 The Engineer will appoint, subject to the District's approval, the following personnel:

1.2.1 Project Manager: The individual designated by the Engineer and approved by the District to oversee and manage the administration of the Contract. The Project Manager shall supervise the Project Representative; alternatively, the Project Representative may also serve as the Project Manager as provided in Article IV of the Agreement.

1.2.2 Project Representative: The individual of the Engineer's firm appointed as Project Representative will be the Engineer's chief representative in all construction site relations with the Contractor and will have all authority and responsibility as set forth in the District's General Conditions of the Contract.

1.2.3 Other Personnel: The Project Manager may assign, and will supervise, such portions of contract administration

duties as he deems necessary, such as reviewing submittals, performing design changes, and substituting for the Project Representative on the construction site during brief absences of the appointed Project Representative. During brief absences of the assigned Project Representative the Project Manager will first send written notice to the Contractor and will notify the District.

B. CONTRACT EXECUTION ASSISTANCE

2.1 The District will issue the Notice of Award and Notice to Proceed to the Contractor.

2.2 Following Contract execution by the District, fully executed Contracts will be distributed by the District as follows:

District	One (1) Set
Contractor:	One (1) Set
Engineer:	One (1) Set

These three (3) sets will be bound in three-ring binders.

C. PRE-CONSTRUCTION CONFERENCE

3.1 The Project Manager and Project Representative shall familiarize themselves with the District's General Conditions of the Contract.

3.2 The Project Manager will prepare a Pre-Construction Conference agenda, and conduct such a conference with the Contractor and applicable third parties at the District's office or on-site. The Project Representative and District Representative shall be present. The agenda should cover the key points of the Contract Documents, including the General Conditions of the Contract, as well as other Project administration matters.

D. SUBMITTAL/SUBSTITUTIONS

4.1 The Project Manager shall review, process, and recommend approval/disapproval of Contractor submittals and substitution requests. Copies of each Contractor submittal and substitution request shall be sent to the District, together with the Project Manager's recommend action.

The District will direct the Engineer to approve/disapprove each submittal and substitution request.

E. INSPECTION/TESTING

5.1 The Project Representative will make all on-site inspections, with the general frequency and duration as directed by the District.

5.2 The Project Representative is authorized to order such tests as he deems necessary for proper administration and inspection of the Project, however, with respect to any such test to be performed by independent firms presently contracting directly with the District, the firm so contracting will be designated by the District to perform the tests. Reports of all test results, or test summaries, shall be submitted to the District by the Project Representative.

5.3 The Project Representative shall keep a daily written log of construction activities at the site during each visit. Copies of the daily log shall be sent to the District on a monthly basis.

5.4 The Project Representative's daily log shall include a comment of whether or not any event or circumstance has developed in the Contract or Project, which in the Project Representative's professional judgment may lead to a claim or protest from the Contractor. The Project Representative shall notify the District immediately of such an event or circumstance, receipt of a written claim or protest, or his becoming aware of events which may lead to such a claim, from the Contractor.

5.5 The Project Representative shall send to the District copies of notes from telephone calls or meetings with the Contractor that, in the opinion of the Project Manager, are significant.

5.6 The Project Representative shall take digital photographs of the construction in progress during each phase of the work. The Project Manager shall prepare a photographic history of the work as described in paragraph 10.3. The format of the digital photographs shall be in accordance with paragraph 10.3. Photographs shall be submitted periodically to the District during the construction phase of the work.

F. CHANGES IN THE WORK

6.1 Field Order: The Project Representative is authorized to, and shall issue all field orders in writing, as described in Article 1.14 of the General Conditions of the Contract. The Project Representative shall submit a copy of each field order to the District.

6.2 Change Orders: The Project Representative and Project Manager are not authorized to approve Change Orders. Change orders may be initiated by the District, by recommendation from the Project

Manager, or by claim of changed conditions by the Contractor. Change orders will be initially reviewed by the Project Manager, then forwarded with a recommendation to the District. The District shall consider if the recommendation is consistent with the Contract Documents, and if acceptable, the District will prepare the change order form for approval by the authorized District staff.

6.3 Emergencies: The District acknowledges that in emergencies immediately affecting the safety or protection of persons or property affected by the construction activities, the Contractor, without special instruction or authorization from the Project Representative or the District, is obligated to act to prevent threatened damage, injury or loss. The Contractor shall give the Project Representative prompt written notice of any significant changes in the Contract construction or deviations from the Contract Documents caused thereby.

G. PROGRESS MEETINGS

7.1 The Project Representative and/or the Project Manager shall attend progress meetings conducted by the Contractor, and shall document the content of the meetings with minutes. Progress meetings will be scheduled at a location and frequency suitable to the project needs. A District Representative will normally attend these meetings.

H. PROGRESS PAYMENTS

8.1 The Project Representative shall receive applications for payment from the Contractor, review and recommend the applications by signature. The Project Representative's signature recommending a progress payment shall constitute the verification of the representations required by the Agreement and the Contract.

8.2 The Project Manager will review the applications, approve them by signature, and submit them to the District within five business days of receipt from the Contractor.

8.3 Each application for payment shall contain the Contractor's certification and signature substantially in conformance with the following:

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that: (1) all previous progress payments received from Owner on account of Work done under the

Contract referred to herein have been applied to discharge in full all obligations of Contractor incurred in connection with Work covered by prior Applications for Payment numbered 1 though ____ inclusive; and (2) title to all materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all liens, claims, security interests and encumbrances (except such as covered by bond acceptable to Owner).

_____

Contractor (Name of Sole Ownership, Corporation or Partnership)

_____

Signature of Authorized Representative

_____ _____

Title Date

8.4 In accordance with State Law, the District will retain 5% of progress payments until the final payment and final completion of the Project.

4. PROJECT CLOSEOUT

1.1 The Project Manager shall be responsible to see that closeout procedures and documents, as specified in the District's General Conditions, are carefully observed. The following standard District forms, or similar forms of the Engineer acceptable to the District, will be used.

1.1.1 Contractor's Certificate of Substantial Completion

1.1.2 Engineer's Notice of Substantial Completion

1.1.3 Contractor's Certificate of Final Completion

1.1.4 Engineer's Notice of Final Completion

1.1.5 Consent of Surety for Final Payment

1.1.6 Affidavit of Payment (from Contractor)

1.2 The Project Manager will submit original copies of the Contractor's Certificates of Substantial and Final Completion to the District.

1.3 The Project Manager shall prepare and sign the Engineer's Certificate of Substantial Completion, a copy of which is attached.

1.4 The Project Manager will prepare, sign and submit the Engineer's Notice of Final Completion, together with the Final Payment application and all submittals required from the Contractor, when he is satisfied the work is complete. A copy of the Engineer's Notice of Completion is attached. The District's acceptance, as Owner, of the Notice of Final Completion will be evidenced by its making final payment.

5. OPERATION AND MAINTENANCE MANUAL

1.1 The Project Manager shall prepare an Operation and Maintenance Manual ("O&M Manual") for the Project. The O&M Manual shall be completed within seven (7) calendar days of Substantial Completion of the work. The intent for the O&M Manual is to be a reference for unfamiliar users of the Project facilities to become familiar with the operation of the facilities, receive direction on how and when to maintain the facilities, and be able to locate technical support reference when necessary.

The District wishes to have the O&M Manual in electronic format as much as possible. Although certain formats of electronic documents are defined in this Agreement, the District recognizes that technology will change and improve over time and encourages the Project Manager to look for creative ways of providing O&M Manuals in electronic versions as much as possible. For example, the Project Manager could require the Contractor to submit O&M Manual information in HTML, PDF or another universal standard electronic format that could be easily accessed by the District in the future.

The format of the O&M Manual shall be as follows:

<u>Volume I (By Engineer)</u>:

Section 1: Description of Facilities, Typical Operating Conditions, Standard Operating Procedures
Section 2: Description of Proper Maintenance Activities
Section 3: List of Equipment and Suppliers
Section 4: Contract Documents and Specifications
Section 5: Record Drawings (see 10.2)
Section 6: Project Photo Log (see 10.3)
Section 7: Other Pertinent Documents
Section 8: Compact Disc

Volume II (By Contractor):

Section 7: Shop Drawings
Section 8: Manufacturer's Literature and Operations & Maintenance Manuals

All the information in Volume I shall be in an electronic format as well as in paper format.

Unless specifically identified in the request for proposal, the Project Manager shall supply four (4) copies of the O&M Manual complete with electronic versions of information contained in the O&M Manual and one (1) additional copy of the electronic information.

1.2 The Project Manager will revise the original drawings to reflect record conditions, from the Contractor's marked-up record drawings and the Project Representative's inspection notes, sign and stamp them as follows:

JVWCD RECORD DRAWINGS:

Revisions drawn by _____ Date: _____

This record drawing has been prepared to reflect conditions as actually constructed, from records compiled during construction by the Contractor and the Engineer.

_____ _____
Project Manager Date

The record drawings are not intended to show in detail the exact location of minor/latent detail of construction. Instead, they are intended to represent as-built conditions in as much detail as practical and available, and to document substantial changes from the original design. The District recognizes that much of the information required to prepare the record drawings is compiled by the Contractor or others during construction, and therefore holds the Engineer harmless from any errors or omissions which may be incorporated into the drawings as a result.

The record drawings will be delivered to the District following Project completion. The record drawings shall be submitted in electronic ((a) AutoCAD 2016 or more recent and (b) PDF format) and (c) paper (11x17) format.

1.3 The Project Manager shall submit the complete photo history of the Project compiled during construction. The photo history shall be in electronic and paper formats. Both versions shall contain all photographs in chronological order with a date and caption below each photo.

The electronic version shall contain 4” x 6” photos in a JPEG format with a resolution of 150 dots per inch (DPI) or higher. If compressed the compression must be a high quality compression.

The paper version shall contain thumbnail-size photographs with no more than twelve (12) photos per 8-1/2” x 11” page.

ENGINEER'S NOTICE OF SUBSTANTIAL COMPLETION

OWNER ENGINEER

TO: Jordan Valley Water
Conservancy District
8215 South 1300 West
P. O. Box 70
West Jordan, UT 84088-0070

PROJECT NAME: _____

Date of Notice to Proceed: _____ Contract Time: _____
Calendar Days _____

In response to Contractor's Certificate of Substantial Completion dated: _____

This Certification of Substantial Completion applies to all work under the Contract Documents or to the following specified parts thereof:

The work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor and Engineer, and that work is hereby declared to be substantially complete in accordance with the Contract Documents on:

Date of Substantial Completion: _____, 20___.

A list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of the Contractor to complete all the work in accordance with the Contract Documents. In accordance with the General Conditions, the items in the list shall be completed or corrected by the Contractor within 45 days of the above date of Substantial Completion.

Marked-up record drawings and operation and Maintenance technical information has been received from the Contractor.

The recommended responsibilities between the Owner and the Contractor for security, operation, safety, maintenance, heat, utilities and insurance, if any, shall be as follows:

Owner: _____
_____
_____

Contractor: _____
_____

ENGINEER'S NOTICE OF SUBSTANTIAL COMPLETION (Continued)

The following documents are attached to and made a part of this Certificate:

_____

_____

Execution of this Certificate by the Engineer extends the Contractor's release of claims against the Owner to the date of execution hereof, in accordance with Article 14.08 of the General Conditions, except for written claims filed prior to date of execution, of which the following, if any, are known to the Engineer:

_____

_____

Executed by the Engineer on _____, 20___.

_____	_____
Project Representative	Signature
_____	_____
Project Manager	Signature

The Contractor hereby acknowledges receiving this Certificate of Substantial Completion.

_____

Contractor (Name of Sole Ownership, Corporation or Partnership)

_____

Signature of Authorized Representative

_____	_____
Title	Date

(Engineer shall submit to the Owner a copy with the Contractor's signature following the Contractor's receipt.)

JORDAN VALLEY WATER CONSERVANCY DISTRICT

ENGINEER'S NOTICE OF FINAL COMPLETION

OWNER ENGINEER

TO: Jordan Valley Water
Conservancy District
8215 South 1300 West
West Jordan, UT 84088

PROJECT NAME: _____

Date of Notice to Proceed: _____

In response to Contractor's Certificate of Final Completion dated: _____

On the basis of our observation of the work during construction and final inspection, and on our review of the Contractor's application for final payment and accompanying documentation, we are satisfied that the Contractor has fulfilled all his obligations under the Contract Documents requisite to final payment.

The following remaining minor deficiencies in the work are recommended to be exempt from final payment, in accordance with Article 14.09 of the General Conditions of the Contract. Recommended completion time limits, extended warranty requirements, and the value of these exempt deficiencies are listed below:

DEFICIENCY	COMPLETION TIME	VALUE

The Contractor's application for final payment together with the following contractor submittals, which comprise all final submittal requirements under the Contract Documents, are submitted herewith:

1. Affidavit of Payment from the Contractor.

2. Consent of Surety for final payment.

The date of our satisfactory final inspection was _____, 20___. This date marks the beginning of the one-year Maintenance and Guarantee period, in accordance with Article 13.01(B) of the General Conditions of the Contract.

Acceptance of final payment by the Contractor shall be a release of claims against the Owner in accordance with Article 14.12 of the General Conditions of the Contract. Acceptance of this Notice of Completion by the Owner makes the Contractor's release effective on the date of execution hereof by the Engineer, excepting written claims filed by the Contractor prior to said date of execution of which the following are known to the Engineer:

_____

_____

Is the Engineer aware of any unresolved liens against the Contractor from suppliers or subcontractors?

☐ Yes ☐ No

Unresolved Liens (If Applicable):

_____

_____

_____

Executed by the Engineer on _____, 20___.

_____	_____
Project Representative	Signature
_____	_____
Project Manager	Signature

ATTACHMENT C

SAMPLE FEE PROPOSAL

Project Name
Fee Proposal Template Example

Client: Jordan Valley Water Conservancy District ***Firm Name:***

Date:

Tasks	Project Manager (Name)	Project Engineer (Name)	Project Rep. (Name)				Total Hours	Cost By Task
Team Member	$_____/hr	$_____/hr	$_____hr	$_____/hr	$_____/hr	$_____/hr		
Pre-Design Phase								
1.								
2.								
							Subtotal:	
Design Phase								
1.								
2.								
							Subtotal:	
Total Hours by Team Member								
							TOTAL PRE-DESIGN/DESIGN COST	$
							20% CONTINGENCY	$
Construction Phase								
1. Bidding Support								
2. Construction Management								
3. Documentation								
							Subtotal:	
Total Hours by Team Member								
							TOTAL CONSTRUCTION MANAGEMENT COST	$
Direct Charges:								
							TOTAL DIRECT CHARGES	$
							TOTAL FEE	$

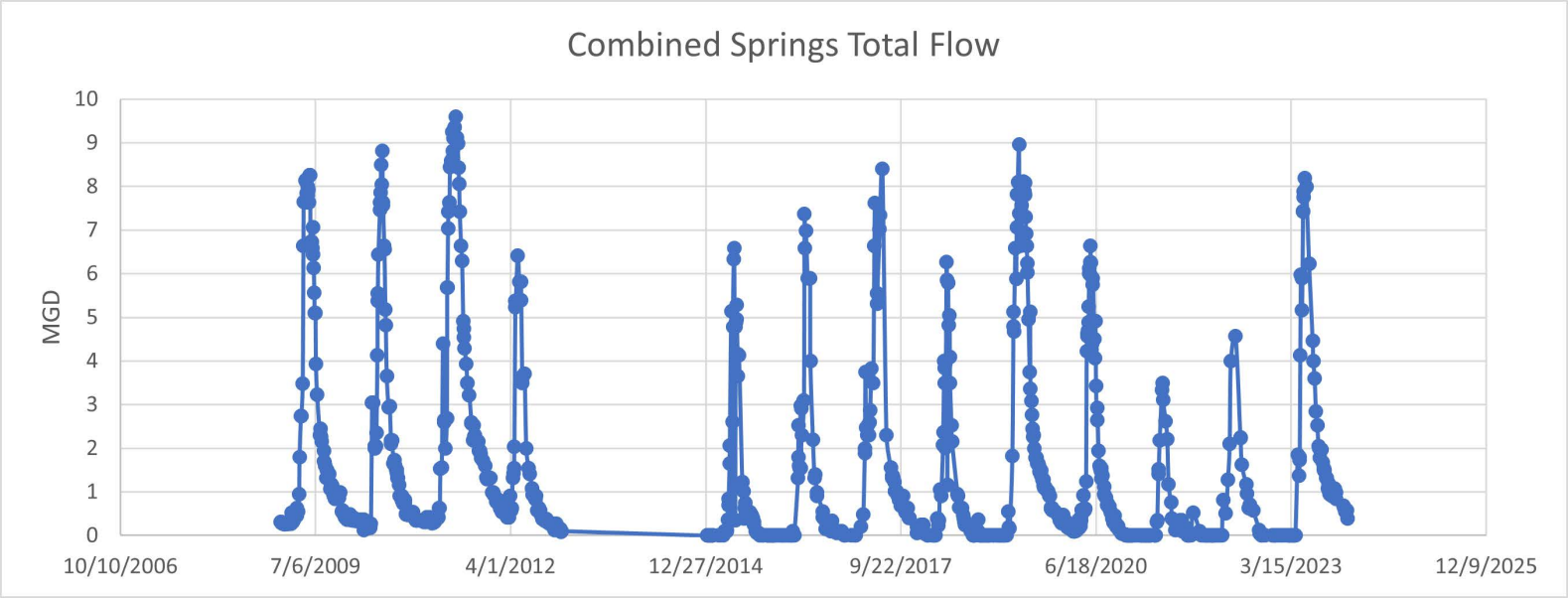
_____
Principal's Name

_____
Principal's Signature

_____
Date

APPENDIX A

Springs Flow Data


Combined Springs Total Flow
MGD
10
9
8
7
6
5
4
3
2
1
0
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025

APPENDIX B

Springs Laboratory Water Quality Data

April

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
4/3/2024	171	529.9	264	7.55	366.7	12.2	0.42	1	<1	0.525	0.013
4/10/2024	170	499	249	7.14	344	11.3	0.77	2	<1	1.34	0.02
4/17/2024	150	364	260	7.9	246	11.1	6.63	18.7	<1	1.74	0.049
4/24/2024	128	295.6	360	7.4	194.7	11.3	17.1	26.2	<1	2.09	0.061

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
4/3/2024	172	528	214	7.58	366.5	11.2	0.3	3.1	<1	0.561	0.014
4/10/2024	169	526	241	7.39	362	11.3	0.63	7.4	<1	0.845	0.02
4/17/2024	150	349	550	7.91	235	10.9	6.8	18.5	<1	1.81	0.05
4/24/2024	127	298.3	346	7.3	196.6	11.5	17.3	25.9	<1	2	0.061

May

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
5/1/2024	111	250.4	243	7.59	166.7	9.8	6.54	17.5	<1	2.14	0.073
5/8/2024	112	262.1	309	7.68	174.8	9.5	4.2	33.1	<1	1.79	0.058
5/15/2024	112	281.8	343	7.16	186.8	10.7	7.13	44.8	<1	1.81	0.059
5/22/2024	94	211.7	279	7.72	141.5	8.7	9.91	35.5	<1	1.9	0.078
5/29/2024	101	234.6	245	7.79	155.4	12.6	4.96	26.2	<1	1.63	0.055

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
5/1/2024	111	251.9	244	7.61	167.4	10.4	6.52	18.7	<1	2.16	0.072
5/8/2024	113	262.1	304	7.71	174.5	9.9	4.02	37.3	<1	1.81	0.053
5/15/2024	112	262.2	364	7.42	171.3	10	7.74	83.3	<1	1.81	0.059
5/22/2024	94.4	212.9	292	7.69	142.3	8.2	9.71	35.5	<1	1.93	0.08
5/29/2024	102	231.5	255	7.8	153.7	11.6	5.19	19.9	<1	1.64	0.061

June

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
6/5/2024	89.5	212	193	7.67	140	9.4	7.2	37.4	1	1.79	0.075
6/12/2024	92.3	218.2	284	7.09	142	9.9	6.8	23.3	1	1.76	0.072
6/19/2024	112	263.9	258	7.64	175.3	12.8	4.4	57.3	1	1.32	0.05
6/26/2024	127	326.7	270	7.68	220.9	11.8	3.37	22.8	<1	1.03	0.031

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
6/5/2024	90	211	194	7.75	139	9.5	7.02	27.2	2	1.83	0.076
6/12/2024	92.5	217.4	305	7.33	142.2	9.6	8.12	28.8	<1	1.83	0.071
6/19/2024	112	261.8	250	7.69	174.2	11	4.31	48	2	1.36	0.049

6/26/2024	128	327.8	284	7.71	221.9	12.8	2.96	18.7	<1	1.04	0.03

July

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
7/2/2024	132	367.1	160	7.47	244.7	11.1	2.7	28.2	<1	0.849	0.024
7/10/2024	144	401.3	330	7.54	269.8	13.5	1.38	17.5	<1	0.731	0.017
7/17/2024	152	428.3	150	7.37	291.2	12.3	1.04	15.8	<1	0.568	0.015
7/22/2024	156	445.6	135	7.54	302.9	12.4	0.84	13.2	<1	0.582	0.011
7/31/2024	160	467.2	274	7.71	319.9	16.9	0.66	8.6	<1	0.576	0.013

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
7/2/2024	134	366.3	154	7.22	246.1	11.3	2.2	18.9	<1	0.851	0.025
7/10/2024	145	401.2	334	7.56	271.3	12.4	1.19	18.5	<1	0.726	0.017
7/17/2024	152	430.3	190	7.51	292.2	12.3	1.08	8.4	<1	0.64	0.018
7/22/2024	156	444	154	7.69	301.3	11.8	0.91	9.8	<1	0.551	0.012
7/31/2024	161	458.4	304	7.67	314.8	14.5	0.76	13.4	<1	0.548	0.014

August

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
8/7/2024	165	477.9	326	7.63	328.6	14.4	0.87	9.8	<1	0.596	0.012
8/14/2024	166	498.6	150	7.54	340.1	12.8	0.5	10.9	1	<0.500	0.012
8/21/2024	169	497.4	284	7.65	342.2	14.5	0.69	16.1	<1	<0.500	0.01
8/28/2024	170	517.6	160	7.62	352.8	13.1	0.49	9.8	<1	<0.500	0.009

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
8/7/2024	165	473.9	314	7.66	326	14	0.99	8.6	1	0.551	0.01
8/14/2024	167	498.9	191	7.61	339.1	11.8	0.47	9.7	<1	<0.500	0.013
8/21/2024	169	500.9	264	7.56	345.4	13.5	0.92	9.7	1	<0.500	0.01
8/28/2024	170	517.8	171	7.66	352	12.1	0.43	6.2	<1	<0.500	0.011

September

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
9/4/2024	172	521.3	303	7.51	360.5	12.9	0.49	6.3			0.01
9/11/2024	172	535.1	315	7.61	364.8	13.9	0.71	4.1	<1	<0.500	0.007
9/18/2024	174	543	186	7.19	373	11.7	0.45	6.3	<1	<0.500	0.002
9/25/2024	175	547.8	302	7.58	374.8	13.3	0.44	2	<1	<0.500	0.002

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
9/4/2024	171	516.2	272	7.57	356.6	13	0.36	2	<1	<0.500	0.008
9/11/2024	173	533.2	315	7.62	363.4	13.5	0.69	5.2	<1	<0.500	0.008

9/18/2024	174	539	231	7.25	371	12.1	0.34	2	<1	<0.500	0.002
9/25/2024	174	544.2	312	7.43	371.8	12.8	0.46	1	<1	<0.500	0.002

January

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
1/8/2025	177							<1	<1	<0.500	0.007
1/15/2025	177	589.7	428	7.5	405.6	11.4	0.31	2	<1		0.007
1/22/2025	178							<1	<1	<0.500	0
1/29/2025	179	585.6	309	7.79	407.7	10.4	0.31	<1	<1	<0.500	0.006

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
1/8/2025	176							<1	<1	<0.500	0.007
1/15/2025	177	588.9	418	7.63	405.7	11.3	0.23	<1	<1		0.007
1/22/2025	178							1	<1	<0.500	-0.003
1/29/2025	178	582.1	284	7.77	404.7	10.8	0.2	<1	<1	<0.500	0.007

February

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
2/5/2025	176	585.1	265	7.53	404.9	12.2	0.34	1	<1	<0.500	0.006
2/12/2025	174	587.6	364	7.54	405.8	9.4	0.25	1	<1	<0.500	0.011
2/19/2025	176	581.3	326	7.85	404.8	10.8	0.25	<1	<1	<0.500	0.007
2/26/2025	178	584.5	322	7.65	406.7	11	0.24	<1	<1	<0.500	0.002

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
2/5/2025	177	586.7	302	7.39	403.9	11.9	0.32	<1	<1	<0.500	0.006
2/12/2025	175	587.8	377	7.26	405.5	10.4	0.19	<1	<1	<0.500	0.008
2/19/2025	176	584.6	357	7.79	406.8	10.4	0.2	1	<1	<0.500	0.007
2/26/2025	177	585.2	322	7.72	408.1	10.2	0.115	1	<1	<0.500	0.001

March

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
3/5/2025	178	581.4	296	7.68	404.3	11.5	0.24	1	<1	<0.500	0.005
3/12/2025	179	591.6	238	8.01	407.4	11.6	0.18	<1	<1	<0.500	0.007
3/19/2025	178	577	354	7.84	402.1	9.7	0.29	<1	<1	<0.500	0.007
3/26/2025	179	566.3	318	7.7	390.8	12.9	0.38	<1	<1	<0.500	0.005

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
3/5/2025	178	580.9	305	7.73	404	11.4	0.18	<1	<1	<0.500	0.006
3/12/2025	179	590.7	263	7.43	404.9	11.4	0.15	1	<1	<0.500	0.006
3/19/2025	178	579.9	333	7.75	404.2	9.2	0.29	<1	<1	<0.500	0.008
3/26/2025	179	559.9	302	7.69	387.3	12.3	0.37	3.1	<1	<0.500	0.006

April

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
4/2/2025	165	473.2	344	7.64	327.2	10.3	1.2	5.2	<1	1.01	0.027
4/9/2025	172	513	309	7.63	354.4	12.4	0.62	2	<1	0.631	0.016

4/16/2025	144	353.6	342	7.83	240.3	11	5.18	11	<1	1.5	0.044
4/23/2025	134	334.4	317	7.63	226.7	12.5	3.77	6.3	<1	1.39	0.046
4/30/2025	113	274.6	320	7.57	183.7	9.4	6.72	11	<1	1.68	0.06
DS-Dry Creek Springs											
Date	**Alkalinity (mg/L)**	**Conductivity (uS/cm)**	**ORP (mV)**	**pH**	**TDS (mg/L)**	**Temp °C**	**Turbidity (NTU)**	**Total Coliform (MPN/100mL)**	**E.Coli (MPN/100mL)**	**TOC (mg/L)**	**UV-254 (cm-1)**
4/2/2025	165	474	369	7.74	328.5	9.9	0.88	3	<1	0.957	0.029
4/9/2025	172	515.4	314	7.7	356.1	11.9	0.52	1	<1	0.701	0.016
4/16/2025	144	351.7	330	7.74	240	10.4	4.91	8.5	<1	1.45	0.042
4/23/2025	135	333.7	324	7.69	226.8	11.1	3.77	11	<1	1.44	0.046
4/30/2025	113	275.6	302	7.66	184.4	9.1	6.74	17.3	<1	1.69	0.062
May											
DS-Casto Springs											
Date	**Alkalinity (mg/L)**	**Conductivity (uS/cm)**	**ORP (mV)**	**pH**	**TDS (mg/L)**	**Temp °C**	**Turbidity (NTU)**	**Total Coliform (MPN/100mL)**	**E.Coli (MPN/100mL)**	**TOC (mg/L)**	**UV-254 (cm-1)**
5/7/2025	95.5	226.7	351	7.15	147.9	10.1	19.6	52	3.1	1.78	0.081
5/14/2025	87.3	200.6	331	7.27	132.6	8.7	16.1	29.2	1	2	0.093
5/21/2025	106	255.3	190	7.54	169.1	10.1	5.38	7.5	<1	1.49	0.056
5/28/2025	93	216.1	235	7.63	141.9	10.7	7.3	9.8	<1	1.52	0.07
DS-Dry Creek Springs											
Date	**Alkalinity (mg/L)**	**Conductivity (uS/cm)**	**ORP (mV)**	**pH**	**TDS (mg/L)**	**Temp °C**	**Turbidity (NTU)**	**Total Coliform (MPN/100mL)**	**E.Coli (MPN/100mL)**	**TOC (mg/L)**	**UV-254 (cm-1)**
5/7/2025	95.5	234.6	323	7.5	155	9.3	19.3	47.3	3.1	1.79	0.081
5/14/2025	87.3	199.7	349	7.59	132	8.9	16	53.7	1	1.99	0.088
5/21/2025	106	255.8	184	7.27	168.9	9.7	5.19	9.8	1	1.49	0.054
5/28/2025	93	216.5	263	7.59	140.9	9.9	7.69	30.1	<1	1.53	0.071
June											
DS-Casto Springs											
Date	**Alkalinity (mg/L)**	**Conductivity (uS/cm)**	**ORP (mV)**	**pH**	**TDS (mg/L)**	**Temp °C**	**Turbidity (NTU)**	**Total Coliform (MPN/100mL)**	**E.Coli (MPN/100mL)**	**TOC (mg/L)**	**UV-254 (cm-1)**
6/4/2025	91.8	213.5	197	7.31	141	11.1	6.79	21.6	<1	1.52	0.066
6/11/2025	109	258.1	312	7.71	171	11.5	4.64	14.5	<1	1.09	0.048
6/18/2025	121	301.9	322	7.36	201.7	12.3	3.27	14.6	<1	0.919	0.031
6/25/2025	132	368.9	295	7.63	251.6	12.2	2.24	8.6	3.1	<0.700	0.024
DS-Dry Creek Springs											
Date	**Alkalinity (mg/L)**	**Conductivity (uS/cm)**	**ORP (mV)**	**pH**	**TDS (mg/L)**	**Temp °C**	**Turbidity (NTU)**	**Total Coliform (MPN/100mL)**	**E.Coli (MPN/100mL)**	**TOC (mg/L)**	**UV-254 (cm-1)**
6/4/2025	92.7	214.1	169	7.01	141.1	11.9	6.35	17.5	<1	1.57	0.065
6/11/2025	110	257.6	330	7.83	171.3	10.7	5.88	8.6	<1	1.09	0.047
6/18/2025	121	304.1	306	7.31	203.9	11.9	3.17	13.5	<1	0.953	0.032
6/25/2025	132	371.2	288	7.71	253.3	11.4	2.13	8.6	4.1	0.76	0.024
July											
DS-Casto Springs											
Date	**Alkalinity (mg/L)**	**Conductivity (uS/cm)**	**ORP (mV)**	**pH**	**TDS (mg/L)**	**Temp °C**	**Turbidity (NTU)**	**Total Coliform (MPN/100mL)**	**E.Coli (MPN/100mL)**	**TOC (mg/L)**	**UV-254 (cm-1)**
7/1/2025	143	403.6	350	7.82	276.4	12.4	1.54	10.9	1	<0.700	0.019
7/9/2025	150	437.8	289	7.7	301.2	12.7	1.02	9.8	<1	<0.700	0.015
7/16/2025	155	464.3	315	7.82	319.3	12.9	0.81	7.4	<1	<0.700	0.011
7/22/2025	157	482	320	7.66	331.4	13.9	0.78	5.2	<1	<0.700	0.009
7/30/2025	161	511.5	212	7.09	350.6	16.5	0.59	5.2	<1	<0.700	0.011
DS-Dry Creek Springs											

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
7/1/2025	144	402.8	293	7.81	276	13.1	1.25	10.8	<1	<0.700	0.017
7/9/2025	150	439.4	294	7.63	303.1	11.6	0.92	10.9	<1	<0.700	0.013
7/16/2025	155	466.2	308	7.77	321	12.3	0.83	2	1	<0.700	0.011
7/22/2025	157	483.2	291	7.72	333.2	12.9	1.41	6.3	<1	<0.700	0.009
7/30/2025	161	509.2	207	6.99	349.3	15.2	0.62	4.1	<1	<0.700	0.01

August

DS-Casto Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
8/6/2025	164	529.1	244	6.98	363.2	12.8	0.46	7.5	<1	<0.700	0.007
8/13/2025	166	531.7	328	7.65	366.2	13.9	0.48	2	<1	<0.700	0.008
8/20/2025	168	543.9	426	7.74	375.6	12.8	0.85	8.5	<1	<0.700	0.008
8/27/2025	170	549.8	312	7.56	379.8	12.5	0.93	5.2	<1	<0.700	0.003

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
8/6/2025	164	531.6	255	7.12	365.1	13.9	0.73	6.3	1	<0.700	0.008
8/13/2025	167	531.4	302	7.72	366	14.5	0.34	4.1	<1	<0.700	0.008
8/20/2025	169	543.1	372	7.75	375.2	12.5	0.36	7.4	<1	<0.700	0.007
8/27/2025	169	549.5	318	7.7	379.6	13.6	0.89	8.4	<1	<0.700	0.004

September

DS-Casto Springs

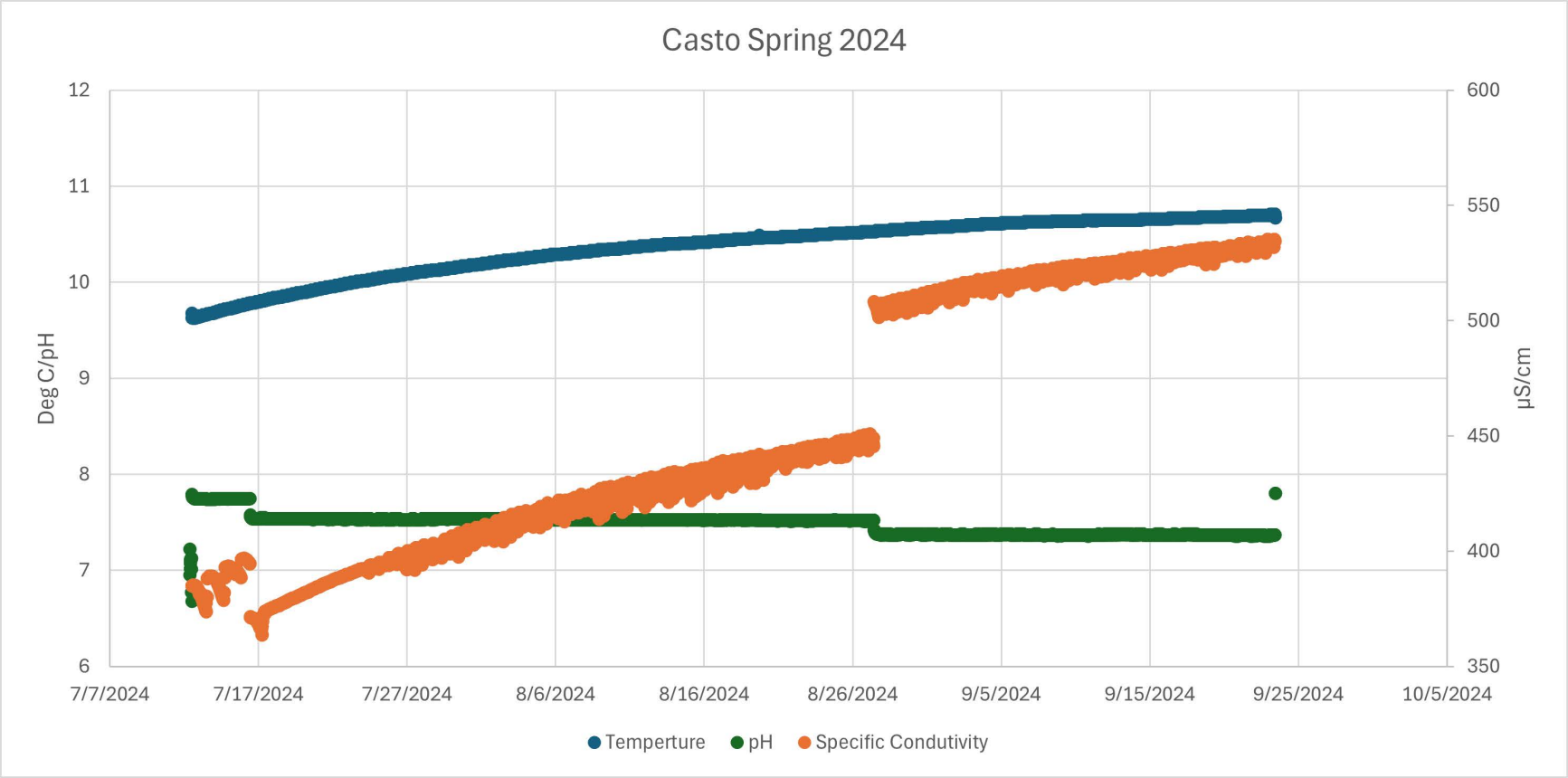
Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
9/3/2025	169	561.8	211	6.94	386.5	12.7	0.34	2	<1	<0.700	0.008

DS-Dry Creek Springs

Date	Alkalinity (mg/L)	Conductivity (uS/cm)	ORP (mV)	pH	TDS (mg/L)	Temp °C	Turbidity (NTU)	Total Coliform (MPN/100mL)	E.Coli (MPN/100mL)	TOC (mg/L)	UV-254 (cm-1)
9/3/2025	170	558.2	175	7.05	380.8	12.5	0.25	3.1	<1	<0.700	0.009

APPENDIX C

Springs In-Situ Sensor Water Quality Data


Casto Spring 2024
12
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Deg C/pH
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µS/cm
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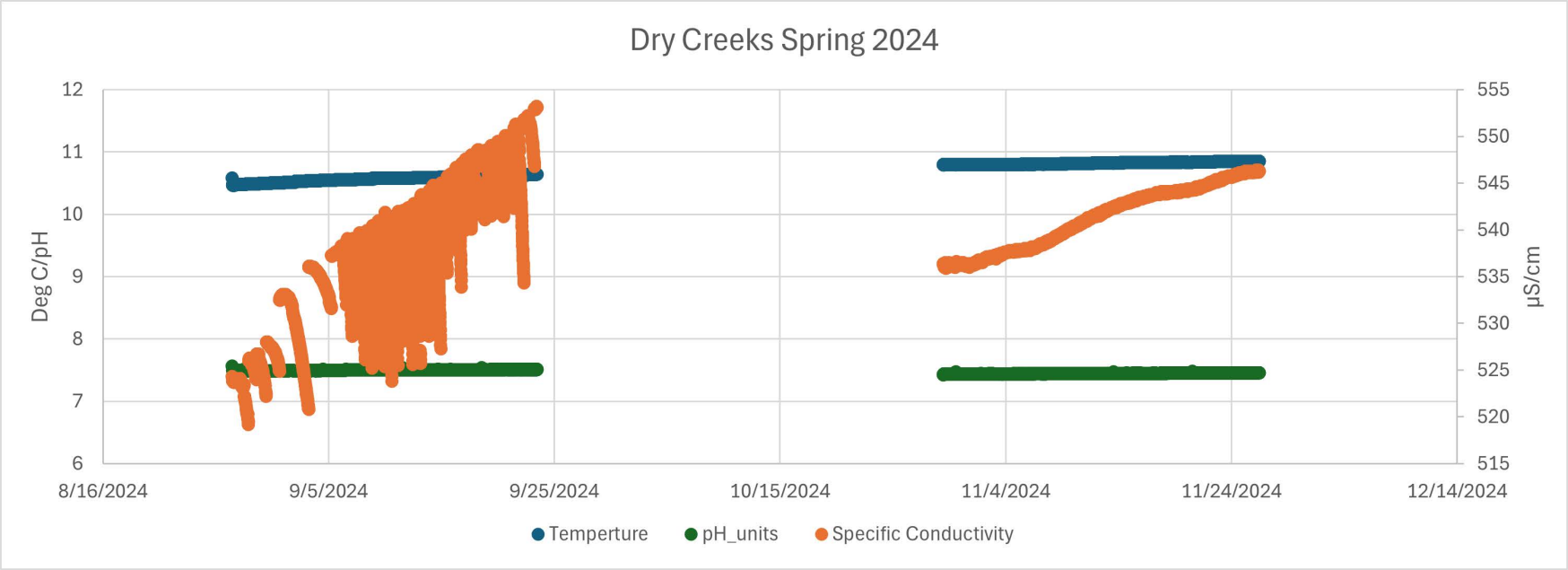
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Deg C/pH
µS/cm
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8/16/2024
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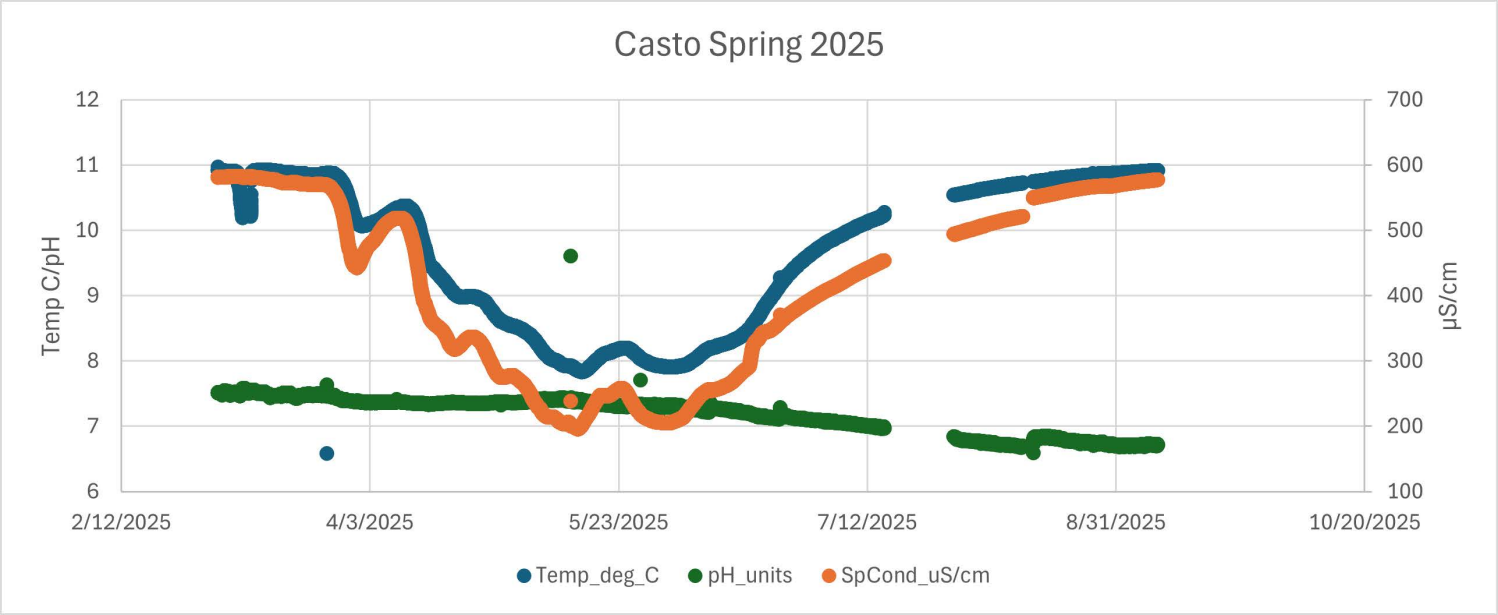
Temperture
pH_units
Specific Conductivity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Temp C/pH
µS/cm
12
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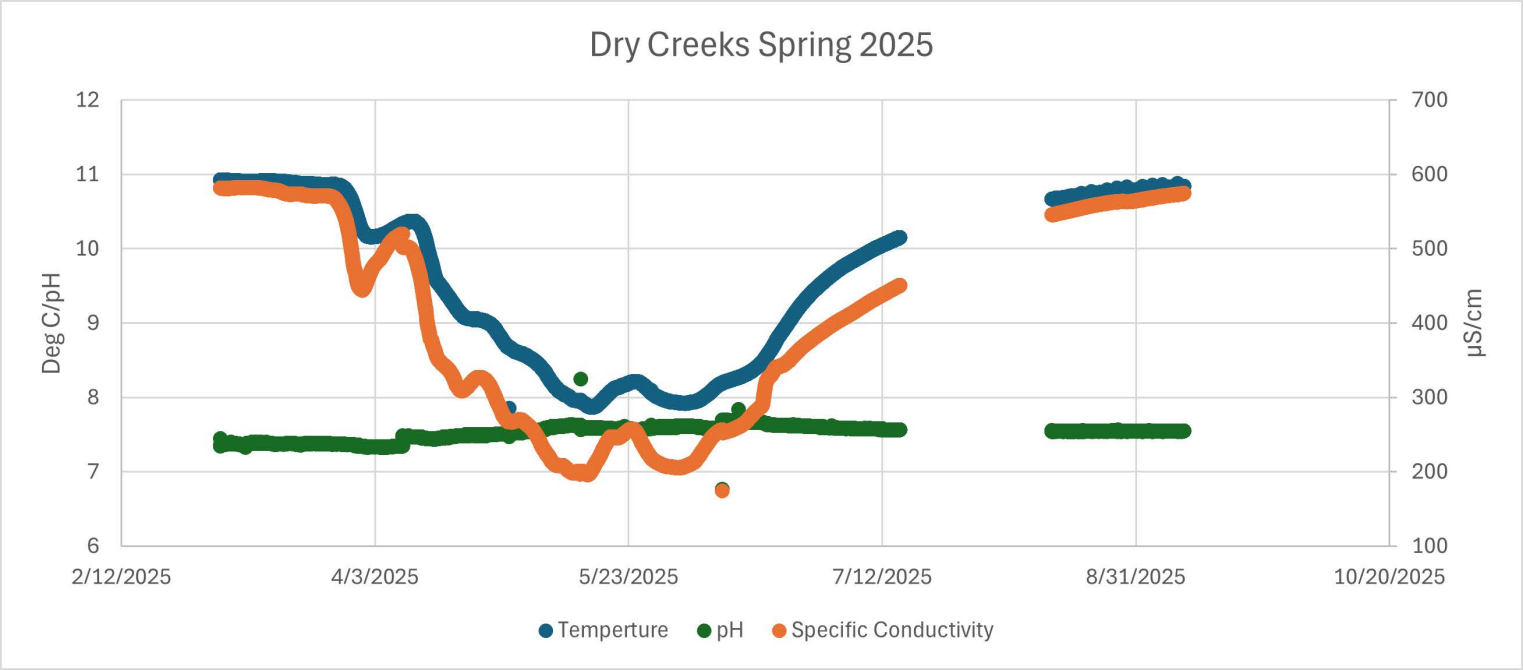
100
2/12/2025
4/3/2025
5/23/2025
7/12/2025
8/31/2025
10/20/2025
Temp_deg_C
pH_units
SpCond_uS/cm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Deg C/pH
µS/cm
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7
6
700
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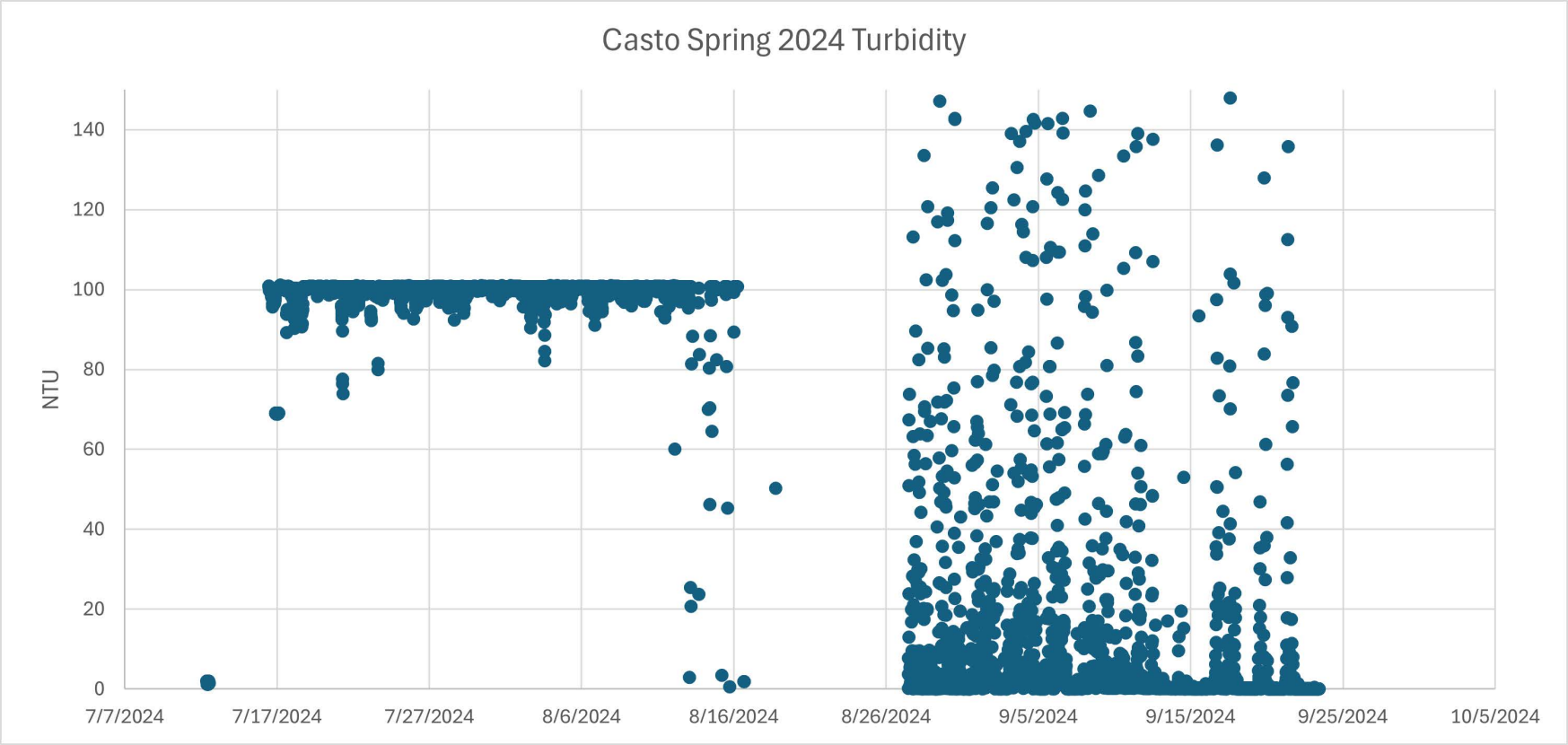
300
200
100
2/12/2025
4/3/2025
5/23/2025
7/12/2025
8/31/2025
10/20/2025
Temperture
pH
Specific Conductivity


Casto Spring 2024 Turbidity
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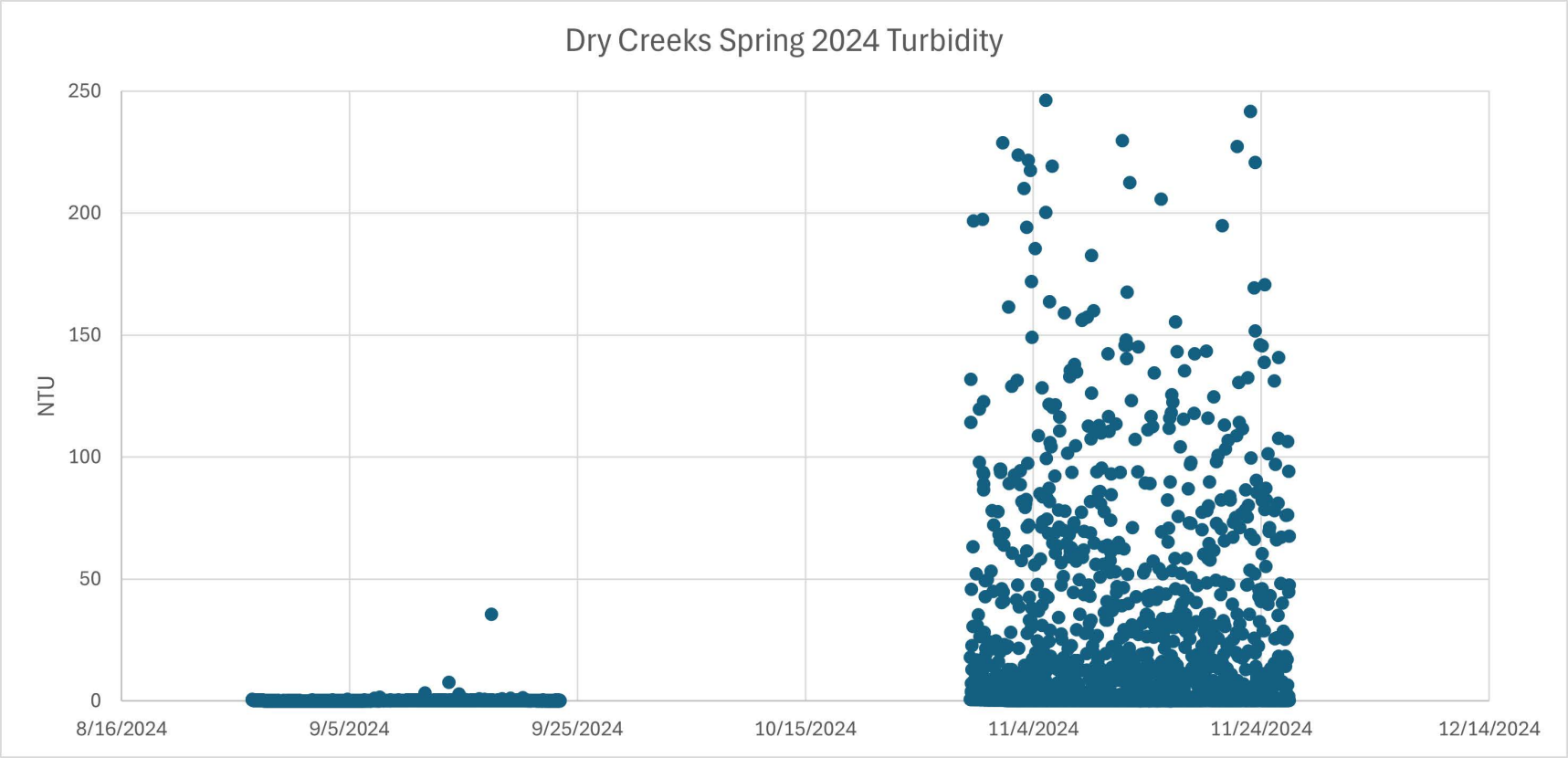
9/25/2024
10/5/2024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9/5/2024
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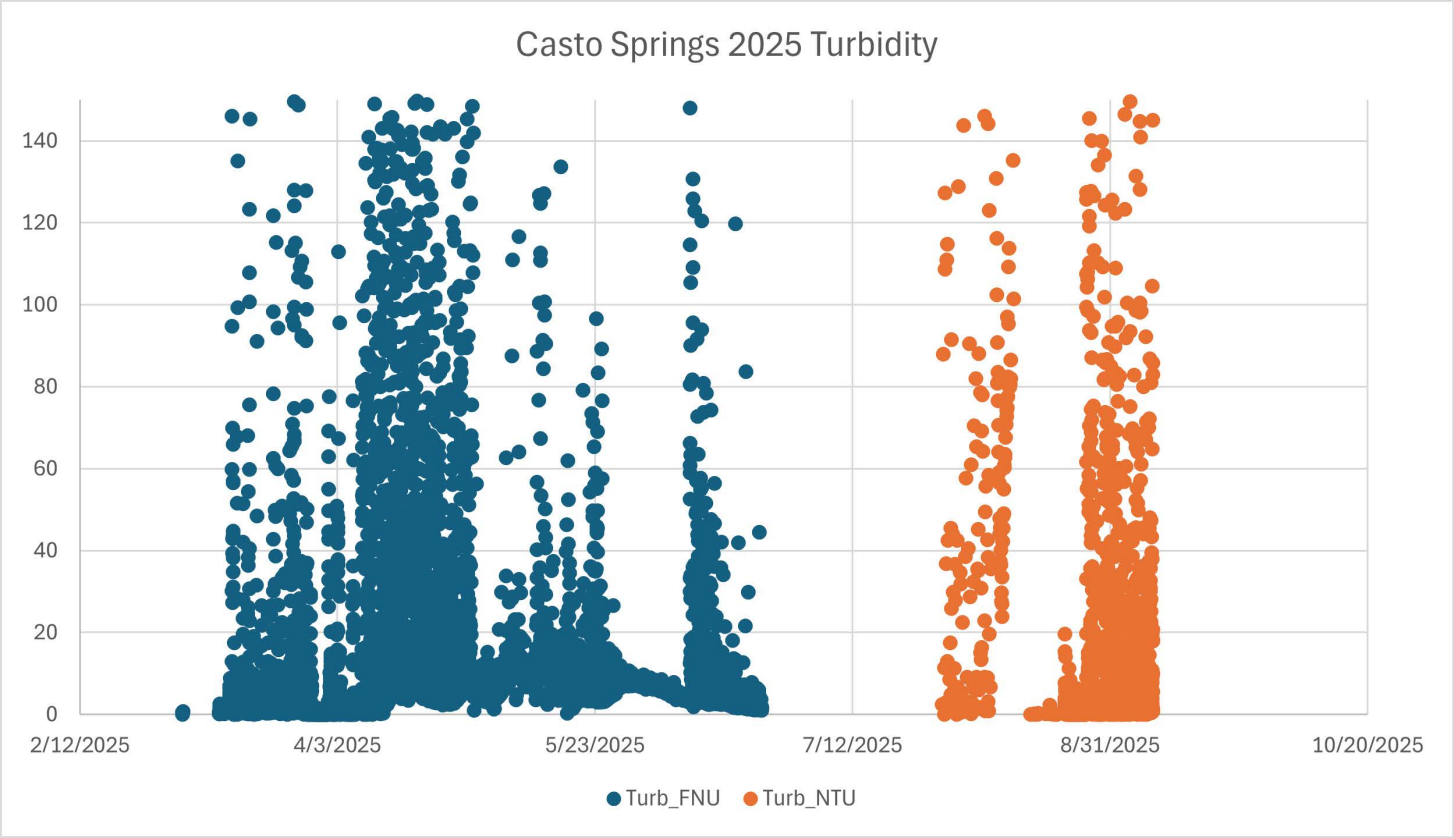
11/24/2024
12/14/2024


Casto Springs 2025 Turbidity
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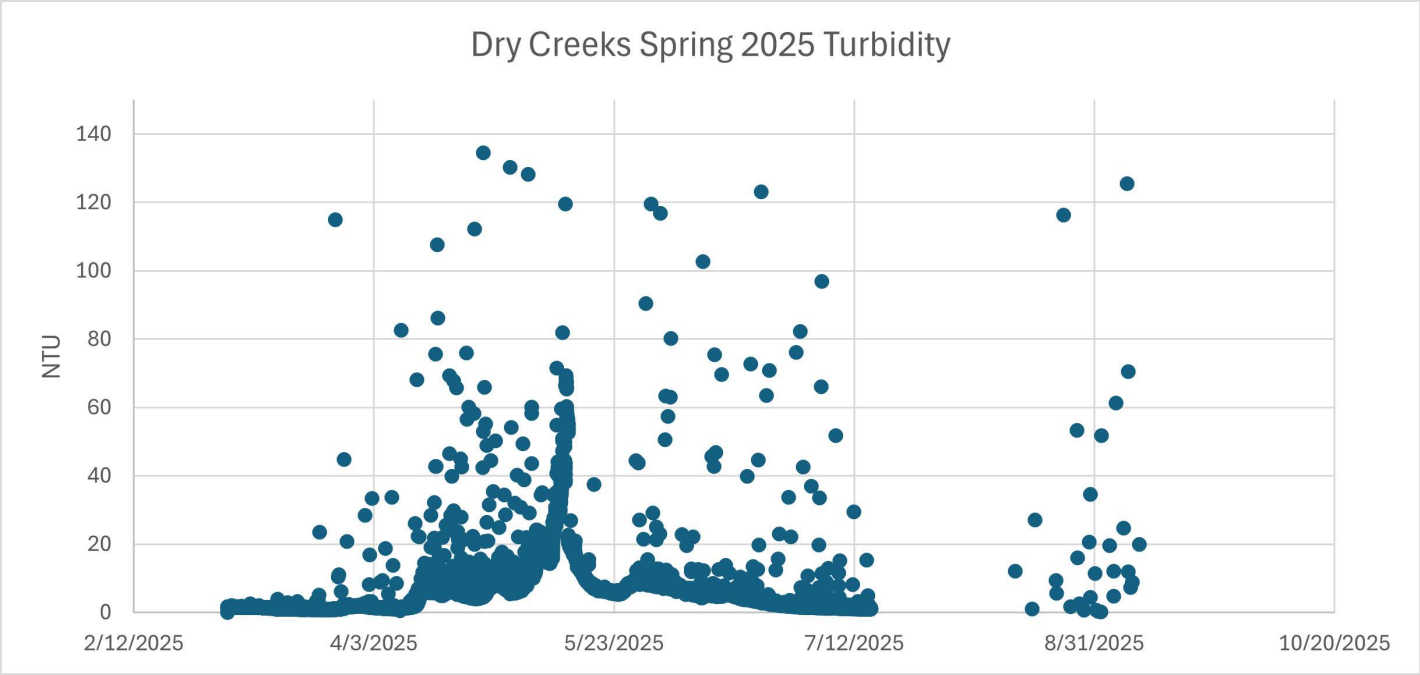
8/31/2025
10/20/2025
Turb_FNU
Turb_NTU


Dry Creeks Spring 2025 Turbidity
NTU
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2/12/2025
4/3/2025
5/23/2025
7/12/2025
8/31/2025
10/20/2025

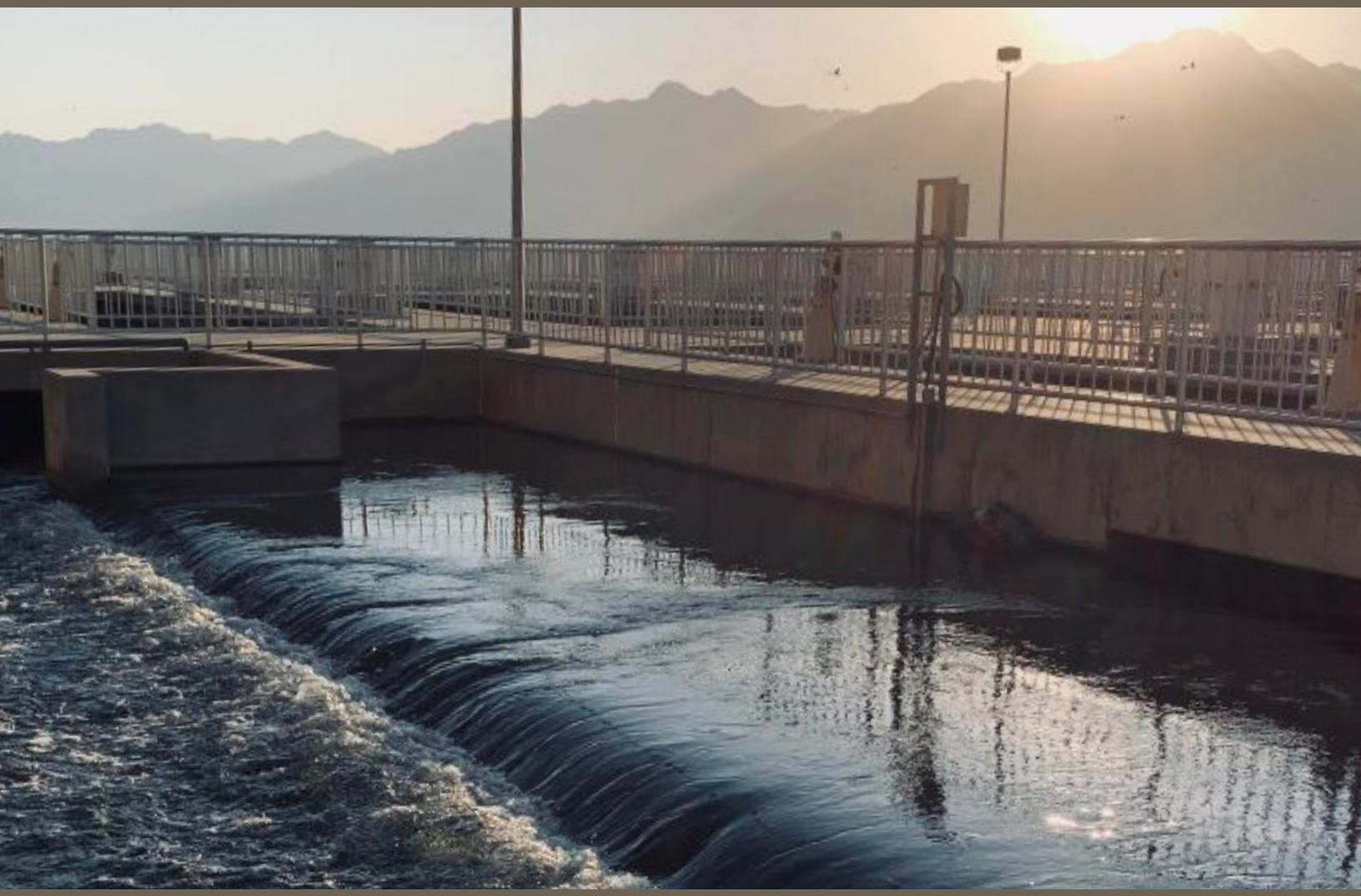
APPENDIX D

Casto and Dry Creek Springs Treatment Plant Grant Proposal

ENHANCING CLIMATE RESILIENCE: THE CASTO AND DRY SPRINGS TREATMENT PLANT PROJECT

Notice of Funding Opportunity No. R25AS00013

WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2025



JORDAN VALLEY WATER
CONSERVANCY DISTRICT

8215 S. 1300 W., West Jordan, UT, 84088

Project Manager: Conor Tyson

8215 S. 1300 W., West Jordan, UT, 84088 | (801) 565-4304 | conort@jvwcd.org

Table of Contents

D.2.2.2. Technical Proposal

D.2.2.2.1 Executive Summary

Applicant name, city, county, and state and a brief explanation of how you meet the applicant eligibility requirements

Jordan Valley Water Conservancy District (JVWCD) is pleased to submit this grant application for the Bureau of Reclamation's (BOR) **WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2025 (No. R25AS00013)** for the Casto and Dry Springs Water Treatment Plant Construction Project (Casto Springs Project). JVWCD is located in West Jordan, UT, and supplies both wholesale and retail culinary water across Salt Lake County.

The Task Area you are applying under and what funding group

JVWCD is applying for Task A – Increasing Reliability of Water Supplies through Infrastructure Improvements. The Casto Springs Project proposes a new treatment facility, which will treat the water of Casto and Dry Creek Springs for use in JVWCD's distribution system. **JVWCD is applying under Funding Group II**.

Indicate whether you are a Category A or Category B applicant

JVWCD is a Category A applicant. JVWCD meets the eligibility criteria as a water district located in the State of Utah.

A one-paragraph project summary

JVWCD, a wholesale and retail water provider in Salt Lake County, will build a treatment plant in Holladay, Utah capable of treating 5 million gallons per day (MGD) from Casto and Dry Creek Springs. The springs are not currently in use for culinary water supply and adding this water source will increase our resilience to climate driven shortages in surface water by 1) adding to our groundwater supply capacity that can be used in a drought year and 2) allowing area groundwater wells to rest more during wet years. Utah is the second driest state in the nation and has experienced moderate to extreme drought conditions for the past seven out of ten years. During times of drought, JVWCD is reliant on groundwater to meet demand. This project will allow for a stronger recovery of our aquifer storage during wet years. This project has been prioritized in JVWCD's official Drought Contingency Plan as well as in its 10-year Capital Projects Plan.

Length of time and estimated completion date for the proposed project

This Project commenced in the spring of 2024 with a water quality study. Project design is expected between December 2025 and September 2026. Construction will begin December 2026 with an estimated completion date of January 2028.

Federal facility/lands

Work for the proposed project will not take place on a Federal facility or Federal lands.

Relevant background information about the applicant

JVWCD is a wholesale and retail water provider in Salt Lake County, UT. It is a political subdivision of the State of Utah and one of the largest water districts in the state, serving water to more than 775,000 people (roughly one quarter of Utah's population). Much of the water delivered by JVWCD is transported by the Jordan Aqueduct, a 72-inch, 40-mile pipeline owned by BOR and operated by JVWCD.

Water use in Salt Lake County is primarily municipal and industrial (M&I). Agricultural use within the county has declined from 16,030 acres of irrigated land in 1987 to 2,213 acres of irrigated land in 2022[1]. This decline is expected to continue.

JVWCD supplies approximately 65% of the M&I water within its service area, while its 17 member agencies supply the remaining 35%. Most of the agricultural water use within JVWCD's service area is delivered by private irrigation companies that divert water from the Jordan River near the Salt Lake County and Utah County border.

Details regarding water supplies

JVWCD has a diverse portfolio of water resources it uses to deliver drinking water supplies to its wholesale member agencies and retail customers. The water resources include Central Utah Project (Jordanelle Storage), Provo River Project (Deer Creek Storage), Provo River unstored flows, Salt Lake Valley high quality groundwater[2], local unstored mountain streams, purchased Central Water Project, and Southwest Groundwater Project (low quality groundwater with reverse osmosis treatment). JVWCD conjunctively manages its surface and groundwater supplies, reducing groundwater production during normal precipitation years and increasing groundwater production during drought years. **Exhibit 1** shows the general water supply utilization strategy employed by JVWCD.

Year	Surface Water Total (acre-feet)*	Agency Groundwater (acre-feet)	Recycled M&I Water (acre-feet)	Other (acre-feet)	Total
2014	83,760.40	7,360.33	0	968.14	92,088.87
2015	79,299.77	5,950.73	0	933.05	86,183.55
2016	71,242.40	13,303.89	0	1,021.73	85,568.02
2017	79,767.59	10,014.96	0	965.90	90,748.45
2018	83,555.37	7,762.57	0	1,011.77	92,329.71
2019	79,168.57	8,056.82	0	1,250.49	88,475.88
2020	111,570.72	7,133.39	0	1,119.00	119,823.11
2021	84,600.14	16,747.80	0	1,191.87	102,539.80
2022	87,020.66	15,908.06	0	844.41	103,773.13
2023	98,402.75	5,203.94	0	879.97	104,486.66
Total Average Annual Water Supply for 2014-2023 in AFY =					**858,388**
Average Annual Water Supply = 85,839 acre-feet (Divide Total Supplies for 2014-2023 above by 10)					
*Include water transfers and exchanges that occur on a long-term basis. Exclude single year transfers					

Exhibit 1. JVWCD General Water Supply

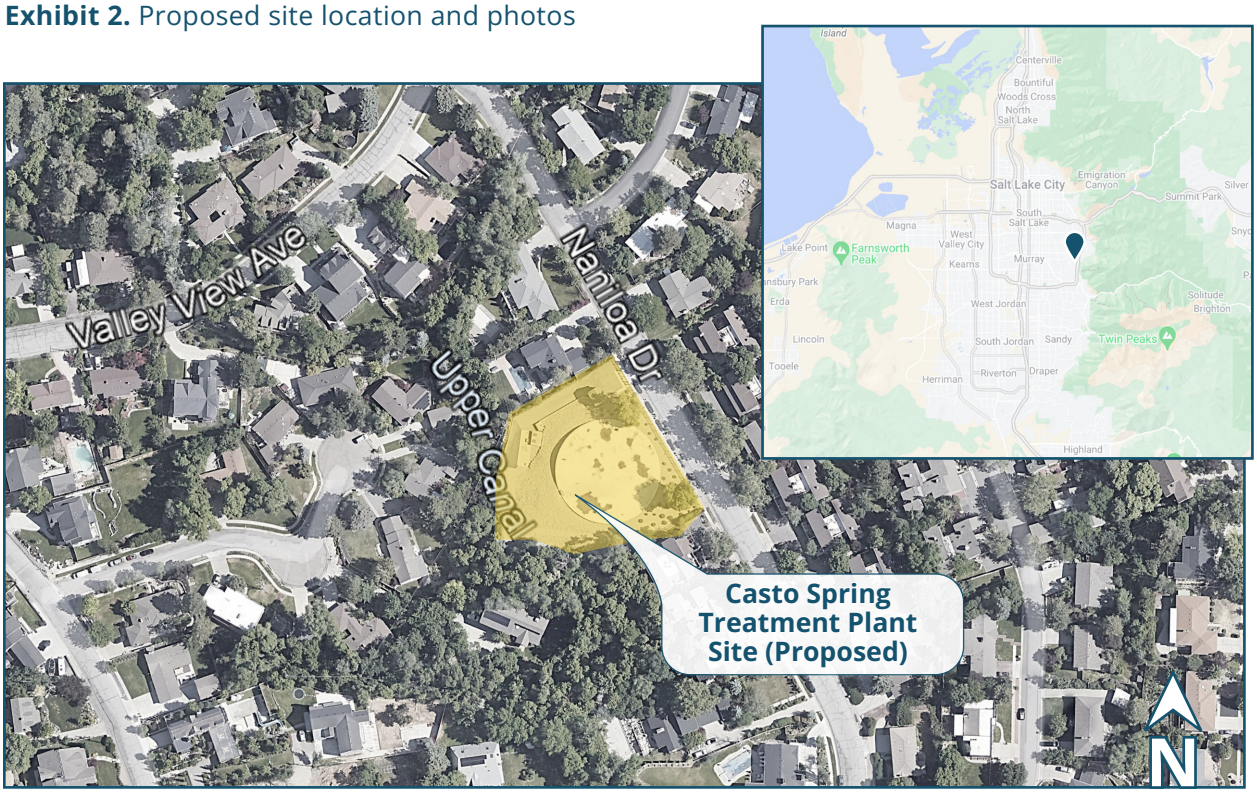
Project Location

The Casto Springs Project is located in Salt Lake County, UT within the town of Holladay. The project coordinates are 40°39'56.09"N, 111°48'38.52"W. See **Exhibit 2** (following page) for the location of the project and site photos.

1 USDA. 2022 Census of Agriculture. https://www.nass.usda.gov/Publications/AgCensus/2022/Full_Report/Volume_1,_Chapter_2_County_Level/Utah/st49_2_001_001.pdf (accessed 08/13/24)

2 High quality groundwater does not require any treatment before introduction into JVWCD distribution system other than fluoride and chlorine to maintain an adequate chlorine residual in the system

Exhibit 2. Proposed site location and photos



Standing in northeast corner looking southwest

Standing in northwest corner looking south

Standing in southwest corner looking north

Standing on south end looking northeast

Project Description

The primary objective of this project is to ensure the reliable delivery of safe, high-quality drinking water to our customers, especially during periods of drought.

The new treatment plant will treat up to 5 MGD of water. The treatment processes in the plant will be compartmentalized to allow the plant to run at lower flows, maintaining operation whenever there are sufficient minimum flows. This process will produce high quality water at a high elevation point in the distribution system allowing greater operation flexibility. The highest flows will be during the early irrigation season (April to June), allowing well operations to be delayed and increasing water availability for groundwater injection.

The specific objectives include:

- Increasing system resiliency and reliability
- Optimizing operational efficiency
- Enhancing data-driven decision making

The project's technical components, which will help us meet our objectives are:

- Water Quality Evaluation: The project's initial phase involves a water quality evaluation including measuring particle counts, turbidity levels, conductivity, pH, hardness, and microbial levels. The data obtained during this phase will serve as a baseline for determining the necessary treatment processes.
- Treatment Plant Design: The treatment plant design will prioritize the production of high-quality water, worker safety, and operational efficiency. This will include the construction of a new building for housing the water treatment process, necessitating geotechnical analysis and structural design.
- Treatment Processes: The treatment plant will incorporate several essential components, including a pre-filter system to remove larger particles from the water and extend the lifespan of downstream equipment. The main filtration system will comprise ultrafiltration, cartridge filters, or other suitable techniques identified during the study. The treatment process will also encompass UV or chlorine disinfection.
- Chemical Feed System: An existing building will be repurposed to house the chemical feed system, which will include chlorine injection for residual disinfection and fluoride injection to meet county requirements.
- Water Quality Monitoring: Water quality monitoring instruments will assess raw water from the springs before treatment and ensure the treated water meets JVWCD's quality standards. This monitoring system will provide real-time data to guide operational adjustments as needed.
- Piping and Flow Management: The project's piping system will transport raw water to the treatment plant, allow for water diversion when necessary (e.g., during non-operational periods or when incoming water exceeds capacity), and direct the finished water into the JVWCD distribution system. Flow meters will be employed to measure both raw water and treated water, ensuring precise control and management of the water supply.

Preliminary technical drawings of the site plan and process drawings are shown on the following pages as **Exhibits 3 and 4**, respectively.

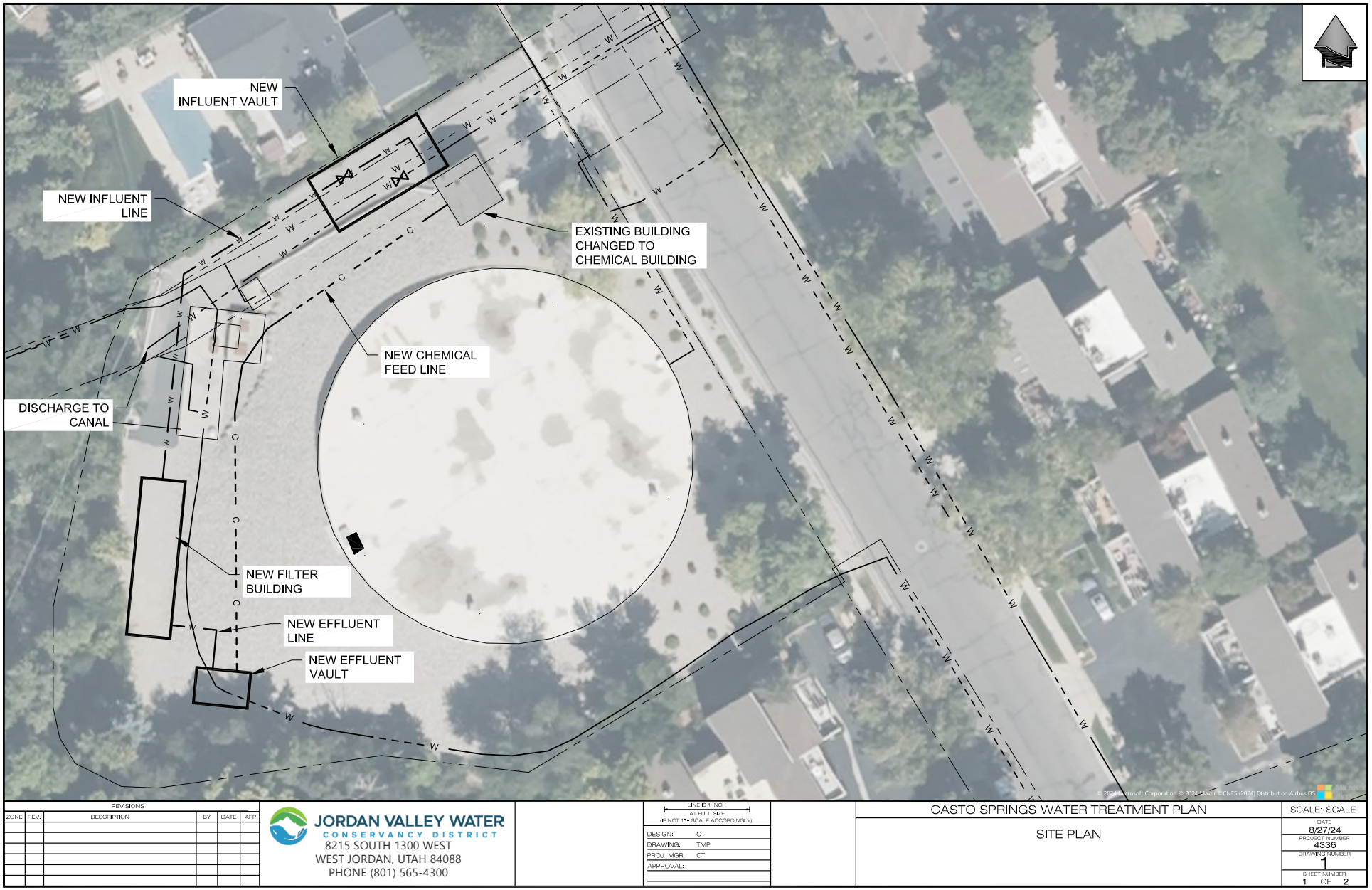


Exhibit 3. Site plan

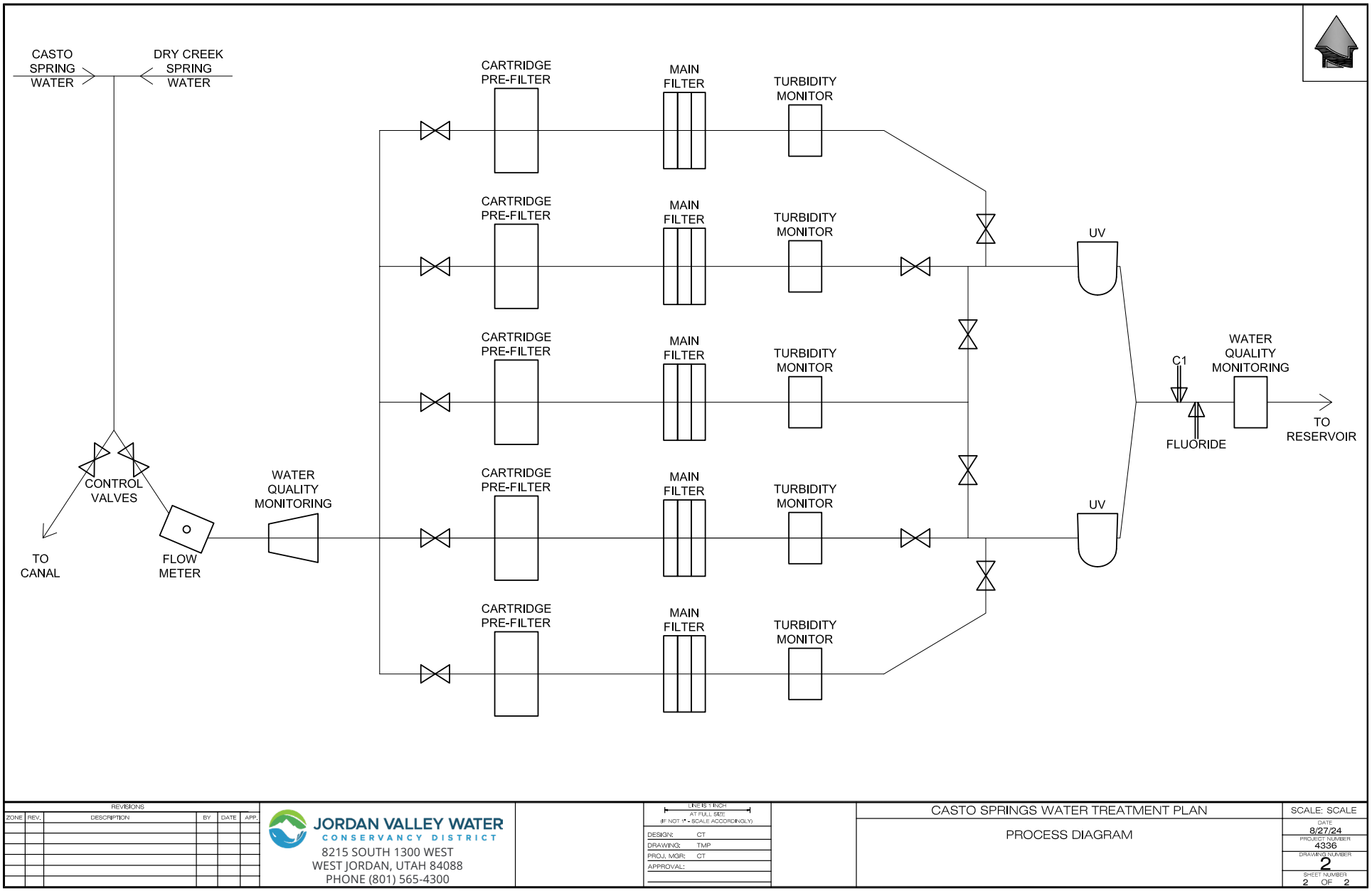


Exhibit 4. Process Diagram

D.2.2.2.2 Evaluation Criteria

E.1.1 Evaluation Criterion A. Severity of Drought or Water Scarcity and Impacts

Recent, existing, or potential drought conditions in the project area

Utah is a semi-arid state, the second driest in the nation. Over the past 128 years, there have been seven periods of extended drought within Salt Lake County, where 80 percent of Utah's population lives (**Exhibit 5**[3]).

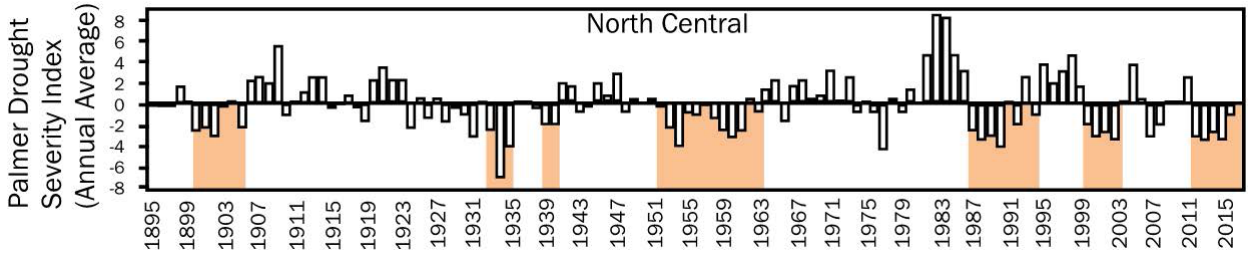


Exhibit 5. North Central Utah Palmer drought severity index.

The chart below (**Exhibit 6**) highlights drought patterns from recent years, including D4 (Exceptional Drought) conditions that have been accompanied by widespread crop failures and water emergencies[4].

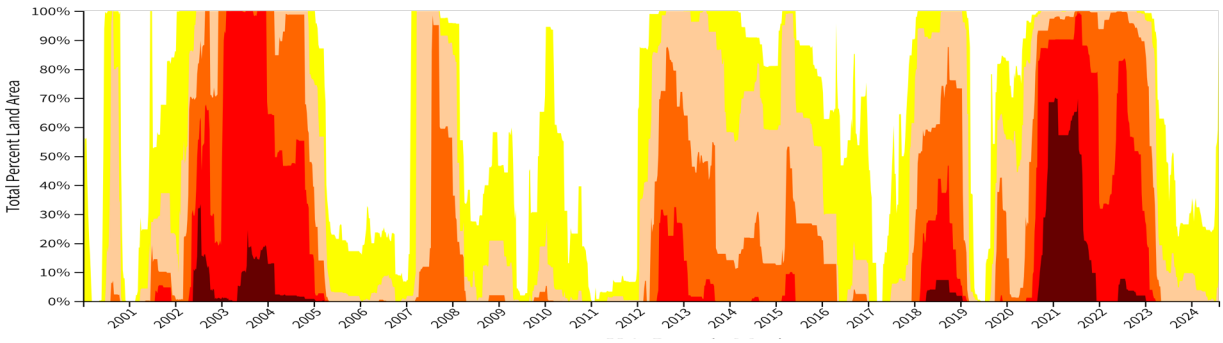


Exhibit 6. Utah historic drought conditions.

Given Utah's climate history as well as projected climate changes, the length and intensity of droughts is expected to increase[5] .

While previous drought periods have created significant public-health risks that have threatened state economic growth and placed restrictions on agricultural users and recreational activities, future impacts are expected to be even more severe.

3 Recreated and adapted from original figure provided at https://hazards.utah.gov/wp-content/uploads/Utah-SHMP-Ch6-Drought.pdf (accessed 08/13/24)

4 US Drought Monitor – Time Series. https://www.drought.gov/states/utah (accessed 08/13/24)

5 IPCC, 2022: Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.)]. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3-33, doi:10.1017/9781009325844.001. (Accessed 09/25/24).

A significant risk associated with the anticipation of more frequent droughts occurring shortly after one another, is the inability of reservoirs to recharge between dry periods. **Exhibit 7** outlines some of the drought impacts that may be experienced within JVWCD's service area across multiple sectors. Additional impacts are outlined below.

Table 4-5. Drought Impacts Across Sectors

Risk Factor and Drought Impact	M&I	Environmental	Agriculture	Recreation
Dry Year Supply Limitations				
Supply limitations due to in-stream flow requirements	x	x	x	x
Groundwater production capacity limitations and supply reduction	x		x	
Climate Change				
Early runoff pattern	x	x	x	x
Reduced reservoir levels	x	x	x	x
Reduced stream flows	x	x	x	x
Increased evapotranspiration	x	x	x	x
Regulatory, environmental, and water rights constraints				
Reduction of contracted water exchanges	x		x	
Increased State and Federal regulation on supply sources to support environmental flows	x	x	x	x
Cost constraints and affordability				
Rising water rates	x		x	
Source water quality degradation				
Water quality impacts from anthropogenic sources (chemical spill, urbanization)	x	x	x	x
Water quality impacts from wildfires	x	x		
Increased occurrence of algal blooms and algae by-products	x	x	x	x
Increased nutrient levels	x	x	x	
Increased water temperatures	x	x		x
Asset/Facility Susceptibility to Disruption				
Asset damage from seismic events	x		x	x
Asset failure due to aging infrastructure	x		x	

Exhibit 7. Table from JVWCD's DCP, discussing the impacts risks of future drought conditions.

Water Quality: In 2016, after several years of drought conditions that started in 2012, Utah Lake dropped to levels causing the Utah State Engineer to prohibit diversions of more than 100,000 acre-feet of junior water right holders in Utah Lake. The low water levels also intensified a wide-spread algal bloom in Utah Lake, prompting public health advisories. Declining water levels and algal blooms caused by drought conditions are a chronic issue that may become worse as droughts intensify.

Premature snowmelt: Premature snowmelt resulting in inefficient conversion of snowmelt runoff to reservoir inflow occurred between 2000-2004 during a drought that affected most Utah watersheds. This is an example of what could be expected to continue with increasing temperatures. Other impacts include potential increase in the rate of evapotranspiration due to increased temperatures, shifting timelines for snow runoff, as well as an increase in the intensity of rainfall events.

Water Availability: The M&I sector relies on each water source in the JVWCD portfolio, and the various assets used to store, convey, or treat the water. Any form of disruption to these sources can heavily impact this sector.

Agricultural: Groups within this sector rely on quality water, free of high salinity concentrations or toxic algae byproducts. Impacts to the water quality due to drought can quickly interrupt water sources that this sector relies on. The previously mentioned 2016 algal blooms in Utah Lake that prompted secondary water systems to shut down are an example of this.

Without the ability to use these secondary water systems, this sector's demand on the JVWCD system increased. These events can trigger further economic hardship to agriculture groups due to raising water rates or loss of agricultural products and income.

Recreation: Many of JVWCD's water sources and reservoirs are home to various recreational interests including bird watching, fishing, sailing, swimming, kayaking, hunting, and water skiing. Reservoir levels and river levels are reduced during times of drought, which can limit recreational activities. Additionally, degraded water quality may cause recreation area closures to protect public health. Recreational closures already regularly occur due to harmful algae blooms. The Utah Department of Environmental Quality has established a recreational water monitoring program to facilitate recreational closures and protect the public.

What are the ongoing or potential drought or water scarcity impacts to specific sectors in the project area if no action is taken and how severe are those impacts?

Without action to develop new water sources such as the Casto Springs Treatment Plant, the project area faces significant risks of water scarcity, particularly during periods of extreme drought. Over-reliance on deep well groundwater will lead to declining groundwater levels, making water extraction more difficult and costly due to increased energy requirements for pumping from deeper aquifers. This unsustainable groundwater usage threatens the long-term viability of the water supply for the region.

Additionally, the local economy, especially sectors dependent on consistent water availability such as landscaping, agriculture, and recreation, will be vulnerable to negative impacts. In the event of extreme drought, insufficient water for irrigation may result in economic losses due to damaged landscaping and reduced recreational activity. The Casto Springs Treatment Plant, along with other self-funded new water supply projects, is crucial to mitigating these risks by providing an alternative water source and enhancing overall system resilience. These efforts are essential for ensuring the sustainability and economic stability of the region.

E.1.2 Evaluation Criterion B. Project Benefits

E.1.2.1 Sub-criterion B1. Project Benefits (Tasks A, B, and D Only)

What is the estimated quantity of additional supply the project will provide and how was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years.

This project is estimated to be able to provide an average annual volume of water of 1500 acre-feet. This amount will vary greatly by year depending on the amount of water flowing in the springs. In wet years, this could increase to about 2200 acre-feet, while in dryer years this could be about 750 acre-feet. This was calculated by looking at historical flows in average years, dry years, and wet years, and then calculating how much of the total water would be captured with a 5 MGD treatment facility.

What percentage of the total water supply does the additional water supply represent? How was this estimate calculated?

The system will be designed to treat a maximum flow of 5 MGD, which is about 3% of JVWCD peak daily demands. This project will increase average annual yield to the JVWCD system by about 1500 acre-feet per year. This represents about 1.7% of the JVWCD annual yield from all sources. This estimate was calculated by looking at measured flow over multiple years at the springs (see **Exhibit 8**). Currently, flows are recorded by visual inspections performed multiple times each month.

Total Project Water Yield in AFY	1,500
Average Annual Water Supply in AFY (from Table in Section D.2.2.2 Technical Proposal, Executive Summary)	85,839
Percentage Yield (Divide Total Project Water Yield by Average Annual Water Supply)	1.7%

Exhibit 8. Percent of total water supply

How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?

Water supply shortages during drought can occur in two ways. Either source water yields are lower than annual water demand, or supply production capacity is lower than the peak day maximum demand. The proposed project builds long-term drought resiliency for JVWCD's service area by mitigating impacts of both types of water supply shortages.

First, treating the water from Casto and Dry Creek Springs will increase JVWCD's ability to meet water demands during the early irrigation season, allowing the District to store runoff from other sources for later in the season. It will also reduce well pumping during wet years, by 1000 to 1500 acre-feet, resting the aquifer for greater extractions during drought years. During drought years, the springs will still produce about 500 to 800 acre-feet of water, lowering well extraction in these years by 350 to 550 acre feet.

Second, adding this additional source increases our total system production capacity from a source that is not subject to reduction due to surface water shortages. Additionally, since the Casto and Dry Creek Springs are not connected to other water sources, adding this new

water source to the system will not negatively impact any other existing water sources (i.e. will not deplete the deep aquifer or take water from other reservoirs).

The project is expected to provide these benefits for the lifetime of the treatment facility (approximately 50+ years).

Provide a qualitative description of the degree/significance of anticipated water management benefits.

Additional drought resilient source options will reduce reliance on JVWCD's Central Utah Project and Provo River Water Sources during drought. Because the Central Utah Project currently makes up 40% of JVWCD's supply portfolio, the water provided through this project will contribute significantly to reducing JVWCD's vulnerability to drought.

The project will improve the District's conjunctive management of surface and groundwater resources by reducing well pumping up to 1500 acre-feet per year when surface water runoff is abundant. It will also facilitate increased utilization of existing JVWCD artificial groundwater recharge facilities.

How will the project supply help buffer against water shortages, reduce the need for emergency responses, and enhance the resilience of water systems?

The Project is designed to enhance JVWCD's resilience to water shortages by tapping into previously unused spring water sources, adding an estimated 1500 acre-feet of water per year to the District's supply, which is crucial for meeting demand during drought conditions. This additional source will help reduce reliance on groundwater pumping, allowing aquifers to recharge during wet years and providing a buffer against water shortages during dry periods.

Furthermore, the project's ability to treat up to 5 MGD will ensure that even during peak demand periods, such as the early irrigation season, JVWCD can meet water needs without overtaxing existing resources. This will be especially crucial during emergency response situations, since JVWCD provides water to hydrants and hospitals throughout Salt Lake Valley.

E.1.2.2 Sub-Criterion B.2. Project Benefits (Task C Only)

N/A

E.1.2.3 Sub-Criterion B.3. Additional Project Benefits (All Tasks)

Sub-Criterion B.3.a: Climate Change

According to BOR's 2021 SECURE Water Act Report, "[watershed] basins throughout the West are projected to experience increasing temperatures, snowpack declines, and earlier seasonal peak runoff. The magnitude of impacts becomes greater with time and varies based on location.[6]" JVWCD's storage reservoirs are sized based on historic snowpack levels and rely on snowpack to ensure they are filled gradually during spring runoff. As the climate warms and more precipitation falls as rain, JVWCD's reservoirs may not reach optimal levels, even in relatively high water years, which can further stress the supply in low water years. The Casto Springs Project helps to keep the water stored in the reservoirs for use in drier years.

6 Reclamation (Bureau of Reclamation) 2021. Water Reliability in the West - 2021 SECURE Water Act Report. Prepared for the United States Congress. Bureau of Reclamation, Water Resources and Planning Office. Denver, Colorado

The report also recognizes that turfgrass is one of the largest irrigated crops in the urban US, and its future water demand is expected to increase significantly due to climate change. By the 2080s, evapotranspiration is projected to increase by 8% to 36%, and irrigation water requirements per acre by 9% to 54%, driven mainly by higher temperatures and longer growing seasons. JVWCD is making significant investments to reduce water use including providing incentives to reduce turfgrass within its service area, however it is important to develop a resilient supply such as the Casto Springs project to meet the increased demand and longer growing seasons.

Additionally, the Casto Springs Project will reduce the District's reliance on pumped well water, which uses a significant amount of electricity. Because the Casto Springs is located at an elevation that can feed by gravity into JVWCD's system (no pumping), it is estimated that the District will save approximately 574,000 kw-hours per year by replacing groundwater well production with the annual Casto Springs production. Since energy in Utah is primarily derived from non-renewable resources (coal (36.1%) and natural gas (22.4%)[7]), reducing the District's electric footprint will reduce air pollution in the Salt Lake Valley and contribute to climate change resiliency by eliminating 401 tons of CO_2 emitted per year. **Appendix A** includes a report from Rocky Mountain Power (RMP) that details the energy savings. RMP also included a cash incentive estimate, however JVWCD is not including it as a cost-share since the incentive has not yet been finalized.

Sub-Criterion B.3.b. Ecological Benefits

The lower Provo River is designated as a critical habitat for the June Sucker, an endangered species endemic to Utah Lake. Current recovery projects for this species are closely related to the water quality, quantity, and hydrology of Utah Lake and its tributaries. When surface water supplies are strained during drought, habitats and natural life cycles can be damaged. Water quality degradation due to drought can also cause adverse impacts to ecosystems.

JVWCD's proposed project will reduce strain on surface water sources during drought, including the lower Provo River, protecting needed water for this endangered species.

Sub-Criterion B.3.c. Other Benefits

By reducing the amount of needed groundwater in a given year, this project will help maintain aquifer levels in Salt Lake County. The Project uses water flowing into the basin; there is no diversion or drawing from aquifers. As such, it should be a more sustainable water supply with fewer negative effects on other basins and groundwater supplies.

E.1.3 Evaluation Criterion C. Planning and Preparedness

Plan Description and Objective

When was the plan developed and how often is it updated?

The Casto and Dry Springs Project is supported by JVWCD's Drought Contingency Plan (DCP). The DCP was developed in 2021 and will be updated every 5 years. The full DCP can be accessed at https://jvwcd.org/public/highlights. Excerpts are included in **Appendix B** and summarized in the following sections.

7 2023 Power Content Label, Rocky Mountain Power. https://www.rockymountainpower.net/savings-energy-choices/blue-sky-renewable-energy/product-content-label.html (accessed 08/29/24)

What is the purpose and objective of the plan?

JVWCD developed the DCP to bring about a cohesive understanding of drought and its impacts on supplies, deliveries, water quality, and shortages by taking into account past and future drought conditions for the Salt Lake Valley and the surrounding area. The DCP is an effort to foster long-term resilience to drought, particularly given the increased likelihood of more extreme drought events due to changing hydrologic conditions.

What is the geographic scope of the plan?

The plan addresses impacts of drought on JVWCD's water sources and its service area. The geographic scope therefore covers northern Utah, specifically the Uintah Mountains, Wasatch Mountains, and Salt Lake Valley.

Explain how the applicable plan addresses drought

The District's DCP was developed in 2021 to support JVWCD's efforts to build drought resilience for the communities it serves. JVWCD developed the DCP with funding provided by the BOR through the WaterSmart Program. The planned drought mitigation measures discussed in the DCP and the identified drought response actions will help reduce JVWCD's drought vulnerabilities and provide a base for JVWCD's future decision making.

Elements of JVWCD's Drought Contingency Plan:

Drought Monitoring

Section 3 of the DCP addresses drought monitoring. The DCP uses water supply shortage conditions to define five water supply availability levels (**Exhibit 9**).

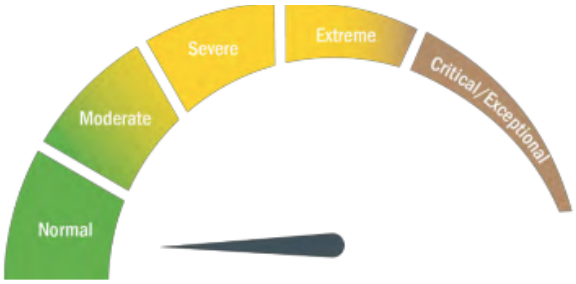


Figure 3-1 Shift in water supply shortage conditions visualized from normal (green) to critical/exceptional (brown)

Table 3-1. Water Supply Availability Level

Water Supply Availability Level	Advisory Code	Water Shortage Description
Level 0		Normal: Normal or near normal water supply conditions exist
Level 1		Moderate: Water supplies are moderately below normal
Level 2		Severe: Water supplies are severely below normal
Level 3		Extreme: Water supplies are extremely below normal
Level 4		Critical/Exceptional: Water supplies are exceptionally and critically below normal

Exhibit 9. Water Supply Availability Levels outlined in JVWCD's Drought Contingency Plan

JVWCD uses the following three criteria to guide the determination of water supply availability:

1. Supply availability of Central Utah Project (CUP) with storage in Jordanelle reservoir as provided by CUWCD.
2. Supply availability (declared allocation) of Provo River Project (Deer Creek storage) as determined by Provo River Water Users Association.
3. Supply availability of high-quality groundwater.

Drought Projections that Consider Climate Change

Section 4 of the DCP is a vulnerability assessment, which discusses potential for future supply shortfalls, including drought projections. Potential reductions to each source were assessed considering climate change impacts such as altered precipitation patterns, increased frequency and severity of drought, higher water temperatures driving water quality issues, reduced snow pack, and altered runoff patterns.

Identification of Drought Mitigation Projects

Section 5 of the DCP lists the drought mitigation measures prioritized for implementation. Nearly 50 proposed mitigation measures were evaluated for their ability to address the vulnerabilities specific to JVWCD's service area supply sources. 15 measures scored high enough on impact and feasibility to be included in an implementation schedule. The Casto Springs Project uniquely aligns with three of the 15 measures since it utilizes a spring (see *Plan support for the project*, on the following page).

Drought Response Actions

Section 6 of the DCP discusses the response actions JVWCD will implement during times of drought. The actions focus on enhanced water supply management and water use reductions, and are tied to the specific water supply availability levels shown in **Exhibit 9**.

Operational and Administrative Framework

Section 7 of the DCP provides an operational and administrative framework that provides clear direction on how the District will carry out drought monitoring activities, establish the drought mitigation measures to prepare for drought, and support efficient implementation of response actions at various water supply availability levels. This includes a drought committee of service area stakeholders that has met regularly since the plan was completed and stayed engaged in implementing the plan.

Plan Development Process

Was the drought plan developed through a collaborative process?

The DCP was developed by JVWCD with assistance from an outside consultant. Throughout its planning process, JVWCD provided opportunities for input and discussion from a task force that included individuals representing municipal and industrial (M&I), agricultural, recreational, and environmental interests. A Stakeholder Outreach Group was also created that included representatives from across JVWCD's service area.

Workshops to present and discuss key milestones in DCP development and content were held with both groups, and DCP sections were provided for review and comment. JVWCD also provided the DCP for review and comment to its 17 Member Agencies.

Plan Support for the Project

Does the plan identify the proposed project by name and location?

The Casto Springs Project is identified in the DCP as a Potential [Drought] Mitigation Measure in the screening and evaluation process table.

Explain how the proposed project was prioritized in the plan over other potential projects/measures

The Casto Springs Project uniquely aligns with three of the 15 mitigation measures identified for implementation in JVWCD's DCP, since it utilizes a spring:

1. Develop high quality groundwater wells
2. New shallow groundwater wells, and
3. Aquifer storage and recovery.

The springs are a high-quality groundwater source requiring minimal treatment, but without the energy costs or consumption associated with well pumping. The springs also yield from shallow groundwater, therefore avoiding additional burden to heavily utilized deep aquifers in the county. This also supports aquifer storage and recovery objectives of allowing the aquifer to recharge by allowing JVWCD to reduce groundwater pumping during wet years and allowing us to still deliver groundwater to the system while we inject water to the deep aquifer.

Relevant sections of the DCP are included in **Appendix B.**

E.1.4 Evaluation Criterion D. Readiness to Proceed and Project Implementation

Implementation Plan

The proposed Project Schedule is shown in **Exhibit 10** and detailed on the following page.

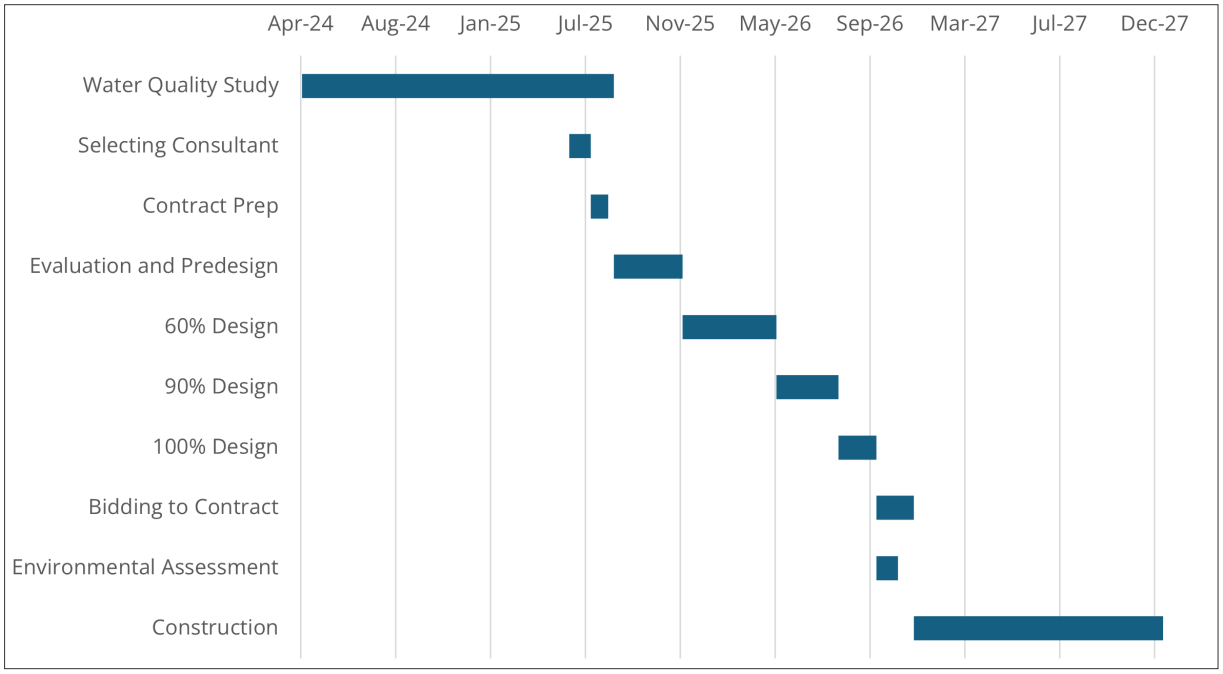


Exhibit 10. Project Schedule.

- Water quality study: Q2 2024 to Q3 2025
  - This will determine the quality of the spring water and the required treatment needed. It will also provide the required data for obtaining State of Utah approval on the plant.
- Selecting consultant Q2 2025 to Q3 2025
  - Using qualification-based procurement, select engineering consultant to help design treatment plant.
  - The process will begin while water study is ongoing to ensure design can start quickly.
- Predesign Q3 2025 to Q4 2025
  - Evaluate water quality data to determine required treatment.
  - Factor pH, temperature, and time of year to determine best treatment option.
  - Perform hydraulic study to help configure piping.
  - Work with State of Utah to inform them of project and discuss steps for approval.
- Design: Q4 2025 to Q4 2026
  - Design a fully functioning water treatment plant, factoring available space, ease of operation, and finished water quality.
  - Create mechanical, civil, and electrical plans.
  - Create specifications for full treatment plant.
  - Work with State of Utah for approval of treatment plan.
- Permitting: Q4 2026 to Q1 2027
  - Final approval from Division of Drinking Water (DDW) on treatment plan.
  - Environmental and Cultural assessment from BOR.
  - Operating permit from Utah DDW, building permit and conditional use permit from Holladay City.
  - Final operating permit to be requested during bidding. Building permit to be by contractor after bidding
- Construction and Installation: Q1 2027 to Q1 2028
  - Completion by January 2028.

Describe any permits or approvals that will be required

Utah Division of Drinking Water (DDW) Operation Permit: All projects having any effect on water quality need to be approved by the DDW and receive an operating permit. We will involve the State early in the process, specifically upon study completion and treatment process selection. Once plans and specifications are prepared, they will be submitted to the DDW for approval during the bidding process. A final operating permit will be applied for once construction is completed.

Conditional Use Permit (CUP): Acquiring a CUP will depend on the city of Holladay and their existing classification for the existing property. Of note, JVWCD already operates and maintains a water storage tank and other water system facilities on the subject property. If Holladay deems the permit required, we will start the process early in the design stage to obtain a permit prior to construction.

Reclamation environmental assessment: All projects need Federal Environmental and Cultural compliance from the Bureau of Reclamation. Since the project is on developed land, it is anticipated this can occur during bidding and contract preparation.

Building Permit: A building permit will be required by the City of Holladay and will be obtained by the contractor once they are awarded the project.

Water rights for the spring water are already held by JVWCD.

Identify and describe any engineering or design work performed specifically in support of the proposed project.

JVWCD has commenced the water quality study. In March 2024 JVWCD's water quality staff began taking weekly grab samples to analyze at our in-house laboratory. Samples are analyzed for alkalinity, conductivity, oxidation reduction potential, pH, total dissolved solids, temperature, turbidity, coliforms, E. coli, total organic carbon, and UV 254 absorbance. Additionally, water monitoring probes were installed in July 2024 to monitor temperature, conductivity, pH, and turbidity. This monitoring will continue for at least a year to ensure data is collected during all seasons.

During the study period, JVWCD staff have begun early preliminary design. This has included evaluating site conditions, meeting with treatment process vendors, and discussing different options. Early drawings have been drafted (see **Exhibits 3 and 4**) to help begin the design process. This work being done will help streamline the later design process with consulting engineers.

While we are collecting the data, JVWCD will seek and obtain the services of licensed engineers to help select the treatment process and prepare drawings and specifications for the selected treatment system. The engineering predesign services will include analyzing the water quality data, evaluating treatment options, seeking JVWCD input, and selecting the best treatment option for the springs. This predesign will be complete by December 2025.

During the design phase, the selected consultant will include prepare drawings and specifications, help obtain required permits, and create a bid package. This will be an iterative process with frequent feedback from JVWCD engineering, operations, and maintenance staff to ensure the designed plant will produce high quality water, be operationally efficient, and require little maintenance. It is anticipated that final designs will be ready by October 2026.

Finally, engineering services will include construction management services. These services will be employed to ensure the built plant matches the drawings and specifications created in design. These services will continue until construction is completed, anticipated by January 2028.

Describe any land purchases that must occur before the project can be implemented.

N/A – JVWCD owns the land on which this project will be built.

If the project is completely or partially located on Federal land, explain whether the agency supports the project?

N/A – the project is not located on Federal land

Describe any new policies or administrative actions required to implement the project

N/A – JVWCD has implemented similar projects in the past and operates multiple treatment facilities within its system. The District and State of Utah regulatory agencies already have well established policies that will guide the implementation of this project.

E.1.5 Evaluation Criterion E. Presidential and DOI Priorities

Disadvantaged or Underserved Communities

Using data from the Climate and Economic Justice Screening Tool, there are 32 census tracts in Salt Lake County that are considered disadvantaged communities with a total population of approximately 173,500 people. Of those, 20 are within JVWCD's service area, with a combined population of approximately 112,000 people (see **Exhibit 11**). Thus, JVWCD serves approximately 65% of disadvantaged communities in Salt Lake County[8]. Since the Casto Springs Project will benefit the District's entire service area, all of these communities will benefit from the project. Increasing JVWCD's supply increases our communities' resilience toward drought, and allows them to thrive. Further, the reduction in groundwater pumping will reduce carbon emissions, benefiting the air quality in Salt Lake County and reducing climate impact.

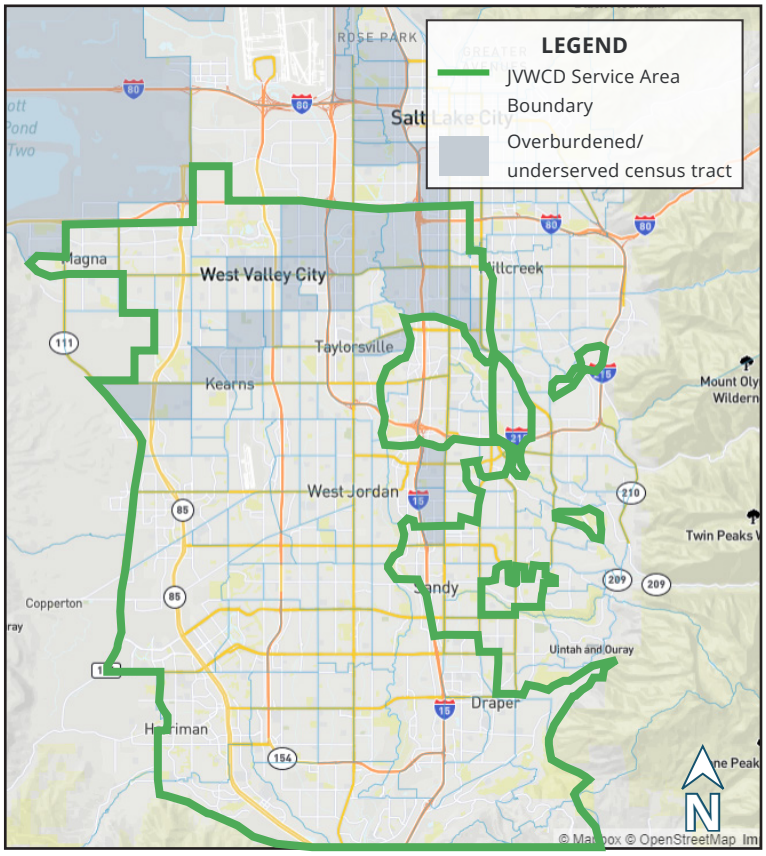


Exhibit 11. JVWCD service area shown over the map produced by Climate and Economic Justice Screening Tool[8].

Tribal Benefits

N/A

8 Climate and Economic Justice Screening Tool. https://screeningtool.geoplatform.gov/ (accessed 8/15/2024)

E.1.6 Evaluation Criterion F. Nexus to Reclamation

JVWCD is the largest petitioner of the BOR's Central Utah Project Bonneville Unit M&I water, contracting to receive 66,400 acre-feet annually. JVWCD receives deliveries associated with a substantial portfolio of water rights, including Deer Creek Reservoir storage rights (a Reclamation project facility constructed as part of the Provo River Project), direct flow water rights in the Provo and Weber rivers systems, and Echo Reservoir storage rights on the Weber River (a Reclamation project facility constructed as part of the Weber River Project). JVWCD also operates and maintains the Jordan Aqueduct, a 72-inch, 40-mile pipeline owned by BOR.

Water treated and delivered through the Casto Springs Project will provide an important supplement and beneficial resilience through diversification to the above listed BOR sources.

E.1.7 Evaluation Criterion G. Stakeholder Support for Proposed Project

Eight of JVWCD's member agencies have expressed support for this project, as well as Salt Lake County Deputy Mayor Catherine Kanter, Congressional Representatives Maloy and Owens, and Senators Romney and Lee (see **Appendix C**). Rocky Mountain Power, the local electric utility, has also expressed support (see **Appendix A**).

D.2.2.2.3 Performance Measures

The success of JVWCD's project will be measured using the metrics identified below:

- **Increased groundwater production capacity:** The project is intended to increase reliable capacity from the collective groundwater sources by 5 MGD.
- **Increased aquifer storage:** This project will allow JVWCD to reduce the amount of water pumped from the aquifer by up to 2200 acre-feet per year during those years that there are sufficient supplies to rest groundwater wells.
- **Increased water supply:** This project is intended to provide an additional 1500 acre-feet of water per year on average, and 750 acre-feet in a dry year. It is anticipated this extra water would reduce the amount of water pulled from wells or other sources by the same amount.
- **Access to high quality water:** It is anticipated the additional water provided by this project would be of high quality (<0.05 NTU), helping maintain JVWCD's high quality water in the system.
- **Chlorine and fluoride boost:** By adding chemical feed at this site, the project will help maintain the chlorine residual in this region of the distribution system, maintaining clean water. By adding fluoridation feed, this project will ensure residents in this area of the distribution system have access to fluoridated water.
- **Reduce energy consumption:** It is estimated that the District will save approximately 574,000 kw-hours per year by replacing groundwater well production with the annual Casto Springs production, equivalent to 401 tons of CO_2.

D.2.2.3 Project Budget

See Budget Narrative Attachment for more details.

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
Jordan Water Valley Conservancy District	$5,458,200
Non-Federal Subtotal	$5,458,200
REQUESTED RECLAMATION FUNDING	**$5,458,200**

Summary **Figures in this summary table are calculated from entries made in subsequent categories, only blank white cells require data entry.**			
6. Budget Object Category	**Total Cost**	**Federal Estimated Amount**	**Non-Federal Estimated Amount**
a. Personnel	$0		
b. Fringe Benefits	$0		
c. Travel	$0		
d. Equipment	$0		
e. Supplies	$0		
f. Contractual	$684,500		
g. Construction	$7,773,700		
h. Other Direct Costs	$0		
i. Total Direct Costs	$8,458,200		
i. Indirect Charges	$0		
Total Costs	$8,458,200	$3,000,000	$5,458,200
Cost Share Percentage		**35%**	**65%**

D.2.2.4 Environmental and Cultural Resources Compliance

N/A – This project does not require fieldwork. All monitoring at this project will be done at existing JVWCD facilities, and the project will not effect any environmental or cultural resources.

D.2.2.5 Required Permits or Approvals

See Section *E.1.4, Readiness to Proceed and Project Implementation*, for a list of required permits or approvals.

D.2.2.6 Overlap or Duplication of Effort Statement

There is no overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel.

The proposal submitted for consideration under this program does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source—whether it be Federal or non-Federal.

D.2.2.7 Conflict of Interest Disclosure

JVWCD does not have any conflict of interest to the US Bureau of Reclamation in accordance with 2 CFR 200.112. If any conflict should arise during the duration of this grant, JVWCD will follow procedures to identify, disclose, and eliminate identified conflicts of interest.

D.2.2.8 Uniform Audit Reporting Statement

In accordance with2 CFR §200 subpart F, JVWCD will submit a single year audit report for any year in which it receives at least $750,000 of federal funding. JVWCD was not required to submit a Single Audit Report for the most recently audited fiscal year.

D.2.2.9 Certification Regarding Lobbying

JVWCD has included with this application an SF424 form that represents our certification of the statements 43 CFR Part 18.

D.2.2.10 SF-LLL: Disclosure of Lobbying Activities

JVWCD has included Form SF-LLL with its application.

D.2.2.11 Letters of Support

See **Appendix C**.

D.2.2.12 Letter of Partnership

N/A – JVWCD is not a Category B applicant.

D.2.2.13 Official Resolution

See **Appendix D**.

D.2.2.14 Letters of Funding Commitment

N/A – cost share funding will not be sought for this project.