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**IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF APACHE**

IN THE GENERAL ADJUDICATION
OF ALL RIGHTS TO USE WATER IN
THE LITTLE COLORADO RIVER
SYSTEM AND SOURCE

Case No. CV6417-400

**OBJECTION TO THE SUBFLOW
ZONE DELINEATION REPORT FOR
THE LOWER LITTLE COLORADO
RIVER SUBWATERSHED**

Special Master Sherri Zendri

OBJECTOR

Name (printed) Arizona Public Service Company

Mailing Address 400 N. 5th Street

Phoenix, AZ 85004

Telephone No. 602-382-6571

Statement of Claimant No. 39- 87225 through 39-87236

STATEMENT OF OBJECTION

Please reference the portion of the report to which you are objecting, explain the reasons for the objection below (or in a separate attachment), and complete the next page.

APS objects to ADWR's use of Step 3 subflow boundary delineations
without providing supporting data or documentation on which
it based those delineations. This includes an extensive, continuous

1 (20+ miles) Step 3 delineation west of Joseph City from River mile
2 184 to River mile 208 that lacks supporting data or documentation.
3 See ADWR Subflow Zone Technical Report, Lower Little Colorado
4 River, Appendix G, maps 8 (20+ miles continuous step 3), 9 and 10.
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9 **CERTIFICATE OF SERVICE**

10 On this 4th day of March, 2026, I certify that the original Objection
11 and two copies were sent by first class mail, or ~~hand delivered~~, to:

12 **Via First Class Mail:**

13 Clerk of the Apache County Superior Court
14 P.O. Box 365
15 St. Johns, Arizona 85936

11 *Federal Express*
12 **Via Hand Delivery:**

13 Clerk of the Apache County Superior Court
14 70 West 3rd South
15 St. Johns, Arizona 85936

16 If you mail your objection to the court, please allow additional time for mailing, so that
17 your objection will be received by the court by **March 4, 2026**.

18 

19 Signature of Objector or Representative

20 If this objection is being submitted by a Representative of the Objector, please provide the
21 following information below or by attachment:

22 Name of Representative (printed) L. William Staudenmaier

23 Mailing Address of Representative Snell & Wilmer

24 One E. Washington, Suite 2700, Phoenix, AZ 85004

25 Telephone Number of Representative 602-382-6571
26

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IN THE GENERAL ADJUDICATION
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**OBJECTION TO THE SUBFLOW
ZONE DELINEATION REPORT FOR
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RIVER SUBWATERSHED**

Special Master Sherri Zendri

OBJECTOR

Name (printed) Arizona Public Service Company

Mailing Address 400 N. 5th Street

Phoenix, AZ 85004

Telephone No. 602-382-6571

Statement of Claimant No. 39- 87225 through 39-87236

STATEMENT OF OBJECTION

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APS objects to ADWR's use of Step 3 subflow boundary delineations

without providing supporting data or documentation on which

it based those delineations. This includes an extensive, continuous

1 (20+ miles) Step 3 delineation west of Joseph City from River mile
2 184 to River mile 208 that lacks supporting data or documentation.
3 See ADWR Subflow Zone Technical Report, Lower Little Colorado
4 River, Appendix G, maps 8 (20+ miles continuous step 3), 9 and 10.
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9 **CERTIFICATE OF SERVICE**

10 On this 3rd day of March, 2026, I certify that the original Objection
11 and two copies were sent by first class mail, or hand delivered, to:

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14 P.O. Box 365
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18 _____
19 Signature of Objector or Representative

20 If this objection is being submitted by a Representative of the Objector, please provide the
21 following information below or by attachment:

22 Name of Representative (printed) L. William Staudenmaier

23 Mailing Address of Representative Snell & Wilmer

24 One E. Washington, Suite 2700, Phoenix, AZ 85004

25 Telephone Number of Representative 602-382-6571
26

FILED

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ANNETTE HOUNSHELL, CLERK
APACHE CO SUPERIOR COURT

**IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF APACHE**

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IN THE GENERAL ADJUDICATION
OF ALL RIGHTS TO USE WATER IN
THE LITTLE COLORADO RIVER
SYSTEM AND SOURCE

Case No. CV6417-400

**OBJECTION TO THE SUBFLOW
ZONE DELINEATION REPORT FOR
THE LOWER LITTLE COLORADO
RIVER SUBWATERSHED**

Special Master Sherri Zendri

OBJECTOR

Name (printed) Arizona State Land Department

Mailing Address 1110 W Washington St., Phoenix, AZ 85007

Telephone No. (602) 542-4631

Statement of Claimant No. 39-86579, et al.

STATEMENT OF OBJECTION

Please reference the portion of the report to which you are objecting, explain the reasons for the objection below (or in a separate attachment), and complete the next page.

*See Attachment "A"

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CERTIFICATE OF SERVICE

On this 4th day of March, 2026, I certify that the original Objection and two copies were sent by first class mail, or hand delivered, to:

Via First Class Mail:

Clerk of the Apache County Superior Court
P.O. Box 365
St. Johns, Arizona 85936

Via Hand Delivery:

Clerk of the Apache County Superior Court
70 West 3rd South
St. Johns, Arizona 85936

If you mail your objection to the court, please allow additional time for mailing, so that your objection will be received by the court by **March 4, 2026**.

Kevin Crestin
Signature of Objector or Representative

If this objection is being submitted by a Representative of the Objector, please provide the following information below or by attachment:

Name of Representative (printed) Arizona Attorney General's Office

Mailing Address of Representative 2005 N Central Avenue, Phoenix, AZ 85004

Telephone Number of Representative (602) 542-8303

ATTACHMENT

A

1 **KRISTIN K. MAYES**
Attorney General
2 (Firm State Bar No. 14000)
David F. Jacobs, SBA #018807
3 Kevin P. Crestin, SBA #033341
4 Eric M. Wilkins, SBA #038306
Assistant Attorneys General
5 Natural Resources Section
2005 N. Central Avenue
6 Phoenix, Arizona 85004
Telephone: 602.542.7784
7 Fax: 602.542.4084
8 NaturalResources@azag.gov

9 Attorneys for Arizona State Land Department

10 **IN THE SUPERIOR COURT OF THE STATE OF ARIZONA**
11 **IN AND FOR THE COUNTY OF APACHE**

13 IN RE THE GENERAL
14 ADJUDICATION OF ALL
RIGHTS TO USE WATER IN
15 THE LITTLE COLORADO
16 RIVER SYSTEM AND SOURCE

Case No.: CV 6417-400

**ARIZONA STATE LAND DEPARTMENT'S
NOTICE OF OBJECTIONS TO ARIZONA
DEPARTMENT OF WATER RESOURCES'
SUBFLOW ZONE DELINEATION FOR
THE LOWER LITTLE COLORADO RIVER
SUBWATERSHED**

(Assigned to the Hon. Scott Blaney)

(Before Special Master Sherri L. Zendri)

21	CONTESTED CASE NAME:	<i>In re Lower Little Colorado River Subwatershed</i>
22	DESCRIPTIVE SUMMARY:	The ASLD provides notice of its objections to ADWR's Subflow Zone Delineation for the Lower Little Colorado River Subwatershed.
23	NUMBER OF PAGES:	4
24	DATE OF FILING:	March 4, 2026

1 The Arizona State Land Department (“ASLD”) hereby provides its Notice of
2 Objections to the Arizona Department of Water Resources’ Report entitled Subflow Zone
3 Delineation for the Lower Little Colorado River Subwatershed, filed on September 5, 2025
4 (“LLCR Subflow Report”). ASLD provides this Notice pursuant to the Court’s Order to
5 Determine Subflow Zone for Lower Little Colorado Subwatershed and Order Establishing
6 Deadlines for Filing Report and Objections issued on December 6, 2022. ASLD reserves
7 the right to amend these objections if additional information is filed or developed as part
8 of these proceedings, including the ability respond to other objectors and participate in any
9 evidentiary proceedings.

10 **I. ASLD Objects to ADWR’s Identification of the Middle Reaches of Clear**
11 **Creek and Chevelon Creek as Intermittent Streams.**

12 Delineation of the subflow zone starts with identification of stream reaches as either
13 perennial or intermittent under predevelopment conditions. *See* Order re Report of the
14 Special Master on the Arizona Department of Water Resources’ Subflow Technical Report,
15 San Pedro River Watershed and Motion for Approval of Report, filed September 28, 2005,
16 23 (“Ballinger Order”). Only streams designated as either intermittent or perennial under
17 predevelopment conditions should be mapped for a subflow zone. *Id.*

18 The LLCR Subflow Report relies on a base map (Brown et al., 1981) and
19 streamgage data to initially select portions of Clear Creek and Chevelon creek to be
20 evaluated as intermittent or ephemeral. LLCR Subflow Report at 34. This base map
21 identifies sections of Clear Creek and Chevelon Creek as ephemeral. *Id.* at 35. However,
22 following its investigation of these portions of Clear Creek and Chevelon Creek, ADWR
23 reclassified certain reaches as intermittent. *Id.* at 106, Figure 3-10.

24 ADWR’s support for these reclassifications is deficient. ADWR first acknowledges
25 that identifying intermittent streams is difficult because ephemeral streams can mimic the
26 qualities of intermittent streams. *See id.* at 31. Specifically, ADWR identifies both

1 intermittent and ephemeral streams “having riparian communities.” *See id.* Yet, ADWR
2 relies heavily upon the presence of riparian vegetation to affirmatively reclassify several
3 reaches. *See id.* at 35–37, 48, Appendix E at 9, 10, 23, 25. ADWR explains that it resorted
4 to relying on riparian data because it was “unable to find maps, streamgage data, and/or
5 peer reviewed studies,” *id.* at 35, but the *absence* of supporting information does not justify
6 a reclassification from the base map, especially when such cases are “complex.”

7 Finally, ADWR’s streamflow classification for Chevelon Creek and the middle
8 portion of Clear Creek conflict with their previous analysis of these reaches as part of a
9 Special Report filed by ADWR in 1989. *See* Hydrology of the Little Colorado River
10 System, filed October 1989, 4-30–4-37. The LLCR Subflow Report does not address this
11 conflict with their previous analysis.

12 **II. ASLD Joins in the LCR Coalition’s Objections to the LLCR Subflow**
13 **Report.**

14 ASLD joins in the Objections filed by the LCR Coalition. *See* LCR Coalition’s
15 Objections to ADWR’s Lower Little Colorado River Subflow Zone Delineation Report,
16 filed March 4, 2026. The Technical Memorandum and Figures provided by the LCR
17 Coalition contain the specific portions of Clear Creek and Chevelon Creek that should be
18 classified as ephemeral. *See id.*, Exhibit C, Figure 1.

19
20 RESPECTFULLY SUBMITTED this 4th day of March, 2026.

21 Kristin K. Mayes
22 Attorney General

23 *Kevin Crestin*

24 David F. Jacobs
25 Kevin P. Crestin
26 Eric M. Wilkins

Assistant Attorneys General
Attorney for Arizona State Land Department

1 CERTIFICATE OF SERVICE

2 ORIGINAL of the foregoing was sent via mail
3 to be filed with the Apache County Superior Court
4 this 4th day of March, 2026, to:

5 Clerk of the Superior Court
6 Apache County
7 P.O. Box 365
8 St. Johns, Arizona 85936

9 COPIES of the foregoing sent via first class mail
10 this 4th day of March, 2026, to:

11 Honorable Scott Blaney
12 Judge of the Superior Court
13 101 W. Jefferson St., Suite 411
14 Phoenix, Arizona 85003

15 Special Master Sherri Zendri
16 Central Court Building Suite 3A
17 201 West Jefferson Street
18 Phoenix, Arizona 85003-2205

19 Clerk of the Superior Court
20 Apache County
21 70 West 3rd South
22 St. Johns, Arizona 85936

23 COPIES of the foregoing were deposited for
24 mailing this 4th day of March, 2026,
25 upon all parties on the court approved mailing list for:

26 *In re Lower Little Colorado River Subwatershed* (Case No.: CV 6417-400) as of August
27 22, 2025

28 By: /s/ Karina Bernal
29 Karina Bernal

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ANNELL MOUNSHELL, CLERK
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1 Lee A. Storey (011989)
lee@tsllawgroup.com
2 TSL LAW GROUP PLC
8767 E. Via de Ventura,
3 Suite 126
Scottsdale, Arizona 85258
4 Telephone: (602) 803-8811
Attorneys for City of Flagstaff

5
6 **IN THE SUPERIOR COURT OF THE STATE OF ARIZONA**
7 **IN AND FOR THE COUNTY OF APACHE**

8 **IN THE GENERAL ADJUDICATION**
9 **OF ALL RIGHTS TO USE WATER IN**
10 **THE LITTLE COLORADO RIVER**
11 **SYSTEM AND SOURCE**

Case No. CV 6417-400

**OBJECTION TO THE SUBFLOW
ZONE DELINEATION REPORT FOR
THE LOWER LITTLE COLORADO
RIVER SUBWATERSHED**

Special Master Sherri Zendri

12
13 **OBJECTOR**

14 Name: City of Flagstaff
15 Mailing Address: TSL Law Group, 8767 E. Via de Ventura, Suite 105
Scottsdale, Arizona 85258
16 Telephone No.: (602) 803-8811
17 Statement of Claimant Nos.: 39-03-83947, 39-03-83948 & 39-03-83949

18
19 **STATEMENT OF OBJECTION**

20 The City of Flagstaff ("Flagstaff") hereby submits its objections to the Technical
21 Report prepared by the Arizona Department of Water Resources (ADWR) for the
22 Subflow Zone Delineation for the Lower Little Colorado River Subwatershed ("LLCR"),
23 for *In Re the General Stream Adjudication of All Rights to Use Water in the Little*
24 *Colorado River System and Source*, Apache County, CV 6417 ("Subflow Report").

25 1. Flagstaff retains the right to object to and further comment on any other
26 party's objections to the Subflow Report, and any future modifications by ADWR to the
27 Subflow Report.

1 2. Flagstaff notes that the Northeastern Arizona Indian Water Rights
2 Settlement Agreement (“NAIWRSA”) was executed by 38 parties, including Governor
3 Hobbs on November 19, 2024, making NAIWRSA binding on the parties to the
4 Agreement. NAIWRSA is mentioned in the Subflow Report and identified in boundary
5 maps, and should be defined in Chapter 1: Legal Background of the Subflow Report.
6 Although NAIWRSA has not yet been enacted by Congress or approved by the
7 Adjudication Court, Flagstaff reserves the right to object to any party comments that are
8 not consistent with NAIWRSA, including comments by the United States of America in
9 its role as trustee for the Navajo Nation, the Hopi Tribe and the San Juan Southern Paiute
10 Tribe.

11 3. ADWR excludes mapping a Subflow zone for the streams and washes
12 flowing through the Navajo Nation, the Hopi Tribe and the San Juan Southern Paiute,
13 including reaches of the Puerco River, on-Reservation tributary washes and the Little
14 Colorado River itself (pp. 44-45). Flagstaff reserves the right to assert that all areas of the
15 LLCR should be evaluated for Subflow zone delineation, including other shallow
16 aquifers that contribute to subflow.

17 4. ADWR indicates that only the C-Aquifer contributes to intermittent flow
18 (p.19). There are shallow aquifers overlying the C-Aquifer that may contribute to
19 intermittent flows, especially on-Reservation such as the N-Aquifer, D-Aquifer and B-
20 Aquifer. Flagstaff incorporates its comment from #3 above.


21 5. ADWR refers to LLCR streamflow diversions as primarily agricultural (p.
22 29, paragraph 2). In lines 3-4 of paragraph 2, Flagstaff suggests revising “Upper and
23 Lower Lake Mary near Flagstaff, ...” to “Upper and Lower Lake Mary for municipal
24 water supply and recreational use near Flagstaff, ...”

25 6. ADWR states that Lake Mary is a “unique case” (Appendix E, p. 2).
26 Flagstaff objects to ADWR’s reference of Lake Mary as a “unique case” as it could be
27 construed as a legal statement and requests that the first paragraph at the top of page 2 in
28 Appendix E be stricken in its entirety, or if technically applicable, alternatively referred

1 to as a "unique geologic area". ADWR should not make legal inferences about
2 individual claims in the Subflow Report. Likewise, in the notes on Appendix E page 6
3 (selection criteria for Upper and Lower Lake Mary), ADWR might list a claim or permit
4 number on file with ADWR, but ADWR's legal comments should be stricken from the
5 notes.

6 DATED this 3rd day of March, 2026.

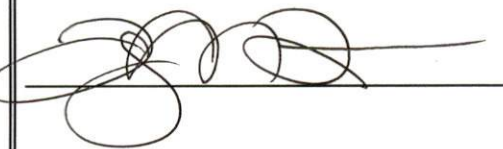
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8 TSL LAW GROUP, PLC

9 By: 
10 Lee A. Storey
11 8767 E. Via de Ventura, Suite 126
12 Scottsdale, Arizona 85258
13 *Attorneys for City of Flagstaff*

14 **CERTIFICATE OF SERVICE**

15 ORIGINAL and two copies of the foregoing sent VIA FEDERAL EXPRESS this 3rd of
16 March, 2026 for filing with:

17 Clerk of the Apache County Superior Court
18 70 West 3rd Street
19 St. Johns, Arizona 85936

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IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF APACHE
ANNELL HOUNSHELL, CLERK
APACHE CO SUPERIOR COURT

IN THE GENERAL ADJUDICATION
OF ALL RIGHTS TO USE WATER IN
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SYSTEM AND SOURCE

Case No. CV6417-400

OBJECTION TO THE SUBFLOW
ZONE DELINEATION REPORT FOR
THE LOWER LITTLE COLORADO
RIVER SUBWATERSHED

Special Master Sherri Zendri

OBJECTOR

Name (printed) DAVID E RAMIREZ

Mailing Address PO Box 981

Winslow, AZ 86047

Telephone No. 928-699-0435

Statement of Claimant No. 39-

STATEMENT OF OBJECTION

Please reference the portion of the report to which you are objecting, explain the reasons for the objection below (or in a separate attachment), and complete the next page.

I own my own Well,

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I'm not near Little Colorado River

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CERTIFICATE OF SERVICE

On this 9 day of Aug, 2025, I certify that the original Objection and two copies were sent by first class mail, or hand delivered, to:

Via First Class Mail:

Via Hand Delivery:

Clerk of the Apache County Superior Court
P.O. Box 365
St. Johns, Arizona 85936

Clerk of the Apache County Superior Court
70 West 3rd South
St. Johns, Arizona 85936

If you mail your objection to the court, please allow additional time for mailing, so that your objection will be received by the court by **March 4, 2026**.

Signature of Objector or Representative

If this objection is being submitted by a Representative of the Objector, please provide the following information below or by attachment:

Name of Representative (printed) _____

Mailing Address of Representative _____

Telephone Number of Representative _____

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APACHE CO SUPERIOR COURT

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**IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
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Case No. CV6417-400

**OBJECTION TO THE SUBFLOW
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RIVER SUBWATERSHED**

Special Master Sherri Zendri

OBJECTOR

Name (printed) Deborah Shimel

Mailing Address P.O. Box 911 Heber, AZ 85928

Telephone No. _____

Statement of Claimant No. 39- _____

STATEMENT OF OBJECTION

Please reference the portion of the report to which you are objecting, explain the reasons for the objection below (or in a separate attachment), and complete the next page.

I object to all of it. See Addendum 1 A B and C.

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Mailing Address of Representative _____

Telephone Number of Representative _____

Addendum 1A

Gila River and Little Colorado River General Stream Adjudications

How Did These Adjudications Start?

The Gila River and Little Colorado River adjudications trace their origins to proceedings initiated in the 1970s under the then-existing general adjudication procedures set forth in Arizona Revised Statutes sections 45-231 to 45-245. On April 26, 1974, the Salt River Valley Water Users' Association (SRV) filed a petition with the Arizona State Land Department (SLD) to determine the water rights in the Salt River above Granite Reef Dam (but excluding the Verde River). On February 24, 1976, SRV filed a similar petition for the Verde River and its tributaries. On February 17, 1978 and on April 19, 1978, utilizing these same statutes, the Phelps Dodge Corporation filed petitions with SLD to determine the water rights of the Gila River system and source and the Little Colorado River system and source. These petitions sought adjudication of the Upper Gila River watershed and of portions of the Lower Gila River watershed. On April 3, 1978, ASARCO, Inc. filed a petition with SLD for the adjudication of the San Pedro River and its tributaries.

On December 24, 1980, the Buckeye Irrigation Company filed a motion to intervene and a petition to enlarge the scope of the adjudication with respect to areas of the Gila River watershed not included in the previously filed petitions. This motion and petition were granted on March 17, 1981, and included the Agua Fria River watershed and portions of the Lower Gila River watershed. At the time, there was litigation pending in federal court which sought an adjudication of the Santa Cruz River watershed in Pima and Santa Cruz counties. Because of this litigation, the Maricopa County Superior Court, by granting the Buckeye Irrigation Company petition for adjudication of additional rights, did not include that portion of the Santa Cruz River watershed located in Pima and Santa Cruz counties. Following the conclusion of that litigation, on October 30, 1985, the Buckeye Irrigation Company filed a petition, granted by the Superior Court, for the inclusion of those portions of the Santa Cruz River watershed.

In April 1979, the Legislature amended the general adjudication procedures. Under these amendments, the Salt River, Verde River, and Gila River adjudications were transferred from SLD to the Maricopa County Superior Court. The San Pedro River adjudication was transferred to the Cochise County Superior Court. In November 1981, the Arizona Supreme Court consolidated these adjudications into one proceeding assigned to the Maricopa County Superior Court under the caption *In re the General Adjudication of All Rights to Use Water in the Gila River System and Source, Nos. W-1, W-2, W-3 & W-4 (Consolidated)*.

Addendum 1B

Under the amended statutes, the Little Colorado River Adjudication was transferred to the Apache County Superior Court where it is litigated under the caption In re the General Adjudication of All Rights to Use Water in the Little Colorado River System and Source, No. 6417.

These cases were assigned to the Maricopa and Apache County Superior Courts because these are the counties where the largest number of potential claimants reside. Pursuant to the amended statutes, summons were issued in both adjudications and served on potential claimants in each watershed. Copies of the summons were served upon all persons listed in property tax assessments in each watershed and on all persons in the watershed who had, at the time, any kind of water rights filing on record with the Arizona Department of Water Resources (ADWR). In July 1984, a special notification was made to owners of registered wells in the Upper Salt River and San Pedro River watersheds. The summons required the filing of a statement of claimant with ADWR if the person claimed a water use from a well in the watershed.

Each watershed in the Gila River system was noticed. The original filing deadlines were:

Gila River Adjudication:

Upper Salt - June 30, 1980

January 4, 1985 (groundwater claims)

San Pedro - July 11, 1980

January 4, 1985 (groundwater claims)

Agua Fria - November 1, 1985

Upper Gila - November 1, 1985

Verde - November 29, 1985

Lower Gila - January 20, 1987

Upper Santa Cruz - August 3, 1987

Little Colorado River Adjudication:

December 23, 1985

Original deadline was May 1, 1982. Next deadline was set for June 30, 1985 after Supreme Court held that the McCarren amendment removed any federal impediment to Arizona state courts jurisdiction over Indian water rights.

Who Will Be Affected By The General Stream Adjudications?

Any person or entity who uses water or has made a claim to use water on property within the Gila River system or within the Little Colorado River system, potentially may be affected. The legislature has charged the Arizona Superior Court with quantifying and prioritizing validly existing water rights claimed in these watersheds. The final court decrees will establish the existence and ownership of claimed water rights, as well as important characteristics of the

• Addendum 1C

water rights including location of water uses, quantity of water used, and date of priority of the water rights.

What Is The Position Of Special Master?

The Special Master is a judicial officer appointed by the Arizona Superior Court to hear cases arising out of the adjudications and report on legal and factual issues designated by the Superior Court. After resolving all the objections to the hydrographic survey reports, the Special Master will present a report and recommended final decree to the Superior Court judge assigned to each adjudication. After hearing and resolving any objections to the Special Master's report, the judges will issue the final decree for each watershed. [Special Master's website](#).

Should A Claim Be Filed For Some Potential Future Use?

No. Under the Arizona system of water law, water rights cannot be established or reserved for some potential future use. Water rights can only be established through proper legal appropriation and putting the water to actual beneficial use.

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2026 MAR -4 AM 9:16

ANNELL HOUNSHELL, CLERK
APACHE CO SUPERIOR COURT

1 David A. Brown (#006827)
J Albert Brown (#030918)
2 Brian J. Heiserman (#031546)
Bradley J. Pew (#033876)
3 Amy Brown (#034296)
Garrett W. Perkins (#034779)
4 BROWN & BROWN LAW OFFICES, P.C.
P.O. Box 1890
5 St. Johns, AZ 85936
Telephone: (928) 337-4225
6 david@b-b-law.com
jabrown@b-b-law.com
7 bheiserman@b-b-law.com
amy@b-b-law.com
8 garrett@b-b-law.com

9 *Attorneys for LCR Coalition*

10 **SUPERIOR COURT OF ARIZONA**

11 **APACHE COUNTY**

12 IN RE: THE GENERAL ADJUDICATION OF
ALL RIGHTS TO USE WATER IN THE
13 LITTLE COLORADO RIVER SYSTEM AND
SOURCE

Civil No. CV 6417-400

**LCR COALITION'S
OBJECTIONS TO ADWR'S
LOWER LITTLE COLORADO
RIVER SUBFLOW ZONE
DELINEATION REPORT**

16 CONTESTED CASE NAME: *In re Lower Little Colorado River Subwatershed*

17 HSR INVOLVED: None

18 DESCRIPTIVE SUMMARY: The LCR Coalition submits objections to the Arizona
19 Department of Water Resources' September 2025 subflow zone delineation report for the
20 Lower Little Colorado River subwatershed.

21 NUMBER OF PAGES: 35 (including 27 pages of exhibits)

22 DATE OF FILING: March 4, 2026
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1 On December 6, 2022, the Special Master issued an order in *In re Lower Little*
2 *Colorado River Subwatershed* (CV 6417-400) instructing the Arizona Department of
3 Water Resources (“ADWR”) to file a technical report delineating a subflow zone for the
4 Lower Little Colorado River subwatershed by September 5, 2025 and setting a March 4,
5 2026 deadline for objections to the report. *See* Order to Determine Subflow Zone for
6 Lower Little Colorado Subwatershed and Order Establishing Deadlines for Filing Report
7 and Objections at 2. On September 5, 2025, ADWR issued its technical report, titled
8 Subflow Zone Delineation for the Lower Little Colorado River Subwatershed (“2025
9 LLCR Subflow Report”). Pursuant to the Special Master’s instruction, the Little
10 Colorado River Coalition (“LCR Coalition”)¹ hereby submits objections to the 2025
11 LLCR Subflow Report. The LCR Coalition reserves the right to submit additional
12 objections if new information becomes available, to participate in legal briefing
13 pertaining to the 2025 LLCR Subflow Report, and to participate in the resolution of
14 objections or comments filed by other parties.

15 **I. Burdens of Proof.**

16 Section 1 of the 2025 LLCR Subflow Report contains background information on
17 legal rulings that pertain to the delineation of subflow zones. ADWR’s description of
18 Judge Goodfarb’s June 1994 San Pedro subflow ruling includes discussion of an
19 applicable burden of proof, with ADWR stating that “[u]ltimately, the Adjudication
20 Court concluded that the fairest burden of proof would be a preponderance of the
21 evidence.” 2025 LLCR Subflow Report at 5 (citing June 30, 1994 Order, *In re the Gen.*
22 *Adjudication of All Rts. to Use Water in the Gila River Sys. & Source*, Nos. W-1, W-2,
23 W-3 & W-4 (“1994 Subflow Order”), at 64). As explained below, ADWR’s burden of
24 proof discussion omits important information and should be expanded upon and clarified.

25 Under Arizona law, underground waters “are presumed to be percolating and,

26 ¹ The members of the LCR Coalition are identified on **Exhibit A**.

1 therefore, not appropriable as subflow.” *In re Gen. Adjudication of All Rts. to Use Water*
2 *in Gila River Sys. & Source (“Gila IV”)*, 198 Ariz. 330, 335 ¶ 6 (2000) (citing *Maricopa*
3 *Cnty. Mun. Water Conservation Dist. No. 1 v. Southwest Cotton Co.*, 39 Ariz. 65, 85
4 (1931)). Given the “strong initial presumption” that a well is pumping groundwater,
5 “[o]ne who asserts that underground water is a part of a stream’s subflow must prove that
6 fact by clear and convincing evidence.” *Id.* at 335 ¶ 6, 343 ¶ 43 (citing *Southwest Cotton*
7 *Co.*, 39 Ariz. at 85). Only after a well is shown to be pumping subflow by clear and
8 convincing evidence does the burden shift to a well owner to show that the well is
9 pumping percolating groundwater. As stated by Judge Goodfarb and confirmed by the
10 Arizona Supreme Court, the appropriate burden of proof for the property owner at that
11 point is a preponderance of the evidence. *See* 2025 LLCR Subflow Report at 5; 1994
12 Subflow Order at 63-64; *Gila IV*, 198 Ariz. at 343 ¶¶ 41-43.

13 The 2025 LLCR Subflow Report contains discussion of the preponderance
14 standard applied to a property owner but does not contain any discussion of the initial
15 burden to prove that a well is pumping subflow by clear and convincing evidence. The
16 accuracy and clarity of ADWR’s legal background section would be improved by
17 including discussion of both burdens of proof.

18 **II. Delineation of Subflow Zones for Clear Creek and Chevelon Creek.**

19 The judicial opinions governing delineation of subflow zones instruct that a
20 subflow zone must be adjacent to and beneath a perennial or intermittent stream, and not
21 an ephemeral stream. *See Gila IV*, 198 Ariz. at 337 ¶ 17; 1994 Subflow Order at 35, 59;
22 November 27, 2017 Order for Production of a Subflow Zone Delineation Technical
23 Report for the Verde River Watershed, *In re Subflow Technical Report, Verde River*
24 *Watershed* (W1-106) (“2017 Verde Order”) at 2-3.

25 A subflow zone may also be delineated for ephemeral reaches of perennial or
26 intermittent streams if: “(1) anthropological surface water diversions or groundwater

1 pumping caused that portion of the perennial or intermittent stream to become ephemeral;
2 and (2) a saturated zone exists beneath the ephemeral reach that is connected to the
3 saturated zone beneath the adjoining perennial or intermittent reaches.” 2017 Verde
4 Order at 2; *see also* 1994 Subflow Order at 35. This is sometimes referred to as the
5 “ephemeral stream exception.”

6 Definitions for “perennial,” “intermittent,” and “ephemeral” streams are provided
7 in Judge Goodfarb’s 1994 Subflow Order, as follows:

8 Perennial streams discharge water continuously through the year. Their
9 source of supply is normally comprised of both direct runoff from
10 precipitation events or snow melt, and baseflow derived from the discharge
of groundwater into the stream . . .

11 Intermittent streams discharge water for long periods of time, but
12 seasonally. For example, an intermittent stream may flow all winter, every
13 winter, but never flow continuously during the summer. During seasons
when baseflow is maintained, groundwater is contributing to the stream . . .

14 Ephemeral streams discharge water only in response to precipitation events
15 or snowmelt, and do not have a baseflow component at any time of the
16 year; they flow out sporadically. The groundwater system and surface water
system do not establish a hydraulic connection in these systems.

17 1994 Subflow Order at 23-24.

18 The 2025 LLCR Subflow Report correctly describes the requirement that a
19 subflow zone be delineated only for perennial or intermittent streams and correctly
20 defines the relevant streamflow classifications. *See* 2025 LLCR Subflow Report at 30-31.
21 It also correctly identifies groundwater discharge as the key criterion for distinguishing
22 between intermittent and ephemeral streams, explaining that:

23 Based on the above definitions, an intermittent stream’s hydraulic
24 connectivity to groundwater distinguishes it from an ephemeral stream.
25 Alongside intermittent streams, groundwater discharge causes regular
26 streamflow for part of every year, and natural losses to streamflow exceed
the groundwater contribution during the remainder of the year, causing

1 streamflow cessation. In contrast, in high elevation areas, snowmelt
2 produces runoff-driven streamflow in the spring, following all but the driest
3 winters, yet lacks the groundwater contribution to streamflow (known as
4 baseflow) as required by Judge Goodfarb's 1994 definition of an
5 intermittent stream (1994 *Subflow Order*, at 23-24). Therefore, ephemeral
6 streams that regularly transport annual snowmelt may mimic similar stream
7 characteristics as a groundwater-supported intermittent stream. These
8 mimicked characteristics may include having riparian communities,
streamgage data reflecting annual springtime flows, and visible springtime
flows occurring during many years. However, these streams lack a
hydraulic connection to groundwater and do not flow during dry years, as
the streamflow occurs only in response to precipitation.

9 *Id.* at 31. Based on a review of the guiding legal documents and its technical analysis,
10 ADWR correctly excluded stream reaches from its subflow zone delineations that did not
11 meet the perennial and intermittent criteria. *See id.* at 46-49 and Figures 3-7 and 3-10.

12 However, portions of ADWR's subflow zone delineations for East Clear Creek
13 ("Clear Creek") and Chevelon Creek are inconsistent with the judicial opinions discussed
14 above and with ADWR's own criteria. In delineating subflow zones for Clear Creek and
15 Chevelon Creek, ADWR mapped continuous subflow zones that extend from the higher-
16 elevation portions of those creeks near the Mogollon Rim to their confluences with the
17 Little Colorado River. *See* 2025 LLCR Subflow Report at 107 and Appendix I.² For the
18 reasons set forth below, the LCR Coalition objects to portions of the delineations
19 proposed by ADWR for Clear Creek and Chevelon Creek.

20 1. The Middle Reaches of Clear Creek and Chevelon Creek are
21 Ephemeral and Receive No Contributions from Groundwater.

22 The LCR Coalition retained Dr. Dave Lipson of HRS Water Consultants, Inc., to
23 evaluate the extent of groundwater contribution occurring along Clear Creek and
24 Chevelon Creek. Dr. Lipson is the Principal Hydrogeologist of HRS and has over 35

25 ² An online map of ADWR's proposed Lower Little Colorado River subflow zone is
26 available on ADWR's website at:
<https://azwater.maps.arcgis.com/apps/webappviewer/index.html?id=a4c748130c7b435ea72afebf90031f70>

1 years of experience conducting evaluations of water resources, groundwater and surface
2 water hydrology, and groundwater-surface water interactions. A copy of Dr. Lipson's
3 curriculum vitae is attached as **Exhibit B**. Dr. Lipson set forth his opinions in a technical
4 memorandum, attached as **Exhibit C**.

5 As discussed in his technical memorandum, Dr. Lipson concluded that the middle
6 portions of both Clear Creek and Chevelon Creek contain significant stretches with
7 downward hydraulic gradients for which there is no groundwater contribution from any
8 underlying aquifer. *See Exhibit C at 1-2. Figure 1 to Dr. Lipson's technical memorandum*
9 *is a map identifying the stream reaches of Clear Creek and Chevelon Creek that do not*
10 *receive contributions from groundwater. Dr. Lipson's conclusions are supported by*
11 *ADWR's own evaluations of groundwater contribution to streamflow throughout the*
12 *Little Colorado River system, published in an October 1989 report, which likewise*
13 *concluded that the middle portions of Clear Creek and Chevelon Creek do not receive*
14 *contributions from groundwater and expressly categorized those reaches as "ephemeral."*
15 *See Exhibit C at 1-2, Figures 2-5.*

16 2. The Ephemeral Stream Exception Does Not Apply to the
17 Middle Reaches of Clear Creek or Chevelon Creek.

18 As discussed above, a subflow zone may be delineated for ephemeral reaches of
19 perennial or intermittent streams if anthropological diversions or withdrawals caused that
20 portion of the stream to become ephemeral. *See 2017 Verde Order at 2; 1994 Subflow*
21 *Order at 35. The extent of cultural depletions throughout the Little Colorado River*
22 *system was evaluated in ADWR's October 1989 report. With respect to both Clear Creek*
23 *and Chevelon Creek, ADWR concluded that "[t]here are no significant industrial,*
24 *municipal, or irrigation depletions to the surface water system."* *See Exhibit C at Exhibit*
25 *1, pp. 4-31 and 4-35. This conclusion is consistent with ADWR's approach in the 2025*
26 *LLCR Subflow Report, which noted the limited extent of streamflow depletions*

1 throughout the Lower Little Colorado River study area. *See* 2025 LLCR Subflow Report
2 at 30. (“Due to limited use of perennial surface water in most of the LLCR Subwatershed,
3 ADWR assumed that current conditions reflect predevelopment conditions except for
4 areas along the LCR and Puerco River with documented flow depletions due to direct
5 diversion and shallow groundwater pumping.”). There is no information presented in the
6 2025 LLCR Subflow Report or its supporting materials that would support application of
7 the ephemeral stream exception to either Clear Creek or Chevelon Creek.

8 3. The Middle Reaches of Clear Creek and Chevelon Creek
9 Should be Excluded from the Proposed Subflow Zone.

10 Based on the available hydrogeologic information, governing judicial opinions,
11 and ADWR’s own criteria in the 2025 LLCR Subflow Report, the middle reaches of
12 Clear Creek and Chevelon Creek should be categorized as ephemeral, not perennial or
13 intermittent. Because there is no evidence that those reaches are ephemeral due to
14 anthropological streamflow diversions or pumping (and in fact ADWR has already
15 concluded otherwise), those reaches should be excluded from the proposed subflow zone.
16 The specific stream reaches to which the LCR Coalition objects are those identified on
17 Dr. Lipson’s Figure 1 as not receiving contributions from groundwater.

18 RESPECTFULLY SUBMITTED this 4th day of March, 2026.

19 BROWN & BROWN LAW OFFICES, P.C.

20 

21 By: _____

22 David A. Brown
23 J Albert Brown
24 Brian J. Heiserman
25 Bradley J. Pew
26 Amy Brown
Garrett W. Perkins

Attorneys for LCR Coalition

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ORIGINAL and two copies of the foregoing and exhibits filed this 4th day of March, 2026 with:

Clerk of the Court
Apache County Superior Court
Attention: Water Case
70 West 3rd Street South
St. Johns, Arizona 85936

COPY of the foregoing and exhibits mailed this same day to those parties who appear on the Court-Approved Mailing List for Case No. 6417-400 dated August 22, 2025.




Exhibit A

LCR Coalition Member	Statements of Claimant
Town of Eagar	39-84465, 39-84466, 39-84467, 39-84468, 39-84469, 39-84470, 39-84471
City of Holbrook	39-82029, 39-82078, 39-82079, 39-82080, 39-82081, 39-85030
City of Show Low	39-84279, 39-84280, 39-84281, 39-84282, 39-84283, 39-84284, 39-84285
Town of Springerville	39-84149
Town of Snowflake	39-83792, 39-84000
Town of Taylor	39-80823
City of Winslow	39-84979, 39-84980
City of St. Johns	39-89123, 39-89124, 39-89125, 39-89126, 39-91702, 39-91703, 39-91704, 39-91705, 39-91706, 39-951532
Forest Lakes Domestic Water Improvement District	39-93509, <i>et al.</i>
Silver Creek Irrigation District	39-88816
Show Low/Pinetop-Woodland Irrigation Company	39-83105, 39-83786, 39-83787, <i>et al.</i>
Lakeside Irrigation Company	39-84141
Little Colorado Water Conservation District	Pending
Round Valley Water Users Association (now Pioneer Irrigation Company)	39-89112
Grover's Hill Irrigation District	39-89196
Bar T Bar Ranch, Inc.	39-87546, 39-87520, 39-87524, <i>et al.</i>
Barnes, Euell	Pending

Flying M Ranch	39-88420, 39-88441, 39-88474, <i>et al.</i>
Aztec Land & Cattle Company, Ltd.; Aztec Land Company, LLC	39-63081, <i>et al.</i>
Pinetop-Lakeside Sanitary District	39-80300

Exhibit B

Education

- Ph.D. Geological Engineering, Colorado School of Mines, 2008
- M.S. Hydrogeology, Syracuse University, 1996
- M.S. Environmental Science, SUNY-ESF, 1990
- B.S. Geology, SUNY Cortland, 1988

Professional Geology Licenses

- Florida No. PG2339
- N. Carolina No. PG2046
- Arizona PG No. 71830

Professional Affiliations

- National Ground Water Association (NGWA) – Board Member
- American Institute of Professional Geologists (AIPG)
- International Association of Hydrogeologists (IAH)
- Rocky Mountain Association of Geologists (RMAG)
- Colorado Ground Water Association (CGWA)

Contact Information

- dlipson@hrswater.com
- www.HRSWater.com
- W: (303) 462-1111
- [David S. Lipson | LinkedIn](#)

David S. Lipson, Ph.D., P.G. Principal

Overview

Dr. David Lipson is a consulting hydrogeologist specializing in water resources, groundwater and surface-water hydrology, groundwater-surface water interactions, fate and transport of contaminants, groundwater remediation, and geochemistry. He brings more than 35 years of experience working throughout the US and internationally solving complicated water and environmental problems for clients. He served as an Adjunct Professor at Colorado School of Mines between 2003 and 2022 when he taught graduate-level courses in groundwater engineering, hazardous waste remediation, and advanced topics. Dr. Lipson also taught a graduate-level environmental engineering course at the Chinese Academy of Sciences in Nanjing. He is an editor of the scientific journal *Groundwater* and serves on the Board of Directors of the National Ground Water Association.

Dr. Lipson has extensive experience dealing with a wide variety of groundwater contaminants including LNAPLs, DNAPLs, chlorinated solvents, creosote, MGP wastes, and volatile organic chemicals. He also has experience characterizing and remediating groundwater at sites impacted with metals, brines, and other inorganic chemicals such as arsenic. In addition, his experience includes investigating and characterizing the transport of per- and polyfluoroalkyl substances (PFAS). Dr. Lipson was a principal author of NGWA's 2017 PFAS best practice document titled "Groundwater and PFAS: State of the Knowledge and Practice."

Dr. Lipson has helped clients by designing and implementing passive remediation strategies such as remediation by natural attenuation (RNA) and risk-based corrective action (RBCA) approaches. If active remediation is required, he has extensive experience designing, implementing, monitoring, and closing pump-and-treat, soil vapor extraction, air sparging, in-situ bioremediation, and in-situ chemical oxidation systems. He is also experienced at designing and evaluating permeable reactive barriers, thermal remediation enhancements, and other emerging technologies.

Dr. Lipson has worked under almost all water-based regulatory programs, including CERCLA, RCRA, the Safe Drinking Water Act, and the Clean Water Act, as well as numerous state-led regulatory programs. He has worked in 35 US states and has experience working under prior appropriation water rights laws common in the western US.

Dr. Lipson has served as an expert witness and testified on topics including water rights, water resources, hydrogeology, groundwater-surface water interactions, geochemistry, fate and transport of contaminants, groundwater remediation, water quality, hydrology, groundwater modeling, construction defects, water damages, water treatment, and related disciplines. Dr. Lipson has been qualified as an expert witness in a court of law and provided testimony in a jury trial.

Work Experience

Principal Hydrogeologist – HRS Water Consultants, Inc., Lakewood, CO, Jan 2018 to present.

President and Technical Expert – Hydro Science + Engineering, LLC Arvada, CO, Feb 2015 to Jan 2018.

Technical Expert – ARCADIS US, Inc., Golden, CO, Sept 2005 to Feb 2015.

Associate Hydrogeologist – Blasland, Bouck & Lee, Inc., Golden, CO, June 1995 to Sept 2005.

Senior Hydrogeologist – Environmental Products & Services, Inc., Syracuse, NY, June 1990 to June 1995.

Academic/Teaching Experience

Adjunct Professor - Colorado School of Mines, Golden, CO, 2003 to 2022. Taught graduate-level courses in Advanced Topics in Hydrogeology, Hazardous Waste Site Remediation, and Groundwater Engineering Design.

Visiting Professor - Chinese Academy of Sciences (CAS), Nanjing, China, September-November 2015. Taught a graduate-level course in Groundwater Engineering to Chinese graduate students.

Short-Course Instructor - National Ground Water Association, Westerville, OH, 2010 to 2014, "Contaminant Hydrogeology of Karst."

Publications and Presentations

Lipson, D.S. 2024. Hydrogeology of the Gold King Mine Blowout. Presentation Given at the Colorado Environmental Management Society 2024 Fall Conference. Westminster, CO. September 10, 2024.

Lipson, D.S. 2022. 1,4-Dioxane Site Conceptual Models: Lessons Learned from 30 Sites. Presentation Given at the RemTec & Emerging Contaminants Summit, Westminster, Colorado, September 2022.

Lipson, D.S. 2021. Darcy's Law and the Supreme Court. *Groundwater*. Vol. 59, No. 1, pp. 2-3.

Lipson, D.S., M. Armstrong, M.J. Seitz, and F. Beetle-Moorcroft. 2020. No-Purge Groundwater Sampling for PFAS. *Groundwater*. Vol. 58, No. 6, pp. 857-1022.

Lipson, D.S. 2020. Forensic Hydrogeology. Colorado Ground Water Association. February 15, 2020.

Lipson, D.S. 2019. PFAS Overview. Speaker and Co-Chair at the LSI PFAS Litigation Conference. Law Seminars International. December 9 & 10, 2019. San Diego, California.

Lipson, D.S., M.J. Gefell, M. Kanematsu, and D. Vlassopoulos. 2018. Aqueous-Phase Sampling with NAPL Exclusion Using Ceramic Porous Cups. *Groundwater*. Vol. 56, No. 6, pp. 847-851.

Lipson, D.S. 2018. Water Matters in Construction Defect and Property Damage Claims. A One-Hour Seminar for Insurance Professionals. CE Credit Provided. Presented at Rocky Mountain Property Claims Association. November 7, 2018.


Lipson, D.S. 2018. Ethics of Experts. Facilitator and panelist for expert panel discussion at Colorado Defense Lawyers Association (CDLA) Annual Conference.

Lipson, D.S. 2018. Water Quality 101. Presented for Continuing Legal Education (CLE) credit through Colorado Bar Association (CBA).

Lipson, D.S. 2018. Overview of PFAS. Presented at Water Quality Association's (WQA) Annual Convention and Exposition, Denver, CO. March 26, 2018.

- Lipson, D.S. 2017. The Yin and Yang of Groundwater. *Groundwater*. Vol. 55, No. 3, p. 287.
- Lipson, D.S. 2017. Of Ternary Diagrams and Contaminant Hydrogeology: One Pillar in the Vast Legacy of Don Siegel. Presented at the Geological Society of America Annual Conference, Seattle, WA, Oct 23, 2017.
- Lipson, D.S. 2016. Emerging Contaminants: PFOA and PFOS. Presented at the Colorado Environmental Management Society. July 12, 2016.
- Lipson, D.S. 2015. Ethics for Experts. Presented at the Colorado Water Congress Legal Ethics in Water and Environmental Law Seminar, November 16, 2015.
- Lipson, D.S. 2015. Clean Water Act Update: Redefining Waters of the United States. Presented at Denver Petroleum Club. August 4, 2015.
- Lipson, D.S. 2014. The Vapor Intrusion Challenge: You Got Your Chocolate in my Peanut Butter! Colorado Environmental Management Society's 2014 Fall Conference: Navigating Complex Site Cleanup: Technical, Regulatory and Public Relations Challenges. October 21, 2014, Coors Field, Denver, Colorado.
- Lipson, D.S. 2014. View from the Witness Stand: A Scientist's Perspective on the Daubert Standard. Presented for Continuing Legal Education (CLE) credit through Colorado Bar Association.
- Lipson, D.S., B. Raine, and M. Webb. 2013. Transport of Perfluorooctane Sulfonate (PFOS) in Fractured Bedrock at a Well-Characterized Site. Proceedings of the SETAC Europe Conference, Glasgow.
- Lipson, D.S. 2013. Role of Geologic Faults on Contaminant Plume Morphology and Implications for Remediation. NGWA Conference on Groundwater in Fractured Rock and Sediments, September 23-24, 2013. Burlington, VT. National Ground Water Association.
- Lipson, D.S. and K.A. White. 2012. Contaminant Hydrogeology of Karst. Course notes provided during the 2012 NGWA Ground Water Summit, May 6-10, 2012. Garden Grove, CA. National Ground Water Association.
- Lipson, D.S. and K.A. White. 2011. Contaminant Hydrogeology of Karst. Course notes provided during the 2011 NGWA Ground Water Summit and 2011 Ground Water Protection Council Spring Meeting, May 1-5, 2011. Baltimore, Maryland. National Ground Water Association and Ground Water Protection Council.
- Lipson, D.S. 2010. Design Considerations for Groundwater Remediation in Areas Influenced by Groundwater-Surface Water Interactions. Proceedings of the 2010 NGWA Ground Water Summit and 2011 Ground Water Protection Council Spring Meeting, April 11-15, 2010. Denver, Colorado.
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- Lipson, D.S. 2008. Evaluation of Geologic Controls on Solute Transport in Fractured Rock: Field, Modeling, and Laboratory Investigations. PhD Dissertation. Arthur Lakes Library, Colorado School of Mines.
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- Lipson, D.S. 2006. Introduction to Environmental Pollutants and Contaminants. Colorado Bar Association Continuing Legal Education Program. Environmental Liability in Real Estate Transactions Seminar. Denver, CO. February 2006.
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- Lipson, D.S., B.H. Kueper, and M.J. Gefell. 2005. Matrix Diffusion Derived Plume Attenuation in Fractured Bedrock. *Groundwater*. Vol. 43, No. 1, pp. 30-39.
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- Lipson, D.S., and R.D. Lindeman. 2003. "Modeling Fate, Transport, and Natural Attenuation of 1,4-Dioxane in Groundwater." Battelle Fourth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, California.
- White, K.A., K. Paschl, and D.S. Lipson. 2003. "Characterization of DNAPL Site in Karst Terrain: Implications for Remediation." Battelle Seventh International Symposium on In-Situ and On-Site Bioremediation, Orlando, Florida.
- Ferro, A., M.J. Gefell, R. Kjelgren, D.S. Lipson, N. Zollinger, and S. Jackson. 2003. Maintaining hydraulic control using deep rooted tree systems. In *Advances in Biochemical Engineering/Biotechnology Special Edition: Phytoremediation*. Vol. 78, eds G.T. Tsao and D. Tsao. Springer-Verlag Berlin Heidelberg.
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- Lipson, D.S., B.H. Kueper, M.J. Gefell, and B.R. Thompson. 2001. "Effect of Fracture and Matrix Characteristics on Plume Retardation in Fractured Bedrock." Queens University Fractured Rock 2001 Conference. Kingston, Ontario, Canada.
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- Lipson, D.S., and J.L. Persico. 2001. Effect of chemical oxidation on in-situ biodegradation of chlorinated solvents. In *Proceedings of the Battelle Sixth International Symposium on In-Situ and On-Site Bioremediation*. San Diego, California.
- Lipson, D.S., and D.I. Siegel. 2000. Using Ternary Diagrams to Characterize Transport and Attenuation of BTX. *Groundwater* 38(1): 106-113.
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Exhibit C



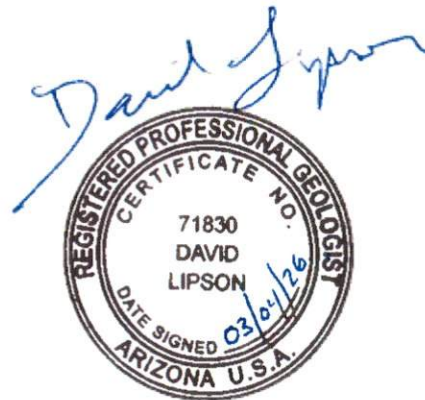
Technical Memorandum

Date: March 2026

To: Brown & Brown Law Offices P.C.
PO Box 1890
St. Johns, Arizona 85936

From: David S. Lipson, Ph.D., P.G.
Principal Hydrogeologist
HRS Water Consultants, Inc.
8885 W. 14th Ave., Lakewood, CO 80215

Subject: Evaluation of East Clear Creek and Chevelon Creek



As requested by Brown & Brown Law Offices, this Technical Memorandum comments on certain hydrogeologic aspects of East Clear Creek ("Clear Creek") and Chevelon Creek, which the Arizona Department of Water Resources (ADWR) included in its 2025 delineation of a proposed subflow zone for the Lower Little Colorado River (LLCR).¹ In particular, I was asked to evaluate the extent of groundwater contribution from underlying aquifers along both Clear Creek and Chevelon Creek. I concluded, based on the available hydrogeologic information, that there are significant stretches along Chevelon and Clear Creeks for which there is no contribution from the Coconino Aquifer ("C-Aquifer") or any other underlying aquifer and that those stretches should therefore be classified as "ephemeral" under the streamflow classification definitions provided to me. The attached Figure 1 shows those portions of Clear Creek and Chevelon Creek for which I have concluded there is no contribution from the C-Aquifer or any other aquifer.

Clear Creek and Chevelon Creek are located within the LLCR subwatershed. Both Creeks originate at elevated regions near the Mogollon Rim and flow north to their confluences with the Little Colorado River. In October 1989, ADWR published a report titled "Hydrology of the Little Colorado River System" that included evaluations of groundwater elevations and the extent of groundwater contributions to streamflow throughout the LLCR subwatershed, including Clear Creek and Chevelon Creek.² Those evaluations were incorporated into ADWR's September 2025 LLCR subflow zone delineation report, including as ADWR's Figure 2-7 (reproduced herein as the attached Figure 2), which depicts C-Aquifer interactions with surface water, and ADWR's Figures 2-9 and 2-10 (reproduced herein as the attached Figures 3 and 4), which are longitudinal profiles of Clear Creek and Chevelon Creek.

ADWR's longitudinal profiles (Figures 3 and 4) depict the geologic formations along and beneath the creeks and groundwater levels relative to the surface. As illustrated in both Figure 3 (ADWR's Figure 2-9) and Figure 4 (ADWR's Figure 2-10), upstream reaches of Clear Creek and

¹ ADWR. 2025. Technical Report Subflow Zone Delineation for the Lower Little Colorado River Subwatershed. In re The General Adjudication of the Little Colorado River System and Source. September 2025.

² ADWR. 1989. Hydrology of the Little Colorado River System. Special Report to the Settlement Committee. In re The General Adjudication of the Little Colorado River System and Source. October 1989.



Chevelon Creek closer to the Mogollon Rim and downstream reaches near their confluences with the Little Colorado River include areas of groundwater contribution from the C-Aquifer. These areas are labelled by ADWR as “perennial.” Conversely, there are stretches in the middle of both Clear Creek and Chevelon Creek where the groundwater level is deeper below ground surface, indicating that these are areas where there is a downward hydraulic gradient, resulting in “losing” reaches³ for which there is no groundwater contribution to streamflow from any aquifer. This lack of groundwater contribution occurs for an approximately 30 mile stretch along Clear Creek and an approximately 23 mile stretch along Chevelon Creek.

ADWR’s longitudinal profiles are supported by its broader characterization of the C-Aquifer’s interactions with surface water throughout the LLCR subwatershed (attached Figure 2, ADWR’s Figure 2-7), which indicates C-Aquifer groundwater contribution to streamflow in those portions of Clear Creek and Chevelon Creek proximate to their confluences with the Little Colorado River. They are also supported by Figure 4-11 to ADWR’s 1989 report (reproduced herein as the attached Figure 5), which is a map of Clear Creek and Chevelon Creek that labels upstream and downstream reaches of those Creeks as perennial, but labels the middle reaches as ephemeral. Further support is provided by ADWR’s discussion of Clear Creek and Chevelon Creek in the 1989 report, which notes that median streamflow in those areas of both Creeks is minimal in June through November/December and that flows in other months are due to snowmelt and occasional summer monsoons. An excerpt of the narrative discussion in ADWR’s 1989 report is attached as Exhibit 1. ADWR’s evaluations of groundwater contributions are corroborated by 1981 streamflow mapping conducted during an Arizona Game and Fish hydrologic study, often referred to as the “Brown and Carmony map,”⁴ which mapped upper and lower reaches of Clear Creek and Chevelon Creek as perennial but excluded the middle reaches. The relevant portion of the Brown and Carmony mapping is attached herein as Figure 6.

Based on the available hydrogeologic information, I conclude that some reaches of Clear Creek and Chevelon Creek in the upstream areas near the Mogollon Rim and downstream near their confluences with the Little Colorado River receive groundwater contributions from the C-Aquifer. I also conclude that there are reaches in the middle portions of Clear Creek and Chevelon Creek that do not receive groundwater contributions from the C-Aquifer or any other aquifer. The reaches of Clear Creek and Chevelon Creek that do not receive groundwater contribution from any aquifer are depicted on the attached Figure 1. The locations of those reaches can also be provided separately in an electronic Geographic Information System (GIS) shapefile if requested⁵.

I have been provided with the following streamflow classification definitions:

- Perennial streams discharge water continuously through the year. Their source of supply is normally comprised of both direct runoff

³ Losing streams occur where the water in the stream is above the water level in a geologic layer adjacent to the stream, and the stream loses water by seepage into the groundwater system.

⁴ Brown, D.E., Carmony, N.B., and Turner, R.M. 1981. Drainage Map of Arizona Showing Perennial Streams and Some Important Wetlands. Arizona Game and Fish Department Federal Aid Project W-53-R.

⁵ The following coordinates are in decimal degree format for the coordinate system NAD 83 UTM Zone 12N. The upstream coordinates for the west branch of Clear Creek are 111.020134° W, 34.631573° N. The upstream coordinates for the east branch of Clear Creek are 110.964832° W, 34.621973° N. The upstream coordinates for Chevelon Creek are 110.750688° W, 34.624169° N. The downstream coordinates for Clear Creek are 110.717645° W, 34.908658° N. The downstream coordinates for Chevelon Creek are 110.539012° W, 34.839015° N.



from precipitation events or snow melt, and baseflow derived from the discharge of groundwater into the stream.

- Intermittent streams discharge water for long periods of time, but seasonally. For example, an intermittent stream may flow all winter, every winter, but never flow continuously during the summer. During seasons when baseflow is maintained, groundwater is contributing to the stream.
- Ephemeral streams discharge water only in response to precipitation events or snowmelt, and do not have a baseflow component at any time of the year; they flow out sporadically. The groundwater system and surface water system do not establish a hydraulic connection in these systems.

Based on my review, I conclude that those portions of Clear Creek and Chevelon Creek that do not receive groundwater contribution from underlying aquifers should be categorized as “ephemeral” because they discharge water only in response to snowmelt and occasional summer monsoon storms and they do not exhibit a baseflow component at any time of the year.

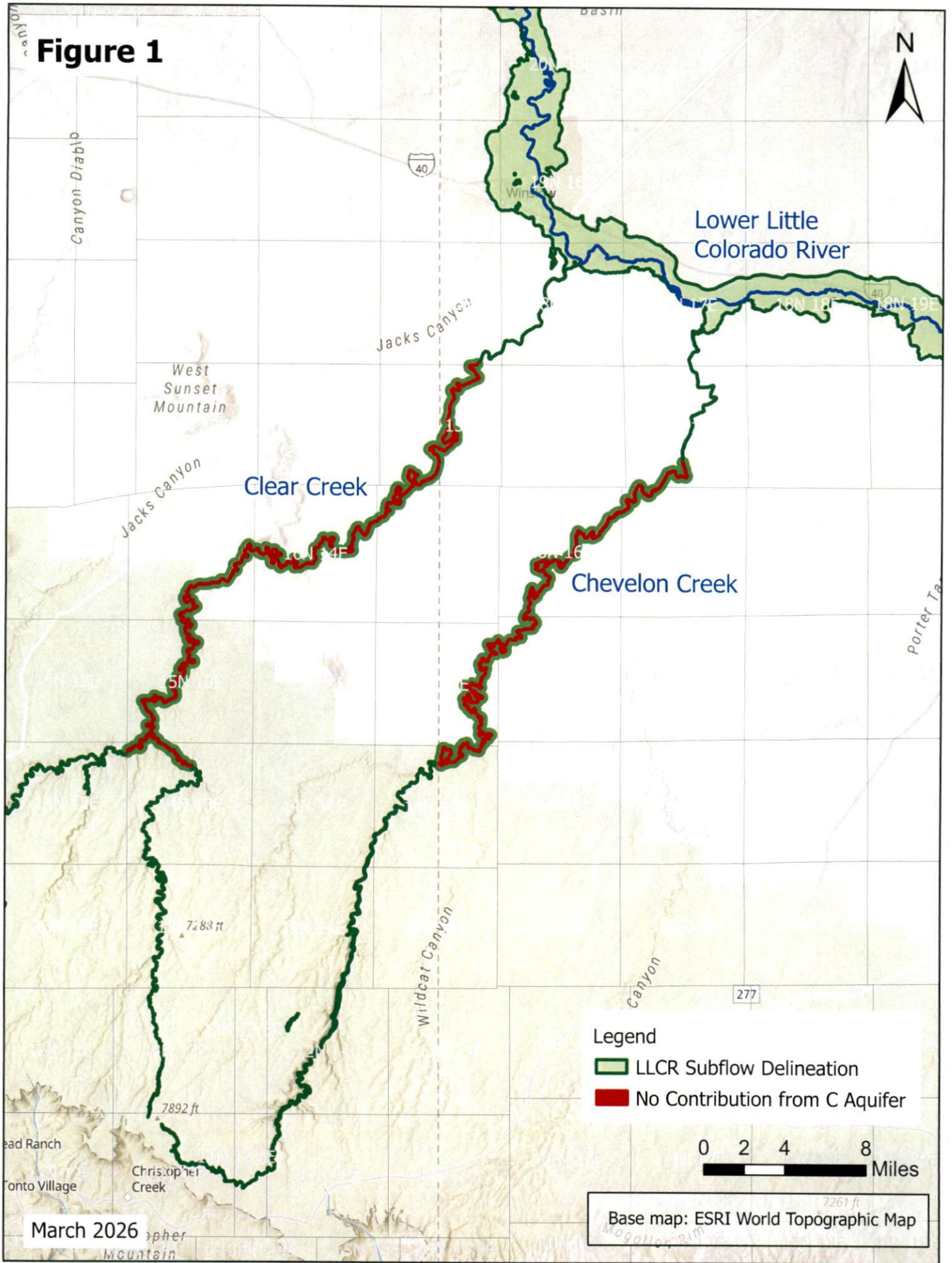
My opinions in this matter are based on my review of the data and information discussed above; the data collected; my analysis of the facts and data; as well as my education, training, and more than 35 years of experience as a professional hydrogeologist and are within a reasonable degree of scientific accuracy.

Figures

1. Portions of Chevelon and Clear Creeks with No Contributions from Underlying Aquifers
2. ADWR Figure 2-7 (2025)
3. ADWR Figure 2-9 (2025)
4. ADWR Figure 2-10 (2025)
5. ADWR Figure 4-11 (1989)
6. Relevant Portion of the Brown and Carmony Map (1981)

Figures

Figure 1



Legend
LLCR Subflow Delineation
No Contribution from C Aquifer

0 2 4 8 Miles

Base map: ESRI World Topographic Map

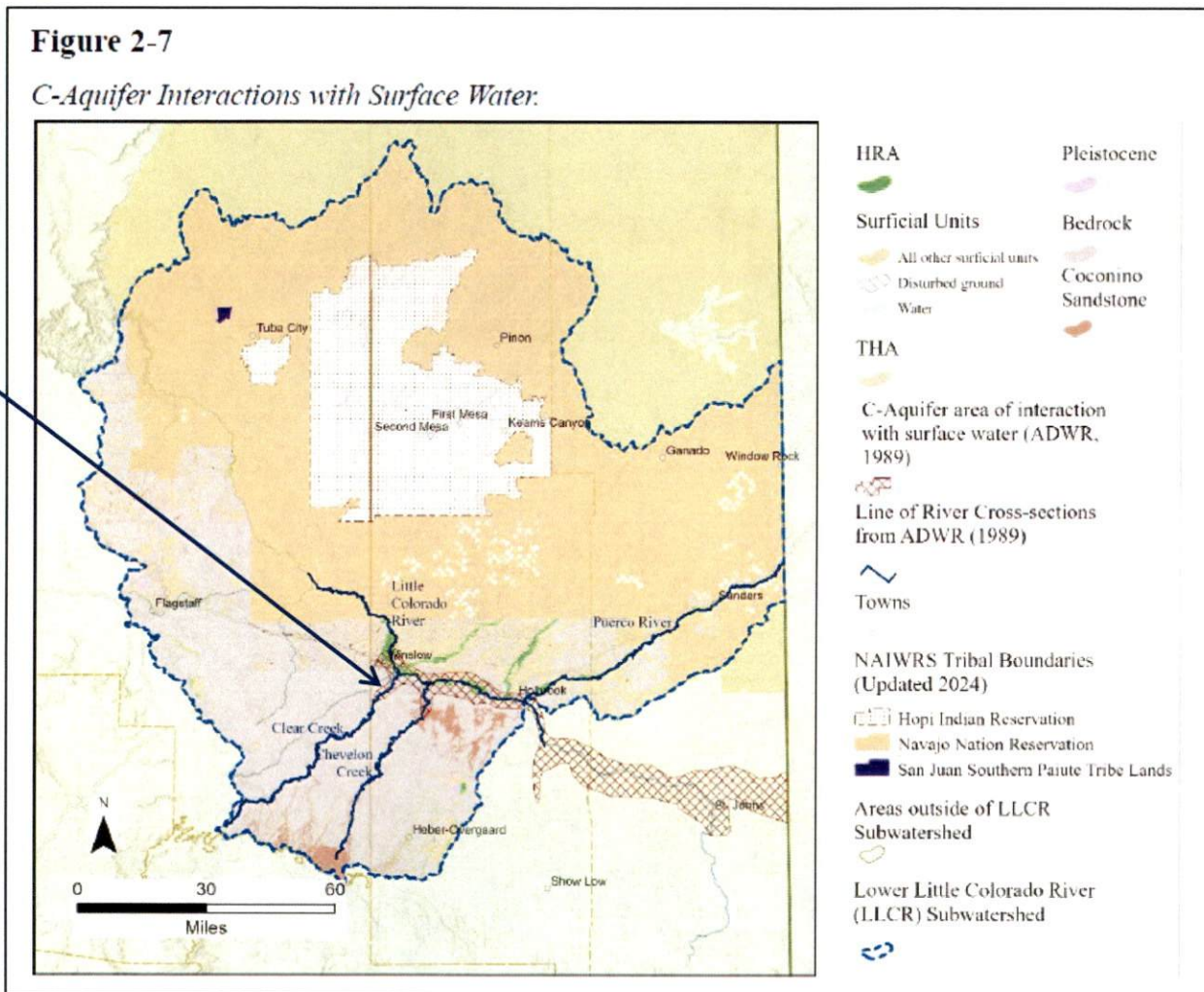
March 2026

Figure 2

Exact Copy of Figure 2-7 from 2025 ADWR LLCR SFZ Report

D.S. Lipson annotations in **blue bold**.

C. Aquifer interactions with surface water identified in cross-hatching.



Source: ADWR. 2025. Technical Report Subflow Zone Delineation for the Lower Little Colorado River Subwatershed. In re The General Adjudication of the Little Colorado River System and Source. September 2025.

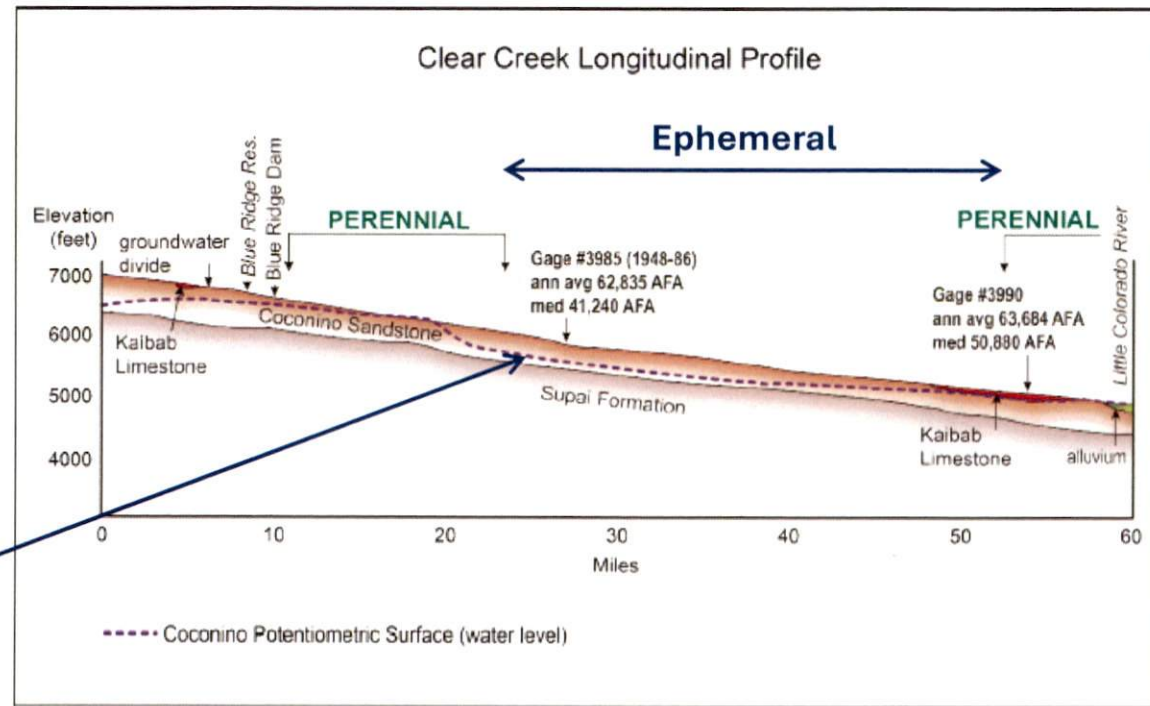
Figure 3

Exact Copy of Figure 2-9 from 2025 ADWR LLCR SFZ Report

D.S. Lipson annotations in **blue bold**.

Figure 2-9

Clear Creek, within the Lower Little Colorado River Subwatershed, Longitudinal Profile.



Note. Cross section along Clear Creek from the headwaters to the confluence of the Little Colorado River, showing the formation, the water level in the Coconino Sandstone, and the perennial reaches.

Source: ADWR. 2025. Technical Report Subflow Zone Delineation for the Lower Little Colorado River Subwatershed. In re The General Adjudication of the Little Colorado River System and Source. September 2025.

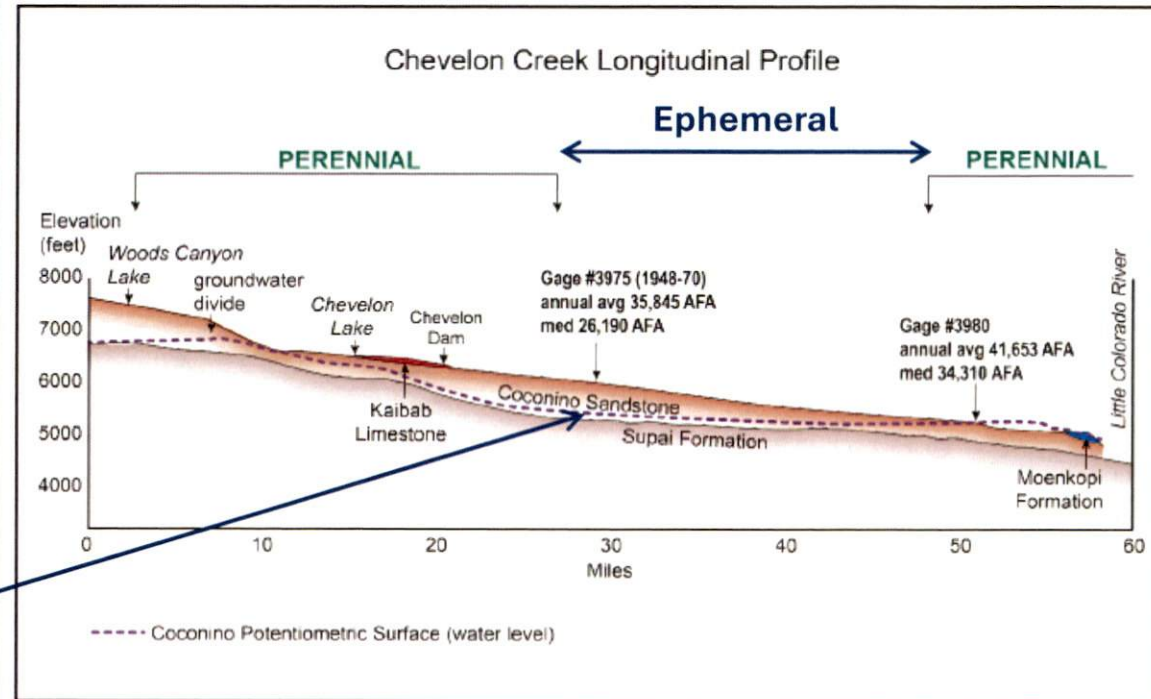
Figure 4

Exact Copy of Figure 2-10 from 2025 ADWR LLCR SFZ Report

D.S. Lipson annotations in **blue bold**.

Figure 2-10

Chevelon Creek, within the Lower Little Colorado River Subwatershed, Longitudinal Profile.



Downward hydraulic gradient indicated by C. Aquifer water level deep below ground surface.

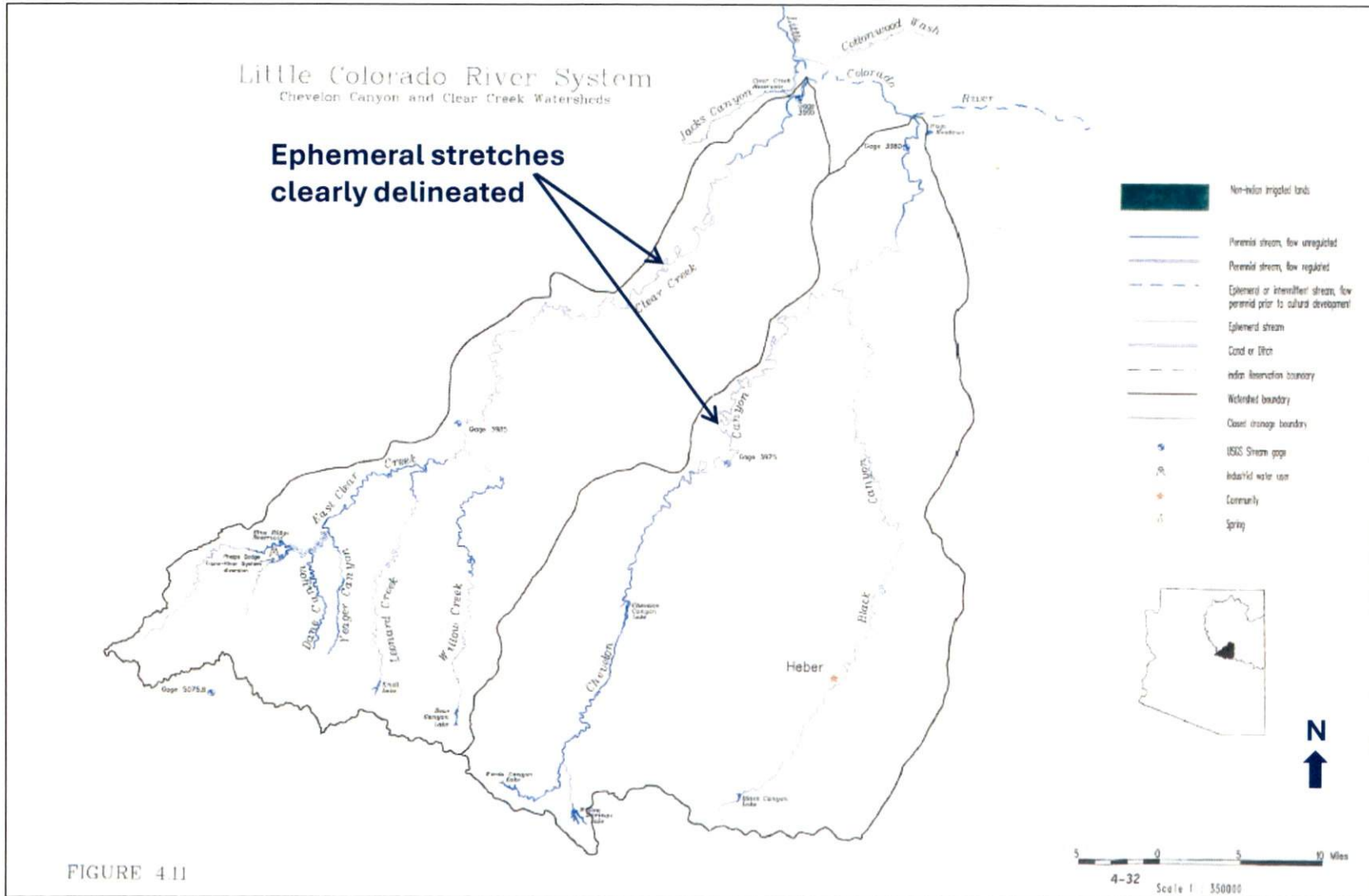
Note. Cross section along Chevelon Creek from the headwaters to the confluence of the Little Colorado River, showing the formation, the water level in the Coconino Sandstone, and the perennial reaches.

Source: ADWR. 2025. Technical Report Subflow Zone Delineation for the Lower Little Colorado River Subwatershed. In re The General Adjudication of the Little Colorado River System and Source. September 2025.

Figure 5

Exact Copy of Figure 4-11 from 1989 ADWR LCR Hydrology Report

D.S. Lipson annotations in **blue bold**.



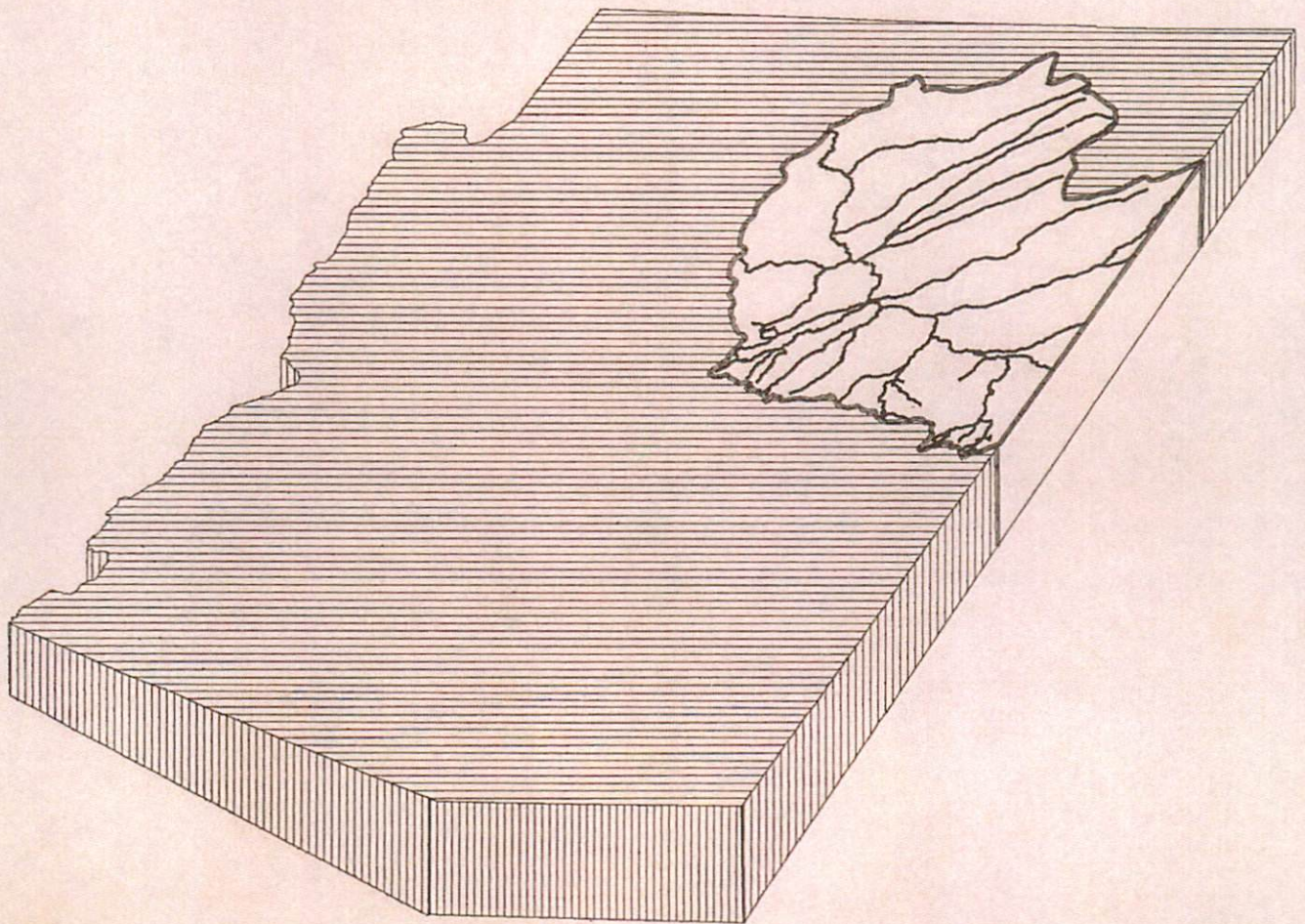
Source: ADWR. 1989. Hydrology of the Little Colorado River System. Special Report to the Settlement Committee. In re The General Adjudication of the Little Colorado River System and Source. October 1989.

Exhibit 1

HYDROLOGY OF THE LITTLE COLORADO RIVER SYSTEM

Special Report to the Settlement Committee

In Re The General Adjudication of the Little
Colorado River System and Source



Arizona Department of Water Resources
October 1989

In summary, the Puerco River watershed furnishes approximately 46,660 acre-feet annually to the Little Colorado River. Since there are no undepleted flow records for this watershed and most of the cultural activities affecting the surface water system occur on reservation land and in New Mexico, only a minimized undepleted flow can be estimated. The only definable surface water depletion occurring off-reservation is from stockpond evaporation, infiltration, and stock usage. Estimated at only 590 acre-feet per year, this is an insignificant amount compared to the annual median flow of the Puerco River watershed. Therefore, the minimum value for undepleted flows for this watershed would be 47,250 acre-feet per year as given in Table 4.1. As stated earlier, it is not within the scope of this report to quantify losses to the surface system from cultural activities on reservation land or in New Mexico. Natural losses from phreatophytes and channel evaporation were estimated to be 10,900 acre-feet per year along the Puerco River off-reservation.

THE CHEVELON CREEK WATERSHED

Moving down the Little Colorado River from the Puerco River, the Chevelon Creek watershed is the next major drainage. This is an elongated north-south running drainage that encompasses nearly 800 square miles of the southcentral Little Colorado River system. Elevation ranges from 7,930 feet at Promontory Butte to 4,900 feet at the USGS gaging station #3980 on Chevelon Creek near Winslow. A map of the watershed showing physical and cultural aspects is given in Figure 4.11. The stream profile and geologic cross section from the headwaters of Chevelon Canyon down to the confluence with the Little Colorado River are shown in Figure 4.12.

The watershed is made up of two subwatershed components from which nearly all streamflow is derived. These two subwatersheds are the upper Chevelon Canyon above the USGS gaging station #3975 on the west and an ungaged tributary known as Black Canyon on the east (Figure 4.11). There are approximately 200 square miles of the Black Canyon subwatershed that are noncontributing to runoff mainly as a result of the underlying pourous Kaibab Limestone.

Streamflow records were examined for the two gaging stations on Chevelon Creek shown on Figure 4.11. Median streamflow is minimal June through December at the upper gage (#3975). Runoff from spring snowmelt is responsible for generating significant streamflow during February through May. Although occasional streamflow results from summer monsoon thunderstorms, continuous daily streamflow is generally non-existent from June through November. Although streamflow at USGS gage #3975 is characterized by seasonal or ephemeral flows, most of the channel upstream is depicted by perennial flows according to Brown, Carmony, and Turner (1978). These perennial flows run from Woods Canyon Lake to above the USGS gage #3975.

Being supported by groundwater discharge from the Coconino aquifer, the lower reach of Chevelon Creek also exhibits perennial flow (Figure 4.11). The USGS gage #3980 on Chevelon Creek near Winslow shows a similar seasonal nature to streamflow as the upstream station, one major runoff period occurring as a result of spring snowmelt runoff. The base period median flow at this gage is estimated to be 34,310 acre-feet per year. Approximately 90 percent of this flow originates from the upper Chevelon Canyon subwatershed.

The Black Canyon subwatershed is thought to contribute very little to the flows at gage #3980 because of the highly permeable Kaibab Limestone underlying most of the subwatershed's channel. As a result, this entire subwatershed is characterized by ephemeral streamflow conditions.

The Chevelon Creek watershed is lacking in cultural development. There are no significant industrial, municipal, or irrigation depletions to the surface water system. There are, however, two diversions below the USGS gage #3940 that will be discussed as part of the Mainstem Region. One is controlled by the Chevelon Irrigation District and the other by the Arizona Game and Fish Department. The community of Heber and rural domestic water requirements are minor and they obtain their supply from groundwater sources. The watershed contains only four major reservoirs (Figure 4.11), used for recreation and wildlife, their total storage capacity is approximately 14,800 acre-feet. Evaporation losses from these reservoirs has been estimated at only 660 acre-feet per year.

The watershed contains an estimated 270 stockponds that lose approximately 770 acre-feet per year. Added to the loss from reservoir evaporation, this makes the total cultural depletions for the watershed equal to only 1,430 acre-feet per year. Combine this with the annual median flow at the USGS gage #3980 of 34,310 acre-feet, an estimated undepleted annual flow for the watershed is found to be 35,740 acre-feet. Phreatophyte and channel evaporation account for 4,300 acre-feet per year in natural depletions (Table 4.1).

THE CLEAR CREEK WATERSHED

Under present conditions, the Clear Creek watershed offers the best potential for providing dependable annual flows to potential downstream users on the Little Colorado River system. This watershed covers an area of over 600 square miles with an elevation that ranges from 8,074 feet at Baker Butte to 4,861 feet at the USGS station #3990 on Clear Creek near Winslow. Clear Creek flows northeast from its headwaters on the Mogollon Rim to its confluence with the Little Colorado River.

The physical and cultural aspects (Figure 4.11) and the stream profile and geologic cross section (Figure 4.13) are very similar to those of the Chevelon Creek watershed. However, these two watersheds do differ in several ways. Clear Creek has a greater density of runoff producing tributaries within the higher precipitation zone; it lacks the major tributary channel underlain by porous Kaibab Limestone that Chevelon Creek (Black Canyon) has; and Clear Creek has very little area that is non-runoff contributing. Mainly as a result of these three factors, the Clear Creek watershed produces about 48 percent more annual runoff than Chevelon Creek, even though it is 200 square miles smaller.

Streamflow records were examined at two USGS gaging stations (Figure 4.11): Clear Creek below Willow Creek (#3985) and Clear Creek near Winslow (#3990). The upper gage (#3985) revealed that median streamflow is minimal June through November. Runoff from spring snowmelt is responsible for generating streamflow during February through May. Although streamflow may result from summer monsoon thunderstorms, streamflow is generally non-existent from June to the following

January. Even though Clear Creek at gage #3985 is classified as seasonal or ephemeral, there are several stretches of perennial flow upstream on Willow Creek, Leonard Creek, Yeager Creek, Dane Canyon, and East Clear Creek.

An examination of streamflow records for the gaging station Clear Creek near Winslow (#3990) shows a similar streamflow nature as the upstream gage. Streamflow conditions for February through May are controlled by snowmelt with a substantial decline in May and June. Summer, fall, and winter runoff, however, is present which is somewhat different than that noted for higher elevation areas. Streamflow within the lower reach of Clear Creek is supported by groundwater discharge from the Coconino aquifer (Figure 3.5). The base period median flow at this gage is estimated to be 50,880 acre-feet per year. This assumes that the upstream reservoirs do not significantly affect quantities of flow downstream over the long term. A similar situation is occurring here as on Chevelon Creek, any losses from the reservoirs upstream may be offset by water saved downstream because of the minor seasonal change in flow occurrences, summer flows being stored, and an equivalent amount released in the spring.

The Clear Creek near Winslow gage has 31 years of record under pre-development conditions prior to the construction of the three major recreational and wildlife reservoirs (Knoll Lake, Bear Canyon, and Blue Ridge Reservoirs). An attempt was made to calculate the effects of the reservoirs on downstream flows by developing extended data records before and after development for both developed and undeveloped conditions using precipitation to runoff relations. No pre- and post-development relationships were possible because of insufficient data and a lack of data correlation.

Cultural depletions of streamflow within the Clear Creek watershed are limited. There are no significant municipal or irrigation depletions to the surface water system. Lake evaporation from the three major reservoirs listed above account for only 210 acre-feet per year lost to evaporation. The estimated 360 stockponds deplete approximately 1,040 acre-feet per year from the surface water system.

A third USGS gaging station (#5075.8) shown on Figure 4.11, records surface water pumped by the Phelps Dodge Corporation from the Blue Ridge Reservoir. This station is located outside the Clear Creek watershed in the East Verde River drainage. The average flow for the period of record (1967-1986) at this station is equal to 9,680 acre-feet per year. The total cultural depletions, when added to the median annual base period flow, give an estimated undepleted flow for the Clear Creek watershed of 61,810 acre-feet. Phreatophyte and channel evaporation account for 3,300 acre-feet per year in natural depletions (Table 4.1).

Located on Clear Creek just upstream of the confluence with the Little Colorado River is the Clear Creek Reservoir. Diversions from this reservoir for irrigation around Winslow will be discussed in the next section.

THE MAINSTEM REGION

This region is a composite of the areas not found in the five previously described watersheds upstream of the Navajo Indian Reservation boundary. It covers an area depicted on Figure 4.14 of over 3,830 square miles from Woodruff to the Navajo Indian Reservation north of Winslow. Elevation ranges from 8,300 feet at the headwaters of Cottonwood Wash to approximately 4,780 feet on the Little Colorado River where it crosses the reservation boundary near Winslow.

This region contains two major ungaged tributaries which are Cottonwood Wash to the north and Jacks Canyon to the southwest. Cottonwood Wash is an ephemeral drainage that is called Pueblo Colorado Wash in its upper end. It drains over 2,400 square miles of which over 2,100 square miles are on the Hopi Tribal land and Navajo Indian Reservation. A small portion of the Pueblo Colorado Wash above Ganado is perennial in nature. Jacks Canyon drains 325 square miles of land from the Mogollon Rim northeast to the confluence with the Little Colorado River upstream of Winslow.

Approximately five percent (150 square miles) of the Mainstem Region shown on Figure 4.14 is contained within the Dry Lake Closed Drainage.

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184

2026 MAR -4 AM 9:16

**IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF APACHE**

ANNELL HOUNSHELL, CLERK
APACHE CO SUPERIOR COURT

IN THE GENERAL ADJUDICATION
OF ALL RIGHTS TO USE WATER IN
THE LITTLE COLORADO RIVER
SYSTEM AND SOURCE

Case No. CV6417-400

**OBJECTION TO THE SUBFLOW
ZONE DELINEATION REPORT FOR
THE LOWER LITTLE COLORADO
RIVER SUBWATERSHED**

Special Master Sherri Zendri

OBJECTOR

Name (printed) LCR Coalition (see Exhibit A to attachment)

Mailing Address P.O. Box 1890, St. Johns, Arizona 85936

Telephone No. (928) 337-4225

Statement of Claimant No. 39- See Exhibit A to attachment

STATEMENT OF OBJECTION

Please reference the portion of the report to which you are objecting, explain the reasons for the objection below (or in a separate attachment), and complete the next page.

Objections set forth in attachment

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CERTIFICATE OF SERVICE

On this 4th day of March, 2026, I certify that the original Objection and two copies were sent by first class mail, or hand delivered, to:

Via First Class Mail:

Clerk of the Apache County Superior Court
P.O. Box 365
St. Johns, Arizona 85936

Via Hand Delivery:

Clerk of the Apache County Superior Court
70 West 3rd South
St. Johns, Arizona 85936

If you mail your objection to the court, please allow additional time for mailing, so that your objection will be received by the court by **March 4, 2026**.

Signature of Objector or Representative

If this objection is being submitted by a Representative of the Objector, please provide the following information below or by attachment:

Name of Representative (printed) David A. Brown

Mailing Address of Representative P.O. Box 1890, St. Johns, Arizona 85936

Telephone Number of Representative (928) 337-4225

FILED

DOCKETED BY: 187

2026 MAR -9 AM 8:52

WILLIAMS, CLERK
SUPERIOR COURT

**IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF APACHE**

IN THE GENERAL ADJUDICATION
OF ALL RIGHTS TO USE WATER IN
THE LITTLE COLORADO RIVER
SYSTEM AND SOURCE

Case No. CV6417-400

**OBJECTION TO THE SUBFLOW
ZONE DELINEATION REPORT FOR
THE LOWER LITTLE COLORADO
RIVER SUBWATERSHED**

Special Master Sherri Zendri

OBJECTOR

Name (printed) Salt River Project Agricultural Improvement & Power District

Mailing Address c/o Salmon, Lewis & Weldon, PLC
2850 East Camelback Road, Suite 300 Phoenix, AZ 85016

Telephone No. (602) 801-9060

Statement of Claimant No. 39- Multiple. See attachment "A"

STATEMENT OF OBJECTION

Please reference the portion of the report to which you are objecting, explain the reasons for the objection below (or in a separate attachment), and complete the next page.

See Attachment A.

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CERTIFICATE OF SERVICE

On this 4th day of March, 2026, I certify that the original Objection and two copies were sent by first class mail, or hand delivered, to:

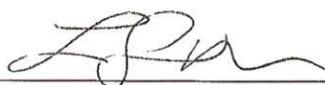
Via First Class Mail:

Clerk of the Apache County Superior Court
P.O. Box 365
St. Johns, Arizona 85936

Via Hand Delivery:

Clerk of the Apache County Superior Court
70 West 3rd South
St. Johns, Arizona 85936

If you mail your objection to the court, please allow additional time for mailing, so that your objection will be received by the court by **March 4, 2026**.



Signature of Objector or Representative

If this objection is being submitted by a Representative of the Objector, please provide the following information below or by attachment:

Name of Representative (printed) Lucas Shaw
Mailing Address of Representative c/o Salmon, Lewis & Weldon, PLC
2850 E. Camelback Road, Suite 300, Phoenix, AZ 85016
Telephone Number of Representative (602) 801-9060

1 Mark A. McGinnis, 013958
Michael K. Foy, 032736
2 Katrina L. Wilkinson, 037195
Kathryn M. Ust, 037042
3 **SALMON, LEWIS & WELDON, P.L.C.**
2850 East Camelback Road, Suite 300
4 Phoenix, Arizona 85016
(602) 801-9060
5 mam@slwplc.com
mkf@slwplc.com
6 klw@slwplc.com
kmu@slwplc.com
7

8 *Attorneys for Salt River Project Agricultural
Improvement and Power District*

9
10 **IN THE SUPERIOR COURT OF THE STATE OF ARIZONA**
11 **IN AND FOR THE COUNTY OF APACHE**

12 IN RE: THE GENERAL
13 ADJUDICATION OF ALL RIGHTS
14 TO USE WATER IN THE LITTLE
15 COLORADO RIVER SYSTEM AND
16 SOURCE

Contested Case No. CV 6417-400

**ATTACHMENT "A" TO SALT
RIVER PROJECT'S OBJECTIONS
TO SUBFLOW ZONE
DELINEATION FOR LOWER
LITTLE COLORADO RIVER
SUBWATERSHED**

(Assigned to the Hon. Scott Blaney)

(Referred to Special Master Sherri L.
Zendri)

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20 Contested Case Name: *In re Lower Little Colorado River Subwatershed.*

21 Descriptive Summary: SRP submits its objections to the Arizona Department of Water
22 Resources' September 5, 2025 Subflow Zone Delineation Report for the Lower Little
23 Colorado River Subwatershed.

24 Statement of Claimant Nos.: 39-82193 through 39-82206, 39-84543, 39-87365
through 39-87370, 39-87393, 39-89038, and 39-95385.

25 Date of Filing: Original mailed to the Clerk of the Superior Court for Apache County
26 for filing on March 4, 2026.

27 Number of Pages: 20 + 2 (attachments) = 22.

1 On September 5, 2025, the Arizona Department of Water Resources (“ADWR”) filed
2 its Technical Report re Subflow Zone Delineation for the Lower Little Colorado River
3 Subwatershed (“LLCR Report”). Pursuant to Special Master Harris’s Order dated December
4 6, 2022, the Salt River Project Agricultural Improvement and Power District (“SRP”) hereby
5 submits its objections to the LLCR Report.

6 These objections do not challenge any specific ADWR mapping decision, either as it
7 relates to ADWR’s threshold decision of which particular streams have a subflow zone or its
8 subflow zone delineation boundaries for those streams. Rather, SRP objects to various
9 aspects of ADWR’s methodology. These objections are intended to alert the Court, ADWR,
10 and the other parties to certain continuing defects in ADWR’s stream classification and
11 delineation methodologies so that they may be corrected prior to a final subflow zone
12 delineation for the Lower Little Colorado Subwatershed (“LLCR”). SRP reserves the right to
13 fully participate in any trial that is held to adjudicate the objections filed by any other party,
14 but SRP is not requesting a trial on these objections at this time. To the extent that ADWR
15 applies the improper procedures described in these objections in any future subflow zone
16 delineation reports, SRP reserves the right to challenge the procedures in that proceeding.

17 **I. Geologic Differences**

18 As ADWR correctly states, there are “important differences between the geology of
19 the LLCR Subwatershed and that of the San Pedro River and Verde River Watersheds,”
20 which led to ADWR using a different methodology for the subflow zone delineation for the
21 LLCR than it did for the San Pedro Watershed (“San Pedro”) or the Verde Watershed
22 (“Verde”) in the Gila Adjudication. LLCR Report, at 25. ADWR is correct that the area
23 encompassed in the LLCR is geologically distinct from the San Pedro and Verde. The LLCR
24 lies within the Colorado Plateau physiographic province. In the LLCR, subflow zones
25 primarily coincide with Floodplain Holocene Alluvium (“FHA”) confined within bedrock
26 canyons. Perennial and intermittent flows are sourced from the C Aquifer—a bedrock
27 aquifer—rather than from basin-fill aquifers common elsewhere in Arizona. As a result,

1 subflow zone boundaries are controlled by where the C Aquifer discharges to stream channels
2 and associated alluvium. In contrast to the LLCR, the San Pedro, which is located in the
3 Basin and Range province, contains subflow zones that are in contact with basin-fill deposits.
4 In the San Pedro, basin-fill aquifers supply perennial and intermittent flows and exhibit more
5 complex interactions with stream channels and alluvium, complicating subflow zone
6 delineation. The Verde lies within the Transition Zone between the Basin and Range and
7 Colorado Plateau provinces. It includes bedrock canyons, basin-fill aquifers, and structural
8 features such as faults, all of which influence surface-water sources and subflow zone
9 mapping.

10 Although ADWR used a different methodology for its delineation work in recognition
11 of the important differences between the LLCR and other watersheds for which it has
12 previously delineated a subflow zone, ADWR imported (and, in some cases, exacerbated)
13 errors from the Verde in its stream classification methodology. *See* Section II, *infra*. In
14 addition, ADWR repeated certain errors from the Verde with respect to identifying the
15 upstream termination point for its subflow mapping. *See* Section III.A, *infra*.

16 **II. Stream Classification Methodology**

17 **A. Legal Requirements for Stream Classification Methodology**

18 In *Gila IV*,¹ the Arizona Supreme Court considered whether the Gila Adjudication
19 Court “properly determined what underground water constitutes ‘subflow’ of a surface
20 stream, thus making it appropriable” 198 Ariz. at 333. The Adjudication Court’s order
21 had determined, among other things, that subflow requires a saturated geologic unit and that
22 subflow must “be a part of the surrounding floodplain of the stream basin.” *Id.* at 337. That
23 floodplain “must be the alluvial plain of a perennial or intermittent stream and *not* an
24 ephemeral stream” *Id.* (cleaned up). Thus, the Adjudication Court concluded that “[a]
25 ‘subflow’ zone is adjacent [to] and beneath a perennial or intermittent stream and not an

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27 ¹ *In re Gen. Adjudication of All Rts. to Use Water in Gila River Sys. & Source*, 198 Ariz. 330 (2000) (“*Gila IV*”).

1 ephemeral stream.” *Id.* at 338. The Supreme Court affirmed the Adjudication Court’s order
2 “in all respects.” *Id.* at 344.

3 For purposes of stream classification in the subflow context, streams are classified as
4 either perennial, intermittent, or ephemeral based on “the extent of groundwater/surface water
5 interactions taking place” along the stream. Order, Maricopa County Superior Court Cases
6 Nos. W-1 through W-4, at 23 (June 30, 1994) (“Goodfarb Order”). “Perennial streams
7 discharge water continuously through the year. Their source of supply is normally comprised
8 of both direct runoff from precipitation events or snow melt, and baseflow derived from the
9 discharge of groundwater into the stream.” *Id.* “Intermittent streams discharge water for long
10 periods of time, but seasonally.” *Id.* Groundwater contributes to streamflow in intermittent
11 streams “[d]uring seasons when baseflow is maintained.” *Id.* at 23-24. “Ephemeral streams
12 discharge water only in response to precipitation events or snowmelt, and do not have a
13 baseflow component at any time of the year; they flow out sporadically. The groundwater
14 system and surface water system do not establish a hydraulic connection in these systems.”
15 *Id.* at 24.

16 B. Failure to Account for Predevelopment Conditions in Stream Classification
17 Analysis

18 The Goodfarb Order that the Supreme Court affirmed in *Gila IV* recognized that the
19 determination of whether a watercourse is ephemeral, for purposes of subflow analysis,
20 includes a temporal element under which a currently ephemeral stream may include a subflow
21 zone if it is ephemeral due to “adjacent surface water diversion or groundwater pumping.”
22 *See* Goodfarb Order, at 35. In its subsequent 2005 Subflow Order,² the Gila Adjudication
23 Court elaborated upon this exception to the exclusion of ephemeral streams (the “ephemeral
24 stream exception”). That exception applies to “streams that would legitimately be categorized
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26 ² *See* Order Re: Report of the Special Master on the Arizona Department of Water Resources’
27 Subflow Technical Report, San Pedro River Watershed and Motion for Approval of Report,
Maricopa County Superior Court Case No. W1-103 (Sept. 28, 2005) (“2005 Subflow Order”).

1 as ephemeral, but only because of the effect of surface water diversions or groundwater
2 pumping.” *Id.* at 23. The Adjudication Court offered the following explanation of the
3 exception:

4 The exception requires, in effect, that these streams be considered in a
5 predevelopment state. That is, if one assumes away the effects of diversions
6 and pumping, would the subject streams share the characteristics of an adjacent
7 intermittent or perennial stream? If the answer is “yes,” they can be included
8 within the subflow zone due to their predevelopment attributes. Instead of an
9 admonition to use only current conditions, the ephemeral stream exception is
10 evidence that the Goodfarb Order contemplated that ADWR would outline the
subflow zone without having to be concerned that human generated water
diversions or depletions might artificially divest jurisdiction over water right
claims this Court is charged with adjudicating.

11 *Id.* at 23-24. Accordingly, a stream lacks a subflow zone only if that stream was ephemeral
12 during the “predevelopment state” that preceded modern surface diversions and pumping.

13 *See id.*

14 In the LLCR Report, ADWR broadly states that “data regarding predevelopment
15 conditions are not available for the study area,” so it instead “used current streamflow
16 conditions while paying special attention to areas where human activity likely changed the
17 natural streamflow.” LLCR Report, at 29. However, ADWR does not detail its efforts to
18 locate data regarding predevelopment conditions. *See id.* “Where the available data does not
19 provide insight into predevelopment conditions, ADWR should rely on the earliest data
20 available.”³

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26 ³ Order for Production of Subflow Zone and Summary Adjudication Technical Reports,
27 Apache County Superior Court Case No. CV 6417-203 CV 6417-401, at 2 (Feb. 24, 2026)
 (“ULCR Subflow Order”).

1 “ADWR must thoroughly explain agency decisions, including specifying procedures
2 used for stream classification.”⁴ ADWR has failed to do that. In the 2025 Subflow Order, the
3 Special Master identified a wide body of evidence (including, among other things, historic
4 newspaper accounts and homestead files) as probative of predevelopment conditions of the
5 watercourses at issue in that proceeding. 2025 Subflow Order, at 8-9. In the LLCR Report,
6 ADWR does not attempt to explain whether it made any effort to locate similar materials for
7 its stream classification analysis in the LLCR and, if so, what those efforts entailed.

8 C. Errors in ADWR’s Two-Step Process for Stream Classification

9 ADWR applied a two-step process to determine which streams should be classified as
10 intermittent or perennial and thereby receive a subflow zone delineation. “First, ADWR
11 identified all potential perennial or intermittent streams in the study area based on maps
12 depicting streamflow conditions and riparian habitats” and “contracted [Arizona Geological
13 Survey (“AZGS”)] to map surficial geology along every perennial and potentially intermittent
14 stream from the initial selection.” LLCR Report, at 32. Second, “[a]fter AZGS mapped the
15 initial stream selection, ADWR evaluated the results, along with additional evidence, to
16 determine a final list of streams and/or stream reaches for subflow delineation.” *Id.* at 46. As
17 set forth below, both steps of ADWR’s process include methodological errors. These errors
18 appear to have been caused, at least in part, by ADWR’s misinterpretation of what constitutes
19 an “intermittent stream.” Most glaringly, ADWR states that “[p]erennial or intermittent
20 streams require year-round contributions from groundwater.” *Id.* at 19. However,
21 intermittent streams have baseflow (i.e., streamflow contribution from groundwater) for only
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24 ⁴ Order Granting Admission of Additional Exhibits into Evidence and Order for ADWR to
25 Revise Subflow Zone Delineation for Portions of the Verde River Mainstem and Tributaries,
26 Maricopa County Superior Court Case No. W1-106, at 18 (March 5, 2025) (“2025 Subflow
27 Order”). SRP disagrees with certain portions of the 2025 Subflow Order. SRP’s citations to
the 2025 Subflow Order herein are not an endorsement of the entirety of that order, and SRP
reserves all rights to challenge that order once its conclusions are reduced to a Rule 53 report
and presented to Judge Blaney for approval.

1 part of the year. *See* Section II.A, *supra*; *see also* 2025 Subflow Order, at 15 (“[T]he relevant
2 definition of ‘intermittent stream’ does not require constant flow . . .”).

3 1. ***Step 1: Initial Stream Selection***

4 For its initial stream selection, ADWR states at some points in the LLCR Report that it
5 relied solely on perennial stream maps and riparian vegetation, but it states elsewhere that it
6 also considered aerial photography and streamgage data. *See* discussion, *infra*. Regardless of
7 whether ADWR actually considered aerial photography and streamgage data in connection
8 with its initial selection, ADWR’s methodology is flawed because it excludes potentially
9 intermittent streams.

10 a. *Perennial Stream Mapping*

11 ADWR’s first line of evidence (maps of “current perennial stream reaches”) provides
12 no insight into which streams were intermittent under predevelopment conditions. LLCR
13 Report, at 33-34. ADWR did not rely on any mapping showing streams that were perennial
14 or intermittent under predevelopment conditions and instead considered only “[p]rinted and
15 digital maps that showed the location of current perennial stream reaches” for its stream
16 classification mapping sources. *Id.* at 33. As ADWR states, this line of evidence was useful
17 only for “identification of currently perennial streams.” *Id.* at 34. This line of evidence
18 provides no insight into whether a stream was (or is) intermittent.

19 b. *Riparian Vegetation*

20 ADWR’s second line of evidence (riparian vegetation) also does not capture all
21 watercourses that are, or historically were, intermittent. LLCR Report, at 35-40. This is a
22 critical flaw in ADWR’s stream classification methodology because ADWR’s other stream
23 classification method (mapping of perennial streams) necessarily excludes intermittent
24 streams. Therefore, ADWR’s methodology excluded potentially intermittent streams from
25 the initial classification unless all intermittent streams have riparian vegetation. As set forth
26 below, they do not.

1 For purposes of its analysis, ADWR defined riparian vegetation as “phreatophytes,”
2 and appears to have treated only trees with “deep root systems,” such as Cottonwood or
3 Tamarisk, as meeting that definition. LLCR Report, at 36. As the Special Master recently
4 observed, “riparian vegetation can be a useful clue for classifying a stream, but is not a
5 decisive factor.” 2025 Subflow Order, at 16. This conclusion is supported by Judge
6 Goodfarb’s observation that parts of the San Pedro—which was historically intermittent or
7 perennial for its entire length, as evidenced by the fact that it has a subflow zone—historically
8 lacked traditional riparian vegetation. *See* Goodfarb Order, at 13. As Judge Goodfarb
9 explained, historic evidence showed that the areas beside certain portions of the river had “no
10 trees in the area and a large grassy plain next to a stream entrenched a few feet below the
11 surface of the adjoining grasslands.” *Id.* Therefore, the presence of riparian trees is not
12 required in order for a stream to be intermittent.⁵

13 In contrast to the Goodfarb Order and 2025 Subflow Order, ADWR states that “**if**
14 **evidence did not indicate the existence of a riparian environment along a stream, then**
15 **ADWR did not request AZGS to map that area.**” LLCR Report, at 16 (emphasis added).
16 Thus, ADWR treated the presence of riparian trees as dispositive of whether to have AZGS
17 map an area. Because a subflow zone was delineated only for certain streams that AZGS
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22 ⁵ To support its reliance on riparian vegetation for the stream classification analysis, ADWR
23 cites Judge Goodfarb’s statement that “[r]iparian vegetation may be useful in marking the
24 lateral limits of the ‘subflow’ zone” LLCR Report, at 36 (citing Goodfarb Order, at 65).
25 But this language from the Goodfarb Order relates to the delineation of the lateral boundaries
26 of the subflow zone for a stream that already has been determined to have a subflow zone. It
27 has nothing to do with determining the threshold question of whether a stream should have a
subflow zone due to its being historically perennial or intermittent. Elsewhere, Judge
Goodfarb explains that the presence of riparian vegetation can be a “false marker” even for
the limited purpose of delineating the lateral extent of the subflow zone. Goodfarb Order, at
57.

1 mapped, ADWR also treated the current presence⁶ of riparian trees as dispositive of whether a
2 stream was perennial or intermittent under predevelopment conditions. ADWR further
3 underscores this point by stating that ADWR included streams in the initial selection if they
4 “were marked as perennial on any map or study of perennial streams,” or “were described as
5 bordered by riparian vegetation as part of a map, scientific study, or visible in aerial
6 photographs.” LLCR Report, at 44. Therefore, unless a stream is **currently** perennial, the
7 only way that it can have a subflow zone under ADWR’s rubric is if it **currently** has riparian
8 vegetation. This is directly contrary to the 2025 Subflow Order and the Goodfarb Order. The
9 Goodfarb Order was upheld by the Arizona Supreme Court in *Gila IV* and thus applies in this
10 Adjudication.

11 c. Aerial Photography

12 ADWR states that it used a third criteria (historic aerial imagery) to “look for riparian
13 vegetation.” LLCR Report, at 40. Therefore, ADWR’s aerial imagery analysis is a
14 continuation of its riparian vegetation analysis which, for the reasons noted above, is not a
15 reliable or appropriate way to identify intermittent streams. ADWR also claims to have used
16 aerial imagery to look for “visible flowing water.” *Id.* For several reasons, ADWR’s use of
17 aerial photography for this purpose also is unreliable for stream classification.

18 First, ADWR does not explain how it determined whether historic aerial imagery
19 supports a conclusion that a particular stream was intermittent rather than ephemeral. LLCR
20 Report, at 40. For ADWR to classify a stream as intermittent, does water need to be visible in
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23 ⁶ Even assuming that ADWR’s over-reliance on the presence of riparian vegetation were
24 otherwise appropriate, the relevant inquiry would be the riparian vegetation “existing during
25 an identifiable chronological year or range of years immediately prior to regular, discernable
26 diversion or depletion of stream flows resulting from human activity.” 2005 Subflow Order,
27 at 21. ADWR’s riparian vegetation analysis does not disclose any effort to identify whether,
and to what extent, streams within the LLCR historically had riparian vegetation. LLCR
Report, at 35-40. For example, ADWR has not conducted a search of ground-based historic
photographs that depict the stream during the first half of the 20th Century or earlier. *Id.*

1 at least one of the historic aerals, all of them, or something in between? That question cannot
2 be answered based on ADWR's description.

3 Second, the presence of surface water during a particular snapshot in time does not
4 provide insight into whether a stream is intermittent because, in intermittent streams,
5 "groundwater is contributing to the stream" at least part of the year. Goodfarb Order, at 23-
6 24. As ADWR correctly notes, "an intermittent stream's hydraulic connectivity to
7 groundwater distinguishes it from an ephemeral stream." LLCR Report, at 31. ADWR fails
8 to explain whether it was able to use aerial imagery to visualize or infer whether groundwater
9 was contributing to the streams at issue.

10 Third, ADWR does not identify the dates on which the aerial photographs were taken
11 or explain whether, assuming the stream was intermittent, water typically would have been
12 present in the stream on those particular dates. *See* LLCR Report, at 40 & App'x D. And
13 even if ADWR had conducted this analysis, it would not be a valid method of determining
14 whether a stream is intermittent. As the Special Master explained, a "single observation of a
15 dry streambed" or even "a handful of observations" is not inconsistent with a stream being
16 intermittent, even if the observations occurred during the winter or at the margins of the wet
17 season. 2025 Subflow Order, at 15.

18 d. Streamgage Data

19 Although ADWR did not identify it as one of the criteria it used for its initial stream
20 selection, ADWR also states that it "evaluated streamgage information for all currently
21 operating (7) and historic (10) USGS streamgages within the Subwatershed." LLCR Report,
22 at 41. These current or historic streamgages were present on only eight watercourses within
23 the LLCR, and therefore do not provide data for most of the streams within the study area.
24 For the locations where a gage is present, ADWR does not explain what methodology it
25 applied in order for gage data to support classification of a stream as intermittent rather than
26 perennial. *See id.* Must the stream flow for a certain percentage of the year? Or for a certain
27 number of consecutive days? Or consistently during a certain time of year? Even if ADWR

1 had properly explained its methodology, the methodology would be invalid because, as noted
2 above, intermittency is defined by a connection between the aquifer and the stream channel
3 for at least part of the year, and not by surface flows existing for any particular duration. *See*
4 Section II.A, *supra*; Goodfarb Order, at 23-24.

5 e. *Failure to Consider NHD Data*

6 ADWR states that it “was unable to find maps . . . categorizing intermittent streams for
7 the LLCR Subwatershed,” which apparently is why ADWR limited its analysis of maps for
8 the stream classification to a single map of perennial streams (Brown et al. 1981). LLCR
9 Report, at 35. ADWR’s statement ignores that the National Hydrography Dataset (“NHD”)
10 prepared by the United States Geological Survey (“USGS”) maps perennial, intermittent, and
11 ephemeral streams throughout the LLCR. Attached hereto as Figures 1 and 2 are examples of
12 NHD mapping for portions of the LLCR. As the legend indicates, the NHD separately
13 identifies intermittent and ephemeral streams. The NHD maps identify several intermittent
14 streams that ADWR omitted from its initial stream selection analysis. ADWR improperly
15 failed to identify the NHD mapping or explain why ADWR rejected NHD in connection with
16 its stream classification analysis. *See, e.g.*, ULCR Subflow Order, at 2 (“ADWR shall
17 provide a thorough review and explanation of all available data, and a detailed explanation of
18 any data ADWR finds inappropriate or otherwise rejects, or any gaps in information.”).

19 Even assuming that the NHD uses a broader definition of “intermittent” than the
20 definition used in the Goodfarb Order, that would provide an additional reason for ADWR to
21 rely on NHD for its initial stream selection. As ADWR explains, it “intentionally used broad
22 criteria that would over-select ephemeral streams to ensure a comprehensive investigation.”
23 LLCR Report, at 46. ADWR’s goal of over-selecting streams during the initial selection is
24 appropriate for the reason ADWR notes. But that is not what ADWR did. As explained
25 above, ADWR instead relied solely on **perennial** mapping and riparian vegetation, even
26 though riparian vegetation is, at best, a “useful clue” for stream classification. 2025 Subflow
27 Order, at 16.

1 **2. Step 2: Final Stream Selection**

2 ADWR states that “[a]fter AZGS mapped the initial stream selection, ADWR
3 evaluated the results, along with additional evidence, to determine a final list of streams
4 and/or stream reaches for subflow delineation.” *See* LLCR Report, at 46. ADWR stated that
5 this second step of the process focused on re-examining and eliminating streams that “were
6 labeled as potentially intermittent because those labels were based only on the presence of
7 riparian vegetation and not classified based on the Brown et al. map.” *Id.* Thus, ADWR’s
8 consideration of “additional evidence” did not result in ADWR adding intermittent streams
9 that it missed due to its overreliance on riparian vegetation, but instead only resulted in
10 ADWR further winnowing its list. *See id.* Therefore, ADWR’s consideration of additional
11 evidence (even if that evidence was otherwise appropriate) did not cure the errors that resulted
12 from ADWR concluding that current presence of riparian vegetation is the only way that a
13 stream could have been intermittent under predevelopment conditions. *See* Section II.C.1.b,
14 *supra.*

15 a. ADWR’s Two “Definitive Criteria”

16 ADWR explains that it classified a stream as intermittent or perennial, and therefore
17 delineated a subflow zone, if the stream met at least one of two “definitive criteria”: (1) being
18 shown as perennial in a 1981 map; or (2) “streamgage data.” *See* LLCR Report, at 47-48.
19 ADWR provides no explanation in the LLCR Report itself or in the relevant appendix of what
20 methodology it applied to evaluate whether “streamgage data” demonstrates an intermittent
21 stream. *See id.*; *see also id.* at App’x E. Regardless, stream gage data is ill-suited to
22 determine whether a stream is intermittent. *See* Section II.C.1.d, *supra.* The 1981 map does
23 not show intermittent streams and, as noted above, the vast majority of streams in the LLCR
24 do not have USGS gages. Therefore, the “definitive criteria” are effectively designed to
25 exclude intermittent streams.

1 b. ADWR's Four "Suggestive Criteria"

2 For streams that do not meet one of the two "definitive criteria," ADWR states that it
3 still might delineate a subflow zone if the stream meets "several" of four "suggestive criteria."
4 LLCR Report, at 47. Those criteria are: (1) visible evidence or reliable documentation of
5 surface water use; (2) well-documented springs located along the streambed; (3) water visible
6 in aerial and historical imagery over multiple years during the same season; and (4) a
7 continuous area of riparian vegetation along the stream banks. *Id.* at 48. ADWR does not
8 quantify how many of these criteria must be met in order for ADWR to classify the stream as
9 intermittent. However, ADWR's Appendix E (which includes a chart depicting ADWR's
10 application of the criteria to individual streams) shows that ADWR did not propose a subflow
11 zone for any stream unless at least two of these criteria were present. *See generally* LLCR
12 Report, App'x E.

13 A stream does not need to meet "several" of ADWR's "suggestive" criteria in order for
14 that stream to have been an intermittent stream under predevelopment conditions (or even
15 currently intermittent). For example, parts of Leonard Canyon are identified as perennial on
16 the map that ADWR relied upon for its stream classification (Brown, et al. 1981), but no part
17 of Leonard Canyon met any of ADWR's suggestive criteria. *See* LLCR Report, App'x E at
18 12. If a stream can be perennial while failing to meet any of ADWR's suggestive criteria, it
19 follows that intermittent streams easily could as well.

20 With respect to the "documentation of surface water use" suggestive criterion, ADWR
21 does not describe any effort to locate historic newspaper accounts, homestead files, or other
22 documentation that would shed light on whether water was historically used. *See* LLCR
23 Report, at 48 & n.57. Instead, ADWR appears to have relied upon water rights claims and
24 certificates for this criterion. Even for that limited inquiry, however, ADWR's analysis was
25 incomplete and inaccurate. In the case of Rio de Flag, for example, ADWR concluded that
26 there was no evidence of surface water use even though claims for Rio de Flag include,
27 among other things, a Statement of Claim to a 1908 priority date for diversion of 176 acre-

1 feet of water per year for the irrigation of 35 acres from an “intermittent” stream. *See*
2 Statement of Claim No. 36-30234. Even if correctly applied, this criterion likely would have
3 limited utility because the absence of diversion and use of water on the surface could be due
4 to, among other things, the location being unsuitable for irrigation or other significant
5 upstream water uses. At a minimum, ADWR should have considered whether a particular
6 watercourse was in an area that is suitable for irrigation before applying this criterion to that
7 watercourse.

8 With respect to ADWR’s “well-documented springs” criteria, a spring is not necessary
9 in order for a connection between groundwater and the stream bed to exist. *See, e.g.,*
10 Sustainability of Ground-Water Resources, USGS Circular 1186, at 8 (1999), *available at*
11 <https://pubs.usgs.gov/circ/circ1186/pdf/circ1186.pdf>. Rather, intermittent or perennial flow
12 may be supported by groundwater discharge occurring diffusely through the streambed and
13 banks along gaining reaches, rather than by a discrete spring discharge point. *See id.* For
14 example, the USGS has described groundwater discharge occurring “at springs or along
15 streams,” expressly distinguishing point-source spring discharge from distributed
16 groundwater inflow to channel systems. *See id.* Moreover, as ADWR’s own analysis
17 indicates, there are streams for which gage data “shows flow 60% of each year” that
18 nevertheless do not have springs associated with them. *See* LLCR Report, App’x E, at 3.

19 With respect to “[w]ater visible in aerial and historical imagery over multiple years
20 during the same season,” it is unclear what “historical imagery” ADWR refers to. LLCR
21 Report, at 48. In Appendix E, which provides a more detailed explanation of ADWR’s
22 application of these factors, ADWR identifies this criterion as encompassing only aerial
23 photos. *See id.*, App’x E at 2. As explained above in Section III.C.1.c, ADWR’s aerial
24 photograph analysis is unreliable for several reasons.

25 ADWR’s final criterion (a continuous area of riparian vegetation along the stream
26 banks) is flawed for the same reasons explained above in Section III.C.1.b. LLCR Report, at
27 48. Additionally, ADWR has failed to adequately explain how, if at all, the riparian

1 vegetation criteria that it applied at Step 2 of the stream classification process differs from the
2 criteria that it applied at Step 1 of the process. *See id.* ADWR did not request AZGS to map
3 streams unless they either were mapped as perennial or if ADWR identified “the existence of
4 a riparian environment along [the] stream.” *Id.* at 36; *see* Section II.C.1.b, *supra*. However,
5 Appendix E identifies “[p]resence of riparian vegetation along natural channel” as a criterion
6 that ADWR applies at Step 2 of the process. *See* LLCR Report, App’x E at 2. This additional
7 criterion should not be necessary because, by definition, any streams that ADWR selected for
8 AZGS mapping would meet this criterion. Thus, ADWR has failed to meet its duty to
9 “thoroughly explain agency decisions, including specifying procedures used for stream
10 classification.” 2025 Subflow Order, at 16.

11 **III. Methodological Errors in ADWR’s Subflow Zone Delineation**

12 A. Upstream Termination Points

13 “The subflow zone is defined as the saturated floodplain Holocene alluvium.” *Gila IV*,
14 198 Ariz. at 344. The subflow zone must be “adjacent to and beneath a perennial or
15 intermittent stream” *Id.* at 338. Accordingly, ADWR may not “terminate[] subflow
16 mapping despite the existence of intermittent or perennial reaches and Holocene alluvium
17 beyond the termination point.” 2025 Subflow Order, at 19. It is appropriate to compare
18 proposed termination points with “drainage maps depicting currently perennial, currently
19 intermittent, and historically perennial streams” when evaluating the upstream extent of
20 intermittent or perennial reaches. *See id.* ADWR must provide “explanations of subflow
21 zone termination points.” ULCR Subflow Order, at 2.

22 As ADWR correctly notes in its report, “all streams contain some Holocene alluvium,”
23 and “[n]early all streams, including ephemeral ones, contain Holocene River Alluvium . . . in
24 their channels and along their banks.” LLCR Report, at 52. In narrow canyon streams, the
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1 lateral extent of the Holocene alluvium could be quite narrow, but it nevertheless exists.⁷
2 Therefore, the upstream termination point for a particular watercourse typically would not be
3 based on the absence of Holocene alluvium beyond the termination point, but rather on the
4 stream becoming ephemeral above the termination point. Several maps depict the locations of
5 streams that are perennial or intermittent within the study area, including Brown et al. (1981)
6 and the NHD. In several instances, ADWR appears to have terminated the extent of the
7 subflow zone even though one or more of these mapping sources reflects perennial or
8 intermittent streamflow continuing farther upstream. For example, ADWR did not map the
9 full extent of Woods Canyon Creek that is reflected as perennial in Brown et al. (1981) and
10 intermittent in NHD, nor did ADWR map the full extent of Turkey Creek that was mapped as
11 perennial by NHD.

12 In the Verde Watershed, the “improper cutoffs” on the upstream termination points for
13 several streams “were the result of incomplete instructions from ADWR to AZGS.” 2025
14 Subflow Order, at 19-20. In response, the Special Master directed ADWR to extend portions
15 of the subflow zone that were “improperly terminated” and, in doing so, to “provide
16 explanations for unusual cutoffs of subflow mapping, especially where termination is the
17 result of contractual instructions between agencies.” *Id.* at 20. It appears that, like in the
18 Verde Watershed, many (if not all) of the premature terminations in the LLCR Report may
19 have been caused by ADWR’s instructions to AZGS. Appendix C to the LLCR Report
20 includes communications between ADWR and AZGS with respect to the geologic mapping.
21 LLCR Report, at 44 & n.50. In those communications, ADWR provides shapefiles depicting
22 the reaches that it instructed AZGS to map, along with a table identifying the specific river
23 miles that ADWR instructed AZGS to map for each watercourse. *See id.*, App’x C, at 1, 15
24 (providing shapefiles for the areas that ADWR instructed AZGS to map), and 4-14 (providing

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26 ⁷ ADWR states that it did not delineate a subflow zone if “[t]he stream reach contained no
27 continuously mappable Holocene alluvium outside the streambed.” LLCR Report, at 60.
This is improper. Under the scenario that ADWR describes, the subflow zone might narrow
to the point that it includes only the streambed itself, but the subflow zone still would exist.

1 river miles for the areas that ADWR instructed AZGS to map). Thus, AZGS’s termination
2 points appear to have been largely dictated by ADWR rather than based on AZGS’s own
3 observations.⁸

4 B. Saturation Assumption

5 As explained above, subflow analysis is based on predevelopment, rather than current,
6 conditions. *See* Section II.B, *supra*. In its 2005 Subflow Order, the Adjudication Court held
7 that ADWR should assume the entire lateral extent of the FHA is saturated for the purpose of
8 delineating a subflow zone. 2005 Subflow Order, at 17-18. The Adjudication Court
9 determined that the saturation assumption is “reasonable, practical, and consistent with the
10 goal of permitting this adjudication to be completed ‘within the lifetime[s] of some of those
11 presently working on the case’ (or at least their children’s).” *Id.* at 17. The Court explained
12 that, although the saturation assumption is “not entirely tied to current geological and
13 hydrological conditions,” incorporating it into the subflow definition “uses historical data to
14 prevent hydrological conditions during a specific timeframe from having a disproportionate
15 impact on the adjudication’s jurisdictional limits.” *Id.* at 18.⁹

16 The 2017 order directing ADWR to delineate a subflow zone in the Verde Watershed
17 recognized the saturation assumption and directed that “ADWR shall assume that the entire
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20 ⁸ In the report that it prepared for its mapping work, AZGS indicates that it may have reduced
21 the ADWR-selected stream lengths where it “determined little to no alluvium was preserved
22 along some segments of the channel,” but AZGS does not identify any instances where it
23 lengthened the upstream termination points due to intermittent or perennial flows continuing
24 upstream. *See* LLCR Report, App’x F, at 15. Thus, it appears that AZGS treated ADWR’s
25 instructions as a ceiling but not a floor as to the extent of its upstream termination points.

26 ⁹ As ADWR explained in connection with the proceedings that led to the 2005 Subflow
27 Order, the saturation assumption is consistent with using predevelopment streamflow
conditions because, “[b]y definition, [FHA] was saturated at some point in predevelopment
time.” *See* Report of the Special Mater on ADWR’s Subflow Technical Report, San Pedro
River Watershed; Motion for Approval of Report; and Notice of Subsequent Proceedings,
Maricopa County Superior Court, Case No. W1-103, at 54 (July 16, 2004) (internal quotation
marks omitted).

1 lateral extent of the floodplain Holocene alluvium is saturated.”¹⁰ In the LLCR Report,
2 “ADWR chose to classify streams as it had been ordered to in the 2017 Verde Order,” and
3 also claims to have “followed the parameters for FHA found in the 2017 [Verde Order]” for
4 its subflow zone delineation. LLCR Report, at 28 n.33, 57. In its discussion of the setbacks
5 to the lateral extent of the FHA to account for perpendicular “side pressure” from tributary or
6 basin-fill aquifers, however, ADWR states that “minor tributary alluvium is unsaturated, thus
7 negating the use of 100-foot setbacks within the LLCR Subwatershed.” *Id.* at 69. SRP
8 objects to this methodology as contrary to the saturation assumption.

9 **IV. Exclusion of Tribal Lands**

10 ADWR states that “[t]he Navajo Nation Reservation, Hopi Tribe Reservation, and San
11 Juan Southern Paiute Tribe lands are not part of the study area for this report.” LLCR Report,
12 at 14. Therefore, ADWR did not direct AZGS to map streams that “fell entirely within the
13 Navajo Nation Reservation, Hopi Tribe Reservation, or the San Juan Southern Paiute Tribe
14 lands,” and “did not delineate a subflow zone where . . . [t]he stream reach was located on the
15 Navajo Nation Reservation, Hopi Tribe Reservation, or San Juan Southern Paiute Tribe
16 lands.” *Id.* at 45, 59.

17 The Special Master’s order directing ADWR to prepare the LLCR Report simply
18 stated that “ADWR shall file its report and maps delineating the subflow zone for the
19 [LLCR].”¹¹ Portions of the Navajo Reservation, Hopi Reservation, and San Juan Southern
20 Paiute Tribe lands are located within the LLCR. LLCR Report, at 14 n.11. ADWR offers no
21 explanation for its exclusion of tribal lands from the LLCR Report. Therefore, the Special

22
23 ¹⁰ See Order for Production of a Subflow Zone Delineation Technical Report for the Verde
24 River Watershed, Maricopa County Superior Court, Case No. W1-106, at 2 (Nov. 27, 2017)
25 (“2017 Verde Order”); see also ULCR Subflow Order, at 2 (directing ADWR to “[a]ssume
that the entire lateral extent of the floodplain Holocene alluvium is saturated” when delineated
a subflow zone in the Upper Little Colorado River Subwatershed).

26 ¹¹ Order to Determine Subflow Zone for Lower Little Colorado Subwatershed and Order
27 Establishing Deadlines for Filing Report and Objections, Apache County Superior Court Case
No. 6417-400, at 1 (Dec. 6, 2022).

1 Master should direct ADWR to explain its decision to exclude these lands from the LLCR
2 Report, including by identifying the impact (if any) that the Northeastern Arizona Indian
3 Water Rights Settlement Act of 2025 had on ADWR's decision.

4 **V. Conclusion**

5 The LLCR Report contains methodological errors in its stream classification analysis,
6 its upstream subflow zone termination points, and its failure to apply the saturation
7 assumption to its setbacks analysis. SRP requests that the Special Master direct ADWR to
8 reconsider and correct those analytical flaws in the report before it is finalized and is used to
9 delineate the subflow zone in the LLCR. SRP further requests that the Special Master direct
10 ADWR to explain its decision to exclude tribal lands from the scope of its analysis.

11 DATED this 4th day of March, 2026.

12 SALMON, LEWIS & WELDON, P.L.C.

13 By  _____

14 Mark A. McGinnis
15 Michael K. Foy
16 Katrina L. Wilkinson
17 Kathryn M. Ust
18 2850 East Camelback Road, Suite 300
19 Phoenix, Arizona 85016
20 Attorneys for SRP
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1 ORIGINAL of the foregoing mailed for
2 filing to the Clerk of the Apache County
Superior Court this 4th day of March, 2026.

3 AND COPY hand-delivered this 4th day
4 of March, 2026 to:

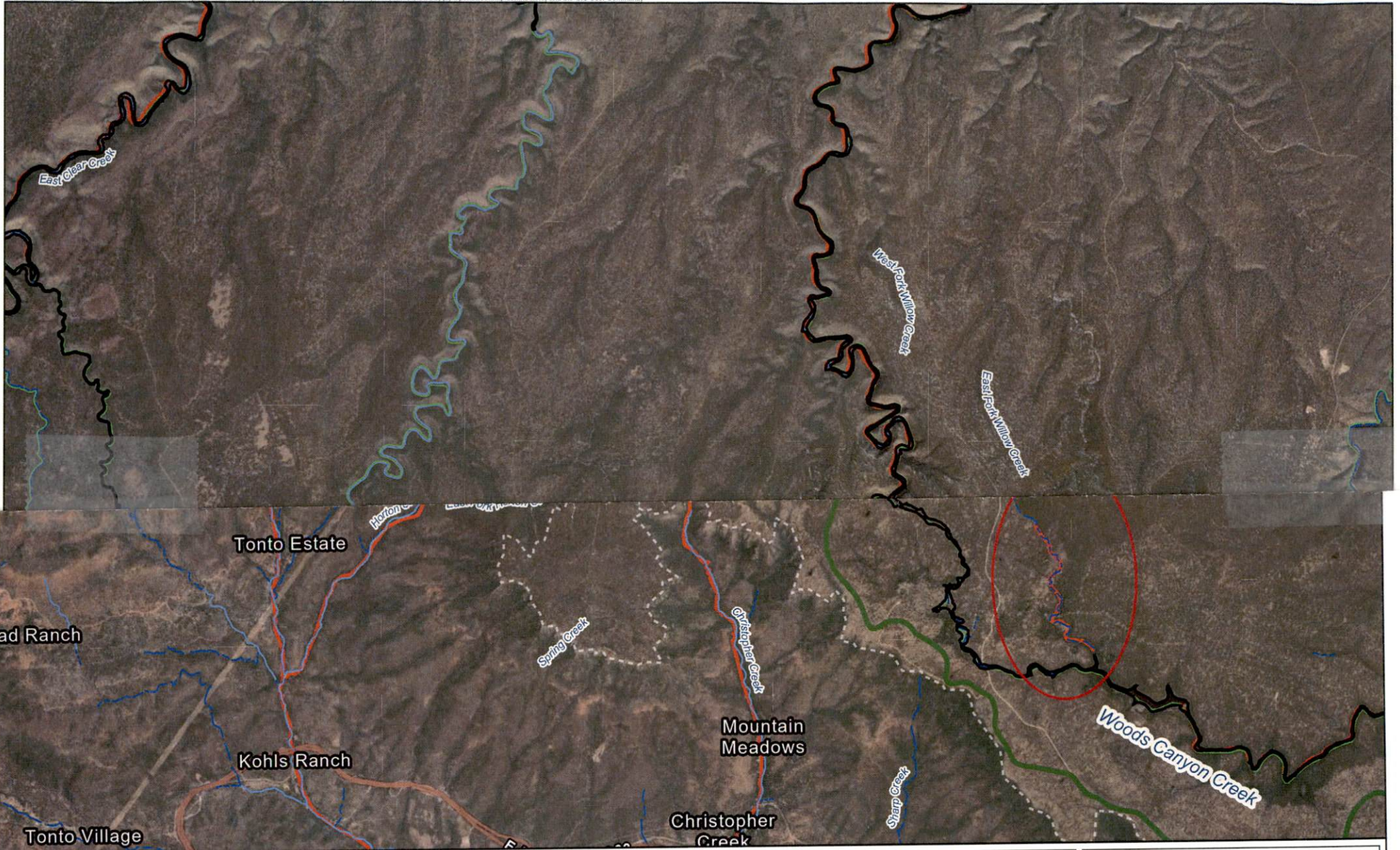
5 Sherri L. Zendri
6 Special Master
7 Central Court Building, Ste. 3A
8 201 West Jefferson
Phoenix, AZ 85003-2205

9 Hon. Scott Blaney
10 Judge of the Superior Court
11 East Court Building
12 101 West Jefferson Street, Suite 411
13 Phoenix, AZ 85003

14 Arizona Department of Water Resources
15 Legal Division
16 Karen J. Neilsen
17 1110 W. Washington Street, Suite 310
18 Phoenix, AZ 85007

19 AND COPY mailed this 4th day of March, 2026,
20 to all persons on the Court-approved mailing
21 list for Contested Case No. CV 6417-400 dated
22 August 22, 2025.

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






 ADWR Subflow Zone Mapping	 Brown EtAl 1981 - ADWR Digitized Raster
 Lower Little Colorado Subwatershed	 NHD Flowline
 Native American Reservations	 Stream/River: Intermittent
 AZGS Field Mapping Locations	 Stream/River: Perennial
	 Stream/River: Ephemeral

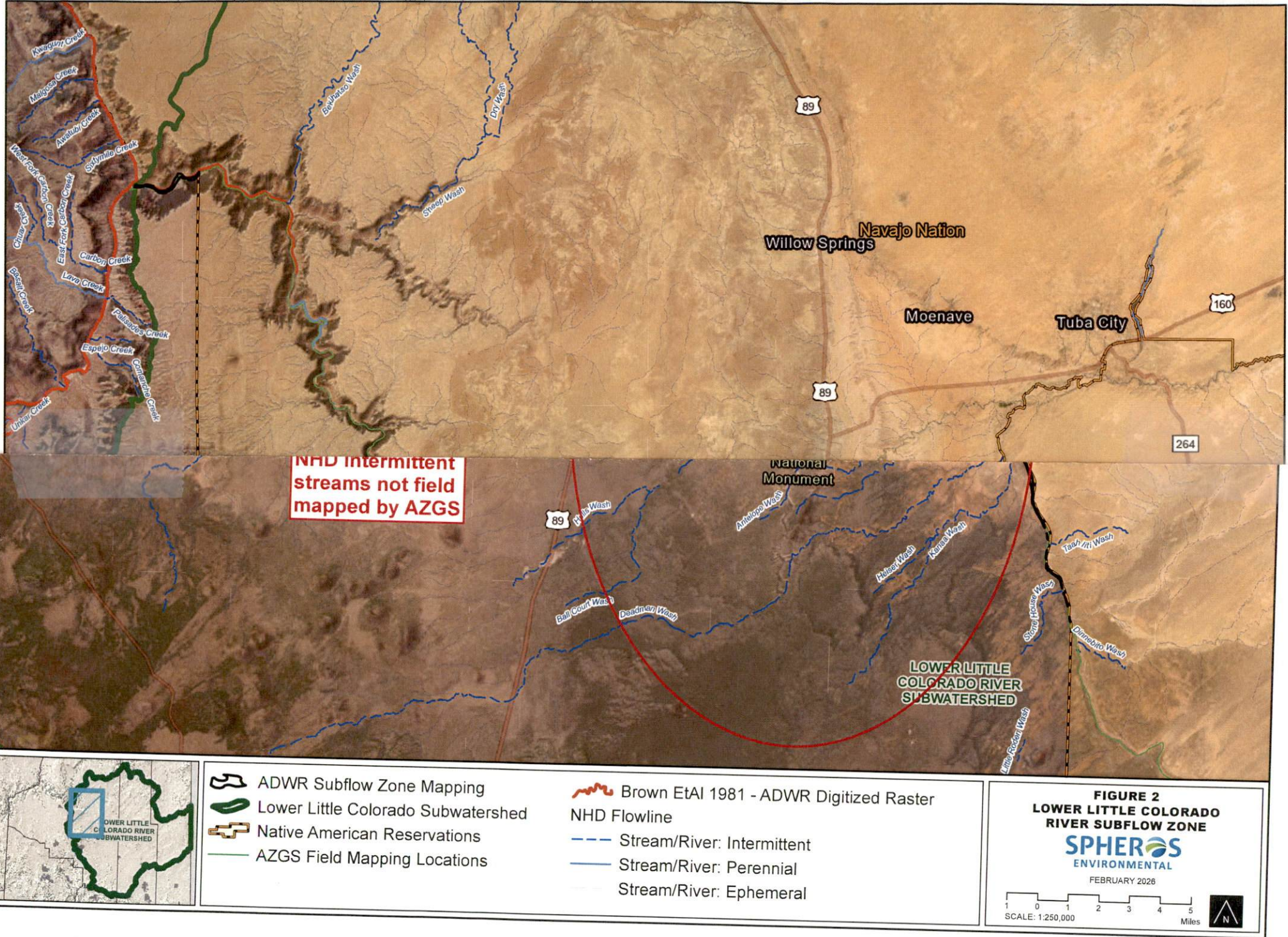
FIGURE 1
LOWER LITTLE COLORADO RIVER SUBFLOW ZONE

SPHEROS
 ENVIRONMENTAL

FEBRUARY 2026

0.35 0 0.35 0.7 1.05 1.4 1.7
 SCALE: 1:84,000 Mile





NHD Intermittent streams not field mapped by AZGS

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**IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF APACHE**

IN THE GENERAL ADJUDICATION
OF ALL RIGHTS TO USE WATER IN
THE LITTLE COLORADO RIVER
SYSTEM AND SOURCE

Case No. CV6417-400

**OBJECTION TO THE SUBFLOW
ZONE DELINEATION REPORT FOR
THE LOWER LITTLE COLORADO
RIVER SUBWATERSHED**

Special Master Sherri Zendri

OBJECTOR

Name (printed) Sonia Garcia
Mailing Address 3243 East Poinsettia Dr.
PHX, AZ 85028
Telephone No. 602-292-6298
Statement of Claimant No. 39-

STATEMENT OF OBJECTION

Please reference the portion of the report to which you are objecting, explain the reasons for the objection below (or in a separate attachment), and complete the next page.

See Attached Letter

FILED

Docketed By: 178

APACHE COUNTY SUPERIOR COURT
ANNELL HOUNSHELL, CLERK

NOV 04 2025

NOV 04 2025

ANNELL HOUNSHELL, CLERK
APACHE COUNTY SUPERIOR COURT

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WA 0417-400

CERTIFICATE OF SERVICE

On this 31 day of October, 2025 I certify that the original Objection and two copies were sent by first class mail, or hand delivered, to:

Via First Class Mail:

Clerk of the Apache County Superior Court
P.O. Box 365
St. Johns, Arizona 85936

Via Hand Delivery:

Clerk of the Apache County Superior Court
70 West 3rd South
St. Johns, Arizona 85936

If you mail your objection to the court, please allow additional time for mailing, so that your objection will be received by the court by **March 4, 2026**.

Sonia Garcia

Signature of Objector or Representative

If this objection is being submitted by a Representative of the Objector, please provide the following information below or by attachment:

Name of Representative (printed) SONIA GARCIA

Mailing Address of Representative 3243 East Poinsettia Dr.

PHX AZ 85008

Telephone Number of Representative 602-292-6298

Case No. CV6417-400

Formal Objection to Subflow Zone Delineation Report for the Lower Little Colorado River Subwatershed

To Whom It May Concern,

I am writing to formally object to the Subflow Zone Delineation Report for the Lower Little Colorado River Subwatershed as a property owner and resident of the Clear Creek area who relies on a private well for water access.

The proposed subflow zone delineation, if implemented as currently outlined, will have serious and adverse impacts on my property and the broader Clear Creek community. Specifically, the delineation will likely result in:

1. **Reduced Access to Groundwater:** By including areas like Clear Creek in the subflow zone, the delineation could lead to increased regulation or restrictions on the use of existing wells. This will directly reduce the water available to residents who have historically relied on private wells for domestic, agricultural, and other essential uses.
2. **Increased Costs to Property Owners:** The potential lowering of the groundwater table as a result of changes in water rights and management will force many well owners—including myself—to deepen our wells at significant personal cost. This financial burden is unfairly imposed on residents who have been responsibly using groundwater resources for years without contributing to overuse or depletion.
3. **Unintended Consequences on Rural Livelihoods:** The delineation fails to consider the disproportionate impact on rural and semi-rural residents who do not have access to municipal water systems. Requiring deeper wells or additional permitting processes places a significant strain on individuals and families who rely solely on well water for their basic needs.

I urge the decision-makers to reconsider or revise the current delineation boundaries to exclude areas like Clear Creek, where inclusion in the subflow zone would create inequitable burdens on private property owners with longstanding, sustainable water usage.

Thank you for considering this objection. I respectfully request that this letter be entered into the public record and that further stakeholder engagement be conducted before finalizing any delineation changes that will affect our access to water and the viability of our homes and lands.

Sincerely,

Sonia Garcia



Mailing address- 3243 East Poinsettia Drive

Property in clear creek -698 Saddlerock Rd Happy Jack Az 86024

Phoenix AZ 85028

Zonieg@gmail.com

602-292-6298

Oct 12,2025

**IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF APACHE**

STEPHEN J. WIELL, CLERK
APACHE CO SUPERIOR COURT

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IN THE GENERAL ADJUDICATION
OF ALL RIGHTS TO USE WATER IN
THE LITTLE COLORADO RIVER
SYSTEM AND SOURCE

Case No. CV6417-400

**OBJECTION TO THE SUBFLOW
ZONE DELINEATION REPORT FOR
THE LOWER LITTLE COLORADO
RIVER SUBWATERSHED**

Special Master Sherri Zendri

OBJECTOR

Name (printed) United States of America

Mailing Address 150 M. St. NE, Washington, D.C., 20002

Telephone No. _____

Statement of Claimant No. 39- 89222, et al.

STATEMENT OF OBJECTION

Please reference the portion of the report to which you are objecting, explain the reasons for the objection below (or in a separate attachment), and complete the next page.

See Attachment A.

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CERTIFICATE OF SERVICE

On this 3RD day of March, 2026, I certify that the original Objection and two copies were sent by first class mail, or hand delivered, to:

Via FedEx

Clerk of the Apache County Superior Court
P.O. Box 365
St. Johns, Arizona 85936

If you mail your objection to the court, please allow additional time for mailing, so that your objection will be received by the court by **March 4, 2026**.

Mark J. Widerschein

Signature of Objector or Representative

If this objection is being submitted by a Representative of the Objector, please provide the following information below or by attachment:

Name of Representative (printed) Mark Widerschein

Mailing Address of Representative 150 M St. NE, Washington, D.C. 20002

U.S. Department of Justice, ENRD, NRS

Telephone Number of Representative 202-532-5803

ATTACHMENT A

1 **Adam R.F. Gustafson**
Principal Deputy Assistant Attorney General

2
3 **Mark Widerschein**
4 **Alexa Penalosa**
Trial Attorneys, Natural Resources Section

5 **Emmi Blades**
6 **Guss Guarino**
Trial Attorneys, Tribal Resources Section
7 Environment and Natural Resources Division
8 United States Department of Justice
9 P.O. Box 7611, Ben Franklin Station
10 Washington, DC 20044
11 (202) 532-5803 (Widerschein)
12 (202) 598-0661 (Blades)
13 Mark.Widerschein@usdoj.gov
14 Emmi.Blades@usdoj.gov

15 *Counsel for the United States*

16 **IN THE SUPERIOR COURT OF THE STATE OF ARIZONA**
17 **IN AND FOR THE COUNTY OF MARICOPA**

18 IN RE THE GENERAL
19 ADJUDICATION OF ALL RIGHTS
20 TO USE WATER IN THE LITTLE
21 COLORADO RIVER SYSTEM AND
22 SOURCE

23 CV 6417-400
24 **United States' Objection to Subflow**
25 **Delineation Report**

26 **Contested Case Names:** *In Re Lower Little Colorado River Subwatershed*

27 **HSR Involved:** None

28 **Descriptive Summary:** The United States objects to the Arizona Department of Water
29 Resources' Subflow Delineation Report.

30 **Number of Pages:** 3

31 **Date of Filing:** March 3, 2026

1 **Objection**

2 Pursuant to the Court’s Order to Determine Subflow Zone for Lower Little
3 Colorado River Subwatershed and Order Establishing Deadlines for Filing Report and
4 Objections (Dec. 6, 2022), the United States respectfully provides the following
5 comments on the Arizona Department of Water Resources’ (“ADWR”) Subflow Zone
6 Delineation for the Lower Little Colorado River Subwatershed (“Report”), dated
7 September 2025.

8 **I. The Puerco River Ephemerality Determination is Unsupported.**

9 In the Report, ADWR did not fully apply its methodology in making the
10 determination that the Puerco River (tributary to the Lower Little Colorado River
11 (“LLCR”)) is ephemeral upstream from river mile 10. Because a USGS streamgage with
12 long-term data is present, and the evidence supports it, a subflow zone should be
13 delineated above river mile 10 on the Puerco River.

14 In the Report, ADWR identifies six criteria for assessing streams: two “definitive”
15 and four “suggestive.” Report at 48. The “definitive” criteria are (1) streamgage data and
16 (2) streams mapped as perennial in Brown *et al.* (1981) (the “Brown Map”). *Id.* The
17 “suggestive” criteria are (3) visible evidence or reliable documentation of surface water
18 use; (4) well-documented springs located along the streambed; (5) water visible in aerial
19 and historical imagery over multiple years during the same season, and (6) a continuous
20 area of riparian vegetation along the stream banks. *Id.* Meeting either definitive criteria
21 results in an automatic subflow delineation, while meeting any suggestive criteria
22 requires the use of ADWR’s “professional judgment.” *Id.*

23 The Puerco River was selected for initial mapping. Report at 32; *see also* Table 3-
24 1. Eighty-one miles were mapped. *Id.* ADWR eventually delineated a subflow zone for

1 river miles 0-10. *See* Appendix E at 25. It did so because it identified that two
2 “suggestive” criteria were met: (4) well-documented springs and (5) water visible in
3 aerial imagery over multiple years. *Id.* However, a streamgage with long-term data –
4 definitive criterion (1) – exists within the Puerco River channel (USGS No. 09396100¹).
5 Appendix E leaves the stream-gage criterion unchecked for the Puerco River. *Id.*
6 ADWR’s notes do not discuss streamflow data, and indicate that a subflow zone would
7 be delineated only for river miles 0-10, as “[r]iparian vegetation thins upstream of RM
8 10, and downstream profile in 1989 ADWR report supports this. Tamarisk along RM 0-
9 10 and flowing water visible in multiple images.” *Id.* Application of ADWR’s stated
10 methodology would result in the delineation of a subflow zone for the Puerco River,
11 because a “definitive” criterion is met. This alone should require delineation. However,
12 ADWR apparently did not even review the streamgage data.

13 Even if there were not a streamgage, the basis identified for not delineating
14 beyond river mile 10 appears arbitrary. As to the thinning of riparian vegetation,
15 ADWR’s own criterion (6) is whether riparian vegetation continues, not whether it thins.
16 As the Report implicitly acknowledges, aerial imagery shows riparian vegetation
17 continuing upstream of river mile 10. Additionally, criterion (4) and (5) are checked,

18
19 ¹ Accessible at <https://waterdata.usgs.gov/monitoring-location/USGS-09396100>. Gage
20 09396100 is located adjacent to Chambers, AZ, within the boundaries of the LLCR. It is
21 not clear from the report why this gage was not included. It is not mapped on Figure 2-5,
22 which shows current and historic streamgages. However, Figure 3-7 illustrates that
23 portions of the Puerco River crossing the Navajo Nation Reservation were removed from
24 consideration. *See also* Table 3-2, Report at 44-45 (indicating that ADWR “excluded
25 streams that ... fell entirely within the Navajo Nation Reservation[.]” Because the gage is
on the Navajo Nation Reservation, it may have also been excluded. However, even if the
river miles within the Navajo Nation Reservation are excluded from consideration, the
data from the gage is still relevant for the Puerco River, which flows primarily off-
reservation.

1 which would support riparian vegetation. At minimum, further evidentiary support for the
2 cutoff at river mile 10 is required beyond an unsupported statement about riparian
3 vegetation.

4 Further, in making it a definitive criterion, ADWR gives the Brown Map
5 significant weight in making its determination of perennial streams in the Report.
6 However, this 40-year-old map was created on a scale covering the entire state of
7 Arizona and it should not be utilized as one of only two criteria for deciding if a stream
8 should receive a perennial classification or not.

9 Finally, the 1989 ADWR report on hydrology of the Little Colorado River System
10 identifies groundwater pumping from the Puerco River alluvium for community and
11 irrigation supply, acknowledging localized drawdown offset by recharge during flow
12 events. It also states that "significant" uses of surface water on the Puerco River
13 watershed occur "on the reservation or in New Mexico." 1989 Report at 4-29. This
14 suggests that, based on ADWR's own methodology, suggestive criteria (3) ("Visible
15 evidence or reliable documentation of surface water use") should be checked in Appendix
16 E, even if such uses are not themselves within the scope of the LLCR proceeding.

17 Because a definitive criterion and up to four suggestive criteria are met, a subflow
18 zone should be delineated for the Puerco River above river mile 10.

19 **II. The Delineation At River Mile 10 is Not Based on Geology.**

20 To the extent that ADWR determines it must arbitrarily cut-off the subflow zone
21 at river mile 10, the straight-line cutoff that it makes is not geologically supported. As
22 shown on *Exhibit 1*, ADWR only delineated a subflow zone for the Puerco River from its
23 confluence with the Little Colorado River to a location 10 miles upstream where an
24 abrupt and straight-line subflow zone delineation was made across the Holocene river

1 alluvium. The geologic units of the Holocene river alluvium within the area delineated as
2 a subflow zone and upstream of the area delineated as a subflow zone on the Puerco
3 River are shown on the attached map. The proposed delineation on the Puerco River runs
4 directly through a wide area of "Qy2r" without any discernable surface or geological
5 conditions that would justify a determination to limit the subflow zone delineation at that
6 location.

7 **III. Conclusion**

8 ADWR should delineate a subflow zone for the entire Puerco River, because it
9 meets definitive criterion (1) and suggestive criteria support it. If ADWR does not do so,
10 it should re-evaluate the straight-line cutoff at river mile 10, which does not account for
11 the geology of the region.

12 Respectfully submitted this 3rd day of March, 2026

13 ADAM R.F. GUSTAFSON
14 Principal Deputy Assistant Attorney General

15 **MARK WIDERSCHNEIN**
16 **ALEXA PENALOSA**
17 Trial Attorneys, Natural Resources Section

18 **EMMI BLADES**
19 **GUSS GUARINO**
20 Trial Attorneys, Tribal Resources Section

21 Environment & Natural Resources Division
22 United States Department of Justice

23 By: *Mark J. Widerschein*
24 *Counsel for the United States*

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CERTIFICATE OF SERVICE

Copies of the foregoing sent via Federal Express this 3rd day of March, 2026 to:

Clerk of the Superior Court Maricopa County
Attn: Water Case
601 West Jackson Street
Phoenix, AZ 85003

Special Master Sherri L. Zendri
Maricopa County Superior Court
201 West Jefferson Street
Central Court Building, Suite 3A
Phoenix, AZ 85003

Copies of the foregoing sent via First Class U.S. Mail this 3rd day of March, 2026 to all persons appearing on the Court Approved Mailing Lists for Contested Case CV 6417-400 dated 08/22/2025.

Matthew Lamb

Matthew Lamb

EXHIBIT 1



9155 Township
 LLCN Watershed
 Puerco River
 Subflow Zone

Source(s):
 Base Map USDA NAD 2011 (https://nrcs.app.box.com/v/npshdr/-/7451504630)
 ADWR Subflow Delineation and Watershed Boundary (https://www.adwr.gov/arcgis/rest/services/108068/ADWR_Geology/ViewWebApp)
 ADWR Base Geology (https://www.adwr.gov/arcgis/rest/services/108068/ADWR_Geology/ViewWebApp)

ADWR SUBFLOW RELATIVE TO ADWR MAPPED RIVER GEOLOGY
 LOWER LITTLE COLORADO RIVER SUB-WATERSHED, NAVAJO COUNTY, AZ

