WELL E-2 REDRILL

2024.831.2049

REQUEST FOR PROPOSAL

(RFP)

Closing Date

September 10, 2026, at 3:00 P.M.

Logan Mayer
Water District Manager
8495 Fontaine Blvd.
Colorado Springs, CO 80925
logan@wwsdonline.com

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NOTE:

Widefield Water and Sanitation District reserves the right at its sole discretion to modify this RFP and the terms described at any time and from time to time. The terms of this document are not, and are not intended to be, binding on the parties. Any agreement between Widefield water and Sanitation District and a successful bidder selected by Widefield Water and Sanitation District must be mutually signed by both parties for it to be binding. Each bidder recognizes and acknowledges that Widefield Water and Sanitation District has the right to and will establish negotiations with multiple parties until mutually signed execution of a mutually signed definitive agreement with the party it selects. Widefield Water and Sanitation District considers the bid process, all related communication and documents, and the fact that we are in discussions regarding the subject matter, all to be confidential information. Widefield Water and Sanitation District expects that both parties will keep all information in confidence as required.

DESCRIPTION OF OPERATIONS

Website:

www.wwsdonline.com

History and Description of Operations:

Widefield Water and Sanitation District, 8495 Fontaine Blvd., Colorado Springs, CO 80925, was created as a Special District in 1996. The Widefield Water and Sanitation District (the District) is located in El Paso County, Colorado. The District is a political subdivision of the State of Colorado and a body corporate with all the powers of a public or quasi-municipal entity.

The District's customer base is primarily residential, representing 98% of all accounts. The remaining 2% of accounts are commercial. There are no industrial accounts within the District. Occasionally, wholesale water is provided to a neighboring agency. At the end of 2025, the District served 11,036 water accounts and 11,561 wastewater accounts.

Since the formation of the District, the service areas of water and wastewater have each increased. The increased acreage resulted from the development areas of Lorson Ranch (water and wastewater), Southpark Tech Center (wastewater), Mesa Ridge (water), and rolling Hills Ranch (water and wastewater) being added to the District. The District anticipates 14,000 new homes will be built in these areas.

In total, the District's water service boundary covers 10,368 acres. The wastewater service boundary covers 9,152 acres.

The District currently employs 34 full time employees.

The District has a Board of Directors consisting of five members.

INITIATIVE

The District is evaluating all areas of our business to strategically manage costs and maximize value. Our objective is to work with select vendors who can assist the District in maximizing the value and service quality of the goods and services we procure, while identifying opportunities to reduce the costs of externally purchased goods and services and improving the District's vendor selection and management processes and improve the District's infrastructure.

The District is in the process of redrilling one of its potable water wells and is in need of a water well driller.

RFP GOALS

The District has identified the following project goals:

- To obtain competitive bids from vendors capable of drilling a potable water well.
- Work with Selected Contractor to drill and test potable water well for future pump and electrical design considerations.

SCOPE OF THIS PROJECT

- To select a firm to perform the drilling of a new potable water well in the same property as the existing one.
    - Scope of work does not include connection to the existing system.
- Duties and responsibilities of Drilling Company to include:
    - Preparation of site for drilling and well construction
    - To drill a 16" potable water well to a depth of approximately 50 feet per drilling criteria with respect to plumbness and alignment as outlined in the ANSI/AWWA A100-15/A100-20 Standard for Water Wells (Appendix E).
    - Install 2" PVC pipe in the gravel pack between exterior of casing and borehole to the same depth of the casing, slotted at the same intervals as the 16" casing with equivalent size perforations or slots as the casing. An additional 2" sounding tube identical to one placed in the gravel pack to be placed in the annular space between column pipe and casing interior shall be installed during pump installation.
    - To follow and complete the specifications of this RFP to provide the District with a new Potable Water Well.
    - Drill the proposed well and test as outlined in the specification.
    - Provide a proper sampling port during well testing for water quality samples can be taken.
    - Following testing, coordinate with Engineer to select an appropriate pump size. Install new pump and equipment.
    - Permitting
        - Traffic Control Plan and permit from City of Fountain
        - Any applicable El Paso County Construction Permitting
    - Project Coordination
        - Attendance at Pre-Construction meeting and progress meetings hosted by the Engineer.
        - Submittal of all materials required for scope of work prior to ordering for Engineer and Owner review and approval.
        - Submit RFI's, work change directives, change orders, and all tasks requiring Engineer and Owner review and approval.
        - Provide Engineer with any applicable site plan contractor notes for as-built preparation.
        - Identify where well cuttings will be placed during the drilling process and ultimately disposed of.

- Owners Responsibilities
    - Owner has final say on all changes to the project.
    - Owner shall review pay applications and make payments.
    - Owner shall remove and replace fence on the property boundary
    - Owner shall handle coordination with all members of the public and adjacent property owners
    - Owner will obtain the State Discharge permit as well as the DWR redrill permit.

- **Please see Appendix A for Bid Form.**
- **Please see Appendix B for Drawings.**
- **Please see Appendix C for Project Specifications.**
- **Please see Appendix D for Sample Contract.**
- **Please see Appendix E for ANSI/AWWA A100-15/A100-20 Standard for Water Wells**

SECTION I – TIMELINE AND RESPONSE GUIDELINES

1. Critical Dates

Activity	Target Date
1. RFP sent to Vendors	**August 10, 2026**
2. Pre-bid Site Meeting[1]	**August 20, 2026**
3. Deadline for questions to RFP	**August 27, 2026**
4. Proposal received from Respondents	**September 10, 2026**
5. Notification of Selection	**September 17, 2026**

1 – To take place at 8495 Fontaine Blvd. at 10 A.M.

2. Submittal date and Location

Your response must be submitted no later than September 10, 2026, by 3:00 P.M. to:

Logan Mayer
Water Department Manager
Widefield Water and Sanitation District
8495 Fontaine Blvd.
Colorado Springs, CO 80925
Electronically:
logan@wwsdonline.com

Following the receipt of responses, your proposal will be evaluated, and your company may be asked to provide additional information or respond to follow-up questions. Your response should be tailored specifically to address the questions outlined in the RFP.

Following the firm evaluation process, the firm to perform the Construction Project Management will be selected.

3. **Proposal Contact**

   Your primary contact for any questions or comments regarding the attached document is Logan Mayer, Water Department Manager, logan@wwsdonline.com. Your secondary contact is Kenny Zelones, Lead Water Operator, Kenny@wwsdonline.com..

4. Proposal Content Requirements
    a. Contractor shall submit the follow items at a minimum:
        i. Proposed Project Schedule
        ii. Team organizational chart and contact information
        iii. Bid Form
        iv. Insurance, current licenses, and certifications.
        v. Up to three examples of local or applicable project experience

The District will not hold a formal RFP opening. The District will review the RFP and notify the selected respondent.

SECTION II – RFP ELIGIBILITY AND SELECTION CRITERIA

1. **Selection Process and Participation Requirements**

   a. Comply with all instructions.
   b. Complete all required sections of the RFP and the Districts requested format.
   c. Respond to all questions in reasonable detail.
   d. Meet the deadline for submission of RFP to the District.

2. **Selection Criteria**

   The successful respondent will be selected for further consideration based upon, but not limited to, the following criteria:
   a. Quality of the response to the RFP.
   b. Stability.
   c. Reputation.

3. **Evaluation Process**

   The District will systematically review and evaluate your proposal. The District reserves the right to select, or not select, a vendor for any reason.

4. **Submission Effort**

   a. **Date of submission:** Response to the RFP received after the designated date will not be considered.
   b. **District Format:** Response to the RFP in any other format will not be considered.
      - All proposals must be submitted in writing according to the deadline mentioned above.
      - All proposals must be on the attached bid form.
      - Proposers primary contact must be included.
      - Submittal must be signed by an agent or authorized representative to bind Proposer and the associated company to the proposal. The proposal needs to include the name and title of the person submitting the proposal.
   c. **Special Instructions:** Response to the RFP must include insurance, current licenses, and certifications.
   d. **Proposal Acceptance:** The District reserves the right to accept or reject any proposals made to it in response to this RFP whether in whole or in part. The District makes no guarantee whatsoever implied or otherwise that it will contract or agree to contract with any party because of this RFP.
   e. **Cancellation of the RFP:** The District reserves the right, in its sole discretion, to cancel this RFP at any time prior to the execution of a written agreement with the successful respondent.

f. **Waivers:** In the interest of furthering competition, the District may waive minor procedural requirements or informalities during the process of soliciting, evaluating, or negotiating this award.
g. **Submitted Materials:** Materials provided to the District by vendor will remain at the District. At the end of the proposal RFP process, all materials submitted will become the property of the District, unless alternative agreements have been reached in writing.

SECTION III – VENDOR QUALIFICATIONS

Please provide answers to the following questions.

1. **Overview of Company Structure/History/Philosophy**
   a. Describe the structure of your organization, including number of employees, and available resources.
2. **Qualifications**
   a. Expertise; technical/industry specific.
3. **References**
   a. Please provide at least 4 references. Use the attached reference form. References will be contacted. Please notify them accordingly. If you have provided services to the District in the past, references are not required.
4. **Quality Control**
   a. Ensure well is drilled and completed per ANSI/AWWA A100-15/A100-20 Standard for Water Wells (Appendix D).

SECTION IV – VENDOR COMPENSATION

Participants are requested to provide thoughts about compensation including:

1. Compensation shall be per the bid form.

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Appendix A

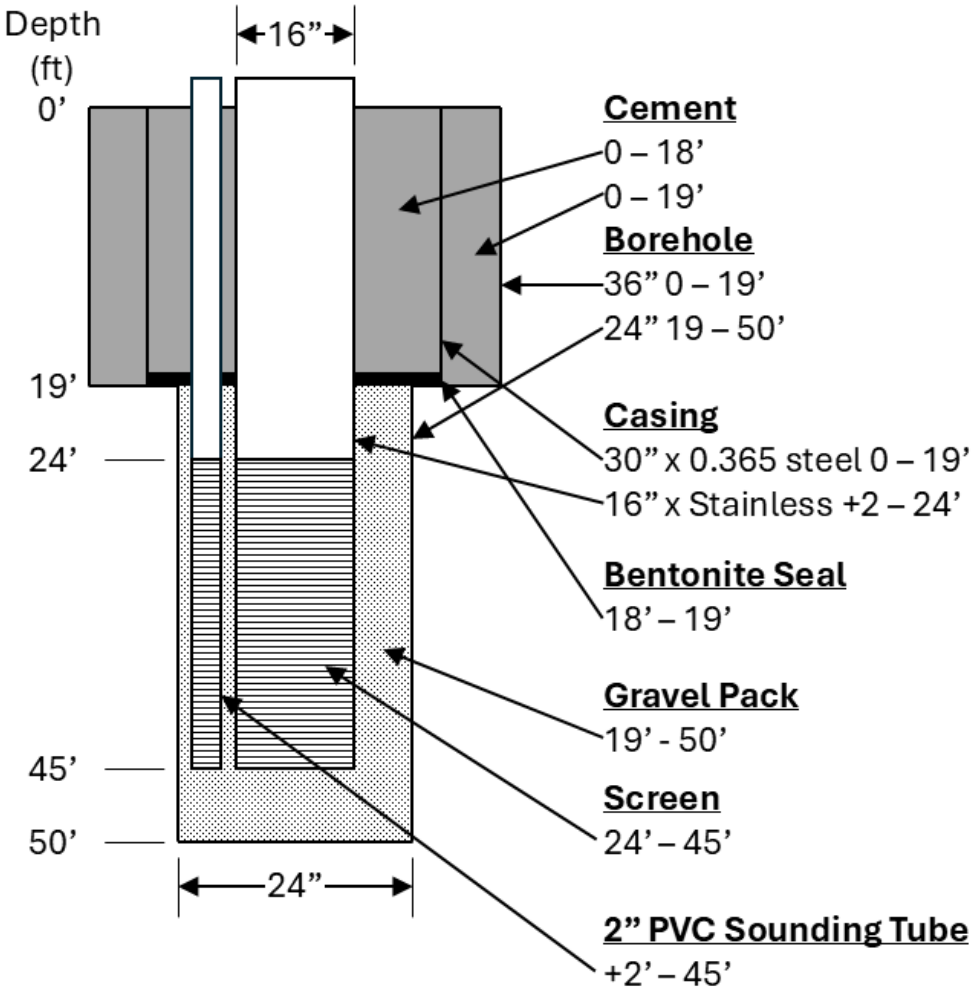
Bid Form

Item	Units	Units	Unit Cost	Total
Mobilization and Demobilization	LS	1		
Site Prep	LS	1		
Drilling – 36" Surface Hole	FT	19		
Drilling – 24" Production Hole	FT	31		
30" Steel Surface Casing	FT	19		
16" SS Blank Casing	FT	26		
16" SS Wire Wrap Screen	FT	20		
Grout	FT	19		
Bentonite Seal	FT	1		
3/8" Pea Gravel Pack	FT	31		
Development	LS	1		
Well Testing	LS	1		
Video Survey	LS	1		
Fluids Disposal	LS	1		
Cuttings Disposal	LS	1		
2" PVC sounding tube	FT	94		
Transducer	LS	2		
Pump, Motor, and Cable	LS	1		
Pump installation	LS	1		
Well Abandonment	LS	1		
			Total:	

Drillers Hourly Rate:	

Appendix B

Drawings



Not to scale

SPHEROS ENVIRONMENTAL

WWSD E-2 Redrill Well Construction
Permit Number: 11690-FR

Well E-2 Discharge Path

Widefield Well Design
Widefield Water and Sanitation District
01/08/2026

Project NO 296191000

Page 1 of 1

2 North Nevada Avenue
Colorado Springs, Colorado 80903
Phone: (719) 453-0180

Appendix C

Specifications

Widefield Water and Sanitation District (WWSD) is replacing the alluvial aquifer well E-2 (permit no. 11690-FR) located at 7381 Southmoor Drive in Fountain, CO. The cost estimate should include mobilization/demobilization, site preparation, drilling, construction, video survey, development, and testing of the new well, and installation of a new pump, drop pipe, and equipment. Additionally, please include costs for abandonment of the old well. The following operational assumptions should be made:

- The driller will be responsible for all disposal of fluids and cuttings, including drilling fluid produced during well development
- Operational hours are from 7am to 7pm
- No sound walls will be required
- Water produced during well testing will need to be discharged via a discharge line to Crews Gulch, approximately 1200 feet away. No road crossings are required.
    - Driller is responsible for providing a transducer during well testing
- During drilling operations, if lost circulation conditions occur, the driller will be compensated at the drillers hourly rate

The goal of this work is to construct a new well adjacent to the original well and to maintain similar construction to the original well, particularly the screened interval. This includes 30-inch surface casing (0.365 wall), 16-inch stainless steel casing and 16-inch stainless-steel screen (0.120 slot), 3/8” pea gravel filter pack, and sounding tubes installed in the gravel pack and inside the casing (sounding tube in gravel pack should be slotted over the same interval as the well screens). Well testing will include an 8-hour step rate test and a 72-hour constant rate test using disinfected temporary equipment.

Appendix D

Sample Contract

Contract Between Owner and Contractor
For a Small Project

This **CONTRACT** is made:

This _____ day of _____, 20___

BETWEEN the Owner:

Widefield Water and Sanitation District
Whose address is:
8495 Fontaine Blvd,
Colorado Springs, CO 80925
Phone: 719-390-7111
Fax: 719-390-1409

and the Contractor:

Phone: Phone
Fax: Fax
E-Mail: email

for the following Project:

WIDEFIELD WATER AND SANITATION DISTRICT
Project Description

The Owner and Contractor agree as follows:

ARTICLE 1

THE CONTRACT DOCUMENTS

The Contractor shall complete the Work described in the Contract Documents for the project. The Contract Documents consist of:

1. this Contract signed by the Owner and Contractor;

2. General Conditions;

3. written change orders or orders for minor changes in the Work issues after execution of this Contract; and

4. other documents, if any, identified as follows:

a. Click to enter text
b. Click or tap here to enter text.
c. Click or tap here to enter text.
d. Click or tap here to enter text.

ARTICLE 2

DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION DATE

The date of commencement shall be the date of this Contract unless otherwise indicated below. The Contractor shall substantially complete the Work not later than Date, subject to adjustment by Change Order.

ARTICLE 3

CONTRACT SUM

3.1 Subject to additions and deductions by Change Order, the total not-to-exceed Contract Sum is:
Written (number)

3.2 For purposes of payment, the Contract Sum includes the following values related to portions of the Work:

See proposal sheet

3.3 The Contract Sum shall include all items and services necessary for the proper execution and completion of the Work.

3.4 The Contract Sum will be reduced based upon the salvage value of any scrap metal salvaged by the Contractor. For purposes of this Contract, the total salvage value is estimated to be $3,000, which shall be deducted from the Contractor's first invoice(s) along with retainage as described herein. Contractor shall provide satisfactory evidence of the actual salvage value of materials sold by Contractor prior to or at the time of Contractor's final invoice and the estimate described above and the Final Payment to Contractor will be adjusted in order to reflect the actual salvage value in comparison to the salvage value estimate.

ARTICLE 4

PAYMENT

4.1 Based on Contractor's invoices for payment, the Owner shall pay the Contractor as follows:

a. The Contractor shall prepare, in a format acceptable to the Owner, a schedule showing how the Contractor will break down the Work and schedule the Work to be completed by the contractual date.

b. The Contractor shall submit invoices for payment to the Owner, in accordance with the General Conditions, and in accordance with the schedule of values provided above.

c. The Owner shall make a progress payment, less any retainage, to the Contractor within 30 days of the date of receipt of the Contractor's acceptable invoice for payment, subject to the Contractor's acceptable performance of the Work and satisfaction of any conditions contained in the Contract Documents, in the amount of 50% of the Contract Sum upon completion of 50% of the project, in the Owner's sole discretion. Final payment shall be made upon completion of the project.

d. The Owner shall reimburse the Contractor for approved materials properly stored on site, or in a location agreed to by the Owner.

e. The Owner shall withhold from payment retainage in the amount of five percent (5%) of the Contract Sum until Final Acceptance, in accordance with § 24-91-103, C.R.S.

f. Due to the relatively short duration of this project, the contractor may apply for the entire lump sum payment after Final Acceptance, if desired.

ARTICLE 5

INSURANCE AND BOND REQUIREMENTS

5.1 The Contractor shall provide Contractor's Liability and other Insurance as follows:

a. Workers' compensation insurance in accordance with applicable law.

b. Commercial general liability insurance in the amount of $1,000,000.00 combined single limit bodily injury and property damage, each occurrence; $2,000,000.00 general aggregate, and $1,000,000.00 products and completed operations. Coverage shall include all major divisions of coverage and be on a comprehensive basis, including:

1. premises operations;
2. personal injury liability without employment exclusion'
3. blanket contractual;
4. broad form property damage;
5. medical payments;
6. products and completed operations;
7. independent contractor's coverage.

Each commercial general liability policy and any workers' compensation policy shall waive any right of subrogation against the Owner and its directors, officers and employees. The policies shall state: "Permission is expressly granted to the insured to waive any right of subrogation against an individual, firm or corporation, provided such waiver is executed in writing prior to any occurrence giving rise to claims hereunder."

c. Automobile liability insurance in the amount of $1,000,000.00 combined single limit bodily injury and property damage, each accident covering any auto.

d. All policies except workers' compensation shall name the Owner, its officers, directors, agents and employees as additional insureds.

5.2 The Contractor shall obtain an endorsement to its general liability insurance policy to cover the Contractor's indemnification obligations under paragraph 3.11 of the General Conditions.

5.3 Certificates of insurance shall be provided by each party showing their respective coverages prior to commencement of the Work.

5.4 A Payment and Performance Bond is not required with this Contract, unless the not-to-exceed Contract Sum in Article 3 of this Contract is more than $50,000, in which case, Contractor shall provide a Payment and Performance Bond prior to commencement of performance executed by Contractor and an acceptable corporate surety, or collateral approved by Owner, in the full amount of the Contract Price, including provisions for any adjustment of the Contract Price in accordance with the terms of this Agreement. Such bond shall expressly guarantee: (i) faithful performance of this Agreement and completion of the Project in complete compliance with the Contract Documents; and (ii) payment to all persons performing labor and furnishing materials, supplies, tools and equipment in connection with the Project. Contractor shall obtain such bond on Owner's behalf separate and apart from any similar bond or surety or warranty agreement entered into independently between Owner and any manufacturer or supplier. Owner may, in its discretion, require that the bond guaranteeing payment to all persons performing labor and furnishing materials, supplies, tools and equipment in connection with the Project be separate from the bond guaranteeing performance of the work. Notwithstanding anything contained within the bonds to the contrary, such bonds are required, in part, by and shall comply with the minimum requirements of Section 38-26-106, C.R.S.

5.5 **Pursuant to the Workers' Compensation Act § 8-40-202(2)(b)(IV), C.R.S., the Contractor understands that it and its employees and servants are not entitled to workers' compensation benefits from the Owner. The Contractor further understands that it is solely obligated for the payment of federal and state income tax on any moneys earned pursuant to this Agreement.**

ARTICLE 6
OTHER TERMS AND CONDITIONS

6.1 Coordination and Cooperation with Other Contractors.

Contractor is responsible for coordinating its Work with any other contractors or consultants working at the site.

6.2 Quality Control.

Contractor is responsible for coordinating quality control testing to ensure performance in accordance with the specifications. Contractor shall submit for the Owner's approval prior to commencing Work a quality control plan identifying what tests will be made, when, frequency and by whom. Owner shall pay for all quality control testing.

6.3 Substantial Completion.

Contractor shall provide notice to the Owner when the Contractor has completed the entire project, or such elements of the project as may be mutually agreed to except for minor punch list items; at that time the Work can be used for its intended purposes. Upon receipt of notice, the Owner will inspect the Work. If there is no incomplete or defective Work and if there is agreement on the punch list, the Owner may allow the Work or portion of the Work to be used.

6.4 Failure to Complete Work on Time, Liquidated Damages.

If the Contractor fails to fully perform and complete the work in conformity to the provisions and conditions of the Contract within the specified time limit set forth in the Contract ("Performance Deadlines"), including any extensions granted hereto, the Contractor shall pay to the Owner for each calendar day of delay until such time the Contract is complete, liquidated damages at the applicable daily rate below.

Amount of Liquidated Damages per Calendar Day
LD's

These liquidated damages are based upon Owner's evaluation of its likely losses in the event the Performance Deadlines are not met. The liquidated damages herein established are agreed to by Contractor after full discussion of the implication of this Section. The failure to perform the work and complete the Project by the Performance Deadlines will cause significant damage to Owner. Owner and Contractor agree that such actual damages caused by Contractor's failure to meet the Performance Deadlines would reasonably likely include, without limitation, the costs for additional construction management and other Owner representative/employee time; the costs for third-party consultants' time; inefficiency and inconvenience damages to Owner's business operations; damages to Owner's reputation with third-parties (including governmental entities with regulatory jurisdiction over Owner), as well as other potential actual damages to Owner reasonably associated with the subject matter of this Agreement. Contractor acknowledges that the liquidated damages established herein are a reasonable pre-estimate of the detriment Owner will suffer in the event Contractor fails to perform the work and complete the Project by the Performance Deadlines and, after a full discussion of the implications of this section, further acknowledges that it would be impractical and extremely difficult to estimate precisely the damages that Owner might suffer by reason of Contractor's failure to perform the work and complete the Project by the Performance Deadlines. The liquidated damages established herein are intended to be and are cumulative and shall be in addition to any other remedy enforceable at law under this Agreement. Liquidated damages do not include any sums of money to reimburse Owner for extra costs which Owner may become obligated to pay on other contracts, which are delayed or extended because of Contractor's failure to perform the work and complete the Project by the Performance Deadlines. Should Owner incur such other additional costs because of delays or extensions to other contracts resulting from Contractor's unexcused failure or delay in performance, Owner will assess any such extra costs against Contractor in addition to the liquidated damages provided for herein.

6.5 Final Acceptance.

Final Acceptance of the Work will occur when all the requirements of the Contract Documents have been met and all punch list items have been completed to the reasonable satisfaction of the Owner. Notice of Final Acceptance shall be acknowledged by written notice by the Owner.

6.6 Warranties.

Contractor warrants to the Owner that upon Final Acceptance the Work shall be fit for its intended purposes, that material and equipment furnished under this Contract shall be of good quality and new, that all Work shall be free from defects and that all Work shall conform to all of the requirements of this Contract. If at any time within one year after Final Acceptance, any portion of the Work is found to be not in accordance with the Contractor's warranty, Contractor shall correct it promptly after receipt of written notice from the Owner to do so. The Contractor's warranty shall expire one year from the date of Final Acceptance.

6.7 Conflicting Provisions; Grant Requirements Control; Interpretation.

In the event any provision of this Agreement conflicts with any provision of any other Contract Document, then the provisions of this Agreement shall govern and control such conflicting provisions. If the Project is financed in whole or in part by a federal or State grant, any provision of the Contract Documents that is in conflict with the terms of such grant shall be inapplicable. Subject to the foregoing provisions of this Section, to the extent the Parties need guidance on a matter that is not addressed by the Contract Documents, such matter shall be governed by the pertinent provisions, if any, contained in the General Conditions.

6.8 Counterparts; Electronic Signatures; Electronic Records.

This Agreement may be executed in multiple counterparts, each of which shall constitute an original, but all of which shall constitute one and the same document. The Parties consent to the use of electronic signatures and agree that the transaction may be conducted electronically pursuant to the Uniform Electronic Transactions Act, § 24-71.3-101 et seq., C.R.S. This Agreement and any other documents requiring a signature may be signed electronically by either Party. The Parties agree not to deny the legal effect or enforceability of this Agreement, solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of this Agreement in the form of an electronic record, a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature on the grounds that it is an electronic record or an electronic signature or that it is not in its original form or is not an original.

This Contract is entered into as of the day and year first written above.

OWNER:

WIDEFIELD WATER AND SANITATION DISTRICT

By: _____
Name/Title: _____

Attest:

By: _____
Name/Title: _____

STATE OF COLORADO)
) ss.
COUNTY OF_____)

The foregoing instrument was acknowledged before me this _____ day of _____, 2021, by _____, as _____ of Widefield Water and Sanitation District.

WITNESS my hand and official seal.

My commission expires: _____

[SEAL]

_____
Notary Public

CONTRACTOR:

By: _____
Name/Title: _____
License No.: _____

STATE OF COLORADO)
) ss.
COUNTY OF_____)

The foregoing instrument was acknowledged before me this _____ day of _____, 2021, by _____, as _____ of_____, a Colorado corporation.

WITNESS my hand and official seal.

My commission expires: _____

[SEAL]

_____
Notary Public

Appendix E

ANSI/AWWA A100-15/A100-20 Standard for Water Wells

ANSI/AWWA **A100-20**

(Revision of ANSI/AWWA A100-15)

AWWA Standard

Water Wells

Effective date: July 1, 2020.
First edition approved by Board of Directors May 10, 1946.
This edition approved Jan. 23, 2020.
Approved by American National Standards Institute Feb. 6, 2020.

American Water Works Association

Approved American National Standard ANSI

STANDARD Since 1881

AWWA Standard

This document is an American Water Works Association (AWWA) standard. It is not a specification. AWWA standards describe minimum requirements and do not contain all of the engineering and administrative information normally contained in specifications. The AWWA standards usually contain options that must be evaluated by the user of the standard. Until each optional feature is specified by the user, the product or service is not fully defined. AWWA publication of a standard does not constitute endorsement of any product or product type, nor does AWWA test, certify, or approve any product. The use of AWWA standards is entirely voluntary. This standard does not supersede or take precedence over or displace any applicable law, regulation, or codes of any governmental authority. AWWA standards are intended to represent a consensus of the water industry that the product described will provide satisfactory service. When AWWA revises or withdraws this standard, an official notice of action will be placed in the Official Notice section of *Journal AWWA*. The action becomes effective on the first day of the month following the month of *Journal AWWA* publication of the official notice.

American National Standard

An American National Standard implies a consensus of those substantially concerned with its scope and provisions. An American National Standard is intended as a guide to aid the manufacturer, the consumer, and the general public. The existence of an American National Standard does not in any respect preclude anyone, whether that person has approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard. American National Standards are subject to periodic review, and users are cautioned to obtain the latest editions. Producers of goods made in conformity with an American National Standard are encouraged to state on their own responsibility in advertising and promotional materials or on tags or labels that the goods are produced in conformity with particular American National Standards.

CAUTION NOTICE: The American National Standards Institute (ANSI) approval date on the front cover of this standard indicates completion of the ANSI approval process. This American National Standard may be revised or withdrawn at any time. ANSI procedures require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of ANSI approval. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036; 212.642.4900, or emailing info@ansi.org.

ISBN-13, print: 978-1-64717-005-9

ISBN-13, electronic: 978-1-61300-548-4

DOI: http://dx.doi.org/10.12999/AWWA.A100.20

Committee Personnel

The AWWA Standards Committee on Wells, which reviewed and approved this standard, had the following personnel at the time of approval:

Ernest B. Williams, *Chair*
Gregory D. Buffington, *Vice-Chair*

General Interest Members

D.W. Abbott, Oakland, Calif.
R.N. Davee, Wright-Pierce Engineers, Portsmouth, N.H.
F. Getchell, WSP USA, Upper Saddle River, N.J.
R.J. Kyle, KYLE Groundwater, Pomona, Calif.
D. Mason (*liaison, nonvoting*), Standards Council Liaison, Allstate Consultants, Lees Summit, Miss.
E. Meek (*liaison, nonvoting*), Standards Engineer Liaison, AWWA, Denver, Colo.
L. Thomas, Stanley Consultants, Crystal Lake, Ill.
T. Watkins (*alternate*), GEOSCIENCE Support Services, Claremont, Calif.
D.E. Williams, GEOSCIENCE Support Services, Claremont, Calif.
E.B. Williams, Bennett & Williams Inc., Columbus, Ohio
S. Wojtkiewicz, Donohue & Associates, Rice Lake, Wis.
C.P. Wolf, Daniel B. Stephens & Associates, Albuquerque, N.M.

Producer Members

G.D. Buffington, Layne Christensen Company, Aurora, Ill.
A.C. Fiedler, Johnson Screens, Colorado Springs, Colo.
K.S. Kaplan, Red Flint Sand and Gravel, Eau Claire, Wis.
T.D. Lynch, Roscoe Moss Company, Los Angeles, Calif.
K.B. McGillicuddy (*alternate*), Roscoe Moss Company, Los Angeles, Calif.
M.H. Mehmert, Aqseptence Group/Johnson Screens, Evergreen, Colo.
M.D. Richardson, J&S Well Service, Bellville, Tex.
K.M. Wartick (*alternate*), Layne Christensen Company, The Woodlands, Tex.
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User Members

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Contents

All AWWA standards follow the general format indicated subsequently. Some variations from this format may be found in a particular standard.

Tables

Appendixes

Foreword

This foreword is for information only and is not a part of ANSI/AWWA A100.*

I. Introduction.

I.A. *Background*. This standard was originally used more as a specification than as a standard. Subsequent changes have been directed at developing a true standard as opposed to a specification. This standard is designed primarily for vertical wells for municipal and industrial water supply.

I.B. *History*. The first edition of this standard was approved by the AWWA Board of Directors on May 10, 1946, and was titled "Standard Specifications for Deep Wells," with the designation 4A1-1946. Amendments to Sec. 1-1.1, Sec. 1-3.2, and Sec. 1-3.3 of that standard were approved by the board on Oct. 1, 1946, and the standard was redesignated AWWA A100-46. Subsequently, a number of minor editorial changes were made; a recommended procedure for sealing abandoned wells was added as appendix Sec. A1-13; and the standard was published on June 18, 1952, titled "Standard for Deep Wells." The standard was revised on Jan. 26, 1958, and was adopted jointly by AWWA and the National Water Well Association (NWWA). The standard was revised again in 1966. In 1984, the standard was reorganized substantially and revised to be a standard for well construction, rather than a specification, and republished under the title "Standard for Water Wells." The standard was again revised in 1990 and 1997. Subsequent editions were approved by the AWWA Board of Directors on Feb. 12, 2006, and June 7, 2015. This edition was approved on Jan. 23, 2020.

I.C. *Acceptance*. In May 1985, the US Environmental Protection Agency (USEPA) entered into a cooperative agreement with a consortium led by NSF International (NSF) to develop voluntary third-party consensus standards and a certification program for direct and indirect drinking water additives. Other members of the original consortium included the Water Research Foundation (formerly AwwaRF) and the Conference of State Health and Environmental Managers (COSHEM). The American Water Works Association (AWWA) and the Association of State Drinking Water Administrators (ASDWA) joined later.

In the United States, authority to regulate products for use in, or in contact with, drinking water rests with individual states.[†] Local agencies may choose to impose

* American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036.

† Persons outside the United States should contact the appropriate authority having jurisdiction.

requirements more stringent than those required by the state. To evaluate the health effects of products and drinking water additives from such products, state and local agencies may use various references, including

1. Specific policies of the state or local agency.
2. Two standards developed under the direction of NSF*: NSF/ANSI/CAN† 60, Drinking Water Treatment Chemicals—Health Effects, and NSF/ANSI/CAN 61, Drinking Water System Components—Health Effects.

Various certification organizations may be involved in certifying products in accordance with NSF/ANSI/CAN 61. Individual states or local agencies have authority to accept or accredit certification organizations within their jurisdictions. Accreditation of certification organizations may vary from jurisdiction to jurisdiction.

Annex A, "Toxicology Review and Evaluation Procedures," to NSF/ANSI/CAN 61 does not stipulate a maximum allowable level (MAL) of a contaminant for substances not regulated by a USEPA final maximum contaminant level (MCL). The MALs of an unspecified list of "unregulated contaminants" are based on toxicity testing guidelines (noncarcinogens) and risk characterization methodology (carcinogens). Use of Annex A procedures may not always be identical, depending on the certifier.

ANSI/AWWA A100 does not address additives requirements. Users of this standard should consult the appropriate state or local agency having jurisdiction in order to

1. Determine additives requirements, including applicable standards.
2. Determine the status of certifications by all parties offering to certify products for contact with, or treatment of, drinking water.
3. Determine current information on product certification.

II. Special Issues.

II.A. *Screen Capacity*. The physical conditions of aquifers, as well as the experience and practice related to their utilization as groundwater resources, vary between well sites and geographic regions. Historically, a common practice for sizing well-screen length and diameter was based on screen open area and inlet velocity (entrance velocity). However, the recommended upper limit for this screen inlet velocity has varied greatly among designers and remains a subject of considerable technical debate. Many designers have, for various technical reasons, limited well-screen entrance velocities to not exceed 0.1 ft/s (0.03 m/s). Others have used and demonstrated successful well designs and installations with velocities substantially exceeding 0.1 ft/s

* NSF International, 789 North Dixboro Road, Ann Arbor, MI 48105.
† Standards Council of Canada, 55 Metcalfe Street, Suite 600, Ottawa, ON K1P 6L5 Canada.

(0.03 m/s), and prior editions of this standard (through the 1997 edition) proposed an upper limit of entrance velocity of 1.5 ft/s (0.46 m/s).

Based on a significant body of ongoing research within the groundwater industry, the committee recognizes as part of this current standard that there is no singular uniquely defined criterion for permissible velocity through the screen slot openings that is solely suitable for designing a well screen without consideration of the aquifer characteristics and the manner of well construction. In particular, the aspects of flow surrounding the well screen in the filter and at the filter–aquifer interface are known to play a prominent role in the well's performance and are, in fact, more influential than screen entrance velocity in determining screen dimensions. Similarly, the sizing of screen length and diameter are greatly influenced by the aquifer thickness, stratigraphic layering, and pump size. Accordingly, the applicable design approach must be regarded as a multifaceted and dynamic problem. Within this context, this standard does not recommend screen design solely on the basis of screen entrance velocity criterion (Sec. 4.5.3).

III. Use of This Standard. It is the responsibility of the user of an AWWA standard to determine that the products described in that standard are suitable for use in the particular application being considered.

III.A. *Purchaser Options and Alternatives.* The following information should be provided by the purchaser:

1. Standard used—that is, ANSI/AWWA A100, Water Wells, of latest revision.
2. Whether compliance with NSF/ANSI/CAN 61, Drinking Water System Components—Health Effects, is required, in addition to the requirements of the Safe Drinking Water Act.
3. Scope of the exploratory investigation (Sec. 4.2.1).
4. Whether additional formation samples are needed (Sec. 4.2.2.2).
5. Time, place, and mode of sample delivery (Sec. 4.2.2.5).
6. Type of geophysical log desired, if any (Sec. 4.2.3).
7. Details of federal, state, and local requirements (Sec. 4.3).
8. Options for type of casing material (Sec. 4.3.4).
9. Whether the purchaser wants to specify temporary casings (Sec. 4.4.1).
10. Minimum casing wall thickness (Sec. 4.4.5).
11. Determination of the capacity of the well screen by careful evaluation of the composition of the aquifer. (The well-screen selection should be made by a qualified professional engineer, hydrogeologist, or well-drilling constructor.) (See Sec. 4.5, Appendix L, and Sec. II.A, Screen Capacity, of the foreword.)

12. Maximum rate of flow from well (Sec. 4.5.2 and Sec. 4.5.3).

13. Available options for screen construction (Sec. 4.5.7).

14. Requirements for approval of filter pack sampling (Sec. 4.6.3).

15. Alternate-alignment tolerance (Sec. 4.7.9.4 and Appendix D).

16. The depth of the completed well, which defines the lower limit to which construction tolerances are to be applied (Sec. 4.7.9.5).

17. Height of well casing above ground level (Sec. 4.7.10.3).

18. Flow rate and protocol for performance testing (Sec. 5.1 and Sec. E.4.2 in Appendix E).

19. Accuracy of water-level measurements (Sec. E.2.2 in Appendix E).

III.B. *Modification to Standard.* Any modification to the provisions, definitions, or terminology in this standard must be provided by the purchaser.

IV. Major Revisions. Major revisions made to the standard in this edition include the following:

1. The scope was clarified that this standard is primarily for vertical wells for municipal and industrial water supply (Sec. 1.1).

2. "Gravel packed" terminology was updated to "filter packed" material throughout the standard. The definition was updated to recognize that packs can range from sand to coarse gravel depending on the formation.

3. Test duration was added to the list of driller's log items (Sec. 4.2.5.1).

4. A constructor requirement to remove drilling fluids has been added to Sec. 4.8.2.

5. Disinfection level of available chlorine has been updated to 100 mg/L for the entire water depth of the well (Sec. 4.9.2).

6. An Alternate-Alignment Tolerance Warning was added to the beginning of Appendix D.

7. The equations in Appendix K have been updated to clarify conversions for use with metric units.

V. Comments. If you have any comments or questions about this standard, please call AWWA Engineering and Technical Services at 303.794.7711, FAX at 303.795.7603; write to the department at 6666 West Quincy Avenue, Denver, CO 80235-3098; or email at standards@awwa.org.

American Water Works Association
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ANSI/AWWA A100-20
(Revision of ANSI/AWWA A100-15)

AWWA Standard

Water Wells

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes the minimum requirements for vertical water supply wells and is designed primarily for municipal and industrial applications.

Sec. 1.2 Purpose

The purpose of this standard is to provide the minimum requirements for water wells, including consideration of the influences of geologic and hydrologic conditions and water quality and well construction.

Sec. 1.3 Application

This standard can be referenced in specifications for constructing water wells and can be used as a guide for vertical water supply wells. The stipulations of this standard apply when this document has been referenced and only to water wells used in water supply service applications. Application of this standard is not limited by well depth.

SECTION 2: REFERENCES

This standard references the following documents. In their latest editions, they form a part of this standard to the extent specified within the standard. In any case of conflict, the requirements of this standard shall prevail.