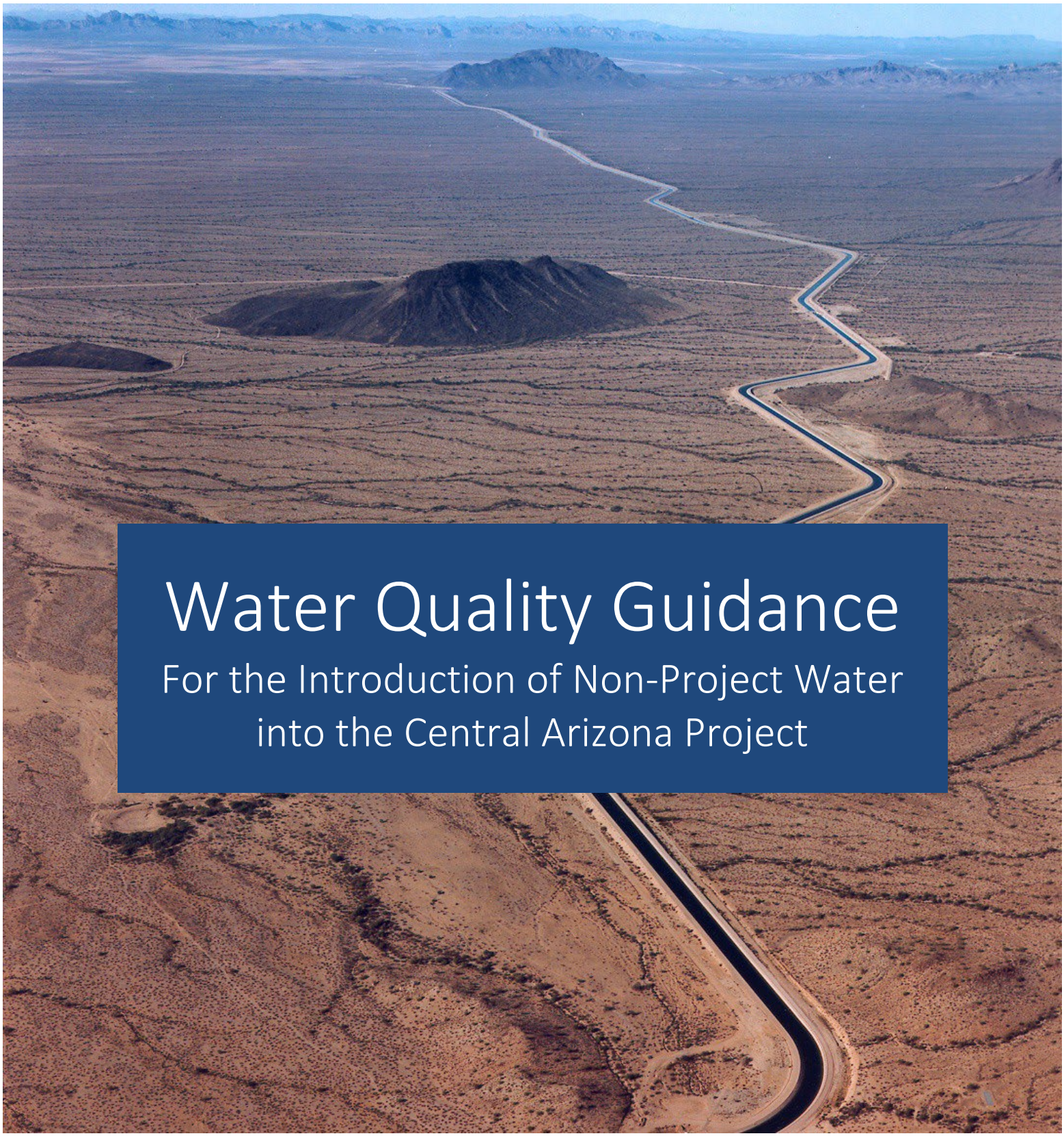

Water Quality Guidance

For the Introduction of Non-Project Water into the Central Arizona Project

CAP
CENTRAL ARIZONA PROJECT

BUREAU OF
RECLAMATION

Water Quality Guidance
For The Introduction of Non-Project Water into the Central Arizona Project

August 21, 2025

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1 Definitions

- Applicant – means the person or organization that wishes to enter into an agreement with CAWCD and/or the United States to introduce Non-Project Water into the CAP System.

- *CAP System* – as defined in the System Use Agreement, and used herein means all of the transferred works of the Central Arizona Project (CAP) including, but not limited to: A) the Mark Wilmer Pumping Plant; B) the Hayden-Rhodes Aqueduct; C) the Fannin-McFarland Aqueduct; D) the Tucson Aqueduct; E) the New Waddell Dam; F) any pumping plant or appurtenant works of a feature described in any of A) through E); and G) any extension of, addition to, or replacement for a feature described in any of A) through F). This definition excludes all federal and non-federal canals, pipelines or facilities that are not operated by CAWCD including those that transport water from the CAP System to end-users.

- *CAP System-wide Water Quality Model* – means a computer model maintained by CAWCD that is capable of simulating the individual and cumulative water quality effects of introducing Non-Project Water into the CAP system.

- *CAWCD* – means the Central Arizona Water Conservation District, a multi-county water district organized under the laws of Arizona, or any successor operating agency for the CAP System.

- *CAWCD Water Transmission Group* – means the division of CAWCD charged with the operational responsibilities for wheeling Non-Project Water.

- *CAWCD Wheeling Contract* – as defined in the System Use Agreement, and used herein means a contract among CAWCD, Reclamation, and a separate party for the transportation of Non-Project Water in the CAP system.

- *Delivery Standards* – means the maximum target numeric water quality standards established by CAWCD and Reclamation when Non-Project Water supplies are modeled with a one million acre-foot Project Water supply.

- *EPA* – means the United States Environmental Protection Agency.

- *Federal Arrangement* – as defined in the System Use Agreement, and used herein means an arrangement relating to the use of the CAP System entered into by Reclamation and a separate party under Article 8.17 of the Master Repayment Contract.

- *Firming Agreement* – as defined in the System Use Agreement, and used herein means an agreement between the United States or CAWCD and Long-Term Contractors or lessees of tribal Project Water to set forth the terms and conditions under which CAWCD will deliver, and the Long-Term Contractor or lessee of tribal Project Water will accept, Firming Water.

- *Firming Water* – as defined in the System Use Agreement, and used herein means water, including non-Project Water introduced into the CAP System, available to satisfy all or a portion of a CAP long-term delivery contract that has been reduced due to a water shortage.

- *Introduction Standards* – means the numeric water quality standards, established by CAWCD and

Reclamation, which define the maximum allowable concentrations of constituents in Non-Project Water that is introduced into the CAP System.

- *Master Repayment Contract* – means the Contract between the United States and the Central Arizona Water Conservation District for Delivery of Water and Repayment of Costs of the Central Arizona Project, Contract No. 14-06-W-245, Amendment No. 1, dated December 1, 1988, as it may be amended and supplemented.

- *Non-Project Water* – as defined in the System Use Agreement, and used herein means all water, including Recovered Water, other than Project Water. For the purposes of the System Use Agreement and this Guidance Document, the term Non-Project Water does not include Long-Term Storage Credits.

- *Project Water* - means that water defined as Project Water in the Repayment Stipulation.

- *Reclamation Wheeling Contract*— as defined in the System Use Agreement, and used herein means a contract between Reclamation and a separate entity to deliver Non-Project Water using the CAP System entered into pursuant to Article 8.17 of the Master Repayment Contract.

- *Recovered Water* - as defined in the System Use Agreement, and used herein means the water resulting from the recovery of Long-Term Storage Credits from wells pursuant to a valid recovery well permit issued by Arizona Department of Water Resources (ADWR) under A.R.S. § 45-834.01.

- *Repayment Stipulation* – means the Stipulated Judgment and the Stipulation for Judgment (including any exhibits to those documents) entered on November 21, 2007, in the United States District Court for the District of Arizona in the consolidated civil action styled Central Arizona Water Conservation District v. United States, et al., and numbered CIV 95-625-TUC-WDB (EHC) and CIV 95-1720-PHX-EHC.

- *System Use Agreement* – means The Central Arizona Project System Use Agreement between the United States and the Central Arizona Water Conservation District, Agreement No. 17-XX-30- W0622 (Feb. 2, 2017).

- *Turn-In* – means a structure that facilitates the introduction of Non-Project Water into the CAP System.

- *Verification Sample* – means a mandatory water quality sample collected pursuant to Section 6 herein after an exceedance of an Introduction Standard in an initial sample.

- *Wheeling* – means use of the CAP system to transport and deliver Non-Project Water.

- *Wheeling Entity* – means the person or organization that has entered into a CAWCD Wheeling Contract, Reclamation Wheeling Contract, Federal Arrangement, or Firming Agreement.

2 Introduction

2.1 CAP Water Quality

The CAP System delivers Colorado River water for a variety of uses by tribes, cities, private water companies, irrigation districts and others in Maricopa, Pinal, and Pima counties. CAWCD has been monitoring water quality within the CAP System since 1996 and the historical data demonstrates a high degree of consistency through time. The Project Water delivered by the CAP System is also relatively high quality, however treatment is needed for direct potable use, and many municipalities operate advanced surface water treatment plants to provide it as drinking water to their customers.

CAWCD's historical water quality data provides a baseline for many of the water quality standards referenced in this document (Appendix A). Although CAWCD does not warrant the quality of water and is under no obligation to treat the water, CAWCD and Reclamation recognize that CAP Water is highly valued by water users, and protecting the quality and chemical stability of that water is a priority.

2.2 Transportation of Non-Project Water

The CAP system was designed to divert and deliver Project Water. However, the ability to wheel Non-Project Water supplies has been contemplated for decades, and is consistent with federal directives to maximize project benefits. The first request for transportation of Non-Project Water came to CAWCD in 1983, and the 1988 Master Repayment Contract explicitly contemplates wheeling Non-Project Water, notably in Articles 8.17 and 8.18. Article 8.18 includes specific reference to a jointly developed Standard Form of Wheeling Contract. The Secretary is required to take into consideration the impact that wheeling of such Non-Project water will have on the quality of the project water when considering the approval of such a contract.

In February 2017, CAWCD and Reclamation approved the Central Arizona Project System Use Agreement, which includes a Standard Form Wheeling Agreement and other provisions related to the transportation of Non-Project Water through the CAP System. Non-Project Water can originate from a variety of sources with water quality characteristics that differ from CAP water. Therefore, the System Use Agreement calls for CAWCD and Reclamation to establish "uniform water quality standards" that must be adhered to by all parties introducing Non-Project Water into the CAP system. Non-Project Colorado River supplies that are transported by the CAP system are excluded from these standards. CAWCD and Reclamation share the goal of maximizing the flexibility of the CAP and maximizing the potential beneficiaries from transportation of Non-Project Water.

2.3 Establishment of Water Quality Standards

The water quality standards and related operational approaches in this document were developed by CAWCD and Reclamation with extensive engagement by the CAWCD Board of Directors, technical experts, and affected parties, including both Tribal contractors and M&I subcontractors. These processes spanned more than two years, and included multiple opportunities for public comment and involvement. Water quality data and information developed pursuant to this agreement will be available to both CAWCD and Reclamation.

The core of the adopted water quality approach is the establishment of numeric standards for a broad suite of constituents. These include Introduction Standards, which are fully enforceable at the point of discharge into the CAP System, and Delivery Standards, which serve as maximum reference

levels for modeling the collective impacts after blending with one million acre-feet of Project Water. Introduction Standards have been established at levels such that changes to the character of Project Water are expected to be both modest and gradual as non-Project Water supplies are introduced through time.

In addition to input from stakeholders and experts, the historical CAP water quality data, data from local and regional sources, laboratory Method Reporting Limits (MRL), recognized Federal and State contaminant levels, and model simulations for a wide range of future scenarios were considered in developing these standards. The numeric standards are presented in Appendix A and are subject to review and re-classification every 5 years or sooner if Reclamation and CAWCD determine changes are necessary to achieve the objectives described in this document:

Table A-1 - Includes identified priority constituents. Standards were developed as described above.

Table A-2 – Includes constituents that have rarely or never been found in CAP water, including primary and secondary EPA regulated contaminants, EPA unregulated contaminants, and EPA recognized disinfection byproducts. The standards for these constituents have been set to preclude appreciable concentrations from being introduced into the CAP System, and are based on historical values in CAP Water and Method Reporting Limits (MRLs) utilized by licensed laboratories. Table A-2 also includes bacteria and parasites (microbiology) that should only be introduced at levels that are not significantly higher than CAP baseline values (Section 6.3).

Table A-3 – Includes constituents that are rare in most water supplies and there is currently no standard EPA analytical method for testing. Although testing is not required, the status of these constituents will be periodically monitored and may be re-characterized at any time by CAWCD and Reclamation.

2.4 Environmental Reviews

The Central Arizona Project is a federal facility, and Applicants proposing to introduce Non-Project Water into the CAP System must comply with all applicable environmental regulations, including the National Environmental Policy Act (NEPA). The NEPA analysis will include consideration of how the application of the water quality standards in this Guidance Document will affect the quality of water delivered over a range of supply conditions as well as any project modifications that may be necessary. Once a project completes the environmental reviews it will receive the final environmental clearance from Reclamation. Per Section 6.6 of this Guidance Document, operational modifications that were part of the final environmental clearance shall be included as contractual requirements of the project and wheeling contract(s).

2.5 Guidance Document Status

This Guidance Document is intended to provide assistance to both those seeking to introduce Non-Project Water to the CAP System, and those reviewing such proposals in the course of administrating the CAP System and related contracts. This Guidance Document does not create any legal right, entitlement, or cause of action. Proposals for introduction and delivery of Non-Project Water into the CAP System will be reviewed individually. Although this document can be used as a general guideline, CAWCD and Reclamation reserve the right to modify its contents at any time.

3 Initial Analysis

3.1 Purpose

The Initial Analysis is intended to allow CAWCD and Reclamation to have sufficient information to make a determination of the likely effect of introducing a proposed Non-Project Water source into the CAP System. This step occurs prior to the introduction of the Non-Project Water supply and includes use of the CAP System-wide Water Quality Model (Section 3.4.4) to evaluate conformance with Delivery Standards per Section 3.4.5.

3.2 Applicant Permitting

An Applicant that desires to introduce Non-Project Water into the CAP System is responsible for securing all requisite Federal, State, or local approvals, permits, or licenses, including all applicable environmental clearances.

3.3 Applicant Financial Requirements

An Applicant that desires to introduce Non-Project Water into the CAP System is responsible for all costs and expenses related to the transportation of that water. Costs and expenses include, but are not limited to the environmental clearances, permitting, facilities used to introduce and transport water into the CAP System, and the associated water quality testing and monitoring described in this document.

3.4 Water Quality Analysis

The introduction of Non-Project Water has the potential to alter, and possibly degrade, the water quality in the CAP System. Because of this potential, it is essential for CAWCD and Reclamation to evaluate how a proposed Non-Project Water supply will meet Introduction Standards. Additionally, as part of the evaluation in the Initial Analysis, the introduction of the Non-Project Water must not, in combination with all other approved Non-Project water supplies, result in an exceedance of the Delivery Standards with a one million acre-foot Project Water supply as simulated by the CAP System-wide Water Quality Model.

3.4.1 Water Quality – Initial Analysis

The following sampling protocols will be required in the Initial Analysis phase for all entities that wish to introduce Non-Project Water into the CAP system:

3.4.1.1 Physical Sampling Procedures

To adequately assess the suitability of groundwater (wells) and/or surface water for introduction into the CAP, Non-Project source water must be collected by the Applicant using appropriate procedures. The Southwest Region of the United States Environmental Protection Agency (EPA Region 9) has provided acceptable sampling and handling techniques on its website. Alternatively, the USGS National Field Manual for Collection of Water Quality Data details appropriate sampling and handling procedures for both surface water and groundwater sources. Wheeling entities that prefer to utilize procedures that differ from EPA or USGS methods must be given approval by CAWCD and Reclamation.

3.4.1.2 Laboratory

A test result is valid only if the sample is analyzed by a laboratory that is licensed by the Arizona Department of Health Services, an out-of-state laboratory licensed under A.R.S. § 36-495.14, or a laboratory exempted under A.R.S. § 36-495.02, for the analysis performed. Laboratories must use analytical methods as prescribed in A.A.C. R9-14-610, 40 CFR 136.3, or an alternative analytical method approved under A.A.C. R9-14-610(C). If no Arizona Department of Health Services approved method exists, then an appropriate method, developed by the EPA, shall be used.

3.4.1.3 Chain of Custody (COC)

Specific laboratory COC procedures are described in each laboratory's Quality Assurance Program Manual. In general, COC forms will be used to document custody of the samples. All individuals transferring and receiving samples will sign, date, and record the time on the COC that the samples are transferred. Laboratories must receive the COC documentation submitted with each batch of samples and sign, date, and record the time the samples are transferred. Laboratories will also note any sample discrepancies (e.g., labeling, breakage).

3.4.1.4 Initial Analysis Sampling – Groundwater

A sample of each well that is proposed as a Non-Project source is required and must be collected during the Initial Analysis phase using physical sampling and handling methods described above. Constituents listed in Table A-1 must be sampled from each proposed well. Constituents listed in Table A-2 must also be sampled from each well unless CAWCD, in consultation with the Applicant and Reclamation, has determined that a subset of representative wells is sufficient for the Initial Analysis.

3.4.1.5 Initial Analysis Sampling – Surface Water

Due to the seasonal variability and complexity in surface waters, specific sampling frequency for the Initial Analysis may be determined through coordination with CAWCD and Reclamation. However, general guidelines will be as follows:

> The Applicant must demonstrate that Introduction Standards can be met for any times of the year, and all operating conditions, for which introduction into the CAP system is proposed. Historic data may be utilized in lieu of sampling, but is subject to approval. The historic data must be collected within the previous three years and include the full list of constituents (Tables A-1 and A-2). If sufficient historic data is not available, the Applicant may be required to supplement the historic data with current sample data to meet Introduction Standards.
>
> If historic data is not available, current conditions must be tested and variability in water quality must be evaluated. Surface water samples must be taken at the nearest point of proposed introduction (turn-In). Physical sampling and handling procedures outlined in Section 3.4.1.1 must be utilized.

For constituents listed in Table A-1, samples must be collected quarterly for a minimum of one year or more frequent samples for the Initial Analysis may be required through coordination with CAWCD and Reclamation. For constituents in Table A-2, samples must be collected semi-annually during that same year.

3.4.1.6 Other Non-Project Water Supplies

It is possible through the use of advanced water treatment technologies for heavily impaired water sources, including effluent, to be treated to the point where Introduction Standards could be met. However, the degree of treatment required and issues of public perception warrant additional caution and consideration. As a consequence, CAWCD and Reclamation will not consider projects in which effluent, liquid waste from mining, energy or oil and gas operations, or water from a Superfund or WQARF site is the source water for introduction into the CAP System, even if Introduction Standards can be met with treatment, until at least five years of operational experience with introduction of other supplies, and the mandated review of standards in Section 7.2 has occurred.

3.4.2 Modeling of Introduction Standards

For groundwater, if multiple wells are to be blended prior to introduction into the CAP, the Applicant is responsible for demonstrating (through modeling or physical sampling of the blended supply) that the blended composition of well water will meet established Introduction Standards. Although CAWCD and Reclamation do not require a specific water quality model to be used, the model chosen by the Applicant must be robust enough to adequately demonstrate that water quality will meet Introduction Standards over a broad range of operational regimes (e.g. flow rates from various wells).

For surface water, water quality modeling on a monthly time-step will be required to demonstrate that the surface water will meet established Introduction Standards based on seasonal water quality characteristics and over a range of operational regimes (e.g. seasonal flow rates).

In the event that surface water and groundwater are proposed to be blended prior to introduction into the CAP, considerable modeling will be required to demonstrate compliance with Introduction Standards. In this case, specific requirements will be outlined in advance.

For blending purposes, values of constituents that are reported by a laboratory as "non-detect" should be considered to be 50% of the MRL as listed in Appendix A or the MRL used by the testing laboratory, whichever is lower.

3.4.3 Review and Verification

The Applicant will meet with CAWCD to discuss test results and model output. Test results conducted by the laboratory within the previous twelve months, must be made available at this meeting. In addition, the water quality model must be presented in a manner that clearly demonstrates that the Applicant will meet Introduction Standards over a range of operational scenarios. Under limited conditions, a short-term variance to the Introduction Standards may

be considered (as described in Section 6.5.1).

3.4.4 CAWCD System-wide Modeling

The CAWCD Water Transmission Group is responsible for the ongoing development, calibration and maintenance of a CAP System-wide Water Quality Model that is capable of simulating the individual and cumulative water quality effects of introducing Non-Project Water into the CAP System over a broad range of operating scenarios.

Upon verification and acceptance of initial water quality test results and modeling of Introduction Standards from the Applicant (Section 3.4.2), the data will be incorporated into the CAP System-wide Water Quality Model to evaluate how the Applicant's Non-Project Water will affect the total CAP water supply.

This up-front evaluation will be based on a shortage-reduced Project Water supply of one million acre-feet. The evaluation will include the water quality and volume from all previously approved sources of Non-Project Water, and water quality monitoring data collected by CAWCD and others. Results from these analyses will be shared with Reclamation and available for public review. Additional modeling at other Project Water supply volumes including at 1.5 million acre-feet, 1.25 million acre-feet, 750,000 and minimal CAP supplies will be conducted as part of CAWCD's initial review and Reclamation's NEPA review. The goal is to describe the impacts to CAP water quality in a manner that covers a full range of projected CAP operations.

3.4.5 Exceedance of Modeled Delivery Standards

In the event that modeling with a one million acre-foot Project Water supply during the Initial Analysis shows that the proposed Non-Project Water supply would meet the Introduction Standards, but would, in combination with all other previously approved Non-Project Water sources, result in an exceedance of one or more Delivery Standards, CAWCD and Reclamation would work with all wheeling parties, any cooperating agencies, and interested parties to identify opportunities for alternate resolution that would result in meeting the Delivery Standards. If a timely alternative resolution is not achieved, CAWCD and Reclamation will take steps to accommodate the proposed Non-Project water supply in a way that would result in meeting the Delivery Standards, including reserving the right to adopt more restrictive Introduction Standard(s) applicable to both the proposed and all previously approved Non-Project water supply projects.

3.4.6 Water Treatment Plan

If testing and modeling fail to demonstrate compliance with Introduction Standards, and a variance is not provided, then treatment may be required prior to introducing water into the CAP System. In this case, the Applicant must demonstrate that the treated water is acceptable for introduction. A comprehensive water treatment plan will be developed by the Applicant for approval by CAWCD and Reclamation. Testing and modeling of the treated water will be required as described above, but will be specifically determined by CAWCD and Reclamation on a case-by-case basis.

3.4.7 Modifications to Non-Project Source Supply

Any proposed changes (excluding routine maintenance) to Non-Project water sources (e.g., new or modified groundwater wells, changes in surface water diversions, changes in treatment processes, etc.) after the Initial Analysis phase must be reported to CAWCD and Reclamation. The proposed changes will require additional sampling, as described above, and, if applicable, a new blending model must be approved by CAWCD and Reclamation prior to implementation of the changes. The modified Non-Project supply must comply with all Standards. Modifications may result in additional water quality monitoring requirements, and possible revisions to the CAWCD Wheeling Contract, Reclamation Wheeling Contract, Federal Arrangement, or Firming Agreement. Modifications that would result in impacts beyond what was evaluated in NEPA shall not be permitted.

4 Operational Monitoring

4.1 Purpose

The goal of operational water quality monitoring is to collect essential data to establish/affirm baseline conditions for the introduced Non-Project Water during an initial Proving Period, and ensure continued compliance with Introduction Standards thereafter (Compliance Monitoring).

4.2 Sampling Protocols

The following sampling protocols will be required for all Wheeling Entities that have been approved to introduce Non-Project Water into the CAP System:

4.2.1 Physical Sampling Procedures

A permanent water sampling station (e.g. raw water tap) will be constructed between the blending point and the turn-in structure that will allow for a safe, accessible, and consistent point of obtaining a representative grab sample for analysis. The construction of this sampling point must be included within the facility design. Due to variations in sample station design, the sampling and handling procedures to be used by the Wheeling Entity must be approved by CAWCD and Reclamation. These procedures should be consistent with EPA, USGS, or CAWCD/Reclamation approved methods, and may include appropriate flush times to ensure a representative sample. CAWCD reserves the right to access this sampling point for verification sampling.

4.2.2 Laboratory

A test result is valid only if the sample is analyzed by a laboratory that is licensed by the Arizona Department of Health Services, an out-of-state laboratory licensed under A.R.S. §36-495.14, or a laboratory exempted under A.R.S. §36-495.02, for the analysis performed. Laboratories must use analytical methods as prescribed in A.A.C. R9-14-610, 40 CFR 136.3, or an alternative analytical method approved under A.A.C. R9-14-610(C). If no Arizona Department of Health Services approved method exists, then an appropriate method, developed by the EPA, shall be used.

4.2.3 Chain of Custody (COC)

Specific laboratory COC procedures are described in each laboratory's Quality Assurance Program Manual. In general, COC forms will be used to document custody of the samples. All individuals transferring and receiving samples will sign, date, and record the time on the COC that the samples are transferred. Laboratories must receive the COC documentation submitted with each batch of samples and sign, date, and record the time the samples are transferred. Laboratories will also note any sample discrepancies (e.g., labeling, breakage).

4.3 Sampling Frequency

The frequency of sampling is divided into two time periods: an initial Proving Period, and ongoing Compliance Monitoring thereafter.

4.3.1 Proving Period

All water conveyed into the CAP System will require routine monitoring for a minimum of two years following initial introduction to determine the water classification and compliance monitoring frequency (Section 4.3.2). During that two-year period, known as the "Proving Period", constituents included in Table A-1 will be sampled quarterly and constituents included in Table A-2 will be tested semi-annually. For Non-Project Water that requires treatment prior to introduction into the CAP System, or for project specific reasons, additional sampling frequency and/or procedures may be required by CAWCD or Reclamation. If more than twelve months have elapsed between the Initial Analysis (Section 3.4.1) and the beginning of the Proving Period, re-sampling of individual wells or source water is required to confirm the original analysis.

4.3.2 Supply Classification

Upon the completion of the Proving Period, Non-Project Water will be placed into one of three classifications (described below; Table 1) and the frequency of ongoing Compliance Monitoring will be based on those designations. CAWCD will review the classifications of each Non-Project source every five years and confer with Reclamation to determine if a re-classification is necessary. Detection of exceedances and/or planned operational changes by the Wheeling Entity will also cause the initiation of a review and re-classification. For all classifications below, Reclamation or CAWCD can request additional sampling at any time for project specific reasons.

"Type A" – Initial Analysis and Proving Period have demonstrated that the Non-Project Water source complies with Introduction Standards and is below Delivery Standards prior to mixing with the CAP water for all constituents listed in Appendix A. Non-Project water sources classified as Type A must:

- conduct annual sampling of constituents listed in Table A-1, regulated constituents listed in Table A-2, and microbiology analyses (Table A-2);
- sample once every three years for *unregulated* constituents listed in Table A-2.

A verified exceedance of any constituent will result in the appropriate re-classification of that Non-Project Water source.

"Type B" – Initial Analysis and Proving Period have shown that the Non-Project source complies with Introduction Standards for each water quality constituent (Appendix A), but that source is above the Delivery Standards for one or more constituents. Non-Project water sources classified as Type B must:

- conduct annual sampling of constituents listed in Table A-1, *regulated* constituents listed in Table A-2, and microbiology analyses (Table A-2);
- sample once every three years for *unregulated* constituents listed in Table A-2;
- sample all constituents that exceed Delivery Standards prior to mixing (exceedance constituent), as determined by modeling, every quarter;

- provide flow data to ensure consistency with operational plans, as determined by CAWCD and Reclamation.

If the Wheeling Entity demonstrates that an exceedance constituent complies with both Introduction and Delivery Standards (prior to blending) for eight consecutive quarters during ongoing Compliance Monitoring, that constituent will move to the appropriate sampling frequency (based on the designation in Table 1).

"Type C" – Initial Analysis and Proving Period have shown that the Non-Project Water source requires treatment for one or more constituents prior to introduction into the CAP System. Non-Project water sources classified as Type C must:

- conduct annual sampling of constituents listed in Table A-1, *regulated* constituents listed in Table A-2, and microbiology analyses (Table A-2);
- sample once every three years for *unregulated* constituents listed in Table A-2;
- sample all constituents that exceed Delivery Standards prior to mixing (exceedance constituent), as determined by modeling, every quarter;
- provide flow data to ensure consistency with operational plans, as determined by CAWCD and Reclamation;
- sample all constituents that are required to be treated prior to introduction into the canal in real-time (if applicable), or monthly to verify successful treatment. Operational data (e.g. flow data) may also be required.

If the Wheeling Entity demonstrates that an exceedance constituent (untreated) complies with both Introduction and Delivery Standards (prior to blending) for eight consecutive quarters during ongoing Compliance Monitoring, that constituent will move to the appropriate sampling frequency (based on the designation in Table 1).

Table 1. Water quality sampling frequency for Non-Project Water. All waters are sampled quarterly and semi-annually for the first two years (Proving Period). Waters are then classified and sampled accordingly for Compliance Monitoring.

<table>
<tr><th></th><th>Water Types</th><th>Table A-1</th><th>Table A-2 (Regulated and Microbiology)</th><th>Table A-2 (Unregulated)</th><th>Exceedance Constituents</th></tr>
<tr><td>Proving Period</td><td>All Introduced Non-Project Water</td><td>Quarterly</td><td colspan="2">Semi-Annual</td><td>Real-time or Monthly (Treated Water Only)</td></tr>
<tr><td rowspan="3">Compliance Monitoring</td><td>Type A Water</td><td rowspan="2" colspan="2">Annual</td><td rowspan="2">Once every three years</td><td>N/A</td></tr>
<tr><td>Type B Water</td><td>Quarterly</td></tr>
<tr><td>Type C Water</td><td colspan="2">Annual</td><td>Quarterly (untreated); Real-time or Monthly (Treated)</td></tr>
</table>

4.3.3 Additional Monitoring

For Non-Project supplies with unique potential impacts due to their volume, location, or other factors, CAWCD and Reclamation may require Wheeling Entities to reimburse CAWCD for costs that are directly attributable to expanded sampling at points upstream and downstream of the point of introduction of the Non-Project Water. The terms of these additional costs will be defined through agreement between the Wheeling Entity and CAWCD.

5 Reporting/Communication

5.1 Purpose

The goal of reporting/communication is to ensure that CAWCD has the necessary information to make critical operational decisions regarding Non-Project Water. Specifically, communication between the Wheeling Entity and CAWCD will:

- provide water quality data for the CAP System-wide Water Quality Model;
- allow for review of long-term sampling data and flag any exceedances or potential problem constituents;
- provide a basis for enforcement (due to exceedance; Section 6);
- alert CAWCD of changes in operation that may affect water quality;
- provide a summary of activities in the form of an annual report.

5.2 Requirements

5.2.1 Water Quality Reporting – Test Results

The Wheeling Entity or its designee will be responsible for submitting test results from each sampling event to the CAWCD Water Transmission Group for review, verification, and approval. These results will be transmitted electronically in a format established by the CAWCD Water Transmission Group. Any exceedance of Introduction Standards (Appendix A) must be reported within 48 hours of receiving the test results. All other test results must be reported within 10 business days of receiving the results. All submitted water quality data will be made available upon request.

5.2.2 Records Retention

All field notes, chain of custody paperwork, and laboratory water quality analytical reports will be kept by the Wheeling Entity for a period of five years, and made available to CAWCD or Reclamation upon request by either.

5.2.3 Planned Operational Changes

Operational changes are expected from time-to-time due to maintenance, addition/ subtraction of equipment (including wells), or other extenuating circumstances. Planned operational changes must be reported to the CAWCD Water Transmission Group at least 14 days prior to the occurrence of the operational change so that potential impacts can be evaluated. For example, if a group of wells will be shut down for maintenance, but water will continue to be wheeled, CAWCD may require the Wheeling Entity to collect additional samples, or model potential impacts to water quality. In the event of an outage caused by unforeseen circumstances, CAWCD should be notified as soon as practical.

5.2.4 Water Quality Reporting - Annual Report

By March 31 of each year of operational monitoring (Proving Period and Compliance Monitoring), the Wheeling Entity shall submit an annual report for the previous calendar year to the CAWCD Water Transmission Group and Reclamation. The CAWCD Water Transmission Group will develop a standard format for the report, but in general, the report will summarize

all sampling activity, operational data (e.g. flow data), and water quality data. Constituents that exceed Standards at any time during the year will be highlighted with an explanation of reasons for the exceedance and actions taken to mitigate the exceedance.

6 Enforcement

6.1 Purpose

The goal of enforcement is to maintain the integrity of standards adopted by CAWCD and Reclamation, and to allow for appropriate corrective action to take place. After a review of operational data, corrective actions initiated in response to an exceedance may include, but are not limited to, additional water quality sampling of Non-Project Water sources by the Wheeling Entity, modification of Wheeling Entity operations, treatment to ensure compliance, or possible cessation of non-compliant introductions by the Wheeling Entity.

6.2 Compliance with Introduction Standards

6.2.1 Exceedance of Introduction Standards – Proving Period

Any exceedance of the Introduction Standards by the Wheeling Entity during the Proving Period must be identified and reported as described in Section 5.2.1.

Within 7 days of receiving test results that show an exceedance, the Wheeling Entity must collect a second sample to be tested (Verification Sample). Only constituents that exceed the Introduction Standards are required in the Verification Sample. Results of this test must be provided to the CAWCD Water Transmission Group within 48 hours of receipt.

CAWCD acknowledges that there may be variations in water quality associated with the initiation of a Non-Project water supply. An exceedance in the Verification Sample will prompt consultation with CAWCD Water Transmission. On a case-by-case basis, CAWCD Water Transmission Group, with Reclamation, will consider issuing a short-term variance as described in Section 6.5.1.

6.2.2 Exceedance of Introduction Standards – Compliance Monitoring

Following the Proving Period, the Wheeling Entity must meet Introduction Standards at all times. If test results show an exceedance, the Wheeling Entity must report the exceedance (Section 5.2.1) and follow these procedures:

1. Within 7 days of receiving test results that show an exceedance, the Wheeling Entity must collect a second sample to be tested (Verification Sample). Only constituents that exceed Introduction Standards are required in the Verification Sample. Results of this test must be provided to the CAWCD Water Transmission Group within 48 hours of receipt.
2. CAWCD will categorize Exceedances into one of two categories, which will determine the next steps (Figure 1):

   Tier 1 – Exceedance occurred in the initial sample, but did not occur in the Verification Sample. Introduction of Non-Project Water can continue; however, CAWCD may require increased sampling frequency to verify that the irregularity is not re-occurring.

   Tier 2 – Exceedance occurs in both the initial sample and the Verification Sample. Introduction of Non-Project Water must cease immediately and may

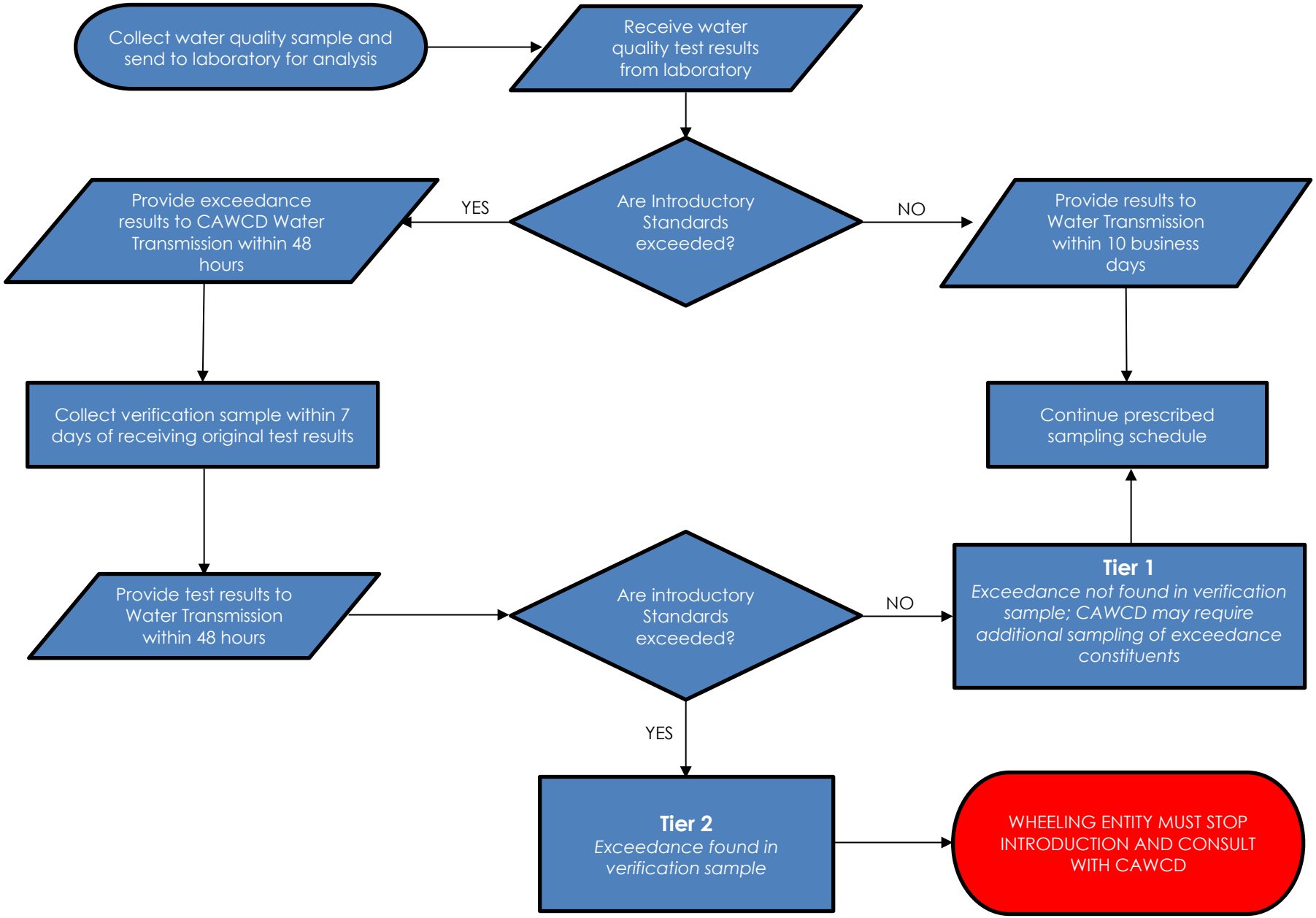

Figure 1. Flow chart describing process when there is an exceedance in water quality results.

not resume until an approved remedy can be implemented. Remedies approved by CAWCD and Reclamation may include, but are not limited to:

- the exceedance constituent(s) may require more frequent sampling;
- the Wheeling Entity may apply for a variance (Section 6.5.2);
- modification of blending or exclusion of a specific water source;
- treatment.

6.2.3 Exceedance of Introduction Standards—Sampling by CAWCD or Reclamation

CAWCD and Reclamation may collect water samples at the Wheeling Entity's permanent water sampling station at any time. If, after following the sampling protocols defined in Section 4.2, testing results in an exceedance of an Introduction Standard, the Wheeling Entity shall be required to follow the procedures of this Section as though that exceedance was from a sample collected by the Wheeling Entity itself. The Wheeling Entity will be notified within 24 hours after collection.

6.2.4 Cessation After Tier 2 Exceedance

Due to potential differences between a Wheeling Entity's introduction and delivery schedules for Non-Project Water, there may be limited instances during the year in which more non-Project Water has been introduced than has been delivered. If a Wheeling Entity has a Tier 2 exceedance as described in Section 6.2.2, the cessation of delivery will be required to occur. If at the time of the cessation (during that calendar year) more Non-Project Water was introduced in the canal then has been delivered, CAWCD will continue to satisfy the Non –Project delivery schedule for the volume that was introduced into the canal. The Wheeling Entity must consult with CAWCD to determine availability of water to be delivered.

6.3 Narrative Water Quality Standards

In some cases Non-Project Water supplies that comply with Introduction Standards may still contribute to operational or aesthetic issues. In these cases, corrective actions may be applied at the discretion of CAWCD and Reclamation. The following Narrative Water Quality Standards, adapted from applicable portions of A.A.C. R18-11-108, shall apply to Non-Project Water:

1. Non-Project Water shall not contain pollutants or have characteristics (including temperature, dissolved oxygen or pH) that:
    - settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of beneficial aquatic life;
    - cause objectionable odor in the area of introduction;
    - cause off-taste or odor in drinking water;
    - cause off-flavor in aquatic organisms (e.g. fish in Lake Pleasant);
    - are toxic to humans, animals, plants, or other organisms;

- cause the growth of algae or aquatic plants that impair the intended uses of the CAP System;
- cause or contribute to a violation of an aquifer water quality standard prescribed in R18-11-405 or R18-11- 406; or
- change the color of the CAP Water from natural background levels of color.

2. Non-Project Water shall not contain oil, grease, or any other pollutant that floats as debris, foam, or scum; or that causes a film or iridescent appearance on the surface of the CAP; or that causes a deposit on a shoreline or canal slope.
3. Non-Project Water shall not contain a discharge of suspended solids in quantities or concentrations that interfere with the operational reliability of downstream CAP infrastructure, treatment processes at the nearest downstream potable water treatment plant, or substantially increase the cost of handling solids produced at the nearest downstream potable water treatment plant.
4. Non-Project Water shall not contain solid waste such as refuse, rubbish, demolition or construction debris, trash, garbage, motor vehicles, appliances, or tires.
5. Non-Project Water shall not contain levels of bacteria (e.g. total coliforms, E. coli, and HPC), parasites (e.g. cryptosporidium and giardia), or other pathogens at levels that are significantly higher than baseline values of CAP water.

6.4 Reporting of Exceedances

All verified (initial and Verification Sample) exceedances of the Introduction Standards will be reported to CAP water users, including the categorization of the exceedance (Section 6.2.2) and the steps to remedy the exceedance. This notification will be provided electronically, either through direct communication or through a secure web site for authorized users.

6.5 Variances of Introduction Standards

6.5.1 Variance – Proving Period

Under limited circumstances, and if consistent with Section 6.6, a short-term variance for a constituent(s) that exceeds an Introduction Standard may be granted by CAWCD and Reclamation on a case-by-case basis during the Proving Period. Requests for a variance will be considered if:

- The variance constituent(s) is expected to stabilize below the Introduction Standard by the end of the Proving Period, and
- CAWCD System-wide modeling performed in the Initial Analysis (Section 3.4.4) using the variance level confirms that the Delivery Standard for the variance constituent(s) will not be exceeded in the CAP System after blending, and
- The variance is consistent with the environmental clearance for the project.

If a variance is granted:

- The variance will be set for no more than 150% of the Introduction Standard

without express authorization of CAWCD and Reclamation, and

- The variance will be set for a fixed duration not to exceed the remaining time in the Proving Period (24 month maximum), and
- The variance shall apply only on a constituent-specific basis. The Non-Project Water shall meet all other applicable Standards for which a variance is not granted.

CAWCD and Reclamation reserve the right to withdraw a variance at any time if there is inadequate progress towards stabilizing the variance constituent below the Introduction Standard during the variance period.

6.5.2 Variance - Ongoing Compliance Period

If unforeseen issues arise, CAWCD, with approval from Reclamation, and if consistent with Section 6.6, may issue a temporary variance for a constituent(s) that exceeds Introduction Standards on a case-by-case basis, provided that:

- Delivery Standards, as predicted by the CAP System-wide Water Quality Model, are not exceeded, and
- The variance is consistent with the environmental clearance for the project, and
- The variance is for a fixed duration, not to exceed two years, and
- The variance applies only on a constituent-specific basis. The Non-Project Water shall meet all other applicable water quality standards for which a variance is not granted, and
- CAWCD and Reclamation expect that the issue requiring the variance will be resolved by the end of the variance period, and
- An increased frequency of sampling will be required.

6.6 Compliance with Environmental Clearance

Consistent with Exhibit B, section 6, and Exhibit C, section 3, of the CAP System Use Agreement (No. 17-XX-30-W0622), as a condition of wheeling project approval and issuance of wheeling contracts, CAWCD and Reclamation shall ensure that Non-Project Water would only be transported in a manner consistent with the final environmental clearances from the United States. If the environmental clearance included requirements regarding modifying wheeling operations in response to changing water supply conditions (e.g., reduced volumes of Project Water and/or wheeling water, well blending, etc.), those operations shall be contractual requirements of the wheeling project. Reclamation or CAWCD shall have the right to take actions, up to and including wheeling project cessation, to ensure that wheeling projects operate consistent with those requirements.

Each subsequent wheeling project will have a final environmental clearance that evaluates the impacts of the proposed wheeling project on CAP water quality in conjunction with the impacts from all previously approved wheeling projects. This will include modeling at several Project Water supply volumes including at 1.5 million acre-feet, 1.25 million acre-feet, 1.0 million acre-feet, 750,000, and minimal CAP supplies. Non-Project water for all wheeling projects must be transported in a manner consistent with the most recent environmental clearance. As wheeling projects are approved and

implemented, water quality may change. All wheeling projects, regardless of when approved, must comply with the most recent water quality analysis performed in the latest environmental clearance for wheeling projects. If Non-Project Water is not transported consistent with the most recent environmental clearance for CAP wheeling, such as a deviation from the modeled results of water quality in the CAP, then Reclamation or CAWCD shall have the right to take actions, up to and including wheeling project cessation, to ensure that all wheeling projects operate consistent with current requirements.

6.7 Deviation from Modeled Results

If measured results from water quality testing in the CAP System fall repeatedly and materially outside of the range of values projected by the CAP System-wide Water Quality Model in the final environmental clearances, in addition to Section 6.6 applying, CAWCD, in consultation with Reclamation, shall take affirmative steps to identify the source(s) of deviation, including, if necessary, resampling at the place or places where the deviation was identified.

- If the source of the deviation is determined to be water introduced by a Wheeling Party, CAWCD shall confirm compliance with Introduction Standards (Section 6.2). If the Introduction Standards are being satisfied CAWCD and/or Reclamation shall work with the wheeling party to determine if operations can be modified.

- If the source of the deviation is attributable to changes in the Project Water supply, CAWCD shall take steps to update model data, and Reclamation and CAWCD may revise Introduction and/or Delivery Standards .
- If the source of deviation is attributable to the CAP System-wide Model, CAWCD shall take steps to update, improve and re-run the model.
    - If updated model results indicate that previously approved projects would no longer meet the Delivery Standards based on the one million acre-foot CAP supply in Section 3.4.4, provisions of Section 3.4.5 shall apply.

7 Indemnification and Revision

7.1 Indemnification

The party introducing the Non-Project Water into the CAP System shall indemnify and hold the United States and CAWCD harmless from and against all claims, damages, costs and other liabilities resulting from that party's introduction of Non-Project Water into the CAP System.

7.2 Revision

The Guidance Document is subject to periodic review and modification by CAWCD and Reclamation. CAWCD and Reclamation will review and seek comment on revisions no less frequently than every five years after the first introduction of Non-Project Water. CAWCD and Reclamation also reserve the right to make revisions of Introduction Standards at any time pursuant to Section 3.4.5.

Appendix A

Table A-1. List of CAP Priority Constituents and their respective Introduction and Delivery standards. Reporting Limits (or MRLs) are derived from a survey of ADHS licensed laboratories. Reporting limits that are lower than published values may be used, but higher values will not be accepted. Introduction and Delivery Standards were determined as described in Section 2.3.

Constituent	Units	Reporting Limit	Introduction Standard	Delivery Standard
General Constituents				
Dissolved Oxygen	mg/L		Narrative	
pH	Units	2	6.5 - 9.5	
Temperature	°F		Narrative	
CAP Priority Constituents				
Alkalinity (CaCO3 Units)	mg/L	20	250	170
Alpha, Gross	pCi/L	3	15	6
Aluminum, Dissolved	µg/L	50	50	50
Aluminum, Total	µg/L	50	200	200
Ammonia Nitrogen	mg/L	0.5	0.5	0.5
Antimony	µg/L	1	6	2
Arsenic	µg/L	2.5	10	5
Barium, Total	µg/L	2.5	2000	230
Beryllium	µg/L	1	4	1
Beta, Gross	pCi/L	4	50	16
Boron	mg/L	0.2	1	0.5
Bromide	µg/L	50	650	125
Cadmium	µg/L	1	5	1
Calcium, Total	mg/L	2	200	160
Chloride	mg/L	10	450	170
Chromium	µg/L	3	100	10
Cobalt, Total	µg/L	2	2	2
Copper, Dissolved	µg/L	10	64	64
Fluoride	mg/L	0.5	4	0.7
Hexavalent Chromium	µg/L	0.05	16	3
Iron, Dissolved	mg/L	0.02	1	0.1
Lead	µg/L	2.5	15	3
Manganese, Total	µg/L	20	250	27
Mercury	µg/L	0.2	2	0.5
Molybdenum	µg/L	4	40	13
Nickel	µg/L	5	5	5
Nitrate	mg/L	1	10	1
Nitrite	mg/L	0.5	1	0.5
Perchlorate	µg/L	4	15	5
Phosphorus, Total-P	mg/L	0.02	0.1	0.025
Potassium, Total	mg/L	5	10	6
Radium 226/228	pCi/L	2	2	2
Selenium	µg/L	20	50	20
Silver, Total	µg/L	1	100	20
Sodium, Total	mg/L	5	350	110
Strontium	mg/L	0.1	2	1
Sulfate	mg/L	15	400	250
Thallium	µg/L	1	1	1
Total Dissolved Solids (TDS)	mg/L	30	1150	747
Total Organic Carbon	mg/L	1	6	4
Turbidity[1]	NTU	1	9	6
Uranium	µg/L	1	30	5
Vanadium	µg/L	3	98	25
Zinc	µg/L	20	1000	30

[1] For the purposes of assessing if a Non-Project surface water exceeds the established standard for turbidity (9 NTU), a running 24-hour daily average is required. Continuous data collection is preferred, with one or more samples collected per hour.

Table A-2. List of primary and secondary EPA regulated constituents, EPA unregulated constituents, and EPA disinfection byproducts that are recognized as constituents of concern and are prohibited from introduction into the CAP System. These constituents have rarely or never been found in the CAP System, and therefore, Introduction and Delivery Standards are equivalent to the MRL. Reporting Limits (or MRLs) are derived from a survey of ADHS licensed laboratories. Reporting limits that are lower than published values may be used, but higher values will not be accepted. Bacteria and other parasites (microbiology) are also included in this list, as their introduction should not negatively impact the CAP system.

Constituent	Units	Reporting Limit	Introduction Standard	Delivery Standard
Regulated EPA Constituents				
1,1,1-Trichloroethane	µg/L	0.5	ND	ND
1,1,2-Trichloroethane	µg/L	0.5	ND	ND
1,1-Dichloroethylene	µg/L	0.5	ND	ND
1,2,4-Trichlorobenzene	µg/L	0.5	ND	ND
1,2-Dibromo-3-Chloropropane (DBCP)	µg/L	0.5	ND	ND
1,2-Dichlorobenzene (1,2 DCB)	µg/L	0.5	ND	ND
1,2-Dichloroethane	µg/L	0.5	ND	ND
1,2-Dichloropropane	µg/L	0.5	ND	ND
1,4 Dichlorobenzene (1,4 DCB)	µg/L	0.5	ND	ND
2,4,5-TP (Silvex)	µg/L	1	ND	ND
2,4-D	µg/L	1	ND	ND
Alachlor	µg/L	0.8	ND	ND
Atrazine	µg/L	0.8	ND	ND
Benzene	µg/L	0.5	ND	ND
Benzo(a)pyrene	µg/L	0.16	ND	ND
Carbofuran (Furadan)	µg/L	0.9	ND	ND
Carbon Tetrachloride	µg/L	0.5	ND	ND
Chlordane	µg/L	0.5	ND	ND
Chlorobenzene	µg/L	0.5	ND	ND
cis-1,2-Dichloroethylene	µg/L	0.5	ND	ND
Dalapon	µg/L	10	ND	ND
Di(2-Ethylhexyl) adipate	µg/L	4.8	ND	ND
Di(2-Ethylhexyl) phthalate	µg/L	4.8	ND	ND
Dichloromethane	µg/L	0.5	ND	ND
Dinoseb	µg/L	1	ND	ND
Diquat	µg/L	0.4	ND	ND
Endothall	µg/L	10	ND	ND
Endrin	µg/L	0.2	ND	ND
Ethyl benzene	µg/L	0.5	ND	ND
Ethylene Dibromide (EDB)	µg/L	2	ND	ND
Glyphosate	µg/L	6	ND	ND
Heptachlor	µg/L	0.32	ND	ND
Heptachlor Epoxide (isomer B)	µg/L	0.16	ND	ND
Hexachlorobenzene	µg/L	0.8	ND	ND
Hexachlorocyclopentadiene	µg/L	0.8	ND	ND
Lindane	µg/L	0.16	ND	ND
Methoxychlor	µg/L	0.8	ND	ND
Metolachlor	µg/L	0.8	ND	ND
Oxamyl	µg/L	2	ND	ND
Pentachlorophenol	µg/L	0.4	ND	ND
Picloram	µg/L	1	ND	ND
Simazine	µg/L	0.7	ND	ND
Styrene	µg/L	0.5	ND	ND
Tetrachloroethylene	µg/L	0.5	ND	ND
Toluene	µg/L	0.5	ND	ND
Total PCBs	µg/L	2	ND	ND
Total Trihalomethanes (TTHMs)	µg/L	3	ND	ND
Toxaphene	µg/L	1	ND	ND
trans-1,2-Dichloroethylene	µg/L	0.5	ND	ND
Trichloroethylene	µg/L	0.5	ND	ND
Vinyl Chloride	µg/L	0.5	ND	ND
Xylenes (total)	µg/L	1.5	ND	ND

Constituent	Units	Reporting Limit	Introduction Standard	Delivery Standard
Unregulated EPA Constituents				
1,1,1,2-Tetrachloroethane	µg/L	0.5	ND	ND
1,1,2,2-Tetrachloroethane	µg/L	0.5	ND	ND
1,1-Dichloroethane	µg/L	0.5	ND	ND
1,1-Dichloropropene	µg/L	0.5	ND	ND
1,2,3-Trichlorobenzene	µg/L	0.5	ND	ND
1,2,3-Trichloropropane	µg/L	0.5	ND	ND
1,2,4-Trimethylbenzene	µg/L	0.5	ND	ND
1,3,5-Trimethylbenzene	µg/L	0.5	ND	ND
1,3-Dichlorobenzene (1,3 DCB)	µg/L	0.5	ND	ND
1,3-Dichloropropane	µg/L	0.5	ND	ND
1,3-Dichloropropene	µg/L	0.5	ND	ND
1,4-Dioxane	µg/L	0.1	ND	ND
2,2-Dichloropropane	µg/L	0.5	ND	ND
2,4,5-T	µg/L	0.5	ND	ND
2,4-DB	µg/L	2	ND	ND
2-Butanone (MEK)	µg/L	5	ND	ND
3,5-Dichlorobenzoic acid	µg/L	0.5	ND	ND
3-Hydroxycarbofuran	µg/L	0.5	ND	ND
4,4'-DDD	µg/L	0.1	ND	ND
4,4'-DDE	µg/L	0.1	ND	ND
4,4'-DDT	µg/L	0.1	ND	ND
4-Methyl-2-Pentanone (MIBK)	µg/L	5	ND	ND
Acetaldehyde	µg/L	5	ND	ND
Acetochlor	µg/L	0.1	ND	ND
Acifluorfen	µg/L	1	ND	ND
Acrolein	µg/L	50	ND	ND
Aldicarb (Temik)	µg/L	0.5	ND	ND
Aldicarb sulfone	µg/L	0.8	ND	ND
Aldicarb sulfoxide	µg/L	0.5	ND	ND
Aldrin	µg/L	0.1	ND	ND
alpha-Chlordane	µg/L	0.5	ND	ND
Aniline	µg/L	20	ND	ND
Aroclor 1016	µg/L	0.1	ND	ND
Aroclor 1221	µg/L	20	ND	ND
Aroclor 1232	µg/L	0.5	ND	ND
Aroclor 1242	µg/L	0.3	ND	ND
Aroclor 1248	µg/L	0.1	ND	ND
Aroclor 1254	µg/L	0.1	ND	ND
Aroclor 1260	µg/L	0.2	ND	ND
Baygon	µg/L	0.5	ND	ND
Bentazon	µg/L	0.5	ND	ND
Bromobenzene	µg/L	0.5	ND	ND
Bromochloromethane	µg/L	0.5	ND	ND
Bromodichloromethane	µg/L	0.5	ND	ND
Bromoethane	µg/L	1	ND	ND
Bromoform	µg/L	1	ND	ND
Bromomethane (Methyl Bromide)	µg/L	2	ND	ND
Carbaryl	µg/L	0.5	ND	ND
Carbon Disulfide	µg/L	1	ND	ND
Chlorodibromomethane	µg/L	1	ND	ND
Chloroethane	µg/L	2	ND	ND
Chloroform (Trichloromethane)	µg/L	0.5	ND	ND
Chloromethane (Methyl Chloride)	µg/L	0.5	ND	ND
Dibromomethane	µg/L	0.5	ND	ND
Dicamba	µg/L	0.1	ND	ND
Dichlorodifluoromethane	µg/L	1	ND	ND
Dichlorprop	µg/L	2	ND	ND
Dieldrin	µg/L	0.1	ND	ND
Di-isopropyl ether	µg/L	3	ND	ND
Ethylene glycol	mg/L	5	ND	ND
Formaldehyde	µg/L	5	ND	ND

Constituent	Units	Reporting Limit	Introduction Standard	Delivery Standard
Gamma-Chlordane	µg/L	0.1	ND	ND
Hexachlorobutadiene	µg/L	0.8	ND	ND
Hexane	µg/L	2	ND	ND
Isopropylbenzene	µg/L	0.5	ND	ND
M/P-Xylenes	µg/L	1	ND	ND
Methanol	µg/L	0.5	ND	ND
Methiocarb	µg/L	1	ND	ND
Methomyl	µg/L	0.5	ND	ND
Methyl Tert-butyl ether (MTBE)	µg/L	0.5	ND	ND
Molinate	µg/L	0.1	ND	ND
Naphthalene	µg/L	0.5	ND	ND
N-Butylbenzene	µg/L	0.5	ND	ND
N-nitrosodiethylamine (NDEA)	ng/L	10	ND	ND
N-nitrosodimethylamine (NDMA)	ng/L	10	ND	ND
N-nitroso-di-n-propylamine (NDPA)	ng/L	10	ND	ND
N-nitrosopyrrolidine (NPYR)	ng/L	10	ND	ND
NEtFOSAA	ng/L	2	ND	ND
NMeFOSAA	ng/L	2	ND	ND
N-Propylbenzene	µg/L	0.5	ND	ND
o-Chlorotoluene	µg/L	0.5	ND	ND
o-Xylene	µg/L	0.5	ND	ND
Paraquat	µg/L	2	ND	ND
p-Chlorotoluene	µg/L	0.5	ND	ND
Hexafluoropropylene oxide dimer acid (HFPO–DA) (GenX)	ng/L	2	ND	ND
Perfluorobutanesulfonic acid (PFBS)	ng/L	2	ND	ND
Perfluorodecanoic acid (PFDA)	ng/L	2	ND	ND
Perfluorododecanoic acid (PFDoA)	ng/L	2	ND	ND
Perfluoroheptanoic acid (PFHpA)	ng/L	2	ND	ND
Perfluorohexanesulfonic acid (PFHxS)	ng/L	2	ND	ND
Perfluorohexanoic acid (PFHxA)	ng/L	2	ND	ND
Perfluorononanoic acid (PFNA)	ng/L	2	ND	ND
Perfluorooctanesulfonic acid (PFOS)	ng/L	2	ND	ND
Perfluorooctanoic acid (PFOA)	ng/L	2	ND	ND
Perfluorotetradecanoic acid (PFTA)	ng/L	2	ND	ND
Perfluorotridecanoic acid (PFTrDA)	ng/L	2	ND	ND
Perfluoroundecanoic acid (PFUnA)	ng/L	2	ND	ND
p-Isopropyltoluene	µg/L	0.5	ND	ND
sec-Butylbenzene	µg/L	0.5	ND	ND
Tert-Butylbenzene	µg/L	0.5	ND	ND
Thiobencarb	µg/L	0.2	ND	ND
Total DCPA Mono- and Di-acid Degradate	µg/L	0.5	ND	ND
Total Kjeldahl Nitrogen	mg/L	0.5	ND	ND
trans-1,3-Dichloropropene	µg/L	0.5	ND	ND
trans-Nonachlor	µg/L	0.1	ND	ND
Trichlorofluoromethane-Freon11	µg/L	1	ND	ND
EPA Disinfection Byproducts				
Bromochloroacetic Acid	µg/L	1	ND	ND
Bromodichloroacetic Acid	µg/L	1	ND	ND
Chlorodibromoacetic Acid	µg/L	2	ND	ND
Dibromoacetic Acid	µg/L	1	ND	ND
Dichloroacetic Acid	µg/L	1	ND	ND
Monobromoacetic Acid	µg/L	1	ND	ND
Monochloroacetic Acid	µg/L	2	ND	ND
Tribromoacetic Acid	µg/L	4	ND	ND
Trichloroacetic Acid	µg/L	1	ND	ND
Total Haloacetic Acids (HAA5 or HAA9)	µg/L	2	ND	ND
Microbiology				
Coliform, Total	MPN/100 mL	1	Narrative	
Cryptosporidium	oocysts/L	0.1	Narrative	

Constituent	Units	Reporting Limit	Introduction Standard	Delivery Standard
E. Coli	MPN/100 mL	1	Narrative	
Giardia	cysts/L	0.1	Narrative	
HPC	MPN/mL	1	Narrative	

Table A-3. List of constituents for which there is currently no EPA approved analytical method, or methods are no longer commercially available in Arizona, but were identified by the Task Force as potential constituents of concern. There is no requirement to test for these constituents at this time, however, this list will be re-evaluated periodically and constituents will be re-classified as needed.

Constituents	
1-Butanol	Hydrazine
1,3-Butadiene	*Legionella Pneumophilia*
17 alpha-estradiol	Mestranol
2-Methoxyethanol	Methamidophos
2-Nonylphenol	Metolachlor ESA
2-Propen-1-ol	Metolachlor OA
4,4'-Methylenedianiline	Nitrobenzene
4-Nitrophenol (qualitative)	Nitroglycerin
Acephate	N-Methyl-2-pyrrolidone
Acetamide	N-nitrosodiphenylamine
Acetochlor ESA	Norethindrone (19-Norethisterone)
Acetochlor OA	o-toluidine
Alachlor ESA	Oxirane, methyl
Alachlor OA	Oxydemeton-methyl
alpha-HCH	Oxyfluorfen
Bensulide	UCMR 5 Analytes[2]
Benzyl chloride	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
Butylated hydroxyanisole	1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)
Captan	1H, 1H, 2H, 2H-perfluorohexane sulfonic acid (4:2 FTS)
Chloramben	1H, 1h, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)
Chlorpyrifos	4,8-dioxa-3H-perfluorononanoic acid (ADONA)
Clethodim	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)
Cumene hydroperoxide	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
Cyanotoxins	Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)
Anatoxin a	Perfluoro-3-methoxypropanoic acid (PFMPA)
Cylindrospermopsin	Perfluoro-4-methoxybutanoic acid (PFMBA)
Microcystin-LA	Perfluorobutanoic acid (PFBA)
Microcystin-LF	Perfluoroheptanesulfonic acid (PFHpS)
Microcystin-LR	Perfluoropentanesulfonic acid (PFPeS)
Microcystin-LY	Perfluoropentanoic acid (PFPeA)
Microcystin-RR	Lithium
Microcystin-YR	Permethrin
Nodularin	Profenofos
Dacthal	Quinoline
Dicrotophos	RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)
Dimethipin	Silicone
Diuron	Tebuconazole
Equilenin	Tebufenozide
Equilin	Tellurium
Erythromycin	Thiodicarb
Estradiol (17-beta estradiol)	Thiophanate-methyl
Estriol	Toluene diisocyanate
Estrone	Tribufos
Ethoprop	Triethylamine
Ethylene oxide	Triphenyltin hydroxide (TPTH)
Ethylene thiourea	Urethane
Ethynly estradiol (17-alpha ethynyl estradiol)	Vinclozolin
Germanium	Ziram
HCFC-22	

[2] There are 30 analytes included in UCMR 5 (effective 01/26/22); a number of these have previously been included in Table A-2 (and therefore not listed in Table A-3). When EPA issues a final determination, constituents will be added or removed from the Tables as appropriate.