Water Quality Guidance Document Briefing

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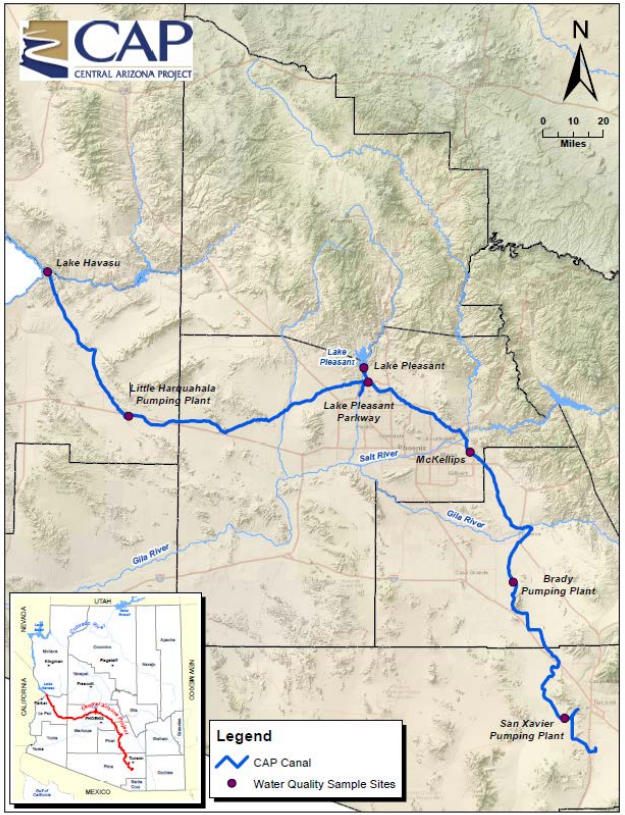
CAP CENTRAL ARIZONA PROJECT

Background

- Water Transmission Group
  - Formed in 2018
- Expanded CAP Water Quality Program
  - Increased sampling
  - Water quality website
  - Data management
  - CAWCD System-wide water quality model
  - Improved collaboration and communication with CAP Water Users



https://www.cap-az.com/departments/water-operations/water-quality

Overview

- Article 12.1, System Use Agreement
  - Water Quality Guidance Document
- April 23, 2020 posting
  - April 26, 2020 Briefing
  - 90 day comment period (June 23, 2020)
- 10 Entities responded

Public Comments

- Initial Analysis (Section 3)
  - Laboratory Licensing
- Operational Monitoring (Section 4)
  - Monitoring Frequency
- Appendix A
  - EPA Test Method
  - Method Reporting Limit (MRL)
- Technical Team
  - Water Transmission and Black and Veatch

Technical Meetings

- Summary
  - August 6 – 16, September 23
  - Stakeholders, CAP, Reclamation, Black and Veatch
  - Tribal engagement

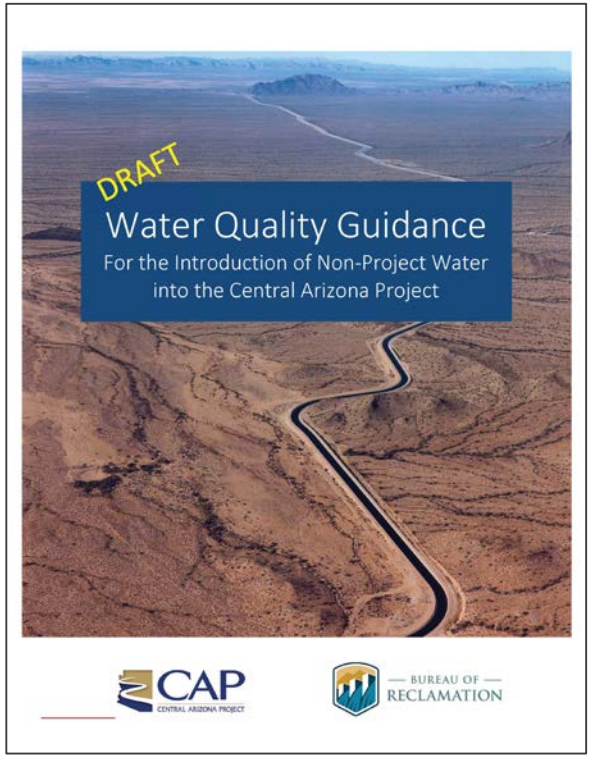
- Approach
  - Dialogue between groups
  - Feedback on proposed language

DRAFT - Water Quality Guidance Document

Sections

1. Definitions
2. Introduction
3. Initial Analysis
4. Operational Monitoring
5. Reporting/Communication
6. Enforcement
7. Indemnification and Revisions

   Appendix A



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CAP CENTRAL ARIZONA PROJECT

Revisions – Water Quality Guidance Document

- Review each Section
- Pause for comments between Sections
  - questions@cap-az.com
- Focus on key changes

Section 1 - Definitions

- *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.

- *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.

- ~~*Water Quality Monitoring and Reporting Plan* — means a water quality monitoring and compliance agreement between CAWCD or Reclamation and a Wheeling Entity introducing Non-Project Water into the CAP System.~~

- *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.

- *Delivery Standards* – means the maximum target numeric water quality standards when modeled in a shortage condition, established by CAWCD and Reclamation, for water delivered by the CAP System.

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Section 2 Introduction

- 2.1 – CAP Water Quality
- 2.2 – Transportation of Non-Project Water
- 2.3 – Establishment of Water Quality Standards
- 2.4 – Environmental Review
- 2.5 – Guidance Document Status

2. Introduction

~~2.1.~~

~~2.2.~~2.1. *CAP Water Quality*

The CAP System ~~provides~~delivers ~~water is high quality~~a consistent and reliable source of Colorado River water ~~to central and southern Arizona. and This stability makes it suitable~~ for a variety of uses by tribes, cities, private water companies, irrigation districts and others in Maricopa, Pinal and Pima counties. ~~It meets most (if not all) established primary drinking water standards, and requires minimal treatment prior to delivery for potable uses. CAP water is also of a relatively consistent water quality due to~~ 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 ~~long residence times in Colorado River Reservoirs and the CAP system being largely isolated from natural runoff and storm water inflows. Despite the relativ~~relatively~~e~~ high quality ~~of Colorado River water delivered by through the CAP~~, however ~~Water~~ treatment is needed for direct potable use, ~~and~~and~~s~~ many municipalities operate ~~sophisticated~~ advanced surface water treatment plants to provide it as drinking water to their customers. ~~–~~

~~CAWCD has been monitoring water quality within the CAP system since 1996 and the historical data demonstrates show a~~the high degree of consistency through time. The CAWCD's historical water quality data also provide~~s~~ a baseline for many of the water quality standards referenced in this document (~~see~~ Appendix A). Although CAWCD does not warrant the quality of water and is under no obligation to treat the water, CAWCD and Reclamation recognize~~s~~ that ~~the high quality and chemical stability of~~ CAP W~~w~~ater is highly valued by water users, and protecting the ~~high~~ quality and chemical stability of that water is a priority ~~for CAWCD~~.

Section 2.1
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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 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 as necessary):
~~The numeric standards are presented in Appendix A:~~

Table A-1 - Includes identified priority constituents. Standards were developed as described above.~~for constituents with sufficient background data. If there was not adequate data to develop Standards, the constituent was labeled as "Characterize". Standards will be established for these constituents after sufficient data collection and review.~~

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.~~, and pathogens of concern that have rarely or never been found in the CAP.~~ The standards for these constituents have been set to preclude appreciable concentrations from being ~~should not be~~ introduced into the CAP System, and are based on ~~(non-detect), so T~~the ~~Introduction and Delivery Standards are equivalent to~~ historical values in CAP Water~~values~~ and~~, or the~~ ~~Method Reporting Limit (~~Method Reporting Limits (MRLs) ~~RL) (as determined by a survey of values~~ utilized by licensed laboratories~~).historically recognized by CAWCD.~~

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

Section 3 Initial Analysis

- 3.1 – Purpose
- 3.2 – Applicant Permitting
- 3.3 – Applicant Financial Requirements
- 3.4 – Water Quality Analysis

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) for introduction into the CAP, Non-Project source water must be sampled by the Applicant using approved procedures outlined by the United States Environmental Protection Agency (EPA; SESDPROC-301-R4) or as amended. Similarly, Non-Project surface water must be sampled by the Applicant using approved procedures outlined by the EPA (SESDPROC- 201-R4) or as amended. Alternative procedures may utilized with approval from CAWCD and Reclamation.~~

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 ~~the EPA Region 9~~its website.~~:~~ ~~(https://www.epa.gov/quality/field-sampling-procedures-region-9).~~ 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*

~~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).~~ 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, approved by the EPA, shall be used.

3.4.1.3 *Chain of Custody (COC)*

Specific l~~L~~aboratory COC procedures ~~are~~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. ~~Laboratory COC procedures are described in each laboratory's Quality Assurance Program Manual.~~ 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). ~~After generating the laboratory data report for the client, samples will be stored for a minimum of 30 days in a secured area of the lab prior to disposal.~~

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 highly impaired source waters 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~~es~~ 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).

3.4.4. *CAWCD System-wide Modeling of Delivery Standards*

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 ~~CAWCD Water Transmission group will incorporate the~~ data will be incorporated into the CAP System-wide Water Quality Model ~~(Section 6)~~ to ~~.~~evaluate how the Applicant's Non-Project Water will affect the total CAP Water supply, including compliance with Delivery Standards.~~—~~ This up-front evaluation will be based on a shortage-reduced Project Water supply of one million acre-feet, water quality and volume from all previously approved sources of Non-Project Water, and water quality monitoring data collected by CAWCD and others.~~—~~ ~~This model will include water quality and volume from all previously approved sources of Non-Project Water, a shortage-reduced Project Water supply of one million acre- feet, and additional CAP operational data and historical CAP water quality data. Results of the model will determine if the proposed introduction of Non-Project Water will meet established Delivery Standards over a range of operational scenarios.~~Results from these analyses will be shared with Reclamation and available for public review.

Section 4 Operational Monitoring

- 4.1 – Purpose
- 4.2 – Sampling Protocols
- 4.3 – Sampling Frequency

4.3.2. *Supply Classification*

~~Based on water quality test results compiled during u~~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 ~~O~~planned operational changes by the Wheeling Entity ~~may~~will also cause the initiation~~e~~ of a review and re-classification.

"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:~~. For ongoing Compliance Monitoring, Type A water must be tested annually for the full list of constituents (Appendix A).~~

- Annual sampling of constituents listed in Table A-1 and *regulated* constituents listed in Table A-2
- Sampling 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 ~~w~~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 ~~only meets Delivery Standards when mixed with CAP water (as predicted by modeling)~~is above the Delivery Standards for one or more constituents:~~.~~ ~~For ongoing Compliance Monitoring, Type B water will be tested annually for the full list of constituents (Appendix A), however, exceedance constituents (those that exceed Delivery Standards) must be sampled quarterly. Operational data (e.g. flow data) may also be required.~~

- Annual sampling of constituents listed in Table A-1 and *regulated* constituents listed in Table A-2
- Sampling once every three years for *unregulated* constituents listed in Table A-2
- All constituents that exceed Delivery Standards prior to mixing (exceedance constituent ~~of concern~~), ~~as determined by modeling,~~ must be sampled quarterly~~.~~
- The Wheeling Entity may be required to provide ~~Operational data (e.g.~~ flow data ~~) may also be required~~to ensure consistency with operational plans~~.~~
- If the Wheeling Entity demonstrates that an exceedance constituent ~~of concern~~ 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)~~—~~

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"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 ~~canal~~System:~~.~~ ~~For Compliance Monitoring, Type C water will be tested annually for the full list of constituents (Appendix A). However, for exceedance constituents (those contributing to the reason for treatment), real-time or monthly sampling will be required to verify successful treatment. Real-time sampling will only be required for an exceedance constituent that can be effectively tested in real-time (e.g. turbidity). Operational data (e.g. flow data) may also be required.~~

- Annual sampling of constituents listed in Table A-1 and *regulated* constituents listed in Table A-2
- Sampling once every three years for *unregulated* constituents listed in Table A-2
- All constituents that exceed Delivery Standards prior to mixing (exceedance constituent~~ of concern~~), as determined by modeling, must be sampled quarterly
- The Wheeling Entity may be required to provide flow data to ensure consistency with operational plans

~~All constituents that exceed Delivery Standards must be sampled quarterly.~~

- All constituents that ~~exceed Introduction and/or Delivery Standards and~~ are required to be treated prior to introduction into the canal must be sampled 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 ~~of concern~~ (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).

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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.

	Water Types	Table A-1	Table A-2 (Regulated)	Table A-2 (Unregulated)	Exceedance Constituents ~~of Concern~~
Proving Period	All Introduced Non-Project Water~~s~~	Quarterly	Semi-Annual		Real-time or Monthly (Treated Water Only)
Compliance Monitoring ~~Period~~	Type A Water	Annual		Once every three years	N/A
	Type B Water				Quarterly
	Type C Water				Quarterly (untreated); Real-time or Monthly (treated)

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.

Section 5. Reporting/Communications

- 5.1 – Purpose
- 5.2 – Requirements

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 ~~approved~~ established by the CAWCD Water Transmission Group. Any exceedance of ~~established water quality~~ 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. ~~within 10 business days48 hours of receiving the results. Any exceedance of established water quality Introduction Standards (Appendix A) must be reported within 48 hours identified within theof receiving the test results.~~ All submitted water quality data will be made available ~~to Reclamation~~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 o~~O~~perational 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 model potential impacts to water quality.

6. CAP System-wide Water Quality Modeling

6.1. *Purpose*

The goal of the CAP System-wide Water Quality Model is to simulate the individual and cumulative water quality effects of introducing Non-Project Water on established Delivery Standards over a broad range of operating scenarios.

6.2. *Modeling*

The CAWCD Water Transmission Group will develop and maintain the CAP System-wide Water Quality Model. All modeling will be performed by CAWCD and shared with Reclamation. rResults may will be made available to Wheeling Entities and water users upon request.

As described in Section 3.4.4, the CAP System-wide Water Quality Model will be used in the Initial Analysis to determine if the proposed introduction of Non-Project Water will meet established Delivery Standards.

For Compliance Monitoring, the CAP System-wide Water Quality Model will incorporate test results provided by the Wheeling Entity (Section 5.2.1) and CAWCD baseline monitoring to predict compliance with established water quality Delivery Standards. CAWCD will incorporate CAP operational data, as well as operational data from Wheeling Entities, to improve accuracy of the predicted effects.

Section 6. Enforcement

- 6.1 – Purpose
- 6.2 – Compliance with Introduction Standards
- 6.3 – Narrative Water Quality Standards
- 6.4 – Reporting of Exceedances
- 6.5 – Variance

~~7.~~6. Enforcement

~~7.1.~~6.1. *Purpose*

The goal of enforcement is to maintain the integrity of ~~Standards~~ 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*

~~7.1.1.~~

~~7.1.2.~~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 ~~57~~ 10 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 ~~7.3.6.~~6.5.1~~2.4.2.~~

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.

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, at the time of cessation due to a Tier 2 exceedance described in Section 6.2.2, the cumulative volume of Non-Project Water introduced by Wheeling Entity, after accounting for any applicable losses, exceeds the amount delivered by CAWCD to that point in time, CAWCD will continue to satisfy the Non-Project Water delivery schedule up to the point where the Wheeling Entity's delivered water, less applicable losses, is equal to the volume of introduced water. 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:
   A. Settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of beneficial aquatic life;
   B. Cause objectionable odor in the area of introduction;
   C. Cause off-taste or odor in drinking water;

Section 6.3
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D. Cause off-flavor in aquatic organisms (e.g. fish in Lake Pleasant);

E. Are toxic to humans, animals, plants, or other organisms;

F. Cause the growth of algae or aquatic plants that impair the intended uses of the CAP System;

G. Cause– or– contribute– to– a– violation– of– an– aquifer– water quality– standard prescribed– in– R18-11-405– or– R18-11- 406; or

H. 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.

Appendix A

- Numeric Criteria
- Table A-1, A-2, A-3
- Method Reporting Limit
- EPA Test Methods
- CAP 5 Year Average

Appendix A

- Table A-1 CAP Priority Constituents
  - Constituents identified by stakeholders
  - Introduction and Delivery Standards for 25 constituents
  - Additional 19 constituents to be characterized
- Table A-2 Constituents
  - Constituents that have rarely if never been found in the CAP system
- Table A-3 Constituents
  - No requirement to test for these contaminants at this time

Appendix A

- Method Reporting Limit
  - Align with industry?

- Table A-1 Characterized Constituents
  - 19 Constituents
  - Concentration in CAP water supply
  - Regional groundwater and surface water?

Constituent	Rec	Method Reporting Limit
Dissolved Oxygen		
pH		
Temperature		
CAP Priority Contaminants - Characterize		
Alpha, Gross		3
Aluminum, Total, ICAP		20
Beryllium		1
Beta, Gross		3
Bromide		5
Cadmium		0.5
Cobalt, Total		2
Germanium		0.3
Mercury		0.2
Molybdenum		2
Nickel		5
Nitrite		0.05
Potassium, Total, ICAP		1
Radium-226+228		1
Strontium, ICAP		0.01
Vanadium		3

Black & Veatch Scope

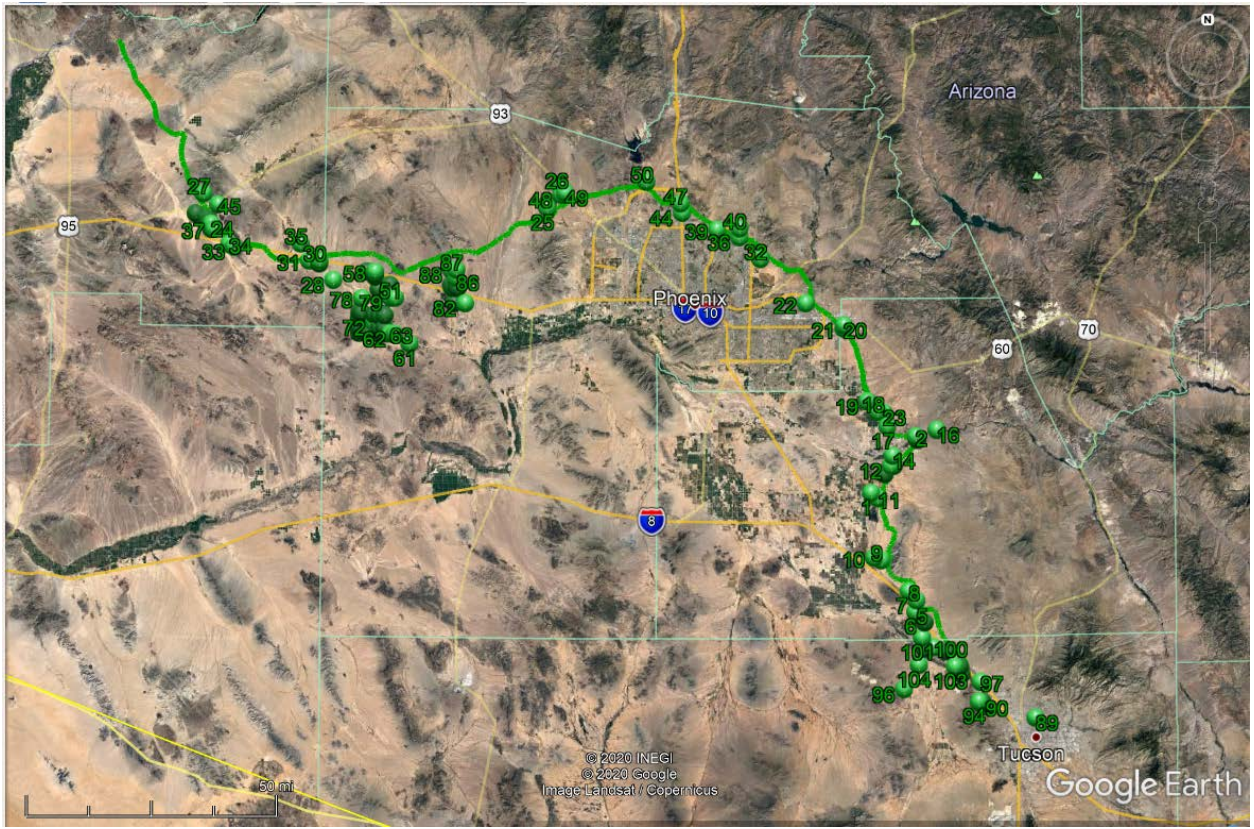
- Table A-1 Characterize List
  - 19 Constituents were not previously characterized
    - Introduction Standards
    - Delivery Standards
- Reporting Limit Surveys
  - ADHS Licensed Laboratory MRLs
  - California DDW DLRs
- Potential Non-Project Water Quality
  - Potential regional Non-Project groundwater supplies
  - Potential regional Non-Project surface water supplies

Method Reporting Limits (MRLs)

- Method Reporting Limits
  - Lowest analyte concentration determined with statistical accuracy
  - Laboratory specific values
    - Analytical method
    - Analytical instrumentation
    - Analyst experience
- ADHS Licensed Laboratory Survey
  - Market survey of 82 currently licensed environmental laboratories
  - Table A-1 and Table A-2 constituents
  - MRLs provided by 15 respondents statistically analyzed

Potential Non-Project Groundwater Supplies

- USGS – NWIS
  - 19 Table A-1 Priority Constituents
  - 59 wells within 2 miles of the CAP Canal
  - 46 wells in other select areas
  - Data from 1970 to present included
  - Statistical analysis performed



Potential Non-Project Surface Water Supplies

- SRP Data
  - Salt and Verde River supplies
  - Combined Supply
  - January 2000 to October 2020
  - 16 Table A-1 Priority Constituents
  - Statistical analysis performed

CAP Characterization Process

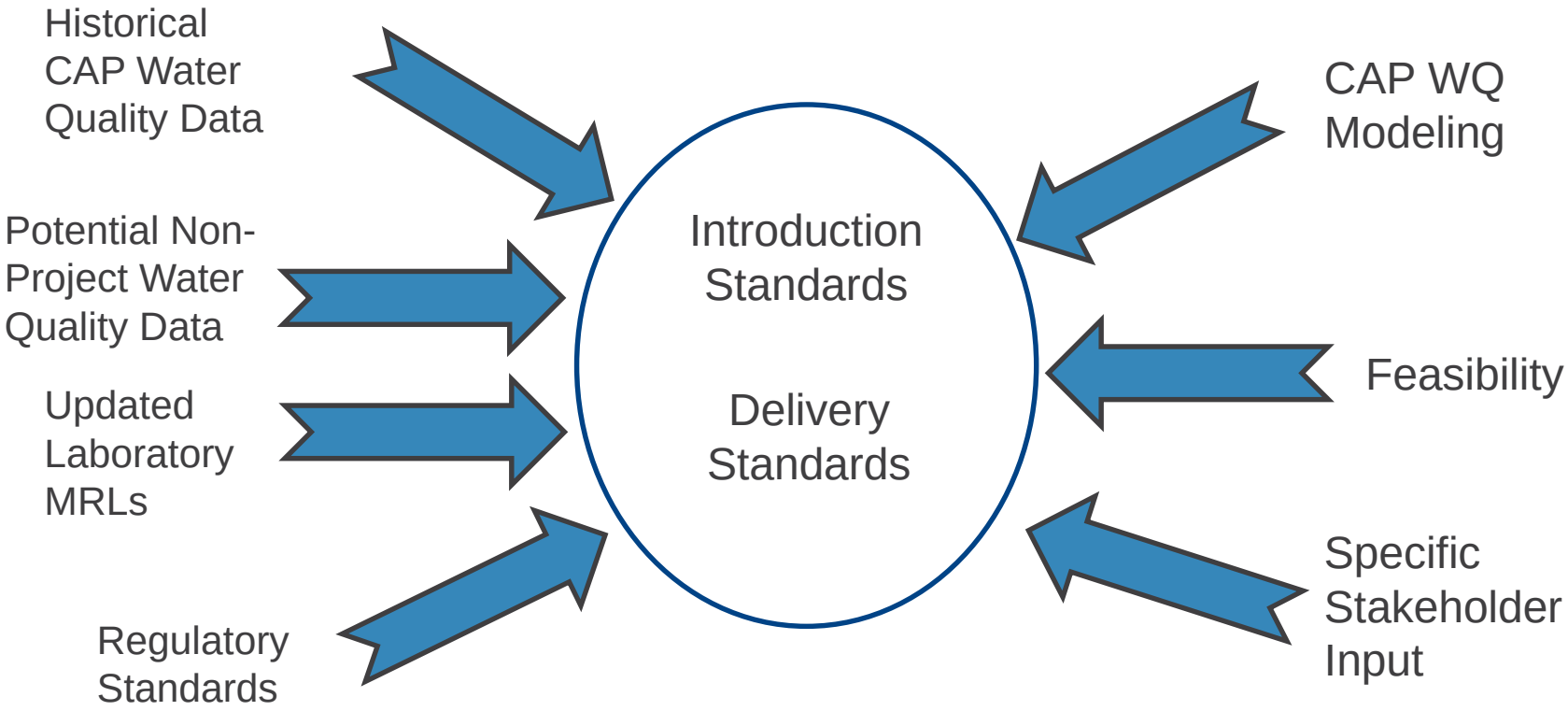


***Table A-1. List** of CAP Priority Constituents and their respective Introduction and Delivery standards. Reporting Limits (or MRLs) are derived from a survey of ADHS licensed laboratories. Reporting limits that are lower than published values may be used, but higher values will not be accepted. Introduction 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, Total	µg/L	50	50	50
Ammonia Nitrogen	mg/L	0.5	0.5	0.5
Turbidity[a]	NTU	1	9	6
Uranium	µg/L	1	30	5
Vanadium	µg/L	3	98	25
Zinc	µg/L	20	1000	30

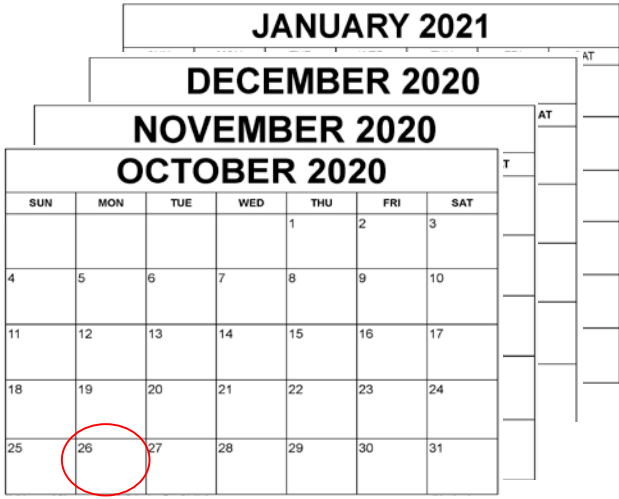
[a] Monitoring and compliance provisions related to the Introduction Standard of 9 NTU for turbidity are subject to project-specific criteria that ~~may~~ include use of a running 24-hour daily average and continuous or high-frequency sampling.

Next Steps

October 26 – Posted revised document

November 23 – Today's Briefing

January 24, 2021 – 90-day comment period ends



https://www.cap-az.com/departments/planning/service-area-planning/cap-system-use-agreement/sua-water-quality-guidance-document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