

2012/14 Status of Water Quality Arizona's Integrated 305(b) Assessment and 303(d) Listing Report

August 2015



2012/14 Status of Water Quality in Arizona

Arizona's Integrated 305(b) Assessment and 303(d) Listing Report

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CHAPTER I

INTRODUCTION AND PURPOSE

Every two years, the Arizona Department of Environmental Quality (ADEQ) is required by the federal Clean Water Act to conduct a comprehensive analysis of water quality data associated with Arizona's surface waters to determine whether surface water quality standards are being attained and designated uses are being supported. This integrated surface water assessment and impaired waters listing report (2012/14 Integrated Assessment Report) serves three functions.

- Nationally, it fulfills a reporting requirement of the Clean Water Act, and is submitted to the Environmental Protection Agency (EPA), and used to report on national water quality issues and concerns.
- For ADEQ, it provides a mandate to compile environmental data and information from ADEQ's surface water quality monitoring and protection programs, as well as from other agencies, organizations, and individuals. This comprehensive evaluation of quality of water in Arizona is used to set priorities, allocate resources, and make decisions about land use activities, discharges to the water, future monitoring, and program initiatives.
- For the public, it provides an opportunity to learn about and comment on the status of water quality in the state.

Surface Water Assessment Methods and Technical Support

ADEQ has created a separate assessment methods document. It is assumed that the reader will obtain and reference this technical support document when using the information in this assessment.

The Assessment Methods and Technical Support document provides a description of the assessment process and specific assessment and impaired water listing criteria. It also provides information about the monitoring data and information used in this assessment and Arizona's credible data requirements.

Report Overview

Chapter I –	Introduction and Purpose
Chapter II –	Assessments of individual surface waters, organized by watershed
Chapter III –	Summary Information
Chapter IV –	Action Plan
Appendix A –	Alphabetical List of Waters Included in the Assessment
Appendix B –	Waters Grouped by Assessment Category
Appendix C –	Impaired Waters List
Appendix D –	Critical Conditions
Appendix E –	Delisting Impairments
Appendix F –	Water Quality Improvements
Appendix G –	TMDL Priority Ranking

Although an attempt was made to avoid technical jargon and unnecessary abbreviations, this is a technical report. Acronyms and terms used in the assessment report are defined in the Assessment Methods and Technical Support document.

CHAPTER II

WATER QUALITY ASSESSMENTS BY WATERSHED

Assessment summaries are reported alphabetically by individual assessment units (stream reaches and lakes) in this chapter and grouped by the 10 watersheds, as illustrated on the following map: Bill Williams Watershed, Colorado /Grand Canyon Watershed, Colorado / Lower Gila Watershed, Little Colorado/San Juan Watershed, Middle Gila Watershed, Salt Watershed, San Pedro Watershed, Santa Cruz Watershed, Upper Gila Watershed, and Verde Watershed. If the reader is uncertain about which watershed to look in for assessment information, an alphabetical listing of surface waters assessed is provided in Appendix A.

Assessment Information

A summary page is provided for each assessed waterbody indicating:

- Designated use support and an overall assessment
- Impairment status and pollutant causing impairment (if applicable)
- Monitoring data used in the assessment
- List of Exceedances
- Data gaps and monitoring priorities.

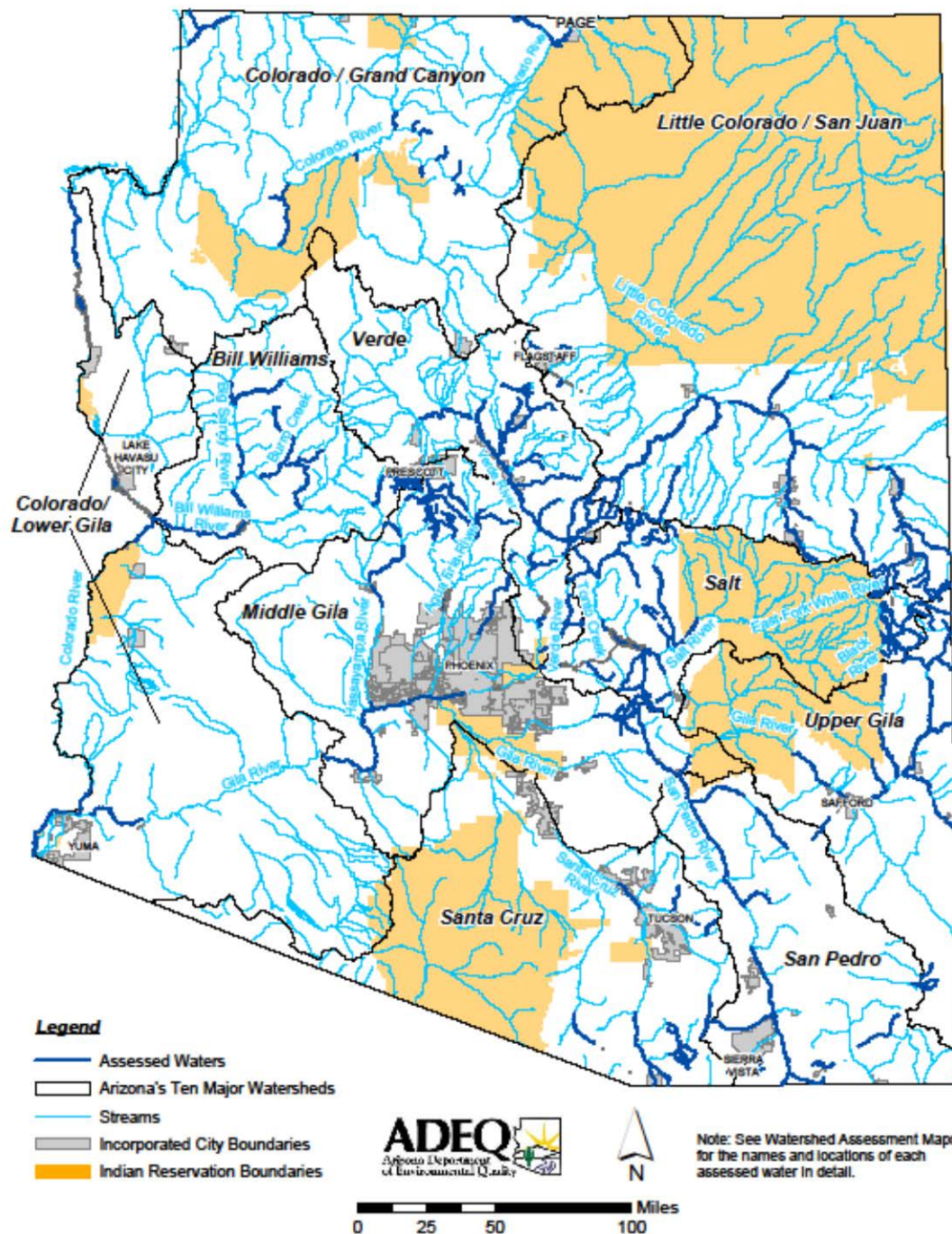
Page 3 of this chapter provides an example summary page with information on “How to Read” the individual waterbody assessment pages.

The reader should refer to the Surface water Assessment Methods and Technical Support document for information concerning the assessment process, determining exceedances, assessment criteria, assessment categories, and monitoring prioritization criteria.

Watershed Information

General background information and maps are provided for each watershed to provide some context for the assessments. One map (or a series of maps) shows the assessed surface waters.

2012/2014 Statewide Assessed Waters



How to Read an Assessment Summary Page

"Attaining" or "Inconclusive" Summary Page

Waterbody Name

- Each watershed report is organized alphabetically by waterbody names.

Assessment Unit Information

- Reach Description
- Waterbody ID (8 digit HUC + reach/ lake number)
- Reach Length/ Lake Area

Overall Assessment Category

- The worst-case designated use support represents overall category for the assessment unit.

Watershed Name

- appears as a side-header on each page

Parameter Name

- Superscript "d" after a metal name denotes dissolved constituent.
- No superscript after a metal name denotes total.

Number and Types of Samples

- Number of events used in assessment. An event is represented by samples collected at a site during a 7-day period.

Monitoring Priority

- High, Medium, or Low based on the criteria defined in the Assessment Methods and Technical Support document
- Used to schedule and prioritize future monitoring

Data Gaps

- "Inconclusive" parameters with insufficient data to assess
- Core parameters and seasonal distribution determine attainment.
- Missing core parameters and/or seasonal distribution means inconclusive use support (even if parameter-level assessment is attaining).
- Parameters that could not be assessed due to detection limits higher than the standards

"Impaired" or "Not Attaining" Summary Page

Pollutant Causing Impairment

- Impaired parameters and years first added to the 303(d) list of impaired waters
- May include EPA impairments (parameters over-filed by EPA based on federal regulations)

Bill Williams River
 Watershed Assessment Report
 Category 6
 Pass

Annual and High pH (2026)
 AGW - Impaired + FBC - Impaired
 AGL - Impaired + FC - Failing

Parameters

Parameter	Assessment Method	Result	Impaired or Failing
pH	Good	Good	No
FBC	Good	Good	No

See the Assessment Methods and Technical Support document for more information on the assessment process.

Bill Williams Watershed Water Quality Assessments

Watershed Description

The Santa Maria River and the Big Sandy River drainages merge at Alamo Lake to create the Bill Williams River, which connects to the Colorado River at Parker Dam. Land ownership is divided approximately as 45% federal, 28% state, and 27% private (no Tribal lands). With only 8,000 people (2000 census), this watershed does not have any large population centers. Open range grazing is the principal land use. A large mining complex is located in the Bagdad area, while historic mine sites are scattered throughout the watershed.

Elevations range from 8,417 feet (above sea level) at Hualupai Peak to 1,000 feet near the Colorado River. Most of the watershed is below 5,000 feet, with low desert fauna and flora (Sonoran Desert - Mohave Desert transition area) and warmwater aquatic communities where perennial waters exist.

Water Resources

There is little precipitation, from 13 inches a year, with an additional inch of snowfall per year in higher elevations, so surface water resources are sparse. Perennial flow in this watershed is frequently interrupted (short segments), even on the larger main-stem rivers. The largest lake, Alamo Lake, covers 11,950 acres; however, only an estimated 1,415 acres are perennial.

An estimate of surface water resources in the Bill Williams Watershed is provided in the following table, based on USGS digitized hydrology at 1:100,000, rounded to the nearest 5 miles or 5 acres.

Estimated Surface Water Resources in the Bill Williams Watershed			
	Perennial	Intermittent	Ephemeral
Stream miles	185	655	5035
	Perennial	Non-perennial	
Lake acres	1832	11,950	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters.

Assessments

The Bill Williams Watershed can be separated into the following drainage areas in Arizona:

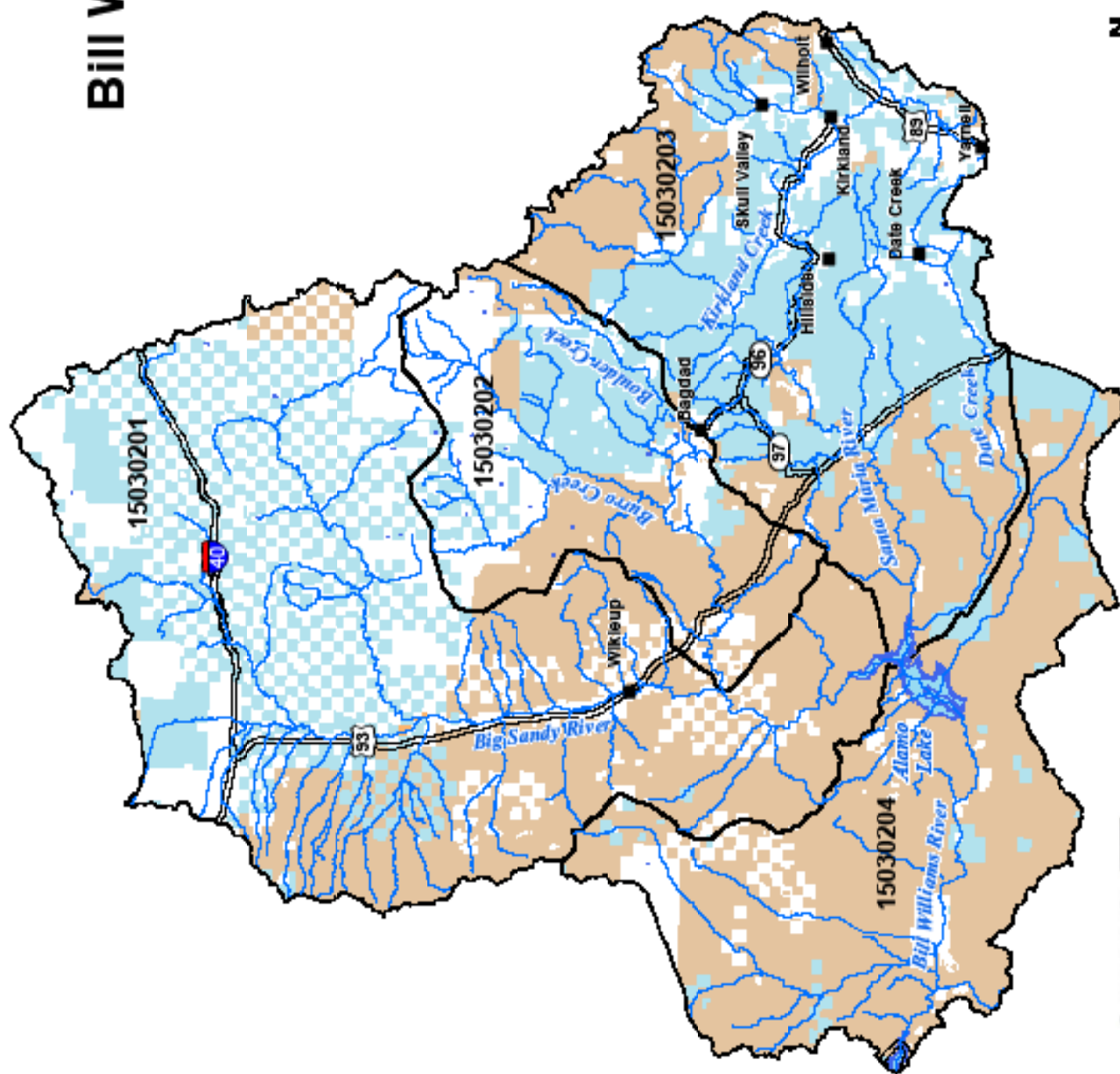
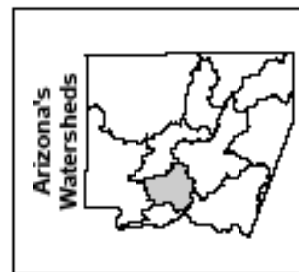
15030201	Big Sandy River
15030202	Burro Creek
15030203	Santa Maria River
15030204	Bill Williams River

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

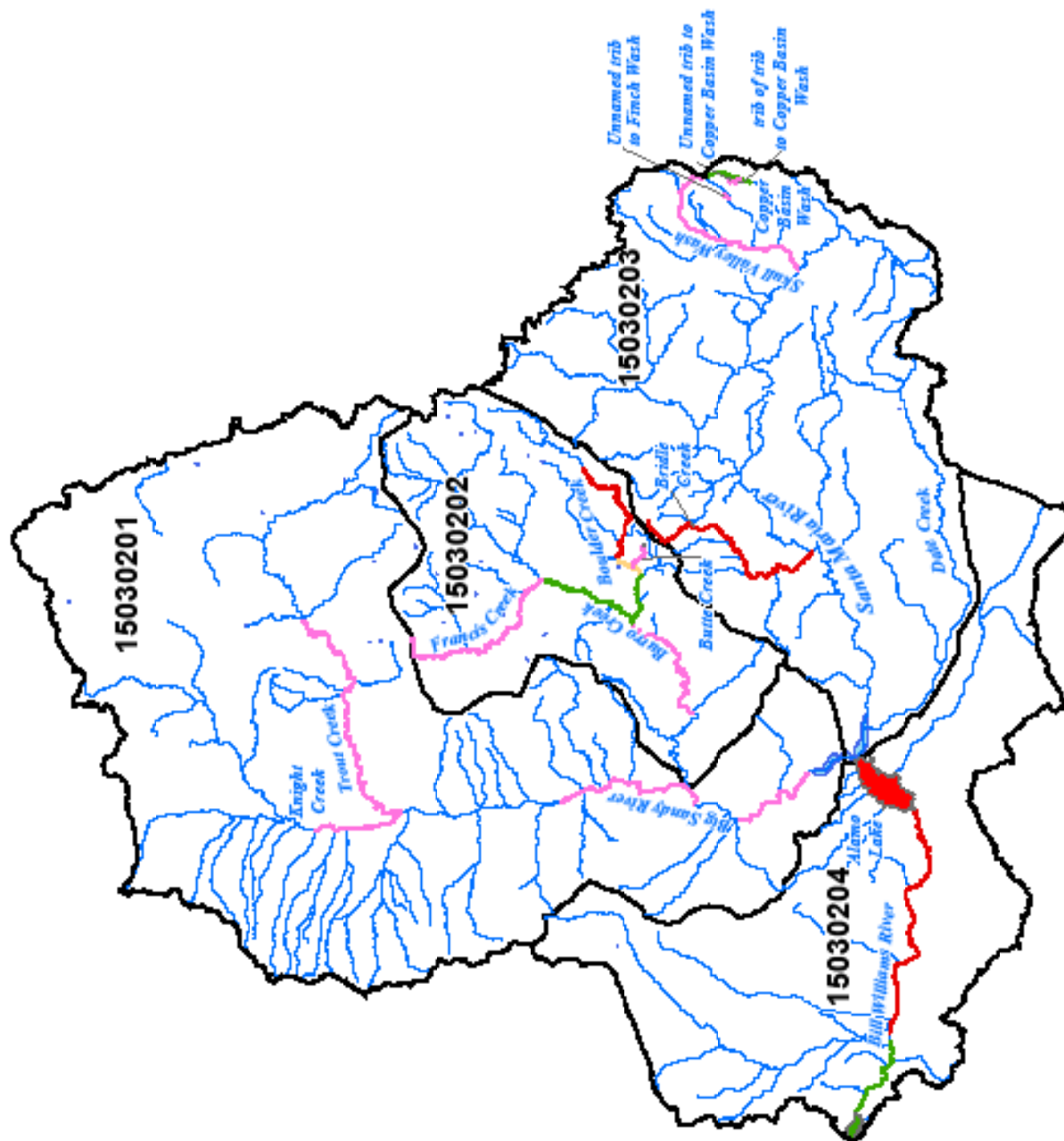
Bill Williams Watershed

Legend

- Towns
 - ~ Streams
 - == Highways
 - Lakes
 - HUC Watershed Boundaries
- ## Land Ownership
- Federal
 - Private
 - State/County/Municipal
 - Tribal



Bill Williams Watershed **2012/2014 Assessment for Streams and Lakes**



<p>Legend</p> <p>Assessed Lakes - 2012</p> <p>ADEQ and EPA Listings</p> <p>Attaining</p> <p>Intermediate</p> <p>Not Attaining</p> <p>EPA Impaired</p> <p>Impaired</p> <p>HUC Watershed Boundaries</p> <p>Assessed Streams - 2012</p> <p>ADEQ and EPA Listings</p> <p>Attaining</p> <p>Intermediate</p> <p>Not Attaining</p> <p>EPA Impaired</p> <p>Impaired</p> <p>Lakes</p> <p>Streams</p>		<p>See Individual HUC Printouts for Waters not Labeled</p> <p>ADEQ Arizona Department of Environmental Quality</p>
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A LAMO LAKE

15030204-0040A
1415 Acres

Category 5
Impaired

*High pH (1996), ammonia (2004), and
mercury in fish tissue (EPA, 2002)*

FC - Impaired • FBC - Impaired • AGL - Impaired
A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Ammonia	0.24 ng/L	8/14/2006	0.28 mg/L	A&Ww chronic is inconclusive
pH	9.2 SU	8/7/2007	9.4 SU	AGL, FBC & A&Ww are inconclusive (binomial)
DO	5.8 mg/L	7/4/2006	5.5 mg/L	A&Ww is inconclusive (binomial)

Monitoring Summary

Sampling period: 7/4/2006 - 8/22/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Across From Picnic Area (Mid Lake)	BWALA-NLS	105779	ADEQ	Clean Lakes Program
At Dam (Lower Lake)	BWALA-A	101350	ADEQ and COE	Clean Lakes Program, Ambient
Upper Lake	BWALA-B	101351	ADEQ and COE	Clean Lakes Program, Ambient
Mid Lake	BWALA-C	102514	ADEQ and COE	Clean Lakes Program, Ambient
Site 1 (Lower Lake)	BWALA-1	100001	COE	Ambient
Site 3 (Upper Lake)	BWALA-3	100003	COE	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4-5) Ammonia, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, DO, ammonia
Missing Core Parameters	copper(dis & tot), cadmium, zinc, lead, <i>E. coli</i>
Missing Seasonal Distribution	All core parameters
Lab Detection Limits Not Low Enough	

Priority	Monitoring Recommendations
High	Collect dissolved oxygen, pH, and ammonia samples to support development of a nutrient TMDL. Use a more sensitive/reliable analytical method for hydrogen sulfide. Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
Lake remains impaired for high pH (1996), ammonia (2004), and mercury in fish tissue (2002).

BIG SANDY RIVER

Rupley - Alamo Lake North
15030201-001
10.2 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Bottom deposits	50%	5/18/2010	100%	A&Ww is inconclusive with only 1 exceedance during the assessment period.

Monitoring Summary

Sampling period: 12/9/2009 - 5/18/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR WIKIEUP, AZ	BWBSR015.60	100457	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, bottom deposits

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect bottom deposits samples due to the exceedance. Collect core parameters to represent at least 3 seasons in an assessment period.

BIG SANDY RIVER

Stove Spring - Sycamore
15030201-006
2.8 Miles

Category 3
Inconclusive

Bill Williams

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	80 mg/L	12/9/2009	110 mg/L	A&Ww is inconclusive. Only 1 single sample exceedance. Not enough samples to calculate a median.
Bottom deposits	50%	4/21/2010	98%	A&Ww is inconclusive. Only 1 exceedance in the assessment period.

Monitoring Summary

Sampling period: 12/9/2009 - 4/21/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
EAST OF WIKIEUP	BWBSR037.79	107384	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, bottom deposits

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Bottom deposits, SSC
Missing Core Parameters	Dissolved oxygen
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), copper, <i>E. coli</i> , lead
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect additional suspended sediment and bottom deposits samples due to exceedances. A minimum of 4 suspended sediment samples within a 2-year period is needed to calculate a median. Collect core parameters to represent at least 3 seasons in an assessment period.

BIG SANDY RIVER

Sycamore - Burro Creek
15030201-004
13.8 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6 mg/L	5/18/2010	5.41 mg/L	A&Ww is inconclusive. 1 exceedance in 3 samples (binomial).
SSC	80 mg/L	12/16/2009	226 mg/L	A&Ww is inconclusive. Only 1 single sample exceedance. Not enough samples to calculate a median.
Bottom deposits	50%	5/18/2010	100%	A&Ww is inconclusive. Only 1 exceedance during the assessment period.
Biocriteria	IBI ≥ 50 attaining IBI 40-49 inconclusive IBI ≤ 39 violating	6/14/2010	IBI 46	A&Ww is inconclusive.

Monitoring Summary

Sampling period: 12/16/2009 - 5/18/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT HIGHWAY 93 BRIDGE	BWBSR034.68	100400	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, bottom deposits, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, SSC, bottom deposits, biocriteria
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect additional dissolved oxygen, suspended sediment, and bottom deposits samples due to exceedances. Collect an additional macroinvertebrate sample to verify the bioassessment result. Collect core parameters to represent at least 3 seasons in an assessment period.

BILL WILLIAMS RIVER

Alamo Lake - Castaneda Wash
15030204-003
35.9 Miles

Category 5
Impaired

Ammonia and high pH (2006)

FC - Inconclusive • FBC - Impaired • AGL - Impaired
A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	2/22/2010	2.1 ug/L	A&Ww is inconclusive with 1 exceedance.
Biocriteria	IBI ≥ 50 attaining IBI 40-49 inconclusive IBI ≤ 39 violating	6/10/2010	IBI 43	A&Ww is inconclusive with 2 inconclusive IBI scores at 2 sites.
		6/10/2010	IBI 45	

Monitoring Summary

Sampling period: 7/4/2006 - 6/10/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT ABOVE GROUND PIPELINE	BWBWR025.86	107385	ADEQ	Ambient
BELOW ALAMO DAM	BWBWR038.52	102316	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(6) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3-9) Ammonia, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(6-9) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Selenium, biocriteria
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect more total selenium samples to assess A&W attainment. Collect an additional macroinvertebrate sample to verify the bioassessment result. Many core parameters in need of seasonal coverage.

Impairment Discussion
Reach remains impaired for ammonia and high pH (2006).

BILL WILLIAMS RIVER

Mohave Wash - Colorado River
15030204-001
17.5 Miles

Category 2

Attaining some uses

FC - Inconclusive • FBC - Attaining • AGL - Inconclusive
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 8/31/2006 - 4/23/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MINERAL WASH, NEAR PLANET USGS 09426600	BWBWR009.92	100924	USGS	USGS Ambient
AT LAKE HAVASU, AZ.	BWBWR003.45	105129	USGS	USGS Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	(4-5) Nitrate, nitrite, nitrite/ nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), copper, lead
Missing Seasonal Distribution	Zinc (dissolved), copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Copper, lead, and dissolved zinc need sample and seasonal coverage.

IMPACTMENT STATUS

Arsenic (1998)

FC - Attaining • FBC - Not Attaining • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L	1/22/2007	42.6 ug/L	FBC remains not attaining. A minimum of 10 samples is required to determine attainment. No new data since the last assessment.

Monitoring Summary

Sampling period: 7/12/2006 - 12/5/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COPPER CREEK	BWBOU005.15	102193	Phelps Dodge	Permit monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(1-5) Arsenic, beryllium, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, zinc	None	(5) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen, <i>E. coli</i> , boron, lead
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i> , boron, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved), silver (dissolved)

Priority	Monitoring Recommendations
Medium	Collect arsenic samples during critical conditions and in critical locations. Collect core parameters to represent at least 3 seasons during an assessment period. Use a lower lab reporting limit for dissolved cadmium.

Impairment Discussion

Reach remains impaired for arsenic (1998). TMDL for arsenic completed in 2004. The Hillside mine, located upstream of this reach, continues to degrade water quality. Additional sampling under critical conditions is needed to determine attainment of water quality standards.

BOULDER CREEK

Copper Creek - Burro Creek
15030202-005C
4.5 Miles

Category 2
Attaining some uses

Bill Williams

FC - Attaining • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L	1/22/2007	41.8 ug/L	FBC is inconclusive with 1 exceedance in 5 samples (binomial).

Monitoring Summary

Sampling period: 7/12/2006 - 12/5/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW MULHOLLAND WASH	BWBOU002.18	102224	Phelps Dodge	Permit monitoring
SITE B - BELOW COPPER CREEK	BWBOU005.11	101008	Phelps Dodge	Permit monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(2-10) Arsenic, beryllium, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, zinc	None	(10) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Arsenic
Missing Core Parameters	Dissolved oxygen, <i>E. coli</i> , boron, lead
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i> , boron, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved), silver (dissolved)

Priority	Monitoring Recommendations
Low	Collect additional arsenic samples due to the exceedance. Collect core parameters to represent at least 3 seasons during an assessment period. Use a lower lab reporting limit for dissolved cadmium.

Boulder Creek

Tributary at 344114 / 1130334 - Wilder Creek
15030202-006B
14.4 Miles

Category 5
Impaired

Beryllium (2010)

FC - Attaining • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Beryllium ^d	5.3 ug/L	7/10/2006	33 ug/L	A&Ww chronic remains impaired. 3 exceedances in the assessment period. No new data since the last assessment.
		1/22/2007	10 ug/L	
		5/15/2007	7.0 ug/L	

Monitoring Summary

Sampling period: 7/10/2006 - 5/15/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW WARM SPRING CREEK	BWBOU013.05	102219	Phelps Dodge	Permit monitoring
ABOVE HILLSIDE MINE	BWBOU008.92	100401	Phelps Dodge	Permit monitoring
DOWNSTREAM OF TUNGSTON MINE DRAIN PIPE	BWBOU012.82	102233	Phelps Dodge	Permit monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(12) Arsenic, beryllium, cadmium, chromium, copper, manganese, mercury, selenium, silver, zinc	None	(12) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen, <i>E. coli</i> , boron, lead
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i> , boron, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved), silver (dissolved)

Priority	Monitoring Recommendations
High	Collect dissolved beryllium samples in support of TMDL development. Collect core parameters to represent at least 3 seasons during an assessment period. Use lower lab reporting limits for dissolved cadmium and dissolved silver.

Impairment Discussion
Remains impaired for beryllium (2010).

Boulder Creek

Wilder Creek - Butte Creek
15030202-005A
1.4 Miles

Category 4A
Not Attaining

*Arsenic, copper, and zinc (1998)
Beryllium, manganese, and low pH (2006/2008)*

FC - Attaining • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L	7/12/2006	63.1 ug/L	FBC remains not attaining. A minimum of 10 samples is required to determine attainment. No new data since the last assessment.
		11/1/2006	30.4 ug/L	
		1/22/2007	51 ug/L	
		5/1/2007	64.9 ug/L	
Copper ^d	26.6 ug/L ^{acute} , 16.6 ug/L ^{chronic} @ 206 mg/L hardness	11/1/2006	30 ug/L	A&Ww remains not attaining. No new data for this assessment period.
Zinc ^d	216.2 ug/L @ 206 mg/L hardness	11/1/2006	860 ug/L	A&Ww remains not attaining. No new data for this assessment period.
	89.8 ug/L @ 73 mg/L hardness	12/5/2007	90 ug/L	

Monitoring Summary

Sampling period: 7/12/2006 - 12/5/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW HILLSIDE MINE	BWBOU008.35	100402	Phelps Dodge	Permit monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(1-5) Arsenic, beryllium, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, zinc	None	(5) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen, <i>E. coli</i> , boron, lead
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i> , boron, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved), silver (dissolved)

Priority	Monitoring Recommendations
Medium	Collect arsenic, copper, zinc, beryllium, manganese, and pH samples during critical conditions and in critical locations. Collect core parameters to represent at least 3 seasons during an assessment period. Use a lower lab reporting limit for dissolved cadmium.

Impairment Discussion
There were no beryllium, manganese, or pH exceedances in this assessment period. However, attainment could not be determined due to the lack of data during critical conditions. TMDL for arsenic, copper, and zinc completed in 2004.

BRIDLE CREEK

Headwaters - Santa Maria River
15030203-027
25.8 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	576 cfu/100 mL, SSM	12/8/2009	2200 cfu/100 mL	PBC is inconclusive with 1 exceedance. Sample taken one day after massive winter storm.

Monitoring Summary

Sampling period: 12/8/2009 - 4/2/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW MOUNTAIN SPRINGS WASH	BWBRI009.54	102313	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(2-3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect <i>E. coli</i> samples due to exceedance. Core parameters need seasonal distribution.

BURRO CREEK

Boulder Creek - Black Canyon Creek
15030202-004
17.2 Miles

Category 3
Inconclusive

Bill Williams

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/12/2006 - 12/4/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE 6 MILE CROSS-ING	BWBR0023.54	102244	Phelps Dodge	Permit monitoring
BELOW MAMMOTH WASH	BWBR0025.09	102243	Phelps Dodge	Permit monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(3-11) Arsenic, beryllium, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, zinc	None	(11) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen, <i>E. coli</i>
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i> , lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), mercury (dissolved), silver (dissolved)

Priority	Monitoring Recommendations
Low	Collect core parameters to represent 3 seasons during assessment period. Use lower reporting limits for dissolved mercury and cadmium.

BURRO CREEK

Francis Creek - Boulder Creek
15030202-008
13.8 Miles
Outstanding Arizona Water

Category 2

Attaining some uses

FC - Attaining • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI \geq 50 attaining IBI 40-49 inconclusive IBI \leq 39 violating	4/20/2010	IBI 37	A&Ww is inconclusive.

Monitoring Summary

Sampling period: 7/12/2006 - 4/20/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BOULDER CREEK	BWBR0029.91	100404	ADEQ/Phelps Dodge	Ambient/Permit monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(2-7) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, zinc	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-7) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Biocriteria
Missing Core Parameters	Dissolved oxygen, <i>E. coli</i>
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i> , lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved), silver (dissolved)

Priority	Monitoring Recommendations
Medium	Collect core parameters to represent at least 3 seasons during an assessment period. Use lower lab reporting limits for dissolved metals (cadmium, copper, and silver).

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 11/1/2006 - 12/5/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
HILLSIDE MINE AREA TRIBUTARY	BWBUT000.59	103504	Phelps Dodge	Permit monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(1-3) Arsenic, beryllium, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, zinc	None	(3) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen, <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

COORS LAKE
15030202-5000
230 Acres

Category 5
Impaired

Mercury in fish tissue (EPA, 2004)

FC - Impaired • FBC - Inconclusive • A&Ww - Inconclusive

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Mid Lake	BWC00-B	102756	AGFD	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect fish tissue mercury samples to support TMDL development. Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
EPA listing is due to a fish consumption advisory issued in 2004.

COPPER BASIN WASH

Headwaters - Tributary at 342811/1123531
15030203-032A
4.6 Miles

Category 2
Attaining some uses

Bill Williams

FC - Attaining • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Cadmium ^d	0.64 µg/L ^{chronic} @ > 400 mg/L hardness	8/21/2008	4.3 µg/L	A&Wc is inconclusive (see discussion below)
		12/16/2008	2.2 µg/L	
		12/26/2008	1.1 µg/L	
		1/23/2010	0.7 µg/L	
Copper	500 µg/L	1/23/2010	518 µg/L	AGL is inconclusive with 1 exceedance in 5 samples (binomial).
Copper ^d	49.6 µg/L ^{acute} , 29.3 µg/L ^{chronic} @ >400 mg/L hardness	8/21/2008	430 µg/L	A&Wc is inconclusive (see discussion below)
		12/16/2008	170 µg/L	
		12/26/2008	160 µg/L	
		5/20/2009	150 µg/L	
		1/23/2010	99.2 µg/L	
Selenium	2 µg/L	1/23/2010	9.2 µg/L	A&Wc chronic is inconclusive. Dissolved result higher than total by more than 10%. This is also an estimate value below reporting limit. All reporting limits were higher than the chronic standard.

Monitoring Summary

Sampling period: 8/21/2008 - 1/23/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
COPPER BASIN WASH - AT FR56 BELOW COPPER BASIN MINE	BWCBW009.00	107324	ADEQ	TMDL
COPPER BASIN WASH - BELOW VICTORY STOCK-PILE	BWCBW009.10	107323	ADEQ	TMDL

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
COPPER BASIN WASH - BELOW NORTH COM- MERCIAL STOCKPILE	BWCBW009.38	107322	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-5) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	None	(1-5) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper, selenium
Missing Core Parameters	Dissolved oxygen, <i>E. coli</i>
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i>
Lab Detection Limits Not Low Enough	Arsenic, cadmium, cadmium (dissolved), selenium, zinc (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect dissolved copper and cadmium samples to reassess A&Wc attainment. (see discussion below) Collect more than 3 seasonally distributed dissolved oxygen and <i>E. coli</i> samples to complete core parameter coverage.

Attainment Discussion
While this reach is technically impaired for dissolved cadmium and copper, a closer review reveals that all or most of the exceedances came from a site (107324) immediately below an adit that was plugged in 2011. Therefore, rather than base an impairment on past data when a major change in the situation has occurred, ADEQ has decided to call the reach 'inconclusive' until enough post-adit-plugging data becomes available.

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI ≥ 50 attaining IBI 40-49 inconclusive IBI ≤ 39 violating	4/19/2010	IBI 47	A&Ww is inconclusive.

Monitoring Summary

Sampling period: 2/25/2010 - 4/19/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BURRO CREEK	BWFRA000.04	100406	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-2) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Biocriteria
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic
Lab Detection Limits Not Low Enough	Copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect an additional macroinvertebrate sample to verify the bioassessment result. Collect core parameters to represent at least 3 seasons during an assessment period.

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	2/26/2010	3.1 ug/L	A&Ww chronic is inconclusive. Only 1 exceedance in the assessment period.
SSC	80 mg/L	2/26/2010	400 mg/L	A&Ww is inconclusive. Only 1 single sample exceedance. Not enough samples to calculate a median.

Monitoring Summary

Sampling period: 2/26/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BIG SANDY	BWKN1000.53	102311	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Selenium, SSC
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect additional total selenium and suspended sediment samples due to exceedances. Collect core parameters to represent at least 3 seasons in an assessment period.

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 1/23/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT SKULL VALLEY	BWSVW009.04	108782	ADEQ	TMDL
BELOW COPPER BASIN WASH	BWSVW002.82	108802	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, nickel, zinc, selenium	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, <i>E. coli</i> , cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, <i>E. coli</i> , cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Boron, cadmium (dissolved), copper, nickel, selenium

Priority	Monitoring Recommendations
Low	No exceedances but too little information to assess. All core parameters need sample number and seasonal coverage.

TROUT CREEK

Cow Creek - Knight Creek
15030201-014
32.1 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Lead ^d	4.18 ug/L ^{chronic} @ 160 mg/L hardness	5/19/2010	12 ug/L	A&Ww chronic is inconclusive. Only 1 exceedance in the assessment period.
Selenium	2 ug/L	4/1/2010	3.6 ug/L	A&Ww chronic is inconclusive. Only 1 exceedance in the assessment period.

Monitoring Summary

Sampling period: 4/1/2010 - 6/11/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR WIKIEUP	BWTRT002.43	100397	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead (dissolved), selenium
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect additional dissolved lead and total selenium samples due to exceedances. Collect core parameters to represent at least 3 seasons in an assessment period.

UNNAMED TRIB TO COPPER BASIN WASH TRIB

Headwaters - Unnamed Trib to Copper Basin Wash
15030203-045
0.5 Miles

Category 3
Inconclusive

Bill Williams

PBC - Inconclusive • AWE - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper	1300 ug/L	1/23/2010	2270 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).
Copper ^d	55.2 ug/L @ 250 mg/L hardness	1/23/2010	685 ug/L	AWE is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 1/23/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COPPER BASIN ROAD	BWUUC000.01	108805	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, nickel, selenium, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved), copper
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Arsenic, boron, cadmium, cadmium (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more total and dissolved copper to verify exceedances. All core parameters need number and seasonal coverage.

UNNAMED TRIB TO COPPER BASIN WASH

Headwaters - Copper Basin Wash
15030203-4291
1.2 Miles

Category 3
Inconclusive

PBC - Inconclusive • AWE - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper	1300 ug/L	1/23/2010	8280 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).
Copper ^d	73.7 ug/L @ 340 mg/L hardness	1/23/2010	220 ug/L	AWE is inconclusive with 1 exceedance.
Lead	15 ug/L	1/23/2010	24.7 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 1/23/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT COPPER BASIN ROAD	BWUCB000.18	108804	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, nickel, selenium, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved), copper, lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Boron, cadmium, cadmium (dissolved), selenium, zinc (dissolved)

Priority	Monitoring Recommendations
Medium	Collect samples to determine assessment status and contribute to Copper Basin work. All core parameters need sample number and seasonal coverage.

UNNAMED TRIB TO FINCH WASH

Headwaters - Finch Wash
15030203-044
0.5 Miles

Category 3
Inconclusive

Bill Williams

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 1/23/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COPPER BASIN ROAD	BWUFW000.01	108803	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, nickel, selenium, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Boron, copper (dissolved), lead, lead (dissolved)

Priority	Monitoring Recommendations
Low	No exceedances but too little information to assess. All core parameters need sample number and seasonal coverage.

Colorado – Grand Canyon Watershed

Watershed Description

This watershed is defined by the Colorado River drainage area, beginning in Arizona at Lake Powell, through the Grand Canyon National Park, to Hoover Dam at Lake Mead. It does not include the Little Colorado River drainage. The watershed contains spectacular incised canyons formed by erosion of sandstone formations, as well as volcanically formed mountains and high plateaus.

Land ownership is divided approximately as: 45% federal, 25% tribal, 15% private, and 5% state. Most of the 16,437 square miles in this watershed are sparsely populated, with an approximate population of 67,500 people (2000 census). The largest communities are Kingman and Williams. Land use is primarily open grazing, recreation, and silviculture (forestry), with scattered mining districts. The Grand Canyon National Park, Kaibab National Forest, Lake Mead National Recreation Area, and Glen Canyon National Recreation Area are all located within this watershed and all have restricted land uses to protect natural resources. These federal lands also draw a large number of tourists and recreationists.

Elevations range from 1,000 feet (above sea level) along the Colorado River to 10,400 feet near Flagstaff. The majority of the watershed is between 5,000-7,000 feet elevation, with high desert fauna and flora, including coldwater aquatic communities where perennial waters exist.

Water Resources

Precipitation varies from 10-15 inches a year, including about 1 inch of snowfall per year in higher elevations. Excluding the Colorado River and its reservoirs (Lake Powell and Lake Mead), surface water is sparse.

An estimate of surface water resources in the Colorado – Grand Canyon Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

Estimated Surface Water Resources in the Colorado – Grand Canyon Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	480	260	14,870
	Perennial	Non-perennial	
Lake acres	68,400	13,415	

Additional Estimated Water Resources on Tribal Lands – Not Assessed

	Perennial	Intermittent	Ephemeral
Stream miles	125	5	3,740
	Perennial	Non-perennial	
Lake acres	390	0	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.

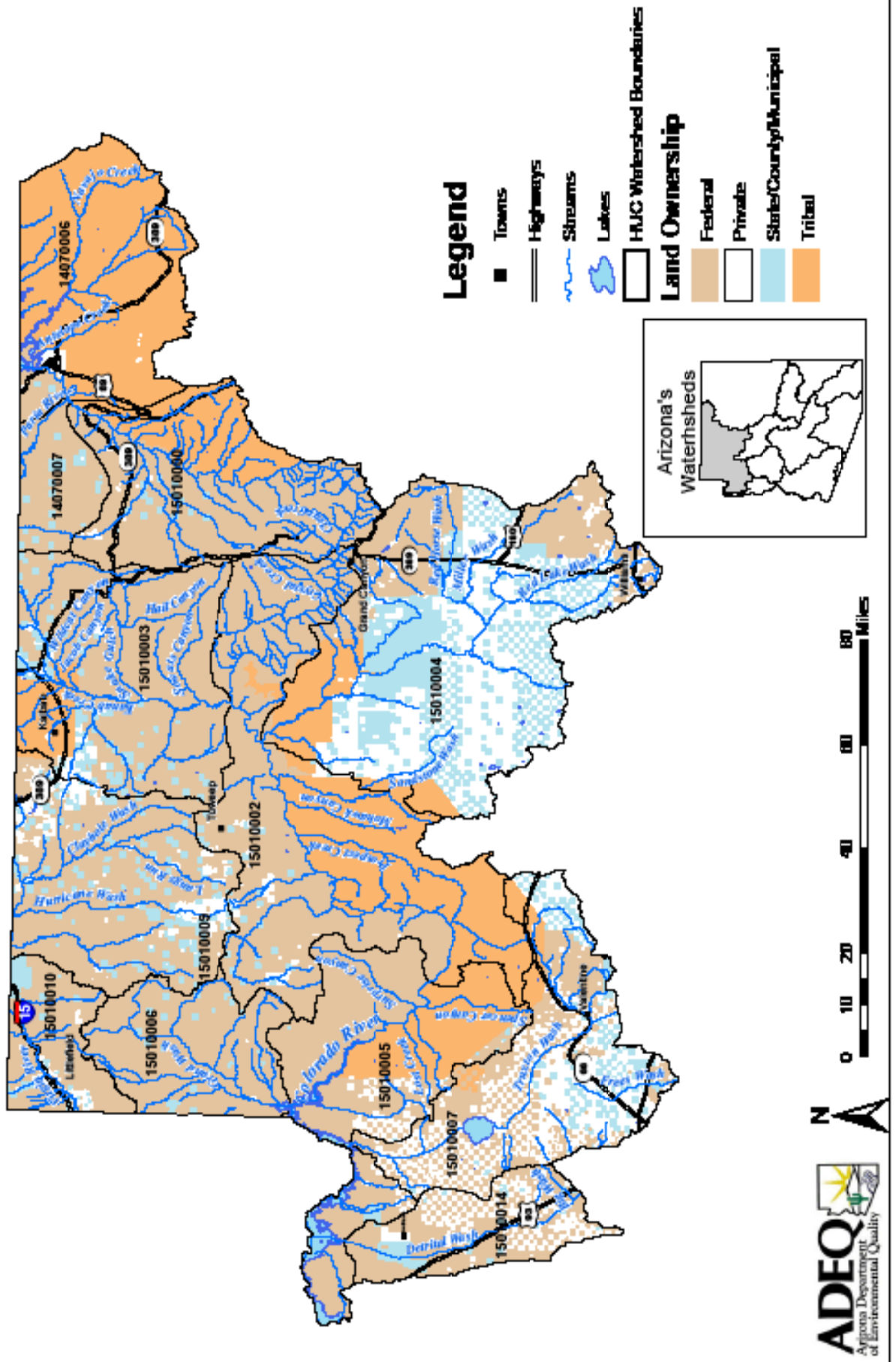
Assessments

The Colorado – Grand Canyon Watershed can be separated into the following drainage areas in Arizona:

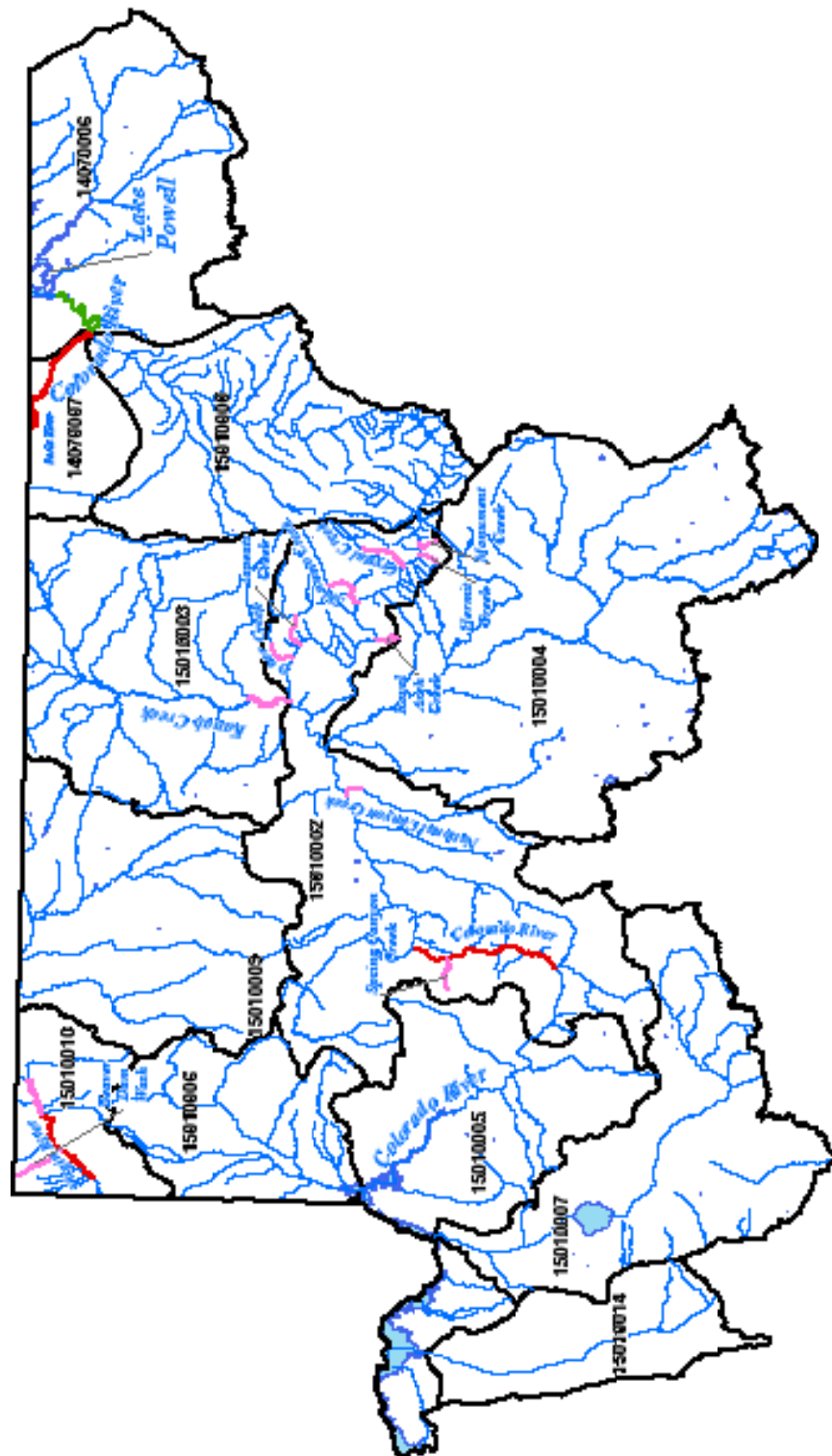
14070006	Lake Powell
14070007	Paria River
15010001	Marble Canyon
15010002	Grand Canyon
15010003	Kanab Creek
15010004	Havasu Creek
15010005	Lake Mead
15010006	Grand Wash
15010007	Red Lake
15010009	Fort Pearce Wash
15010010	Virgin River
15010014	Detrital Wash

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

Colorado-Grand Canyon Watershed



Colorado / Grand Canyon Watershed 2012/2014 Assessment for Streams and Lakes



Legend

Assessed Lakes - 2012

ADEQ and EPA Listings

Attaining

Intermediate

Not Attaining

EPA Impaired

Impaired

HUC Watershed Boundaries

Assessed Streams - 2012

ADEQ and EPA Listings

Attaining

Intermediate

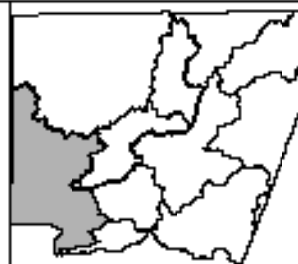
Not Attaining

EPA Impaired

Impaired

Lakes

Streams



See Individual HUC Printouts
for Waters not Labeled

N



0 40 Miles

BEAVER DAM WASH

Utah border - Virgin River
15010010-009
9.6 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	3/9/2010	2000 cfu/100 mL	FBC is inconclusive with 1 exceedance. Note: This exceedance occurred during a storm event.
Lead	15 ug/L	3/9/2010	37 ug/L	FBC is inconclusive with 1 exceedance in 1 sample (binomial).
SSC	80 mg/L	3/9/2010	2600 mg/L	A&Ww is attaining. This exceedance occurred during a local storm event.

Monitoring Summary

Sampling period: 11/10/2009 - 4/27/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW HIGHWAY 91 BRIDGE IN LITTLEFIELD	CGBDW000.99	100449	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i> , lead
Missing Core Parameters	Dissolved oxygen
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	Need seasonal coverage on all core parameters. Collect more <i>E. coli</i> and lead samples to determine FBC attainment.

BRIGHT ANGEL CREEK

Phantom Creek - Colorado River
15010001-019
1.9 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 10/16/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE PHANTOM RANCH	CGBRA001.36	100423	ADEQ	Ambient
BELOW PHANTOM RANCH	CGBRA000.44	100422	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-2) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	Need seasonal coverage on all core parameters.

DWS - Inconclusive • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7 mg/L	12/4/2007	6.5 mg/L	A&Wc is inconclusive. Low dissolved oxygen in 2 of 9 samples (binomial).
		8/19/2008	6.3 mg/L	
Mercury ^d	0.01 ug/L	3/6/2007	0.012 ug/L	A&Wc chronic is inconclusive. The exceedance on 6/5/2007 is unreliable - the dissolved fraction greater than the total value (0.008 ug/L). Only 1 valid exceedance during the assessment period.
		6/5/2007	0.011 ug/L	

Monitoring Summary

Sampling period: 8/8/2006 - 12/1/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT LEES FERRY, AZ USGS 09380000	CGCLR698.93	100743	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(10) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(10) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(9-10) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, mercury (dissolved)
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect additional dissolved oxygen and dissolved mercury samples due to exceedances. Reach was originally listed for selenium in 2006, but new data (20 samples collected between 2006 and 2011) indicate no evidence of continuing selenium problems. Since there have been no exceedance measured in the last 6 years and data were collected from the same site and under similar flow conditions as the previous exceedances this reach has been delisted.

IMPACT STATUS

SSC and selenium (2004)

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	7/13/2006	933 mg/L	A&Wc remains impaired. All 9 single samples exceeded the standard and no exclusions for storm events.
		8/31/2006	3310 mg/L	
		11/7/2006	172 mg/L	
		2/1/2007	264 mg/L	
		3/15/2007	78 mg/L	
		4/26/2007	65 mg/L	
		6/6/2007	905 mg/L	
		7/18/2007	419 mg/L	
		8/15/2007	2190 mg/L	
Selenium ^d	2 ug/L	4/26/2007	2.2 ug/L	A&Wc chronic remains impaired with 2 exceedances. Note: These exceedances are based on dissolved selenium results.
		8/15/2007	2.1 ug/L	

Monitoring Summary

Sampling period: 7/13/2006 - 8/15/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE DIAMOND CREEK USGS 09404200	CGCLR473.00	101483	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(9 dissolved) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, iron, lead, manganese, nickel, selenium, silver, zinc	(6-9) Nitrate, nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(9) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper, lead
Missing Seasonal Distribution	<i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect samples to support development of suspended sediment and selenium TMDLs. Most core parameters in need of sample number and seasonal coverage.

Impairment Discussion
The reach remains impaired for selenium and SSC. ADEQ will coordinate development of selenium TMDLs along the Colorado River.

CRYSTAL CREEK

Tributary at 361342 / 1121148 - Colorado River
15010002-018B
9.1 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L	10/18/2009	42 ug/L	FBC is inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 10/18/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COLORADO RIVER	CGCRY000.05	100525	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Arsenic
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more arsenic samples to determine FBC attainment. All core parameters need sample number and seasonal coverage.

DEER CREEK

Tributary at 362616 / 1122816 - Colorado River
15010002-019B
4.9 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 10/20/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COLORADO RIVER	CGDEE000.07	100532	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	No exceedances but too little information to assess. All core parameters need coverage.

HAVASU CREEK

Havasupi Reservation - Colorado River
15010004-001
3.3 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 10/21/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COLORADO RIVER USGS 09404115	CGHAV000.36	100568	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	No exceedances but too little information to assess. All core parameters need coverage.

HERMIT CREEK

Hermit Pack Trail crossing - Colorado River
15010002-020B
3.5 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	10/17/2009	2.2 ug/L	A&Ww chronic is attaining. Elevated selenium concentration is considered entirely due to natural sources as there are no anthropogenic activities that can lead to selenium contamination in this small remote watershed.

Monitoring Summary

Sampling period: 10/17/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COLORADO RIVER	CGHRM000.08	100570	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	All core parameters need sample number and seasonal coverage.

KANAB CREEK

Jump - up Canyon - Colorado River
15010003-001
12.8 Miles

Category 3
Inconclusive

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	10/20/2009	3.8 ug/L	A&Ww chronic is inconclusive. Only 1 sample in the assessment period.

Monitoring Summary

Sampling period: 10/20/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COLORADO RIVER	CGKAN000.26	100577	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Selenium
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), copper, <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), copper, <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect additional selenium samples due to the exceedance. All core parameters need number of sample and seasonal coverage.



LAKE POWELL

14070006-1130
9770 Acres (in Arizona)

Category 5
Impaired

EPA mercury in fish tissue (2010)

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	7/11/2006	727 cfu/100 mL	FBC is attaining. 1 single sample exceedance outside the analysis window (7/2008 - 6/2011).

Monitoring Summary

Sampling period: 7/10/2006 - 9/7/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT ANTELOPE MARINA	CGPOW-ANTEL	102956	NPS/USGS	Special study
AT BEACH EAST OF NPS#2	CGPOW-BEACH	103938	USGS	Special study
ABOVE ANTELOPE CREEK	CGPOW-BYANT	105116	NPS	Special study
RANDOM SITES NEAR WAHWEAP	CGPOW-RAND	105121	NPS	Special study
AT WAHWEAP MARINA	CGPOW-WWMAR	102972	NPS	Special study

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(14-16) <i>E. coli</i> , petroleum products, chlorinated hydrocarbons, and other VOCs

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), copper, nitrite/nitrate, fluoride, arsenic, chromium, lead, manganese, boron
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, nitrite/nitrate, fluoride, arsenic, chromium, lead, manganese, boron
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect additional <i>E. coli</i> samples due to the exceedance. Collect core parameters to represent at least 3 seasons during an assessment period. <i>E. coli</i> problem is studied and monitored by the National Park Service.

Impairment Discussion
EPA overfile for mercury in fish tissue

MONUMENT CREEK

Headwaters - Colorado River
15010002-845
3.5 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	10/17/2009	4.73 mg/L	A&Ww is attaining. Low dissolved oxygen due to low flow.
Selenium	2 ug/L	10/17/2009	6.5 ug/L	A&Ww chronic is attaining. Elevated selenium concentration is considered entirely due to natural sources as there are no anthropogenic activities that can lead to selenium contamination in this small remote watershed.

Monitoring Summary

Sampling period: 10/17/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COLORADO RIVER	CGMON000.19	101434	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	All core parameters need sample number and seasonal coverage. Use a lower detection limit for dissolved mercury (one A&W chronic exceedance in 2005).

NATIONAL CANYON CREEK

Headwaters - Colorado River
15010002-016
3.2 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	10/22/2009	4.6 ug/L	A&Ww chronic is attaining. Elevated selenium concentration is considered entirely due to natural sources as there are no anthropogenic activities that can lead to selenium contamination in this small remote watershed.

Monitoring Summary

Sampling period: 10/22/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COLORADO RIVER	CGNAT000.48	100602	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), pH, <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), pH, <i>E. coli</i>
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect core parameter samples over three season period.

PARIA RIVER

Utah border - Colorado River
14070007-123
29.4 Miles

Category 5
Impaired

Colorado - Grand Canyon

E. coli (2006/8) and SSC (2004)

FC - Attaining • FBC - Impaired • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L	3/30/2010	34 ug/L	FBC is inconclusive. 1 exceedance in 3 samples (binomial).
Chromium	100 ug/L	2/9/2010	160 ug/L	FBC is inconclusive. 1 exceedance in 3 samples (binomial).
Lead	15 ug/L	2/9/2010	170 ug/L	FBC is inconclusive. 2 exceedances in 3 samples (binomial).
		3/30/2010	140 ug/L	
SSC	80 mg/L	2/9/2010	27500 mg/L	A&Ww remains impaired (2004). Both exceedances occurred during local storm events and were excluded from the median value determination. Insufficient number of samples left to assess.
		3/30/2010	7600 mg/L	
Biocriteria	IBI ≥ 50 attaining IBI 40-49 inconclusive IBI ≤ 39 violating	6/8/2010	IBI 40	A&Ww is inconclusive.

Monitoring Summary

Sampling period: 2/9/2010 - 6/8/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT LEES FERRY, AZ	CGPAR000.49	101073	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Arsenic, chromium, lead, biocriteria
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect additional <i>E. coli</i> and suspended sediment samples to support TMDL development. Collect arsenic, chromium, and lead samples due to exceedances. Collect an additional macroinvertebrate sample to verify the bioassessment result.

Impairment Discussion
Reach remains impaired for <i>E. coli</i> (2006) and Suspended Sediment (2004). TMDLs for these parameters will be initiated in 2014.

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	10/19/2009	8.2 ug/L	A&Ww chronic is attaining. Elevated selenium concentration is considered entirely due to natural sources as there are no anthropogenic activities that can lead to selenium contamination in this small remote watershed.

Monitoring Summary

Sampling period: 10/19/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COLORADO RIVER	CGRYA000.05	100632	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	All core parameters need sample number and seasonal coverage.



SHINUMO CREEK

Tributary at 361821 / 1121803 - Colorado River
15010002-029B
8.8 Miles

Category 3

Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 10/18/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COLORADO RIVER	CGSHI000.05	101436	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	No exceedances but too little information to assess. All core parameters need coverage.

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	10/25/2009	2.1 ug/L	A&Ww chronic is attaining. Elevated selenium concentration is considered entirely due to natural sources as there are no anthropogenic activities that can lead to selenium contamination in this small remote watershed.

Monitoring Summary

Sampling period: 10/25/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE COLORADO RIVER	CGSPG000.17	100648	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	All core parameters need sample number and seasonal coverage.

TAPEATS CREEK

Headwaters - Colorado River
15010002-696
12.8 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 10/20/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT COLORADO RIVER	CGTAP000.08	100662	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	No exceedances but too little information to assess. All core parameters need coverage.

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	3/9/2010	460 cfu/100 mL	FBC is inconclusive. Only 1 single sample exceedance in the last 3 years of monitoring. Note: This exceedance occurred during a storm event.
Selenium	2 ug/L	11/9/2009	2.1 ug/L	A&Ww is inconclusive with only one event at one site on one day.
SSC	80 mg/L	3/9/2010	911 mg/L	A&Ww is attaining. Both exceedances occurred during local storm events.
		4/27/2010	1100 mg/L	
Bottom deposits	50%	6/15/2010	89%	A&Ww is inconclusive with only one exceedance during the assessment period.

Monitoring Summary

Sampling period: 11/9/2009 - 6/15/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT I-15 REST STOP	CGVGR052.23	100679	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, bottom deposits

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Selenium, bottom deposits, <i>E. coli</i>
Missing Core Parameters	Dissolved oxygen
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> , selenium, and bottom deposits samples due to exceedances. Need seasonal coverage on most core parameters.

Add selenium to the 303(d) list.

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	3/9/2010	346 cfu/100 mL	FBC is inconclusive. Only 1 single sample exceedance in the last 3 years of monitoring. Note: This exceedance occurred during a storm flow.
Selenium	2 ug/L	11/10/2009	2.4 ug/L	A&Ww is impaired with two exceedances out of four samples, average 1.3 times standard, over 6-7 month period (see discussion).
		6/16/2010	2.9 ug/L	
SSC	80 mg/L	3/9/2010	825 mg/L	A&Ww is attaining. Both exceedances occurred during local storm events.
		4/27/2010	982 mg/L	

Monitoring Summary

Sampling period: 11/10/2009 - 6/16/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT LITTLEFIELD, AZ	CGVGR039.41	100680	ADEQ	Ambient
AT MOUTH OF NARROWS	CGVGR044.58	101835	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	Dissolved oxygen
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
High	Good core parameter coverage with small number of samples. Collect more <i>E. coli</i> to determine FBC status and selenium to support development of TMDL.

Impairment Discussion
Impaired for selenium but not much data to assess overall situation. Only 6 total and 17 dissolved selenium values 1977-2005 with switch from dissolved to total after 1977. Large time gaps between samples (1977-1994-2005) and no seasonal distribution. Last three total Se rather high (two shown plus 7.2 in 2004).

SSC and selenium (2004) and *E. coli* (2010)

FC - Inconclusive • FBC - Impaired • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Boron ^d	1000 ug/L	6/17/2008	1010 ug/L	AGI is inconclusive (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	8/24/2006	1500 cfu/100 mL	FBC remains impaired. No new data since last assessment.
		9/29/2006	13000 cfu/100 mL	
		3/9/2007	280 cfu/100 mL	
		12/17/2008	1400 cfu/100 mL	
Selenium ^d	2 ug/L	6/17/2008	2.1 ug/L	A&Ww remains impaired with 2 exceedances.
		12/17/2008	2.1 ug/L	
SSC	80 mg/L	12/20/2007	746 mg/L	A&Ww remains impaired. Exceedances on 6/17/08, 8/21/08, and 12/17/08 occurred during storm events. No new data since last assessment.
		3/10/2008	457 mg/L	
		6/17/2008	92 mg/L	
		8/21/2008	136 mg/L	
		12/17/2008	601 mg/L	

Monitoring Summary

Sampling period: 8/24/2006 - 12/17/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT LITTLEFIELD, AZ USGS 09415000	CGVGR038.80	101836	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(6 dissolved) Arsenic, boron, iron, selenium	(6) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-7) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Boron
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
High	Collect samples to support development of selenium, suspended sediment, and <i>E. coli</i> TMDLs. Collect additional boron samples due to the exceedance. Collect core parameters to represent at least 3 seasons during the assessment period.

Impairment Discussion
Reach remains impaired for SSC and selenium (2004) and <i>E. coli</i> (2010). No new data since last assessment.

Colorado – Lower Gila Watershed

Watershed Description

This watershed is defined by the Colorado River drainage area, from Hoover Dam at Lake Mead to the Mexico border near Yuma. It does not include the Bill Williams River drainage or the Gila River above Painted Rocks Dam.

Land ownership is divided approximately as: 89% federal, 6% state, 4% tribal, and 1% private. Except for communities along the Colorado River (e.g., Yuma, Bullhead City, Lake Havasu City, Kingman), most of this 14,459 square mile watershed is sparsely populated with only 187,700 people (2000 census).

Due in part to the sparse population, six wildlife refuges and three wilderness areas have been established in this watershed, along with several military bases with live fire exercise areas. All of these have restricted land uses. Tribal and private land is primarily along the Colorado River and lower Gila River and is intensively cultivated. Open grazing occurs across the watershed.

Elevations range from 5,450 feet (above sea level) in the mountains near Lake Mohave to 80 feet along the Colorado River as it flows into Mexico. The area contains low desert fauna and flora, and support warmwater aquatic communities where perennial waters exist.

Water Resources

Precipitation is meager, varying from 3 to 10 inches a year. Perennial water is limited to the Colorado River mainstem and its reservoirs, with irrigation return flow providing perennial flow in the Gila River near Yuma.

An estimate of surface water resources in the Colorado – Lower Gila Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

Estimated Surface Water Resources in the Colorado – Grand – Lower Gila Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	375	145	13,545
	Perennial	Non-perennial	
Lake acres	36,860	0	

Additional Water Resources on Tribal Lands – Not Assessed

	Perennial	Intermittent	Ephemeral
Stream miles	75	0	535
	Perennial	Non-perennial	
Lake acres	245	0	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.

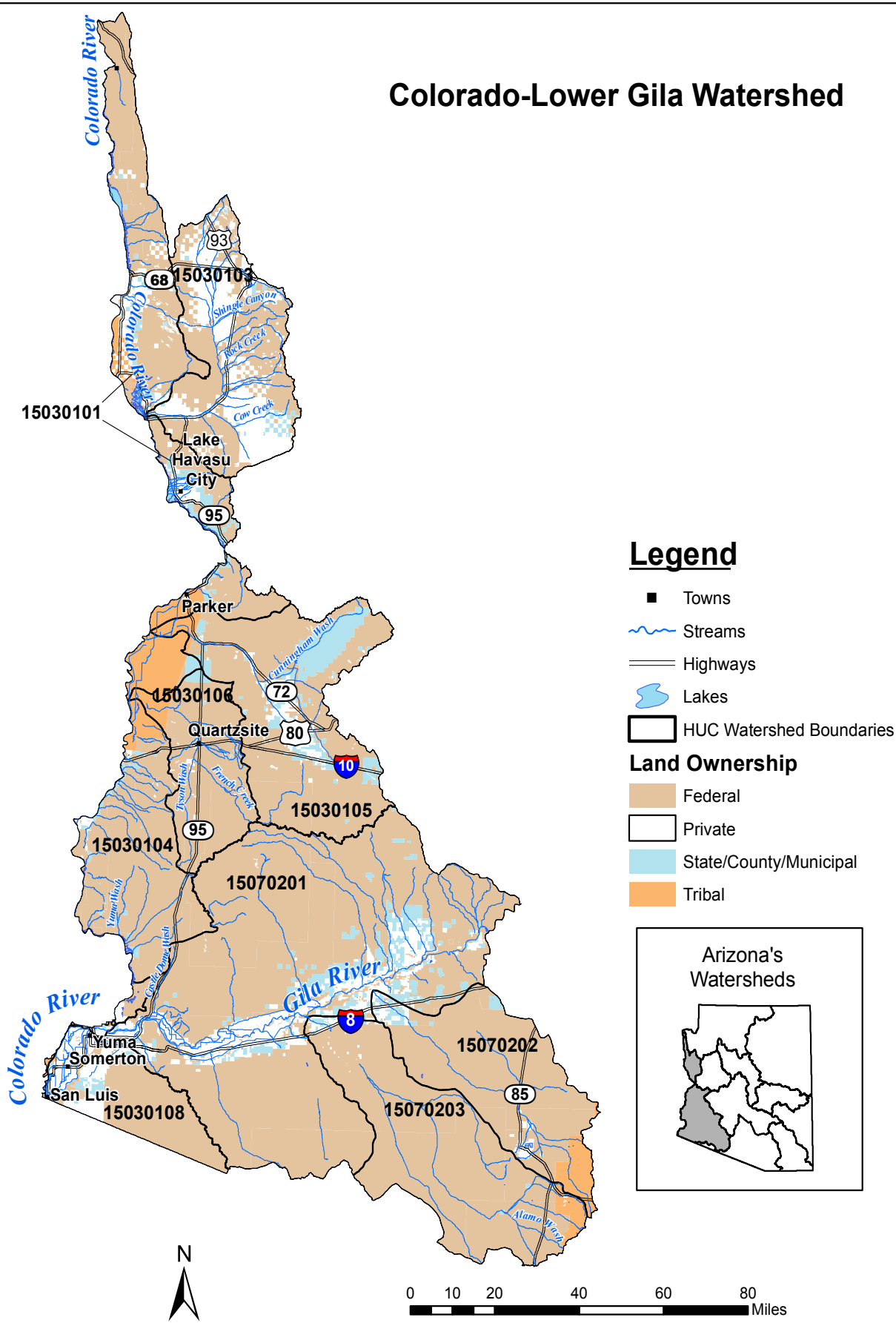
Assessments

The Colorado – Lower Gila Watershed is separated into the following drainage areas (subwatersheds):

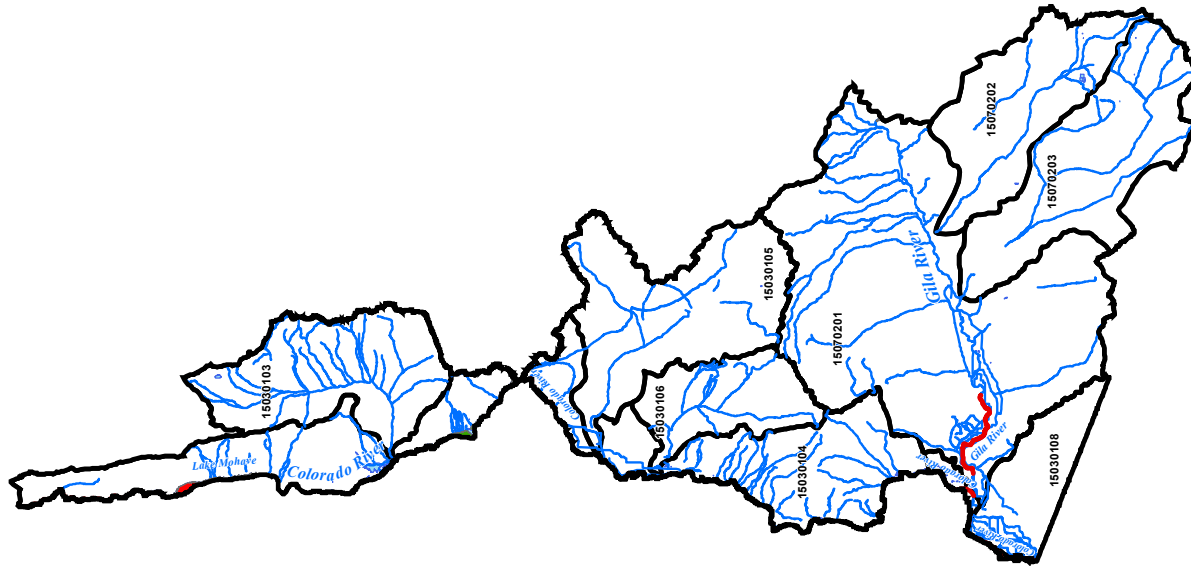
15030101	Mohave -Havasui
15030103	Sacramento Wash
15030104	Imperial Reservoir
15030105	Bouse Wash
15030106	Tyson Wash
15030107	Lower Colorado
15030108	Yuma Desert
15070201	Lower Gila
15070202	Tenmile Wash
15070203	San Cristobal Wash

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

Colorado-Lower Gila Watershed



Colorado / Lower Gila Watershed 2012/2014 Assessment for Streams and Lakes



Legend

Assessed Lakes - 2012 ADEQ and EPA Listings

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired

Assessed Streams - 2012 ADEQ and EPA Listings

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired

HUC Watershed Boundaries

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired

Lakes

Streams

See Individual HUC Printouts for Waters not Labeled

N

IMPAIRMENT STATUS

Selenium (2004)

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium ^d	2 ug/L	11/16/2006	2.1 ug/L	A&Wc chronic remains impaired. 4 exceedances in the assessment period. Note: These exceedances are based on dissolved selenium concentrations.
		5/17/2007	2.2 ug/L	
		8/29/2007	2.2 ug/L	
		11/28/2007	2.2 ug/L	

Monitoring Summary

Sampling period:

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW HOOVER DAM USGS 09421500	CLCLR346.35	101484	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(6-14 dissolved) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, uranium, zinc	(3-6) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-14) Dissolved oxygen, pH, SSC, total dissolved solids, fluoride, pesticides

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i> , lead, copper, manganese, arsenic, chromium, boron
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i> , lead, copper, manganese, arsenic, chromium, boron
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect selenium samples to support TMDL development. Collect all core parameters to represent at least 3 seasons during the assessment period.

Impairment Discussion
Reach remains impaired for selenium (2004). No new samples since last assessment.

IMPAIRMENT

Selenium (2010)

DWS - Attaining • FC - Attaining • FBC - Attaining
 AGI - Attaining • AGL - Attaining • A&Ww - Impaired

No Exceedances

Monitoring Summary

Sampling period: 8/31/2006 - 7/15/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW PARKER DAM USGS 09427520	CLCLR195.22	100742	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(6-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(8) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more selenium samples for TMDL development. Good core parameter coverage with small number of samples.

Impairment Discussion
Reach remains impaired for selenium (2010). No new samples since last assessment.

COLORADO RIVER

Imperial Dam - Gila River
15030107-003
15.3 Miles

Category 5
Impaired

Selenium (2010)

DWS - Attaining • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Ww - Impaired

No Exceedances

Monitoring Summary

Sampling period: 8/29/2006 - 7/22/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE IMPERIAL DAM USGS 09429490	CLCLR048.36	100752	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(5-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1-9) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-9) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect selenium samples in support of TMDL development. Good core parameter coverage.

Impairment Discussion
Reach remains impaired for selenium (2010). No new data since last assessment.

Selenium and low dissolved oxygen (2006)

DWS - Attaining • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Boron	1000 ug/L (AGI) 1400 ug/L (DWS) 186667 ug/L (FBC)	2/14/2007	310000 ug/L	AGI, DWS, and FBC are attaining with 1 exceedance in 12 samples (binomial).
Dissolved oxygen	6.0 mg/L	8/30/2006	5.5 mg/L	A&Ww remains impaired with 3 exceedances in 23 samples. No new data since last assessment.
		8/28/2007	5.5 mg/L	
		7/23/2008	5.6 mg/L	
Manganese	10000 ug/L (AGI) 980 ug/L (DWS)	2/14/2007	130000 ug/L	AGI and DWS are attaining with 1 exceedance in 13 samples (binomial).
Mercury ^d	0.01 ug/L	1/29/2008	0.011 ug/L	A&Ww is attaining. This exceedance occurred during a storm event and does not represent chronic conditions.
SSC	80 mg/L	12/20/2007	143 mg/L	A&Ww is attaining. No annual median exceedances.
Selenium	2 ug/L	8/30/2006	2.3 ug/L	A&Ww remains impaired. No new samples since last assessment.
		4/9/2008	2.2 ug/L	

Monitoring Summary

Sampling period: 8/30/2006 - 12/4/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MORELOS DAM USGS 09522000	CLCLR023.30	100744	USGS	USGS
BELOW YUMA WWTP	CLCLR026.80	105308	ADEQ	Ambient
ABOVE YUMA WWTP	CLCLR029.59	105309	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(10-16) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(6-27) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(4-27) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, pesticides, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
High	Collect samples to support dissolved oxygen and selenium TMDLs. Collect more samples for parameters showing exceedances (boron and manganese). Good core parameter coverage.

Impairment Discussion
Reach remains impaired for selenium and dissolved oxygen (2006). There are 7 dissolved selenium values over a two year period (2007-2008) though the average is only slightly higher than the (total) standard. Situation seems slightly improved from 2002-2004 where the average value was about 2.5 ug/L.

Boron and selenium (2004)FC - Attaining • FBC - Attaining • AGI - Impaired
AGL - Attaining • A&Ww - Impaired**No Exceedances****M**onitoring Summary

Sampling period: 2/13/2007 - 5/30/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR DOME, AZ USGS 09520280	CLGLR010.53	100455	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, organic compounds/pesticides

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Boron, copper (dissolved)
Missing Seasonal Distribution	Boron, copper (dissolved)
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
High	Collect boron and selenium samples in support of TMDL development. Use a lower detection limit for selenium.

Impairment Discussion
Reach remains impaired for boron and selenium (2004). No new data since the last assessment. All selenium data had method reporting limits above the A&W chronic standard.



LAKE HAVASU

15030101-0590
19783 Acres

Category 2

Attaining some uses

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Attaining • AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Beryllium	4 ug/L (DWS) 84 ug/L (FC)	10/28/2008	130 ug/L	DWS and FC are inconclusive with 1 exceedance in 5 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM Because of the size of this reservoir, ADEQ assesses bacteria exceedances at each site.	North Rotary Beach	7/17/2008 1230 cfu/100 mL	FBC is inconclusive with only 1 exceedance.
		South Rotary Beach	7/24/2008 411 cfu/100 mL	FBC is inconclusive for South Rotary Beach and Middle Rotary Beach. Exceedances at each site occurred only 4 days apart (in different aggregated weeks), and subsequent monitoring by Mohave County Health Department showed no exceedances.
			7/28/2008 1300 cfu/100 mL	
		Middle Rotary Beach	7/24/2008 2420 cfu/100 mL	
			7/28/2008 1986 cfu/100 mL	
	126 cfu/100 mL, Geometric mean	Middle Rotary Beach	7/17/2008 - 7/29/2008 147 cfu/100 mL	FBC is inconclusive with 1 geometric mean exceedance for Middle Rotary Beach. Not enough samples to calculate any other monthly geometric means for this site.

Monitoring Summary

Sampling period: 1/31/2007 - 6/3/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	CLHAV-B	100102	ADEQ	Clean Lakes Program
AT PARKER DAM USGS 09427500	CLHAV-A	100098	ADEQ	Clean Lakes Program
AT THOMPSON BAY	CLHAV-TB2	106242	ADEQ	Clean Lakes Program
SITE C	CLHAV-C	100099	ADEQ	Clean Lakes Program

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
COLORADO RIVER	CLHAV-CRA	100101	ADEQ	Clean Lakes Program
SOUTH ROTARY BEACH	CLHAV-SROTS	100121	ADEQ	Clean Lakes Program
MIDDLE ROTARY BEACH	CLHAV-MROTS	100122	ADEQ	Clean Lakes Program
NORTH ROTARY BEACH SHORE	CLHAV-NROTS	100123	MOHD	Clean Lakes Program
AT WEST STATE BEACH SHORE	CLHAV-WSBSH	100171	ADEQ	Clean Lakes Program
AT EAST STATE BEACH SHORELINE	CLHAV-ESBSH	100117	ADEQ	Clean Lakes Program
AT CRAZY HORSE COVE	CLHAV-CHC	100139	ADEQ	Clean Lakes Program
OFF WINDSOR BEACH	CLHAV-OFFWB	100155	ADEQ	Clean Lakes Program
AT NORTH CHANNEL	CLHAV-NCH	100168	MOHD	Beach Monitoring (<i>E. coli</i>)
CRAZY HORSE BEACH	CLHAV-CRAZ	102352	ADEQ	Clean Lakes Program
WINDSOR COVE	CLHAV-WIND	102363	ADEQ	Clean Lakes Program
MID THOMPSON BAY	CLHAV-TB	100170	ADEQ	Clean Lakes Program
AT LONDON BRIDGE	CLHAV-MC	100150	ADEQ	Clean Lakes Program
AT NAUTICAL COVE	CLHAV-NAUTC	100151	ADEQ	Clean Lakes Program
AT WINDSOR BEACH SOUTH OF BOAT RAMP	CLHAV-WBSR	100130	ADEQ	Clean Lakes Program

Metal Samples	Nutrients & Related Samples	Other Samples
(17-26) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(25-26) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(28-35) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Beryllium, <i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), nickel (dissolved), selenium, silver (dissolved), thallium, zinc (dissolved), barium, chromium, boron

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> samples to stay on top of situation. Collect additional beryllium samples due to the exceedance. Use a lower lab detection limit for selenium and collect additional selenium samples (Colorado River is impaired for selenium in upstream reaches). Good core parameter coverage.



LAKE MOHAVE

15030101-0960
27044 Acres

Category 5
Impaired

Colorado - Lower Gila

IMPAIRMENT STATUS

Selenium (2010)

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	3/28/2007	2.9 ug/L	A&Wc remains impaired. No new samples since last assessment.
		8/14/2007	2.2 ug/L	
		9/11/2007	3.3 ug/L	
		2/5/2008	2.2 ug/L	
		5/13/2008	2.4 ug/L	
		7/8/2008	2.5 ug/L	
		12/9/2008	2.8 ug/L	

Monitoring Summary

Sampling period: 12/11/2006 - 3/3/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
WILLOW BEACH FISH HATCHERY	CLMOHWBFH	107202	USFWS	Permit monitoring
AT DAVIS DAM USGS 09422500	CLMOH-A	100030	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(1-28) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , lead, copper, manganese, nitrite/nitrate, fluoride, arsenic, chromium, boron
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , lead, copper, manganese, nitrite/nitrate, fluoride, arsenic, chromium, boron
Lab Detection Limits Not Low Enough	Cadmium (dissolved), arsenic , barium, chromium

Priority	Monitoring Recommendations
High	Collect selenium samples to support TMDL development. Needs core parameter sample number and seasonal distribution coverage.

Impairment Discussion
Remains impaired for selenium (2010). No new data since last assessment.

PAINTED ROCK BORROW PIT LAKE

15070201-1010
186 Acres

Category 5
Impaired

Colorado - Lower Gila

Low dissolved oxygen (1992)

FC - Impaired • FBC - Inconclusive AGI - Inconclusive
AGL - Inconclusive • A&Wc - Impaired

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Southwest Shore	CLPRL-D	102515	COE	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , lead, copper, manganese, boron
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , lead, copper, manganese, boron
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect pesticide and dissolved oxygen samples to support TMDL development when the lake refills.

Impairment Discussion
Fish consumption advisories for pesticides in effect since 1991. EPA relisted DDT metabolites, toxaphene, and chlordane in 2002. Based on recent water quality and fish tissue data ADEQ is proposing to delist this waterbody for pesticides.

Little Colorado River Watershed

Watershed Description

This watershed is defined by the Little Colorado River, from its headwaters to the Colorado River, and tributaries to the San Juan River which flow into north and east into New Mexico and Utah. This area contains horizontally stratified sandstone and limestone which have eroded to form canyon and plateaus. In a few areas, igneous rocks have deposited on sedimentary formations due to volcanic activity. Natural erosion can be easily increased by human activities in such locations.

Land ownership is divided approximately as: 60% tribal, 12% federal, 12% private, 6% state. This 26,794 square mile watershed is sparsely populated outside of Flagstaff, with 236,500 people (including Flagstaff) (2000 census). Land use is primarily open grazing, forestry, recreation, and mining. The area contains four national monuments, four wilderness areas, and two national forests with varying levels of use restrictions.

Elevations range from 12,600 feet (above sea level) at Humphrey's Peak near Flagstaff to 2,700 feet near the Colorado River. However, most of the watershed is above 5000 feet elevation, with desert highlands flora and fauna, and coldwater aquatic communities where perennial waters exist.

Water Resources

The climate provides approximately 10 inches of rain and 15 to 20 inches of snow yearly. Snow melt has been a primary source of water for this region. The flow on the Little Colorado River is "interrupted" (stretches of perennial, intermittent, and ephemeral flow). Perennial flow is generally limited to headwaters streams.

An estimate of surface water resources in the Little Colorado Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

Estimated Surface Water Resources in the Little Colorado Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	640	1,655	9,635
	Perennial	Non-perennial	
Lake acres	16,050	6,830	

Additional Water Resources Located on Tribal Lands – Not assessed

	Perennial	Intermittent	Ephemeral
Stream miles	305	170	15,310
	Perennial	Non-perennial	
Lake acres	5,295	118	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.

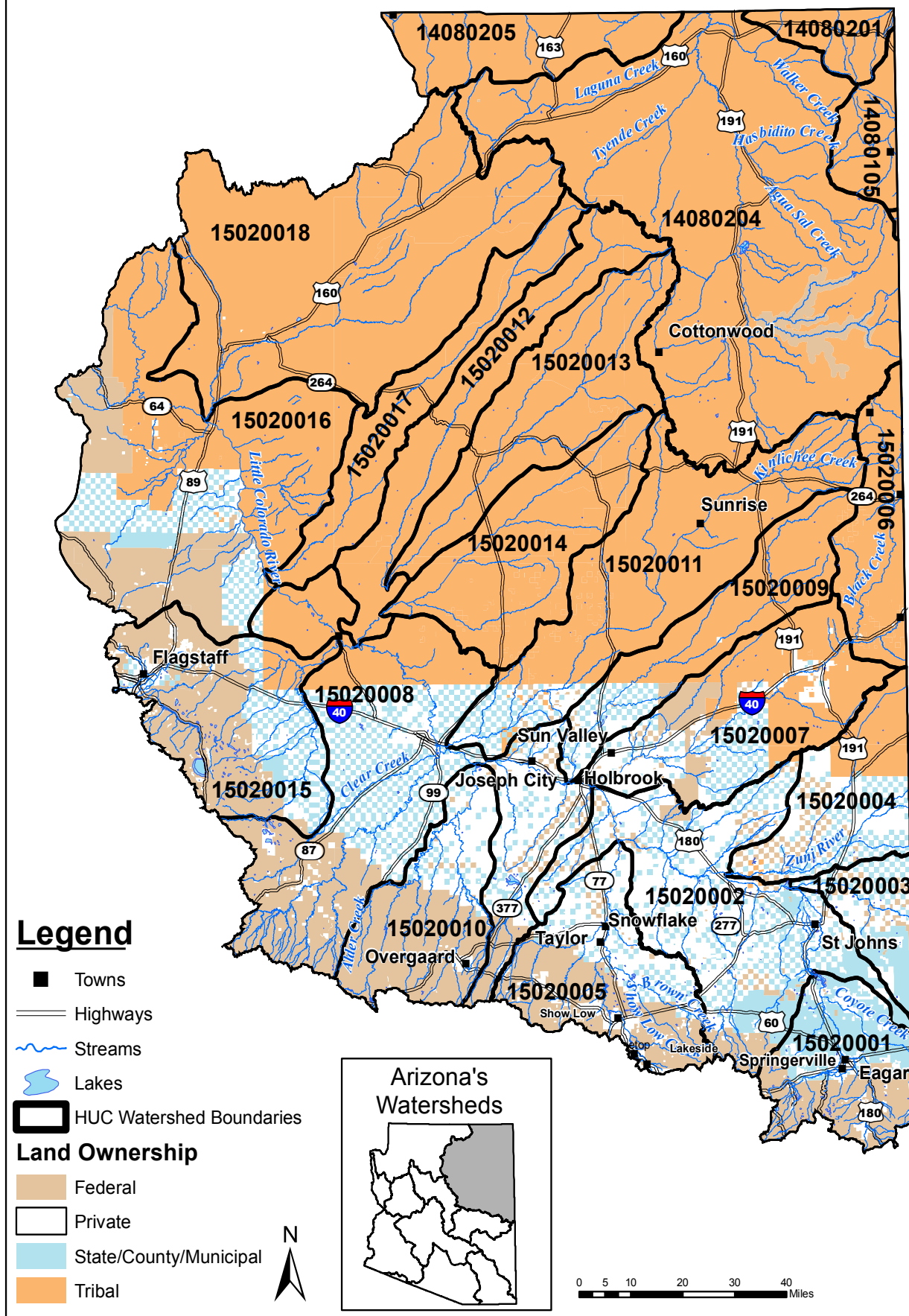
Assessments

The Little Colorado River Watershed can be separated into the following drainage areas (subwatersheds):

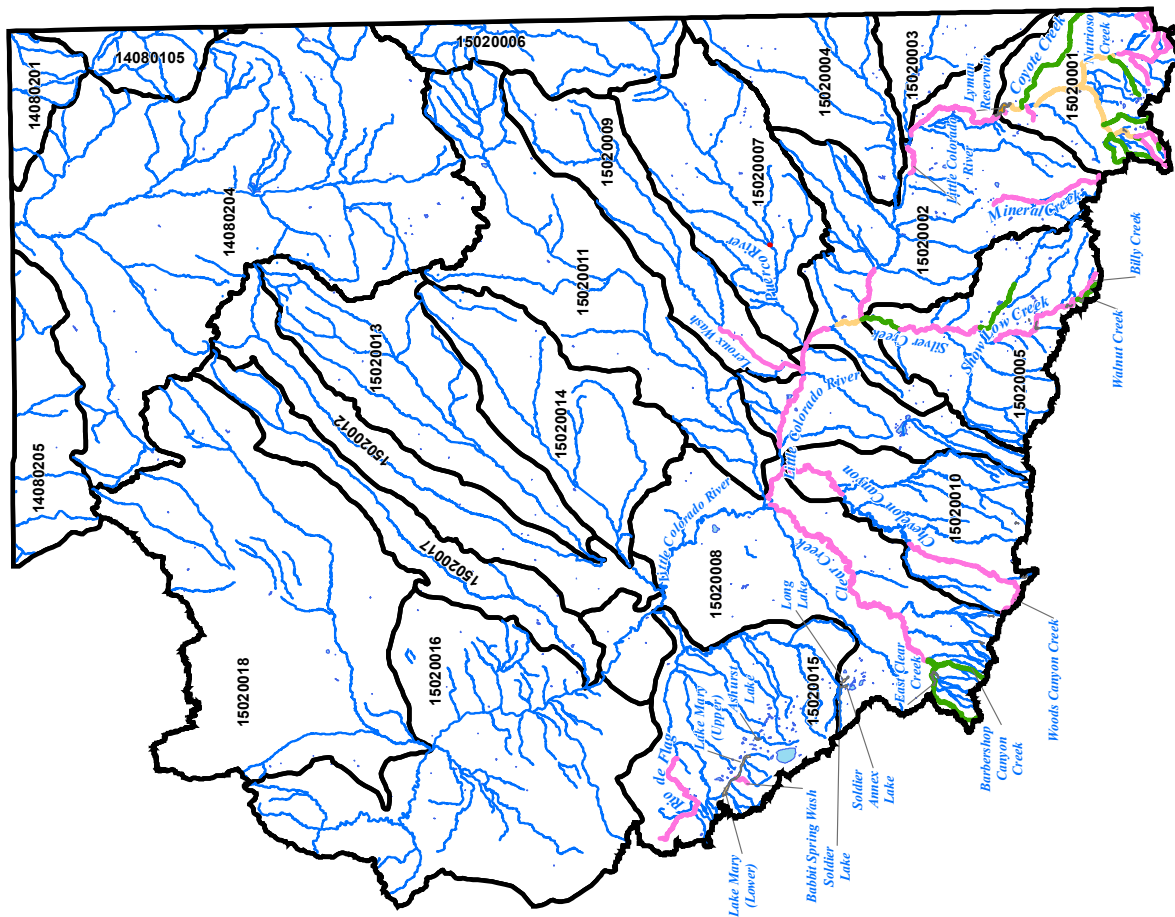
14080105	La Plata River Drainage Area (Tribal Land – Not assessed)
14080106	Charco River Drainage Area (Tribal Land – Not assessed)
14080201	Cottonwood Creek Drainage Area (Tribal Land – Not assessed)
14080204	Chinle Wash Drainage Area (Tribal Land – Not assessed)
14080205	Oljeto Wash Drainage Area (Tribal Land – Not assessed)
15020001	Little Colorado River Headwaters Drainage Area
15020002	Upper Little Colorado River Drainage Area
15020003	Carrizo Wash Drainage Area
15020004	Zuni River Drainage Area
15020005	Silver Creek Drainage Area
15020006	Upper Puerco River Drainage Area (Tribal Land – Not assessed)
15020007	Lower Puerco River Drainage Area
15020008	Middle Little Colorado River Drainage Area
15020009	Wide Ruin Wash Drainage Area
15020010	Chevelon Canyon Drainage Area
15020011	Puerco Colorado Wash Drainage Area
15020012	Oraibi Wash Drainage Area (Tribal Land – Not assessed)
15020013	Polacca Wash Drainage Area (Tribal Land – Not assessed)
15020014	Jadito Wash Drainage Area (Tribal Land – Not assessed)
15020015	Canyon Diablo Drainage Area
15020016	Lower Little Colorado River Drainage Area
15020017	Dinnebito Wash Drainage Area (Tribal Land – Not assessed)
15020018	Moenkopi Wash Drainage Area (Tribal Land – Not assessed)

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

Little Colorado/San Juan Watershed



Little Colorado / San Juan Watershed 2012/2014 Assessment for Streams and Lakes



Legend

Assessed Lakes - 2012

ADEQ and EPA Listings

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired
- Impaired

HUC Watershed Boundaries

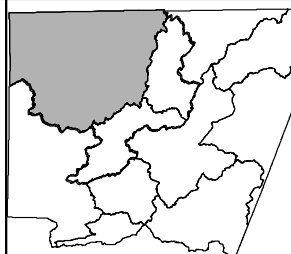
Assessed Streams - 2012

ADEQ and EPA Listings

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired
- Impaired

Lakes

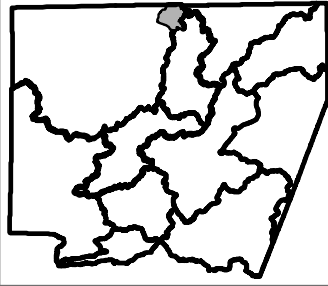
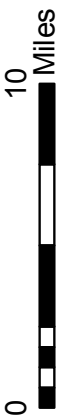
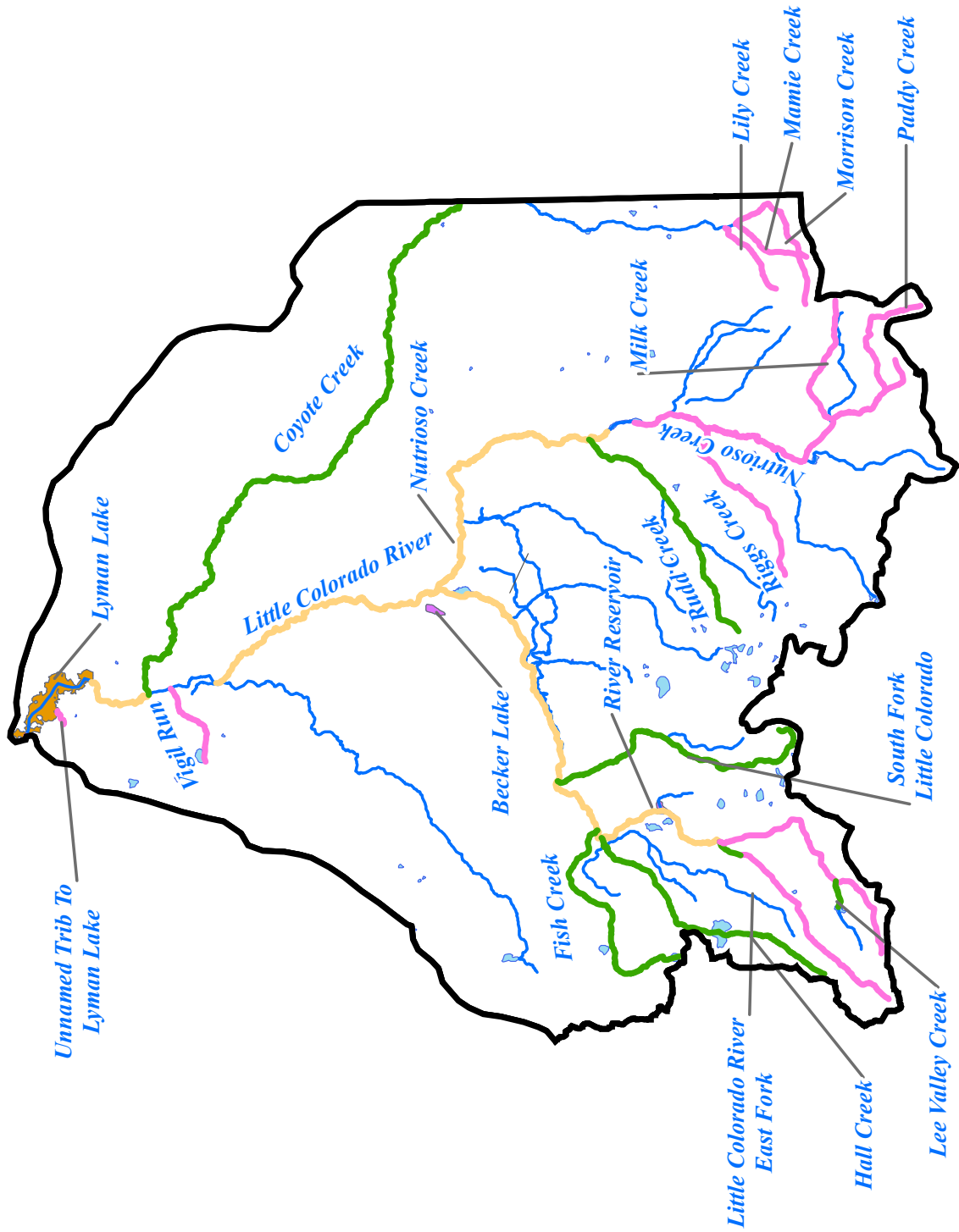
Streams



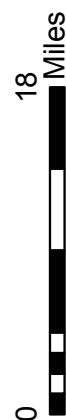
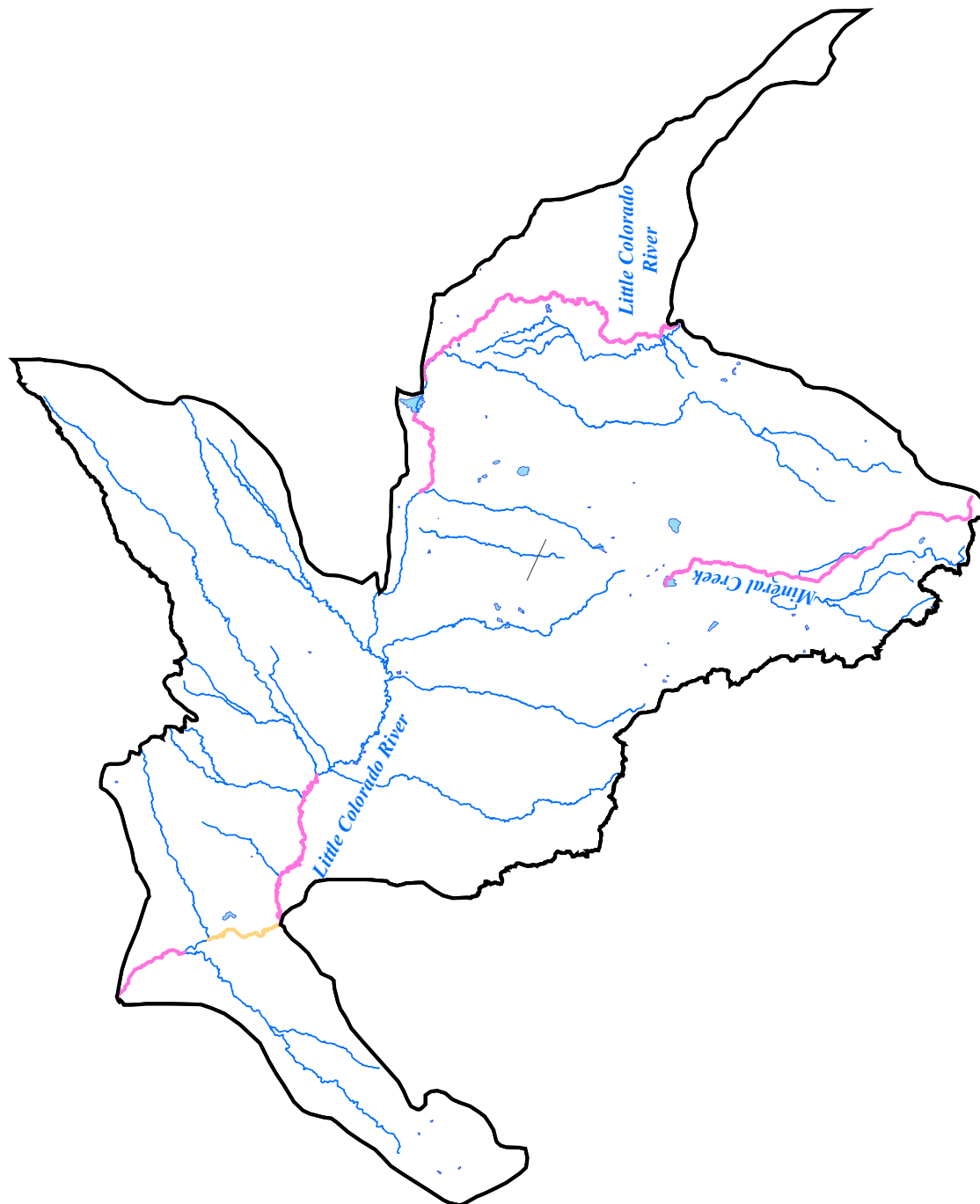
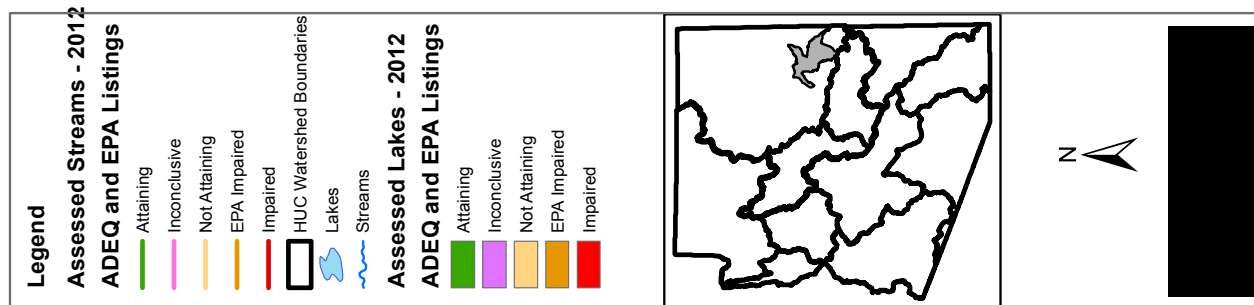
See Individual HUC Printouts
for Waters not Labeled



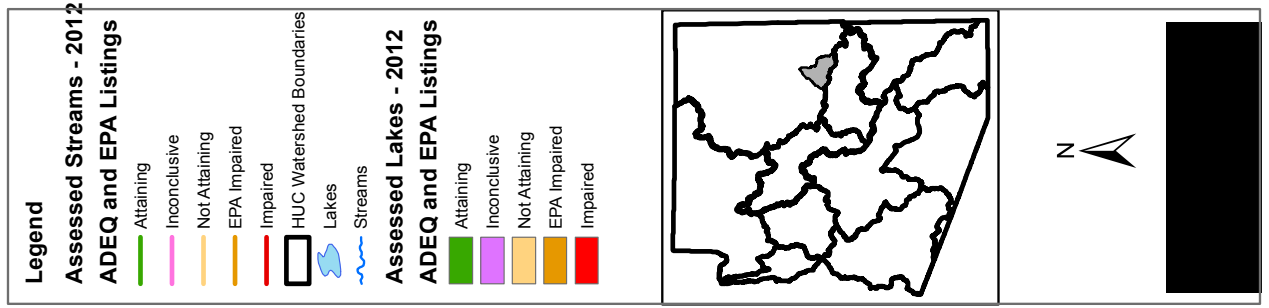
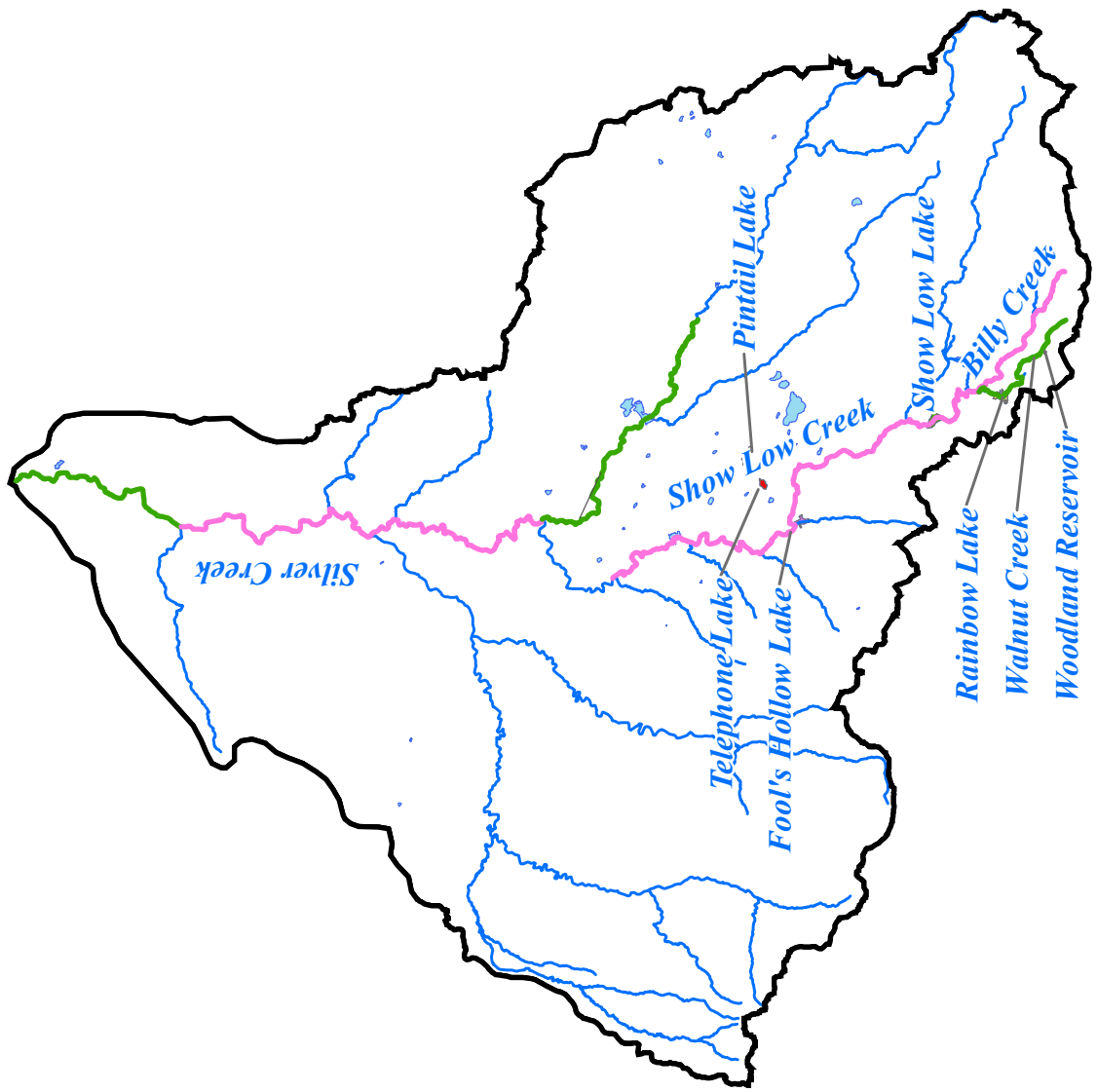
Little Colorado / San Juan Watershed HUC 15020001 2012/2014 Assessment for Streams and Lakes



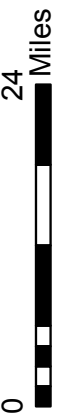
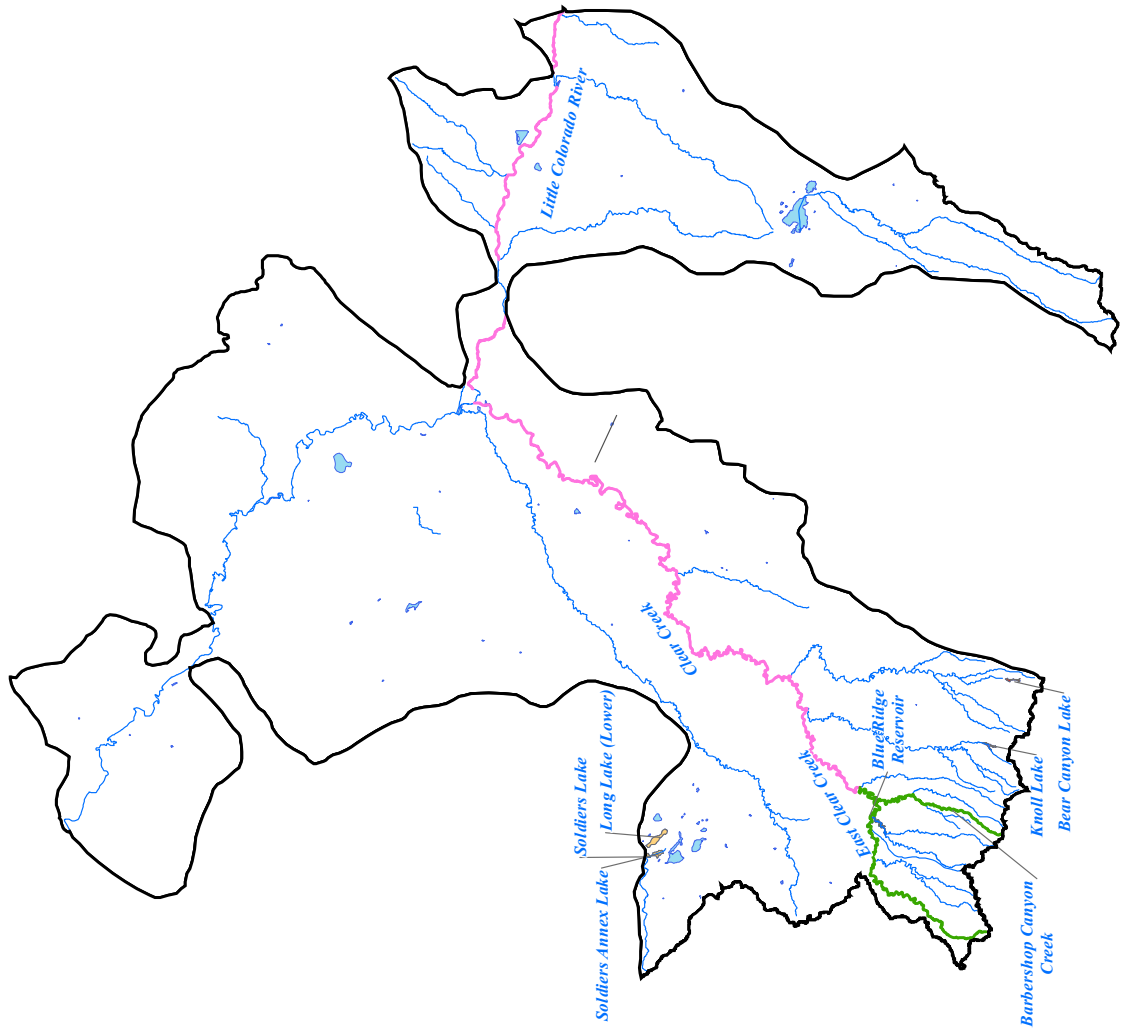
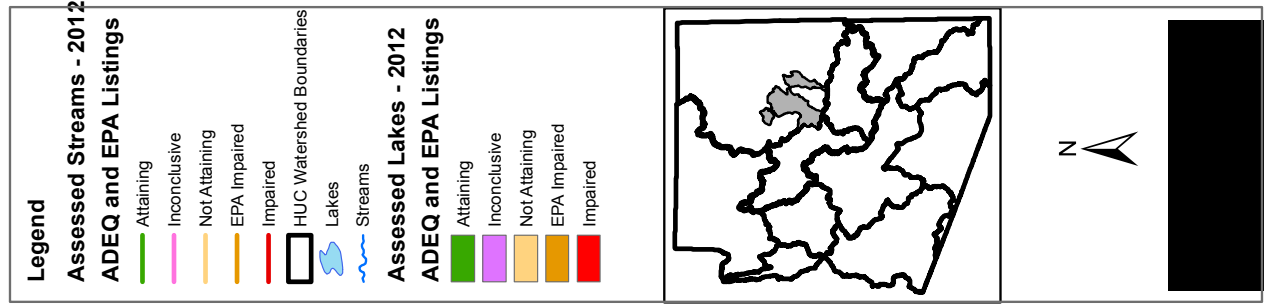
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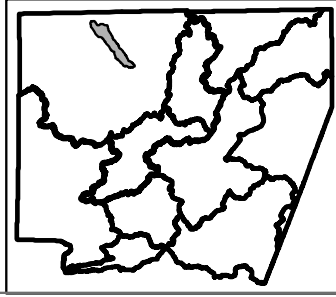
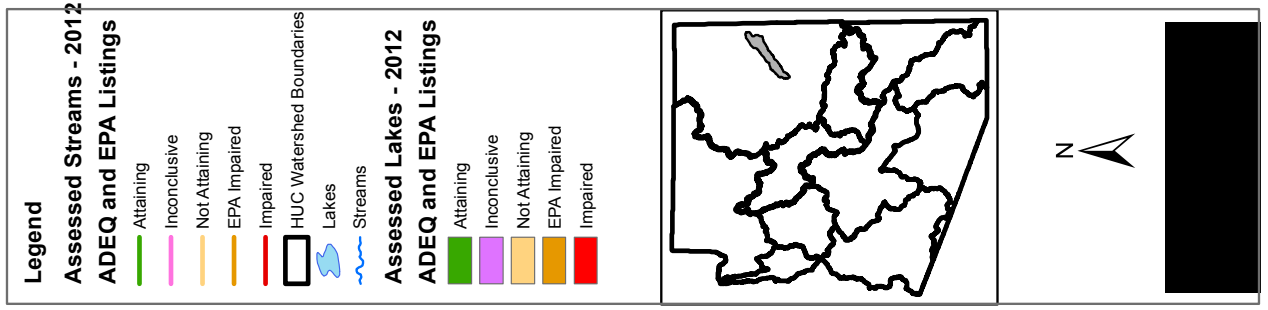
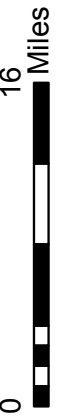
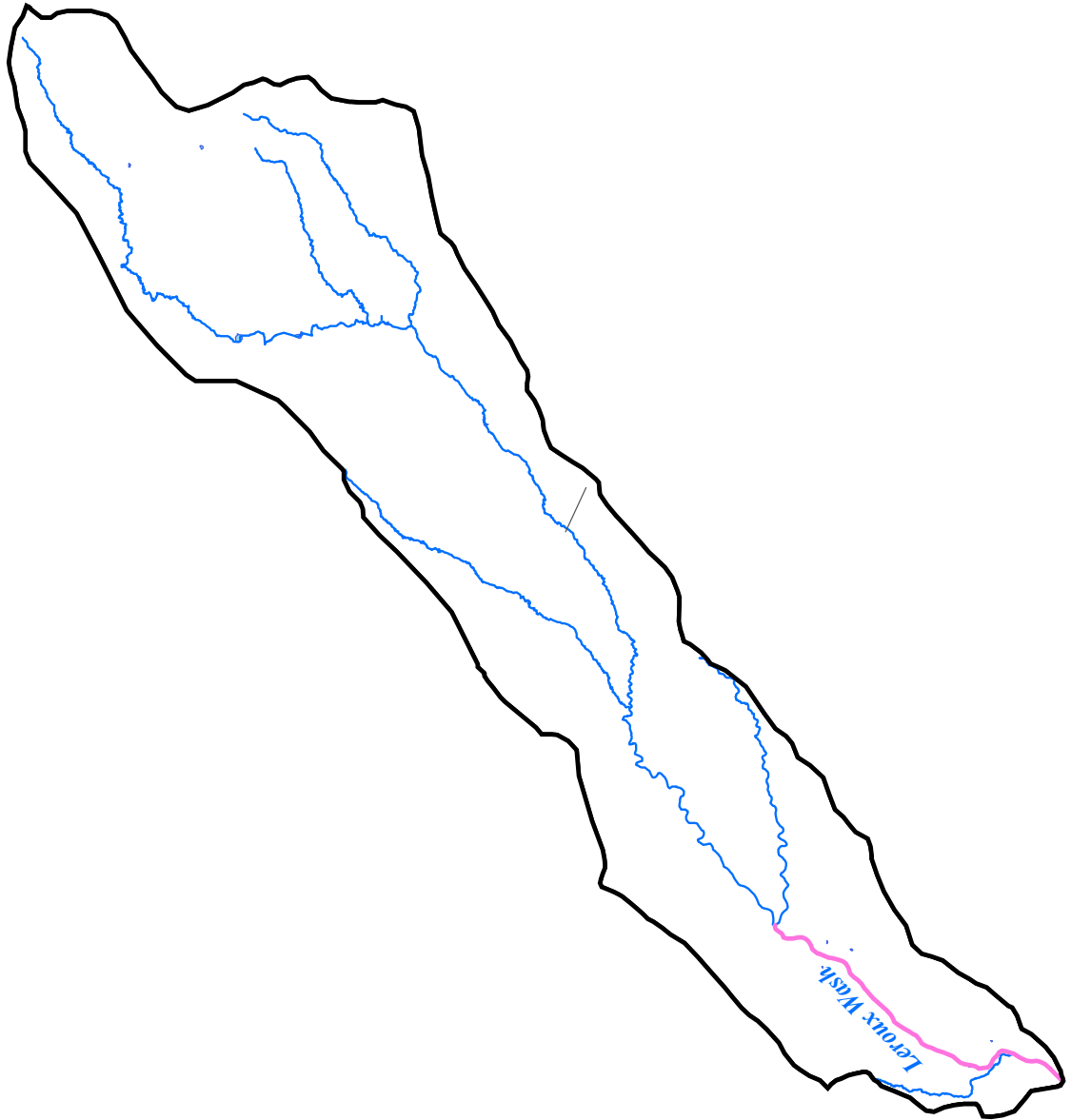
Little Colorado / San Juan Watershed HUC 15020005 2012/2014 Assessment for Streams and Lakes



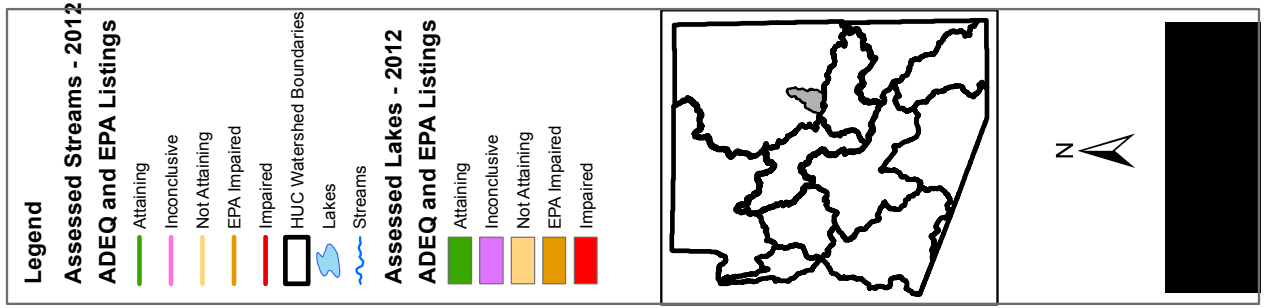
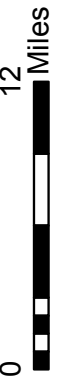
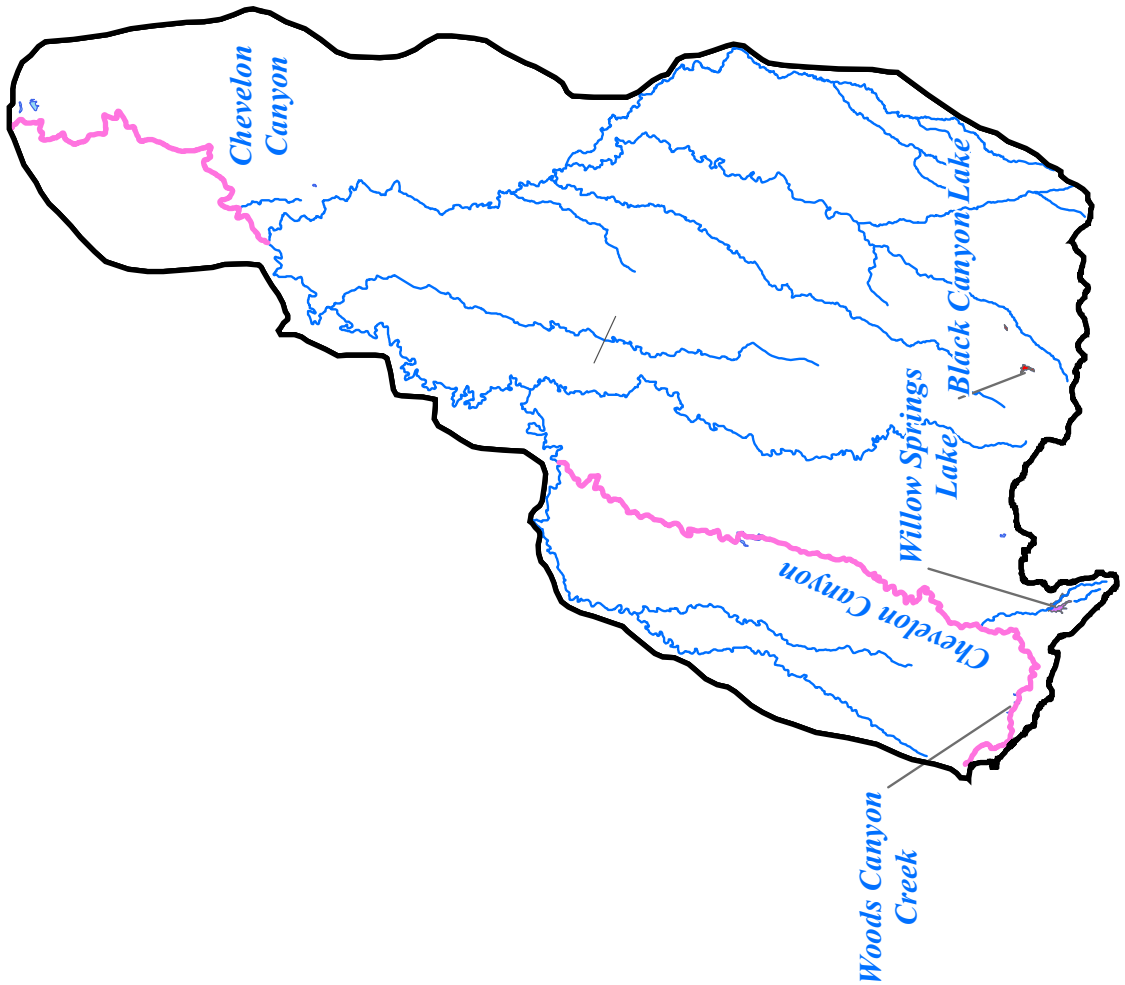
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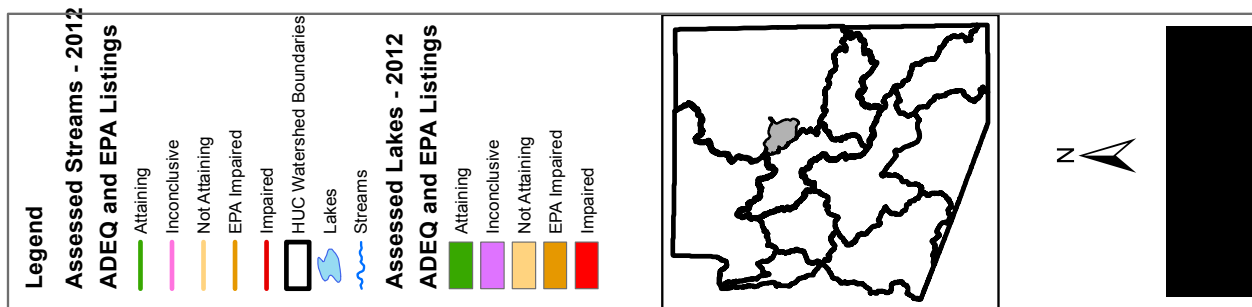
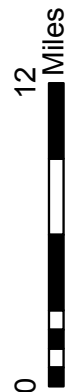
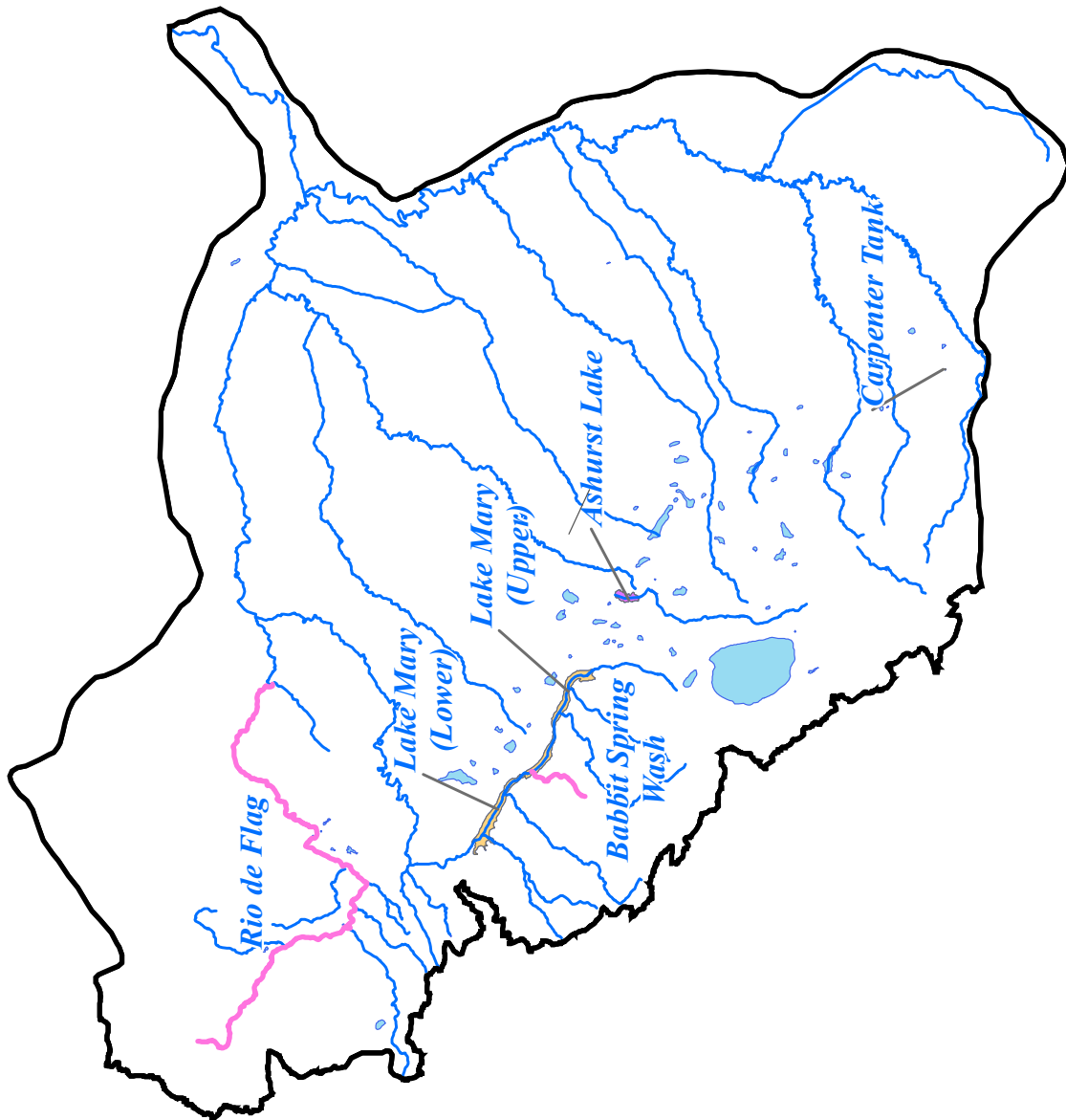
Little Colorado / San Juan Watershed HUC 15020009 2012/2014 Assessment for Streams and Lakes



Little Colorado / San Juan Watershed HUC 15020010 2012/2014 Assessment for Streams and Lakes



Little Colorado / San Juan Watershed HUC 15020015 2012/2014 Assessment for Streams and Lakes



A SHURST LAKE

15020015-0090
201 Acres

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/19/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	LCASH-B	101294	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Nitrate, nitrite/nitrate, phosphorus	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect at least 3 of each core parameter to represent 3 seasons over the assessment period.

BABBIT SPRING WASH

Headwaters - Upper Lake Mary
15020015-210
2.3 Miles

Category 3
Inconclusive

Little Colorado

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved Oxygen	7.0 mg/L	6/1/2010	5.59 mg/L	A&Wc is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 3/29/2010 - 6/1/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR UPPER LAKE MARY	LCBBS000.02	102344	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved)

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect at least 3 of each core parameter to represent 3 seasons over the assessment period.

BARBERSHOP CANYON CREEK

Headwaters - East Clear Creek
15020008-537
10.229 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI \geq 52 attaining IBI 46 - 51 inconclusive IBI \leq 45 violating	6/18/2007	IBI 45	A&Wc is inconclusive.

Monitoring Summary

Sampling period: 11/14/2006 - 6/18/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE EAST CLEAR CREEK	LCBRB000.27	100411	ADEQ	Ambient
BELOW MERRITT DRAW	LCBRB006.74	100410	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(5) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), nickel (dissolved), silver (dissolved), selenium

Priority	Monitoring Recommendations
High	Reassess biocriteria when Implementation Procedure has been adopted. Good core parameter coverage with low number of samples.

BEAR CANYON LAKE

15020008-0130
54 Acres

Category 5
Impaired

Little Colorado

IMPAIRMENT STATUS

Low pH (EPA 2004)

FC - Inconclusive • FBC - Impaired • AGI - Impaired
AGL - Impaired • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	6.5 SU	10/22/2009	6.23 SU	AGL, FBC & A&Wc remain impaired with 1 exceedance in 3 samples. Two other reported exceedances of min pH but both were lab pHs and there were holding time issues.

Monitoring Summary

Sampling period: 10/22/2009 - 7/13/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM	LCBCL-A	100969	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, cadmium, copper, lead, mercury	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more pH samples due to exceedance. All core parameters in need of seasonal distribution, <i>E. coli</i> needs sample number coverage as well.

Impairment Discussion
Remains impaired for low pH (2004, EPA)

BECKER LAKE

15020001-0150
88.6 Acres

Category 3
Inconclusive

Little Colorado

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	10/18/2006	6.21 mg/L	A&Wc is inconclusive with 1 exceedance in 4 samples (binomial).
pH	9.0 SU	10/18/2006	11 SU	A&Wc, AGL, FBC are inconclusive with 2 exceedances in 4 samples (binomial).
		10/1/2007	9.4 SU	

Monitoring Summary

Sampling period: 10/18/2006 - 10/1/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM SITE	LCBEC-A	105267	ADEQ	CLP
NEAR SHALLOW END OF LAKE	LCBEC-B	105268	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(3-5) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-6) Ammonia, nitrate, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-6) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), nickel (dissolved), selenium, silver (dissolved), thallium, mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect more pH and dissolved oxygen samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

BILLY CREEK

Headwaters - Show Low Creek
15020005-019
7.6 Miles

Category 3
Inconclusive

Little Colorado

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	7/25/2007	6.44 mg/L	A&Wc is inconclusive with 3 exceedances in 11 samples (binomial).
		7/15/2008	6.73 mg/L	
		9/21/2008	6.71 mg/L	

Monitoring Summary

Sampling period: 4/5/2007 - 5/6/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT PINETOP, AZ	LCBIL005.75	100946	ADEQ	TMDL
ABOVE PORTER CREEK CONFLUENCE	LCBIL000.01	100947	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1-10) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-11) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more dissolved oxygen samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

BLACK CANYON LAKE

15020010-0180
37.4 Acres

Category 5
Impaired

IMPAIRMENT STATUS

Ammonia (2010)

FC - Inconclusive • FBC - Inconclusive • DWS - Inconclusive
A&Wc - Impaired • AGL - Inconclusive • AGI - Inconclusive

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
At Dam	LCBLC-A	100014	AGFD, ADEQ	Ambient, Clean Lakes Program

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect samples in support of TMDL development.

Impairment Discussion
Remains impaired for ammonia (2010). No data since 2004.

BLUE RIDGE (CC CRAGIN) RESERVOIR

15020008-0200
292 Acres

Category 2
Attaining some uses

Little Colorado

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	6.5 SU	10/20/2009	6.25 SU	AGL, FBC and A&Wc are inconclusive with 1 exceedance in 7 samples. (Two other exceedances reported, 9.4 and 10.34, but first was a lab value and the second had holding time issues. High pH noted in 2004 assessment. Having both high and low pH issues may suggest data quality issues or unusual activity in the lake.)

Monitoring Summary

Sampling period: 6/5/2007 - 6/28/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM	LCBRR-A	100974	SRP, ADEQ	CLP
AT MID LAKE	LCBRR-NLS	105799	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(4-7) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(2-7) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-8) Dissolved oxygen, pH, total dissolved solids, , tetrachloroethane, tetrachloroethylene, toluene, trichloroethane 111, trichloroethane 112, trichloroethylene, trihalomethanes, vinylchloride, xylene

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	Zinc (dissolved), nitrogen, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, nitrogen, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more pH samples due to exceedance. Several core parameters need sample number and/or seasonal distribution (see listing above).

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	6/25/2008	5.9 mg/L	A&Wc is inconclusive with 2 exceedances in 2 samples (binomial).
		9/29/2010	4.52 mg/L	

Monitoring Summary

Sampling period: 6/24/2008 - 9/29/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT PUMPING STATION 0.5 MILES UPSTREAM OF DAM	LCCHC001.75	105153	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(1-3) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect more dissolved oxygen samples to determine A&W attainment. All core parameters need sample number and seasonal distribution coverage.

CHEVELON CANYON

Headwaters - West Chevelon Creek
15020010-006
31.58 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	5/11/2011	5.87 mg/L	A&Wc is inconclusive with 1 exceedance in 3 samples.
SSC	25 mg/L	11/15/2006	32 mg/L	A&Wc is inconclusive with 0 median exceedances in 3 samples.
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	6/19/2007	40	A&Wc is inconclusive.
		5/25/2010	37	

Monitoring Summary

Sampling period: 11/15/2006 - 5/11/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT TELEPHONE RIDGE ABOVE HORSE TRAP CANYON	LCCHC081.26	104821	ADEQ	Ambient
AT CHEVELON CROSSING	LCCHC060.09	100342	ADEQ	FSN
DS CHEVELON CROSS- ING BEFORE TRIB	LCCHC060.61	104757	ADEQ	Ambient
AT TELEPHONE RIDGE	LCCHC073.26	100445	ADEQ	Ambient, TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-6) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(2-6) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, SSC
Missing Core Parameters	None
Missing Seasonal Distribution	Cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Reassess biocriteria when Implementation Procedures are adopted. Collect more dissolved oxygen and SSC samples due to exceedances. Collect dissolved cadmium and copper samples to reflect 3 seasons over the assessment period to complete core parameter coverage.

CLEAR CREEK
 E. Clear Creek - Sand Draw
 15020008-007
 28.3 Miles

Category 3
 Inconclusive

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
 AGL - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 5/7/2007 - 5/7/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DOWNSTREAM OF WIL- LOW CREEK CONFLU- ENCE	LCCLE063.52	105558	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(1) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, copper
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, copper
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters in need of sample number and seasonal distribution coverage.

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 11/16/2006 - 5/1/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW CLEAR CREEK RESERVOIR DAM	LCCLE000.69	104837	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, zinc	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrate, fluoride, arsenic, chromium, lead, copper
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrate, fluoride, arsenic, chromium, lead, copper
Lab Detection Limits Not Low Enough	Cadmium (dissolved), mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters in need of sample number and seasonal distribution coverage.

COYOTE CREEK

New Mexico border - Little Colorado River
15020001-018
29.0 Miles

Category 2

Attaining some uses

FC - Attaining • FBC - Inconclusive • AGI - Inconclusive
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	7/31/2007	5.1 mg/L	A&Wc is inconclusive with 1 exceedance in 2 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	7/31/2007	3628.5 cfu/100 mL	FBC is inconclusive with 1 exceedance in 4 samples.
SSC	25 mg/L	4/10/2007	51 mg/L	A&Wc is attaining. No median exceedances.
		7/31/2007	397 mg/L	

Monitoring Summary

Sampling period: 11/28/2006 - 4/14/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT RICHVILLE VALLEY	LCCOY000.71	107303	ADEQ	Ambient
AT RICHVILLE VALLEY	LCCOY000.71	104698	ADEQ	Ambient
ABOVE TEP PONDS	LCCOY002.64	107302	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(6) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, thallium, zinc, selenium	(1-4) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-6) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, <i>E. coli</i>
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Copper (dissolved), manganese
Lab Detection Limits Not Low Enough	Cadmium (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect dissolved oxygen and <i>E. coli</i> samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

EAST CLEAR CREEK

Headwaters - Yeager Canyon
15020008-009
38.0 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI \geq 52 attaining	5/2/2007	28	A&Wc is inconclusive.
	IBI 46 - 51 inconclusive IBI \leq 45 violating	5/3/2007	37	

Monitoring Summary

Sampling period: 11/13/2006 - 6/20/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
3/4 MI US FROM KINDER CROSSING	LCECL018.17	104797	ADEQ	Ambient
AT POVERTY FLAT ALONG FH147	LCECL040.69	104719	ADEQ	Ambient
JUST EAST OF FH095 AND FH496 INTERSECTION	LCECL021.13	104718	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(8-9) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(9) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-9) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), zinc (dissolved), selenium

Priority	Monitoring Recommendations
High	Reassess biocriteria when Implementation Procedures are adopted. Collect samples of dissolved copper and cadmium to represent 3 seasons over assessment period to complete core parameter coverage and move unit to attaining all uses.

EAST CLEAR CREEK

Yeager Canyon - Willow Creek
15020008-008
17.4 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI \geq 52 attaining IBI 46 - 51 inconclusive IBI \leq 45 violating	5/24/2010	26	A&Wc is inconclusive.

Monitoring Summary

Sampling period: 5/24/2010 - 5/24/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MACKS CROSS-ING	LCECL009.39	100538	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
High	Reassess biocriteria when Implementation Procedures are adopted. Not enough data to assess. All core parameters in need of sample number and seasonal distribution coverage.

FISH CREEK

Headwaters - Little Colorado River
15020001-211
9.0 Miles

Category 2
Attaining some uses

Little Colorado

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 9/29/2009 - 6/29/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOREST ROAD # 118	LCFIS003.86	101244	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Use lower lab reporting limits for dissolved metals, especially A&W core parameters (cadmium, copper, and zinc).

FOOL'S HOLLOW LAKE

15020005-0530
152 Acres

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	7/24/2007	6.1 mg/L	A&Wc is inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 7/24/2007 - 7/24/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT SITE 2	LCF00-2	100022	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Nitrate, nitrite/nitrate, phosphorus	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect more dissolved oxygen samples due to the exceedance. Collect core parameters to represent at least 3 seasons during an assessment period.

HALL CREEK

Headwaters - Little Colorado River
15020001-012
14.3 Miles

Category 2
Attaining some uses

Little Colorado

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Mercury ^d	0.01 ug/L	11/16/2006	0.02 ug/L	A&Wc is inconclusive with 1 exceedance in 1 sample.
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	6/4/2007	IBI 51	A&Wc is inconclusive.
		6/5/2007	IBI 40	

Monitoring Summary

Sampling period: 11/16/2006 - 6/7/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
UPSTREAM OF FR 112	LCHAL005.62	104678	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Mercury (dissolved), biocriteria
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), zinc (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect dissolved mercury samples to determine A&Wc attainment. Reassess biocriteria when Implementation Procedure is adopted.

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
 A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Lead	15 ug/L	10/21/2009	26 ug/L	FBC is inconclusive with 1 exceedance in 2 samples (binomial).

Monitoring Summary

Sampling period: 6/5/2007 - 7/13/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MID LAKE	LCKNO-NLS	105819	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1-3) Ammonia, nitrate, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	Zinc (dissolved), nitrogen, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more lead samples to determine AGL and FBC attainment. All core parameters in need of sample number and/or seasonal coverage.



LAKE MARY (LOWER)

15020015-0890
764 Acres

Category 4A
Not Attaining

Mercury in fish tissue (EPA 2002)

DWS - Inconclusive • FC - Not Attaining • FBC - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
SITE A	LCMAL-A	102253	ADEQ	CLP
SITE B	LCMAL-B	103360	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Conduct effectiveness monitoring. Collect at least 3 of each core parameter to represent 3 seasons over the assessment period.

Impairment Discussion
Mercury TMDL completed in 2011.



LAKE MARY (UPPER)

15020015-0900
861 Acres

Category 4A
Not Attaining

Mercury in fish tissue (EPA 2002)

DWS - Inconclusive • FC - Not Attaining • FBC - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/19/2007 - 6/19/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	LCMAU-B	101342	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Nitrate, nitrite/nitrate, phosphorus	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluorine, arsenic, chromium, lead, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluorine, arsenic, chromium, lead, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Conduct effectiveness monitoring. Collect at least 3 of each core parameter to represent 3 seasons over the assessment period.

Impairment Discussion
Mercury TMDL completed in 2011.

LEE VALLEY CREEK

Headwaters - Lee Valley Reservoir
15020001-232A
1.6 Miles

Category 2
Attaining some uses

Little Colorado

FC - Attaining • FBC - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	6/3/2010	6.26 mg/L	A&Wc is inconclusive with 1 exceedance in 6 samples (binomial).
SSC	25 mg/L	11/14/2006	29 mg/L	A&Wc is inconclusive. Not enough samples to calculate a median value.
		6/13/2007	28 mg/L	
Bottom Deposits	< 50% fines	6/13/2007	42 %	A&Wc is inconclusive with 1 exceedance.

Monitoring Summary

Sampling period: 11/14/2006 - 6/24/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE LEE VALLEY RESERVOIR	LCLVL001.32	101243	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(5) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-7) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, bottom deposits

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, SSC, bottom deposits
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), selenium, zinc (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more dissolved oxygen and SSC samples due to exceedances. Collect at least 3 dissolved copper samples to represent three seasons over the assessment to complete core parameter coverage.



LEROUX WASH

Digger Wash - Little Colorado River
15020009-001
19.8 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Chromium	100 µg/L	7/16/2008	290 µg/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 7/16/2008 - 3/17/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR HOLBROOK, AZ	LCLUW000.50	101742	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, manganese, mercury, nickel, silver, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Chromium
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Selenium (dissolved), lead

Priority	Monitoring Recommendations
Medium	Not enough data to assess. Collect more chromium samples due to exceedance. All core parameters in need of sample number and seasonal distribution coverage. Change in designated uses since last assessment.



LITTLE CREEK

Headwaters - Coyote Creek
15020001-350
3.1 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/24/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW FOREST ROAD #275	LCLIL002.16	100584	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved)

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.



LITTLE COLORADO EAST FORK

Headwaters - Little Colorado River
15020001-230
10.6 Miles

Category 2

Attaining some uses

FC - Attaining • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	6/12/2007	263 cfu/100 mL	FBC is attaining. 1 exceedance outside the analysis window.
Mercury ^d	SSM	11/14/2006	0.94 ug/L	A&Wc chronic is inconclusive with 1 exceedance.
SSC	0.01 ug/L	4/19/2007	27 mg/L	A&Wc is attaining with no median exceedances.
Lead ^d	25 mg/L	4/19/2007	0.196 ug/L	A&Wc chronic is inconclusive with 1 exceedance.

Monitoring Summary

Sampling period: 11/14/2006 - 6/24/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE F.S. R.D # 113	LCELR007.19	104739	ADEQ	Ambient
500 FEET ABOVE WEST FORK CONFLUENCE	LCELR000.13	103897	ADEQ	Ambient
1.5 MILES UPSTREAM FROM PHELPS CABIN	LCELR008.70	107402	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2-8) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(8) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(6-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Mercury (dissolved), lead (dissolved)
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), pH, selenium, zinc (dissolved)

Priority	Monitoring Recommendations
Medium	Collect additional dissolved mercury, dissolved lead, and <i>E. coli</i> due to exceedances. Good core parameter coverage with low number of samples but many parameters have detection limit issues.

LITTLE COLORADO RIVER

Coyote Creek - Lyman Lake
15020001-005
3.427 Miles

Category 4A
Not Attaining

Turbidity / SSC (1998)

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	7/31/2007	5.52 mg/L	A&Wc is inconclusive with 1 exceedance in 3 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	7/31/2007	3629 cfu/100 mL	FBC is inconclusive with 1 exceedance in 2 samples.
Lead ^d	2.1 ug/L @ 85 mg/L hardness	6/3/2010	3.2 ug/L	A&Wc is inconclusive with 1 exceedance in 2 samples.
SSC	25 mg/L	7/31/2007	1045 mg/L	A&Wc remains not attaining with 1 median exceedance. Exceedances on 7/31/07 and 6/3/10 occurred during storm events and were excluded from the median calculation.
		3/3/2008	400 mg/L	
		3/11/2008	111 mg/L	
		3/25/2008	590 mg/L	
		4/14/2010	657 mg/L	
		4/26/2010	215 mg/L	
		6/3/2010	59 mg/L	
Phosphorus	0.75 mg/L, SSM	7/31/2007	1.1 mg/L	A&Wc is inconclusive with 1 exceedance in 2 samples (binomial).

Monitoring Summary

Sampling period: 7/31/2007 - 6/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT RICHEY RICH NEAR SPRINGERVILL, AZ. SITE 14	LCLCR324.92	103963	ADEQ	TMDL
ABOVE LYMAN LAKE	LCLCR323.69	101723	ADEQ	TMDL
ABOVE LYMAN LAKE	LCLCR320.46	107305	ADEQ	TMDL
ABOVE LYMAN LAKE USGS 09384000	LCLCR323.60	101174	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-10) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-14) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, phosphorus, lead (dissolved), <i>E. coli</i>
Missing Core Parameters	Manganese
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Arsenic, cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), nickel, nickel (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Continue effectiveness monitoring.

Impairment Discussion
Remains not attaining for turbidity/SSC. Turbidity TMDL approved in 2002. Implementing strategies to reduce loading.

LITTLE COLORADO RIVER

Nutrios Creek - Carnero Creek
15020001-009
12.1 Miles

Category 4A
Not Attaining

IMPAIRMENT STATUS

Turbidity / SSC (1998)

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	3/13/2008	78 mg/L	A&Wc remains not attaining. Not enough data to calculate 2 medians.
		3/27/2008	265 mg/L	
		5/20/2008	31.5 mg/L	
		4/14/2010	151 mg/L	
		4/26/2010	66 mg/L	
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	4/18/2007	IBI 26	A&Wc is inconclusive.

Monitoring Summary

Sampling period: 11/15/2006-3/17/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW SPRINGVILLE WWTP	LCLCR340.02	100331	ADEQ	TMDL, Ambient
AT WENIMA BRIDGE	LCLCR336.76	102567	ADEQ	TMDL
UPSTREAM OF WENIMA RESTORATION	LCLCR336.89	108702	ADEQ	TMDL
BELOW MASS WASTING SITE	LCLCR336.15	108703	ADEQ	TMDL
UPSTREAM OF PROPERTY FENCE LINE	LCLCR335.52	108704	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4-6) Antimony, arsenic, beryllium, cadmium, copper, lead, mercury	(6) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(6-17) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium, zinc (dissolved)

Priority	Monitoring Recommendations
High	Continue effectiveness monitoring. Reassess biocriteria when Implementation Procedures are adopted.

Impairment Discussion
Remains not attaining for turbidity/SSC. Turbidity TMDL approved in 2002. Implementing strategies to reduce loading.

LITTLE COLORADO RIVER

Water Canyon - Nutrioso Creek
15020001-010
3.8 Miles

Category 4A
Not Attaining

IMPAIRMENT

Turbidity / SSC (1998)

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	3/13/2008	73 mg/L	A&Wc remains not attaining. Not enough data to calculate 2 medians.
		3/27/2008	186 mg/L	
		3/24/2009	128 mg/L	
		4/14/2010	123 mg/L	
		4/26/2010	58 mg/L	
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	4/11/2007	IBI 27	A&Wc is inconclusive.

Monitoring Summary

Sampling period: 11/28/2006 - 4/26/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE AIRPORT ROAD	LCLCR342.03	104740	ADEQ	Ambient
ON THE EAST SIDE OF WET LAND AREA	LCLCR340.65	100333	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(1-3) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-11) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese
Lab Detection Limits Not Low Enough	Cadmium (dissolved), selenium

Priority	Monitoring Recommendations
High	Continue effectiveness monitoring. Reassess biocriteria when Implementation Procedures are adopted.

Impairment Discussion
Remains not attaining for turbidity/SSC. Turbidity TMDL approved in 2002. Implementing strategies to reduce loading.

LITTLE COLORADO RIVER

West Fork Little Colorado -Water Canyon
15020001-011
19.8 Miles

Category 4A
Not Attaining

Turbidity / SSC (1998)

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	3/12/2008	27.7 mg/L	A&Wc remains not attaining. Not enough data to calculate 2 medians.
		3/28/2008	70 mg/L	
		3/25/2009	29.1 mg/L	
		10/5/2009	27 mg/L	
		4/15/2010	47 mg/L	
		4/27/2010	50 mg/L	

Monitoring Summary

Sampling period: 11/15/2006 - 4/27/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT GREER POST OFFICE	LCLCR360.06	104737	ADEQ	Ambient
OFF HWY 261 (TO BIG LAKE) HWY 273 BRIDGE	LCLCR346.01	102281	ADEQ	TMDL
SCHOOLHOUSE ROAD	LCLCR344.58	102284	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-6) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-11) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), zinc (dissolved)

Priority	Monitoring Recommendations
Medium	Continue effectiveness monitoring.

Impairment Discussion
Remains not attaining for turbidity/SSC. Turbidity TMDL approved in 2002. Implementing strategies to reduce loading.

LITTLE COLORADO RIVER

Washboard Wash - Puerco River
15020002-001
6.3 Miles

Category 3
Inconclusive

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Antimony	6 ug/L	8/7/2008	86 ug/L	DWS is inconclusive with 1 exceedance in 3 samples. (7/15/2008 exceedance dropped due to detection limit issues)
Arsenic	10 ug/L (DWS) 30 ug/L (FBC) 80 ug/L (FC)	7/15/2008	49 ug/L	DWS and FBC are inconclusive with 3 and 2 exceedances, respectively in 7 samples, and FC is inconclusive with 1 exceedance in 8 samples (binomial).
		8/7/2008	24.75 ug/L	
		9/7/2009	120 ug/L	
Barium	2000 ug/L	7/15/2008	7500 ug/L	DWS is inconclusive with 2 exceedances in 6 samples (binomial).
		9/7/2009	24000 ug/L	
Beryllium	4 ug/L	7/15/2008	36 ug/L	DWS is inconclusive with 2 exceedances in 8 samples (binomial).
		9/7/2009	74 ug/L	
Chromium	100 ug/L (DWS, FBC)	7/15/2008	260 ug/L	DWS and FBC are inconclusive with 2 exceedances in 8 samples (binomial).
		9/7/2009	590 ug/L	
Copper	500 ug/L	9/7/2009	720 ug/L	AGL is inconclusive with 1 exceedance in 8 samples (binomial).
Copper ^d	49.6 ug/L ^{acute} , 29.3 ug/L ^{chronic} @ 400 mg/L hardness	9/7/2009	64.7 ug/L	A&Wc is inconclusive with 1 exceedance in 7 samples.
Dissolved oxygen	7.0 mg/L	7/15/2008	5.66 mg/L	A&Wc is inconclusive with 3 exceedances in 6 samples (binomial).
		8/7/2008	5.48 mg/L	
		9/7/2009	5.14 mg/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	7/15/2008	1600 cfu/100 mL	FBC is inconclusive. All exceedances are storm-related.
		8/7/2008	1333 cfu/100 mL	
		9/7/2009	11199 cfu/100 mL	
Lead	100 ug/L (AGL) 15 ug/L (DWS, FBC)	9/7/2009	650 ug/L	AGL is inconclusive with 1 exceedance in 8 samples, and DWS and FBC are inconclusive with 1 exceedance in 5 samples (binomial).
Manganese	10000 ug/L (AGI) 980 ug/L (DWS)	7/15/2008	7900 ug/L	AGI and DWS are inconclusive with 1 exceedance and 3 exceedances, respectively in 8 samples (binomial).
		8/7/2008	1200 ug/L	
		9/7/2009	20000 ug/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Nickel	140 ug/L	7/15/2008	290 ug/L	DWS is inconclusive with 2 exceedances in 6 samples (binomial).
		9/7/2009	810 ug/L	
SSC	25 mg/L	7/15/2008	13793 mg/L	A&Wc is inconclusive. 8/7/2008 and 9/7/2009 exceedances occurred within 48 hours of storm event.
		8/7/2008	2620 mg/L	
		3/3/2009	62.75 mg/L	
		9/7/2009	46000 mg/L	

Monitoring Summary

Sampling period: 11/28/2006 - 9/7/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE PUERCO RIVER	LCLCR216.67	104317	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(4-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-4) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Manganese, copper, lead, copper (dissolved), dissolved oxygen, antimony, arsenic, barium, beryllium, chromium, nickel, <i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Antimony, antimony (dissolved), arsenic, arsenic (dissolved), beryllium, cadmium, cadmium (dissolved), lead, lead (dissolved), mercury, mercury (dissolved), selenium, silver

Priority	Monitoring Recommendations
Medium	Many parameters have exceedances and reporting limit issues. Collect more samples to determine attainment of all designated uses.

LITTLE COLORADO RIVER

Silver Creek - Carr L Wash
15020002-004
6.1 Miles

Category 4A
Not Attaining

SSC (2006/8) and E. coli (2004)

DWS - Inconclusive • FC - Attaining • FBC - Not attaining
AGI - Inconclusive • AGL - Inconclusive • A&Wc - Not attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Antimony	6 ug/L	8/7/2009	30 ug/L	DWS is inconclusive with 1 exceedance in 5 samples (binomial).
Arsenic	10 ug/L (DWS) 30 ug/L (FBC) 80 ug/L (FC)	7/15/2008	51 ug/L	DWS and FBC are inconclusive with 6 exceedances in 12 samples, and FC is attaining with 2 exceedances in 13 samples (binomial).
		8/7/2008	63.45 ug/L	
		7/21/2009	59.7 ug/L	
		8/6/2009	67 ug/L	
		9/7/2009	110 ug/L	
		9/18/2009	156 ug/L	
Barium	2000 ug/L	7/15/2008	5200 ug/L	DWS is inconclusive with 6 exceedances in 11 samples (binomial).
		8/7/2008	11000 ug/L	
		7/21/2009	4870 ug/L	
		8/6/2009	14675 ug/L	
		9/7/2009	22000 ug/L	
		9/18/2009	26143 ug/L	
Beryllium	4 ug/L	7/15/2008	22.5 ug/L	DWS is inconclusive with 6 exceedances in 13 samples (binomial).
		8/7/2008	34 ug/L	
		7/21/2009	12 ug/L	
		8/6/2009	41.8 ug/L	
		9/7/2009	62 ug/L	
		9/18/2009	69 ug/L	
Chromium	100 ug/L (DWS, FBC)	7/15/2008	180 ug/L	DWS and FBC are inconclusive with 6 exceedances in 13 samples (binomial).
		8/7/2008	390 ug/L	
		7/21/2009	121 ug/L	
		8/6/2009	242 ug/L	
		9/7/2009	570 ug/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Chromium	100 µg/L (DWS, FBC)	9/18/2009	551 µg/L	Continued.
Copper	500 µg/L	9/18/2009	827 µg/L	AGL is attaining with 1 exceedance in 13 samples (binomial).
Copper ^d	49.6 µg/L ^{acute} @ hardness = 400 mg/L	9/18/2009	52.6 µg/L	A&Wc is inconclusive with 1 exceedance in 12 samples.
<i>E. coli</i>	235 cfu/100 mL, SSM	8/7/2008	4611 cfu/100 mL	FBC remains impaired with 4 exceedances in 16 samples.
		9/7/2009	6131 cfu/100 mL	
		8/6/2010	5794 cfu/100 mL	
		9/8/2010	4884 cfu/100 mL	
Iron ^d	1000 µg/L	8/7/2008	5700 µg/L	A&Wc is inconclusive with 1 exceedance in 3 samples.
Lead	100 µg/L (AGL) 15 µg/L (DWS, FBC)	7/21/2009	91 µg/L	AGL is inconclusive with 3 exceedances in 13 samples, and DWS and FBC are inconclusive with 4 exceedances in 11 samples (binomial).
		8/6/2009	472 µg/L	
		9/7/2009	530 µg/L	
		9/18/2009	711 µg/L	
Manganese	10000 µg/L (AGI) 980 µg/L (DWS)	7/15/2008	5050 µg/L	AGI is inconclusive with 4 exceedances in 13 samples, and DWS is inconclusive with 6 exceedances in 13 samples (binomial).
		8/7/2008	11000 µg/L	
		7/21/2009	6570 µg/L	
		8/6/2009	20335 µg/L	
		9/7/2009	16000 µg/L	
		9/18/2009	34142 µg/L	
Nickel	140 µg/L	7/15/2008	210 µg/L	DWS is inconclusive with 5 exceedances in 10 samples (binomial).
		8/7/2008	390 µg/L	
		8/6/2009	324 µg/L	
		9/7/2009	720 µg/L	
		9/18/2009	937 µg/L	
pH	9.0 SU	9/7/2009	9.3 SU	AGI, AGL, A&Wc, DWS, and FBC are attaining with 1 exceedance in 16 samples (binomial).
SSC	25 mg/L	11/28/2006	36.5 mg/L	A&Wc remains impaired.
		2/26/2007	26.5 mg/L	
		5/17/2007	119 mg/L	
		7/15/2008	13097 mg/L	
		8/7/2008	23599 mg/L	
		10/5/2008	46849 mg/L	
		10/6/2008	57402 mg/L	
		12/29/2008	426 mg/L	
		1/24/2009	3413 mg/L	
		1/28/2009	172 mg/L	
		2/25/2009	250 mg/L	
		3/3/2009	289 mg/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	7/21/2009	175 mg/L	Continued.
		8/6/2009	47450 mg/L	
		9/7/2009	45000 mg/L	
		9/18/2009	51143 mg/L	
		2/2/2010	5802 mg/L	
		2/12/2010	110 mg/L	
		3/17/2010	128 mg/L	
		8/6/2010	13121 mg/L	

Monitoring Summary

Sampling period: 11/28/2006 - 9/8/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR WOODRUFF BRIDGE, AZ	LCLCR226.31	100334	USGS	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(6-14) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-6) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(13-21) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Manganese, lead, iron (dissolved), antimony, arsenic, barium, beryllium, chromium, nickel
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Antimony, antimony (dissolved), arsenic, arsenic (dissolved), beryllium, cadmium, cadmium (dissolved), copper (dissolved), lead

Priority	Monitoring Recommendations
High	Collect <i>E.coli</i> and SSC samples in support of TMDL development. Many parameters have exceedances and reporting limit issues. Collect more samples to determine DWS, AGL, and AGI attainment.

Impairment Discussion
TMDL approved by EPA. Remains not attaining for <i>E. coli</i> (2004) and SSC (2006).

LITTLE COLORADO RIVER

Milky Wash - Silver Creek
15020002-005
16.5 Miles

Category 3
Inconclusive

Little Colorado

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	10 ug/L (DWS) 30 ug/L (FBC) 80 ug/L (FC)	7/15/2008	77 ug/L	DWS and FBC are inconclusive with 3 exceedances in 3 samples. FC is inconclusive with 1 exceedance in 3 samples (binomial).
		8/7/2008	42.9 ug/L	
		9/7/2009	160 ug/L	
Barium	2000 ug/L	7/15/2008	6600 ug/L	DWS is inconclusive with 3 exceedances in 3 samples (binomial).
		8/7/2008	8150 ug/L	
		9/7/2009	34000 ug/L	
Beryllium	4 ug/L (DWS) 84 ug/L (FC)	7/15/2008	23 ug/L	DWS is inconclusive with 3 exceedances in 3 samples. FC is inconclusive with 1 exceedance in 3 samples (binomial).
		8/7/2008	30 ug/L	
		9/7/2009	87 ug/L	
Chromium	100 ug/L	7/15/2008	210 ug/L	DWS and FBC are inconclusive with 3 exceedances in 3 samples (binomial).
		8/7/2008	205 ug/L	
		9/7/2009	730 ug/L	
Copper	500 ug/L	9/7/2009	1200 ug/L	AGL is inconclusive with 1 exceedance in 3 samples (binomial).
Dissolved oxygen	7.0 mg/L	9/8/2010	5.55 mg/L	A&Wc is inconclusive with 1 exceedance in 6 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	8/7/2008	1607 cfu/100 mL	FBC is inconclusive. All exceedances are storm-related.
		9/7/2009	46110 cfu/100 mL	
		8/6/2010	12033 cfu/100 mL	
		9/8/2010	3873 cfu/100 mL	
Iron ^d	1000 ug/L	8/7/2008	6400 ug/L	A&Wc is inconclusive with 1 exceedance in 2 samples.
Lead	100 ug/L (AGL) 15 ug/L (DWS, FBC)	9/7/2009	870 ug/L	AGL is inconclusive with 1 exceedance in 3 samples, and DWS and FBC are inconclusive with 1 exceedance in 1 sample (binomial).
Manganese	10000 ug/L (AGI) 980 ug/L (DWS)	7/15/2008	6300 ug/L	AGI is inconclusive with 1 exceedance in 3 samples, and DWS is inconclusive with 3 exceedances in 3 samples (binomial).
		8/7/2008	9250 ug/L	
		9/7/2009	34000 ug/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Nickel	140 µg/L	7/15/2008	250 µg/L	DWS is inconclusive with 3 exceedances in 3 samples (binomial).
		8/7/2008	205 µg/L	
		9/7/2009	1200 µg/L	
SSC	25 mg/L	7/15/2008	14801 mg/L	A&Wc is inconclusive. All exceedances except on 2/2/10 occurred within 48 hours of storm events and were excluded from a median value calculation. Not enough samples left to calculate median.
		8/7/2008	19550 mg/L	
		9/7/2009	58000 mg/L	
		2/2/2010	9103 mg/L	
		8/6/2010	18692 mg/L	
Zinc	2100 µg/L	9/7/2009	2200 µg/L	DWS is inconclusive with 1 exceedance in 3 samples (binomial).

Monitoring Summary

Sampling period: 7/15/2008 - 9/8/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW MEXICAN HOL- LOW WASH	LCLCR232.24	106442	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2-3) Arsenic, barium, beryllium, boron, chromium, copper, lead, manganese, mercury, nickel, silver, zinc	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-7) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Manganese, copper, lead, dissolved oxygen, iron (dissolved), arsenic, barium, beryllium, chromium, nickel, zinc, <i>E. coli</i>
Missing Core Parameters	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), nitrite/nitrate, fluoride
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Arsenic, beryllium, cadmium (dissolved), lead, mercury, silver

Priority	Monitoring Recommendations
Medium	Many parameters have exceedances and reporting limit issues. Collect more samples to determine attainment of all designated uses.

LITTLE COLORADO RIVER

Zion Reservoir - Concho Creek
15020002-016
7.3 Miles

Category 3
Inconclusive

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	7/27/2006	50100 mg/L	A&Wc is inconclusive. 2 median exceedances can be calculated but examination of flow regime suggests that all flows are likely to cause runoff (see USGS flow data for site). 10 single sample exceedances in 10 samples.
		8/7/2006	11664 mg/L	
		8/15/2006	8544 mg/L	
		8/26/2006	7330 mg/L	
		7/30/2007	9572 mg/L	
		8/6/2007	2423 mg/L	
		8/15/2007	1100 mg/L	
		8/21/2007	149 mg/L	
		9/5/2007	140 mg/L	
		8/11/2008	2840 mg/L	

Monitoring Summary

Sampling period: 7/27/2006 - 8/11/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW ZION RESERVOIR	LCLCR283.83	101459	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(10) SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	SSC
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Designated uses inconclusive due to irregular flow regime, lack of data, and core parameter coverage.



LITTLE COLORADO RIVER

Unnamed Trib @ 342812.644/1092127.698 to Big Hollow Wash
15020002-023
16.3 Miles

Category 3
Inconclusive

Little Colorado

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	5/10/2011	4.3 mg/L	A&Wc is inconclusive with 1 exceedance in 2 samples (binomial).
SSC	25 mg/L	5/19/2009	316 mg/L	A&Wc is inconclusive. Not enough samples to calculate a median.
		5/10/2011	49 mg/L	

Monitoring Summary

Sampling period: 5/19/2009 - 5/10/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT THE RESERVOIR	LCLCR301.17	103962	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, barium, beryllium, boron, chromium, copper, lead, manganese, nickel, silver, zinc	None	(1-2) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, SSC
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

LITTLE COLORADO RIVER

Lyman Lake to Diversion Dam @ 342812.757/1092127.727
 15020002-024
 13.9 Miles

Category 3
 Inconclusive

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
 AGI - Inconclusive • AGL - Inconclusive
 A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	5/18/2009	5.85 mg/L	A&Wc is inconclusive with 2 exceedances in 3 samples (binomial).
		5/10/2011	6.7 mg/L	
SSC	25 mg/L	5/10/2011	109.9 mg/L	A&Wc is inconclusive. Not enough samples to calculate a median.

Monitoring Summary

Sampling period: 11/28/2006 - 5/10/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW LYMAN LAKE	LCLCR317.67	101724	USGS	USGS
SOUTH OF SALADO	LCLCR311.31	104720	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-4) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, zinc	(1-3) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, SSC
Missing Core Parameters	Copper (dissolved), fluoride
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper
Lab Detection Limits Not Low Enough	Cadmium (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect dissolved oxygen, SSC samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

LITTLE COLORADO RIVER

Chevelon Creek - Cottonwood Wash
15020008-014
8.5 Miles

Category 3
Inconclusive

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/25/2008 - 6/25/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
2.7 MILES DOWN- STREAM FROM CHEV- ELON CANYON	LCLCR184.28	105172	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters in need of sample number and seasonal distribution coverage.

LITTLE COLORADO RIVER

Porter Tank Draw - McDonalds Creek
15020008-017
17.4 Miles

Category 3
Inconclusive

Little Colorado

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGL - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Antimony	6 ug/L	08/06/2008	110 ug/L	DWS is inconclusive with 2 exceedances in 3 samples (binomial).
		07/20/2009	120 ug/L	
Arsenic	10 ug/L (DWS) 200 ug/L (AGL) 30 ug/L (FBC) 80 ug/L (FC)	07/14/2008	230 ug/L	AGL, DWS, FBC & FC are inconclusive with 4, 9, 9 & 6 exceedances respectively in 12 samples (binomial).
		08/06/2008	44.2 ug/L	
		01/10/2009	48 ug/L	
		01/29/2009	70 ug/L	
		05/22/2009	120 ug/L	
		07/06/2009	110 ug/L	
		07/20/2009	205 ug/L	
		09/06/2009	280 ug/L	
		09/07/2009	623.75 ug/L	
Barium	2000 ug/L	07/14/2008	26000 ug/L	DWS is inconclusive with 10 exceedances in 12 samples (binomial).
		08/06/2008	3300 ug/L	
		12/22/2008	2200 ug/L	
		01/10/2009	3600 ug/L	
		01/29/2009	4400 ug/L	
		05/22/2009	15125 ug/L	
		07/06/2009	12000 ug/L	
		07/20/2009	26000 ug/L	
		09/06/2009	20800 ug/L	
		09/07/2009	45625 ug/L	
Beryllium	4 ug/L (DWS) 84 ug/L (FC)	07/14/2008	100 ug/L	DWS is inconclusive with 10 exceedances, and FC is inconclusive with 2 exceedances in 12 samples (binomial).
		08/06/2008	9.3 ug/L	
		12/22/2008	7.9 ug/L	
		01/10/2009	17 ug/L	
		01/29/2009	15 ug/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Beryllium	4 ug/L (DWS) 84 ug/L (FC)	05/22/2009	62 ug/L	Continued.
		07/06/2009	41 ug/L	
		07/20/2009	77 ug/L	
		09/06/2009	75 ug/L	
		09/07/2009	186 ug/L	
Boron	1000 ug/L (AGI) 1400 ug/L (DWS)	07/14/2008	2400 ug/L	AGI & DWS are inconclusive with 4 & 3 exceedances respectively in 12 samples (binomial).
		05/22/2009	1212.5 ug/L	
		07/06/2009	2400 ug/L	
		07/20/2009	2700 ug/L	
Chromium	100 ug/L (DWS, FBC) 1000 ug/L (AGI, AGL)	07/14/2008	960 ug/L	AGI & AGL are attaining with 1 exceedance, DWS & FBC are inconclusive with 9 exceedances in 12 samples (binomial).
		08/06/2008	150 ug/L	
		01/10/2009	170 ug/L	
		01/29/2009	200 ug/L	
		05/22/2009	467.5 ug/L	
		07/06/2009	600 ug/L	
		07/20/2009	848.75 ug/L	
		09/06/2009	515 ug/L	
		09/07/2009	1621.25 ug/L	
Copper	500 ug/L (AGL) 1300 ug/L (DWS, FBC)	05/22/2009	657.5 ug/L	AGL is inconclusive with 3 exceedances, and DWS & FBC are attaining with 1 exceedance in 12 samples (binomial).
		09/05/2009	870 ug/L	
		09/07/2009	3142.5 ug/L	
Dissolved oxygen	6.0 mg/L	08/06/2008	5.13 mg/L	A&Ww is inconclusive with 1 exceedance in 7 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	07/14/2008	24196 cfu/100 mL	FBC is inconclusive with 5 exceedances in 9 samples. Only one non-storm related exceedance (1/29/09). No geometric mean exceedances.
		08/06/2008	2046 cfu/100 mL	
		01/29/2009	435 cfu/100 mL	
		07/06/2009	816 cfu/100 mL	
		09/06/2009	7701 cfu/100 mL	
Lead	100 ug/L (AGL) 15 ug/L (DWS, FBC)	12/22/2008	24 ug/L	AGL is inconclusive with 6 exceedances, and DWS & FBC are inconclusive with 7 exceedances in 9 samples (binomial).
		01/10/2009	150 ug/L	
		01/29/2009	160 ug/L	
		05/22/2009	521.25 ug/L	
		07/20/2009	593.75 ug/L	
		09/06/2009	660 ug/L	
		09/07/2009	2617.5 ug/L	
Manganese	10000 ug/L (AGI) 980 ug/L (DWS)	07/14/2008	28000 ug/L	AGI & DWS are inconclusive with 5 and 10 exceedances, respectively in 12 samples (binomial).

Parameter	Applicable Standard	Date	Result	Designated use support comments
Manganese	10000 ug/L (AGI) 980 ug/L (DWS)	08/06/2008	5400 ug/L	Continued.
		12/22/2008	1500 ug/L	
		01/10/2009	3800 ug/L	
		01/29/2009	4300 ug/L	
		05/22/2009	18125 ug/L	
		07/06/2009	7200 ug/L	
		07/20/2009	20875 ug/L	
		09/06/2009	23650 ug/L	
		09/07/2009	53875 ug/L	
Nickel	140 ug/L	07/14/2008	1100 ug/L	DWS is inconclusive with 9 exceedances in 12 samples (binomial).
		08/06/2008	210 ug/L	
		01/10/2009	200 ug/L	
		01/29/2009	250 ug/L	
		05/22/2009	555 ug/L	
		07/06/2009	590 ug/L	
		07/20/2009	893 ug/L	
		09/06/2009	775 ug/L	
		09/07/2009	1942 ug/L	
pH	9.0 SU	07/14/2008	9.2 SU	AGI, AGL, A&Ww, DWS & FBC are attaining with 1 exceedance in 10 samples (binomial).
SSC	80 mg/L	07/14/2008	95590 mg/L	SSC is inconclusive with 1 median exceedance in 8 samples.
		08/06/2008	8750 mg/L	
		10/05/2008	72609 mg/L	
		10/06/2008	59949 mg/L	
		12/22/2008	5641 mg/L	
		01/10/2009	16509 mg/L	
		01/29/2009	14329 mg/L	
		03/02/2009	231 mg/L	
		05/22/2009	30835 mg/L	
		07/06/2009	30511 mg/L	
		07/20/2009	109500 mg/L	
		09/06/2009	22950 mg/L	
		09/07/2009	107916 mg/L	
		02/02/2010	12295 mg/L	
		02/12/2010	180 mg/L	
		03/30/2010	284 mg/L	
Zinc	2100 ug/L (DWS) 5106 ug/L (FC)	07/14/2008	2800 ug/L	DWS is attaining with 2 exceedances in 12 samples, and FC is attaining with 1 exceedance in 12 samples (binomial).
		09/07/2009	8850 ug/L	

Monitoring Summary

Sampling period: 2/27/2007 - 3/30/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BRIDGE AT JOSEPH CITY	LCLCR200.23	103982	ADEQ	TMDL
AT CONFLUENCE WITH MANILA WASH	LCLCR194.10	104879	ADEQ	TMDL
NEAR APS TANK	LCLCR203.94	106202	ADEQ	TMDL
NEAR JOSEPH CITY	LCLCR206.75	101480	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2-27) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, nickel, selenium, silver	(7) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(12-30) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Boron, manganese, arsenic, copper, lead, dissolved oxygen, ssc, antimony, barium
Missing Core Parameters	None
Missing Seasonal Distribution	Nitrogen, phosphorus, fluoride
Lab Detection Limits Not Low Enough	Antimony, antimony (dissolved), arsenic, arsenic (dissolved), beryllium, cadmium, copper (dissolved), lead, lead (dissolved)

Priority	Monitoring Recommendations
High	Collect more samples for all exceedance parameters leading to inconclusive status (above). Collect nitrogen, phosphorus and fluoride to represent 3 seasons in the assessment period to complete core parameter coverage.

LITTLE COLORADO RIVER

Puerco River - Leroux Wash
15020008-020
5.8 Miles

Category 3
Inconclusive

Little Colorado

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Antimony	6 ug/L	7/14/2008	88 ug/L	DWS is inconclusive with 1 exceedance in 6 samples (binomial).
Arsenic	10 ug/L (DWS) 80 ug/L (FC) 30 ug/L (FBC) 200 ug/L (AGL)	7/14/2008	240 ug/L	AGL is attaining with 2 exceedances, and DWS, FBC & FC are inconclusive with 3-4 exceedances in 9-10 samples (binomial).
		8/7/2008	161.25 ug/L	
		1/29/2009	55 ug/L	
		9/7/2009	560 ug/L	
Barium	2000 ug/L	7/14/2008	23000 ug/L	DWS is inconclusive with 4 exceedances in 8 samples (binomial).
		8/7/2008	12000 ug/L	
		1/29/2009	3300 ug/L	
		9/7/2009	38000 ug/L	
Beryllium	4 ug/L (DWS) 84 ug/L (FC)	7/14/2008	83 ug/L	FC is attaining and DWS is inconclusive with 1 and 3 exceedances respectively in 10 samples (binomial).
		8/7/2008	56 ug/L	
		9/7/2009	160 ug/L	
Boron	1000 ug/L (AGI) 1400 ug/L (DWS)	7/14/2008	1900 ug/L	AGI & DWS are attaining with 1 exceedance in 10 samples (binomial).
Chromium	100 ug/L (DWS, FBC) 1000 ug/L (AGI, AGL)	7/14/2008	750 ug/L	AGI & AGL are attaining with 1 exceedance, and DWS & FBC are inconclusive with 4 exceedances in 10 samples (binomial).
		8/7/2008	540 ug/L	
		1/29/2009	150 ug/L	
		9/7/2009	1400 ug/L	
Copper	500 ug/L (AGL) 1300 ug/L (DWS, FBC)	7/14/2008	577 ug/L	AGL is inconclusive with 3 exceedances, and DWS & FBC are attaining with 1 exceedance in 10 samples (binomial).
		8/7/2008	737.5 ug/L	
		9/7/2009	2700 ug/L	
Copper ^d	29.3 ug/L @ hardness > 400 mg/L	8/7/2008	30 ug/L	A&Ww chronic is inconclusive with 1 exceedance in 7 samples.
Dissolved oxygen	6.0 mg/L	2/26/2007	5.06 mg/L	A&Ww is inconclusive with 2 exceedances in 5 samples (binomial).
		4/24/2007	5.44 mg/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	7/14/2008	12997 cfu/100 mL	FBC is inconclusive with only 1 non-storm related exceedance (1/29) in 10 samples.
		8/7/2008	7701 cfu/100 mL	
		1/29/2009	687 cfu/100 mL	
		9/7/2009	19683 cfu/100 mL	
Iron ^d	1000 ug/L	8/7/2008	8000 ug/L	A&Ww chronic is inconclusive with 1 exceedance in 3 samples.
Lead	15 ug/L (DWS, FBC) 100 ug/L (AGL)	8/7/2008	190 ug/L	DWS, FBC & AGL is inconclusive with 3 exceedances in 8-10 samples (binomial).
		1/29/2009	110 ug/L	
		9/7/2009	2400 ug/L	
Manganese	980 ug/L (DWS) 10000 ug/L (AGI)	7/14/2008	23000 ug/L	AGI & DWS are inconclusive with 3 and 4 exceedances respectively in 10 samples (binomial).
		8/7/2008	15000 ug/L	
		1/29/2009	3300 ug/L	
		9/7/2009	47000 ug/L	
Nickel	140 ug/L	7/14/2008	850 ug/L	DWS is inconclusive with 4 exceedances in 7 samples (binomial).
		8/7/2008	600 ug/L	
		1/29/2009	190 ug/L	
		9/7/2009	1700 ug/L	
SSC	80 mg/L	7/14/2008	68139 mg/L	A&Ww is attaining with no median exceedances in 8 samples.
		8/7/2008	37003 mg/L	
		1/29/2009	10780 mg/L	
		3/2/2009	237 mg/L	
		9/7/2009	140000 mg/L	
Zinc	2100 ug/L (DWS) 5106 ug/L (FC)	7/14/2008	2500 ug/L	FC is attaining with 1 exceedance and DWS is inconclusive with 3 exceedances in 10 samples (binomial).
		8/7/2008	4200 ug/L	
		9/7/2009	7900 ug/L	
Bottom deposits	< 50% fines	4/24/2007	100%	A&Ww is inconclusive with 1 exceedance.
Biocriteria	IBI ≥ 50 attaining IBI 40 - 49 inconclusive IBI ≤ 39 violating	5/15/2007	14	A&Ww is inconclusive.

Monitoring Summary

Sampling period: 11/28/2006 - 9/7/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT HOLBROOK, AZ	LCLCR212.96	101743	ADEQ	TMDL
NORTH OF MCLAWS BEND	LCLCR211.73	104857	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2-10) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(2-8) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-10) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria, bottom deposits

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, copper (dissolved), iron (dissolved), antimony, arsenic, <i>E. coli</i> , barium, beryllium, chromium, bottom deposits
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Arsenic (dissolved), beryllium, cadmium, lead, lead (dissolved), mercury, selenium

Priority	Monitoring Recommendations
High	Reassess biocriteria when Implementation Procedures are adopted. Collect samples of all parameters showing exceedances to determine attainment status. Note that most exceedance parameters have 1-2 new exceedances in this assessment period.

LONG LAKE (LOWER)

15020008-0820
323.1 Acres

Category 4A
Not Attaining

Mercury in Fish Tissue (2004)

FC - Not Attaining • FBC - Inconclusive
A&Wc - Inconclusive • AGL - Inconclusive • AGI - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	9.2 SU	9/5/2007	9.9 SU	A&Wc,FBC,AGL,AGI are inconclusive, insufficient samples (binomial)
Dissolved Oxygen	6.8 mg/L	7/18/2006	6.34 mg/L @ 1ft	A&Wc is inconclusive, insufficient samples (binomial)
			5.98 mg/L @ surface	

Monitoring Summary

7/18/2007-9/5/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NORTH COVE	LCLLL-NC	102760	AGFD	Ambient
SOUTH COVE	LCLLL-SO	102555	AGFD	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
	(2) Ammonia, nitrite/nitrate, phosphorus, total Kjeldahl nitrogen, chlorophyll A	(2) Dissolved oxygen, pH, total dissolved solids, suspended solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	dissolved oxygen, pH
Missing Core Parameters	all
Missing Seasonal Distribution	all
Lab Detection Limits Not Low Enough	

Priority	Monitoring Recommendations
Medium	

Impairment Discussion
Remains not attaining for mercury in fish tissue. TMDL approved in 2011.

LYMAN RESERVOIR

15020001-0850
1308 Acres

Category 5
Impaired

Mercury in fish tissue (EPA 2004)

FC - Impaired • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	7/10/2007	6.46 mg/L	A&Wc is inconclusive with 1 exceedance in 3 samples (binomial).
Hydrogen Sulfide	2.0 ug/L	3/13/2007	106 ug/L	A&Wc is inconclusive with 1 exceedance.

Monitoring Summary

Sampling period: 3/13/2007 - 7/10/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	LCLYM-B	101842	ADEQ	CLP
EAST SHALLOW	LCLYM-D	105087	ADEQ	TMDL
AT DAM	LCLYM-A	101841	NAU	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(3-7) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-4) Ammonia, nitrate, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-8) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, hydrogen sulfide
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, dissolved oxygen, hydrogen sulfide, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved)

Priority	Monitoring Recommendations
High	Collect more samples in support of TMDL development. Collect dissolved oxygen samples due to exceedances.

MAMIE CREEK
 Headwaters - Coyote Creek
 15020001-351
 4.6 Miles

Category 3
 Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
 A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/24/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW FOREST ROAD #275	LCMAM002.05	100589	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, cadmium, copper, lead	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved)

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	5/22/2007	28 mg/L	A&Wc is inconclusive. Not enough samples to calculate a median value.
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	5/22/2007	IBI 47	A&Wc is inconclusive.

Monitoring Summary

Sampling period: 11/14/2006 - 5/22/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
SOUTHWEST CORNER OF SECTION 34	LCMLK001.18	104738	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	SSC, Biocriteria
Missing Core Parameters	Copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more SSC samples to determine attainment status. Collect an additional macroinvertebrate sample to verify the bioassessment result. Collect core parameters to represent at least 3 seasons during an assessment period.

MINERAL CREEK

Headwaters - Concho Creek
15020002-648
25.8 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	6/26/2007	6.24 mg/L	A&Wc is inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 6/26/2007 - 6/26/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOREST ROAD # 404	LCMIN018.05	100593	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	5/23/2007	5.46 mg/L	A&Wc is inconclusive with 1 exceedance in 2 samples (binomial).
SSC	25 mg/L	3/28/2007	61 mg/L	A&Wc is inconclusive. Not enough samples to calculate a median value.
		5/23/2007	38 mg/L	

Monitoring Summary

Sampling period: 11/14/2006 - 5/23/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
0.8 MILE BELOW CON- FLUENCE WITH COYOTE CREEK	LCMRS043.17	104677	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, SSC
Missing Core Parameters	Copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved)

Priority	Monitoring Recommendations
Low	Collect dissolved oxygen and SSC samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

NUTRIOSO CREEK

Headwaters - Nelson Reservoir
15020001-017A
13.3 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	10.5 ug/L ^{chronic} @ 120 mg/L hardness	7/1/2010	11 ug/L	A&Wc is inconclusive with 1 exceedance in 3 samples.
Dissolved oxygen	7.0 mg/L	5/20/2008	6.52 mg/L	A&Wc is inconclusive with 1 exceedance in 6 samples (binomial).
SSC	25 mg/L	3/13/2008	26.3 mg/L	A&Wc is inconclusive with 1 median exceedance.
		3/27/2008	50 mg/L	
		3/25/2009	30 mg/L	
		4/15/2010	442 mg/L	
		4/27/2010	41 mg/L	

Monitoring Summary

Sampling period: 3/13/2008 - 7/26/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT PADDY CREEK RESTAURANT	LCNUT025.35	102006	ADEQ	TMDL
AT WEIR	LCNUT026.83	102008	ADEQ	TMDL
AT HIGHWAY 180 BRIDGE SOUTH OF NUTRIOSO	LCNUT023.17	102002	ADEQ	TMDL
UPSTREAM OF NELSON RESERVOIR	LCNUT015.61	100344	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-13) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, copper (dissolved), ssc
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect additional dissolved copper, dissolved oxygen, and SSC samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

NUTRIOSO CREEK

Nelson Reservoir - Picnic Creek
15020001-017B
13.5 Miles

Category 4A
Not Attaining

IMPAIRMENT STATUS

Turbidity / SSC (1998)

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	5/20/2008	4.11 mg/L	A&Wc is inconclusive with 1 exceedance in 3 samples (binomial).
pH	9.0 SU 6.5 SU	5/21/2007	9.3 SU	AGI is inconclusive with 1 exceedance in 9 samples (binomial). AGL, A&Wc, and FBC are inconclusive with 2 exceedances in 9 samples (binomial).
		3/5/2007 1	5.71 SU	
SSC	25 mg/L	3/3/2008 7	87 mg/L	A&Wc is inconclusive with 1 median exceedance.
		3/12/2008	96 mg/L	
		3/25/2008	175 mg/L	
		3/24/2009	39 mg/L	

Monitoring Summary

Sampling period: 11/13/2006 - 3/24/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DOWNSTREAM OF NELSON RESERVOIR	LCNUT013.33	101722	ADEQ	TMDL
EAST OF HIGHWAY 60 SPRINGVILLE @ BRIDGE	LCNUT004.71	101987	ADEQ	TMDL
DOWNSTREAM FROM OLD USGS GAGING STATION	LCNUT012.99	104777	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(7) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(1-3) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-13) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, dissolved oxygen
Missing Core Parameters	Copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Continue effectiveness monitoring.

Impairment Discussion
Remains not attaining for turbidity/SSC. Turbidity TMDL completed in 2000.

NUTRIOSO CREEK

Picnic Creek - Little Colorado River
15020001-015
3.5 Miles

Category 4A
Not Attaining

IMPAIRMENT STATUS

Turbidity / SSC (1998)

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	3/13/2008	39.5 mg/L	A&Wc remains not attaining with 1 median exceedance. Not enough data to calculate 2 medians.
		4/14/2010	55 mg/L	
		4/26/2010	34 mg/L	

Monitoring Summary

Sampling period: 3/13/2008 - 4/26/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MOUTH NEAR SPRINGVILLE, AZ.	LCNUT000.01	104318	USGS	TMDL
UPSTREAM OF GUTIERREZ STREET BRIDGE	LCNUT002.22	108302	ADEQ	TMDL
AT USGS GAGE 09383570	LCNUT000.95	108303	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(2-4) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Continue effectiveness monitoring.

Impairment Discussion
Remains not attaining for turbidity/SSC. Turbidity TMDL completed in 2000.

PADDY CREEK
 Headwaters - Nutrioso Creek
 15020001-305
 5.0 Miles

Category 3
 Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
 A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/22/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE NUTRIOSIO CREEK	LCPAD001.30	100615	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved)

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

IMPAIRMENT STATUS

Ammonia (2010)

PBC - Inconclusive • A&Wedw - Impaired

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	LCPIT-3	107105	City of Show Low	
NEAR OUTLET 1	LCPIT-1	107103	COSL	
OUTLET 2	LCPIT-2	107104	COSL	

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect samples in support of TMDL development.

Impairment Discussion
Remains impaired for ammonia (2010). No data since 2005.

Add E. coli to the 303(d) list.

Copper(2010)

DWS - Inconclusive • FC - Inconclusive • FBC - Impaired

AGI - Inconclusive • AGL - Inconclusive

A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	10 ug/L (DWS) 30 ug/L (FBC) 80 ug/L (FC) 200 ug/L (AGL)	7/15/2008	250 ug/L	DWS and FBC are inconclusive with 6 exceedances in 6 samples (binomial). FC is inconclusive with 5 exceedances in 6 samples (binomial). AGL is inconclusive with 4 exceedances in 6 samples (binomial).
		1/30/2009	100 ug/L	
		5/19/2009	63 ug/L	
		7/22/2009	483 ug/L	
		9/6/2009	810 ug/L	
		9/7/2009	527 ug/L	
Barium	2000 ug/L	7/15/2008	14000 ug/L	DWS is inconclusive with 6 exceedances in 6 samples (binomial).
		1/30/2009	4800 ug/L	
		5/19/2009	9908 ug/L	
		7/22/2009	26000 ug/L	
		9/6/2009	51000 ug/L	
		9/7/2009	33863 ug/L	
Beryllium	4 ug/L (DWS) 84 ug/L (FC)	7/15/2008	81 ug/L	DWS is inconclusive with 6, FC is inconclusive with 3 exceedances in 6 samples (binomial).
		1/30/2009	28 ug/L	
		5/19/2009	46 ug/L	
		7/22/2009	133 ug/L	
		9/6/2009	223 ug/L	
		9/7/2009	148 ug/L	
Boron	1000 ug/L	7/22/2009	1085 ug/L	AGI is inconclusive with 1 exceedance in 6 samples (binomial).
Chromium	1000 ug/L (AGI, AGL) 100 ug/L (DWS, FBC)	7/15/2008	680 ug/L	AGI and AGL are inconclusive with 3 exceedances in 6 samples (binomial). DWS and FBC are inconclusive with 6 exceedances in 6 samples (binomial).
		1/30/2009	280 ug/L	
		5/19/2009	188.333 ug/L	
		7/22/2009	1293.333 ug/L	
		9/6/2009	2033.333 ug/L	
		9/7/2009	1202.381 ug/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper	500 ug/L (AGL) 1300 ug/L (DWS, FBC)	7/15/2008	872 ug/L	AGL is inconclusive with 4 exceedances in 6 samples (binomial). DWS and FBC are inconclusive with 3 exceedances in 6 samples (binomial).
		7/22/2009	2200 ug/L	
		9/6/2009	4200 ug/L	
		9/7/2009	2524 ug/L	
Copper ^d	49.6 ug/L ^{acute} , 29.2 ug/L ^{chronic} @ 400 mg/L hardness	5/19/2009	130 ug/L (max) 87 ug/L (median)	A&Ww remains impaired with 2 exceedances in 7 samples.
	49.6 ug/L ^{acute} , 29.2 ug/L ^{chronic} @ 400 mg/L hardness	9/9/2009	92.7 ug/L	
E. coli	235 cfu/100 mL, SSM	7/15/2008	9208 cfu/100 mL	FBC is impaired with 4 exceedances in 4 samples. Only 2 exceedances (7/15/2008 and 9/8/2009) were storm-related.
		1/30/2009	3629 cfu/100 mL	
		9/8/2009	24196 cfu/100 mL	
		2/3/2010	670 cfu/100 mL	
Lead	15 ug/L (DWS, FBC) 100 ug/L (AGL)	7/15/2008	98 ug/L	DWS and FBC are inconclusive with 6 exceedances in 6 samples (binomial). AGL is inconclusive with 5 exceedances in 6 samples (binomial).
		1/30/2009	260 ug/L	
		5/19/2009	280 ug/L	
		7/22/2009	1867 ug/L	
		9/6/2009	3400 ug/L	
		9/7/2009	2271 ug/L	
Manganese	980 ug/L (DWS) 10000 ug/L (AGI)	7/15/2008	18000 ug/L	DWS is inconclusive with 6 exceedances in 6 samples (binomial). AGI is inconclusive with 4 exceedances in 6 samples (binomial).
		1/30/2009	5700 ug/L	
		5/19/2009	9592 ug/L	
		7/22/2009	34000 ug/L	
		9/6/2009	64333 ug/L	
		9/7/2009	44143 ug/L	
Nickel	140 ug/L	7/15/2008	730 ug/L	DWS is inconclusive with 6 exceedances in 6 samples (binomial).
		1/30/2009	300 ug/L	
		5/19/2009	237 ug/L	
		7/22/2009	1433 ug/L	
		9/6/2009	2400 ug/L	
		9/7/2009	1586 ug/L	
SSC	80 mg/L	7/15/2008	50868 mg/L	A&Ww is inconclusive. Exceedances on 7/15/2008, 5/19/2009, 7/22/2009, 9/6/2009, 9/7/2009 occurred during storm events were excluded from assessment. Not enough samples left calculate a median.
		1/8/2009	10228 mg/L	
		1/30/2009	23880 mg/L	
		5/19/2009	26805 mg/L	
		7/22/2009	139250 mg/L	
		9/6/2009	182500 mg/L	
		9/7/2009	101714 mg/L	
		2/3/2010	20004 mg/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Zinc	2100 µg/L (DWS) 5106 µg/L (FC) 10000 µg/L (AGI)	7/15/2008	3500 µg/L	DWS is inconclusive with 4 exceedances in 6 samples (binomial). FC is inconclusive with 3 exceedances in 6 samples (binomial). AGI is inconclusive with 1 exceedance in 6 samples (binomial).
		7/22/2009	7000 µg/L	
		9/6/2009	12000 µg/L	
		9/7/2009	7448 µg/L	

Monitoring Summary

Sampling period: 7/15/2008 - 2/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR ADAMANA, AZ.	LCPRR024.69	105128	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(7) Arsenic, barium, beryllium, boron, chromium, copper, lead, manganese, nickel, silver, zinc, cadmium, antimony	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Boron, chromium, manganese, zinc, arsenic, copper, lead, barium, beryllium
Missing Core Parameters	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), nitrite/nitrate, fluoride
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), nitrite/nitrate, selenium
Lab Detection Limits Not Low Enough	Arsenic, beryllium, copper (dissolved), lead, silver, selenium, mercury (dissolved), cadmium, antimony

Priority	Monitoring Recommendations
High	Collect more samples in support of TMDL development.

Impairment Discussion
Remains impaired for copper (2010). New samples in this assessment show continued problems for many parameters with values for most increasing. Add <i>E. coli</i> to the 303(d) list.

*Narrative nutrients, low dissolved oxygen,
and high pH (2000)*

FC - Attaining • FBC - Not Attaining • AGI - Not Attaining
AGL - Not Attaining • A&Wc - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	7/26/2007	4.13 mg/L	A&Wc remains not attaining with 2 exceedances in 6 samples.
		9/21/2008	5.5 mg/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	7/26/2007	238 cfu/100 mL	FBC is attaining. Result is not above screening value.
pH	9.0 SU	7/26/2006	9.6 SU	AGI, AGL, A&Wc, and FBC remain not attaining with 5 exceedances in 9 samples (binomial).
		7/26/2007	9.4 SU	
		8/28/2007	9.4 SU	
		7/16/2008	10.4 SU	
		9/21/2008	9.7 SU	

Monitoring Summary

Sampling period: 7/26/2006 - 9/21/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM	LCRAI-A	100069	NAU	TMDL
MID LAKE	LCRAI-B	100070	ADEQ	TMDL
AT BAY TWO	LCRAI-BAY2	106163	ADEQ	TMDL
AT BAY ONE	LCRAI-BAY1	106162	ADEQ	TMDL
MID LAKE NEAR INLET	LCRAI-C	100071	ADEQ	CLP
AT BOAT RAMP	LCRAI-BR	101402	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-7) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-19) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(7-24) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead, lead (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Continue effectiveness monitoring.

Impairment Discussion
Remains not attaining for narrative nutrient, pH, dissolved oxygen (2000). Narrative nutrient TMDL completed in 2000.

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	5/10/2007	46 mg/L	A&Wc is inconclusive. Not enough samples to calculate a median value.

Monitoring Summary

Sampling period: 11/15/2006 - 5/10/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE RIGGS RESER-VOIR	LCRIG004.87	104699	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(1-3) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved)

Priority	Monitoring Recommendations
Low	Collect more SSC samples due to the exceedance. Collect core parameters to represent at least 3 seasons during an assessment period.

RIO DE FLAG

Flagstaff WWTP outfall - San Francisco Wash
15020015-004B
3.7 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&Wedw - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 11/29/2006 - 3/7/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT INTERSTATE-40	LCRDF015.45	101751	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(1-2) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
Low	Not enough data to determine attainment. Collect at least 3 of each core parameter to represent 3 seasons over the assessment period.

RIO DE FLAG

Headwaters - Flagstaff WWTP outfall
15020015-004A
34.5 Miles

Category 3
Inconclusive

Little Colorado

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 3/31/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FLAGSTAFF, AZ	LCRDF019.33	101750	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect at least 3 of each core parameter to represent 3 seasons over the assessment period.

RIVER RESERVOIR

15020001-1220
140 Acres

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	9.0 SU	10/18/2006	10.8 SU	AGI, AGL, A&Wc, and FBC are inconclusive with 2 exceedances in 4 samples (binomial).
		10/2/2007	9.2 SU	

Monitoring Summary

Sampling period: 10/18/2006 - 10/2/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM SITE	LCRIV-A	105269	ADEQ	CLP
MID LAKE	LCRIV-B	102556	ADEQ	CLP
DAM SITE AT LOW LAKE LEVEL	LCRIV-A2	105939	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(3-5) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-6) Ammonia, nitrate, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-6) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), nickel (dissolved), selenium, silver (dissolved), thallium, zinc (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect pH samples due to exceedances. Collect missing core parameters to represent at least 3 seasons during an assessment period.

R UDD CREEK

Headwaters - Nutrioso Creek
15020001-026
10.6 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Ammonia	6.2 mg/L ^{acute} @ pH = 7.95	5/5/2010	52 mg/L	A&Wc is inconclusive with 1 exceedance in 8 samples.
	2.6 mg/L ^{chronic} @ pH = 7.95 & Temp = 7 °C	5/5/2010	52 mg/L	
Copper ^d	11.9 ug/L ^{acute} , 8.03 ug/L ^{chronic} @ hardness 88 mg/L	7/1/2010	16 ug/L	A&Wc is inconclusive with 1 exceedance in 4 samples.
Dissolved oxygen	7.0 mg/L	9/30/2009	6.45 mg/L	A&Wc is inconclusive with 2 exceedances in 8 samples (binomial).
		7/1/2010	6.73 mg/L	

Monitoring Summary

Sampling period: 11/27/2006 - 7/1/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DOWNSTREAM OF ST. MARY LAKE	LCRUD008.43	107482	ADEQ	Ambient
ABOVE BENTON CREEK	LCRUD007.23	100634	ADEQ	Ambient
AT SIPE WILDLIFE AREA	LCRUD003.45	104697	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(5-8) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1-8) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Ammonia, copper (dissolved), dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more dissolved copper, ammonia, and dissolved oxygen due to exceedances.

SHOW LOW CREEK

Headwaters - Linden Wash
15020005-012
19.5 Miles

Category 2
Attaining Some Uses

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	3/5/2007	26 mg/L	A&Wc is attaining with no median exceedances.
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	4/16/2007	IBI 21	A&Wc is inconclusive.
		4/17/2007	IBI 14	
		6/27/2007	IBI 37	

Monitoring Summary

Sampling period: 11/14/2006 - 10/23/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW PORTER CREEK & BILLY CREEK CONFLUENCE	LCSHL031.05	104679	ADEQ	Ambient
ABOVE MORGAN WASH	LCSHL026.50	105418	ADEQ	Ambient
NEAR LAKESIDE, AZ	LCSHL029.75	101728	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(5) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(5-7) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect core parameters to represent at least 3 seasons during an assessment period. Reassess biocriteria after Implementation Procedure has been established.

SHOW LOW LAKE

15020005-1380
129.5 Acres

Category 2
Attaining some uses

FC - Inconclusive • FBC - Attaining • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	10/17/2006	6.27 mg/L	A&Wc is inconclusive with 1 exceedance in 4 samples (binomial).

Monitoring Summary

Sampling period: 10/17/2006 - 10/4/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM SITE	LCSHO-A	105270	ADEQ	CLP
AT MID LAKE	LCSHO-NLS	105801	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(4-6) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-7) Ammonia, nitrate, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-7) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), nickel (dissolved), selenium, thallium, mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect more dissolved oxygen samples due to the exceedance. Collect core parameters to represent at least 3 seasons during an assessment period.

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	11/27/2006	73 mg/L	A&Wc is inconclusive. Not enough samples to calculate a median.
		3/5/2007	79 mg/L	

Monitoring Summary

Sampling period: 11/27/2006 - 3/5/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW BURRO PIT	LCSIL013.53	104798	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(1-2) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more SSC samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

SILVER CREEK

Headwaters - Show Low Creek
15020005-013
33.6 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI \geq 52 attaining	4/24/2007	IBI 20	A&Wc is inconclusive.
	IBI 46 - 51 inconclusive IBI \leq 45 violating	6/28/2007	IBI 23	

Monitoring Summary

Sampling period: 11/15/2006 - 5/11/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW AGFD HATCHERY	LCSIL043.84	101125	ADEQ	Ambient, TMDL
BELOW BOURDON RANCH ROAD	LCSIL042.58	108502	ADEQ	TMDL
BELOW HATCHERY NEAR BOURDEN RANCH	LCSIL043.30	105372	ADEQ	TMDL
END OF QUEEN CREEK PLACE	LCSIL041.04	104681	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(5-8) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1-8) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(7-14) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Biocriteria
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), selenium

Priority	Monitoring Recommendations
High	Good core parameter coverage. Reassess biocriteria when Implementation Procedures are adopted.

SILVER CREEK

Sevenmile Dr - Little Colorado River
15020005-001
9.3 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	7/15/2008	5.64 mg/L	A&Wc is inconclusive with 6 exceedances in 14 samples (binomial).
		8/7/2008	6.2 mg/L	
		7/7/2009	5.41 mg/L	
		3/17/2010	6.7 mg/L	
		8/6/2010	6.63 mg/L	
		9/8/2010	5.68 mg/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	9/8/2010	4884 cfu/100 mL	FBC is inconclusive with 1 exceedance in 12 samples.
SSC	25 mg/L	11/15/2006	34 mg/L	A&Wc is inconclusive with 1 median exceedance.
		2/26/2007	49 mg/L	
		3/6/2007	46 mg/L	
		7/15/2008	889 mg/L	
		1/28/2009	179 mg/L	
		3/3/2009	91 mg/L	
		9/7/2009	98 mg/L	
		2/2/2010	45 mg/L	
		3/17/2010	130 mg/L	
		8/6/2010	194 mg/L	

Monitoring Summary

Sampling period: 11/15/2006 - 9/8/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
200 FEET BELOW USGS GAGE	LCSIL006.13	100337	ADEQ	Ambient
AT WOODRUFF DAM	LCSIL000.06	104877	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(10-14) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, SSC, <i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead, lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect dissolved oxygen, <i>E. coli</i> and SSC samples due to exceedances.

SILVER CREEK

Show Low Creek - Cottonwood
15020005-009
10.7 Miles

Category 2
Attaining some uses

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	5/4/2010	5.77 mg/L	A&Wc is inconclusive with 1 exceedance in 7 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	9/21/2009	494 cfu/100 mL	FBC is inconclusive. All exceedances were storm-related.
		5/4/2010	320 cfu/100 mL	
SSC	25 mg/L	11/15/2006	26 mg/L	A&Wc is inconclusive. Not enough samples to calculate a median.
		3/6/2007	69 mg/L	
		4/23/2007	58 mg/L	
		6/1/2010	270 mg/L	

Monitoring Summary

Sampling period: 11/15/2006 - 6/1/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FLAKE PROPERTY	LCSIL024.83	104682	ADEQ	Ambient
SOUTHEAST OF PINE-DALE & HWY 77	LCSIL027.05	107382	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3-6) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1-6) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(5-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, <i>E. coli</i> , SSC
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect additional dissolved oxygen, <i>E. coli</i> , and SSC samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

SOLDIER ANNEX LAKE

15020008-1430
122 Acres

Category 4A
Not Attaining

Mercury in fish tissue (EPA 2004)

FC - Not Attaining • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 11/2/2006 - 11/19/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM	LCSAL-A	103354	ADEQ	CLP
AT MID LAKE	LCSAL-NLS	105802	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(2-3) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-4) Ammonia, nitrate, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-4) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), nickel (dissolved), selenium, silver (dissolved), thallium

Priority	Monitoring Recommendations
High	Most core parameters in need of sample number and/or seasonal distribution coverage. Many parameters have detection limit issues.

Impairment Discussion
Remains not attaining for mercury in fish tissue (2004, EPA). Mercury TMDL completed in 2011.

SOLDIER LAKE

15020008-01440
28 Acres

Category 4A
Not Attaining

Mercury in fish tissue (EPA 2002)

FC - Not Attaining • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved Oxygen	6.8 MG/l	7/18/2006	6.01 mg/L	A&Wc is inconclusive, insufficient samples (binomial)

Monitoring Summary

7/18/2006-7/18/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
SOLDIER LAKE, SHORE	LCSOI-C	105374	AZGFD	

Metal Samples	Nutrients & Related Samples	Other Samples
	(1) Nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus	(1) Dissolved oxygen, pH, total dissolved solids, suspended solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved Oxygen
Missing Core Parameters	All
Missing Seasonal Distribution	All
Lab Detection Limits Not Low Enough	

Priority	Monitoring Recommendations
Medium	All core parameters in need of seasonal distribution,

Impairment Discussion
EPA overfile for mercury in fish tissue (2002). Mercury TMDL completed in 2011.

South Fork Little Colorado

Headwaters - Little Colorado River
15020001-027
11.9 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	5/21/2008	5.98 mg/L	A&Wc is inconclusive with 3 exceedances in 15 samples (binomial).
		6/2/2010 3	6.14 mg/L	
		6/30/2010	6.52 mg/L	

Monitoring Summary

Sampling period: 11/16/2006 - 6/30/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT CAMPGROUNDS	LCSLR001.42	100644	ADEQ	TMDL
BELOW JOE BACA DRAW	LCSLR003.72	105538	ADEQ	Ambient
OFF COUNTRY ROAD 4124 UPSTREAM OF CAMPGROUNDS	LCSLR000.91	102280	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4-7) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(7) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(7-15) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect more dissolved oxygen samples due to exceedances.

TELEPHONE LAKE

15020005-1500
22.3 Acres

Category 5
Impaired

IMPAIRMENT STATUS

Ammonia (2010)

PBC - Inconclusive • A&Wedw - Impaired

No Exceedances

Monitoring Summary

Sampling period: 3/11/2008 - 3/11/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR OUTLET BOX	LCTEL-O	107102	City of Show Low	Permit Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Nitrate, nitrite	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more samples in support of TMDL development.

Impairment Discussion
Remains impaired for ammonia (2010).

UNNAMED TRIB TO LYMAN LAKE (ULY)

Headwaters - Lyman Lake
15020001-772

Category 3
Inconclusive

Little Colorado

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/31/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
UNNAMED TRIB TO LYMAN LAKE (ULY)	LCULY000.05	107362	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Mercury	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

VIGIL RUN

Cienega - Little Colorado River
15020001-174
1.9 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	7/31/2007	4.4 mg/L	A&Wc is inconclusive with 1 exceedance in 4 samples (binomial).

Monitoring Summary

Sampling period: 7/31/2007 - 3/25/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW HIGHWAY NEAR SPRINGVILLE #11(LCR SEEP)	LCVIG000.92	104162	USGS	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, mercury, nickel, silver, thallium, zinc, selenium	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), lead (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect dissolved oxygen samples due to the exceedance. Collect core parameters to represent at least 3 seasons during an assessment period.

WALNUT CREEK (WAN)

Pine Lake - Billy Creek
15020005-238
6.2 Miles

Category 2

Attaining some uses

Little Colorado

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	7/25/2007	3.92 mg/L	A&Wc is inconclusive with 4 exceedances in 10 samples (binomial).
		4/15/2008	5.95 mg/L	
		7/15/2008	4.81 mg/L	
		9/21/2008	5.49 mg/L	
pH	9.0 SU	7/15/2008	10 SU	AGL, A&Wc, and FBC are attaining with 2 exceedance in 10 samples (binomial).
		7/25/2007	9.2 SU	
SSC	25 mg/L	6/27/2007	25.5 mg/L	A&Wc is attaining with no median exceedances.
		7/25/2007	33.5 mg/L	

Monitoring Summary

Sampling period: 7/26/2006 - 9/21/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW RAINBOW LAKE BEFORE DIVERSION	LCWAN000.58	105498	ADEQ	TMDL
BELOW RAINBOW LAKE BELOW DIVERSION	LCWAN000.54	105500	ADEQ	TMDL
ABOVE BIG SPRING	LCWAN002.60	105248	ADEQ	TMDL
ABOVE WOODLAND RESERVOIR	LCWAN004.71	105247	AGFD	CLP
AT HOMESTEAD ROAD	LCWAN002.19	105249	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(3-7) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(4-26) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-30) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), nickel (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect more dissolved oxygen samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	9/9/2009	6.7 mg/L	A&Wc is inconclusive with 1 exceedance in 3 samples (binomial).

Monitoring Summary

Sampling period: 9/9/2009 - 6/23/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
2.5 MILES UPSTREAM OF SHEEP CROSSING CAMPGROUND	LCWLR007.37	107383	ADEQ	Ambient
AT MT. BALDY WILDERNESS BOUND	LCWLR005.05	100329	ADEQ	TMDL
BELOW SHEEPS CROSSING	LCWLR004.09	100945	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-5) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved)

Priority	Monitoring Recommendations
Low	Collect dissolved oxygen samples due to the exceedance. Collect core parameters to represent at least 3 seasons during an assessment period.

WEST FORK LITTLE COLORADO

Government Springs - Little Colorado River
15020001-013B
2.2 Miles
Outstanding Arizona Water

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	5/21/2008	26.8 mg/L	A&Wc is attaining with no median exceedances.
		6/2/2010	28 mg/L	
Copper ^d	2.1 ug/L ^{acute} , 1.7 ug/L ^{chronic} @ 14 mg/L hardness	5/19/2009	2.5 ug/L	A&Wc is inconclusive with 1 exceedance.

Monitoring Summary

Sampling period: 11/13/2006 - 6/2/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT GOVERNMENT SPRINGS	LCWLR000.92	100328	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, zinc, selenium	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-12) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved)
Missing Core Parameters	None
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), silver (dissolved), zinc (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect dissolved copper samples due to the exceedance.

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 10/13/2009 - 7/14/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM	LCWIS-A	100091	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(2-3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	All core parameters are in need of seasonal distribution coverage. <i>E. coli</i> needs sample number coverage as well.

WOODLAND RESERVOIR

15020005-1690
15.8 Acres

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	9/20/2007	4.28 mg/L	A&Wc is inconclusive with 1 exceedance in 2 samples (binomial).
pH	9.0 SU	9/20/2007	9.2 SU	AGI, AGL, A&Wc, and FBC are inconclusive with 1 exceedance in 2 samples (binomial).

Monitoring Summary

Sampling period: 4/5/2007 - 9/20/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR DAM / GATE	LCWOR-A	105221	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-2) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, dissolved oxygen
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), nickel (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect more pH and dissolved oxygen samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	12/10/2010	5.25 mg/L	A&Wc is inconclusive with 1 exceedance in 2 samples (binomial).

Monitoring Summary

Sampling period: 12/10/2010 - 5/11/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW WOODS CANYON LAKE DAM	LCWCY005.01	108522	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(2) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect more dissolved oxygen samples due to exceedance. All core parameters need sample number and seasonal coverage.

Middle Gila Watershed

Watershed Description

This watershed encompasses the Gila River drainage area below Coolidge Dam (San Carlos Reservoir) in the east to Painted Rocks Dam in the west. It excludes the Santa Cruz River, the San Pedro River, and the Salt River drainage above Granite Reef Dam. The Salt River drainage area below Granite Reef Dam is included in this watershed (instead of the Salt Watershed) because the canals and diversions at the dam hydrologically disconnect the system from the rest of the lower Salt River drainage.

The Phoenix metropolitan area, located in this 12,250 square mile watershed, consists of more than three million people (2000 census) and continues to be one of the fastest growing areas in the United States. Land ownership in the Middle Gila is approximately: 65% federal land, 25% private land, 4% state land, and 4% tribal land. Within the metropolitan area, irrigated agriculture uses are rapidly being displaced by urbanization. Outside the urbanized area, livestock grazing is the primary land use. Mining (primarily now abandoned) has occurred across this watershed, with more concentration south of Prescott.

Elevations range from 7,400 feet (above sea level) to 1,100 feet at Painted Rocks Reservoir. Most of the watershed is below 5,000 feet in elevation, with Sonoran Desert flora and fauna and warmwater aquatic communities.

Water Resources

This area receives little rainfall (approximately 13 inches a year); therefore, surface water flow is primarily attributed to releases from upstream impoundments, effluent from wastewater treatment plants, and agricultural return flows.

An estimate of surface water resources in the Middle Gila Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

Estimated Surface Water Resources in the Middle Gila Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	165	1,210	5,460
	Perennial	Non-perennial	
Lake acres	10,320	6,830	

Additional Water Resources Located on Tribal Lands – Not Assessed

	Perennial	Intermittent	Ephemeral
Stream miles On Tribal Lands	0	10	1,105
	Perennial	Non-perennial	
Lake acres On Tribal Lands	240	0	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.

Assessments

The Middle Gila Watershed can be separated into the following drainage areas (subwatersheds):

- 15050100 Gila – Queen Creek Drainage Area (from San Carlos Reservoir to Salt River)
- 15060106B Salt – Cave Creek Drainage Area (from Granite Reef Dam to Gila River)
- 15070101 Gila – Painted Rock Drainage Area (from Salt River to Painted Rock Dam)
- 15070102 Agua Fria River Drainage Area
- 15070103 Hassayampa River Drainage Area
- 15070104 Centennial River Drainage Area

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

Middle Gila Watershed

Legend

Towns

NAME

■ Towns

★ PHOENIX

== Highways

~ Streams

☪ Lakes

▭ HUC Watershed Boundaries

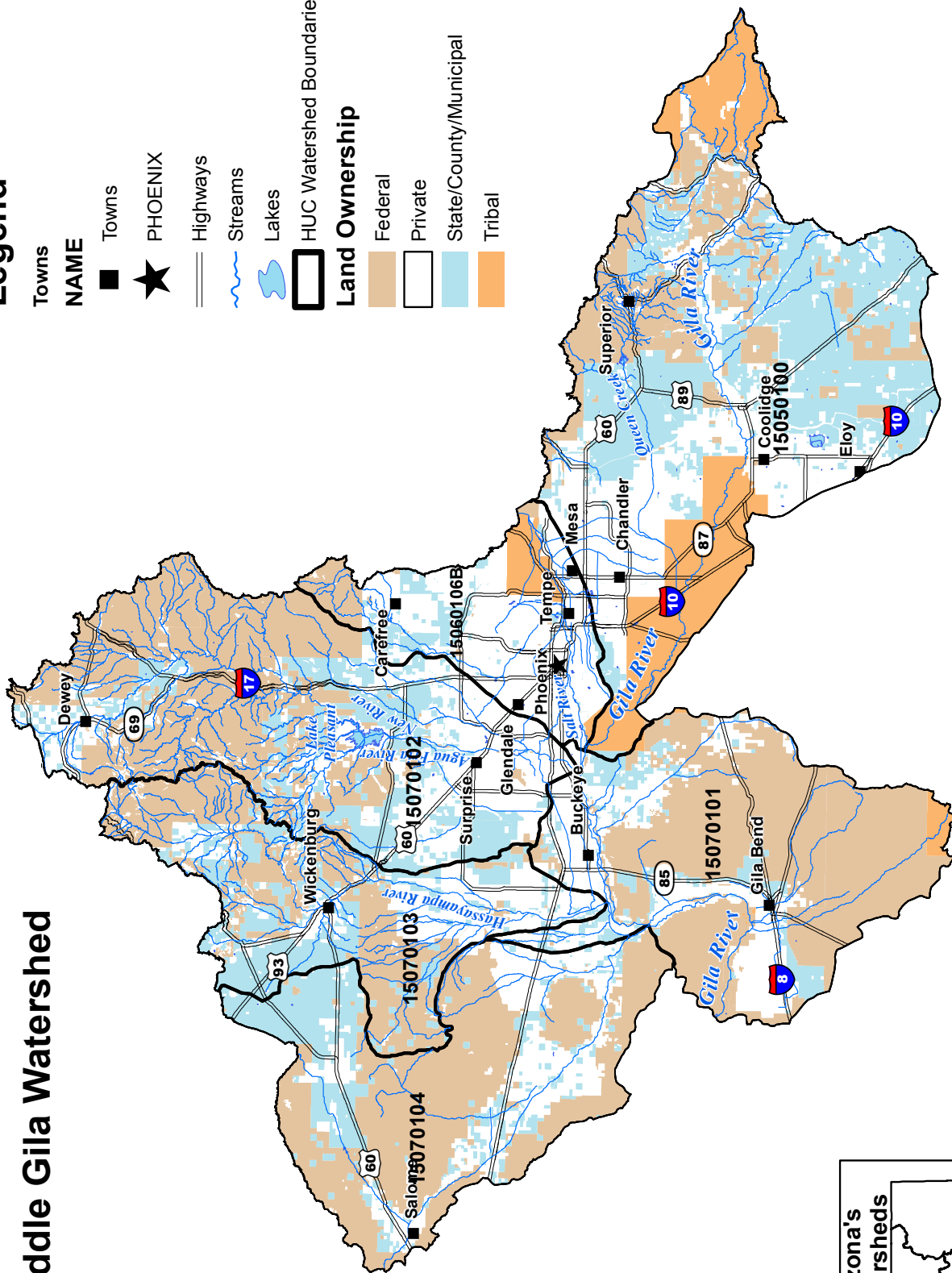
Land Ownership

Federal

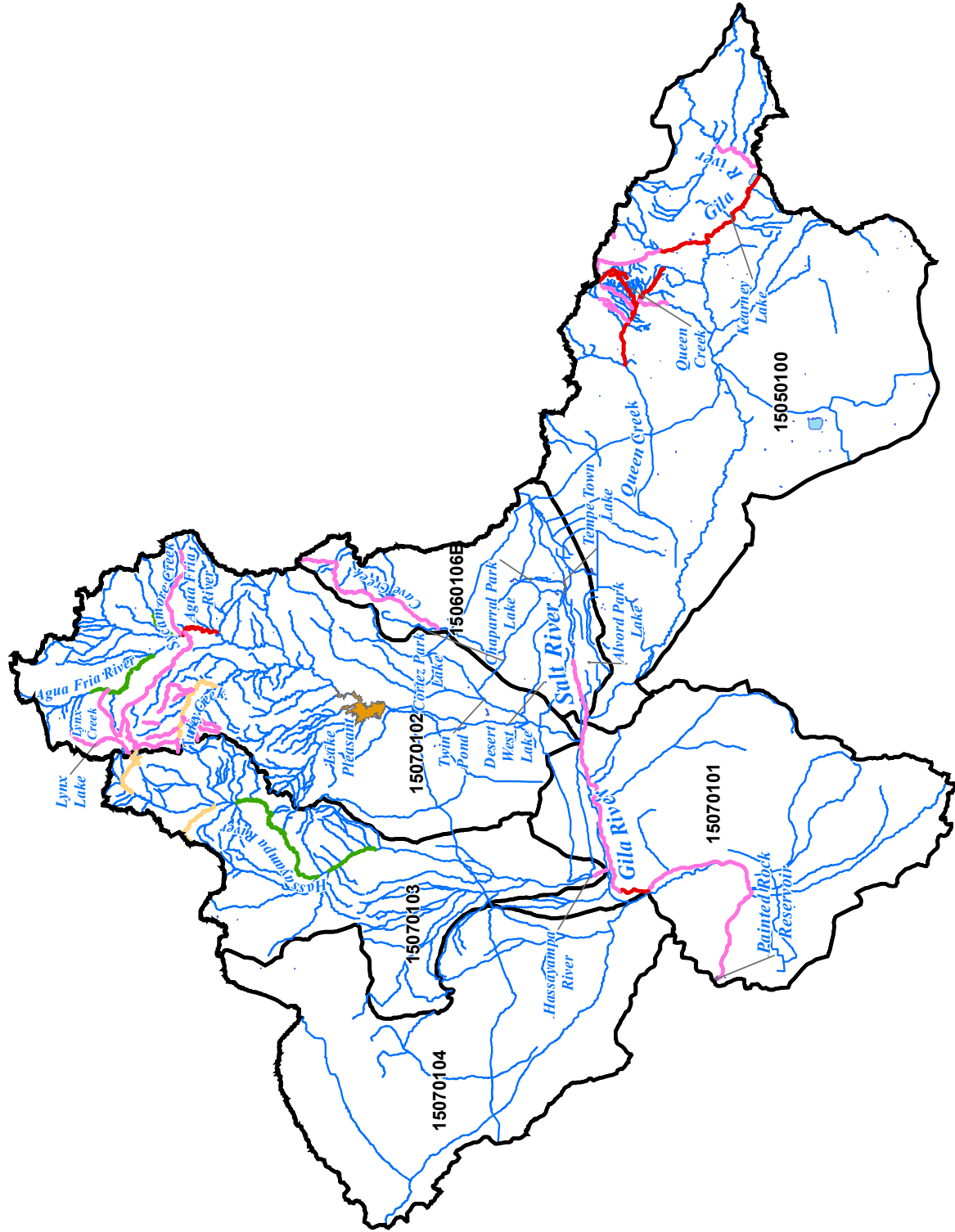
Private

State/County/Municipal

Tribal



Middle Gila Watershed 2012/2014 Assessment for Streams and Lakes



Legend

Assessed Lakes - 2012

ADEQ and EPA Listings

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired
- Impaired

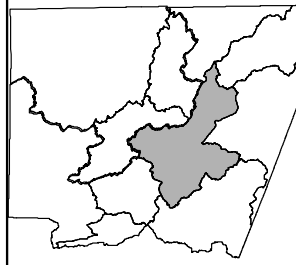
HUC Watershed Boundaries

Assessed Streams - 2012

ADEQ and EPA Listings

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired
- Impaired

- Lakes
- Streams

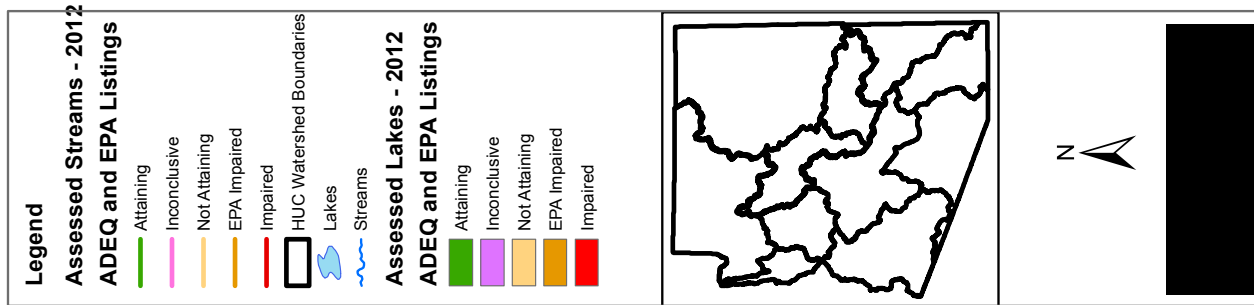
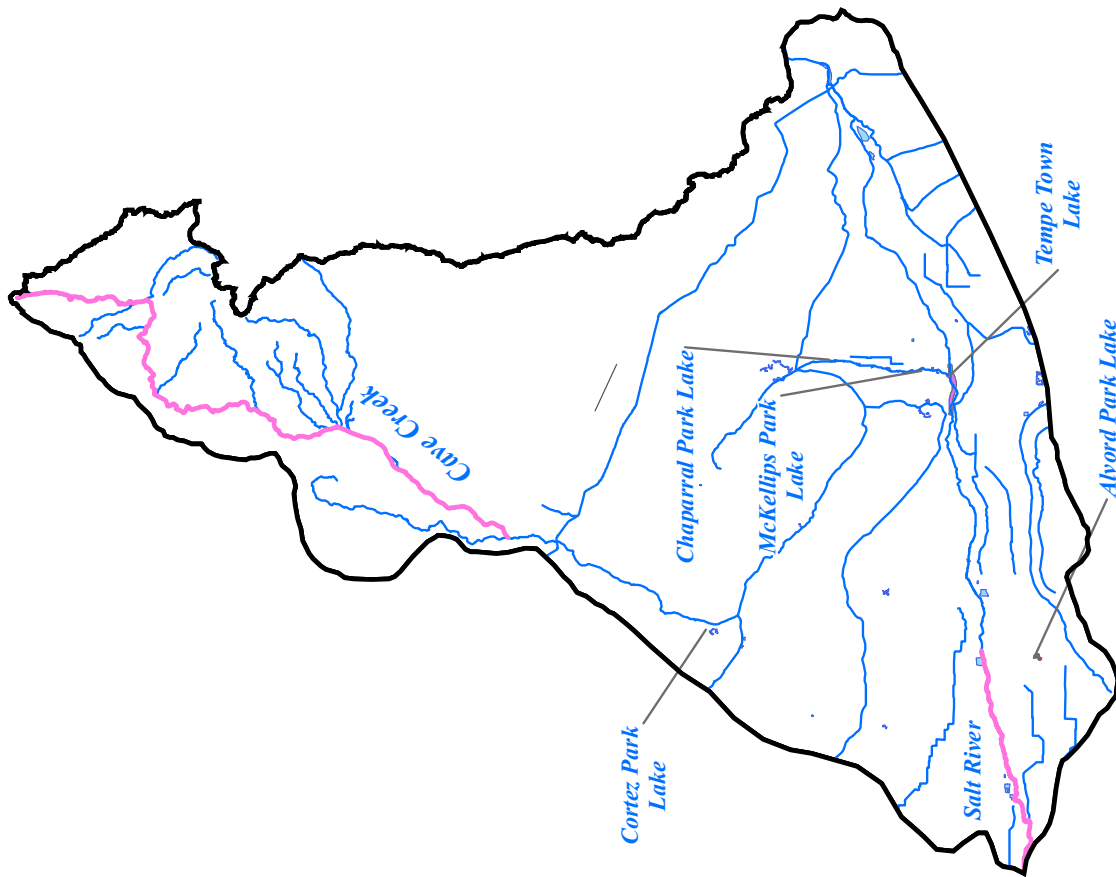


See Individual HUC Printouts
for Waters not Labeled

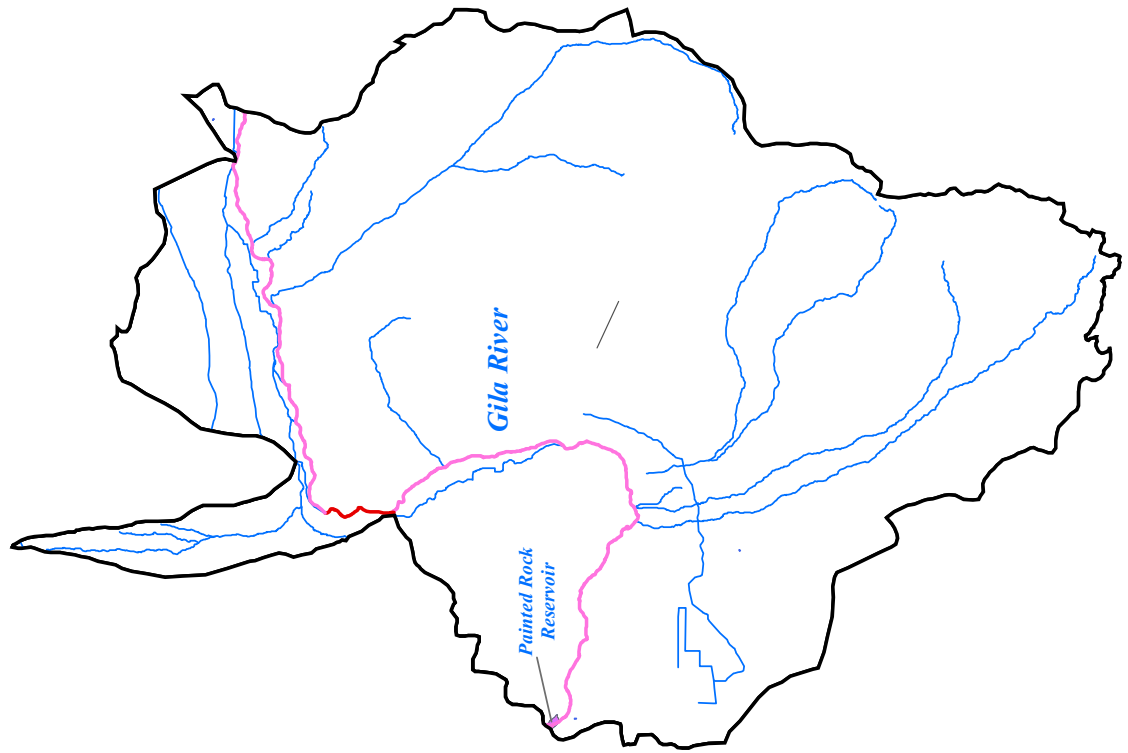
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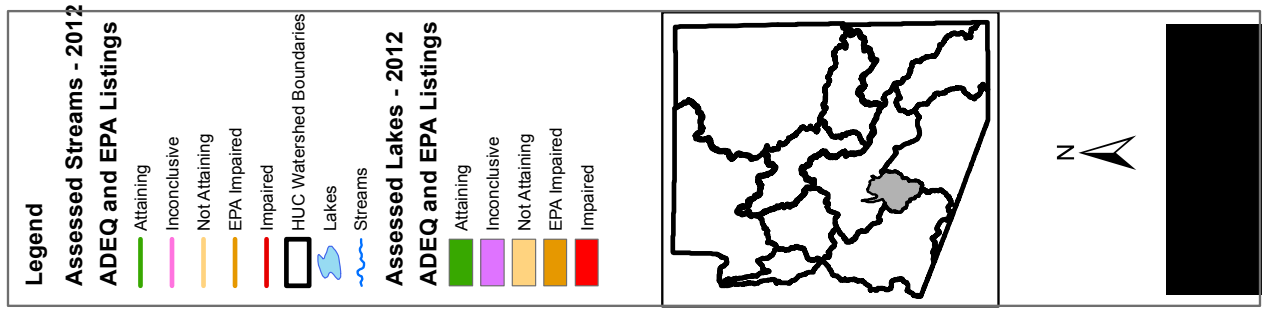
Middle Gila Watershed HUC 15060106B 2012/2014 Assessment for Streams and Lakes



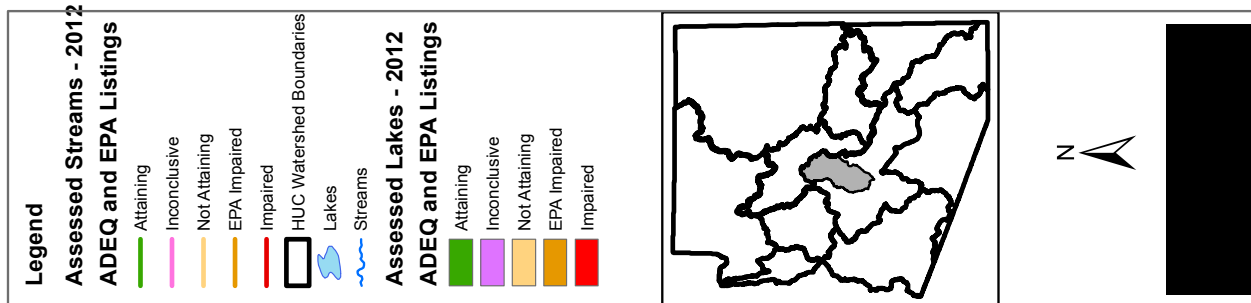
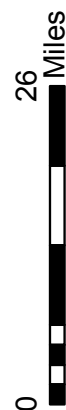
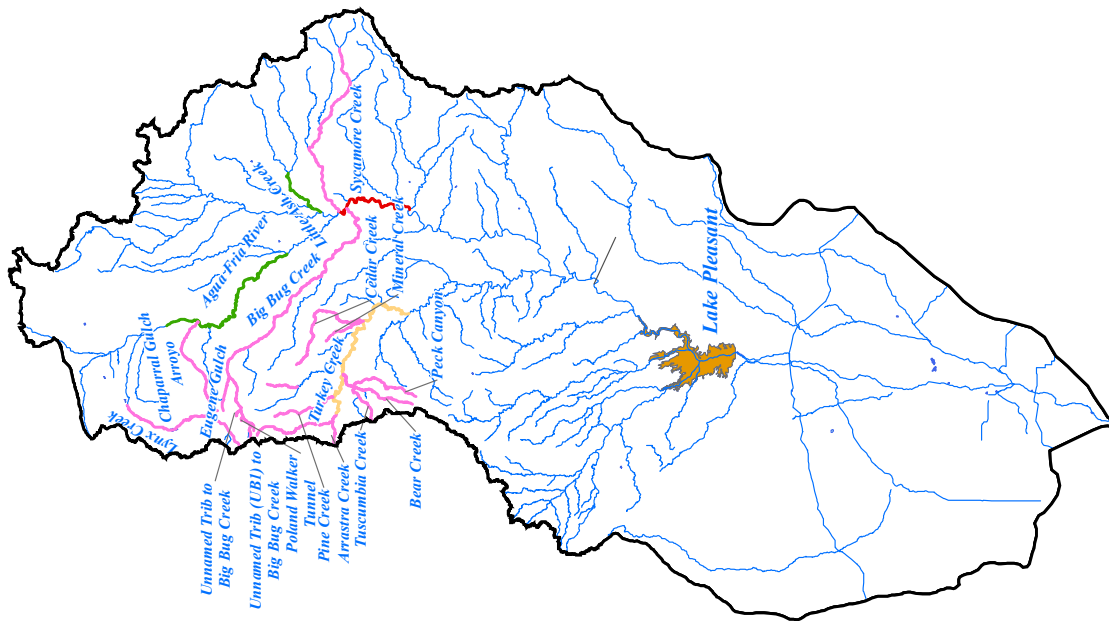
Middle Gila Watershed HUC 15070101 2012/2014 Assessment for Streams and Lakes



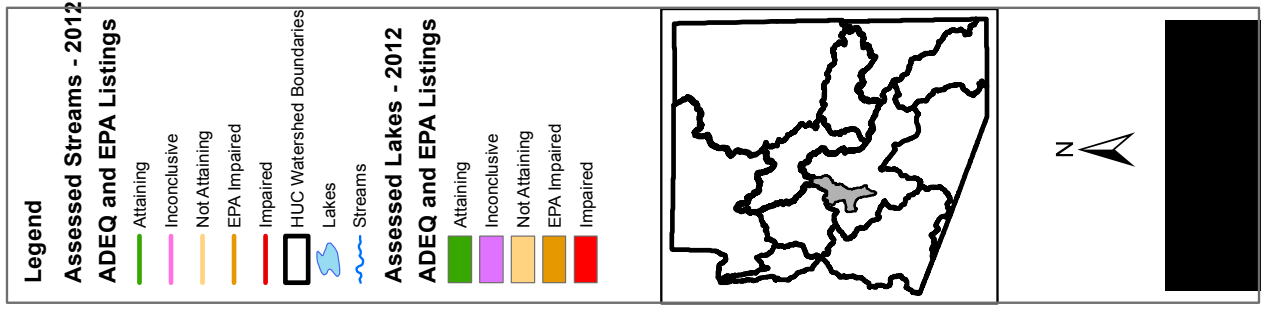
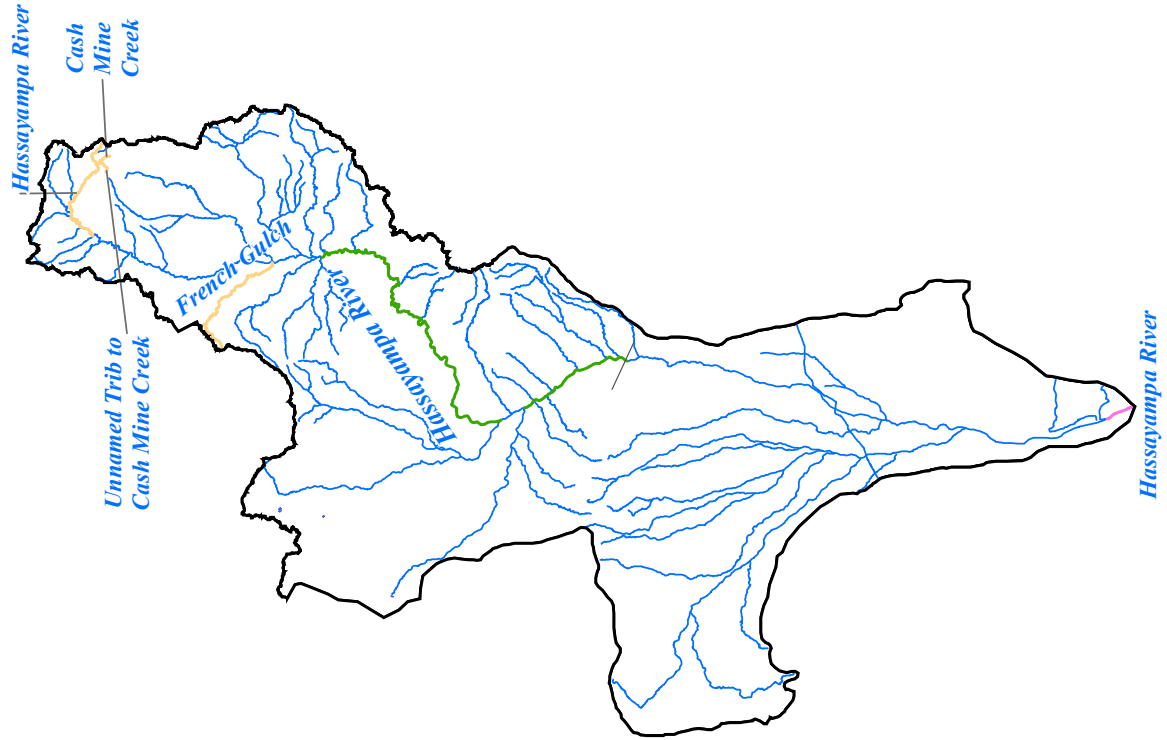
0 22 Miles



Middle Gila Watershed HUC 15070102 2012/2014 Assessment for Streams and Lakes



Middle Gila Watershed HUC 15070103 2012/2014 Assessment for Streams and Lakes



A GUA FRIA RIVER

Sycamore Creek - Bishop Creek
15070102-023
9.1 Miles

Category 5
Impaired

E. coli (2010)

DWS - Inconclusive • FC - Attaining • FBC - Impaired
AGI - Attaining • AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	10 ug/L	8/13/2008	16 ug/L	DWS is inconclusive with 1 exceedance in 4 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	9/11/2008	533 cfu/100 mL	FBC remains impaired with two exceedances in the last three years of the assessment period (7/08-6/11).
		10/20/2008	310 cfu/100 mL	

Monitoring Summary

Sampling period: 8/13/2008 - 4/6/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW USGS GAGE 09512500	MGAFR087.06	100710	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Arsenic
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> to support TMDL development and arsenic due to exceedances. Good core parameter coverage with small number of samples.

Impairment Discussion
<i>Remains impaired for E. Coli (2010).</i>

A GUA FRIA RIVER

State Route 169 - Yarber Wash
15070102-031B
17.8 Miles

Category 2
Attaining some uses

DWS - Attaining • FC - Attaining • FBC - Inconclusive
AGI - Attaining • AGL - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 ml, SSM	9/11/2008	690 cfu/100 mL	FBC is inconclusive with 1 exceedance in 4 samples.

Monitoring Summary

Sampling period: 8/13/2008 - 4/6/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE CHAPARRAL GULCH	MGAFR110.01	106462	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	Dissolved oxygen
Missing Seasonal Distribution	Dissolved oxygen
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect additional <i>E. coli</i> samples due to the exceedance. Collect more dissolved oxygen to represent 3 seasons over the assessment period to complete core parameter coverage.

IMPAIRMENT STATUS

Ammonia (2004)

FC - Attaining • PBC - Inconclusive • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	9/10/2008	5.19 mg/L	A&Ww is inconclusive with 1 exceedance in 6 samples (binomial).
pH	9.0 SU	5/14/2009	9.7 SU	A&Ww and PBC are inconclusive with 2 exceedances in 6 samples (binomial).
		8/6/2009 8	9.3 SU	

Monitoring Summary

Sampling period: 9/21/2006 - 8/6/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	MGALV-C	101042	ADEQ	CLP
INFLOW	MGALV-A	101040	AGFD	CLP
WEST LAGOON	MGALV-WEST	102563	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(12) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(13-14) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, pH
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more pH and dissolved oxygen due to exceedances. TMDL sampling completed.

Impairment Discussion
Remains impaired for ammonia (2004). Two exceedances in 2005 (2010 assessment) but no ammonia exceedances in this assessment period in 12 samples. TMDL development ongoing.

IMPAIRMENT STATUS

Copper (2010)

FC - Attaining • FBC - Inconclusive • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Chromium	100 ug/L	7/22/2007	107 ug/L	FBC is inconclusive with 1 exceedance in 8 samples (binomial).
Copper ^d	24 mg/L ^{acute} @ 87 mg/L hardness & 10.5 ug/L ^{chronic} @ 120 mg/L hardness	8/6/2007	11.8 mg/L (worst case)/ 11 ug/L (median)	A&Ww remains impaired with 3 chronic exceedances in 9 samples.
	10.0 ug/L ^{acute} & 6.7 ug/L ^{chronic} @ 72 mg/L hardness	12/8/2007	12 ug/L (max) 11 ug/L (median)	
	9.1 ug/L ^{acute} & 6.3 ug/L ^{chronic} @ 66 mg/L hardness	1/7/2008	9.8 ug/L	
Lead	15 ug/L	3/23/2007	52.3 ug/L	FBC is inconclusive with 8 exceedances in 9 samples (binomial requires 20 samples for impairment).
		7/22/2007	270 ug/L	
		7/23/2007	123.4 ug/L	
		8/6/2007	52.3 ug/L	
		8/16/2007	108 ug/L	
		12/8/2007	23.6 ug/L	
		1/7/2008	76.3 ug/L	
		1/21/2010	28.8 ug/L	
SSC	80 mg/L	3/23/2007	337 mg/L	A&Ww is inconclusive. 2 non-storm single sample exceedances (3/23/07 and 1/28/08) but not enough samples to calculate a median.
		7/22/2007	1771 mg/L	
		8/16/2007	1060 mg/L	
		12/8/2007	200 mg/L	
		1/7/2008	2204 mg/L	
		1/28/2008	868 mg/L	

Monitoring Summary

Sampling period: 3/23/2007 - 1/21/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE CONFLUENCE WITH QUEEN CREEK	MGARN000.11	103503	ADEQ	TMDL
ABOVE CONFLUENCE WITH TRIBUTARY 1	MGARN008.31	106222	ADEQ	TMDL
ABOVE CONFLUENCE WITH WOOD CANYON	MGARN005.52	107842	ADEQ	TMDL
ABOVE CONFLUENCE WITH TELEGRAPH CANYON	MGARN003.84	107823	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(9-11) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(2-8) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead, chromium, SSC
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Dissolved oxygen, pH, <i>E. coli</i>
Lab Detection Limits Not Low Enough	Copper (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more chromium, lead, and SSC samples due to exceedances. Collect missing core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
Remains impaired for copper (2010). Included as part of Queen Creek TMDL project.

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 2/25/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MOUTH POINT NEAR CORRAL	MGARS000.04	107783	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, copper, lead, manganese	None	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

BEAR CREEK

Headwaters - Turkey Creek
15070102-046
8.1 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 11/28/2006 - 2/23/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
0.3 MILES SOUTH OF TURKEY CREEK CORRAL SITE	MGBEA001.08	104882	ADEQ	TMDL
DS OF TUSCUMBIA CREEK, US OF MOUTH PECK CANYON	MGBEA002.08	107703	ADEQ	TMDL
MID-STREAM (4X4 ACCESSIBLE)	MGBEA003.05	105347	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, copper, lead, manganese	None	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

BIG BUG CREEK

Eugene Gulch - Agua Fria River
15070102-034B
23.3 Miles

Category 3
Inconclusive

Middle Gila

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	9.6 ug/L @ 108 mg/L hardness	1/22/2010	10.1 ug/L	A&Ww is inconclusive with 1 exceedance in 2 samples.
Lead	15 ug/L	1/22/2010	23 ug/L	FBC is inconclusive with 1 exceedance in 2 samples (binomial).

Monitoring Summary

Sampling period: 1/22/2010 - 3/9/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT SOUTH SPRING LANE	MGBGB009.57	107763	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved), lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more lead and dissolved copper due to exceedances. All core parameters need sample and seasonal distribution coverage.

BIG BUG CREEK

Headwaters - Eugene Gulch
15070102-034A
5.7 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 3/9/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FS ROAD 261 TRAIL BRIDGE	MGBGB028.27	108102	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, selenium, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), lead (dissolved)

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period. Use lower lab reporting limits for dissolved cadmium and lead.

Cadmium, copper, and zinc (2002)

FC - Inconclusive • FBC - Inconclusive
A&Wc - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW CASH MINE	MGCSM000.47	100832	ADEQ	Fixed Station Network
BELOW ROAD	MGCSM000.29	100833	Weston, ADEQ	TMDL, Fixed Station Network
NEAR MCCLEUR TAIL-INGS	MGCSM000.34	102818	ADEQ, Weston	TMDL, WQRF

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring after TMDL strategies have been implemented.

Impairment Discussion
Included in the Hassayampa River TMDL (2002).

CAVE CREEK

Headwaters - Cave Creek Dam
15060106B-026A
32.909 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 4/23/2009 - 11/18/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW SEVEN SPRINGS	MGCVE037.68	100527	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(2) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

CEDAR CANYON (CEDAR CREEK)

Headwaters - Turkey Creek
15070102-053
11.6 Miles

Category 3
Inconclusive

Middle Gila

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Lead	15 ug/L	12/22/2010	42.7 ug/L	PBC is inconclusive with 1 exceedance in 2 samples (binomial).

Monitoring Summary

Sampling period: 7/20/2006 - 12/22/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NORTH OF MINERAL CREEK MOUTH	MGCED000.25	102522	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Arsenic, boron, chromium, copper, lead, manganese, mercury	None	(1) Dissolved oxygen, pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect lead samples due to the exceedance. Collect core parameters to represent at least 3 seasons during an assessment period.

CHAPARRAL GULCH ARROYO

Headwaters - Agua Fria
15070102-739
9.9 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Lead	15 ug/L	1/22/2010	205 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).
Zinc ^d	1509 ug/L @ 143 mg/L hardness	1/22/2010	4900 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 1/22/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW IRON KING MINE	MGCGA001.32	107762	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Zinc (dissolved), lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Not enough data to assess. Collect more lead and dissolved zinc due to exceedances. Collect at least 3 of each core parameter to represent 3 seasons over assessment period.

E. coli and low dissolved oxygen (2004)

FC - Attaining • PBC - Attaining • AGI - Attaining
A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Ammonia	0.31 mg/L @ pH 8.8 and temp 26.1 °C	5/13/2009	1.2 mg/L	A&Ww is inconclusive with 1 exceedance in 4 samples.
Dissolved oxygen	6.0 mg/L	9/8/2008 9	4.51 mg/L	A&Ww remains impaired with 1 exceedance in 5 samples (binomial).

Monitoring Summary

Sampling period: 9/8/2008 - 8/5/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM	MGCHA-A	101045	ADEQ	TMDL
MID LAKE	MGCHA-B	101046	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-5) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(7) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(10) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Ammonia
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more ammonia samples due to the exceedance.

Impairment Discussion
Remains impaired for dissolved oxygen and <i>E. coli</i> (2004). Five <i>E. coli</i> samples taken in this assessment period (08-09) with no exceedances. TMDL sampling completed. Developing TMDL report.

Dissolved oxygen and pH (2004)

FC - Attaining • PBC - Impaired • AGI - Impaired
A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	9.0 SU	5/13/2009	9.4 SU	AGI, A&Ww, and AGI remain impaired with 1 exceedance in 5 samples.

Monitoring Summary

Sampling period: 9/4/2008 - 8/5/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM	MGCOR-A	101043	ADEQ	TMDL
MID LAKE	MGCOR-B	101044	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(2-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(6-8) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(10) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring after TMDL strategies have been implemented.

Impairment Discussion
Remains impaired for dissolved oxygen and pH (2004). TMDL sampling completed.

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	3.64 ug/L ^{acute} , 2.74 ug/L ^{chronic} @ 23 mg/L hardness	12/11/2007	12 ug/L	A&Ww chronic is inconclusive with 1 exceedance in the assessment period.

Monitoring Summary

Sampling period: 12/11/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT US 60	MGDVC009.11	105979	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	None	(1) SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved)
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), zinc (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Insufficient sampling event and seasonal coverage. Collect more dissolved copper samples due to the exceedance.

EUGENE GULCH
 Headwater - Big Bug Creek
 15070102-768
 3.1 Miles

Category 3
 Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	13.2 ug/L @ 55 mg/L hardness	3/9/2010	50.9 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 3/9/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE POLAND JUCTION ROAD	MGEUG000.75	108103	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, selenium, zinc	None	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved)
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more dissolved copper due to the exceedance. All core parameters need sample number and seasonal distribution coverage.

Cadmium, copper, and zinc (2004)

FC - Inconclusive • FBC - Inconclusive
A&Ww - Not Attaining

Monitoring Summary
Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE ZONIA GULCH	MGFRG008.19	102235	ADEQ	TMDL
AT HEADWATERS	MGFRG010.13	102086	ADEQ	TMDL
BELOW HEADWATERS	MGFRG010.33	102234	ADEQ	TMDL
BELOW UPPER WASTE ROCK PILE	MGFRG009.59	102087	ADEQ	TMDL
ABOVE HASSAYAMPA RIVER	MGFRG000.19	102084	ADEQ	TMDL
ABOVE PLACERITA GULCH	MGFRG007.06	101649	ADEQ	TMDL
ABOVE ZONIA MINE	MGFRG009.79	101619	ADEQ	TMDL
BELOW PLACERITA GULCH	MGFRG006.95	101650	ADEQ	TMDL
BELOW ZONIA GULCH	MGFRG008.09	101620	ADEQ	TMDL
WESTERN TRIB ABOVE ZONIA MINE	MGFRG010.19	102085	ADEQ	TMDL
ABOVE ZONIA MINE	MGFRG010.14	102088	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring after TMDL strategies have been implemented.

Impairment Discussion
Remains not attaining for copper, cadmium and zinc. French Gulch TMDL completed in 2005.

IMPAIRMENT STATUS

SSC (2006/8)

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	80 mg/L	9/16/2008	98 mg/L	A&Ww remains impaired. The exceedance on 5/13/09 occurred during a storm event and was excluded from assessment.
		1/14/2009	87.5 mg/L	
		5/13/2009	93 mg/L	

Monitoring Summary

Sampling period: 9/16/2008 - 5/13/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT KELVIN, AZ USGS 09474000	MGGLR313.73	100748	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more SSC samples to support TMDL development.

Impairment Discussion
Remains impaired for SSC (2006/8)

AGI - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive • FBC - Inconclusive • FC - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 9/7/2006 - 10/4/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW ASH CREEK	MGGLR337.14	104638	ADEQ	Special Studies

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(1-2) <i>E. coli</i> , pH, turbidity

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	pH, boron, manganese, copper, lead, zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	pH, boron, manganese, copper, lead, zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Many core parameters need seasonal distribution and/or sample number coverage as well (at least 3 samples representing 3 seasons).

GILA RIVER

Centennial Wash - Gillespie Dam
15070101-008
5.3 Miles

Category 5
Impaired

Boron (1992), selenium (2004)

PBC - Inconclusive • FC - Inconclusive • A&Wedw - Impaired
AGL - Inconclusive • AGI - Impaired

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE DIVERSION AT GILLESPIE DAM USGS 09518000	MGGLR167.44	100734	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more samples to support TMDL development.

Impairment Discussion
Remains impaired for boron and selenium. Overfile listing for pesticides in fish tissue by EPA in 2002. ADEQ proposes delisting this reach for pesticides based on recent fish tissue and water quality data.

GILA RIVER SITES

Salt River - Painted Rock Reservoir
15070101 (multiple reaches)
77.2 Miles

Category 3
Inconclusive

Middle Gila

PBC - Inconclusive • FC - Inconclusive • A&Wedw - Inconclusive
AGL - Inconclusive • AGI - Inconclusive

Sites Summary

Sampling period: No current data

HUC-reach	Reach Description	Miles
15070101-015	Salt River - Agua Fria River	3.7
15070101-014	Agua Fria River - Waterman Wash	11.9
15070101-010	Waterman Wash - Hassayampa River	13.9
15070101-009	Hassayampa - Centennial Wash	7
15070101-007	Gillespie Dam - Rainbow Wash	5.1
15070101-005	Rainbow Wash - Sand Tank	16.9
15070101-001	Sand Tank - Painted Rock Reservoir	18.7

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect samples to determine designated use attainments.

Delisting of Previous Impairment
ADEQ proposes delisting these reaches (2002 EPA overfiles) based on recent fish tissue and water quality data..

HASSAYAMPA RIVER

Buckeye Canal - Gila River
15070103-001B
2.3 Miles

Category 2

Attaining some uses

FC - Inconclusive • FBC - Inconclusive • AGL - Attaining
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 ml, SSM	5/14/2009	808 cfu/100 mL	FBC is inconclusive with 1 exceedance in 3 samples.
SSC	80 mg/L	1/13/2009	1511 mg/L	A&Ww is attaining with no median exceedances in 7 samples.
		5/14/2009	116 mg/L	

Monitoring Summary

Sampling period: 9/15/2008 - 5/14/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE GILA RIVER	MGHSR000.77	101197	ADEQ	Ambient
NEAR ALINGTON, AZ USGS 09517000	MGHSR002.67	101496	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(3-6) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(3-7) Dissolved oxygen, <i>E. coli</i> , hexachlorocyclohexane delta, isophorone, naphthalene, nitrobenzene, nitrophenol, pH, phenol, pyrene, SSC, simazine, total dissolved solids, trichlorobenzene

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> samples to assess attainment. Collect more dissolved metals (cadmium, copper, zinc) covering 3 seasons over assessment period. Many organic parameters being monitored have detection limit issues (too many to list).

Delisting of Previous Impairment
Previously impaired for pesticides in fish tissue (2002, EPA). ADEQ proposes delisting based on recent fish tissue and water quality data.

HASSAYAMPA RIVER

Cottonwood Creek - Martinez Wash
15070103-004
32.1 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	8/12/2008	5.46 mg/L	A&Ww is inconclusive with 1 exceedance in 3 samples (binomial).

Monitoring Summary

Sampling period: 8/12/2008 - 4/7/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT BLM GAGE, BOX CANYON DAM	MGHSR058.80	100463	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury, nickel (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more dissolved oxygen samples due to exceedance. Good core parameter coverage with small number of samples.

H ASSAYAMPA RIVER

Headwaters - Copper Creek
15070103-007A
11.0 Miles

Category 4A
Not Attaining

Middle Gila

Low pH(2006/8) and zinc, cadmium, and copper (1992)

FC - Attaining • FBC - Not Attaining • AGI - Not Attaining
AGL - Not Attaining • A&Wc - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Cadmium ^d	0.37 ug/L ^{chronic} @ 180 mg/L hardness	2/15/2007	2.8 ug/L	A&Wc remains not attaining.
	0.51 ug/L ^{chronic} @ 280 mg/L hardness	10/20/2008	3.3 ug/L	
	2.2 ug/L ^{acute} , 0.26 ug/L ^{chronic} @ 110 mg/L hardness	2/4/2009	3.9 ug/L	
	2.8 ug/L ^{acute} , 0.31 ug/L ^{chronic} @ 140 mg/L hardness	4/7/2009	5.8 ug/L	
Copper ^d	15.9 ug/L ^{acute} , 10.5 ug/L ^{chronic} @ 180 mg/L hardness	2/15/2007	18 ug/L	A&Wc remains not attaining.
	14.7 ug/L ^{acute} , 9.7 ug/L ^{chronic} @ 110 mg/L hardness	2/4/2009	36 ug/L	
	18.5 ug/L ^{acute} , 11.9 ug/L ^{chronic} @ 140 mg/L hardness	4/7/2009	38 ug/L	
Zinc ^d	192 ug/L @ 180 mg/L hardness	2/15/2007	370 ug/L	A&Wc remains not attaining.
	127 ug/L @ 110 mg/L hardness	2/4/2009	260 ug/L	
	156 ug/L @ 140 mg/L hardness	4/7/2009	290 ug/L	

Monitoring Summary

Sampling period: 2/15/2007 - 4/7/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DOWNSTREAM OF WET- LAND MINE BABBLE	MGHSR113.86	100942	WESTN	TMDL
LOWER WOLF CREEK CAMPGROUND	MGHSR110.58	106662	ADEQ	Ambient
AT SENATOR MINE ADIT	MGHSR113.01	101084	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more cadmium, copper, and zinc samples to assess on the ground improvements. Good core parameter coverage with small number of samples.

Impairment Discussion
TMDL for cadmium, copper, zinc completed and approved in 2002. On the ground improvements meant to improve metal concentrations may have improved pH levels – no pH exceedances in this assessment period.

HASSAYAMPA RIVER

Sols Wash - 8 Miles Below Wickenburg
15070103-002A
9.2 Miles

Category 2
Attaining some uses

Middle Gila

FC - Attaining • FBC - Attaining • AGI - Inconclusive
AGL - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	8/15/2008	5.22 mg/L	A&Ww is inconclusive with 2 exceedances in 4 samples (binomial).
		2/4/2009	5.63 mg/L	
Manganese	10000 ug/L	8/15/2008	77000 ug/L	AGI is inconclusive with 1 exceedance in 4 samples (binomial).
Bottom Deposits	< 50%	10/22/2008	59%	A&Ww is inconclusive with 1 exceedance.

Monitoring Summary

Sampling period: 8/15/2008 - 6/4/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT NATURE CONSERVANCY	MGHSR048.20	100462	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, bottom deposits

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Manganese, dissolved oxygen, bottom deposits
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more manganese, dissolved oxygen, and bottom deposits samples due to exceedance. Good core parameter coverage with small number of samples.



LAKE PLEASANT

15070102-1100
8000 Acres

Category 5
Impaired

Mercury in fish tissue (EPA 2006/8)

FC - Impaired • FBC - Inconclusive • DWS - Inconclusive
A&Ww - Inconclusive • AGL - Inconclusive • AGI - Inconclusive

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AGUA FRIA ARM	MGPLE-AGUA	102553	AGFD	Ambient
AT DAM	MGPLE-A	100067	ADEQ	TMDL
AT RIVERINE ZONE	MGPLE-C	101708	UA, ADEQ	CLP
CASTLE CREEK	MGPLE-CSTL	102554	ADEQ	TMDL
MARINA	MGPLE-MAR	101000	UA, ADEQ	CLP
MID LAKE	MGPLE-B	100068	ADEQ	CLP, TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more samples in support of TMDL development.

Impairment Discussion
Remains impaired for mercury in fish tissue (2006/8).

LITTLE ASH CREEK (LAS)

Headwaters - Ash Creek
15070102-039
17.7 Miles

Category 2

Attaining some uses

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	8/14/2008	250 cfu/100 mL	FBC is inconclusive with 1 exceedance in the last 3 years of monitoring.

Monitoring Summary

Sampling period: 8/14/2008 - 4/8/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR ESTLER PEAK	MGLAS004.52	100578	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> samples due to the exceedance.

LITTLE WOLF CREEK

Headwaters - Wolf Creek
15070102-834
3.0 Miles

Category 3
Inconclusive

Middle Gila

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 2/25/2010 - 3/9/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE HIGHWAY 177 CROSSING	MGLWL000.32	107784	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Arsenic, boron, copper, lead, manganese	None	(2) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.



LYNX CREEK

Headwaters - Unnamed Trib at 343429/1122105
15070102-033A
13.1 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Cadmium ^d	1.3 ug/L ^{acute} , 0.19 ug/L ^{chronic} @ 66 mg/L hardness	3/9/2010 3	5.7 ug/L	A&Wc is inconclusive with 1 exceedance in 1 sample.
Copper ^d	9.1 ug/L ^{acute} , 6.3 ug/L ^{chronic} @ 66 mg/L hardness	3/9/2010 3	75.6 ug/L	A&Wc is inconclusive with 1 exceedance in 1 sample.
Lead	15 ug/L	3/9/2010 3	18.5 ug/L	FBC is inconclusive with 1 exceedance in 1 sample (binomial).
Zinc ^d	82 ug/L @ 66 mg/L hardness	3/9/2010 3	540 ug/L	A&Wc is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 3/9/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT PINE MOUNTAIN ROAD	MGLNX018.81	108104	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, selenium, zinc	None	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Cadmium (dissolved), copper (dissolved), zinc (dissolved), lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), lead (dissolved)

Priority	Monitoring Recommendations
Medium	Collect additional lead and dissolved metals (cadmium, copper, and zinc) due to exceedances. All core parameters need sample number and seasonal distribution coverage.

MCKELLIPS PARK LAKE 15060106B-0920 6.0 Acres

Category 2
Attaining some uses

FC - Attaining • PBC - Inconclusive • AGI - Attaining
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 2/14/2007 - 12/2/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DRAIN	MG MPL-W	107122	SRP	SRP

Metal Samples	Nutrients & Related Samples	Other Samples
(19-20) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(20) Nitrate, nitrite, phosphorus	(2-20) Naphthalene, pH, total dissolved solids, styrene, , tetrachloroethane, tetrachloroethylene, toluene, trichlorobenzene, trichloroethane 111, trichloroethane 112, trichloroethylene, trihalomethanes, vinylchloride, xylene

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

MINERAL CREEK (MIN)

Devil's Canyon - Gila River
15050100-012B
19.6 Miles

Category 5
Impaired

Middle Gila

*Dissolved oxygen (2006/08),
selenium (2004), and copper (1992)*

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Hex chromium ^d	11 ug/L	9/14/2007	12 ug/L	A&Ww is inconclusive with 1 exceedance in 7 samples.
Copper ^d	3.4 ug/L ^{acute} , 2.6 ug/L ^{chronic} @ 23 mg/L hardness	12/17/2007	21 ug/L	A&Ww remains impaired with 4 exceedances in 23 samples.
	26 ug/L ^{acute} @ 203 mg/L hardness 14.6 ug/L ^{chronic} @ 177 mg/L hardness	7/16/2008	43 ug/L (Max) 39 ug/L (Median)	
	15.3 ug/L ^{chronic} @ 187 mg/L hardness	9/9/2008	23 ug/L	
	29.2 ug/L ^{chronic} @ >400 mg/L hardness	10/7/2008	48 ug/L	
Dissolved oxygen	6.0 mg/L	9/9/2006	1.16 mg/L	A&Ww remains impaired with 16 exceedances in 22 samples.
		12/5/2006	2.3 mg/L	
		4/16/2007	4.34 mg/L	
		5/18/2007	2.2 mg/L	
		6/26/2007	3.56 mg/L	
		7/11/2007	4.94 mg/L	
		8/3/2007	4.2 mg/L	
		9/14/2007	5.1 mg/L	
		10/5/2007	5.12 mg/L	
		4/8/2008	5.21 mg/L	
		5/14/2008	4.13 mg/L	
		6/10/2008	2.8 mg/L	
		7/16/2008	3.79 mg/L	
Dissolved oxygen	6.0 mg/L	8/13/2008	3.96 mg/L	Continued.
		9/9/2008	3.68 mg/L	
		10/7/2008	3.01 mg/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Hydrogen sulfide	2 ug/L	11/20/2007	606 ug/L	A&Ww is inconclusive, 1 exceedance, 1 sample
pH	6.5 SU	12/5/2006	5 SU	AGL, A&Ww, and FBC are attaining with 2 exceedances in 24 samples.
		12/17/2007	5.33 SU	
Selenium	2 ug/L	12/5/2006	5.1 ug/L	A&Ww remains impaired with 10 exceedances in 13 samples.
		5/18/2007	6.2 ug/L	
		6/26/2007	9.8 ug/L	
		7/11/2007	8.7 ug/L	
		8/3/2007	9.7 ug/L	
		9/14/2007	11 ug/L	
		10/5/2007	8.8 ug/L	
		11/20/2007	9.1 ug/L	
		11/11/2008	5 ug/L	
		12/10/2008	5.4 ug/L	
SSC	80 mg/L	7/16/2008	96.8 mg/L	A&Ww is attaining. Reported single sample exceedance was storm related.

Monitoring Summary

Sampling period: 9/9/2006 - 12/10/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
TUNNEL OUTLET	MGMIN003.69	103333	ASARC	Permit Monitoring
AT INDIAN GARDENS	MGMIN008.81	103331	ASARC	Permit Monitoring
CHANNLE OUTLET	MGMIN002.65	103334	ASARC	Permit Monitoring
AT HIGHWAY 177 BRIDGE NORTH OF KEL- VIN, AZ	MGMIN001.38	100472	ASARC	Permit Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(1-64) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-61) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-64) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Hex chromium (dissolved), hydrogen sulfide
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Beryllium (dissolved), cadmium (dissolved), chromium (dissolved), copper (dissolved), cyanide, lead (dissolved), nickel (dissolved), selenium, selenium (dissolved), silver (dissolved), thallium, thallium (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect additional samples in support of TMDL development. Use lower detection limits for dissolved metals.

Impairment Discussion
Remains impaired for copper (1992), selenium (2004), and dissolved oxygen (2006/8).

MINERAL CREEK (MNR)

Headwaters - Cedar Canyon Creek
15070102-823
4.0 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/20/2006 - 2/10/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MOUTH	MGMNR000.21	102520	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, chromium, copper, manganese, mercury	None	(1) Dissolved oxygen, pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

PAINTED ROCK RESERVOIR

15070101-1020A
100 Acres

Category 3
Inconclusive

Middle Gila

FBC - Inconclusive • A&Ww - Inconclusive
AGL - Inconclusive • AGI - Inconclusive • FC - Inconclusive

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM FOREBAY	MGPRR-2	100053	USFWS	
MID LAKE	MGPRR-3	100054	USFWS	
UPPER RESERVOIR	MGPRR-4	100055	USFWS	

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect samples to determine designated use attainments..

Delisting of Previous Impairment
EPA overfile in 2002 due to pesticides in fish tissue (DDT, toxaphene, chlordane). ADEQ proposes delisting this water body based on recent fish tissue and water quality data.

PEACHVILLE WASH

Headwaters - Fortuna Wash
15050100-1846
2.1 Miles

Category 3
Inconclusive

PBC - Inconclusive • AGL - Inconclusive
A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Lead	15 ug/L	1/28/2008	44 ug/L	PBC is inconclusive with 2 exceedances in 3 samples (binomial).
		2/22/2010	15.9 ug/L	

Monitoring Summary

Sampling period: 1/28/2008 - 7/29/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FORTUNA WASH AT JEEP CROSSING	MGPEW000.02	106232	ADEQ	TMDL
AT BEDROCK OUTCROP	MGPEW000.79	108342	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(1-2) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect lead samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 4/3/2007 - 10/7/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DOWNSTREAM OF PECK MINE	MGPEC000.38	105396	ADEQ	TMDL
UPSTREAM OF PECK MINE	MGPEC003.48	105397	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Arsenic, boron, copper, lead, manganese	None	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

PINE CREEK
 Headwaters - Turkey Creek
 15070102-069
 6.3 Miles

Category 3
 Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/20/2006 - 2/25/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NORTH OF PINE FLAT ROAD	MGPIN003.49	102521	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, copper, lead, manganese	None	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

POLAND WALKER TUNNEL

Headwater - Big Bug Creek
15070102-334
0.4 Miles

Category 3
Inconclusive

Middle Gila

PBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Cadmium ^d	4.3 ug/L ^{acute} , 0.43 ug/L ^{chronic} @ 220 mg/L hardness	3/9/2010	284 ug/L	A&Wc is inconclusive with 1 exceedance in 1 sample.
Copper ^d	28.2 ug/L ^{acute} , 17.6 ug/L ^{chronic} @ 220 mg/L hardness	3/9/2010	50.7 ug/L	A&Wc is inconclusive with 1 exceedance in 1 sample.
Lead	15 ug/L	3/9/2010	44.6 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).
Zinc ^d	229 ug/L @ 220 mg/L hardness	3/9/2010	23000 ug/L	A&Wc is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 3/9/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BIG BUG CREEK	MGPWT000.01	108124	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, copper, lead, manganese, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Cadmium (dissolved), copper (dissolved), zinc (dissolved), lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more lead and dissolved metals (cadmium, copper, and zinc) due to exceedances. All core parameters in need of sample and seasonal distribution coverage.

PBC - Inconclusive • AGL - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	200 µg/L	7/31/2006	230 µg/L	AGL is attaining with 1 exceedance in 10 samples (binomial).
Copper	500 µg/L (AGL) 1300 µg/L (PBC)	7/31/2006	1500 µg/L	AGL is attaining with 2 exceedances in 10 samples (binomial). PBC is attaining with 1 exceedance in 10 samples (binomial).
		8/16/2007	1300 µg/L	
Lead	100 µg/L (AGL) 15 µg/L (PBC)	7/31/2006	300 µg/L	AGL is inconclusive with 3 exceedances in 11 samples (binomial). PBC is inconclusive with 7 exceedances in 11 samples (binomial requires 20 samples for impairment).
		8/16/2007	280 µg/L	
		12/1/2007	41.8 µg/L	
		12/8/2007	63.2 µg/L	
		12/11/2007	17.8 µg/L	
		1/6/2008	37 µg/L	
		12/8/2009	166 µg/L	

Monitoring Summary

Sampling period: 7/31/2006 - 12/8/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
JUST ABOVE CONFLUENCE WITH QUEEN CREEK	MGPTC000.15	104438	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(10-11) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(3-11) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Lead

Priority	Monitoring Recommendations
Medium	Collect more lead samples to determine AGL and PBC attainment. Part of Queen Creek TMDL.



QUEEN CREEK

Headwaters - Superior Mining Div. Outfall
15050100-014A
8.8 Miles

Category 5
Impaired

Middle Gila

**Add Selenium to the 303(d) list.
Lead (2010) and copper (2002)**

PBC - Impaired • AGL - Impaired • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	200 ug/L (AGL) 280 ug/L (PBC)	7/31/2006	330 ug/L	AGL and PBC are attaining with 2 exceedances in 24 samples.
		5/16/2007	310 ug/L	
Chromium	1000 ug/L (AGL) 100 ug/L (PBC)	7/31/2006	140 ug/L	AGL is attaining with 1 exceedance in 21 sample. PBC is inconclusive with 4 exceedances in 21 sample.
		5/16/2007	152 ug/L	
		7/21/2007	120 ug/L	
		9/22/2007	1690 ug/L	
Copper	500 ug/L (AGL) 1300 ug/L (PBC)	7/31/2006	1500 ug/L	AGL and PBC are attaining with 4 and 2 exceedances respectively in 25 samples.
		5/16/2007	1160 ug/L	
		7/21/2007	841 ug/L	
		8/16/2007	2300 ug/L	
Copper ^d	8.7 ug/L ^{acute} , 6 ug/L ^{chronic} @ 63 mg/L hardness	3/24/2007	29 ug/L	A&Ww remains impaired with 16 chronic exceedances in 22 samples. Some values (7/21 & 1/6) were aggregated differently in this assessment than in the last due to values in different weeks being only 1-2 days apart.
	16.1 ug/L ^{acute} , 10.5 ug/L ^{chronic} @ 121 mg/L hardness	5/16/2007	63 ug/L	
	21.2 ug/L ^{acute} @ 162 mg/L hardness 29 ug/L ^{chronic} @ 400 mg/L hardness	7/21/2007	46 ug/L (Max) 37 ug/L (Median)	
	49.6 ug/L ^{acute} @ 400 mg/L hardness 15.6 ug/L ^{chronic} @ 192 mg/L hardness	8/6/2007	78 ug/L (Max) 31 ug/L (Median)	
	49.6 ug/L ^{acute} , 29.3 ug/L ^{chronic} @ 400 mg/L hardness	8/16/2007	57 ug/L (Max) 54 ug/L (Median)	
	49.6 ug/L ^{acute} , 29.3 ug/L ^{chronic} @ 400 mg/L hardness	9/22/2007	92 ug/L	
	9.1 ug/L ^{acute} , 6.3 ug/L ^{chronic} @ 66 mg/L hardness	12/1/2007	38 ug/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	14.7 ug/L ^{acute} @ 110 mg/L hardness 10.5 ug/L ^{chronic} @ 120 mg/L hardness	12/4/2007	29 ug/L (Max) 25 ug/L (Median)	Continued.
	12.4 ug/L ^{acute} , 8.3 ug/L ^{chronic} @ 92 mg/L hardness	12/12/2007	20 ug/L	
	10.2 ug/L ^{acute} , 7.4 ug/L ^{chronic} @ 75 mg/L hardness	1/6/2008	20 ug/L	
	8.2 ug/L ^{acute} , 5.7 ug/L ^{chronic} @ 59 mg/L hardness	2/5/2008	103 ug/L	
	9.47 ug/L ^{acute} , 6.52 ug/L ^{chronic} @ 69 mg/L hardness	1/10/2008	24 ug/L	
	9.7 ug/L ^{chronic} @ 110 mg/L hardness	1/30/2008	12 ug/L	
	26.8 ug/L ^{chronic} @ 361 mg/L hardness	4/7/2008	34 ug/L	
	8.5 ug/L ^{chronic} @ 93.5 mg/L hardness	2/7/2010	8.9 ug/L	
Dissolved oxygen	6.0 mg/L	7/31/2006	5.31 mg/L	A&Ww is attaining with 1 exceedance in 13 samples (binomial).
Lead	100 ug/L (AGL) 15 ug/L (PBC)	7/31/2006	430 ug/L	AGL and PBC remain impaired with 7 and 11 exceedances respectively in 23 samples (binomial).
		8/7/2006	53 ug/L	
		5/16/2007	309 ug/L	
		7/21/2007	223 ug/L	
		7/23/2007	49.4 ug/L	
		8/6/2007	114 ug/L	
		8/16/2007	605 ug/L	
		9/22/2007	505 ug/L	
		12/1/2007	82 ug/L	
		12/7/2007	134 ug/L	
		1/6/2008	32 ug/L	
pH	9.0 SU	12/4/2007	9.2 SU	AGL, A&Ww, and PBC are attaining with 1 exceedance in 15 samples (binomial).
SSC	80 mg/L	07/31/2006	8570 mg/L	A&Ww is inconclusive with one median exceedance. Most reported single sample exceedances storm related. Did not appear in 2010 assessment due to change in designated use status.
		08/07/2006	1085.708 mg/L	
		11/28/2006	484.625 mg/L	
		02/14/2007	103.8 mg/L	
		03/24/2007	143 mg/L	
		05/16/2007	33300 mg/L	
		07/21/2007	60000 mg/L	
		07/23/2007	360.25 mg/L	
		08/07/2007	86 mg/L	
		08/16/2007	18033.333 mg/L	
		09/22/2007	19015 mg/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	80 mg/L	12/01/2007	1710 mg/L	Continued.
		12/08/2007	3455 mg/L	
		12/11/2007	111 mg/L	
		01/06/2008	2030 mg/L	
		01/07/2008	473.5 mg/L	
		01/15/2008	84 mg/L	
		01/27/2008	131 mg/L	
		01/30/2008	121 mg/L	
		02/05/2008	500 mg/L	
		03/04/2008	230 mg/L	
Selenium	2 ug/L	07/31/2006	8.1 ug/L	A&Ww is impaired. Selenium values excluded in 2010 assessment due to reliance on AZAC detection limit issue flag which was later shown to be incorrect in this case.
		11/28/2006	5.4 ug/L	
		02/14/2007	8.9 ug/L	
		03/24/2007	4.7 ug/L	

Monitoring Summary

Sampling period: 7/31/2006 - 2/7/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MAGMA AVE & QUEEN CREEK	MGQEN038.73	103095	ADEQ	TMDL
BELOW OMYA MINE	MGQEN044.42	103092	RESCU	Ambient
AT HIGHWAY 60 CULVERTS	MGQEN041.74	103093	ADEQ	TMDL
BLW MINE DISCHARGE	MGQEN037.17	103316	ADEQ	TMDL
BELOW BHP NPDES PERMIT	MGQEN037.09	103096	ADEQ	TMDL
ABOVE CONFLUENCE WITH UNNAMED TRIBUTARY	MGQEN041.42	105658	ADEQ	TMDL
ABOVE OMYA PIT AT BEDROCK OUTCROP	MGQEN045.03	105980	ADEQ	TMDL
JUST BELOW HEADWATERS	MGQEN045.93	103091	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(64-76) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(30-64) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	SSC
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Antimony (dissolved), arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead, selenium, zinc (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	TMDL sampling complete.

Impairment Discussion
Remains impaired for copper (2002) and lead (2010). Copper TMDL initiated in 2004. Add Selenium to the 303(d) list,



QUEEN CREEK

Potts Canyon - Whitlow Canyon
15050100-014C
8.0 Miles

Category 5
Impaired

Middle Gila

IMPAIRMENT STATUS

Copper (2010)

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	200 ug/L (AGL) 80 ug/L (FC) 30 ug/L (FBC)	7/31/2006	460 ug/L	AGL, FC, and FBC are inconclusive with 1, 2, and 4 exceedances respectively in 9 samples (binomial).
		8/16/2006	105 ug/L	
		7/24/2007	42 ug/L	
		12/8/2007	40 ug/L	
Chromium	100 ug/L	7/31/2006	160 ug/L	FBC is inconclusive with 1 exceedance in 9 samples.
Copper	500 ug/L (AGL) 1300 ug/L (FBC)	7/31/2006	3800 ug/L	AGL and FBC are inconclusive with 2 exceedances in 9 samples (binomial).
		8/16/2007	2900 ug/L	
Copper ^d	18.3 ug/L ^{acute} , 11.9 ug/L ^{chronic} @ 139 mg/L hardness	7/24/2007	44 ug/L	A&Ww remains impaired.
	29.3 ug/L ^{chronic} @ > 400 mg/L hardness	8/16/2007	30 ug/L	
	13.1 ug/L ^{acute} , 8.7 ug/L ^{chronic} @ 97 mg/L hardness	12/1/2007	15 ug/L	
	10.2 ug/L ^{acute} , 7.0 ug/L ^{chronic} @ 75 mg/L hardness	12/8/2007	22 ug/L	
	12.4 ug/L ^{acute} , 8.3 ug/L ^{chronic} @ 92 mg/L hardness	12/11/2007	17 ug/L	
Dissolved oxygen	6.0 mg/L	7/31/2006	5.19 mg/L	A&Ww is inconclusive with 1 exceedance in 5 sample (binomial).
Lead	100 ug/L (AGL) 15 ug/L (FBC)	7/31/2006	1200 ug/L	AGL and FBC are inconclusive with 3 and 6 exceedances respectively in 9 samples (binomial). Binomial requires a minimum of 20 samples for impairment.
		7/24/2007	130 ug/L	
		8/16/2007	860 ug/L	
		12/1/2007	65 ug/L	
		12/8/2007	130 ug/L	
		12/11/2007	84 ug/L	
		1/6/2008	34 ug/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	80 mg/L	7/31/2006	42900 mg/L	A&Ww is attaining with no median exceedances. All single sample exceedances occurred during storm events.
		7/24/2007	252.5 mg/L	
		8/16/2007	35600 mg/L	
		12/1/2007	1402.5 mg/L	
		12/8/2007	3100 mg/L	
		12/11/2007	3200 mg/L	
		1/6/2008	1710 mg/L	
		1/29/2008	230 mg/L	
		2/5/2008	307 mg/L	

Monitoring Summary

Sampling period: 7/31/2006 - 2/5/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
JUST ABOVE QUEENS STATION AT RAILROAD TRESTLE	MGQEN030.06	103098	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(9) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(2-9) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper, lead, chromium, dissolved oxygen, arsenic
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Antimony (dissolved), arsenic, arsenic (dissolved), copper (dissolved), lead, selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more copper, lead, chromium, arsenic, and dissolved oxygen samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
Remains impaired for dissolved copper (2010). This reach is included with Queen Creek Copper TMDL project.



QUEEN CREEK

Superior Mining WWTP - Potts Canyon
15050100-014B
5.9 Miles

Category 5
Impaired

Middle Gila

IMPAIRMENT STATUS

Copper (2002)

PBC - Inconclusive • A&Wedw - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	28.5 ug/L ^{acute} , 17.7 ug/L ^{chronic} @ hardness 222 mg/L	7/31/2006	32 ug/L	A&Wedw chronic remains impaired with 5 exceedances in the assessment period.
	24.8 ug/L ^{acute} , 15.6 ug/L ^{chronic} @ hardness 192 mg/L	3/24/2007	25 ug/L	
	37.2 ug/L ^{acute} , 22.6 ug/L ^{chronic} @ 295 mg/L hardness	7/24/2007	51 ug/L	
	13.4 ug/L ^{chronic} @ 160 mg/L hardness 12	12/14/2007	18 ug/L	
	11.5 ug/L ^{acute} , 7.8 ug/L ^{chronic} @ 85 mg/L hardness	1/28/2008	23 ug/L	
Lead	15 mg/L	7/31/2006	82 ug/L	PBC is inconclusive with 2 exceedances in 5 samples (binomial).
		1/28/2008	26 ug/L	

Monitoring Summary

Sampling period: 7/31/2006 - 1/28/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT THE HIGH TRAIL BRIDGE	MGQEN034.25	103544	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(1-5) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead, selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect lead samples due to exceedances. Collect at least 3 <i>E. coli</i> samples to represent 3 seasons over the assessment period to complete core parameter coverage.

Impairment Discussion
Remains impaired for copper (2002). This reach is included with Queen Creek Copper TMDL project.

FC - Inconclusive • PBC - Inconclusive • A&Wedw - Inconclusive
AGL - Inconclusive • AGI - Inconclusive

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT 107TH AVENUE	MGSLR001.09	100374	ADEQ	Fixed Station Network
ABOVE GILA RIVER	MGSLR001.11	100645	ADEQ	Fixed Station Network
ABOVE GILA RIVER	MGSLR000.88	100646	ADEQ	Fixed Station Network
AT 91ST AVE. WWTP DISCHARGE USGS 09512407	MGSLR003.96	100768	ADEQ	Fixed Station Network
BELOW TRES RIOS DISCHARGE	MGSLR003.33	101265	ADEQ	Ambient, Fixed Station Network
AT 91ST AVE CENTER CHANNEL	MGSLR003.56	103738	ADEQ	Fixed Station Network
AT 51ST AVE. BRIDGE	MGSLR009.30	104060	ADEQ	Fixed Station Network

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect samples to determine designated use attainments..

Delisting of Previous Impairment
EPA overfile in 2002 due to pesticides in fish tissue (DDT metabolites, toxaphene, chlordane). ADEQ proposes delisting this reach based on recent fish tissue and water quality data.

PBC - Inconclusive • AGL - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	200 µg/L (AGL) 280 µg/L (PBC)	7/31/2006	350 µg/L	AGL and PBC are inconclusive with 1 exceedance in 7 samples (binomial).
Copper	500 µg/L (AGL) 1300 µg/L (PBC)	7/31/2006	1800 µg/L	AGL is inconclusive with 5 exceedances in 9 samples. PBC is inconclusive with 3 exceedances in 9 samples (binomial).
		8/16/2007	800 µg/L	
		12/8/2007	1700 µg/L	
		1/7/2008	1600 µg/L	
		1/22/2010	544 µg/L	
Copper ^d	38.3 µg/L @ 170 mg/L hardness	12/8/2007	62 µg/L	A&We is attaining. No exceedances in the last 3 years of monitoring.
Lead	100 µg/L (AGL) 15 µg/L (PBC)	7/31/2006	840 µg/L	AGL and PBC are inconclusive with 9 exceedances in 9 samples (binomial).
		8/16/2007	740 µg/L	
		12/1/2007	213.1 µg/L	
		12/8/2007	1000 µg/L	
		12/11/2007	110 µg/L	
		1/7/2008	690 µg/L	
		1/28/2008	203.25 µg/L	
		1/22/2010	525 µg/L	
		2/22/2010	303.5 µg/L	

Monitoring Summary

Sampling period: 7/31/2006 - 2/22/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT WINDMILL	MGSKW004.11	106233	ADEQ	TMDL
AT BOYCE THOMPSON ARBORETUM	MGSKW000.07	103545	ADEQ	TMDL
BELOW SILVER KING MINE AT FS ROAD	MGSKW004.60	106288	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(11-13) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(1-10) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Arsenic, copper, lead
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), copper, lead
Lab Detection Limits Not Low Enough	Lead

Priority	Monitoring Recommendations
Medium	Collect more arsenic, copper, and lead samples due to exceedances.

SYCAMORE CREEK (SYD)

Tank Canyon - Agua Fria River
15070102-024B
17.6 Miles

Category 3
Inconclusive

Middle Gila

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 8/14/2008 - 4/21/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE SYCAMORE RANGER STATION	MGSYD009.13	100704	ADEQ	Ambient
UPSTREAM OF DRY CREEK	MGSYD009.51	106863	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

TELEGRAPH CANYON

Headwaters - Arnett Creek
15050100-1819
6.1 Miles

Category 3
Inconclusive

FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Lead	15 ug/L	1/22/2010	45.2 ug/L	FBC is inconclusive with 1 exceedance in 3 samples (binomial).

Monitoring Summary

Sampling period: 12/8/2009 - 1/27/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE CONFLUENCE WITH ARNETT CREEK	MGTEC000.62	107863	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2-3) Copper, lead	None	(1) Dissolved oxygen, pH, total dissolved solids,

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period. Collect more lead due to the exceedance.

TEMPE TOWN LAKE

15060106B-1588
220 Acres

Category 3
Inconclusive

Middle Gila

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	9.0 SU	7/5/2006	9.4 SU	A&Ww and FBC are inconclusive with 9 exceedances in 14 samples (binomial). Note: On July 20, 2010 one of the lower dams failed, completely draining the lake. The dam was replaced in September 2010 and the lake was refilled by the end of October.
		7/17/2006	9.3 SU	
		7/31/2006	9.3 SU	
		8/8/2006	9.3 SU	
		8/21/2006	9.3 SU	
		9/5/2006	9.5 SU	
		9/11/2006	9.5 SU	
		9/18/2006	9.5 SU	
		9/25/2006	9.3 SU	

Monitoring Summary

Sampling period: 7/5/2006 - 12/5/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE SITE	MGTTT-MID	102452	AGF	Ambient
USD	MGTTT-B	101315	ADEQ	CLP
DSD	MGTTT-A	101316	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, manganese, mercury, nickel, selenium, silver, thallium, zinc	None	(3-38) <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), mercury
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect core parameters to represent at least 3 seasons during an assessment period.

TRIBUT TO BIG BUG CREEK

Headwater - Big Bug Creek
15070102-134
0.8 Miles

Category 3
Inconclusive

Middle Gila

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	4.1 ug/L @ hardness = 16 mg/L	3/9/2010 1	20.2 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.
Lead	15 ug/L	3/9/2010 1	174 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).
Lead ^d	17.7 ug/L @ hardness = 16 mg/L	3/9/2010 1	156 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.
Zinc ^d	235 ug/L @ hardness = 16 mg/L	3/9/2010 1	300 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 3/9/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT POLAND JUCTION (FOREST TRAIL 261)	MGUBB000.11	108122	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, selenium, zinc	None	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved), lead (dissolved), zinc (dissolved), lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), lead (dissolved), zinc (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more lead and dissolved metals (copper, lead, and zinc) due to exceedances and obtain analyses with lower detection limits. All core parameters need sample number and seasonal distribution coverage.

TRIBUT TO BIG BUG CREEK (UB1)

Headwater - Big Bug Creek
15070102-234
1.34 Miles

Category 3
Inconclusive

Middle Gila

PBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	3.4 ug/L ^{acute} , 2.6 ug/L ^{chronic} @ 23 mg/L hardness	3/9/2010	10.5 ug/L	A&Wc is inconclusive with 1 exceedance in 1 sample.
Lead ^d	0.49 ug/L @ 23 mg/L hardness	3/9/2010	2.6 ug/L	A&Wc is inconclusive with 1 exceedance in 1 sample.
Zinc ^d	33.7 ug/L @ 23 mg/L hardness	3/9/2010	130 ug/L	A&Wc is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 3/9/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW SNOWDRIFT MINE AT CONFLUENCE	MGUB1000.01	108123	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, selenium, zinc	None	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Cadmium (dissolved), copper (dissolved), zinc (dissolved), lead (dissolved)
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), lead (dissolved), zinc (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more dissolved metals (copper, lead, and zinc) due to exceedances and try to obtain analyses with lower detection limits. All core parameters in need of sample and seasonal distribution coverage.

TRIBUT TO CASH MINE CREEK

Headwaters - Cash Mine Creek
15070103-415
1.0 Miles

Category 4A
Not Attaining

Middle Gila

Cadmium, copper, and zinc (2002)

FC - Inconclusive • FBC - Inconclusive
A&Wc - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
UPSTREAM OF REMEDIATED MCCLEUR TAILINGS	MGMMT000.13	102816	ADEQ	TMDL
DOWNSIDE OF REMEDIATED MCCLEUR TAILINGS	MGMMT000.01	102817	ADEQ	TMDL
AT BASE OF MCCLEUR TAILINGS	MGUCM000.09	103352	ADEQ	TMDL
UPSTREAM OF ADIT AND MCCLEUR TAILINGS	MGUCM000.27	103357	ADEQ	TMDL
AT ADIT UPSTREAM OF MCCLEUR TAILINGS	MGUCM000.25	103358	ADEQ	TMDL
DOWNSIDE OF ADIT UPSTREAM OF MCCLEUR	MGUCM000.22	103359	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring after TMDL strategies have been implemented.

Impairment Discussion
Included in the Hassayampa River TMDL (2002).

TRIBUTORY TO DRY MINERAL CREEK

Headwaters - Dry Mineral Creek
15050100-212
1.4 Miles

Category 3
Inconclusive

Middle Gila

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper	1300 ug/L	3/14/2008	340000 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).
Copper ^d	85.9 ug/L @ > 400 mg/L hardness	3/14/2008	310000 ug/L	A&We is attaining. 1 exceedance outside the assessment window.
pH	6.5 SU	3/14/2008	2.71 SU	A&We and PBC are inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 3/14/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE 500 FT. ADIT	MGUDR001.20	106784	ADEQ	TMDL
AT 500 FT. ADIT	MGUDR001.15	106783	ADEQ	TMDL
BELOW UPPER PASQUATE DUMPS	MGUDR001.41	106785	ADEQ	TMDL
NEAR LOWER PASQUATE ADIT	MGUDR000.99	106782	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	None	(4) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, copper (dissolved), copper
Missing Core Parameters	Dissolved oxygen,
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect more pH and copper samples due to exceedances.

TRIB (UQ2) TO QUEEN CREEK

Headwaters - Queen Creek
15050100-1000
0.5 Miles

Category 5
Impaired

Middle Gila

IMPAIRMENT Copper (2010) STATUS

PBC - Inconclusive • AGL - Inconclusive • A&We - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	14.6 ug/L @ 61 mg/L hardness	8/17/2007	40 ug/L	A&We remains impaired. No new data since last assessment.
	9.6 ug/L @ 39 mg/L hardness	12/8/2007	52 ug/L	
	7.3 ug/L @ 29 mg/L hardness	1/6/2008	36 ug/L	
Lead	15 ug/L	12/8/2007	24.8 ug/L	PBC is inconclusive with 1 exceedance in 3 samples (binomial).

Monitoring Summary

Sampling period: 8/17/2007 - 1/6/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DRAINAGE ON NORTH FACE OF QUEEN CREEK CANYON	MGUQ2000.07	105760	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(1-3) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	Dissolved oxygen
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), copper, lead
Lab Detection Limits Not Low Enough	Copper (dissolved)

Priority	Monitoring Recommendations
Medium	Collect lead samples due to the exceedance.

Impairment Discussion
Remains impaired for copper (2010). Included as part of Queen Creek TMDL.

TRIB (UQ3) TO QUEEN CREEK

Headwaters (Near King's Crown Peak) - Queen Creek
15050100-1843
1.7 Miles

Category 5
Impaired

Middle Gila

IMPAIRMENT Copper (2010) STATUS

PBC - Inconclusive • AGL - Inconclusive • A&We - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	16.4 ug/L @ 69 mg/L hardness	8/7/2007	23 ug/L	A&We remains impaired with 4 exceedances in 5 samples.
	12.8 ug/L @ 53 mg/L hardness	12/1/2007	25 ug/L	
	16.2 ug/L @ 68 mg/L hardness	12/3/2007	19 ug/L	
	8.4 ug/L @ 34 mg/L hardness	1/6/2008	14 ug/L	

Monitoring Summary

Sampling period: 8/7/2007 - 1/6/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
660 METERS EAST OF HIGHWAY 60 TUNNEL	MGUQ3000.03	105761	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(1-5) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), copper, lead
Lab Detection Limits Not Low Enough	Copper (dissolved)

Priority	Monitoring Recommendations
Medium	Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
Remains impaired for copper (2010). Included as part of Queen Creek TMDL.

TRIB (UQE) TO QUEEN CREEK

Headwaters - Queen Creek
15050100-991
2.0 Miles

Category 5
Impaired

Middle Gila

IMPAIRMENT

Copper (2010)

PBC - Attaining • AGL - Attaining • A&We - Impaired

STATUS

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	7.7 ug/L @ 31 mg/L hardness	2/2/2007	34 ug/L	A&We remains impaired with 16 exceedances in 16 samples.
	6.1 ug/L @ 24 mg/L hardness	3/23/2007	37 ug/L	
	5.8 ug/L @ 23 mg/L hardness	3/27/2007	35.4 ug/L	
	9.3 ug/L @ 38 mg/L hardness	7/23/2007	55 ug/L	
	7.5 ug/L @ 30 mg/L hardness	8/6/2007	63 ug/L	
	9.8 ug/L @ 40 mg/L hardness	8/16/2007	65 ug/L	
	6.1 ug/L @ 24 mg/L hardness	12/1/2007	53 ug/L	
	5.1 ug/L @ 20 mg/L hardness	12/8/2007	49 ug/L	
	6.1 ug/L @ 24 mg/L hardness	12/12/2007	47 ug/L	
	4.1 ug/L @ 16 mg/L hardness	1/6/2008	23 ug/L	
	6.3 ug/L @ 25 mg/L hardness	1/11/2008	51 ug/L	
	6.5 ug/L @ 26 mg/L hardness	1/15/2008	33 ug/L	
	7 ug/L @ 28 mg/L hardness	1/27/2008	21 ug/L	
	5.8 ug/L @ 23 mg/L hardness	1/30/2008	39 ug/L	
	2.3 ug/L @ 8.5 mg/L hardness	2/5/2008	41 ug/L	
	7.0 ug/L @ 28 mg/L hardness	3/4/2008	27 ug/L	
Lead	15 ug/L	8/16/2007	17.7 ug/L	PBC is attaining with 1 exceedance in 16 samples (binomial).
pH	6.5 SU	8/16/2007	5.53 SU	AGL, A&We, and PBC are attaining with 2 exceedances in 14 samples (binomial).
		12/11/2007	6.16 SU	

Monitoring Summary

Sampling period: 7/31/2006 - 3/4/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DRAINING OAK FLAT	MGUQE000.01	104522	ADEQ	TMDL
AT HAIRPIN TURN OF TRIB TO OAK FLAT	MGUQE001.08	106224	ADEQ	TMDL
ABOVE AUTO SAMPLER AT HIGH FLOW SITE	MGUQE000.38	106019	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(22) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(6-20) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead, zinc (dissolved), assessment unit

Priority	Monitoring Recommendations
Medium	Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
Remains impaired for copper (2010). Included in Queen Creek TMDL project.

TURKEY CREEK

Headwaters - Tributary at 341928/1122128
15070102-036A
9.1 Miles

Category 3
Inconclusive

Middle Gila

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/20/2006 - 2/25/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DS FROM MOUTH OF AR- RASTRA CREEK	MGTRK021.89	107782	ADEQ	TMDL
UPSTREAM OF 5,000 MSL	MGTRK021.44	102512	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, copper, lead, manganese	None	(1) Dissolved oxygen, pH, total dis- solved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dis- solved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dis- solved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assess- ment period.

TURKEY CREEK

Tributary at 341928 / 1122128 - Poland Creek
15070102-036B
21 Miles

Category 4A
Not Attaining

Copper and lead (1992)

FC - Inconclusive • FBC - Not Attaining • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Lead	15 ug/L	12/1/2007	19 ug/L	FBC remains not attaining with 2 exceedances in 6 samples (binomial).
		1/6/2008	25 ug/L	
pH	9.0 SU	12/1/2007	9.9 SU	AGI, AGL, A&Ww, and FBC are inconclusive with 1 exceedance in 7 samples (binomial).
SSC	80 mg/L	12/1/2007	3550 mg/L	A&Ww is attaining. This exceedance occurred during a storm event and was excluded from assessment.

Monitoring Summary

Sampling period: 7/20/2006 - 3/2/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DOWNSTREAM OF TRIBUTARY AND OF MINES	MGTRK004.33	102518	ADEQ	TMDL
ON CROWN KING ROAD AT BRIDGE	MGTRK004.42	101627	ADEQ	TMDL
UPSTREAM OF CONFLUENCE WITH POLAND CREEK	MGTRK000.10	104500	ADEQ	TMDL
BELOW GOLDEN TURKEY MINE UPSTREAM OF SPRING	MGTRK003.89	102510	ADEQ	TMDL
NORTH OF CLEATOR AT FOREST ROAD 93 CROSSING	MGTRK007.28	101083	ADEQ	TMDL

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	Cadmium (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Copper (dissolved), lead (dissolved)

Priority	Monitoring Recommendations
Medium	Collect pH samples due to the exceedance. Collect lead and copper samples to determine the effectiveness of TMDL implementation strategies once they have been implemented.

Impairment Discussion
Copper and lead TMDL completed in 2004.

TUSCUMBIA CREEK

Headwaters - Bear Creek
15070102-850
4.1 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 2/23/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MOUTH	MGTUS000.06	107704	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, copper, lead, manganese	None	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

PBC - Inconclusive • AGL - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Lead	100 ug/L (AGL) 15 ug/L (PBC)	12/8/2009	126 ug/L	AGL is inconclusive with 1 exceedance in 4 samples. PBC is inconclusive with 3 exceedances in 4 samples (binomial).
		9/3/2009	35 ug/L	
		1/22/2010	25.3 ug/L	

Monitoring Summary

Sampling period: 9/3/2009 - 1/27/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW CONFLUENCE WITH WOOD CAMP CANYON AND REEVIS TRAIL	MGWFC003.58	107442	ADEQ	TMDL
BELOW BARNETT CAMP	MGWHC000.34	107682	ADEQ	TMDL
AT FOREST SERVICE ROAD 650	MGWHC002.01	107922	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4-8) Copper, lead	None	(2-5) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), copper, lead
Lab Detection Limits Not Low Enough	Lead

Priority	Monitoring Recommendations
Low	Collect more lead samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

Salt Watershed

Watershed Description

This watershed is composed of the Salt River drainage from its headwaters to Granite Reef Dam, excluding the Verde River drainage. This watershed can be divided into four very distinct sub-basins: White River, Black River, Tonto Creek, and the main stem Salt River.

The population of this 6,242 square mile watershed is approximately 40,500 people (2000 census), with most of this population in the Superior-Globe-Miami mining district. Land ownership is approximately: 49% Tribal, 48% federal, 2% private, and 1% state. The principal land uses are open range grazing, recreation, forestry, and mining. Nine wilderness areas have been set aside, which have restricted land uses and activities.

Elevations range from 10,600 feet (above sea level) in the White Mountains, to about 2,000 feet at Granite Reef Dam. The watershed above Roosevelt Lake (White River, Black River, and Tonto Creek) is above 5,000 feet elevation with high desert flora and fauna, and coldwater aquatic communities where perennial waters exist. The area below Roosevelt Lake is below 5,000 feet, and therefore, contains primarily warmwater aquatic communities.

Water Resources

This Watershed receives more precipitation than most of the state, with approximately 20 inches of rain and 20 inches of snowfall. Roosevelt Lake and a chain of other reservoirs (Apache, Canyon, and Saguaro) were constructed to store perennial flow from this watershed and provide much of the water used in the Phoenix metropolitan area.

An estimate of surface water resources in the Salt Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

Estimated Surface Water Resources in the Salt Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	510	1,190	2,785
	Perennial	Non-perennial	
Lake acres	25,544	0	

Additional Surface Water Resources Locate on Tribal Lands – Not Assessed

	Perennial	Intermittent	Ephemeral
Stream miles On Tribal Lands	825	0	4,275
	Perennial	Non-perennial	
Lake acres On Tribal Lands	1,858	0	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.

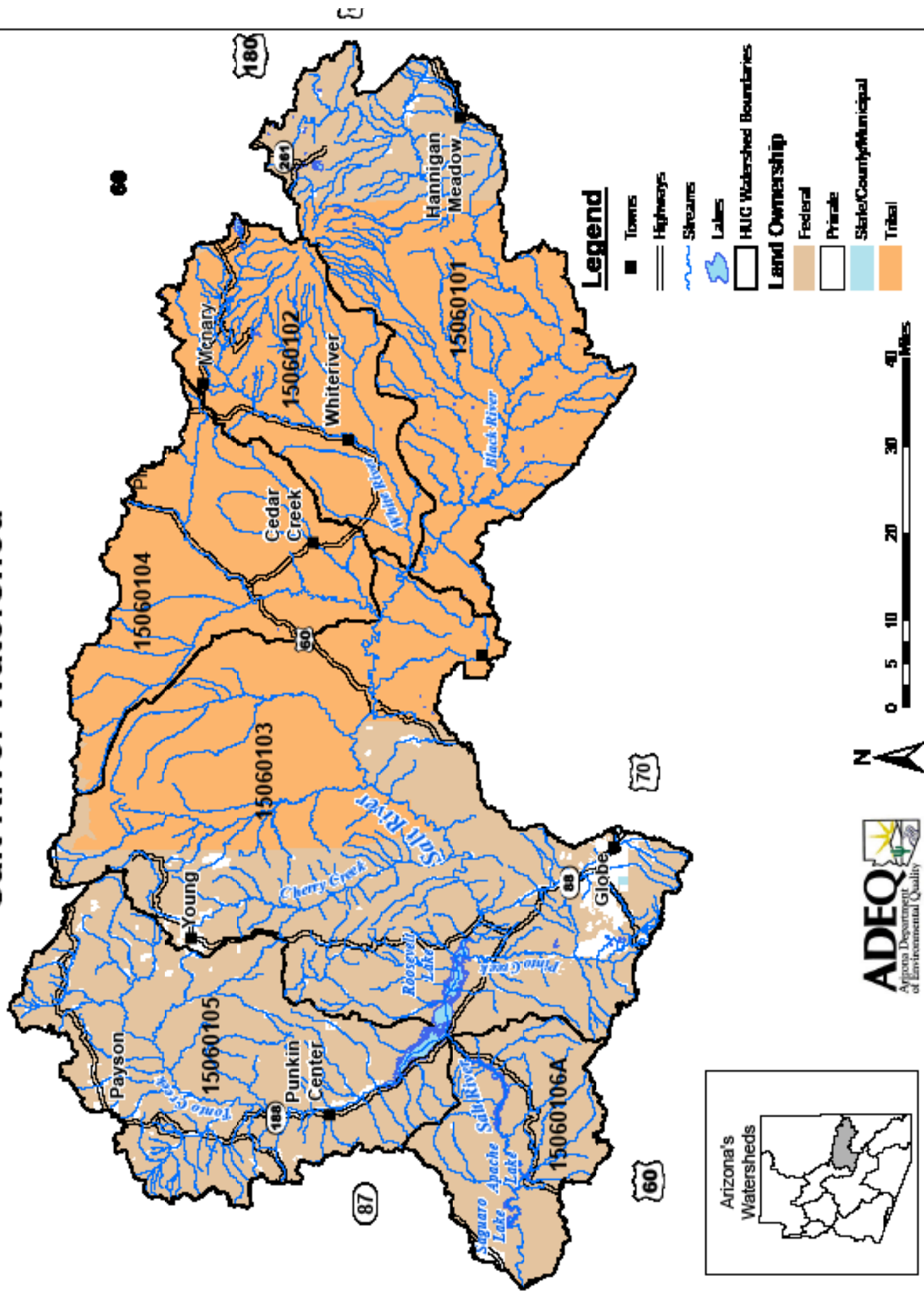
Assessments

The Salt Watershed can be separated into the following drainage areas (subwatersheds):

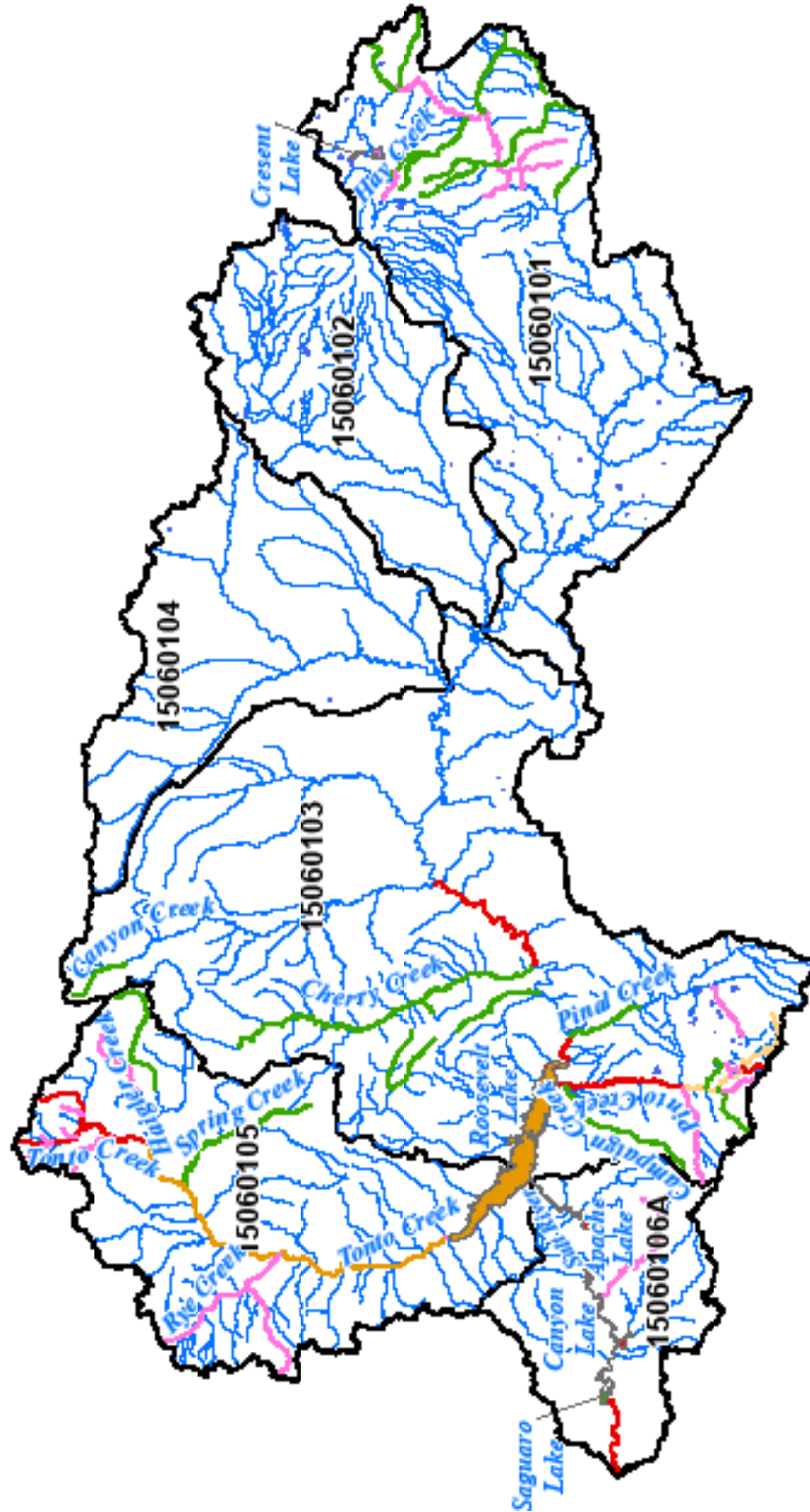
15060101	Black River
15060102	White River (Tribal land – Not assessed)
15060103	Upper Salt River
15060104	Carrizo Creek (Tribal land – Not assessed)
15060105	Tonto Creek
15060106A	Lower Salt River

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

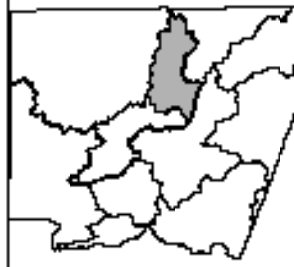
Salt River Watershed



Salt Watershed 2012/2014 Assessment for Streams and Lakes



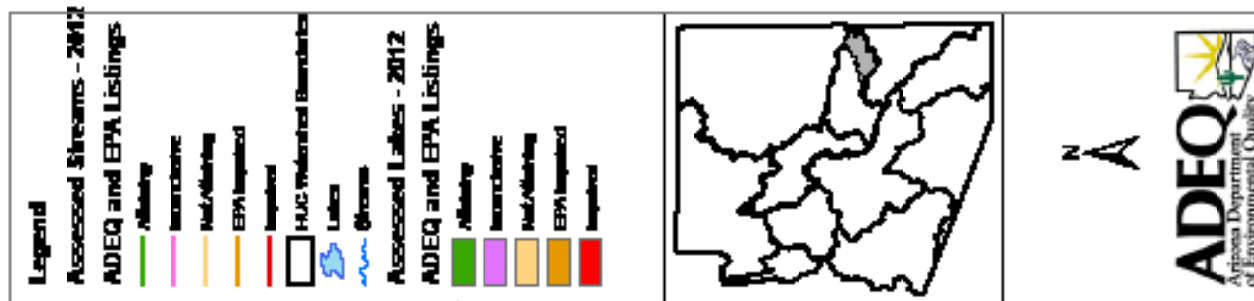
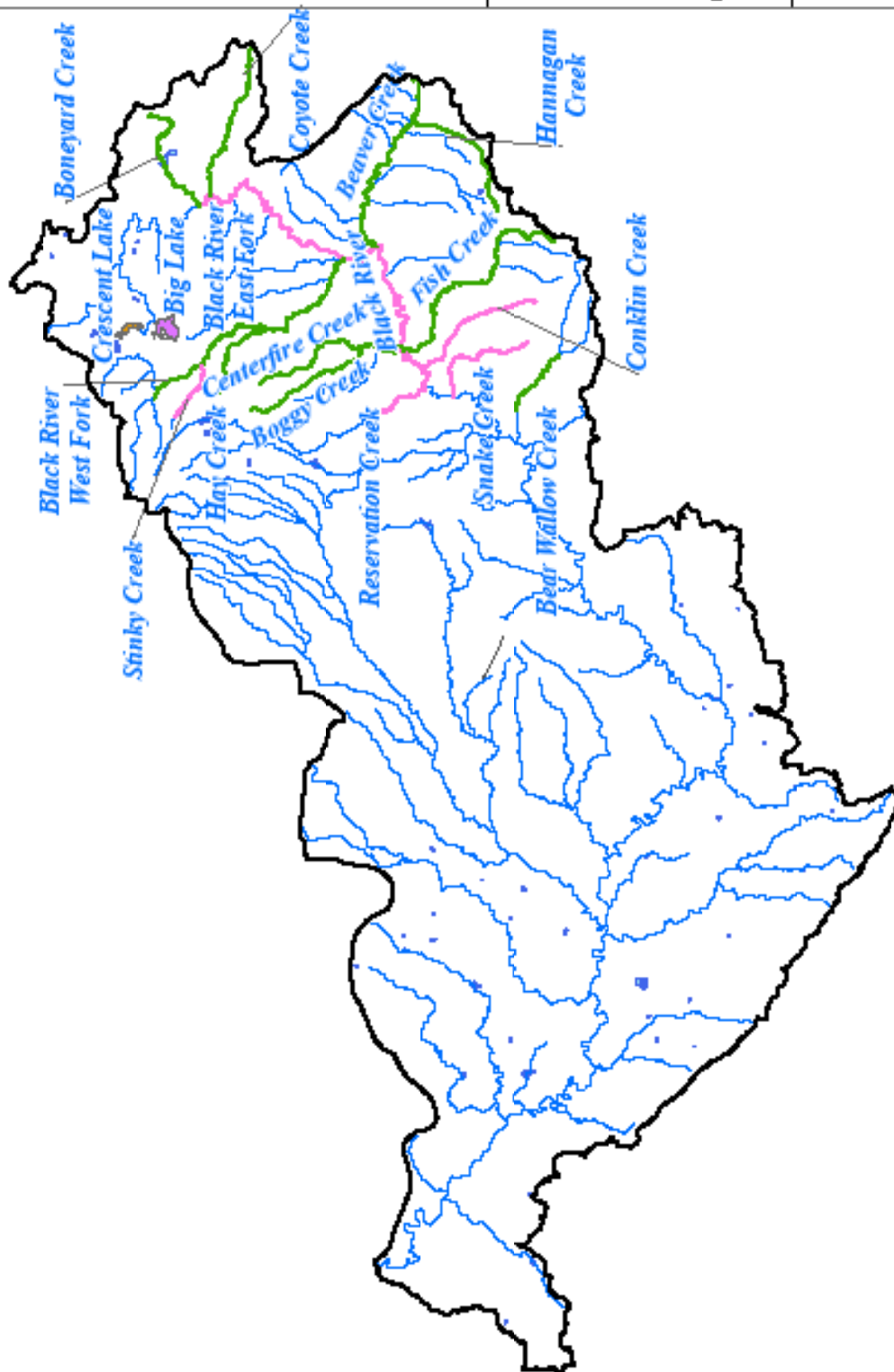
- Legend**
- Assessed Lakes - 2012
ADEC and EPA Listings
- Attaining
 - Intermediate
 - Not Attaining
 - EPA Impaired
 - Impaired
- HUC Watershed Boundaries
- Assessed Streams - 2012
ADEC and EPA Listings
- Attaining
 - Intermediate
 - Not Attaining
 - EPA Impaired
 - Impaired
- Lakes
- Streams



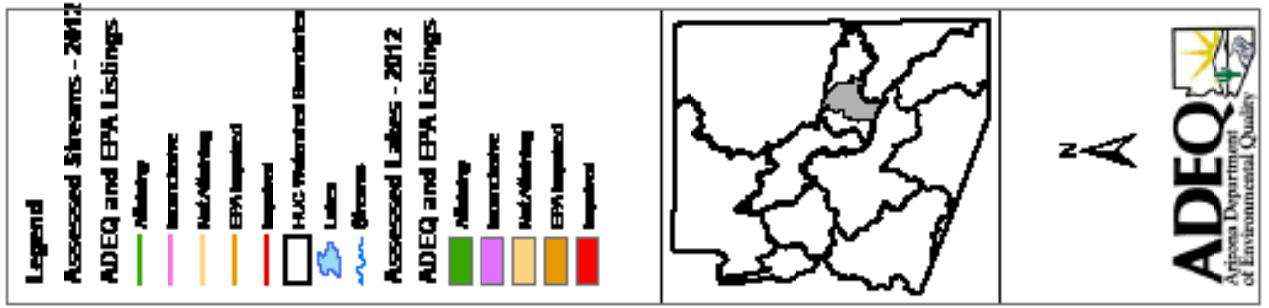
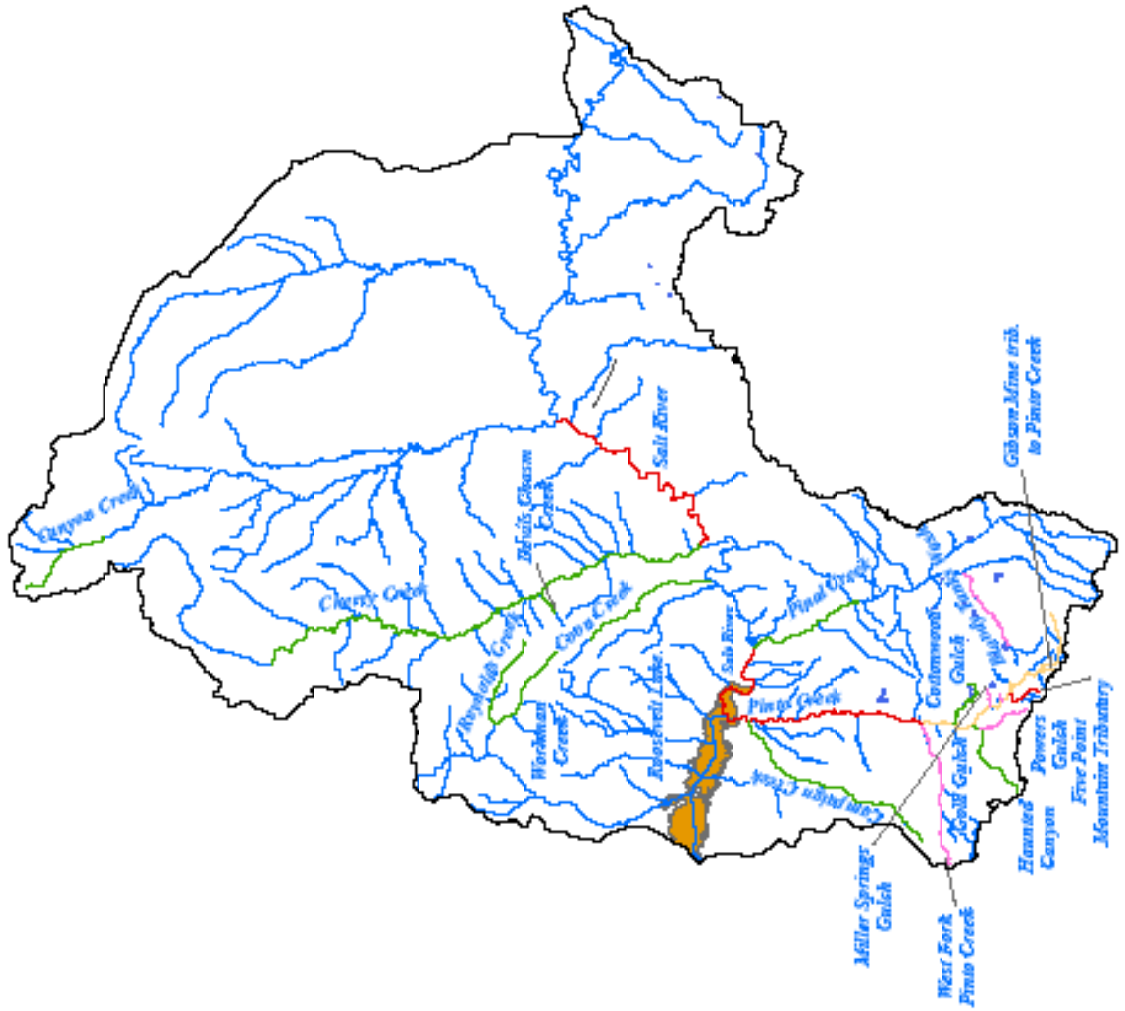
See Individual HUC Printouts
for Waters not Labeled



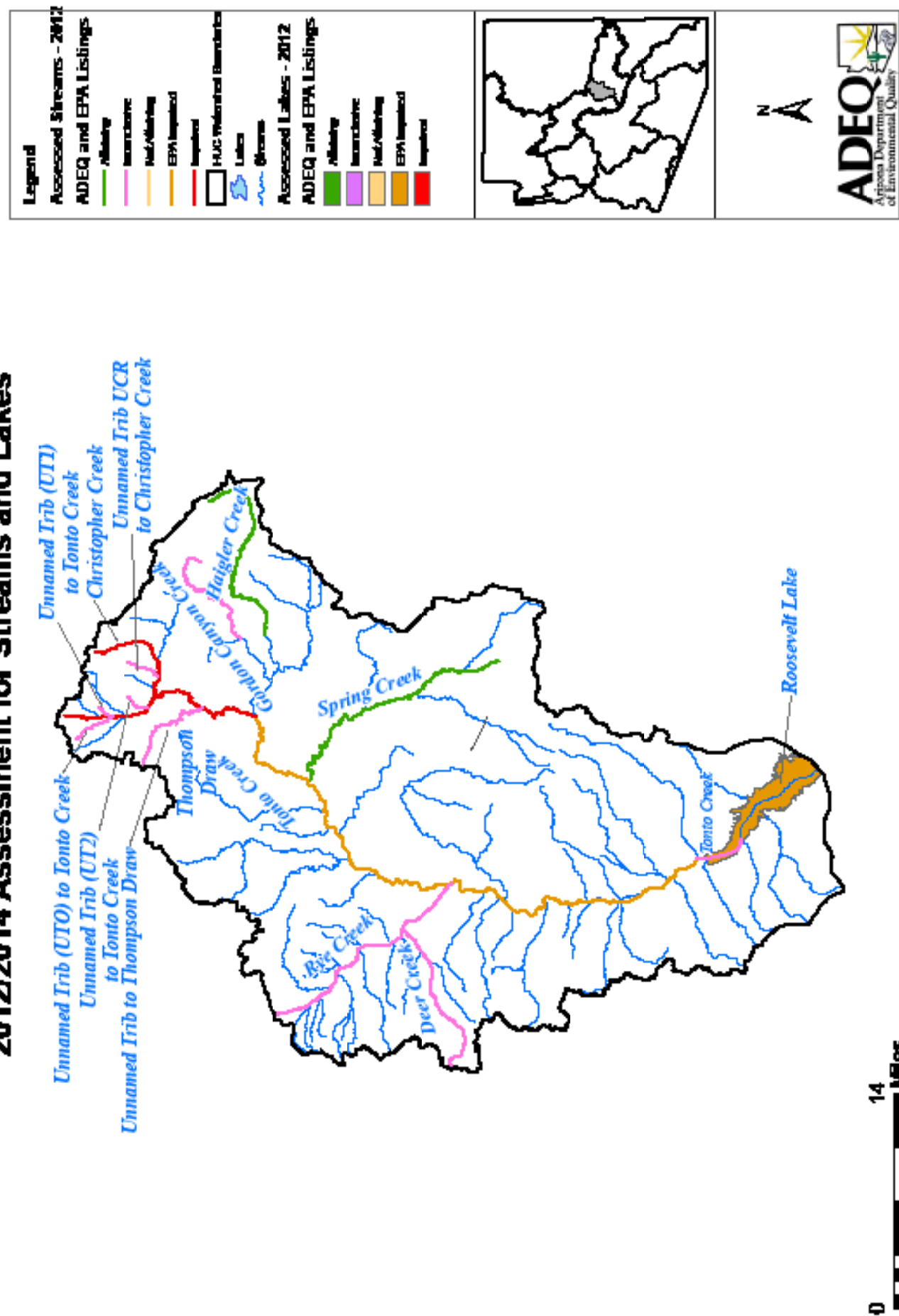
Salt Watershed **HUC 15060101** **2012/2014 Assessment for Streams and Lakes**



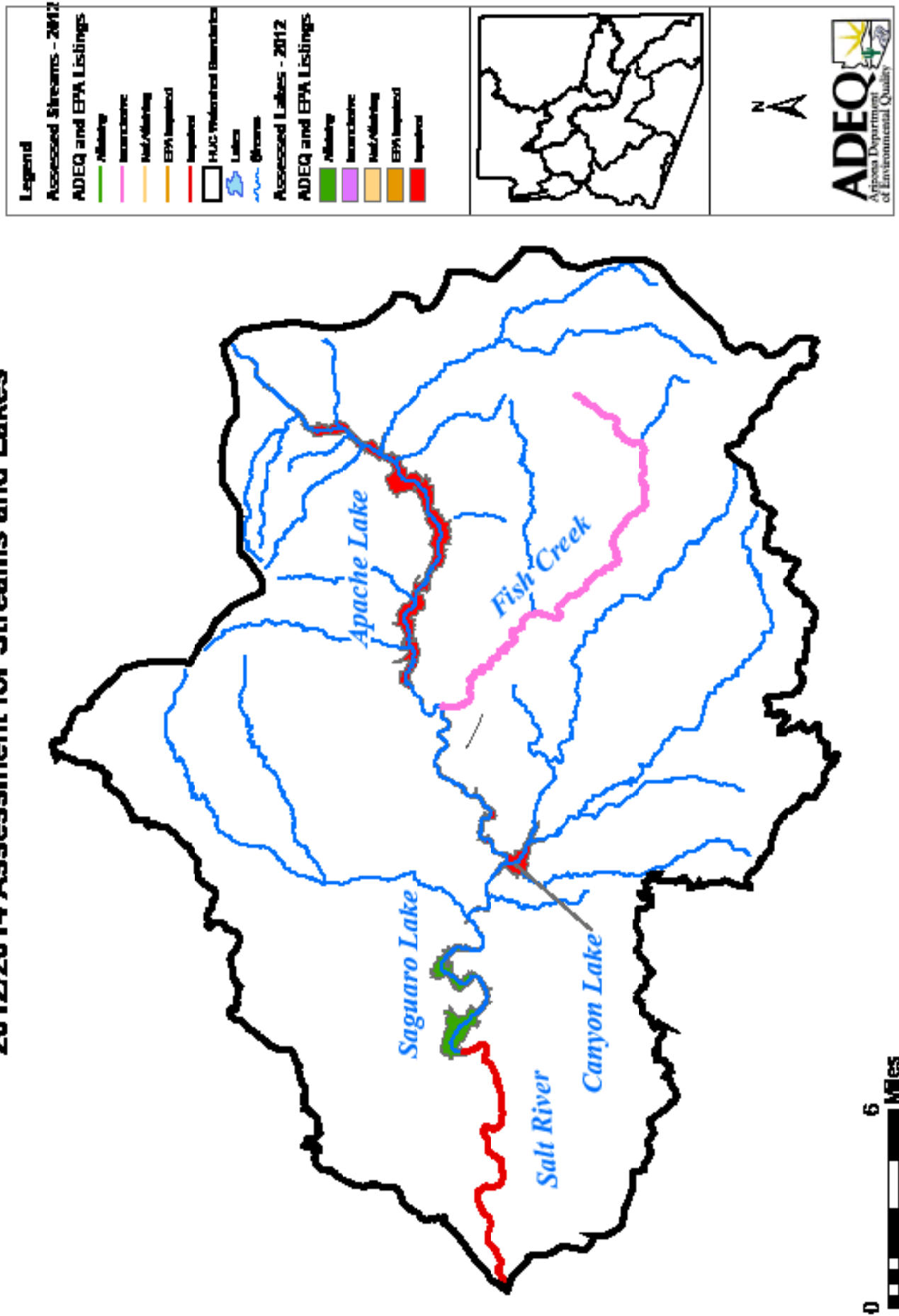
Salt Watershed **HUC 15060103** **2012/2014 Assessment for Streams and Lakes**



**Salt Watershed
HUC 15060105
2012/2014 Assessment for Streams and Lakes**



Salt Watershed **HUC 15060106A** **2012/2014 Assessment for Streams and Lakes**



Low dissolved oxygen (2006/8)

DWS - Inconclusive • FC - Attaining • FBC - Inconclusive
 AGI - Inconclusive • AGL - Inconclusive • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	10 ug/L	9/23/2008	12 ug/L	DWS is inconclusive with 1 exceedance in 7 samples (binomial).
Beryllium	4 ug/L	2/19/2009	64 ug/L	DWS is inconclusive with 1 exceedance in 7 samples (binomial).
Cadmium ^d	3.5 ug/L ^{chronic} @ 185 mg/L hardness	1/23/2008	6.1 ug/L	A&Ww is inconclusive with 1 exceedance in 7 samples.
Copper ^d	20.7 ug/L ^{acute} , 13.2 ug/L ^{chronic} @ 158 mg/L hardness	5/6/2009	30 ug/L	A&Ww is inconclusive with 1 exceedance.
Dissolved oxygen	6.0 mg/L	7/22/2008	3.42 mg/L	A&Ww is remains impaired with 3 exceedances in 12 samples (binomial).
		12/12/2007	5.69 mg/L	
		2/19/2009	2.36 mg/L	
Lead ^d	4.0 ug/L @ 154 mg/L hardness	7/22/2008	6 ug/L	A&Ww is inconclusive with 1 exceedance in 7 samples.
Nitrogen	1.0 mg/L, SSM 0.3 mg/L, Annual Mean	1/23/2008	4.7 mg/L	A&Ww & FBC are inconclusive with 3 exceedances in 15 samples (binomial). No annual average exceedances (2nd aggregation function and time frame for calculating average changed from 2010).
		5/8/2008	1.04 mg/L	
		7/22/2008	1.06 mg/L	
Phosphorus	0.06 mg/L, SSM 0.03 mg/L, Annual Mean	11/2/2006	0.08 mg/L	A&Ww and FBC are inconclusive with 5 exceedances in 19 samples (2nd aggregation function changed since last assessment). 2 numeric annual mean exceedances but none were composites at 1,2, & 5 meters as required.
		2/14/2008	0.062 mg/L	
		7/22/2008	0.11 mg/L	
		9/23/2008	0.09 mg/L	
		5/6/2009	0.16 mg/L	
		7/07-6/08	0.038 mg/L	
		7/08-6/09	0.031 mg/L	
Manganese	10000 ug/L AGI 980 ug/L DWS	7/22/2008	20000 ug/L	AGI and DWS are inconclusive with 1 exceedance in 7 samples (binomial).
pH	9.0 SU	7/22/2008	9.5 SU	AGI, AGL, A&Ww, DWS, and FBC are inconclusive with 1 exceedance in 8 samples (binomial).

Monitoring Summary

Sampling period: 11/2/2006 - 5/6/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
At Marina	SRAPA-MAR	100998	ADEQ	CLP
At Dam	SRAPA-A	100997	ADEQ	CLP
At Riverine Zone	SRAPA-C	101706	UA	CLP
Open Water Northwest From Resort	SRAPA-NLS	105780	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(18-21) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(3-23) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(18-22) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Manganese, pH, copper (dissolved), lead (dissolved), arsenic, beryllium, cadmium (dissolved), dissolved oxygen, nitrogen, phosphorus
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect manganese, arsenic, beryllium, dissolved copper, dissolved lead, and pH samples due to exceedances. Collect <i>E. coli</i> to reflect 3 seasons over assessment period to complete core parameter coverage.

Impairment Discussion
Remains impaired for low dissolved oxygen.

BEAR WALLOW CREEK

N. and S. Forks Bear Wallow - Indian Res.
15060101-023A
5.9 Miles

Category 1
Attaining all uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Attaining

No Exceedances

Monitoring Summary

Sampling period: 8/1/2007 - 5/4/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW SOUTH FORK BEAR WALLOW CREEK	SRBWL005.79	101198	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(5) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Low	Use lower lab reporting limits for dissolved metals, especially cadmium and copper. Good core parameter coverage with small number of samples.

BEAVER CREEK

Headwaters - Black River
15060101-008
13.121 Miles

Category 2
Attaining some uses

Salt

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	6/18/2008	6.5 mg/L	A&Wc is inconclusive with 1 exceedance in 7 samples.
SSC	25 mg/L	7/31/2007	49 mg/L	A&Wc is attaining with no median exceedances.

Monitoring Summary

Sampling period: 7/31/2007 - 10/22/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOREST ROAD 26 BRIDGE	SRBEV007.28	102135	ADEQ	Ambient
AT USGS GAGE NEAR SPRUCEDALE, AZ	SRBEV001.40	100373	ADEQ	Ambient
BELOW HANNAGAN CREEK	SRBEV009.56	102139	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(11) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(9-11) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(8-12) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), zinc (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect dissolved oxygen samples due to the exceedance.

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 10/29/2010 - 5/11/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
At Dam	SRBIG-A	101322	ADEQ	CLP, TMDL
Mid Lake	SRBIG-B	101355	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(3-4) Arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, arsenic, chromium, lead, boron, manganese, copper, fluoride
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

BLACK RIVER

Beaver Creek - Reservation Creek
15060101-007
13.1 Miles

Category 3
Inconclusive

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/10/2008 - 7/10/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOREST ROAD #25	SRBLR102.24	101202	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper
Lab Detection Limits Not Low Enough	Cadmium (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

BLACK RIVER EAST FORK

Headwaters - Black River
15060101-009
26.7 Miles

Category 3
Inconclusive

Salt

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 8/31/2010 - 4/20/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE DIAMOND ROCK CAMPGROUND	SREFB008.27	100539	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrite/nitrate, fluoride, arsenic, chromium, lead, boron, manganese, copper
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

BLACK RIVER WEST FORK

Indian Reservation Boundary - Black River
15060101-048
14.6 Miles

Category 2
Attaining some uses

DWS - Attaining • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/31/2007 - 10/22/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE WEST FORK CAMPGROUND	SRWFB005.34	100691	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(3-4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Use lower reporting limits for dissolved metals, especially cadmium, copper, and zinc. Collect dissolved copper samples to reflect 3 seasons over assessment period to complete core parameter coverage.

BLOODY TANKS WASH

Schultze Ranch - Miami Wash
15060103-034B
6.645 Miles

Category 3
Inconclusive

Salt

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	14.8 ug/L ^{acute} @ 62 mg/L hardness	2/5/2008	46 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 2/5/2008 - 2/5/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FOREST AVENUE	SRBTW003.16	105999	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(0) None	(1) pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved)
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Not enough data to assess. Collect more dissolved copper samples due to the exceedance. All core parameters in need of sample number and seasonal distribution coverage.

BOGGY CREEK (BGY)

Headwaters - Centerfire Creek
15060101-361
7.1 Miles

Category 1

Attaining all uses

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Attaining

No Exceedances**M**onitoring Summary

Sampling period: 7/27/2010 - 4/20/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW FOREST SERVICE ROAD 25	SRBGY002.86	108402	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Use lower reporting limits for dissolved metals, especially cadmium, copper, and zinc.

BONEYARD CREEK

Headwaters - East Fork Black
15060101-305
7.6 Miles

Category 1
Attaining all uses

Salt

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Attaining

No Exceedances

Monitoring Summary

Sampling period: 8/1/2007 - 10/22/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE CLABBER CITY	SRBON001.69	102125	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Use lower reporting limits for dissolved metals, especially cadmium and copper. Good core parameter coverage with small number of samples.

CAMPAIGN CREEK

Headwaters - Pinto Creek
15060103-037
16.579 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	8/29/2007	5.04 mg/L	A&Ww is inconclusive with 1 exceedance in 4 samples.
SSC	80 mg/L	8/29/2007	248 mg/L	A&Ww is attaining with no median exceedances.

Monitoring Summary

Sampling period: 8/29/2007 - 11/18/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT SUPERSTITION WIL- DERNESS BOUNDARY	SRCGN009.78	100431	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(3-4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect dissolved oxygen samples due to the exceedance. Collect <i>E. coli</i> to represent at least 3 seasons during an assessment period.

DWS - Attaining • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Wc - Attaining

No Exceedances

Monitoring Summary

Sampling period: 9/18/2007 - 5/10/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE VALENTINE CANYON	SRCYN045.73	100528	ADEQ	Ambient
BELOW FISH HATCHERY	SRCYN048.21	108442	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4-8) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(7) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), nickel (dissolved), selenium, zinc (dissolved)

Priority	Monitoring Recommendations
Low	Use lower lab reporting limits for dissolved metals, especially cadmium, copper, and zinc. Good core parameter coverage with few samples.

Low dissolved oxygen (2004)

DWS - Inconclusive • FC - Attaining • FBC - Inconclusive
 AGI - Attaining • AGL - Attaining • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	9/27/2006	0.69 mg/L	A&Ww remain impaired with 4 exceedances in 15 samples (binomial).
		10/25/2006	2.58 mg/L	
		7/11/2007	5.5 mg/L	
		6/26/2008	4.5 mg/L	
Manganese	980 µg/L	9/30/2008	10000 µg/L	DWS is inconclusive with 1 exceedance in 8 samples (binomial).
pH	9.0 SU	6/26/2008	9.7 SU	AGI, AGL, A&Ww, DWS, and FBC are attaining with 2 exceedances in 16 samples (binomial).
		7/30/2008	9.5 SU	
Nitrogen	1.0 mg/L, SSM 0.3 mg/L, Annual mean	2/25/2008	3.4 mg/L	A&Ww & FBC are inconclusive with 4 exceedances in 16 samples (SSM, binomial) and 1 numeric annual mean exceedance.
		3/20/2008	4.0 mg/L	
		4/14/2008	2.2 mg/L	
		7/30/2008	1.03 mg/L	
		07/06-06/0	0.48 mg/L	
Phosphorus	0.06 mg/L, SSM 0.03 mg/L, Annual mean	9/27/2006	0.09 mg/L	A&Ww & FBC are inconclusive with 8 exceedances in 15 samples (SSM, binomial) and 3 numeric annual mean exceedances (they were not composites at 1,2, & 5 meters as required).
		10/25/2006	0.068 mg/L	
		7/11/2007	0.3 mg/L	
		2/25/2008	0.134 mg/L	
		3/20/2008	0.11 mg/L	
		4/15/2008	0.08 mg/L	
		9/30/2008	0.061 mg/L	
		5/11/2009	0.51 mg/L	
		7/06-6/07	0.06 mg/L	
		7/07-6/08	0.05 mg/L	
		7/08-6/09	0.04 mg/L	

Monitoring Summary

Sampling period: 9/27/2006 - 5/11/2009

Salt

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT INLET	SRCAN-C1	102615	UA	CLP
IN TRANSITIONAL ZONE	SRCAN-B	101699	ADEQ	CLP
AT MARINA	SRCAN-MAR	101701	UA	CLP
AT STEEP CLIFFS	SRCAN-STE	105719	ADEQ	CLP
ACROSS FROM RESTAURANT LOUNGE	SRCAN-RL	105720	ADEQ	Ambient
DAM SITE IN LITTORAL ZONE	SRCAN-A	101697	ADEQ	CLP
UPPER MIDDLE	SRCAN-MID	102837	AGFD	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(17-25) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(3-36) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(2-36) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Manganese, dissolved oxygen, phosphorus, nitrogen
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Copper (dissolved), lead (dissolved), mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more manganese samples due to the exceedance. <i>E. coli</i> needs sample/seasonal coverage.

Impairment Discussion
Remains impaired for low dissolved oxygen.

CENTERFIRE CREEK

Headwaters - Black River
15060101-356
8.7 Miles

Category 1
Attaining all uses

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Attaining

No Exceedances

Monitoring Summary

Sampling period: 7/27/2010 - 4/20/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FS RD #25	SRCTF004.17	103185	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Use lower reporting limits for dissolved metals, especially cadmium, copper, and zinc.

C HERRY CREEK

Tributary at 340509 / 110560 - Salt River
15060103-015B
40.9 Miles

Category 1
Attaining all uses

Salt

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Attaining

No Exceedances

Monitoring Summary

Sampling period: 10/4/2007 - 5/23/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE DEVILS CHASM	SRCHE013.65	100442	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(8) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(7-8) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Good core parameter coverage with few samples.

CHRISTOPHER CREEK

Headwaters - Tonto Creek
15060105-353
8.0 Miles

Category 4A/5
Not attaining/Impaired

Phosphorus (2006/8) and E. coli (2004)

FC - Inconclusive • FBC - Not Attaining • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	5/27/2008	6.77 mg/L	A&Wc is inconclusive with 4 exceedances in 17 samples (binomial).
		8/13/2009	6.71 mg/L	
		8/24/2010	6.21 mg/L	
		9/8/2010	6.02 mg/L	
E. coli	235 cfu/100 mL, SSM	9/3/2008	365 cfu/100 mL	FBC remains not attaining with 4 exceedances in 16 samples.
		8/14/2009	517 cfu/100 mL	
		9/30/2009	285 cfu/100 mL	
		7/12/2010	3629 cfu/100 mL	
Phosphorus	0.1 mg/L, Annual mean	7/12/2010	0.161 mg/L	A&Wc and FBC remain impaired with 1 annual mean exceedance.

Monitoring Summary

Sampling period: 10/11/2006 - 6/30/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW CHRISTOPHER CREEK CAMPGROUND	SRCRS002.25	100365	ADEQ	TMDL
ABOVE TONTO CREEK AND BELOW BOX CANYON	SRCRS000.08	101034	ADEQ	TMDL
AT TOP OF BOX CANYON	SRCRS001.24	101033	ADEQ	TMDL
ABOVE RECREATION AREA	SRCRS006.20	101027	ADEQ	TMDL
ABOVE R-BAR-C SCOUT RANCH	SRCRS001.74	106060	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(44-60) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(6-64) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more dissolved oxygen samples due to exceedances. Collect more samples in support of TMDL development and effectiveness monitoring.

Impairment Discussion
Not attaining for <i>E. coli</i> with TMDL approved in 2005. Remains impaired for phosphorus (2006/8). New data for this assessment shows exceedances in all the same parameters.

CONKLIN CREEK

Headwaters - Black River
15060101-026
7.4 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 9/2/2010 - 5/5/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOREST ROAD #25	SRCKN001.61	100521	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, (3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

COON CREEK (COO)

Tributary at 334642 / 110542 -- Salt River
15060103-039B
10.1 Miles

Category 2

Attaining some uses

Salt

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 10/4/2007 - 6/18/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FOREST ROAD #203	SRC00001.92	100379	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2-4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Nitrogen
Missing Seasonal Distribution	Nitrogen, phosphorus, <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect <i>E. coli</i> , nitrogen and phosphorus to represent at least 3 seasons during an assessment period.

COTTONWOOD GULCH

Headwaters - Pinto Creek
15060103-891
1.9 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/11/2006 - 4/7/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW OUTFALL PV004	SRCTG000.39	103443	BHP	Permit Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(4-5) Arsenic, beryllium, cadmium, copper, manganese, selenium, zinc	(0) None	(2) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen, pH, nitrogen, phosphorus
Missing Seasonal Distribution	Dissolved oxygen, pH, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • A&Wc - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	7/30/2010	980 cfu/100 mL	FBC is inconclusive with 1 exceedance in 3 samples. Note: This exceedance was storm-related.

Monitoring Summary

Sampling period: 7/30/2010 - 4/19/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOREST SERVICE ROAD 276	SRCOY003.95	108403	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect more <i>E. coli</i> samples due to the exceedance.

CRESCENT LAKE

15060101-0420
156.7 Acres

Category 5
Impaired

IMPAIRMENT STATUS

High pH (2002 EPA)

FC - Inconclusive • FBC - Impaired • AGI - Impaired
AGL - Impaired • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Nitrogen	2 mg/L, SSM	8/7/2008	2.02 mg/L	A&Wc and FBC are inconclusive with 1 single sample maximum exceedance in 7 samples (binomial).
pH	9.0 SU	8/7/2008	9.4 SU	A&Wc, FBC, AGL and AGI remain impaired with 1 exceedance in 7 samples (binomial).
Dissolved Oxygen	7.0 mg/L	8/5/2010	6.51 mg/L	A&Wc is inconclusive with 1 exceedance in 6 samples (binomial).

Monitoring Summary

Sampling period: 11/18/2009 - 5/11/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	SRCRE-B	100993	ADEQ	CLP
AT BOAT RAMP	SRCRE-BR	101320	ADEQ	SPS, CLP
AT DAM	SRCRE-A	108762	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(5) Boron, copper, lead, manganese, mercury, selenium	(1-7) Ammonia, nitrate, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-7) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Nitrogen, dissolved oxygen
Missing Core Parameters	
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more pH, dissolved oxygen and nitrogen samples due to exceedances.

Impairment Discussion
EPA overfiled for pH in 2002.

DEER CREEK (D4E)

Headwater - Rye Creek
15060105-018
11.9 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 3/14/2011 - 3/14/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW HIGHWAY 87	SRD4E001.72	108682	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), lead (dissolved)

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

DEVILS CHASM CREEK

Tributary at 334846 / 110523
15060103-801B
1.6 Miles

Category 2

Attaining some uses

Salt

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	27.8 µg/L ^{acute} @ 240 mg/L hardness	9/21/2010	90 µg/L	A&Ww acute is inconclusive with 1 exceedance in 4 samples.
Nitrogen	0.6 mg/L, Annual mean	9/21/2010	0.64 mg/L	A&Ww and FBC are inconclusive with 1 annual mean exceedance.

Monitoring Summary

Sampling period: 9/21/2010 - 6/1/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE CHERRY CREEK	SRDEV000.38	100533	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4-5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved), nitrogen
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Beryllium, mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect dissolved copper and total nitrogen samples due to exceedances.

FISH CREEK-LOWER SALT RIVER

Headwaters - Salt River
15060106A-583
16.3 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 3/12/2009 - 4/21/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
0.25 MILES ABOVE HIGHWAY 88	SRFSH006.38	100552	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-2) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

FISH CREEK-UPPER SALT RIVER

Headwaters - Black River
15060101-032
13.8 Miles

Category 2
Attaining some uses

Salt

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • A&Wc - Attaining

No Exceedances

Monitoring Summary

Sampling period: 7/31/2007 - 6/24/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR BEAR WALLOW WILDERNESS	SRFIS004.49	100553	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), zinc (dissolved), selenium

Priority	Monitoring Recommendations
Low	<i>E. coli</i> needs sample/seasonal coverage.

Five Point Mountain Tributary

Headwaters - Pinto Creek
15060103-885
2.9 Miles

Category 5
Impaired

Dissolved Copper (2006/8)

PBC - Inconclusive • A&We - Impaired

No Exceedances

Monitoring Summary

Sampling period: no samples

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
60W3	SRFPM002.24	102657	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
none	none	none

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All core parameters
Missing Seasonal Distribution	All core parameters
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Need more data. All core parameters need seasonal coverage.

Impairment Discussion
Remains impaired for dissolved copper (2006/8).

IMPACT

Copper (2006/8)

FC - Inconclusive • FBC - Inconclusive
A&Ww - Not Attaining

STATUS

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper	1300 ug/L	8/7/2007	2300 ug/L	FBC is inconclusive with 4 exceedances in 4 samples (binomial).
		12/1/2007	6400 ug/L	
		12/11/2007	3900 ug/L	
		1/28/2008	4900 ug/L	
Copper ^d	14.7 ug/L ^{acute} , 9.7 ug/L ^{chronic} @ 110 mg/L hardness	8/7/2007	2200 ug/L	A&Ww remains not attaining with 3 exceedances in 3 samples.
	11.5 ug/L ^{acute} , 7.8 ug/L ^{chronic} @ 85 mg/L hardness	12/1/2007	3800 ug/L	
	7.3 ug/L ^{acute} , 5.1 ug/L ^{chronic} @ 52 mg/L hardness	12/11/2007	3500 ug/L	
pH	6.5 SU	12/11/2007	6.1 SU	A&Ww and FBC are inconclusive with 1 exceedance in 4 samples (binomial).

Monitoring Summary

Sampling period: 8/7/2007 - 1/28/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT PINTO CREEK	SRGIB000.11	101071	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, thallium, zinc, selenium	(1) Nitrate, nitrite, nitrite/nitrate	(1-4) pH, SSC

Salt

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, copper
Missing Core Parameters	Dissolved oxygen, pH, nitrogen, phosphorus, <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Copper (dissolved), lead (dissolved), nickel (dissolved), silver (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Need more samples to determine attainment status. All core parameters need coverage.

Impairment Discussion
Remains not attaining for dissolved copper. Pinto Creek copper TMDL completed in 2001.

PBC - Attaining • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	85.9 ug/L @ 400 mg/L hardness	4/7/2008	110 ug/L	A&We is attaining. No acute exceedances during the last 3 years of monitoring.

Monitoring Summary

Sampling period: 7/9/2006 - 10/14/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT WEIR	SRGDG000.03	102666	BHP	Permit Monitoring
NORTH OF #3 TAILING IMPOUNDMENT	SRGDG000.21	103442	BHP	Permit Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(7-9) Arsenic, beryllium, cadmium, copper, manganese, selenium, zinc	(1) Nitrite/nitrate	(4) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Nitrogen, phosphorus
Missing Seasonal Distribution	Nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
Medium	Collect nitrogen and phosphorus samples to represent at least 3 seasons during an assessment period.

GORDON CANYON CREEK

Headwaters - Hog Canyon
15060105-336A
12.7 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 11/10/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ALONG COLCORD ROAD, NEAR YOUNG, AZ	SRGOD012.05	100377	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

H AIGLER CREEK

Headwaters - Trib at 341223 / 1110011
15060105-012A
15.4 Miles

Category 2
Attaining some uses

Salt

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 9/18/2007 - 10/21/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR FISHERMANS POINT ON FR200	SRHAG013.09	105442	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2-3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

HANNAGAN CREEK

Headwaters - Beaver Creek
15060101-034
7.2 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Wc - Attaining

No Exceedances

Monitoring Summary

Sampling period: 7/30/2007 - 6/24/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT HIGHWAY 191, NEAR ALPINE, AZ	SRHAN002.27	102149	ADEQ	Ambient
ABOVE BEAVER CREEK	SRHAN000.06	102141	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(7) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(7) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-7) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

FC - Attaining • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Nitrogen	2.0 mg/L, SSM	12/17/2007	2.76 mg/L	A&Ww and FBC are inconclusive with 1 exceedance in 2 samples (binomial).

Monitoring Summary

Sampling period: 8/28/2007 - 4/30/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
CARLOTA WEIR	SRHNC000.14	101072	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2-3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Nitrogen
Missing Core Parameters	Dissolved oxygen, nitrogen, phosphorus, copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Dissolved oxygen, nitrogen, phosphorus, copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect nitrogen samples to ascertain A&W attainment. Collect D.O., N , P , copper and ecoli samples to represent three seasons in assessment period to complete core parameter coverage.

HAY CREEK

Headwater - West Fork Black River
15060101-353
4.5 Miles

Category 1
Attaining all uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Attaining

No Exceedances

Monitoring Summary

Sampling period: 7/31/2007 - 6/17/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE WEST FORK BLACK RIVER	SRHAY000.04	101299	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Use lower reporting limits for dissolved metals, especially cadmium, copper, and zinc.

MILLER SPRINGS GULCH

Headwaters - Pinto Creek
15060103-892
1.6 Miles

Category 3
Inconclusive

Salt

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/11/2006 - 10/3/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
HEADWATERS TO PINTO CREEK	SRMSG22.83	104979	BHP	Permit Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Arsenic, beryllium, cadmium, copper, manganese, selenium, zinc	(0) None	(2) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

PINAL CREEK

Lower Pinal Creek WTP discharge -- Salt River
15060103-280D
6.4 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	6.5 SU	3/6/2007	6.03 SU	AGL, A&Ww, FBC are attaining with 9 exceedances in 70 samples (binomial)
		8/20/2007	5.55 SU	
		9/4/2007	6.12 SU	
		10/2/2007	5.3 SU	
		11/6/2007	6.17 SU	
		2/5/2008	5.14 SU	
		7/1/2008	6.28 SU	
		4/7/2009	6.04 SU	
		5/5/2009	6.17 SU	
Selenium	2 ug/L	9/2/2008	3 ug/L	A&Ww is inconclusive with 1 exceedance in 3 samples. Note: This is an estimated value below detection limit.

Monitoring Summary

Sampling period: 7/26/2006 - 12/2/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT INSPIRATION DAM	SRPNL003.79	100727	Pinal Creek Group	Permit Monitoring
USGS SITE JJ15	SRPNL005.12	101518	ADEQ, Pinal Creek Group	Ambient, Permit Monitoring
AT SETKA RANCH	SRPNL006.87	101491	Pinal Creek Group	Permit Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(16-94) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(3-4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-98) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Selenium
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Beryllium (dissolved), cadmium (dissolved), copper (dissolved), selenium, cyanide, mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more selenium samples to assess A&Wc attainment. Use lower detection limits for metals listed above.

Attainment Discussion
Additional data was submitted for this reach following the completion of the public comment period. The new dataset includes 9 exceedances in 70 samples occurred during the 2012/14 assessment window. Therefore, this reach is considered 'attaining' following the binomial rule. AGL, A&Ww and FBC are now 'attaining' for pH rather than being inconclusive. Reach status remains 'Attaining some uses', however, because of uncertainty over the status of A&Ww due to a selenium exceedance.

Pinto Creek

Headwaters - Tributary at 331927/1105456
15060103-018A
2.5 Miles

Category 4A
Not attaining

Dissolved Copper (1998)

FC - Inconclusive • FBC - Inconclusive • A&Wc - Not Attaining
AGL - Inconclusive • AGI - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: no current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
At Simpson Dam	SRPNT033.02	102428	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
none	none	none

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	none
Missing Core Parameters	all
Missing Seasonal Distribution	all
Lab Detection Limits Not Low Enough	none

Priority	Monitoring Recommendations
Low	All core parameters need coverage.

Impairment Discussion
Remains not attaining for dissolved copper. Pinto Creek copper TMDL completed in 2001.

IMPACTMENT STATUS

Copper (1998)

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper	500 ug/L (AGL) 1300 ug/L (FBC)	12/1/2007	2000 ug/L	AGL and FBC are attaining with 2 exceedances and 1 exceedance, respectively in 19 samples (binomial).
		12/11/2007	700 ug/L	
Copper ^d	9 ug/L ^{acute} , 6 ug/L ^{chronic} @ 63 mg/L hardness	8/7/2007	31 ug/L	A&Ww remains not attaining with 6 exceedances in 11 sample.
	7 ug/L ^{acute} , 5 ug/L ^{chronic} @ 59 mg/L hardness	12/1/2007	220 ug/L	
	8 ug/L ^{acute} , 5 ug/L ^{chronic} @ 50 mg/L hardness	12/11/2007	530 ug/L	
	7 ug/L ^{acute} , 5 ug/L ^{chronic} @ 60 mg/L hardness	1/28/2008	200 ug/L	
	10 ug/L ^{acute} , 7 ug/L ^{chronic} @ 74 mg/L hardness	2/5/2008	103 ug/L	
	40 ug/L ^{chronic} @ 400 mg/L hardness	4/7/2008	60 ug/L	
Dissolved oxygen	6.0 mg/L	7/11/2006	5.26 mg/L	A&Ww is inconclusive with 2 exceedances in 7 samples (binomial).
		1/23/2007	2.67 mg/L	
Lead	15 ug/L	12/1/2007	38 ug/L	FBC is inconclusive with 1 exceedance in 4 samples (binomial).
pH	6.5 SU	12/1/2007	6.15 SU	AGL, AGI, and FBC are attaining with 1 exceedance in 12 samples (binomial).
SSC	80 mg/L	1/28/2008	800 mg/L	A&Ww is inconclusive.

Monitoring Summary

Sampling period: 7/11/2006 - 12/26/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
300 FEET DOWN-STREAM OF IRON BRIDGE	SRPNT019.23	103313	BHP	Permit Monitoring
BELOW CARLOTA CACTUS BRECCIA	SRPNT023.29	102431	ADEQ	TMDL
ABOVE GIBSON MINE TRIBUTARY	SRPNT028.85	101062	ADEQ	TMDL
AT OLD HIGHWAY 60	SRPNT027.51	101064	ADEQ	TMDL
ABOVE COTTONWOOD GULCH AND BELOW CACTUS BRECCIA	SRPNT024.85	103311	BHP	Permit Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(6-27) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(2) Nitrate, nitrite, nitrite/nitrate	(2-18) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, lead, SSC
Missing Core Parameters	Nitrogen, phosphorus, <i>E. coli</i>
Missing Seasonal Distribution	Nitrogen, phosphorus, <i>E. coli</i> , boron, lead
Lab Detection Limits Not Low Enough	Arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead, lead (dissolved), nickel (dissolved), selenium, silver (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
High	Use a lower lab reporting limit for selenium.

Impairment Discussion
Remains not attaining for dissolved copper. Pinto Creek copper TMDL completed in 2001.

PINTO CREEK

West Fork Pinto Creek - Roosevelt Lake
15060103-018C
18.4 Miles

Category 4A/5
Not attaining/Impaired

Salt

Selenium (2004) and copper (1998)

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • A&Ww - Impaired

No Exceedances

Monitoring Summary

Sampling period: 8/27/2007 - 10/20/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE HENDERSON FORD	SRPNT008.48	100346	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4-5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3-4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Selenium, mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect selenium samples in support of TMDL development and <i>E. coli</i> to complete core parameter coverage.

Impairment Discussion
Remains impaired for selenium and not attaining for copper. Pinto Creek copper TMDL completed in 2001.

POWERS GULCH

Headwaters - Haunted Canyon
15060103-884
3.8 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	53.5 ug/L @ 242 mg/L hardness	2/13/2008	66 ug/L	A&We is inconclusive with 1 exceedance in 5 samples.

Monitoring Summary

Sampling period: 7/11/2006 - 10/14/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR HAUNTED CANYON	SRPWG000.15	102665	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4-5) Arsenic, beryllium, cadmium, copper, manganese, selenium, zinc	(0) None	(2) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved)
Missing Core Parameters	Dissolved oxygen, pH, nitrogen, phosphorus
Missing Seasonal Distribution	Dissolved oxygen, pH, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Arsenic (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect dissolved copper samples due to the exceedance. Collect pH, dissolved oxygen, nitrogen, & phosphorus samples to reflect 3 seasons over assessment period to complete core parameter coverage.

RESERVATION CREEK

Indian Reservation - Black River
15060101-010
3.3 Miles

Category 3
Inconclusive

Salt

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 9/2/2010 - 5/5/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BLACK RIVER	SRRES000.33	100629	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

REYNOLDS CREEK

Headwaters - Workman Creek
15060103-202
6.8 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	6/8/2011	3.94 mg/L	A&Wc is inconclusive with 1 exceedance in 4 samples (binomial).
<i>E. coli</i>	235 cfu/100 ml, SSM	9/22/2010	525 cfu/100 mL	FBC is inconclusive with 1 exceedance in 4 samples.
Nitrogen	0.6 mg/L, Annual mean	9/22/2010	0.712 mg/L	A&Wc and FBC are inconclusive with 1 annual mean exceedance.

Monitoring Summary

Sampling period: 9/22/2010 - 6/8/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW MCFADDEN CREEK	SRREY001.14	100630	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Nitrogen, dissolved oxygen, <i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect dissolved oxygen, <i>E. coli</i> , and total nitrogen samples due to exceedances.

Mercury in fish tissue (2006/8 EPA)

DWS - Inconclusive • FC - Impaired • FBC - Inconclusive

AGI - Inconclusive • AGL - Inconclusive

A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	19.7 ug/L ^{acute} , 12.7 ug/L ^{chronic} @ 150 mg/L hardness	5/5/2009	20 ug/L	A&Ww is inconclusive with 1 exceedance in 7 samples.
Dissolved oxygen	6.0 mg/L	9/24/2007	5.47 mg/L	A&Ww is attaining with 1 exceedance in 11 sample (binomial).
pH	9.0 SU	7/21/2008	9.3 SU	AGI, AGL, A&Ww, DWS, and FBC are inconclusive with 2 exceedances in 8 samples (binomial).
		9/22/2008	9.5 SU	
Phosphorus	0.06 mg/L, SSM	2/12/2008	0.108 mg/L	A&Ww and FBC are attaining with 1 exceedance in 12 samples (binomial).

Monitoring Summary

Sampling period: 9/24/2007 - 6/30/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
At Dam	SRR00-A	100075	ADEQ, AGFD	CLP
Salt River Inlet	SRR00-B	100076	ADEQ, AGFD	CLP
Northeast Of Boat Ramp	SRR00-C2	106243	ADEQ	CLP
Tonto Creek Inlet	SRR00-C	100077	ADEQ	CLP
At Marina	SRR00-MAR	101711	UA, ADEQ	CLP
Below Bumblebee Creek Off Highway 188	SRR00-B1	104417	ADEQ	CLP
At Salt River Inlet	SRR00-SAL	108822	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(19-23) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(4-23) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(24-27) Dissolved oxygen, pH, total dissolved solids,

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, copper (dissolved)
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more pH and dissolved copper samples due to exceedances. Collect fish tissue samples in support of TMDL development.

Impairment Discussion
EPA overfiled for mercury in fish tissue (2006/8).

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 3/14/2011 - 3/14/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW RYE AZ.	SRRYE006.15	102833	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved)

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
 AGI - Attaining • AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	10/11/2006	2 mg/L	A&Ww is attaining with 3 exceedances in 16 samples (binomial).
		9/27/2007	4.2 mg/L	
		7/31/2008	2.92 mg/L	
pH	9.0 SU	5/29/2008	9.4 SU	AGI, AGL, A&Ww, DWS, and FBC are attaining with 3 exceedances in 16 samples (binomial).
		6/19/2008	9.2 SU	
		7/31/2008	9.7 SU	
Thallium	2 ug/L (DWS)	2/26/2008	34 mg/L	DWS, FBC, and FC are inconclusive with 1 exceedance in 6 samples (binomial).
Nitrogen	1 mg/L, SSM 0.03 mg/L, Annual mean	1/29/2008	1.75 mg/L	A&Ww & FBC are attaining with 3 exceedances in 16 samples (binomial). 3 numeric annual mean exceedances were not composites at 1,2, & 5 meters as required.
		3/19/2008	1.34 mg/L	
		4/9/2008	1.06 mg/L	
		7/06-6/07	0.33 mg/L	
		7/07-6/08	0.43 mg/L	
		7/08-6/09	0.23 mg/L	
Phosphorus	0.06 mg/L, SSM 0.03 mg/L, Annual mean	10/11/2006	0.068 mg/L	A&Ww & FBC are inconclusive with 6 exceedances in 16 samples (binomial). 3 numeric annual average exceedances though none were composites at 1,2, & 5 meters as required.
		12/4/2007	0.08 mg/L	
		1/29/2008	0.42 mg/L	
		2/26/2008	0.097 mg/L	
		3/19/2008	0.09 mg/L	
		4/9/2008	0.08 mg/L	
		7/06-6/07	0.045 mg/L	
		7/07-6/08	0.077 mg/L	
		7/08-6/09	0.035 mg/L	

Monitoring Summary

Sampling period: 9/13/2006 - 5/12/2009

Salt

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
850 METERS ACROSS FROM BUTCHER JONES SITE	SRSAG-NLS	105800	ADEQ	CLP
AT DAM	SRSAG-A	100082	ADEQ	CLP
SOUTHEAST OF BAGLEY FLAT	SRSAG-C	101810	ADEQ	CLP
AT MARINA SITE 2	SRSAG-MAR2	100995	ADEQ	CLP
AT CAMPGROUND	SRSAG-MFLAT	101698	AGFD	CLP
MID LAKE SITE	SRSAG-B	104397	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(19-23) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(3-42) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(22-42) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Thallium, phosphorus
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), nickel (dissolved), selenium, thallium

Priority	Monitoring Recommendations
Medium	Collect more nitrogen, phosphorus, and thallium samples due to exceedances.

SALT RIVER

Canyon Creek - Cherry Creek
15060103-007
19.6 Miles

Category 5
Impaired

Add selenium to the 303(d) list.

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	7/19/2010	2.2 ug/L	A&Ww chronic is impaired with 2 exceedances.
		5/25/2011	2.9 ug/L	

Monitoring Summary

Sampling period: 7/19/2010 - 5/25/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT GLEASON FLAT	SRSLR139.75	108422	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect selenium samples in support of TMDL development.

Impairment Discussion

Relatively high turbidity and TSS on 7/19 may indicate upset (i.e. non-chronic) conditions. 1.3 inches of rain in Globe on the 17Th, 0 on the 18th and .25 on the 19th and precipitation map shows widespread rain in area (see documentation).



SALT RIVER

Pinal Creek - Roosevelt Lake
15060103-004
7.5 Miles

Category 5
Impaired

E. coli, phosphorus, and nitrogen (2010) and SSC (2006/8)

FC - Attaining • FBC - Impaired • AGI - Attaining
AGL - Attaining • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	8/15/2006	7100 cfu/100 mL	FBC remains impaired with 2 exceedances in 14 samples.
		12/4/2007	1600 cfu/100 mL	
Lead	15 ug/L	8/15/2006	32.8 ug/L	FBC is attaining with 2 exceedances in 14 samples (binomial).
		1/29/2008	25.9 ug/L	
SSC	80 mg/L	8/15/2006	2520 mg/L	A&Ww is attaining with no median exceedances. All single sample exceedances except 3/20/2007 occurred during storm events and were excluded from assessment.
		3/20/2007	102 mg/L	
		9/11/2007	631 mg/L	
		12/4/2007	488 mg/L	
		1/29/2008	3470 mg/L	
Nitrogen	0.6 mg/L, Annual mean 2.0 mg/L, SSM	8/06 - 6/07	1.013 mg/L	A&Ww and FBC remain impaired with 2 annual mean exceedances.
		9/07 - 6/08	0.976 mg/L	
		8/15/2006	4.75 mg/L	
		1/29/2008	3.18 mg/L	
Phosphorus	0.12 mg/L, Annual mean 1.0 mg/L, SSM	8/06 - 6/07	0.203 mg/L	A&Ww and FBC remain impaired with 2 annual mean exceedances.
		9/07 - 6/08	0.54 mg/L	
		1/29/2008	2.44 mg/L	
Mercury ^d	0.01 ug/L	4/11/2007	0.012 ug/L	A&Ww chronic is inconclusive with 1 exceedance.

Monitoring Summary

Sampling period: 8/15/2006 - 12/2/2008

Salt

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Above Lake Roosevelt	SRSLR107.43	100745	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(14) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(14) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(14) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Mercury (dissolved)
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more samples in support of TMDL development.

Impairment Discussion
The reach is impaired for <i>E. coli</i> , ssc, nitrogen and phosphorus.

SALT RIVER

Stewart Mountain Dam - Verde River
15060106A-003
10.1 Miles

Category 5
Impaired

Dissolved oxygen (2004)

DWS - Attaining • FC - Attaining • FBC - Inconclusive
AGI - Attaining • AGL - Attaining • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	8/24/2006	3 mg/L	A&Ww remains impaired with 3 exceedances in 7 samples (binomial).
		7/25/2007	5.5 mg/L	
		9/24/2008	5.7 mg/L	
Phosphorus	0.05 mg/L, Annual mean	8/06 - 5/07	0.052 mg/L	A&Ww and FBC are inconclusive. Need more data for impairment determination.
		7/08 - 12/08	0.057 mg/L	
Nitrogen	3 mg/L, SSM	4/14/2008	4.3 mg/L	A&Ww and FBC are attaining with 2 exceedance in 35 samples (binomial). No annual average exceedances (time frame for calculation changed from 2010).
		5/12/2008	3.7 mg/L	
SSC	80 mg/L	5/9/2007	531 mg/L	A&Ww is attaining with no median exceedances in 10 samples.
		12/12/2007	136 mg/L	

Monitoring Summary

Sampling period: 7/11/2006 - 12/8/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW STEWART MOUNTAIN DAM	SRSLR051.32	100746	USGS	USGS
BELOW STEWART MOUNTAIN DAM	SRSLR054.32	103131	SRP	SRP

Metal Samples	Nutrients & Related Samples	Other Samples
(21-40) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(10-40) Nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(40) Dissolved oxygen, <i>E. coli</i> , naphthalene, pH, SSC, total dissolved solids, styrene, , tetrachloroethylene, toluene, trichlorobenzene, trichloroethane 111, trichloroethane 112, trichloroethylene, trihalomethanes, vinylchloride, xylene, tetrachloroethane

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Dibromochloropropane, selenium, tetrachloroethane, hexachlorobutadiene

Priority	Monitoring Recommendations
High	Collect more dissolved oxygen samples in support of TMDL development. Collect more phosphorus samples due to exceedances.

Impairment Discussion
Remains impaired for dissolved oxygen (2004).

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
 A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/31/2007 - 5/20/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
1.3 MILES ABOVE BLACK RIVER	SRSNK001.33	101298	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

SPRING CREEK (SPI)

Headwaters - Tonto Creek
15060105-010
20.5 Miles

Category 2

Attaining some uses

Salt

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 9/18/2007 - 11/5/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BRYANT CANYON	SRSPI011.63	100651	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2-3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Lead (dissolved), nickel (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

STINKY CREEK

Headwaters - Fort Apache Res
15060101-352A
2.1 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	6/18/2008	4.24 mg/L	A&Wc is inconclusive with 1 exceedance in 2 samples (binomial).
SSC	25 mg/L	7/30/2007	30 mg/L	A&Wc is inconclusive. Not enough samples to calculate a median.

Monitoring Summary

Sampling period: 7/30/2007 - 6/18/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE WEST FORK BLACK RIVER	SRSTI000.38	101303	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2-3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, SSC
Missing Core Parameters	Dissolved oxygen, nitrogen, phosphorus, copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect dissolved oxygen and SSC samples due to exceedances. Most core parameters need seasonal distribution coverage, many need sample number coverage as well.

THOMPSON DRAW

Headwaters - Billy Creek
15060105-378
7.1 Miles

Category 3
Inconclusive

Salt

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	576 cfu/100 mL, SSM	7/23/2010	1724 cfu/100 mL	PBC is inconclusive with 1 exceedance in 2 samples. Note: This exceedance is storm-related.

Monitoring Summary

Sampling period: 3/4/2008 - 7/23/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DOWN STREAM FROM THOMPSON SUB DIVISION	SRTH0003.23	106365	ADEQ	TMDL
UP STREAM FROM THOMPSON SUB DIVISION	SRTH0003.94	106366	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Antimony, arsenic, barium, beryllium, boron, cadmium, lead, manganese, mercury, selenium, zinc	(2) Ammonia, nitrogen, total Kjeldahl nitrogen	(2-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	Zinc (dissolved), pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect <i>E. coli</i> samples due to the exceedance.

TONTON CREEK (TON)

Greenback Creek - Roosevelt Lake
15060105-004
2.6 Miles

Category 5
Impaired

Salt

Mercury in fish tissue (EPA 2010)

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive
EPA FC - Impaired

No Exceedances

Monitoring Summary

Sampling period: 11/10/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT GREENBACK CREEK CONFLUENCE	SRTON011.00	108542	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
EPA overfile for mercury in fish tissue (2010)

TONTO CREEK (TON)

Haigler Creek - Spring Creek
15060105-011
7.8 Miles

Category 5
Impaired

Mercury in fish tissue (EPA 2010)

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive
EPA FC - Impaired

No Exceedances

Monitoring Summary

Sampling period: 10/12/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Below Haigler Creek, At Hellsgate	SRTON046.90	100669	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
EPA overfile for mercury in fish tissue (2010)

Mercury in fish tissue (EPA 2010)

Impairment

Not Assessed
EPA FC - Impaired

Status

No Exceedances

Monitoring Summary
not assessed

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
TONTO CREEK - ABOVE USGS GAGE ABOVE GUN CREEK	SRTON019.37	100349	ADEQ	FSN
Metals Samples		Nutrients & Related Samples		Other Samples

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	none
Missing Core Parameters	all
Missing Seasonal Distribution	all
Lab Detection Limits Not Low Enough	none

Priority	Monitoring Recommendations
High	Collect fish tissue samples and water quality samples for source identification.

Impairment Discussion
No available water quality data within assessment period. EPA overfile for mercury in fish tissue.

Tonto Creek
 Rye Creek to Gun Creek
 15060105-008
 18.6 Miles

Category 5
 Impaired

Mercury in fish tissue (EPA 2010)

Impairment

Not Assessed

EPA FC - Impaired

Status

No Exceedances

Monitoring Summary

not assessed

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose

Metals Samples	Nutrients & Related Samples	Other Samples

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	none
Missing Core Parameters	all
Missing Seasonal Distribution	all
Lab Detection Limits Not Low Enough	none

Priority	Monitoring Recommendations
High	Collect fish tissue samples and water quality samples for source identification.

Impairment Discussion
No established sampling site, no available water quality data within assessment period. EPA overfile for mercury in fish tissue.

T ONTO CREEK (TON)

Headwaters - Tributary at 34 18 10 / 111 04 14
15060105-013A
8.1 Miles

Category 4A/5
Not attaining/Impaired

Salt

*Low dissolved oxygen (2006),
nitrogen (2004 EPA), and E. coli (2004)*

FC - Attaining • FBC - Not Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	10/11/2006	5.92 mg/L	A&Wc remains impaired with 4 exceedances in 23 samples (binomial).
		10/24/2006	6.68 mg/L	
		7/8/2008	5.98 mg/L	
		8/12/2008	5.71 mg/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	8/12/2008	325.5 cfu/100 mL	FBC remains not attaining with 2 exceedances in 22 samples.
		6/30/2011	365.4 cfu/100 mL	
pH	6.5 SU	8/24/2010	6.13 SU	AGL, A&Wc, and FBC are attaining with 1 exceedance in 24 samples (binomial).
Nitrogen	0.5 mg/L, Annual mean 2.0 mg/L, SSM	7/2010 - 5/2011	0.52 mg/L	A&Wc remains not attaining with 1 annual mean exceedance and 1 single sample maximum.
		10/11/2006	3.05 mg/L	

Monitoring Summary

Sampling period: 10/11/2006 - 6/30/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW AGFD HATCHERY MIXING ZONE	SRTON062.28	101017	ADEQ	TMDL
BELOW CHRISTIAN CAMP ROAD	SRTON060.50	100352	ADEQ	TMDL
BELOW HORTON CREEK	SRTON059.43	100353	ADEQ	Ambient
BELOW TONTO SPRING	SRTON062.89	101016	ADEQ	TMDL
BELOW KOHLS RANCH	SRTON057.70	100929	ADEQ	TMDL

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE HIGHWAY 260 AT KOHLS RANCH	SRTON058.63	100354	ADEQ	TMDL
DOWN STREAM OF CHRISTIAN CAMP TRIBUTARY	SRTON060.28	106059	ADEQ	TMDL
ABOVE CHRISTIAN CAMP	SRTON061.37	101018	ADEQ	TMDL
BELOW TONTO FISH HATCHERY OUTFALL	SRTON062.65	108443	ADEQ	Ambient
ABOVE CHRISTOPHER CREEK	SRTON056.59	100359	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2-6) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(72-98) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(15-105) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more samples in support of TMDL development and effectiveness monitoring.

Impairment Discussion
Remains impaired for dissolved oxygen and not attaining for nitrogen and <i>E. coli</i> . Nutrient (2005) and <i>E. coli</i> (2004) TMDLs completed.

TONTON CREEK (TON)

Spring Creek - Rye Creek
15060105-009
19.5 Miles

Category 5
Impaired

Salt

Mercury in fish tissue (EPA 2010)

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

EPA FC - Impaired

No Exceedances

Monitoring Summary

Sampling period: 9/3/2008 - 8/26/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT OLD GAGING STATION ABOVE HOUSTON CREEK	SRTON032.38	107462	ADEQ	TMDL
DOWNSTREAM OF HOUSTON CREEK	SRTON031.72	106722	ADEQ	TMDL
US OF HOUSTON CREEK AT THE NARROWS	SRTON032.62	100668	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(2-3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-3) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, phosphorus, cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
EPA overfile for mercury in fish tissue (2010)

TONTON CREEK (TON)

Tributary @ 341810/1110414 - Haigler Creek
15060105-013B
8.5 Miles

Category 4A/5

Not attaining/Impaired

*Nitrogen (EPA 2004), E. coli (2004),
Mercury in fish tissue (EPA 2010)*

FC - Attaining • FBC - Not Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Not Attaining
EPA FC - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	7/7/2008	461 cfu/100 mL	FBC remains not attaining with 5 exceedances in 20 samples.
		8/12/2008	866 cfu/100 mL	
		9/3/2008	1299 cfu/100 mL	
		7/12/2010	3629 cfu/100 mL	
		7/23/2010	3628 cfu/100 mL	
Nitrogen	0.5 mg/L, Annual mean 2.0 mg/L, SSM	7/2010 - 6/2011	1.4 mg/L	A&Ww and FBC remain not attaining with 1 annual mean exceedance.
		7/23/2010	8.9 mg/L	
		9/8/2010	3.3 mg/L	
Phosphorus	0.1 mg/L, Annual mean 0.8 mg/L, SSM	8/2008 - 4/2009	0.13 mg/L	A&Ww and FBC are inconclusive. Need more data for impairment determination.
		7/2010 - 6/2011	0.106 mg/L	
		7/23/2010	4.1 mg/L	

Monitoring Summary

Sampling period: 10/11/2006 - 6/29/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BEAR FLATS	SRTON055.09	100357	ADEQ	TMDL
BELOW BEAR FLATS	SRTON053.87	100358	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(30-34) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(8-38) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved)
Lab Detection Limits Not Low Enough	Mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more samples in support of TMDL development and effectiveness monitoring. Collect more phosphorus samples due to exceedances.

Impairment Discussion
Remains not attaining for nitrogen and for E. coli. EPA overfile for mercury in fish tissue (2010).

TRIB (UT1) TO TONTO CREEK

Headwaters - Tonto Creek
15060105-647
1.2 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 3/19/2008 - 3/19/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
CHRISTIAN CAMP	SRUT1000.01	106363	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

TRIB (UT2) TO TONTO CREEK

Headwaters - Tonto Creek
15060105-365
1.8 Miles

Category 3
Inconclusive

Salt

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 5/2/2008 - 7/8/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MOUTH POINT	SRUT2000.01	106682	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(3-4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(0) None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

TRIB (UTO) TO TONTO CREEK

Headwaters - Tonto Creek
15060105-372
2.9 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 3/4/2008 - 3/4/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
FROM WEST SIDE OF TONTO CREEK ROAD	SRUTO000.02	106362	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(1) <i>E. coli</i>

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

TRIB TO CHRISTOPHER CREEK

Headwaters - Christopher Creek
15060105-362
2.4 Miles

Category 3
Inconclusive

Salt

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 3/4/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
R-BAR-C TRIB	SRUCR000.01	106364	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(1) <i>E. coli</i>

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

TRIB TO THOMPSON DRAW

Headwaters - Thompson Draw
15060105-379
0.8 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/23/2010 - 7/23/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW FR 405 CROSS-ING	SRUTD000.10	108462	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(1) <i>E. coli</i>

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameters to represent at least 3 seasons during an assessment period.

WEST FORK PINTO CREEK

Headwaters - Pinto Creek
15060103-066
11.6 Miles

Category 2

Attaining some uses

Salt

FBC - Inconclusive • A&Ww - Inconclusive • FC - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Nitrogen	2.0 mg/L, SSM 0.6 mg/L, Annual mean	12/17/2007	2.94	A&Ww and FBC are inconclusive with 1 SSM exceedance in 6 samples (binomial) and 1 annual mean exceedance.
		12/2007 - 6/2008	0.89	
Bottom Deposits	< 50% fines	9/30/2008	51%	A&Ww is inconclusive with 1 exceedance.

Monitoring Summary

Sampling period: 12/17/2007 - 6/2/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW KENNEDY RANCH	SRWPN004.47	102433	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(6) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(6) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-7) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, bottom deposits

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Nitrogen, bottom deposits
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more total nitrogen samples due to exceedances. Good core parameter coverage with few samples.

WORKMAN CREEK

Headwaters - Reynolds Creek
15060103-195A
7.1 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	8/29/2007	6.71 mg/L	A&Wc is inconclusive with 1 exceedance in 4 samples (binomial).

Monitoring Summary

Sampling period: 8/29/2007 - 11/18/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW FALLS	SRWRK007.97	100696	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(3-4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect more dissolved oxygen samples due to the exceedance. <i>E. coli</i> needs sample/seasonal coverage.

San Pedro Watershed

Watershed Description

This watershed encompasses three hydrological areas:

- San Pedro River, which begins in the mountains near Cananea Sonora, Mexico, and flows north about 100 miles through the southeast corner of Arizona to join the Gila River near Winkelman, Arizona;
- Willcox Playa, a terminal basin (does not drain out of the area), which contains a 30,000 acre ephemeral lake (playa); and
- Two relatively short drainages that flow to the Rio Yaqui in Mexico: Whitewater Draw and Black Draw.

It is a 7,015 square mile watershed is lightly populated with only 130,000 people (2000 census). Communities in the area include the rapidly growing Sierra Vista area and several historic towns, such as Tombstone, Douglas, and Bisbee. Grazing is widespread, with significant areas of irrigated agriculture located on the eastern side of the watershed. Historic copper, silver, and gold mining took place across the watershed; however, only a few mines are still active. Land ownership is divided approximately as: 40% private, 40% state, 20% federal (no tribal land). The Bureau of Land Management established a 50,000 acre San Pedro Riparian National Conservation Area in 1988 to protect this critical habitat.

Elevation varies from 4,000 feet (above sea level), with desert grassland and warmwater aquatic communities, to 10,700 feet at Mount Graham, with alpine forest. Areas above 5,000 feet typically support coldwater aquatic communities where perennial waters exist.

Water Resources

The area gets little precipitation, with 10-15 inches of rain and 0-5 inches of snow. Springs provide perennial flow to segments of the San Pedro River and other streams in this watershed. Concerns have been raised about ground water pumping and water demand in the rapidly growing Fort Huachuca Army Base – Sierra Vista area and the potential impact on perennial flow in the San Pedro River. In 2003, a Fort Huachuca Preservation Legislation required the Secretary of Interior to develop water use management and conservation measures necessary to restore and maintain the sustainable yield of the aquifer.

An estimate of surface water resources in the Salt Watershed is provided in the following table.

Estimated Surface Water Resources in the San Pedro Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	195	665	6,610
	Perennial	Non-perennial	
Lake acres	1,319	29,471	

Estimated miles and acres are based on U.S. Geological Survey digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres. Ambient monitoring focuses on perennial waters; however, special investigations have identified water quality problems on intermittent and even ephemeral waters.

Assessments

The San Pedro Watershed can be separated into the following drainage areas (subwatersheds):

15050201	Willcox Playa
15050202	Upper San Pedro
15050203	Lower San Pedro
15080301	Whitewater Draw
15080302	San Bernardino Valley

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

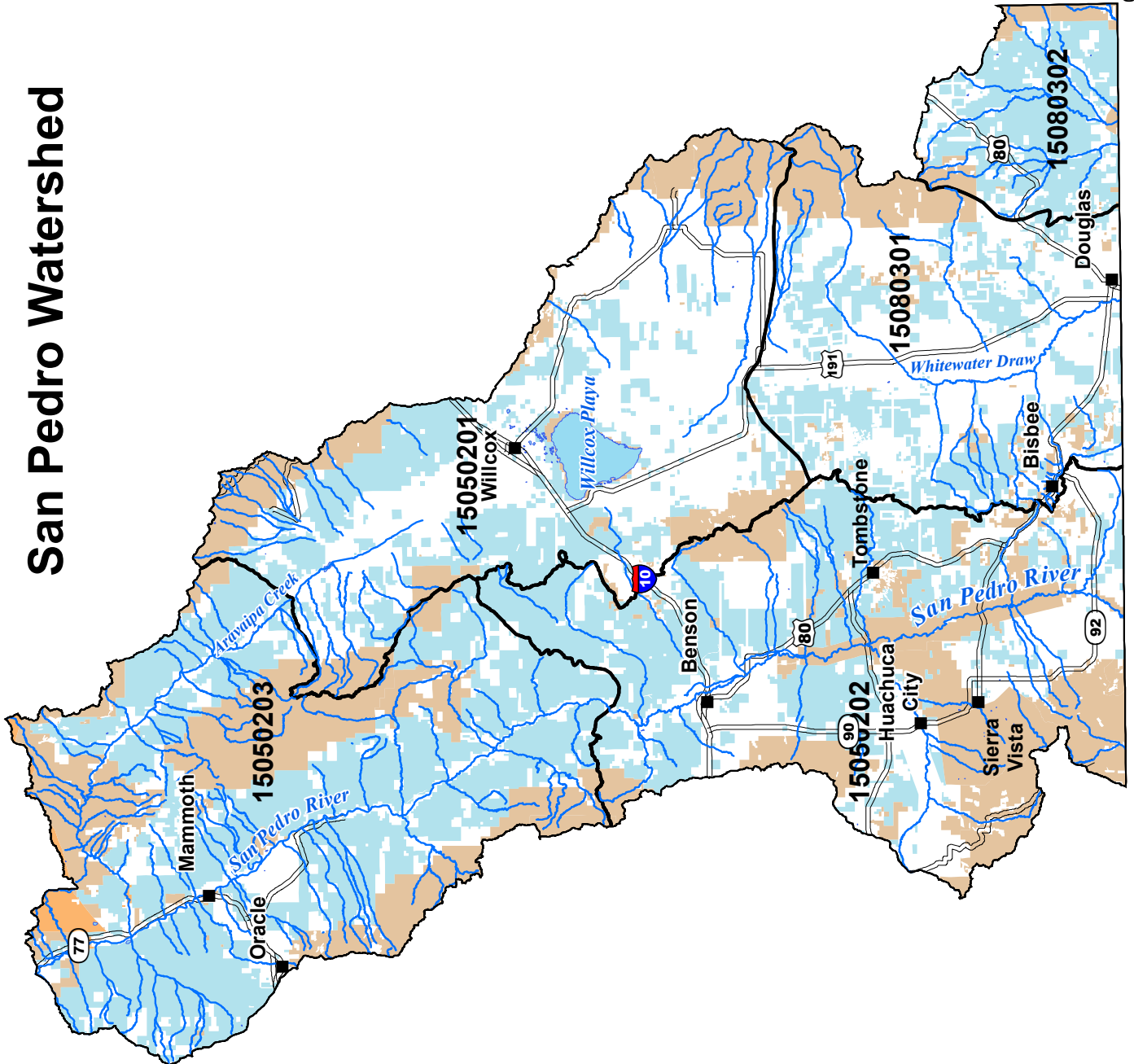
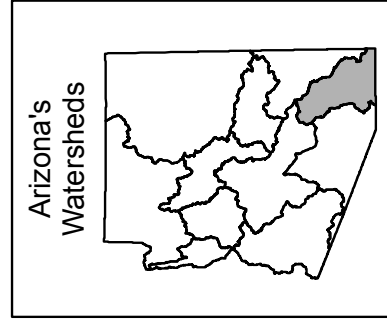
San Pedro Watershed

Legend

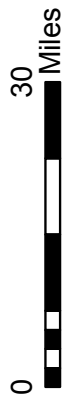
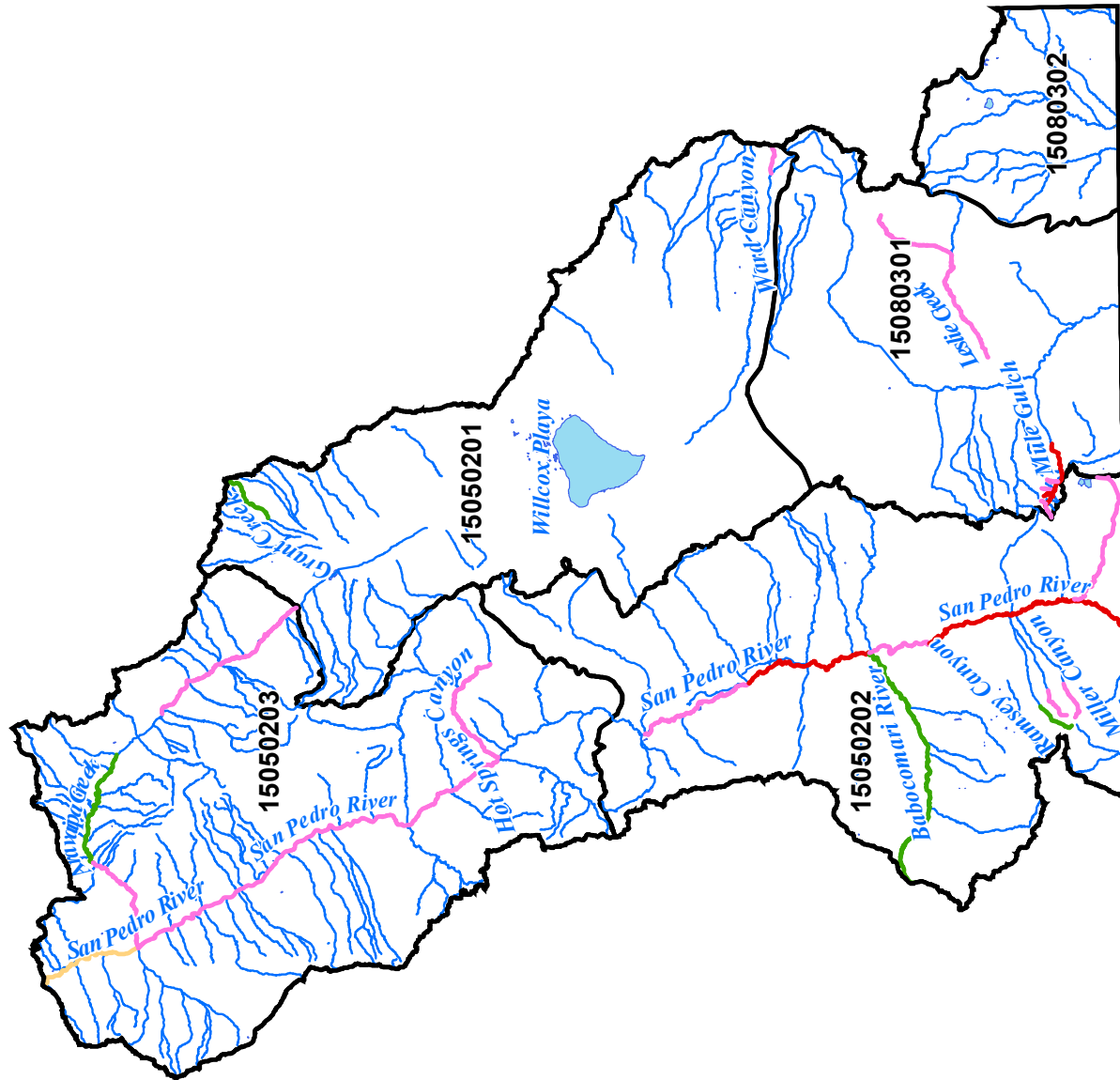
- Towns
- ~ Streams
- == Highways
- ☾ Lakes
- ▭ HUC Watershed Boundaries

Land Ownership

- Federal
- Private
- State/County/Municipal
- Tribal



San Pedro / Willcox Playa / Rio Yaqui Watershed 2012/2014 Assessment for Streams and Lakes



Legend

Assessed Lakes - 2012

ADEQ and EPA Listings

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired
- Impaired

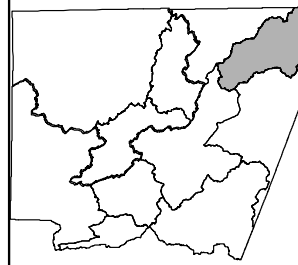
HUC Watershed Boundaries

Assessed Streams - 2012

ADEQ and EPA Listings

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired
- Impaired

- Lakes
- Streams



See Individual HUC Printouts
for Waters not Labeled

N



FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	7/21/2008	5.54 mg/L	A&Ww is inconclusive with 2 exceedances in 4 samples (binomial).
		8/18/2010	4.94 mg/L	
<i>E. coli</i>	235 cfu/100 ml, SSM	7/16/2008	1120 cfu/100 mL	FBC is inconclusive with 1 exceedance in 2 samples. One exceedance (7/16) excluded as analyzed past holding time. All single sample exceedances were storm related.
		7/21/2008	313 cfu/100 mL	
Lead	15 ug/L	7/16/2008	21.4 ug/L	FBC is inconclusive with 1 exceedance in 1 sample (binomial).
SSC	80 mg/L	7/11/2008	1104 mg/L	A&Ww is inconclusive. All single sample exceedances except 8/18/10 occurred within 48 hours of storm events and were excluded. Not enough samples left to calculate a median.
		7/16/2008	819 mg/L	
		7/21/2008	15288 mg/L	
		8/18/2010	1052 mg/L	

Monitoring Summary

Sampling period: 5/30/2007 - 8/18/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT HIGHWAY 77 BRIDGE	SPARA000.28	105601	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-7) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, nickel, selenium, silver, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, <i>E. coli</i> , lead, SSC
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dis-solved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> , lead, dissolved oxygen, and SSC samples due to exceedances. All core parameters need seasonal coverage and many need sample number coverage as well.

ARAVAIPA CREEK

Stowe Gulch - end Aravaipa C
15050203-004B
15.5 Miles
Outstanding Arizona Water

Category 2
Attaining some uses

San Pedro

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	5/14/2009	5.59 mg/L	A&Ww is inconclusive with 1 exceedance in 4 samples (binomial).

Monitoring Summary

Sampling period: 8/20/2008 - 6/24/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT NATURE CONSERVANCY NEAR KLONDYKE	SPARA026.35	106882	ADEQ	Ambient
AT HELLS HALF ACRE CANYON	SPARA013.78	100716	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(6-7) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(7) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(7) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect more dissolved oxygen samples to determine A&W attainment status. Good core parameter coverage.

BABOCOMARI RIVER

Banning Creek - San Pedro River
15050202-004
32.7 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	8/17/2006	1414 cfu/100 mL	FBC is attaining. 1 single sample exceedance outside the analysis window.
SSC	80 mg/L	8/7/2006	326 mg/L	A&Ww is inconclusive. The exceedance on 8/17 occurred during a storm event and was excluded from assessment. Not enough samples left to calculate a median.
		8/17/2006	3900 mg/L	

Monitoring Summary

Sampling period: 8/7/2006 - 11/4/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MOUTH NR FAIRBANK TOWNSITE ON HWY 82	SPBBR000.06	103548	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1-2) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-21) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	SSC
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Antimony (dissolved), arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead, lead (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect SSC samples to investigate exceedances. Good core parameter coverage.

BREWERY GULCH

Headwaters - Mule Gulch
15080301-337
1.1 Miles

Category 5
Impaired

Copper (EPA 2004 and ADEQ 2006/08)

PBC - Inconclusive • A&We - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	6.8 ug/L ^{acute} @ 27 mg/L hardness	3/23/2007	13 ug/L	A&We remains impaired. No new data collected in the last 3 years of monitoring.
	13.2 ug/L ^{acute} @ 55 mg/L hardness	7/20/2007	99 ug/L	
	36.2 ug/L ^{acute} @ 160 mg/L hardness	7/31/2007	49 ug/L	
Lead	15 ug/L	3/23/2007	36 ug/L	PBC is inconclusive with 4 exceedances in 5 samples (binomial).
		7/20/2007	30 ug/L	
		7/31/2007	94.5 ug/L	
		8/9/2007 1	18 ug/L	
pH	6.5 SU	7/20/2007	5.82 SU	A&We and PBC are inconclusive with 1 exceedance in 5 samples (binomial).

Monitoring Summary

Sampling period: 3/23/2007 - 8/9/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT OLD BISBEE STORM DRAIN TO MULE GULCH	SPBRG000.03	103441	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(10) Cadmium, copper, lead, zinc	(0) None	(2-11) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, lead
Missing Core Parameters	Dissolved oxygen, pH
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	All core parameters need seasonal distribution coverage, pH & <i>E. coli</i> need sample number coverage as well (at least 3 samples).

Impairment Discussion
Remains impaired for copper (EPA 2004 & ADEQ 2006/8). Reach is included with the Mule Gulch TMDL.

CARR CANYON CREEK

Headwaters - Tributary at 31
15050202-406A
3.8 Miles

Category 3
Inconclusive

AGL - Inconclusive • A&Wc - Inconclusive
FBC - Inconclusive • FC - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 12/17/2008 - 7/10/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR HEADQUARTERS	SPCRC013.37	100428	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(2) Dissolved oxygen, pH, total dissolved solids, turbidity

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	pH, copper, lead, zinc (dissolved), dissolved oxygen, <i>E. coli</i> , cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	pH, copper, lead, zinc (dissolved), dissolved oxygen, <i>E. coli</i> , cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	All core parameters need seasonal distribution and sample number coverage as well (at least 3 samples representing 3 seasons)

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	7/22/2010	18.1 ug/L	A&Ww chronic is attaining. These exceedances only represent acute conditions. Note: Actual dates of flows are unknown.
		8/12/2010	30.8 ug/L	

Monitoring Summary

Sampling period: 5/30/2007 - 8/12/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE SAN PEDRO RIVER	SPDDW000.13	105623	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Selenium	(0) None	(0) None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	All core parameters need sample number and seasonal distribution coverage.

DUBACHER CANYON

Headwaters - Mule Gulch
15080301-075
1.0 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	25.4 ug/L	7/31/2007	680 ug/L	A&We is inconclusive. Exceedances attributed to natural conditions.
		8/9/2007	440 ug/L	
pH	6.5 SU	7/31/2007	3.7 SU	A&We and PBC are inconclusive with 2 exceedances in 2 samples (binomial).
		8/9/2007	3.44 SU	

Monitoring Summary

Sampling period: 7/31/2007 - 8/9/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MINE AREA	SPDBC000.42	102923	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Cadmium, copper, lead, zinc	(0) None	(1-2) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Conduct follow-up monitoring once the Mule Gulch TMDL and site specific copper standards are established. Collect at least 3 of each core parameter to represent 3 seasons of year.

DWS - Attaining • FC - Attaining • FBC - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	6/25/2009	IBI 40	A&Wc is inconclusive. Please see Appendix G for a discussion of the application of the Biocriteria water quality standard.

Monitoring Summary

Sampling period: 10/16/2008 - 6/25/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW POST CREEK	SPGRA007.71	100561	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), selenium

Priority	Monitoring Recommendations
High	Reassess biocriteria when Implementation Procedures are adopted. Dissolved copper and zinc need sample and seasonal distribution coverage to complete core parameter coverage.

GREENBUSH DRAW

Tributary at 312156 / 1100214 - Tributary at 312257 / 1100417
15050202-425
11.5 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	576 cfu/100 mL, SSM	7/27/2006	691 cfu/100 mL	PBC is inconclusive with 1 exceedance in 1 sample. Note: This exceedance is storm-related.
Lead	15 ug/L	7/27/2006	110 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 7/27/2006 - 7/27/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT HWY 92	SPGBD3.81	103546	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrate, nitrite, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i> , lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Lead (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more lead and <i>E. coli</i> samples to ascertain attainment. All core parameters need sample and seasonal distribution coverage.

HOT SPRINGS CANYON

Headwaters - San Pedro River
15050203-013
25.9 Miles

Category 3
Inconclusive

San Pedro

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 11/12/2008 - 5/11/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW WILDCAT CANYON	SPHSC010.67	100574	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3-4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Lead (dissolved), selenium

Priority	Monitoring Recommendations
Low	All core parameters need seasonal distribution coverage, dissolved cadmium and copper need sample number coverage as well.



LESLIE CREEK

Headwaters - Whitewater Draw
15080301-007
24.5 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/3/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT LESLIE CANYON NATL WILDLIFE REFUGE	SPLES012.75	101500	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(1) Nitrate, nitrite, nitrite/ nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dis- solved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dis- solved), copper, <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dis- solved), copper, <i>E. coli</i>
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect at least 3 of each core parameter to reflect 3 seasons of year.



LOCKLIN CANYON

Headwaters - Mule Gulch
15080301-345
1.0 Miles

Category 3
Inconclusive

San Pedro

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Lead	15 ug/L	7/20/2007	39 ug/L	PBC is inconclusive with 1 exceedance in 3 samples (binomial).
pH	6.5 SU	7/20/2007	6.28 SU	A&We and PBC are inconclusive with 1 exceedance in 3 samples (binomial).

Monitoring Summary

Sampling period: 7/20/2007 - 7/31/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
LOCKLIN AVE CANYON	SPLKC000.29	103437	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Cadmium, copper, lead, zinc	(0) None	(1-3) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, lead
Missing Core Parameters	Dissolved oxygen, pH
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Copper (dissolved)

Priority	Monitoring Recommendations
Low	Collect more lead and pH samples to ascertain attainment status. Copper needs lower detection limit. Many core parameters need seasonal distribution and/or sample number coverage.

MILLER CANYON

Headwaters - Broken Arrow Ranch
15050202-409A
4.3 Miles

Category 3
Inconclusive

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	4/29/2009	37	A&Wc is inconclusive. Please see Appendix G for a discussion of the application of the Biocriteria water quality standard.

Monitoring Summary

Sampling period: 8/21/2008 - 4/29/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
SOUTH OF CARR PEAK	SPMLC013.56	106505	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrate, fluoride, arsenic, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	All core parameters need seasonal distribution, and dissolved oxygen needs sample number coverage.

MORALES CREEK

Headwaters - Mule Gulch
15080301-331
2.0 Miles

Category 3
Inconclusive

San Pedro

A&We - Inconclusive • PBC - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	8.0 ug/L ^{acute} @ 32 mg/L hardness	7/30/2007	15 ug/L	A&We is attaining. One acute exceedance outside the analysis window.

Monitoring Summary

Sampling period: 3/23/2007 - 7/31/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT HIGHLAND PARK ROAD	SPMOR000.27	102937	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Cadmium, copper, lead, zinc	(0) None	(2) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Many core parameters need seasonal distribution and/or sample number coverage.

MULE GULCH

Bisbee WWTP Outfall - Highway 80 bridge
15080301-090C
3.8 Miles

Category 5
Impaired

IMPAIRMENT STATUS

Copper (1990)

A&Wedw - Impaired • PBC - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper	1300 ug/L	3/27/2007	3800 ug/L	PBC remains impaired with 2 exceedances in 4 samples (binomial).
		7/20/2007	2800 ug/L	
Copper ^d	22.8 ug/L ^{acute} @ 175 mg/L hardness	3/27/2007	28 ug/L	A&Wedw remains impaired with 3 acute exceedances in the assessment period.
	22.2 ug/L ^{acute} @ 170 mg/L hardness	7/31/2007	60 ug/L	
	33.1 ug/L ^{acute} @ 260 mg/L hardness	8/9/2007	89 ug/L	
Lead	15 ug/L	3/27/2007	440 ug/L	PBC is inconclusive with 2 exceedances in 4 samples (binomial).
		7/20/2007	350 ug/L	

Monitoring Summary

Sampling period: 3/27/2007 - 8/9/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW ELFRIDA CUTOFF	SPMLG007.81	100225	ADEQ	TMDL
AT MG-200 B NEW	SPMLG010.61	102491	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(5) Cadmium, copper, lead, zinc	(0) None	(1-5) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	Dissolved oxygen, pH, <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Lead (dissolved)

Priority	Monitoring Recommendations
Medium	Many core parameters need seasonal distribution and/or sample number coverage as well (at least 3 samples representing 3 seasons).

Impairment Discussion
Remains impaired for dissolved copper (1990). As a result of Freeport Minerals Corporation projects pH, dissolved cadmium and zinc have been delisted. See Appendix E for additional information.

MULE GULCH

Headwaters - Lavender Pit
15080301-090A
3.0 Miles

Category 5
Impaired

IMPAIRMENT STATUS

Copper (1990)

FC - Inconclusive • PBC - Inconclusive • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	13.2 ug/L ^{acute} @ 98 mg/L hardness	7/27/2007	14 ug/L	A&Ww remains impaired with 2 acute exceedances.
	13.1 ug/L ^{acute} @ 97 mg/L hardness	7/30/2007	15 ug/L	
Lead	15 ug/L	7/30/2007	20.8 ug/L	PBC is inconclusive. Only 1 exceedance in 3 samples (binomial).

Monitoring Summary

Sampling period: 7/27/2007 - 8/9/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT INN AT CASTLE ROCK	SPMLG014.59	100506	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Cadmium, copper, lead, zinc	(0) None	(1-3) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen, pH, <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, <i>E. coli</i> , cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Lead (dissolved)

Priority	Monitoring Recommendations
Medium	Collect at least 3 of each core parameter to represent 3 seasons of year.

Impairment Discussion
Remains impaired for copper (1990).

MULE GULCH

Lavender Pit - Bisbee WWTP Discharge
15080301-090B
0.8 Miles

Category 5
Impaired

IMPAIRMENT STATUS

Copper (1990)

PBC - Inconclusive • A&We - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	22.4 ug/L ^{acute} @ 96 mg/L hardness	3/23/2007	52 ug/L	A&We remains impaired. No data collected in the last 3 years of monitoring.
	25.4 ug/L ^{acute} @ 110 mg/L hardness	7/31/2007	39 ug/L	
Lead	15 ug/L	3/23/2007	18 ug/L	PBC is inconclusive with 3 exceedances in 4 samples (binomial).
		7/20/2007	130 ug/L	
		7/31/2007	35 ug/L	

Monitoring Summary

Sampling period: 3/23/2007 - 8/9/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MG 150	SPMLG012.79	102490	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Cadmium, copper, lead, zinc	(0) None	(1-4) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	Dissolved oxygen, pH
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Many core parameters need seasonal distribution and/or sample number coverage (at least 3 samples representing 3 seasons).

Impairment Discussion
Remains impaired for dissolved copper (1990). As a result of Freeport Minerals Corporation projects, pH has been delisted. See Appendix E for additional information

RAMSEY CANYON

Headwaters - Forest Road 110
15050202-404A
4.4 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	4/28/2009	6.38 mg/L	A&Wc is inconclusive with 1 exceedance in 6 samples (binomial).
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	4/28/2009	IBI 31	A&Wc is inconclusive. Please see Appendix G for a discussion of the application of the Biocriteria water quality standard.

Monitoring Summary

Sampling period: 8/17/2006 - 4/28/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT BOX CANYON	SPRMC011.11	101060	ADEQ	Ambient
ABOVE NATURE CONSERVANCY	SPRMC010.62	104499	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-7) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(2-6) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-7) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Antimony (dissolved), arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead, lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more dissolved oxygen to ascertain attainment status. Good core parameter coverage.

IMPAIRMENT STATUS

E. coli (2004)

FC - Inconclusive • FBC - Impaired • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L (FBC) 80 ug/L (FC)	8/19/2008	160 ug/L	FBC and FC are inconclusive with 1 exceedance in 7 samples (binomial).
Chromium	100 ug/L	8/19/2008	150 ug/L	FBC is inconclusive with 1 exceedance in 6 samples (binomial).
Copper	500 ug/L (AGL) 1300 ug/L (FBC)	8/19/2008	2300 ug/L	AGL and FBC are inconclusive with 1 exceedance in 7 samples (binomial).
Dissolved oxygen	6.0 mg/L	7/21/2008	5.16 mg/L	A&Ww is inconclusive with 4 exceedances in 14 samples (binomial).
		7/22/2010	0.75 mg/L	
		7/27/2010	3.16 mg/L	
		8/18/2010	4.17 mg/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	7/16/2008	961 cfu/100 mL	FBC remains impaired with 7 exceedances in 15 samples. Field notes indicate many exceedances were storm related.
		7/21/2008	36294 cfu/100 mL	
		7/31/2008	921 cfu/100 mL	
		8/19/2008	5900 cfu/100 mL	
		7/22/2010	36294 cfu/100 mL	
		7/27/2010	41060 cfu/100 mL	
		8/18/2010	129970 cfu/100 mL	
	126 cfu/100 mL Geometric mean	7/16/2008 -7/31/2008	4433 cfu/100 mL	
Lead	100 ug/L (AGL) 15 ug/L (FBC)	7/16/2008	34.6 ug/L	AGL and FBC are inconclusive with 1 and 2 exceedance respectively in 7 samples (binomial).
		8/19/2008	610 ug/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	80 mg/L	7/16/2008	1959 mg/L	A&Ww is inconclusive with 1 median exceedance. 7/08 & 7/10 samples excluded due to field notes indicating rain within 48 hours of sampling.
		7/21/2008	67319 mg/L	
		7/31/2008	1610 mg/L	
		8/19/2008	13200 mg/L	
		12/17/2008	206 mg/L	
		7/22/2010	91920 mg/L	
		7/27/2010	56091 mg/L	
		8/18/2010	66261.5 mg/L	
Selenium	2 ug/L (A&Ww chronic) 50 ug/L (AGL)	7/22/2010	158 ug/L	A&Ww chronic is attaining. All exceedance occurred under acute conditions. AGL is attaining with 2 exceedances in 13 samples (binomial).
		7/27/2010	64.7 ug/L	
		8/18/2010	36.6 ug/L	

Monitoring Summary

Sampling period: 5/29/2007 - 8/18/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ON SRP ADOBE PROPERTY	SPSPR012.17	105598	ADEQ	TMDL
ABOVE ROACH WASH	SPSPR003.85	101348	ADEQ	TMDL
ABOVE CONFLUENCE WITH ROMERO WASH	SPSPR001.54	106563	ADEQ	TMDL
ABOVE DODSON WASH	SPSPR006.75	106483	ADEQ	Ambient, TMDL
ABOVE CONFLUENCE WITH SWINGLE WASH	SPSPR006.27	108482	ADEQ	TMDL
ABOVE CONFLUENCE WITH SWINGLE WASH	SPSPR006.27	106322	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-21) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(6-8) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(14-21) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper, lead, dissolved oxygen, SSC, arsenic, chromium
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
High	Collect <i>E. coli</i> samples to support TMDL development. Collect sediment, arsenic, chromium, copper, lead and DO due to exceedances. Good core parameter coverage.

Impairment Discussion
Remains impaired for <i>E. coli</i> (2004) with new <i>E. coli</i> exceedances in this assessment period. <i>E. coli</i> TMDL completed in 2013. Chronic selenium impairment de-listed in 2010.

IMPAIRMENT STATUS

E. coli (2004)

FC - Attaining • FBC - Impaired • AGL - Inconclusive
 A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L	7/27/2006	79 ug/L	FBC is inconclusive with 2 exceedances in 3 samples (binomial).
		8/17/2006	63 ug/L	
Copper	500 ug/L	8/17/2006	580 ug/L	AGL is inconclusive with 1 exceedance in 6 samples (binomial).
Dissolved oxygen	6.0 mg/L	8/30/2006	3.13 mg/L	A&Ww is inconclusive with 2 exceedances in 9 samples (binomial).
		4/12/2007	4.21 mg/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	7/27/2006	2420 cfu/100 mL	FBC remains impaired with 1 single sample exceedance in the last 3 years of monitoring.
		8/17/2006	2420 cfu/100 mL	
		4/12/2007	308 cfu/100 mL	
		9/9/2010	461 cfu/100 mL	
Lead	100 ug/L (AGL) 15 ug/L (FBC)	7/27/2006	220 ug/L	AGL & FBC are inconclusive with 2 exceedances in 5 and 3 samples respectively (binomial).
		8/17/2006	240 ug/L	
SSC	80 mg/L	7/27/2006	13380 mg/L	A&Ww is inconclusive - Exceedances on 7/27, 8/7, and 8/17 occurred during storm events and were excluded from assessment. Not enough samples left calculate a median.
		8/7/2006	695 mg/L	
		8/17/2006	5100 mg/L	
		8/30/2006	282 mg/L	
		12/7/2006	173 mg/L	
Selenium	2 ug/L	7/13/2006	20 ug/L	A&Ww chronic is inconclusive. One of the exceedances is very close to the detection limit (2 ug/L). They are also storm related and may not represent chronic conditions.
		8/17/2006	2.1 ug/L	

Monitoring Summary

Sampling period: 7/13/2006 - 9/9/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NORTH OF HIGHWAY 80	SPSPR101.25	100276	ADEQ	TMDL
AT FAIRBANKS, AZ	SPSPR117.97	100287	ADEQ	TMDL
AT ESCALANTE CROSS-ING	SPSPR105.49	103674	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(13-15) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3-37) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-35) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Arsenic, copper, dissolved oxygen, selenium, SSC, lead
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Antimony (dissolved), arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead, lead (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> samples in support TMDL development. Collect arsenic, copper, lead, dissolved oxygen, SSC, and selenium samples to investigate exceedances. Good core parameter coverage.

Impairment Discussion
<i>Remains impaired for E. coli (2004).</i>

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L (FBC) 80 ug/L (FC)	8/19/2008	190 ug/L	FBC and FC are inconclusive with 1 exceedance in 4 samples (binomial).
Chromium	100 ug/L	8/19/2008	160 ug/L	FBC is inconclusive with 1 exceedance in 4 samples (binomial).
Copper	500 ug/L (AGL) 1300 ug/L (FBC)	8/19/2008	1700 ug/L	AGL and FBC are inconclusive with 1 exceedance in 4 samples (binomial).
Dissolved oxygen	6.0 mg/L	8/19/2008	5.03 mg/L	A&Ww is inconclusive with 1 exceedance in 3 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	8/19/2008	4900 cfu/100 mL	FBC is inconclusive with 1 exceedance in the last 3 years of monitoring. Note: This exceedance is storm related.
Lead	100 ug/L (AGL) 15 ug/L (FBC)	8/19/2008	740 ug/L	AGL and FBC are inconclusive with 1 exceedance in 4 samples (binomial).
SSC	80 mg/L	8/19/2008	13600 mg/L	A&Ww is attaining. This exceedance occurred within 48 hours of a storm event.
Selenium	2 ug/L	8/19/2008	12 ug/L	A&Ww chronic is inconclusive with 1 exceedance during the assessment period. Note: Lab detection limits were above the A&W chronic criterion for all other samples.

Monitoring Summary

Sampling period: 8/19/2008 - 6/9/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT VALLEY ROAD, NEAR SAN MANUEL	SPSPR035.01	100285	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper, lead, dissolved oxygen, selenium, arsenic, chromium, <i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Arsenic (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect arsenic, chromium, copper, lead, selenium, dissolved oxygen, and <i>E. coli</i> samples due to exceedances. All core parameters need seasonal distribution.

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 ml, SSM	8/17/2006	2420 cfu/100 mL	FBC is attaining. 1 single sample exceedance outside the analysis window. Note: This exceedance occurred during a flood flow.
Lead	15 ug/L (FBC) 100 ug/L (AGL)	8/17/2006	120 ug/L	AGL & FBC are inconclusive with 1 exceedance in 2 samples (binomial).
SSC	80 mg/L	8/17/2006	2800 mg/L	A&W is attaining. This exceedance occurred during a storm flow and was excluded from assessment.
Bottom deposits	< 50%	12/18/2008	52%	A&Ww is inconclusive. Please see Appendix H for a discussion of the application of the bottom deposits water quality standard.
		5/28/2009	51%	

Monitoring Summary

Sampling period: 8/17/2006 - 5/28/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BOQUILLAS RANCH	SPSPR120.47	104005	ADEQ	TMDL
BELOW GRAVEYARD GULCH	SPSPR126.35	100653	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(0) None	(2-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, bottom deposits

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Antimony (dissolved), arsenic (dissolved), beryllium (dissolved), lead, lead (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect more lead to determine attainment status. All core parameters except pH need sample and seasonal coverage.

SAN PEDRO RIVER

Dragoon Wash - Tres Alomos Wash
15050202-002
15.4 Miles

Category 3
Inconclusive

AGI - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive • FBC - Inconclusive • FC - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 11/15/2006 - 11/19/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
APACHE NITROGEN CONTAMINATION AREA	SPSPR100.16	103662	Apache Nitrogen Products, Inc	Permit monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(9) Nitrate	(0) None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	pH, boron, manganese, <i>E. coli</i> , copper, lead, zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	pH, boron, manganese, <i>E. coli</i> , copper, lead, zinc (dissolved), dissolved oxygen, cadmium (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	All core parameters need seasonal distribution and sample number coverage as well (at least 3 samples representing 3 seasons).

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 2/9/2009 - 2/9/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT CASCABEL, AZ	SPSPR059.21	100289	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

IMPAIRMENT STATUS

E. coli and copper (2010)

FC - Attaining • FBC - Impaired • AGI - Attaining
AGL - Inconclusive • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L (FBC) 80 ug/L (FC)	7/27/2006	110 ug/L	FBC and FC are inconclusive with 1 exceedance in 2 and 5 samples respectively (binomial).
Copper	500 ug/L (AGL) 1300 ug/L (FBC)	7/5/2006	555 ug/L	AGL and FBC are inconclusive with 2 exceedances and 1 exceedance respectively in 6 samples (binomial).
		7/27/2006	3152 ug/L	
Copper ^d	49.6 ug/L ^{acute} @ 514 mg/L hardness	7/5/2006	180 ug/L	A&Ww acute remains impaired. No new samples collected since last assessment. A&Ww chronic is attaining. One exceedance occurred during a storm event and does not represent chronic conditions.
	27.0 ug/L ^{acute} @ 210 mg/L hardness 29.3 ug/L ^{chronic} @ 400 mg/L hardness	7/26/2006	37 ug/L (max) 32 ug/L (median)	
Dissolved oxygen	6.0 mg/L	7/27/2006	4.4 mg/L	A&Ww is attaining with 2 exceedances in 13 samples (binomial).
		8/30/2006	5.8 mg/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	7/27/2006	2420 cfu/100 mL	FBC remains impaired with 2 exceedances. No new data in this assessment period.
		8/17/2006	2420 cfu/100 mL	
Lead	100 ug/L (AGL) 15 ug/L (FBC)	7/27/2006	270 ug/L	AGL and FBC are inconclusive with 2 exceedances in 5 and 3 samples respectively (binomial).
		8/17/2006	130 ug/L	
SSC	80 mg/L	7/5/2006	4126 mg/L	A&Ww is inconclusive. All exceedances except 8/7/08 and 7/31/08 occurred during storm events and were excluded from assessment. Not enough samples left to determine median values.
		7/27/2006	10610 mg/L	
		8/7/2006	208 mg/L	
		8/17/2006	2160 mg/L	
		7/31/2008	188 mg/L	

Monitoring Summary

Sampling period: 7/5/2006 - 11/5/2008

San Pedro

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT CHARLESTON, AZ USGS 09471000	SPSPR127.50	100291	ADEQ, USGS	TMDL, Ambient
AT PALOMINAS, AZ USGS 09470500	SPSPR150.09	100275	ADEQ, USGS	TMDL, Ambient
NEAR HEREFORD ROAD, AZ USGS	SPSPR144.76	101497	ADEQ, USGS	TMDL, Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(13-14) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(2-12) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(2-16) Dissolved oxygen, <i>E. coli</i> , pH, SSC, simazine, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper, SSC, arsenic, lead
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Antimony (dissolved), arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead, lead (dissolved), mercury (dissolved), diphthalate

Priority	Monitoring Recommendations
High	Collect additional <i>E. coli</i> and dissolved copper samples in support of TMDL development. Collect arsenic, copper, lead, and suspended sediment samples to ascertain attainment. Good core parameter coverage but many parameters have detection limit issues.

Impairment Discussion
<i>Remains impaired for E. coli and dissolved copper (2010),</i>

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L	7/21/2008	56 ug/L	FBC is inconclusive with 1 exceedance in 3 samples (binomial).
Chromium	100 ug/L	7/21/2008	110 ug/L	FBC is inconclusive with 1 exceedance in 3 samples (binomial).
Copper	500 ug/L (AGL) 1300 ug/L (FBC)	7/21/2008	2360 ug/L	AGL and FBC are inconclusive with 1 exceedance in 3 samples (binomial).
Dissolved oxygen	6.0 mg/L	7/21/2008	5.31 mg/L	A&Ww is inconclusive with 3 exceedances in 7 samples (binomial).
		7/22/2010	5.78 mg/L	
		8/18/2010	4.32 mg/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	7/21/2008	36294 cfu/100 mL	FBC is inconclusive with only 1 non storm related single sample exceedance in 8 samples.
		7/22/2010	36294 cfu/100 mL	
		7/27/2010	30760 cfu/100 mL	
		8/18/2010	57940 cfu/100 mL	
Lead	100 ug/L (AGL) 15 ug/L (FBC)	7/21/2008	3580 ug/L	AGL and FBC are inconclusive with 1 exceedance in 3 samples (binomial).
Mercury ^d	0.010 ug/L	7/21/2008	0.0116 ug/L	A&Ww chronic is attaining. 1 exceedance occurred during a local storm event. This value does not represent chronic conditions.
SSC	80 mg/L	1/24/2008	90 mg/L	A&Ww is inconclusive. All single sample exceedances except 1/24/08 occurred within 48 hours of storm events and were excluded from median value determination. Not enough samples left to calculate a median.
		7/11/2008	14512 mg/L	
		7/21/2008	75468 mg/L	
		7/22/2010	11378 mg/L	
		7/27/2010	53859 mg/L	
		8/18/2010	85320 mg/L	
Selenium	50 ug/L (AGL) 2 ug/L (A&Ww chronic)	7/22/2010	22.3 ug/L	AGL is inconclusive with 1 exceedance in 9 samples (binomial). A&Ww chronic is attaining. All exceedance occurred under acute conditions.
		7/27/2010	34.6 ug/L	
		8/18/2010	53.35 ug/L	

Monitoring Summary

Sampling period: 5/30/2007 - 8/18/2010

San Pedro

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT ARAVAIPA CREEK	SPSPR013.38	106164	ADEQ	TMDL
AT HIGHWAY 77 NEAR MAMMOTH	SPSPR022.15	105599	ADEQ	TMDL
ABOVE ARAVAIPA CREEK	SPSPR013.99	105600	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-10) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(2-3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-9) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper, dissolved oxygen, arsenic, chromium, <i>E. coli</i> , lead, SSC, selenium
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), copper, lead
Lab Detection Limits Not Low Enough	Lead, selenium

Priority	Monitoring Recommendations
Medium	Collect arsenic, chromium, lead, dissolved oxygen, copper, <i>E. coli</i> , sediment, and selenium due to exceedances. Several core parameters need seasonal distribution coverage.

UNNAMED TRIB TO WINWOOD CANYON

Headwater - Winwood Canyon
15080301-342
0.2 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	8.4 ug/L ^{acute} @ 34 mg/L hardness	7/31/2007	27 ug/L	A&We is inconclusive with 1 acute exceedance. No data in the last 3 years of monitoring.
Lead	15 ug/L	7/31/2007	16.8 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 7/17/2007 - 8/5/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
FROM MURAL HILL ABOVE MINERALIZED ZONE	SPUWM000.01	102926	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Cadmium, copper, lead, zinc	(0) None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved), lead
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Copper (dissolved)

Priority	Monitoring Recommendations
Low	Collect more lead and dissolved copper due to exceedances. Many core parameters need seasonal distribution and/or sample number coverage as well (at least 3 samples representing 3 seasons).

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Use Support

No Exceedances

Monitoring Summary

Sampling period: 6/3/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	SPTWP-USGS	101581	USGS	USGS Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(1) Nitrate, nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Ammonia

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

WARD CANYON

Headwaters - Turkey Creek
15050201-433
3.0 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	9/8/2008	6.8 mg/L	A&Wc is attaining . Low dissolved oxygen due to low flow and groundwater upwelling.

Monitoring Summary

Sampling period: 9/8/2008 - 3/10/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW SAULSBURY CANYON	SPWRC000.09	102892	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), selenium

Priority	Monitoring Recommendations
Low	All core parameters need seasonal distribution and dissolved oxygen needs sample number coverage as well.

A&We - Inconclusive • PBC - Inconclusive

No Exceedances**M**onitoring Summary
Sampling period: 7/31/2007 - 7/31/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE AUTO SAMPLER TRIB	SPWNC000.70	106963	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Copper, lead, zinc	(0) None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Many core parameters need seasonal distribution and/or sample number coverage as well (at least 3 samples representing 3 seasons)

Santa Cruz Watershed

Watershed Description

This watershed is composed of two hydrological areas: 1) the Santa Cruz River which flows north to the Gila River, and 2) a series of streams that flow south and eventually into the Rio Magdalena and Rio Sonoyta in Mexico. Most of the population in this 11,100 square mile watershed is clustered around metropolitan Tucson (approximately 844,000 people in the 2000 census) and Nogales in Arizona and Sonora Mexico (370,000 people, mostly in Mexico). Land ownership is approximately: 40% Tribal, 25% federal, 20% private, and 15% state.

Grazing is the dominant land use, with irrigated crop production near streams. Active and abandoned mines are scattered throughout the watershed. There are eight wilderness areas along with national forest and national monuments with restricted land uses.

Elevations range from 9,156 feet (above sea level) at Mount Lemmon to about 1,100 feet at the Gila River. Expect for a string of high mountains in the east, most of the watershed is below 5,000 feet, with low Sonoran desert flora and fauna and warmwater aquatic communities where perennial waters exist.

Water Resources

This watershed obtains about 15 inches of rain and up to 1 inch of snow per year. Ground water pumping has eliminated natural perennial flow in most of the mainstem Santa Cruz River. Treated wastewater effluent provides perennial flow below discharges from the cities of Nogales and Tucson.

An estimate of surface water resources in the Santa Cruz Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

Estimated Surface Water Resources in the Santa Cruz Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	85	500	7,245
	Perennial	Non-perennial	
Lake acres	1,366	0	

Additional Surface Water Resources Located on Tribal Land – Not Assessed

	Perennial	Intermittent	Ephemeral
Stream miles	0	50	3,795
	Perennial	Non-perennial	
Lake acres	9,523	11,119	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.

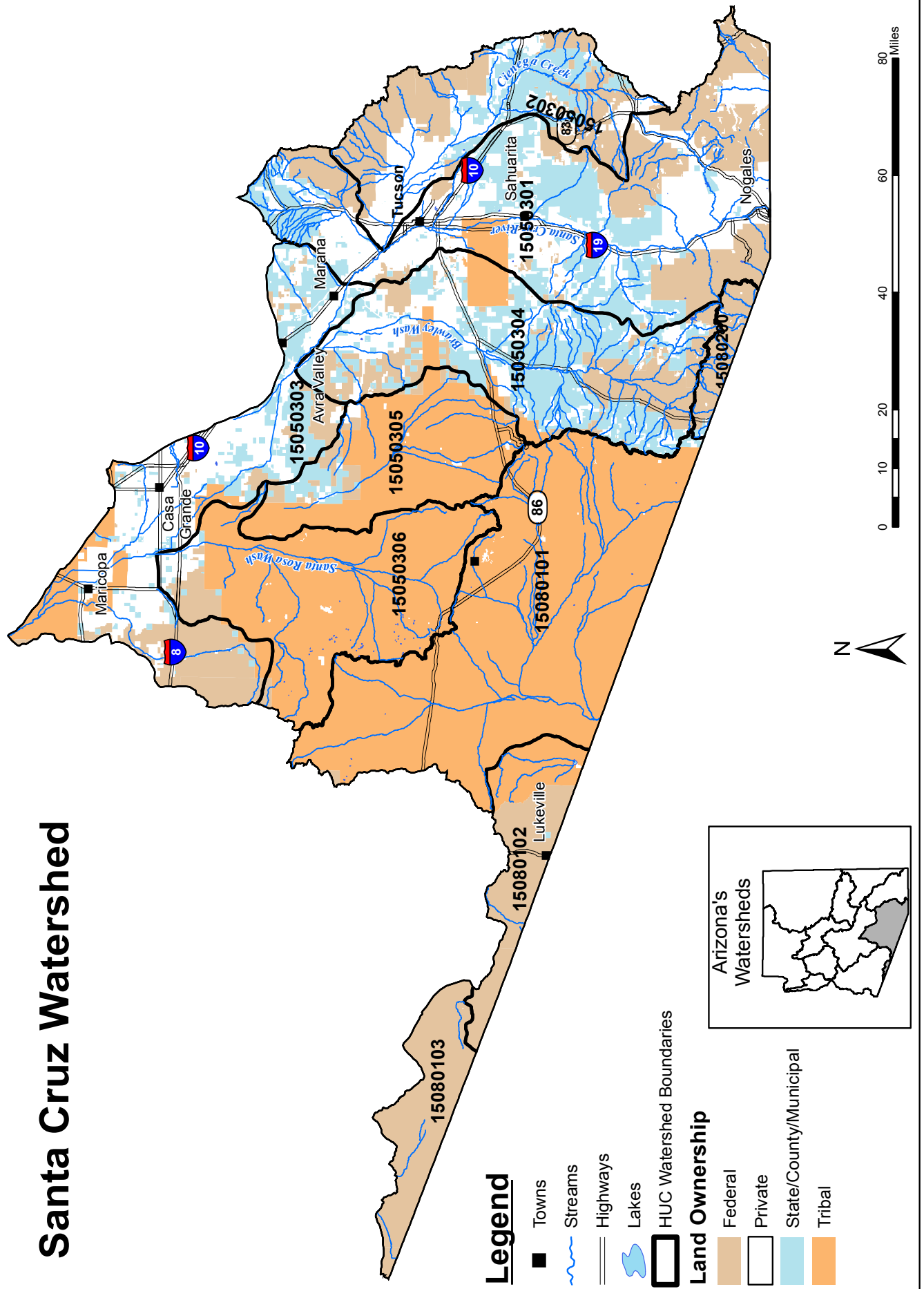
Assessments

The Santa Cruz Watershed can be separated into the following drainage areas (subwatersheds):

15050301	Upper Santa Cruz
15050302	Pantano Wash
15050302	Lower Santa Cruz
15050304	Brawley Wash
15050305	Aguirre Wash
15050306	Santa Rosa Wash
15080101	San Simon Wash (On Tribal Land – Not Assessed)
15080102	Rio Sonoyta
15080103	Tule Desert
15080200	Rio Asuncion

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

Santa Cruz Watershed



Santa Cruz / Rio Magdalena / Rio Sonoita Watershed 2012/2014 Assessment for Streams and Lakes

Legend

Assessed Lakes - 2012

ADEQ and EPA Listings

Attaining

Inconclusive

Not Attaining

EPA Impaired

Impaired

HUC Watershed Boundaries

Assessed Streams - 2012

ADEQ and EPA Listings

Attaining

Inconclusive

Not Attaining

EPA Impaired

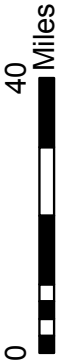
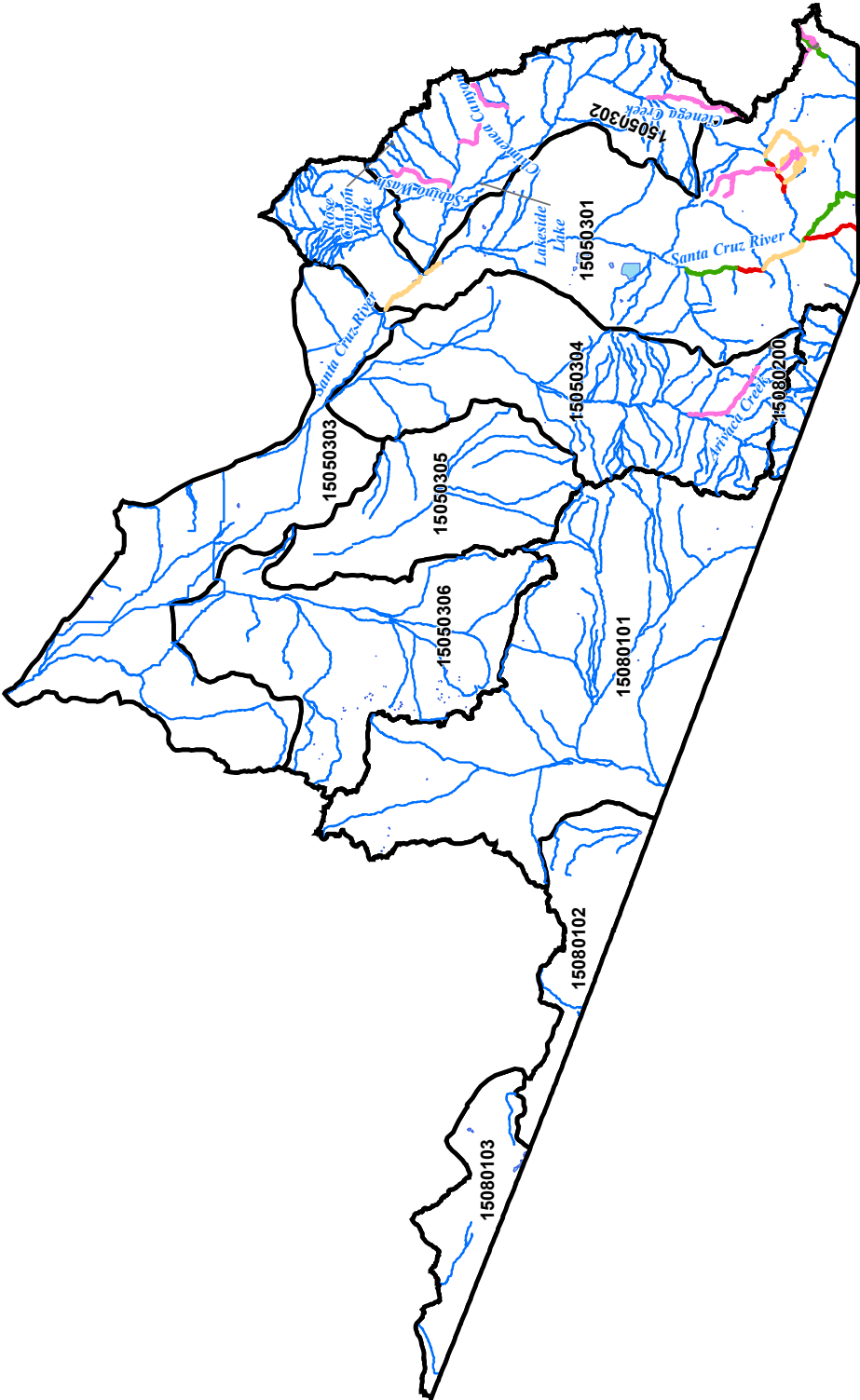
Impaired

Lakes

Streams

See Individual HUC Printouts
for Waters not Labeled

N



FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/4/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	SCACL-USGS	101583	USGS	USGS Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Ammonia

Priority	Monitoring Recommendations
Low	All core parameters need sample number and seasonal coverage.



RIVACA CREEK

Headwaters - Puertocito/Alta Wash
15050304-008
14.9 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	3/25/2008	5.2 mg/L	A&Ww is inconclusive with 10 exceedances in 12 samples (binomial). Minimum 20 samples are required to list.
		4/30/2008	3.2 mg/L	
		5/28/2008	3.1 mg/L	
		6/24/2008	0.8 mg/L	
		7/29/2008	4.2 mg/L	
		9/26/2008	4.5 mg/L	
		10/28/2008	4.6 mg/L	
		11/25/2008	4.6 mg/L	
		1/27/2009	4.8 mg/L	
		2/24/2009	3.9 mg/L	

Monitoring Summary

Sampling period: 3/25/2008 - 5/26/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FIGUEROA SPRINGS	SCARI010.07	100233	Friends of the Santa Cruz	Volunteer

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(12-14) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more DO samples to investigate large number of exceedances, check for possible groundwater upwelling. Collect core parameters to reflect 3 seasons of year.

UNNAMED ADIT TO ALUM GULCH

Headwaters - Alum Gulch
15050301-891

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	6.5 SU	9/5/2009	5.82 SU	A&We and PBC are inconclusive with 2 exceedances in 2 samples (binomial).
		2/3/2010	5.79 SU	

Monitoring Summary

Sampling period: 9/5/2009 - 2/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ADIT BELOW WORLD'S FAIR MINE	SCXA3000.01	107722	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Cadmium, copper, zinc	None	(2) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more pH samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	4.9 ug/L @ 19 mg/L hardness	2/3/2010	67.2 ug/L	A&We is inconclusive with only 1 exceedance.
pH	6.5 SU	2/3/2010	4.85 SU	A&We and PBC are inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 2/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
UNNAMED TRIB (UH2) TO HUMBOLDT CANYON - 125 METERS ABOVE MOUTH	SCUH2000.01	107745	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Cadmium, copper, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, copper (dissolved)
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more dissolved copper and pH samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

A LUM GULCH

Headwaters - 312820 / 1104351
15050301-561A
0.3 Miles

Category 4A
Not attaining

Low pH, zinc, copper, and cadmium (1996)

A&We - Not Attaining • AGL - Not Attaining
PBC - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Below Trench Camp Mine, Above January Mine Adit	SCALG005.66	100839	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	N/A
Missing Core Parameters	N/A
Missing Seasonal Distribution	N/A
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Collect samples during critical conditions to monitor effectiveness of remediation at the Trench Camp Mine. Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
TMDL completed in 2003

Low pH, zinc, copper, and cadmium (1996)

FC - Not Attaining • FBC - Not Attaining • AGL - Not Attaining
A&Ww - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Cadmium	50 ug/L (AGL) 84 ug/L (FC)	11/21/2006	140 ug/L	AGL and FC remain not attaining. 5 AGL exceedances and 4 FC exceedances in 7 samples (binomial).
		7/31/2008	117 ug/L	
		8/31/2008	89.4 ug/L	
		9/1/2008	59.7 ug/L	
		9/5/2009	91.2 ug/L	
Cadmium ^d	6.22 ug/L ^{chronic} @ > 400 mg/L hardness	11/21/2006	130 ug/L	A&Ww remains not attaining. 6 acute exceedances during the last 3 years of monitoring and 7 chronic exceedances during the assessment period.
	19.1 ug/L ^{acute} , 6.22 ug/L ^{chronic} @ > 400 mg/L hardness	7/31/2008	108 ug/L	
	19.1 ug/L ^{acute} , 6.22 ug/L ^{chronic} @ > 400 mg/L hardness	8/31/2008	109 ug/L (max) 64.4 ug/L (median)	
	19.1 ug/L ^{acute} , 6.22 ug/L ^{chronic} @ > 400 mg/L hardness	9/1/2008	78.9 ug/L (max) 72.8 ug/L (median)	
	19.1 ug/L ^{acute} , 6.22 ug/L ^{chronic} @ > 400 mg/L hardness	9/5/2009	134 ug/L (max) 92.8 ug/L (median)	
	19.1 ug/L ^{acute} @ >400 mg/L hardness 3.64 ug/L ^{chronic} @ 193 mg/L hardness	1/21/2010	102 ug/L (max) 18.9 ug/L (median)	
	19.1 ug/L ^{acute} , 6.22 ug/L ^{chronic} @ >400 mg/L hardness	2/3/2010	49.3 ug/L	
Copper	500 ug/L (AGL) 1300 ug/L (FBC)	11/21/2006	1100 ug/L	AGL remains not attaining with 7 exceedances in 7 samples (binomial). FBC remains not attaining with 2 exceedances in 7 samples (binomial).
		7/31/2008	1735 ug/L	
		8/31/2008	659 ug/L	
		9/1/2008	701 ug/L	
		9/5/2009	1467 ug/L	
		1/21/2010	654 ug/L	
		2/3/2010	647 ug/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	49.6 ug/L ^{acute} , 29.2 ug/L ^{chronic} @ > 400 mg/L hardness	11/21/2006	1100 ug/L	A&Ww remains not attaining. 6 acute exceedances during the last 3 years of monitoring and 7 chronic exceedances during the assessment period.
	49.6 ug/L ^{acute} , 29.2 ug/L ^{chronic} @ > 400 mg/L hardness	7/31/2008	1780 ug/L	
	49.6 ug/L ^{acute} , 29.2 ug/L ^{chronic} @ > 400 mg/L hardness	8/31/2008	551 ug/L (max) 519 ug/L (median)	
	49.6 ug/L ^{acute} , 29.2 ug/L ^{chronic} @ > 400 mg/L hardness	9/1/2008	649 ug/L (max) 625 ug/L (median)	
	49.6 ug/L ^{acute} , 29.2 ug/L ^{chronic} @ > 400 mg/L hardness	9/5/2009	1830 ug/L (max) 1460 ug/L (median)	
	49.6 ug/L ^{acute} @ > 400 mg/L hardness 14.7 ug/L ^{chronic} @ 178 mg/L hardness	1/21/2010	1290 ug/L (max) 377 ug/L (median)	
	49.6 ug/L ^{acute} , 29.2 ug/L ^{chronic} @ > 400 mg/L hardness	2/3/2010	673 ug/L	
Dissolved oxygen	6.0 mg/L	11/21/2006	3.65 mg/L	A&Ww is inconclusive with 2 exceedances in 2 samples.
		7/31/2008	4.57 mg/L	
pH	6.5 SU	11/21/2006	4.29 SU	AGL, A&Ww, and FBC remain not attaining with 3 exceedances in 3 samples (binomial).
		7/31/2008	3.17 SU	
		2/3/2010	4.11 SU	
Zinc	5106 ug/L (FC) 25000 ug/L (AGL)	11/21/2006	39000 ug/L	FC and AGL remain not attaining. 7 FC exceedances and 1 AGL exceedance in 7 samples (binomial).
		7/31/2008	25000 ug/L	
		8/31/2008	20500 ug/L	
		9/1/2008	19429 ug/L	
		9/5/2009	21250 ug/L	
		1/21/2010	7750 ug/L	
		2/3/2010	17000 ug/L	
Zinc ^d	379 ug/L @ >400 mg/L hardness	11/21/2006	38000 ug/L	A&Ww remains not attaining. 6 acute exceedances during the last 3 years of monitoring and 7 chronic exceedances during the assessment period.
	379 ug/L @ >400 mg/L hardness	7/31/2008	24000 ug/L	
	379 ug/L @ >400 mg/L hardness	8/31/2008	34000 ug/L (max) 16000 ug/L (median)	
	379 ug/L @ >400 mg/L hardness	9/1/2008	20000 ug/L (max) 18000 ug/L (median)	
	379 ug/L @ >400 mg/L hardness	9/5/2009	32000 ug/L (max) 19000 ug/L (median)	
	379 ug/L ^{acute} @ > 400 mg/L hardness 205 ug/L ^{chronic} @193 mg/L hardness	1/21/2010	23000 ug/L (max) 4200 ug/L (median)	
	379 ug/L @ >400 mg/L hardness	2/3/2010	17000 ug/L	

Monitoring Summary

Sampling period: 11/21/2006 - 2/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW HUMBOLDT CANYON, ABOVE ALUM FALLS	SCALG005.15	100837	ADEQ	TMDL
APPROXIMATELY 200 M DOWNSTREAM FROM WORLD'S FAIR MINE.	SCALG004.45	100870	ADEQ	TMDL
JUST ABOVE WORLD'S FAIR ADIT AND MINE	SCALG004.72	100836	ADEQ	TMDL
JUST BELOW WORLD FAIR ADIT DRAINAGE	SCALG004.70	106622	ADEQ	TMDL
BELOW JANUARY MINE ADIT, ABOVE HUMBOLDT CANYON	SCALG005.35	100838	ADEQ	TMDL
AT JANUARY ADIT	SCALG005.45	102952	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(15) Cadmium, copper, zinc	None	(7-10) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Cadmium, cadmium (dissolved), copper, copper (dissolved), pH, zinc, dissolved oxygen, pH, copper
Missing Core Parameters	<i>E. coli</i> , lead
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i> , lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), zinc (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more cadmium, copper, zinc and pH samples during critical conditions to monitor effectiveness of remediation at mine sites. Collect more dissolved oxygen samples due to exceedances. Collect at least 3 <i>E. coli</i> , dissolved oxygen, and lead samples over 3 seasons to complete core parameter coverage.

Impairment Discussion
Not attaining for copper, cadmium, zinc and low pH (1996). TMDL completed in 2003. New data for this assessment period shows continued exceedances in all impairment parameters.

ALUM GULCH

312917 / 1104425 - Sonoita Creek
15050301-561C
2.3 Miles

Category 4A
Not attaining

Low pH, zinc, copper, and cadmium (2010)

PBC - Not Attaining • AGL - Not Attaining
A&We - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Cadmium	50 ug/L	11/21/2006	79.0 ug/L	AGL remains not attaining.
Copper	500 ug/L (AGL) 1300 ug/L (PBC)	11/21/2006	1800 ug/L	AGL and PBC remain not attaining.
Copper ^d	85.9 ug/L ^{acute} @ > 400 mg/L hardness	11/21/2006	1900 ug/L	A&We remains not attaining.
	69.6 ug/L ^{acute} @ 320 mg/L hardness	7/31/2008	338 ug/L	
pH	6.5 SU	11/21/2006	3.81 SU	AGL, PBC and A&We remain not attaining with 2 exceedances in 2 samples.
		7/31/2008	4.08 SU	
Zinc ^d	3599 ug/L @ > 400 mg/L hardness	11/21/2006	24000 ug/L	A&We remains not attaining.
	2979 ug/L @ 320 mg/L hardness	7/31/2008	9700 ug/L	

Monitoring Summary

Sampling period: 11/21/2006 - 7/31/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MOUTH	SCALG000.07	100259	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Cadmium, copper, zinc	None	(2) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect samples during critical conditions to monitor effectiveness of remediation at mine sites. All core parameters need sample number and seasonal coverage.

Impairment Discussion
Not attaining for dissolved cadmium, copper, zinc and low pH (2010). No new data in this assessment period. TMDL completed in 2003.

A RIVACA LAKE

15050304-0080
118 acres

Category 4A
Not Attaining

Mercury in fish tissue (1996)

A&Ww - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • FBC - Inconclusive • FC - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
At Dam	SCARI-A	100000	University of Arizona	Clean Lakes Program

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All
Missing Seasonal Distribution	All
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Continue sample collection to determine the effectiveness of TMDL load reduction strategies for mercury. Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
Mercury TMDL completed in 1999.

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

No Exceedances**M**onitoring Summary
Sampling period: 6/4/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	SCCAR-USGS	101582	USGS	USGS Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Ammonia

Priority	Monitoring Recommendations
Low	All core parameters need sample number and seasonal coverage. Collect core parameters to reflect at least 3 seasons during assessment period.

CHIMENEA CREEK

Headwaters - Rincon Creek
15050302-140
8.0 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/5/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT SAGUARO NATL PARK USGS	SCCHM004.75	101593	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Nitrite, nitrite/nitrate, nitro- gen, phosphate, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dis- solved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dis- solved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dis- solved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Ammonia

Priority	Monitoring Recommendations
Low	Collect at least 3 of each core parameter over 3 seasons of year.

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 8/19/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE THE NARROWS	SCCIE019.90	100480	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium, ammonia

Priority	Monitoring Recommendations
Low	All core parameters need sample and seasonal distribution coverage

COLLINS CANYON

Headwaters - Parker Canyon Lake
15050301-226
3.0 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 8/7/2006 - 12/4/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FOREST ROAD	SCCOC000.25	104006	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-6) Antimony, arsenic, beryllium, boron, cadmium, copper, lead, manganese, mercury, selenium, zinc	(1-2) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-6) Dissolved oxygen, pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Copper (dissolved), lead, lead (dissolved)

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need seasonal coverage and all except pH and dissolved oxygen need sample number coverage as well.

Cadmium (2002); beryllium, copper, zinc, and pH (1996)

A&Ww - Not Attaining • AGL - Not Attaining
FBC - Not Attaining • FC - Inconclusive

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Below Tributary to European Mine	SCCXG000.81	100869	ADEQ	TMDL
Above Tributary to European Mine	SCCXG000.95	100876	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	N/A
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring once remedial strategies are implemented at mine sites.

Impairment Discussion
Included as part of Three R Canyon TMDL completed in 2003.

FLUX CANYON
Headwaters - Alum Gulch
15050301-562
3.9 Miles

Category 3
Inconclusive

PBC - Inconclusive • AGL - Inconclusive
A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	46.8 ug/L @ 210 mg/L hardness	7/31/2008	254 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.
pH	6.5 SU	7/31/2008	4.28 SU	AGL, PBC and A&We are inconclusive with 1 exceedance in 1 sample (binomial).
Zinc ^d	2085 ug/L @ 210 mg/L hardness	7/31/2008	10000 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 7/31/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MOUTH POINT WITH ALUM GULCH	SCFLC000.03	106543	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Cadmium, copper, zinc	None	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved), zinc (dissolved), pH
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more dissolved copper, zinc and pH samples to determine attainment status. All core parameters need sample number and seasonal distribution coverage.

H

ARSHAW CREEK
Headwaters - 312743 / 11043021
15050301-025A
3.3Miles

Category 4A

Not attaining

Copper and pH (1992)

A&We - Not Attaining • AGL - Not Attaining

PBC - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Below Trench Camp	SCHRS011.14	100319	ADEQ	TMDL
Below Endless Chain Mine Canyon	SCHRS013.17	100848	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	N/A
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring once remedial strategies are implemented at mine sites.

Impairment Discussion
Harshaw Creek TMDL completed in 2003.

Low pH, zinc, copper, and cadmium (1996)

FC - Inconclusive • FBC - Not Attaining
A&Ww - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Cadmium ^d	6.62 ug/L ^{acute} @ 150 mg/L hardness 1.24 ug/L ^{chronic} @ 45 mg/L hardness	7/31/2008	123 ug/L (max) 22 ug/L (median)	A&Ww remains not attaining.
	3.44 ug/L ^{acute} , 1.93 ug/L ^{chronic} @ 82 mg/L hardness	8/31/2008	22.4 ug/L	
	1.79 ug/L ^{acute} @ 45 mg/L hardness 1.05 ug/L ^{chronic} @ 36 mg/L hardness	1/22/2010	17.9 ug/L (max) 9.2 ug/L (median)	
	1.03 ug/L ^{acute} , 0.85 ug/L ^{chronic} @ 27 mg/L hardness	2/3/2010	8 ug/L	
Copper	1300 ug/L	7/31/2008	2092 ug/L	FBC remains not attaining with 1 exceedance in 4 samples (binomial).
Copper ^d	19.7 ug/L ^{acute} @ 150 mg/L hardness 4.53 ug/L ^{chronic} @ 45 mg/L hardness	7/31/2008	3860 ug/L	A&Ww remains not attaining.
	11.1 ug/L ^{acute} , 7.56 ug/L ^{chronic} @ 82 mg/L hardness	8/31/2008	445 ug/L	
	6.33 ug/L ^{acute} @ 45 mg/L hardness 3.74 ug/L ^{chronic} @ 36 mg/L hardness	1/22/2010	1310 ug/L (max) 965 ug/L (median)	
	3.91 ug/L ^{acute} , 2.93 ug/L ^{chronic} @ 27 mg/L hardness	2/3/2010	854 ug/L	
pH	6.5 SU	7/31/2008	2.82 SU	A&Ww and FBC remain not attaining.
		2/3/2010	3.87 SU	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Zinc ^d	165 µg/L ^{acute} @ 150 mg/L hardness 59.6 µg/L ^{chronic} @ 45 µg/L hardness	7/31/2008	8700 µg/L (max) 2900 µg/L (median)	A&Ww remains not attaining.
	99.0 µg/L ^{acute, chronic} @ 82 mg/L hardness	8/31/2008	2500 µg/L	
	59.6 µg/L ^{acute} @ 45 mg/L hardness 49.3 µg/L ^{chronic} @ 36 mg/L hardness	1/22/2010	2200 µg/L (max) 1300 µg/L (median)	
	38.6 µg/L ^{acute, chronic} @ 27 mg/L hardness	2/3/2010	990 µg/L	

Monitoring Summary

Sampling period: 7/31/2008 - 2/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MOUTH POINT WITH ALUM GULCH	SCHMC000.05	106542	ADEQ	TMDL
AT FALLS UPSTREAM FROM HUMBOLDT WELL	SCHMC001.27	100840	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(5) Cadmium, copper, zinc	(0) None	(1-3) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper, pH
Missing Core Parameters	Dissolved oxygen, <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more samples during critical conditions to monitor effectiveness of remediation at Humboldt Canyon mines. Most core parameters need seasonal coverage.

Impairment Discussion
Not attaining for Cadmium, copper, zinc, and low pH (1996). TMDL completed as part of the Alum Gulch TMDL (2003).

LAKESIDE LAKE

15050302-0760
15 Acres

Category 4A

Not attaining

Ammonia, dissolved oxygen, and pH (DEQ, 2004)
Chlorophyll, nitrogen, and phosphorus (EPA, 2004)

A&Ww - Not Attaining • PBC - Not Attaining
FC - Inconclusive

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
At Dam	SCLAK-A	100034	University of Arizona	Clean Lakes Program
Mid Lake	SCLAK-B	100035	University of Arizona	Clean Lakes Program

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Schedule effectiveness monitoring - collect nutrients, chlorophyll, dissolved oxygen, and pH samples during critical conditions. Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
TMDL completed in 2005 for nutrients and associated parameters.



LOMA VERDE

Headwaters - Tanque Verde Wash
15050302-268
4.0 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	9.0 SU	6/5/2008	9.6 SU	A&Ww and FBC are inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 6/5/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
IN SAGURO NATL PARK USGS	SCLMV003.51	101585	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Ammonia

Priority	Monitoring Recommendations
Medium	Collect more pH samples to determine FBC and A&Ww status. Collect at least 3 of each core parameter to reflect 3 seasons of year.

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper	1300 ug/L	4/3/2010	2320 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).
Copper ^d	85.9 ug/L ^{acute} @ > 400 mg/L hardness	4/3/2010	2300 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.
Lead	15 ug/L	4/3/2010	25.2 ug/L	PBC is inconclusive with 1 exceedance in 1 sample (binomial).
pH	6.5 SU	4/3/2010	4.35 SU	A&We and PBC are inconclusive with 1 exceedance in 1 sample (binomial).

Monitoring Summary

Sampling period: 4/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE CONFLUENCE WITH TEMPORAL GULCH	SCMFC000.55	108083	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, copper (dissolved), copper, lead, lead (dissolved)
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, <i>E. coli</i> , cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, <i>E. coli</i> , cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more total and dissolved copper and lead as well as pH samples to determine attainment status. All core parameters need sample number and seasonal distribution coverage.

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 8/7/2006 - 9/6/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FOREST ROAD	SCMEC000.28	104007	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1-2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Dissolved oxygen, <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Lead, lead (dissolved), selenium

Priority	Monitoring Recommendations
Low	All core parameter samples need seasonal coverage, dissolved oxygen and <i>E. coli</i> need sample number coverage as well.

*Copper and ammonia (2004),
E. coli (1998) and chlorine (1996)*

PBC - Impaired • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Ammonia	10.1 mg/L ^{acute} @ pH 7.9	7/29/2008	13 mg/L	A&Ww remains impaired. 1 acute exceedance during the last 3 years of monitoring. Note: No temperature record to calculate a chronic standard.
Cadmium ^d	3.45 ug/L ^{chronic} @ 180 mg/L hardness	7/29/2008	3.9 ug/L	A&Ww is inconclusive. Only 1 exceedance during the assessment period.
Chlorine (total residual)	19 ug/L ^{acute} 11 ug/L ^{chronic}	2/26/2008	70 ug/L	A&Ww remains impaired with 7 exceedances in 7 samples. 3 new exceedances in this assessment period.
		4/30/2008	100 ug/L	
		7/29/2008	3500 ug/L	
		10/28/2008	3500 ug/L	
		1/12/2009	338 ug/L	
		1/27/2009	3500 ug/L	
		4/28/2009	300 ug/L	
Copper ^d	14.8 ug/L ^{chronic} @ 180 mg/L hardness	7/29/2008	18.2 ug/L	A&Ww remains impaired. 1 chronic exceedance during the assessment period.
Dissolved oxygen	6.0 mg/L	2/26/2008	3.9 mg/L	A&Ww is inconclusive with 3 exceedances in 5 samples (binomial).
		4/30/2008	5.8 mg/L	
		7/29/2008	4.8 mg/L	
E. coli	576 cfu/100 mL, SSM	2/26/2008	2419 cfu/100 mL	PBC remains impaired with 1 single sample exceedance in the last 3 years of monitoring.
		4/30/2008	14136 cfu/100 mL	
		7/29/2008	1674 cfu/100 mL	

Monitoring Summary

Sampling period: 7/31/2007 - 4/28/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MORLEY STREET TUNNEL	SCNGW004.87	100251	Friends of the Santa Cruz	Volunteer
SOUTH OF ROUTE 82 OVERPASS	SCNGW004.31	100701	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-7) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-7) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-9) Dissolved oxygen, <i>E. coli</i> , pH, SSC, chlorine

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, cadmium (dissolved)
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Chlorine, lead (dissolved), mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> , chlorine, ammonia and copper samples to support TMDL development. Good core parameter coverage but many parameters are showing detection limit issues.

Impairment Discussion
Remains impaired for <i>E. coli</i> (1998), chlorine (1996), ammonia and copper (2004). In this assessment period, 2 new chlorine exceedances.

PARKER CANYON CREEK

Headwaters - Tributary at 312417 / 1102845
15050301-234A
3.0 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	9/6/2007	5.92 mg/L	A&Wc is attaining. Low dissolved oxygen due to low flow/groundwater upwelling.
Iron ^d	1000 ug/L	5/23/2007	1200 ug/L	A&Wc chronic is inconclusive. Only 1 exceedance during the assessment period.
Mercury ^d	0.010 ug/L	7/31/2007	0.0124 ug/L	A&Wc chronic is attaining. This exceedance occurred during a local storm event and does not represent chronic conditions.
SSC	25 mg/L	7/31/2007	1529 mg/L	A&Wc is attaining. This single sample exceedance occurred during a local storm event.

Monitoring Summary

Sampling period: 8/7/2006 - 12/4/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FOREST ROAD	SCPRK000.05	103937	ADEQ	TMDL
BELOW DAM FIVE FEET BELOW WEIR	SCPRK010.65	105678	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-5) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-3) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Iron (dissolved)
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Antimony (dissolved), arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead, lead (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more dissolved iron to ascertain assessment status. Collect at least 3 <i>E. coli</i> over 3 seasons of year to complete core parameter coverage.

PARKER CANYON LAKE

15050301-1040
129 Acres

Category 5
Impaired

Mercury in fish tissue (EPA, 2004)

FC - Impaired • FBC - Attaining • AGI - Inconclusive
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Mercury ^d	0.010 ug/L	8/31/2007	0.012 ug/L	A&Wc chronic is inconclusive. Only 1 exceedance in the assessment period.

Monitoring Summary

Sampling period: 2/21/2007 - 8/31/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT SOUTH BOAT DOCK	SCPAK-RAMP	106039	ADEQ	TMDL
AT DAM	SCPAK-A	100057	ADEQ	TMDL
AT NORTH BOAT DOCK	SCPAK-D	100058	ADEQ	TMDL
NEAR CONFLUENCE OF COLLIN AND PARKER CANYON	SCPAK-B	104939	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(6-7) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(3-7) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(6-9) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Boron
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), nickel (dissolved), selenium, ammonia

Priority	Monitoring Recommendations
High	Collect mercury tissue samples in support of TMDL development. Collect boron samples to reflect 3 seasons of year to complete core parameter coverage.

Impairment Discussion
Remains impaired for mercury in fish tissue (EPA, 2004). Mercury fish consumption advisory issued in 2002 still exists.

PENA BLANCA LAKE

15050301-1070
50.5 Acres

Category 4A
Not Attaining

Mercury in fish tissue (1996)

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	10/6/2008	1.78 mg/L	A&Wc is inconclusive with 1 exceedance in 2 samples (binomial).

Monitoring Summary

Sampling period: 8/14/2007 - 3/7/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM	SCPEN-A	100064	ADEQ	TMDL
MID LAKE	SCPEN-B	100065	ADEQ	CLP, TMDL
MID LAKE 2	SCPEN-C	100066	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-5) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-6) Ammonia, nitrate, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(3-6) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), nitrogen, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), silver (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more dissolved oxygen samples to determine A&W attainment status. Continue sample collection to determine the effectiveness of TMDL load reduction strategies for mercury. Analyze dissolved metals at lower lab detection limits.

Impairment Discussion
Mercury TMDL completed in 1999.

POTRERO CREEK
 Interstate 19 - Santa Cruz River
 15050301-500B
 4.9 Miles

Category 5
 Impaired

E. coli, low dissolved oxygen, and chlorine (2010)

FC - Inconclusive • FBC - Impaired • AGL - Inconclusive
 A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Chlorine (total residual)	19 ug/L ^{acute} 11 ug/L ^{chronic}	3/25/2008	100 ug/L	A&Ww remains impaired with 3 acute exceedances during the last 3 years of monitoring and 4 chronic exceedances during the assessment period.
		7/29/2008	100 ug/L	
		9/26/2008	100 ug/L	
		4/28/2009	100 ug/L	
Dissolved oxygen	6.0 mg/L	11/28/2006	4.1 mg/L	A&Ww remains impaired with 6 exceedances in 21 sample (binomial).
		9/25/2007	4.3 mg/L	
		11/27/2007	4.1 mg/L	
		7/29/2008	2.9 mg/L	
		9/26/2008	5.1 mg/L	
		3/31/2009	2.1 mg/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	2/26/2008	272 cfu/100 mL	FBC remains impaired with 2 single sample exceedances in the last 3 years of monitoring.
		7/29/2008	> 2419 cfu/100 mL	
		10/28/2008	410 cfu/100 mL	

Monitoring Summary

Sampling period: 7/25/2006 - 5/26/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT RUBY ROAD	SCPOT001.62	100571	Friends of the Santa Cruz, ADEQ	Ambient, TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(2-3) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-28) Dissolved oxygen, <i>E. coli</i> , pH, SSC, chlorine

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), copper, lead
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), copper, lead
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), nickel (dissolved), selenium, ammonia

Priority	Monitoring Recommendations
High	Collect chlorine, dissolved oxygen, and <i>E. coli</i> samples to support TMDL development. Several core parameters need sample number and seasonal coverage.

Impairment Discussion
Remains impaired for chlorine, dissolved oxygen, and <i>E. coli</i> (2010). In this assessment, 1 new exceedance in chlorine and dissolved oxygen.

ROSE CANYON LAKE

15050302-1260
7.3 Acres

Category 5
Impaired

IMPAIRMENT STATUS

Low pH (EPA, 2004)

A&Wc - Impaired • AGL - Inconclusive • FBC - Impaired
FC - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 10/16/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
At Dam	SCROS-A	100183	ADEQ, AGFD	Clean Lake Program

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect additional pH samples to support TMDL. Collect core parameters to represent at least 3 seasons during an assessment period.

Impairment Discussion
All low pH values occurred below 4 meters deep and may be associated with natural conditions. However, pH remains to be a cause for impairment since not enough data was collected since the original listing to assess attainment.

SABINO CREEK

Tributary at 322328 / 1104700 - Tanque Verde Wash
15050302-014B
14.1 Miles

Category 2
Attaining some uses

Santa Cruz

DWS - Attaining • FC - Attaining • FBC - Inconclusive
AGI - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	9/11/2008	310 cfu/100 mL	FBC is inconclusive with 1 exceedance in the assessment period.
Biocriteria	IBI ≥ 50 attaining IBI 40 - 49 inconclusive IBI ≤ 39 violating	9/11/2008	IBI 47.4	A&Ww is inconclusive.

Monitoring Summary

Sampling period: 9/11/2008 - 6/10/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE USGS GAGING STATION	SCSAB005.09	106482	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-4) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, E. coli, pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i> , biocriteria
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), selenium, silver (dissolved), zinc (dissolved)

Priority	Monitoring Recommendations
Medium	Collect an additional macroinvertebrate sample to verify the bioassessment result. Good core parameter coverage with small number of samples but many parameters have detection limit issues.

IMPAIRMENT STATUS

Ammonia (2010)

PBC - Inconclusive • A&Wedw - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Ammonia	1.94 mg/L ^{chronic} @ pH 7.5 and temp 27.1 °C	6/28/2007	16 mg/L	A&Wedw is not attaining. 3 acute exceedances and 7 chronic exceedances.
	2.03 mg/L ^{chronic} @ pH 7.6 and temp 25.3 °C	9/11/2008	12.5 mg/L	
	2.63 mg/L ^{chronic} , 12.8 mg/L ^{acute} @ pH 7.8 and temp 18.0 °C	12/17/2008	18 mg/L	
	2.38 mg/L ^{chronic} @ pH 7.3 and temp 26.3 °C	6/10/2009	11 mg/L	
	2.46 mg/L ^{chronic} @ pH 7.2 and temp 26.4 °C	11/18/2010	21 mg/L	
	2.38 mg/L ^{chronic} , 11.5 mg/L ^{acute} @ pH 7.8 and temp 18.5 °C	2/24/2011	17 mg/L	
	1.37 mg/L ^{chronic} , 15.2 mg/L ^{acute} @ pH 7.7 and temp 30.0 °C	5/12/2011	17 mg/L	
Chlorine (total residual)	11 ug/L	6/28/2007	225 ug/L	A&Wedw chronic is inconclusive with 1 exceedance in 1 sample.
<i>E. coli</i>	576 cfu/100 mL, SSM	9/8/2010	2420 cfu/100 mL	PBC is inconclusive with 1 exceedance in 9 samples. Sample taken during flood conditions.
Selenium	2 ug/L	5/12/2011	2.3 ug/L	A&Wedw is inconclusive with 1 exceedance in 4 samples.

Monitoring Summary

Sampling period: 6/28/2007 - 5/12/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR MARANA	SCSCR034.56	101081	ADEQ	Ambient
AT CORTARO, AZ USGS 09486500	SCSCR039.63	100237	ADEQ	Ambient
AT AVRA VALLEY RD	SCSCR034.31	105065	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(9) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(7-9) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, chlorine

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Chlorine, selenium, <i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Nickel (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> and selenium due to exceedances. Collect more ammonia, chlorine, and dissolved metal samples once upgrades to the existing plant are completed. Good core parameter coverage but many detection limit issues with data. Need lower detection limits on nickel (dissolved) and mercury (dissolved) to assess status.

Impairment Discussion
Remains not attaining for ammonia (2010). The Ina Road wastewater treatment facility has a permit variance for copper, ammonia, and chlorine starting in 2006. In this assessment, new data indicates continued ammonia impairment and detection limit issues with dissolved mercury.

IMPAIRMENT

PBC - Impaired • AGL - Inconclusive • A&Wedw - Impaired

STATUS

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Ammonia	3.5 mg/L ^{chronic} @ pH 7.7 and temp 13.8 °C	4/30/2008	26 mg/L	A&Wedw chronic remains impaired. No new data in this assessment period
Chlorine (total residual)	19 ug/L ^{acute} , 11 ug/L ^{chronic}	2/23/2011	29 ug/L	A&Wedw chronic is inconclusive with 1 exceedance in 17 samples.
<i>E. coli</i>	576 cfu/100 mL, SSM	6/20/2007	2420 cfu/100 mL	PBC remains impaired with 1 single sample exceedance in the last 3 years of monitoring and 8 geometric mean exceedances in the assessment period. No new data since last assessment.
		6/25/2007	1046 cfu/100 mL	
		7/5/2007	770 cfu/100 mL	
		7/12/2007	3690 cfu/100 mL	
		7/18/2007	198630 cfu/100 mL	
		7/24/2007	3630 cfu/100 mL	
		8/9/2007	8664 cfu/100 mL	
		8/16/2007	13140 cfu/100 mL	
		8/21/2007	6770 cfu/100 mL	
		8/30/2007	5172 cfu/100 mL	
		9/5/2007	727 cfu/100 mL	
		9/21/2007	2420 cfu/100 mL	
		10/3/2007	2420 cfu/100 mL	
		10/9/2007	866 cfu/100 mL	
		10/18/2007	2420 cfu/100 mL	
		11/29/2007	72700 cfu/100 mL	
		12/4/2007	2420 cfu/100 mL	
		12/11/2007	10462 cfu/100 mL	
		12/18/2007	839 cfu/100 mL	
		1/29/2008	1340 cfu/100 mL	
		4/30/2008	766 cfu/100 mL	

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i> (continued)	576 cfu/100 mL SSM	7/29/2008	766 cfu/100 mL	
		6/14/2007	308 cfu/100 mL	
	126 cfu/100 mL Geometric mean	7/3/2007 - 7/24/2007	2696 cfu/100 mL	
		8/9/2007 - 8/30/2007	4760 cfu/100 mL	
		9/5/2007 - 9/28/2007	652 cfu/100 mL	
		10/3/2007 - 10/29/2007	880 cfu/100 mL	
		11/5/2007 - 11/30/2007	775 cfu/100 mL	
		12/4/2007 - 12/19/2007	2961 cfu/100 mL	
		1/3/2008 - 1/31/2008	138 cfu/100 mL	

Monitoring Summary

Sampling period: 7/25/2006 - 5/11/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT SANTA GERTRUDIS LANE	SCSCR103.45	100247	ADEQ, Friends of the Santa Cruz	TMDL, Ambient
RIVER CROSSING	SCSCR102.88	106120	NPS	Ambient
TUMACACORI EDUCA- TION	SCSCR103.39	106121	NPS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-3) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-4) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-80) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, chlorine

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Chlorine
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), copper, lead
Lab Detection Limits Not Low Enough	Lead (dissolved), nickel (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect ammonia and <i>E. coli</i> samples to support TMDL development. Collect chlorine samples to determine A&Wedw status. Several core parameters need seasonal coverage.

Impairment Discussion
Remains impaired for Ammonia and <i>E. coli</i> (2010).

DWS - Inconclusive • FC - Inconclusive • FBC - Attaining
AGI - Inconclusive • AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	7/31/2007	3.8 mg/L	A&Ww is attaining. Low dissolved oxygen levels due to low flow conditions (< 0.5 cfs) and groundwater upwelling.
		4/30/2008	5.1 mg/L	
		7/29/2008	3.1 mg/L	

Monitoring Summary

Sampling period: 7/31/2007 - 1/27/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT JOHNSON'S RANCH	SCSCR128.54	105698	ADEQ, Friends of the Santa Cruz	TMDL, Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-7) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-7) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, chlorine

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Fluoride, chromium, boron, manganese
Missing Seasonal Distribution	Fluoride, chromium, boron, manganese
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect core parameters needing sample and seasonal coverage. Many parameters have detection limit issues.

Total residual chlorine and ammonia (2010), cadmium, *E. coli*(2012/14)

**PBC - Impaired • AGL - Attaining
A&Wedw - Not Attaining**

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Ammonia	3.98 mg/L ^{chronic} @ pH 7.6 and temp 10 °C	1/30/2007	26 mg/L	A&Wedw remains not attaining. 4 acute exceedances during the last 3 years of monitoring and 8 chronic exceedances during the assessment period.
	2.06 mg/L ^{chronic} @ pH 7.4 and temp 27.1 °C	6/28/2007	34 mg/L	
	4.36 mg/L ^{chronic} @ pH 7.5 and temp 13 °C	2/26/2008	26 mg/L	
	3.18 mg/L ^{chronic} @ pH 7.6 and temp 18 °C	4/30/2008	25 mg/L	
	1.73 mg/L ^{chronic} , 12.1 mg/L ^{acute} @ pH 7.8 and temp 24 °C	7/29/2008	15 mg/L	
	2.07 mg/L ^{chronic} , 8.41 mg/L ^{acute} @ pH 8 and temp 17 °C	10/28/2008	20 mg/L	
	3.98 mg/L ^{chronic} , 17.0 mg/L ^{acute} @ pH 7.6 and temp 10.0 °C	1/12/2009	25 mg/L	
	4.02 mg/L ^{chronic} , 17.3 mg/L ^{acute} @ pH 7.6 and temp 13.0 °C	1/27/2009	21 mg/L	
Chlorine (total residual)	19 ug/L ^{acute} , 11 ug/L ^{chronic}	6/28/2007	190 ug/L	A&Wedw remains not attaining. 2 acute and 3 chronic exceedances.
		7/29/2008	100 ug/L	
		5/26/2009	100 ug/L	
Dissolved oxygen	3.0 mg/L	6/28/2007	2.47 mg/L	A&Wedw is attaining with 1 exceedance in 25 samples (binomial).
<i>E. coli</i>	576 cfu/100 mL, SSM	7/29/2008	2420 cfu/100 mL	PBC is impaired with two exceedances. 7/29 /2008 and 2010 exceedances were excluded as storm related.
		1/12/2009	1553 cfu/100 mL	
		7/28/2009	1000 cfu/100 ml	
		7/28/2010	31300 cfu/100 ml	
		8/25/2010	2400 cfu/100 ml	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Cadmium ^d	2.99 ug/L @ hardness = 148 mg/L	7/28/09	3.5 ug/L	AWedw is impaired. 1 acute and 3 chronic exceedances with no indications that chronic conditions were not met.
	2.97 ug/L (chronic) and 6.47 ug/L (acute) @ hardness = 147 mg/L	10/27/09	8.1 ug/L	
	2.97 ug/L @ hardness = 147 mg/L	4/29/10	3.5 ug/L	

Monitoring Summary

Sampling period: 7/25/2006 - 5/26/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT RIO RICO	SCSCR111.66	100238	ADEQ, Friends of the Santa Cruz	TMDL, Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-7) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(2-8) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-31) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, chlorine

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more chlorine samples to determine effectiveness of chlorine removal by the new plant. Continue monitoring for ammonia. Additionally, monitoring for dissolved cadmium, chromium, copper, nickel and zinc is recommended given the significant industrial sources within Sonora, Mexico. Although exceedances for all of these metals have not been measured within the Santa Cruz River, large fluctuations in metals concentrations have been observed in the plant's influent and effluent.

Impairment Discussion
Remains not attaining for ammonia and chlorine (2010). The Nogales International Wastewater Treatment Plant has been upgraded and fully operational since 2009. Effectiveness of chlorine removal by the new treatment plant will be determined in 2016 assessment. Also impaired for <i>E. coli</i> and cadmium(2012/14).



SANTA CRUZ RIVER

Roger Road WWTP Outfall - Intermittent Reach
15050301-003B
2.9 Miles

Category 4B

Not Attaining

IMPAIRMENT STATUS

Ammonia (2010)

PBC - Inconclusive • A&Wedw - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Chlorine (total residual)	11 ug/L	6/28/2007	100 ug/L	A&Wedw chronic is inconclusive with 1 exceedance in 1 sample.
Ammonia	1.68 mg/L ^{chronic} @ pH 7.5 and temp 30.0 °C	6/28/2007	20 mg/L	A&Wedw chronic is not attaining.

Monitoring Summary

Sampling period: 6/28/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW RUTHRAUFF ROAD	SCSCR045.13	103623	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, SSC, total dissolved solids, chlorine

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Chlorine
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Nickel (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more chlorine samples to determine A&Wedw status. Collect at least 3 of each core parameter to reflect at least 3 seasons of year.

Impairment Discussion
As part of the Ina Road WWTP expansion and upgrade project, the Roger Road wastewater treatment plant will be replaced by a new facility that would reduce the amount of ammonia and other chemicals in treated water.

SANTA CRUZ RIVER

Tubac Bridge - Sopori Wash
15050301-008B
8.9 Miles

Category 2
Attaining some uses

PBC - Inconclusive • AGL - Attaining • A&We - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	576 cfu/100 mL, SSM	7/29/2008	12010 cfu/100 mL	PBC is inconclusive. Both exceedances appear to be storm related.
		9/8/2010	1046 cfu/100 mL	

Monitoring Summary

Sampling period: 7/25/2006 - 11/10/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NORTH OF CHAVES SID- ING ROAD	SCSCR096.72	100244	ADEQ, Friends of the Santa Cruz	TMDL, Ambient
AT TUBAC BRIDGE	SCSCR099.40	100243	ADEQ, Friends of the Santa Cruz	TMDL, Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2-3) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(2-7) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-19) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, chlorine

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> samples to determine PBC attainment status.

IMPAIRMENT STATUS

Copper (2010)

PBC - Inconclusive • A&Wedw - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT AVRA VALLEY RD	SCSCR034.31	105065	Pima County Wastewater Management	Permit monitoring
DOWNSTREAM OF TRICO MARANA RD	SCSCR25.1	105069	Pima County Wastewater Management	Permit monitoring
NEAR TRICO RD	SCSCR23.24	105070	Pima County Wastewater Management, USGS	Permit monitoring, Ambient
SOUTH EAST OF THE TOWN OF MARANA	SCSCR29.35	105067	Pima County Wastewater Management	Permit monitoring
SOUTH OF THE TOWN OF MARANA	SCSCR28.41	105068	Pima County Wastewater Management	Permit monitoring
1.3 MILES DOWN-STREAM OF AVRA VALLEY RD.	SCSCR033.07	105066	Pima County Wastewater Management	Permit monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more copper samples to determine A&Wedw status.

Impairment Discussion
Remains not attaining for dissolved copper (2010). As part of the Ina Road WWTP expansion and upgrade project, the Roger Road wastewater treatment plant will be replaced by a new facility that would reduce the amount of copper and other chemicals in treated water.

SONOITA CREEK

1600 Feet Below Patagonia WWTP - Patagonia Lake
15050301-013C
9.0 Miles

Category 5
Impaired

Santa Cruz

Zinc (2004) and low dissolved oxygen (1998)

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	29.3 ug/L ^{chronic} @ >400 mg/L hardness	11/21/2006	47 ug/L	A&Ww is inconclusive with 1 exceedance in 4 samples.
Dissolved oxygen	6.0 mg/L	11/21/2006	5.17 mg/L	A&Ww remains impaired.
Zinc ^d	379 ug/L ^{acute, chronic} @ >400 mg/L hardness	11/21/2006	810 ug/L	A&Ww remains impaired.
		8/20/2008	790 ug/L	

Monitoring Summary

Sampling period: 11/21/2006 - 5/11/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE TEMPORAL GULCH, BELOW TNC	SCSON016.78	100320	ADEQ	TMDL
AT CIRCLE Z RANCH	SCSON014.52	101154	ADEQ	Ambient
BELOW ALUM CANYON	SCSON015.35	100257	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4-7) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(6) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved)
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more zinc and dissolved oxygen samples to support TMDL development. Collect more dissolved copper samples to determine level of attainment. Good core parameter coverage with few samples. Use lower lab reporting limits for dissolved mercury and selenium.

Impairment Discussion
Remains impaired for Zinc (2004) and low dissolved oxygen (1998).

SONOITA CREEK

Patagonia WWTP Outfall - 1600 Feet Below
15050301-013B
0.3 Miles

Category 1
Attaining all uses

Santa Cruz

PBC - Attaining • AGL - Attaining • A&Wedw - Attaining

No Exceedances

Monitoring Summary

Sampling period: 11/13/2006 - 2/23/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW PATAGONIA WWTP	SCSON018.17	100253	ADEQ	Ambient
BELOW PATAGONIA WWTP	SCSON018.31	100255	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3-4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium, ammonia

Priority	Monitoring Recommendations
Low	Good core parameter coverage with few samples.

TEMPORAL GULCH

Headwaters - Mansfield Canyon
15050301-617
14.0 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 4/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FR 72	SCTMG007.90	108082	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. Collect core parameter samples, at least three of each to represent 3 seasons of year.

THREE R CANYON

Headwaters - 312819 / 1104556
15050301-558A
2.3 Miles

Category 4A

Not attaining

Santa Cruz

Cadmium (2002); beryllium, copper, zinc, and pH (1996)

A&We - Not Attaining • AGL - Not Attaining
PBC - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Above Three R Mine	SCTHC004.30	100852	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	N/A
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring once remedial strategies are implemented at mine sites.

Impairment Discussion
TMDL completed in 2003.

THREE R CANYON

312835 / 1104619 - 312827 / 1104712 (intermittent flow)
15050301-558B
1 Mile

Category 4A
Not Attaining

Cadmium (2002); beryllium, copper, zinc, and pH (1996)

A&Ww - Not Attaining • AGL - Not Attaining
FBC - Not Attaining • FC - Inconclusive

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Below Uppermost Spring	SCTHC003.83	100872	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	N/A
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring once remedial strategies are implemented at mine sites.

Impairment Discussion
TMDL completed in 2003.

THREE R CANYON

312827 / 1104712 - Sonoita Creek
15050301-558C
3 Miles

Category 4A
Not Attaining

Santa Cruz

Cadmium (2002); beryllium, copper, zinc, and pH (1996)

A&We - Not Attaining • AGL - Not Attaining
PBC - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Below Cox Gulch	SCTHC002.91	100322	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	N/A
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring once remedial strategies are implemented at mine sites.

Impairment Discussion
TMDL completed in 2003.

UNNAMED TRIB (UA2) TO ALUM GULCH

Headwaters - Alum Gulch
15050301-641
0.3 Miles

Category 4A
Not Attaining

IMPACT STATUS

Zinc and copper (2012)

PBC - Inconclusive • A&We - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	85.9 ug/L ^{acute} @ > 400 mg/L hardness	7/31/2008	898 ug/L	A&We is not attaining with 2 exceedances in the last 3 years of monitoring.
		2/3/2010	519 ug/L	
pH	6.5 SU	7/31/2008	3.3 SU	A&We and PBC are inconclusive with 2 exceedances in 2 samples (binomial).
		2/3/2010	4.08 SU	
Zinc ^d	3599 ug/L ^{acute} @ > 400 mg/L hardness	7/31/2008	19000 ug/L	A&We is not attaining with 2 exceedances in the last 3 years of monitoring.
		2/3/2010	18000 ug/L	

Monitoring Summary

Sampling period: 7/31/2008 - 2/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE WORLDS FAIR MINE	SCUA2000.08	106824	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Cadmium, copper, zinc	None	(1-2) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more dissolved copper, zinc and pH samples to monitor effectiveness of remediation at mine sites. All core parameters need sample number and seasonal distribution coverage.

Impairment Discussion
Inconclusive in last assessment period with 1 exceedance in dissolved copper, zinc and pH. New exceedances in this assessment, move reach to 4A status. This reach is in the same general area covered by Alum Gulch TMDL.

UNNAMED TRIB (UA3) TO ALUM GULCH

Headwaters - Alum Gulch
15050301-642
0.3 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	79.8 ug/L ^{acute} @ 370 mg/L hardness	7/31/2008	718 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.
pH	6.5 SU	7/31/2008	3.22 SU	PBC and A&We are inconclusive with 1 exceedance in 1 sample.
Zinc ^d	3369 ug/L ^{acute} @ 370 mg/L hardness	7/31/2008	11000 ug/L	A&We is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 7/31/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW WORLDS FAIR MINE	SCUA3000.02	106822	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Cadmium, copper, zinc	None	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, copper (dissolved), zinc (dissolved)
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more dissolved copper and zinc samples as well as pH to determine attainment. All core parameters need sample number and seasonal distribution coverage.

UNNAMED TRIB (UA5) TO ALUM GULCH

Headwaters - Alum Gulch
15050301-893
0.4 Miles

Category 3
Inconclusive

Santa Cruz

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 2/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
JUST SOUTHWEST OF FLUX CANYON ROAD	SCUA5000.07	107742	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Cadmium, copper, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to ascertain attainment. All core parameters need sample number and seasonal distribution.



UNNAMED TRIB (UAL) TO ALUM GULCH

Headwaters - Alum Gulch
15050301-640
0.3 Miles

Category 3

Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 1/21/2010 - 2/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
UP STREAM OF JANUARY ADIT	SCUAL000.01	106823	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2) Cadmium, copper, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Core parameters need sample number and seasonal distribution coverage.

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	3.9 µg/L ^{acute} @ 15 mg/L hardness	2/3/2010	102 µg/L	A&We is inconclusive with 1 exceedance in the last 3 years of monitoring.
pH	6.5 SU	2/3/2010	5.38 SU	A&We and PBC are inconclusive with 1 exceedances in 1 samples (binomial).

Monitoring Summary

Sampling period: 2/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE HUMBOLDT MINE	SCUHC000.01	107743	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Cadmium, copper, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, copper (dissolved)
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more pH and dissolved copper samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

UNNAMED TRIB TO COX GULCH

Headwaters - Cox Gulch
15050301-890
1 Mile

Category 4A
Not Attaining

Cadmium (2002); beryllium, copper, zinc, and pH (1996)

A&We - Not Attaining • PBC - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Above Cox Gulch	SCUCX000.01	100875	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	N/A
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring once remedial strategies are implemented at mine sites.

Impairment Discussion
Included as part of Three R Canyon TMDL completed in 2003.

UNNAMED TRIB TO HARSHAW CREEK

Headwaters - Harshaw Creek
15050301-888
2 Miles

Category 4A
Not Attaining

Santa Cruz

Copper and pH (1992)

A&We - Not Attaining • PBC - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Below Endless Chain Mine	SCUHR000.38	100850	ADEQ	TMDL
Above Mining Impacted Area	SCUHR000.57	100851	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	N/A
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring once remedial strategies are implemented at mine sites.

Impairment Discussion
Included as part of Harshaw Creek TMDL completed in 2003.

UNNAMED TRIB TO PARKER CANYON LAKE
 Headwaters - Parker Canyon Lake
 15050301-877
 1 Mile

Category 3
 Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 8/7/2006 - 7/31/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FOREST ROAD	SCUPC000.24	104008	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Antimony, arsenic, beryllium, boron, cadmium, copper, lead, manganese, mercury, selenium, zinc	(1-2) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-2) Dissolved oxygen, pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead, zinc (dissolved), lead (dissolved)

Priority	Monitoring Recommendations
Low	All core parameters need sample number and seasonal distribution coverage.

UNNAMED TRIB TO THREE R CANYON

Headwaters - Three R Canyon
15050301-889
2 Miles

Category 4A
Not Attaining

Santa Cruz

Cadmium (2002); beryllium, copper, zinc, and pH (1996)

A&We - Not Attaining • PBC - Not Attaining

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Above Three R Mine	SCUTH000.23	100874	ADEQ	TMDL

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	N/A
Missing Core Parameters	All designated uses
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Conduct effectiveness monitoring once remedial strategies are implemented at mine sites.

Impairment Discussion
Included as part of Three R Canyon TMDL completed in 2003.

UNNAMED TRIB (UH1) TO HUMBOLDT CANYON
 Headwaters - Humboldt Canyon
 15050301-895
 0.6 Miles

Category 3
 Inconclusive

PBC - Inconclusive • A&We - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper	1300 ug/L	2/3/2010	1380 ug/L	PBC is inconclusive with only 1 exceedance in 1 sample (binomial).
Copper ^d	7.3 ug/L @ 29 mg/L hardness	2/3/2010	1360 ug/L	A&We is inconclusive with only 1 exceedance in the last 3 years of monitoring.
pH	6.5 SU	2/3/2010	4.37 SU	PBC and A&We are inconclusive with only 1 exceedance in 1 sample.
Zinc ^d	391 ug/L @ 29 mg/L hardness	2/3/2010	510 ug/L	A&We is inconclusive with only 1 exceedance in the last 3 years of monitoring.

Monitoring Summary

Sampling period: 2/3/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW FALLS	SCUH1000.01	107744	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Copper, zinc	None	(1) pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more pH, copper and dissolved zinc samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

Upper Gila Watershed

Watershed Description

The Upper Gila Watershed in Arizona is defined by the Gila River drainage area, from the New Mexico border to Coolidge Dam (San Carlos Reservoir). This 7,354 square mile watershed is occupied by only 51,500 people (2000 census), mostly living in the Safford and Clifton areas. Land ownership is approximately: 47% federal, 28% tribal, 15% state, and 10% private. Agriculture is a primary land use in the Safford area. Outside of this area, land use is primarily open range grazing and recreation, with a minor amount of forestry in the national forests. A major mining facility is located in the Clifton-Morenci area along the San Francisco River. Five wilderness areas and the Gila Box Riparian National Conservation Area are located in this watershed and have restricted uses.

Elevations range from 10,028 feet (above sea level) on Mount Graham to 2,990 feet at Coolidge Dam. Except for a few sky islands (mountains located in the desert), most of the watershed is below 5,000 feet, with low desert flora and fauna and warm water aquatic communities where perennial waters exist.

Water Resources

Precipitation is limited with only 10 inches of rain and up to 2 inches of snow in some locations. Perennial flow is limited to the Gila River above Safford, the San Francisco River and its tributaries, Eagle Creek, portions of Bonita Creek, the San Carlos River, and short segments of tributaries on Mount Graham and in the Chiricahua Mountains. In the Safford area, irrigated agriculture uses a high percentage of the Gila River flow.

An estimate of surface water resources in the Upper Gila Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

Estimated Surface Water Resources in the Upper Gila Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	445	970	6,305
	Perennial	Non-perennial	
Lake acres	2,289	0	

Additional Surface Water Resources located on Tribal Land – Not Assessed

	Perennial	Intermittent	Ephemeral
Stream miles	105	50	3,795
	Perennial	Non-perennial	
Lake acres	9,523	11,119	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.

Assessments

The Santa Cruz Watershed can be separated into the following drainage areas (subwatersheds):

15040002	Mangus Creek Drainage Area
15040003	Animas Valley Drainage Area
15040004	San Francisco River Drainage Area
15040005	Upper Gila River Drainage Area
15040006	San Simon River Drainage Area
15040007	San Carlos River Drainage Area (Tribal Land – Not Assessed)

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

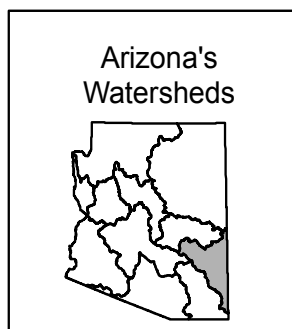
Upper Gila Watershed

Legend

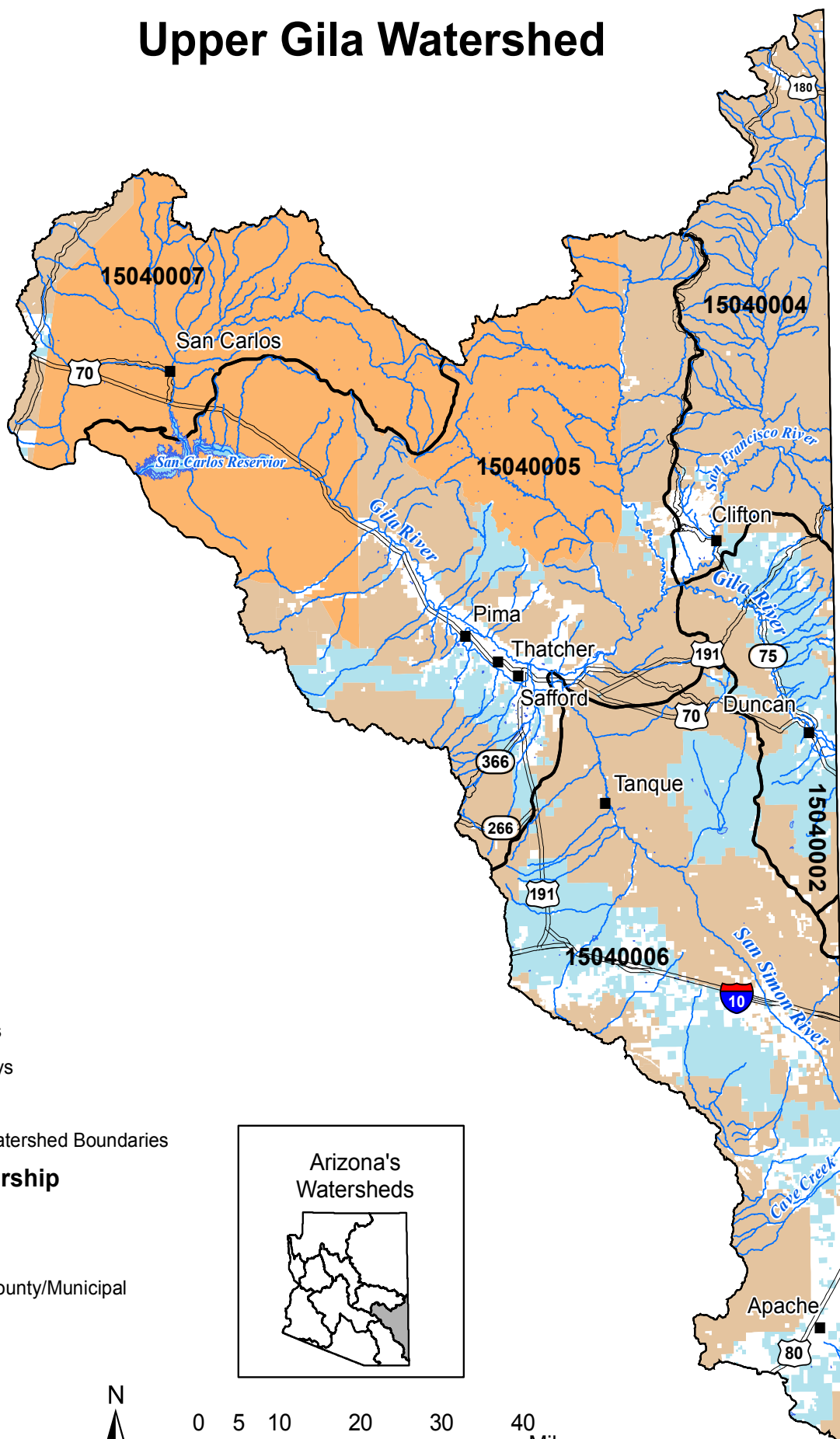
- Towns
- ~ Streams
- == Highways
- ☪ Lakes
- ▭ HUC Watershed Boundaries

Land Ownership

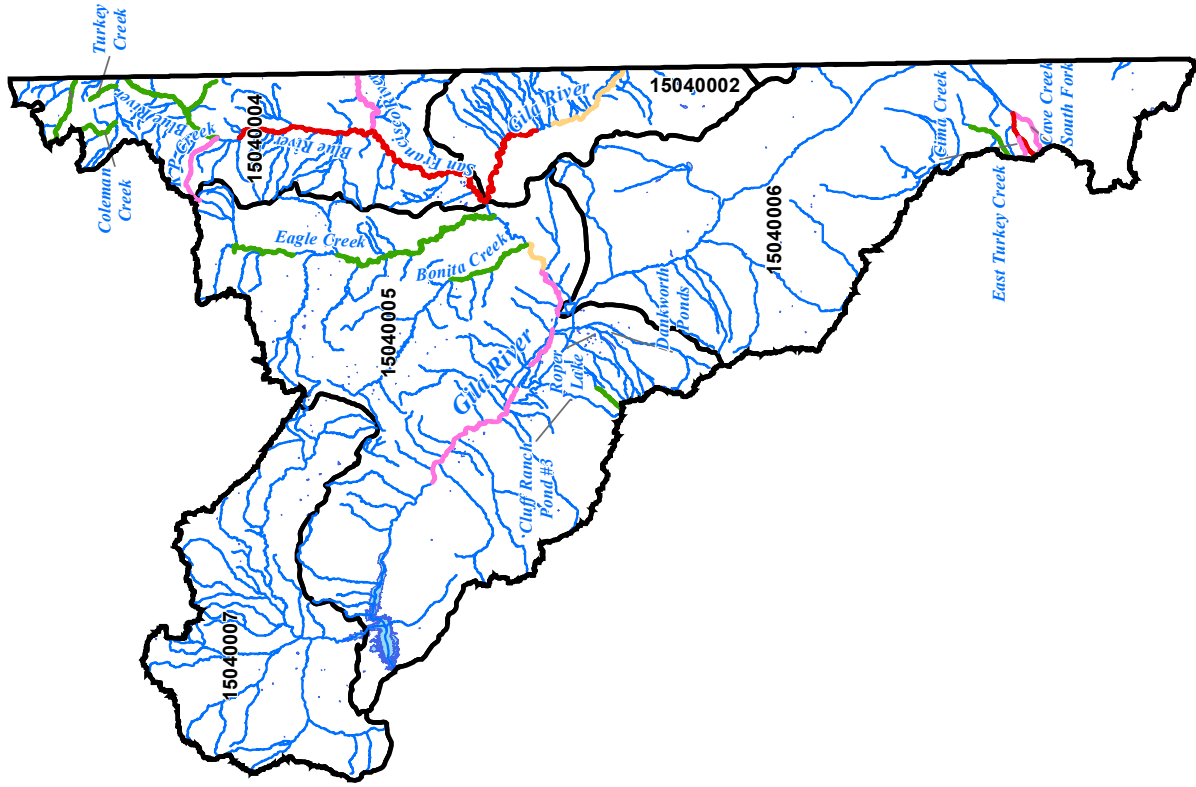
- Federal
- Private
- State/County/Municipal
- Tribal



0 5 10 20 30 40 Miles



Upper Gila Watershed 2012/2014 Assessment for Streams and Lakes



Legend

Assessed Lakes - 2012

ADEQ and EPA Listings

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired
- Impaired

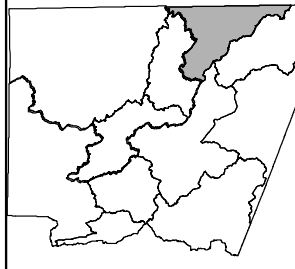
HUC Watershed Boundaries

Assessed Streams - 2012

ADEQ and EPA Listings

- Attaining
- Inconclusive
- Not Attaining
- EPA Impaired
- Impaired

- Lakes
- Streams

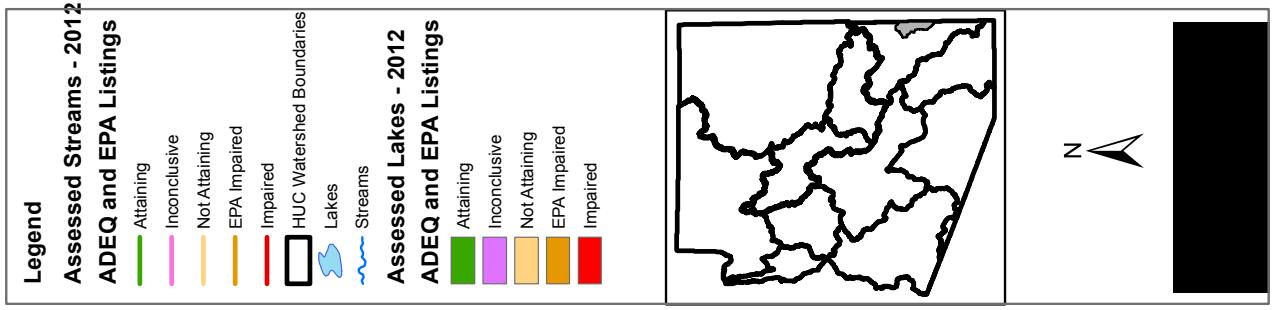
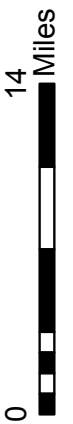
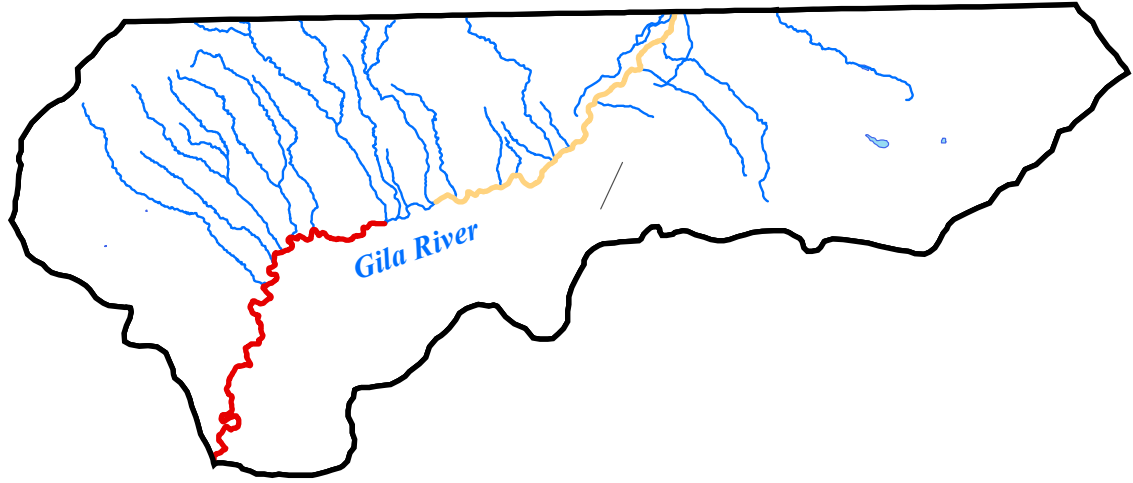


See Individual HUC Printouts
for Waters not Labeled

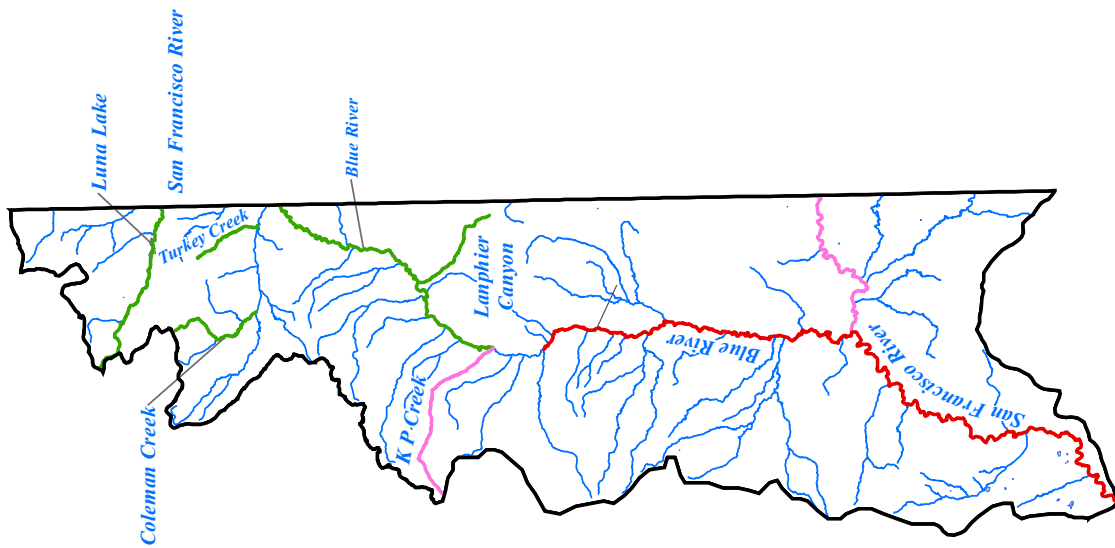
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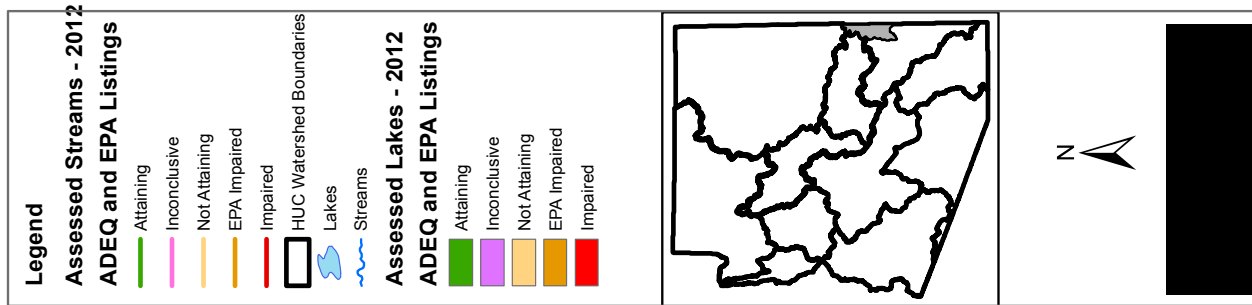
Upper Gila Watershed HUC 15040002 2012/2014 Assessment for Streams and Lakes



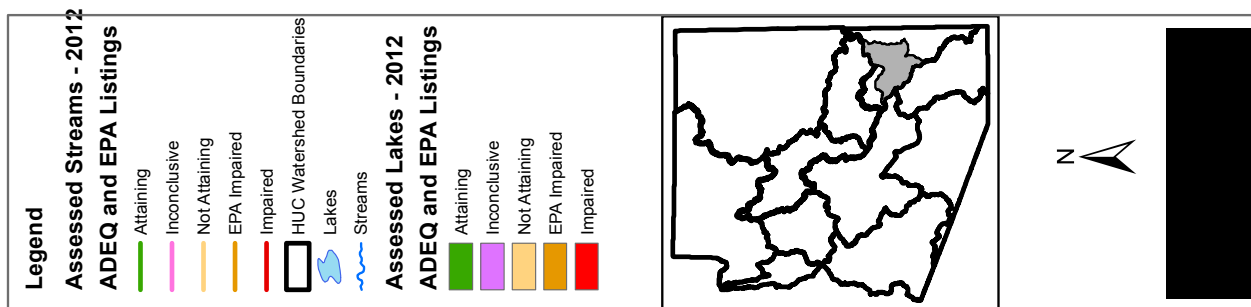
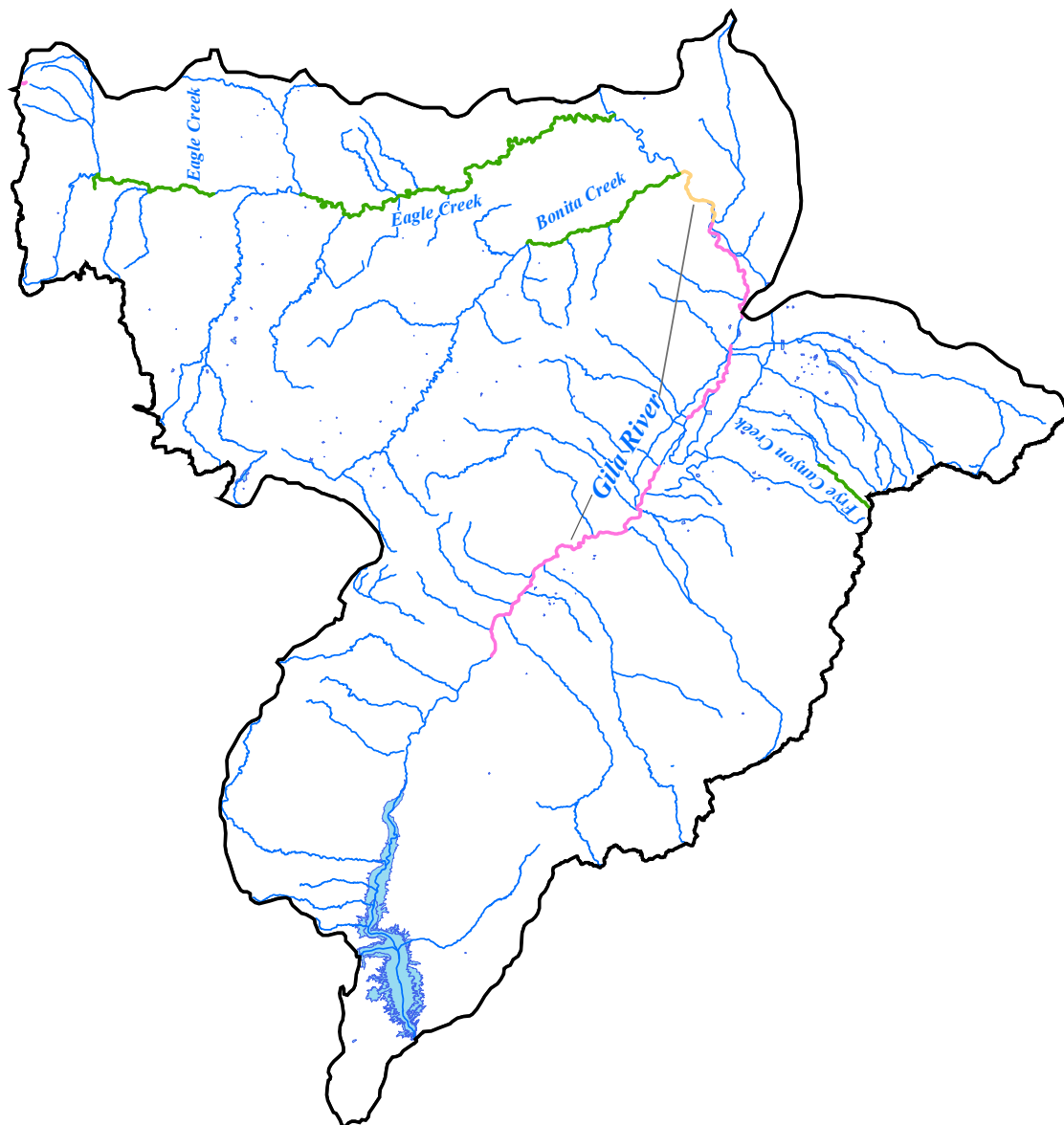
Upper Gila Watershed HUC 15040004 2012/2014 Assessment for Streams and Lakes



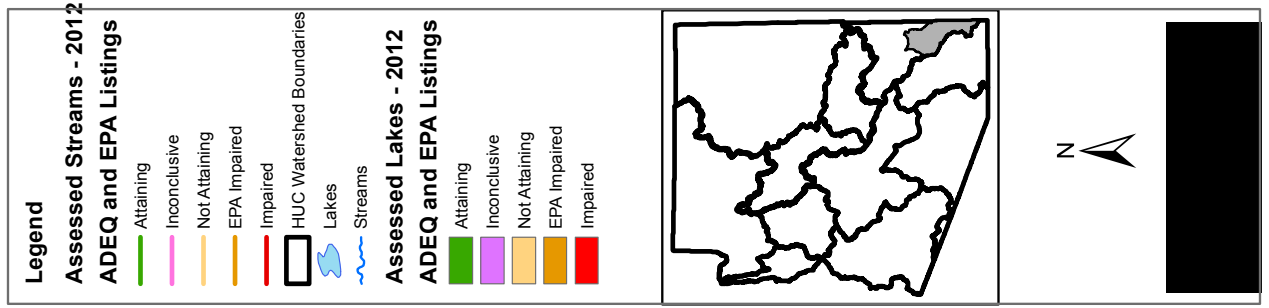
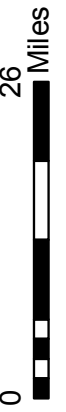
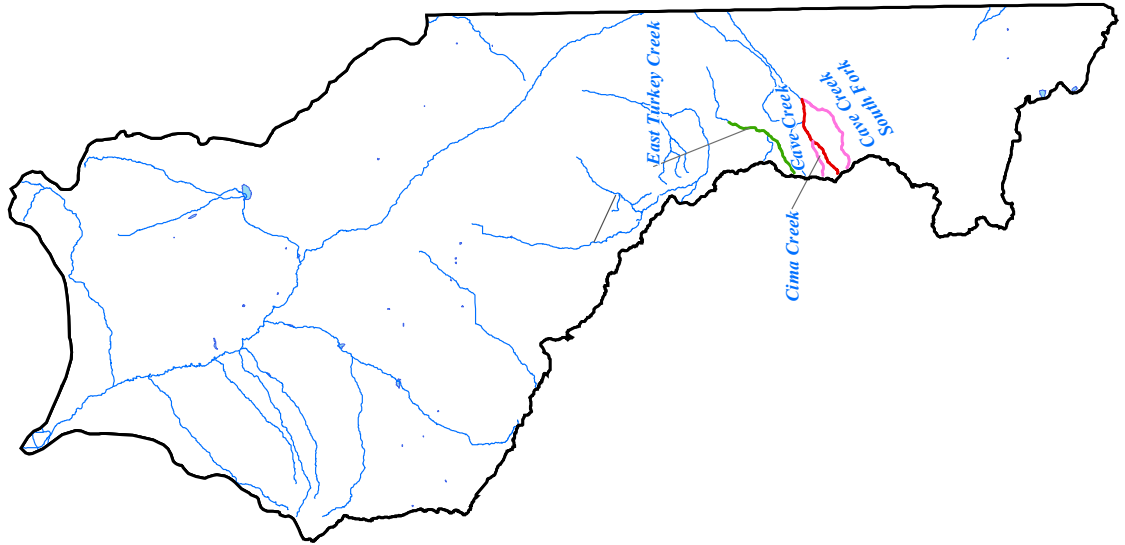
0 20 Miles



Upper Gila Watershed HUC 15040005 2012/2014 Assessment for Streams and Lakes



Upper Gila Watershed HUC 15040006 2012/2014 Assessment for Streams and Lakes



Blue River

Strayhorse Creek - San Francisco River
15040004-025B
25.4 Miles

Category 5
Impaired

Upper Gila

E. coli (2006/8)

FC - Inconclusive • FBC - Impaired • A&Ww - Inconclusive
• AGL - Inconclusive • AGL - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: no samples

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Above Fritz Ranch	UGBLR011.55	100420	USGS, ADEQ	TMDL, Biocriteria, USGS
Above Gaging Station Near Clifton, AZ	UGBLR008.57	103615	USGS	USGS
Above Oak Creek Near Blue, AZ	UGBLR021.70	103842	USGS	USGS
Above Pat Creek Near Clifton, AZ	UGBLR001.42	103613	USGS	USGS
Above Pigeon Creek Near Clifton, AZ	UGBLR006.45	103614	USGS	USGS
At H U Bar Ranch Near Blue, AZ.	UGBLR019.38	103843	USGS	USGS
At Juan Miller Road Crossing	UGBLR008.19	100398	ADEQ, USGS	Stream Ecosystem Monitoring, Ambient, Fixed Station Network, USGS, Biocriteria
At Mouth Of Horse Canyon Near Clifton, AZ	UGBLR013.61	103616	USGS	USGS
Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
At San Francisco River	UGBLR000.84	103612	USGS	USGS
Near Clifton, AZ USGS 09444200	UGBLR008.09	100770	ADEQ, USGS	TMDL, USGS

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All designated uses.
Missing Seasonal Distribution	All designated uses
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect samples to support TMDL development. Collect more SSC samples during non-storm flow regimes to assess situation. Collect biocriteria samples to assess inconclusive.

Impairment Discussion
Impaired for <i>E. coli</i> . Local watershed group is developing a Watershed improvement plan.

BLUE RIVER

New Mexico border - KP Creek
15040004-026
21.4 Miles

Category 2
Attaining some uses

Upper Gila

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	8/6/2009	5.71 mg/L	A&Wc is attaining. Non-representative value with low flow, high nutrient values.
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	6/17/2009	IBI 35	A&Wc is inconclusive with 2 violating IBI scores at 2 sites.
		6/17/2009	IBI 29	
SSC	25 mg/L	8/6/2009	58.8 mg/L	A&Wc is attaining. Exceedance occurred within 48 hours of storm event. Median value did not exceed standard.

Monitoring Summary

Sampling period: 9/22/2008 - 8/6/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ADEQ SITE 10, ABOVE BALKE CROSSING	UGBLR036.37	101189	ADEQ	Ambient
BELOW JACKSON BOX	UGBLR046.35	100419	ADEQ	Ambient
AT COLE FLAT	UGBLR030.24	106506	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3-12) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(12) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(12-13) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Reassess Biocriteria when the Implementation Procedures are adopted. Good core parameter coverage.

BONITA CREEK

Park Creek - Gila River
15040005-030
14.6 Miles

Category 1
Attaining all uses

Upper Gila

DWS - Attaining • FC - Attaining • FBC - Attaining
AGL - Attaining • A&Ww - Attaining

No Exceedances

Monitoring Summary

Sampling period: 9/6/2006-5/13/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE GILA RIVER	UGBON000.17	100185	ADEQ	TMDL
AT LEE'S TRAIL NEAR SOLOMON	UGBON006.41	100421	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-11) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-7) Ammonia, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(5-12) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Arsenic, arsenic (dissolved), cadmium (dissolved), lead (dissolved), manganese, nickel (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Low	Use a lower lab reporting limit for dissolved lead.

CAVE CREEK

Headwaters - South Fork Cave Creek
15040006-852A
7.5 Miles

Category 5
Impaired

IMPAIRMENT STATUS

Selenium (2004)

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	6/12/2008	6.25 mg/L	A&Wc is inconclusive. 1 exceedance in 4 samples (binomial, 6/12/08 low flow - 0.11 cfs).
		6/18/2009	6.24 mg/L	

Monitoring Summary

Sampling period: 6/12/2008 - 6/18/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE HERB MARTYR CAMPGROUND	UGCAV016.84	101108	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3-7) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect additional selenium and dissolved oxygen samples to determine attainment of A&W designate use. Use lower lab reporting limits for dissolved cadmium and dissolved copper.

Impairment Discussion
Remains impaired for selenium (2004). No selenium exceedances in this assessment period. However, the most recent sample had a detection limit issue due to matrix interference.

CAVE CREEK SOUTH FORK

Headwaters - Cave Creek
15040006-849
8.1 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 9/9/2008 - 3/11/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE CAVE CREEK	UGSCV000.11	101109	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), selenium

Priority	Monitoring Recommendations
Low	Use a lower lab reporting limit for dissolved cadmium.

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 9/9/2008 - 9/9/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE CAVE CREEK	UGCIM000.10	106903	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, nitrogen, phosphorus, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Use lower lab reporting limits for dissolved metals (cadmium, copper, and lead).

COLEMAN CREEK

Headwaters - Campbell Blue
15040004-040
7.3 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI \geq 52 attaining IBI 46 - 51 inconclusive IBI \leq 45 violating	6/16/2009	IBI 50	A&Wc is inconclusive.

Monitoring Summary

Sampling period: 9/22/2008 - 6/16/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW TURKEY CREEK	UGCOL003.48	100523	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-4) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Biocriteria
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), pH, selenium

Priority	Monitoring Recommendations
Medium	Collect an additional macroinvertebrate sample to verify the bioassessment result when Biocriteria Implementation Plan is in place. Good core parameter coverage with few samples.

EAGLE CREEK

Headwaters - tributary at 33
15040005-028A
11.8 Miles

Category 2
Attaining some uses

Upper Gila

DWS - Attaining • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI \geq 52 attaining IBI 46 - 51 inconclusive IBI \leq 45 violating	6/15/2009	IBI 43	A&Wc is inconclusive.

Monitoring Summary

Sampling period: 8/26/2008 - 6/15/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE HONEYMOON CAMPGROUND	UGEAG056.85	100535	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2-) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(412) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Reassess Biocriteria when the Implementation Procedures are adopted. Collect all core parameters to represent at least 3 seasons during an assessment period.

EAGLE CREEK

Sheep Wash - Gila River
15040005-025
41.8 Miles

Category 2
Attaining some uses

DWS - Inconclusive • FC - Attaining • FBC - Inconclusive
AGI - Attaining • AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 ml, SSM	8/7/2007	1986 cfu/100 mL	FBC is inconclusive with 1 exceedance in the last 3 years of monitoring (7/08-6/11). (8/7/07 storm-related).
		8/27/2008	660 cfu/100 mL	
Lead	15 ug/L (DWS) 30 ug/L (FBC)	8/7/2007	32 ug/L	DWS and FBC are attaining. 1 exceedance in 12 samples (binomial).
Manganese	980 ug/L	8/7/2007	1900 ug/L	DWS is inconclusive. 1 exceedance in 8 samples (binomial).
SSC	80 mg/L	8/7/2007	1420 mg/L	A&Ww is attaining with 1 (storm-related) exceedance. No median exceedances.

Monitoring Summary

Sampling period: 2/15/2007 - 4/29/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW PUMPING STATION	UGEAG011.51	104959	ADEQ	TMDL
DOWN STREAM FROM MC MORAN PUMPING STATION	UGEAG011.09	106582	ADEQ	Ambient
DOWNSTREAM FROM HORSESHOE GULCH	UGEAG015.23	106583	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-16) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-12) Ammonia, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(12-16) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Manganese, <i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Arsenic, arsenic (dissolved), cadmium (dissolved), lead (dissolved), mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect <i>E. coli</i> and manganese samples due to exceedances.

EAST TURKEY CREEK

Headwaters - tributary at 31
15040006-837A
7.8 Miles

Category 1
Attaining all uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	6/16/2009	6.27 mg/L	A&Wc is attaining. Low dissolved oxygen due to a low flow (0.01 cfs).

Monitoring Summary

Sampling period: 9/9/2008 - 6/16/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOREST ROAD #42	UGETK011.80	100545	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3-4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Use lower lab reporting limits for dissolved copper and cadmium. Lab reporting limits for dissolved copper and dissolved cadmium were higher than the A&Wc chronic standards in 2 and 4 samples, respectively.

FRYE CANYON CREEK

Headwaters - Frye Mesa Reservoir
15040005-988A
5 Miles

Category 2
Attaining some uses

Upper Gila

DWS - Attaining • FC - Attaining • FBC - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI \geq 52 attaining IBI 46 - 51 inconclusive IBI \leq 45 violating	4/27/2009	IBI 38	A&Wc is inconclusive.

Monitoring Summary

Sampling period: 8/25/2008 - 4/27/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FOREST ROAD #36 FIRST CROSSING	UGFRY009.52	100720	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2-4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), zinc (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Reassess Biocriteria when the Implementation Procedures are adopted. Use lower lab reporting limits for dissolved metals (lead, copper, cadmium, and zinc).

GILA RIVER

Apache Creek - Skully Creek
15040002-002
6.4 Miles

Category 5
Impaired

IMPAIRMENT STATUS

E. coli (2010)

FC - Inconclusive • FBC - Impaired • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	2/16/2007	411 cfu/100 mL	FBC remains impaired (2010). No exceedances in last three years (7/08-6/11) of this assessment period.
		3/26/2007	344 cfu/100 mL	
		6/28/2007	517 cfu/100 mL	
		8/8/2007	3629 cfu/100 mL	
		12/10/2007	435 cfu/100 mL	
Lead	15 ug/L	3/26/2007	28 ug/L	FBC is inconclusive with 2 exceedances in 8 samples (binomial)
		8/8/2007	28 ug/L	
SSC	80 mg/L	2/16/2007	935 mg/L	A&Ww is attaining with 0 median exceedances. Only one single sample exceedance (2/27) not excluded from median calculation due to storm flow within 48 hours.
		2/27/2007	202 mg/L	
		3/26/2007	1130 mg/L	
		8/8/2007	3860 mg/L	
		12/10/2007	351 mg/L	

Monitoring Summary

Sampling period: 2/16/2007 - 12/10/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW APACHE CREEK	UGGLR485.91	104960	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-4) Ammonia, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(5-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), boron, manganese, copper, mercury
Lab Detection Limits Not Low Enough	Arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect <i>E. coli</i> samples to support TMDL development. Collect lead and suspended sediment samples due to exceedances. Several core parameters need seasonal coverage.

Impairment Discussion
Remains impaired for <i>E. coli</i> (2010) with additional exceedances in lead and suspended sediment. This reach falls within the larger Gila River <i>E. coli</i> TMDL. No new data since last assessment.

Lead (2010), E. coli (2004) and SSC (EPA 2004)

FC - Attaining • FBC - Not Attaining • AGI - Attaining
 AGL - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Copper ^d	8.2 ug/L	8/16/2006	9 ug/L	A&Ww chronic is inconclusive. Only 1 exceedance in the assessment period.
E. coli	235 cfu/100 ml, SSM	8/16/2006	4000 cfu/100 mL	FBC remains not attaining. No new data since last assessment.
		9/6/2006	302 cfu/100 mL	
		2/14/2007	816.4 cfu/100 mL	
		3/25/2007	435.2 cfu/100 mL	
		9/12/2007	4100 cfu/100 mL	
		12/8/2007	1500 cfu/100 mL	
		9/18/2008	390 cfu/100 mL	
Lead	15 ug/L (FBC) 100 ug/L (AGL)	8/16/2006	95.6 ug/L	FBC remains impaired with 5 exceedances in 17 samples (binomial). No new data since last assessment. AGL is attaining with only 1 exceedance in 17 samples (binomial).
		2/14/2007	22 ug/L	
		8/6/2007	56 ug/L	
		9/12/2007	159 ug/L	
		12/5/2007	26.95 ug/L	
SSC	80 mg/L	8/16/2006	5410 mg/L	A&Ww is inconclusive. Only 1 of 2 annual median values exceeded the standard.
		2/14/2007	1090 mg/L	
		3/1/2007	218 mg/L	
		3/25/2007	470 mg/L	
		8/6/2007	5170 mg/L	
		9/12/2007	7070 mg/L	
		10/25/2007	82 mg/L	
		11/13/2007	297 mg/L	
		12/8/2007	2013 mg/L	
		9/18/2008	610 mg/L	

Parameter	Applicable Standard	Date	Result	Designated use support comments
Bottom deposits	50%	5/15/2007	91%	A&Ww is inconclusive with 1 exceedance in the assessment period (value is median of 2 values on consecutive days).

Monitoring Summary

Sampling period: 8/16/2006 - 12/3/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT HEAD OF SAFFORD VALLEY	UGGLR448.61	100729	ADEQ, USGS	TMDL, USGS
ABOVE BONITA CREEK	UGGLR452.43	100814	ADEQ	TMDL
BELOW RAIL END CANYON	UGGLR451.46	105039	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-34) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(3-22) Ammonia, nitrite, nitrite/nitrate, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(18-34) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, bottom deposits

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Copper (dissolved), SSC, bottom deposits
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Arsenic, cadmium (dissolved), lead (dissolved), mercury (dissolved), selenium, arsenic (dissolved), copper (dissolved), mercury, nickel (dissolved), antimony, antimony (dissolved), beryllium, beryllium (dissolved)

Priority	Monitoring Recommendations
High	Collect additional dissolved copper and bottom deposits samples due to exceedances.

Impairment Discussion
Remains not attaining for <i>E. coli</i> and SSC (2004) and impaired for lead (2010). <i>E. coli</i> TMDL completed int 2011. SSC TMDL completed 2013.

GILA RIVER

New Mexico border - Bitter Creek
15040002-004
16.3 Miles

Category 4A
Not attaining

IMPAIRMENT

E. coli and SSC (2006/8)

FC - Inconclusive • FBC - Not Attaining • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Not Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	9/6/2006	386 cfu/100 mL	FBC remains not attaining. No new data since last assessment.
		2/16/2007	411 cfu/100 mL	
		8/8/2007	3629 cfu/100 mL	
		11/15/2007	548 cfu/100 mL	
		12/10/2007	411 cfu/100 mL	
Lead	15 ug/L	3/26/2007	14.5 ug/L	FBC is inconclusive with 2 exceedances in 8 samples (binomial).
		8/8/2007	49 ug/L	
SSC	80 mg/L	2/16/2007	416 mg/L	A&Ww is not attaining (2006/8). All single sample exceedances except 2/27 & 5/23 were excluded due to storm flow. No new data since last assessment.
		2/27/2007	125 mg/L	
		3/27/2007	920 mg/L	
		8/8/2007	5580 mg/L	
		12/10/2007	217 mg/L	

Monitoring Summary

Sampling period: 9/6/2006 - 12/10/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW NEW MEXICO BORDER, NEAR DUNCAN	UGGLR505.96	100808	ADEQ	SPS
BELOW DUNCAN WWT PONDS	UGGLR498.51	104637	ADEQ	SPS
AT DUNCAN	UGGLR501.45	103587	USGS	USGS
AT FRANKLIN IRRIGATION DISTRICT P.O.D. NM	UGGLR515.55	105287	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-14) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-7) Ammonia, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(8-16) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Selenium, lead
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), boron, manganese, copper, mercury
Lab Detection Limits Not Low Enough	Arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect lead and selenium samples due to exceedances. A number of core parameters need seasonal distribution.

Impairment Discussion
Remains not attaining for <i>E. coli</i> and SSC (2006/8). <i>E. coli</i> TMDL completed in 2011. SSC TMDL completed 2013. No new data since last assessment.

GILA RIVER

Peck Wash - Underwood Wash
15040005-014
4.9 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 ml, SSM	8/23/2006	5794 cfu/100 mL	FBC is inconclusive. 2 exceedances, both storm related, outside last 3 year window (7/08-6/11).
		9/6/2006	1109 cfu/100 mL	

Monitoring Summary

Sampling period: 8/23/2006 - 10/4/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE PECK WASH	UGGLR423.82	103620	ADEQ	SPS

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(1-3) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), boron, copper, lead, manganese, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead, boron, manganese, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect additional <i>E. coli</i> samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

IMPAIRMENT STATUS

E. coli (2010)

FC - Inconclusive • FBC - Impaired • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	9/6/2006	6131 cfu/100 mL	FBC remains impaired. No new exceedances in last three years of this assessment period (6/08-6/11).
		2/15/2007	548 cfu/100 mL	
		3/26/2007	770 cfu/100 mL	
		8/7/2007	3629 cfu/100 mL	
		12/9/2007	921 cfu/100 mL	
Lead	15 ug/L	2/15/2007	35 ug/L	FBC is inconclusive with 4 exceedances in 8 samples (binomial)
		3/26/2007	31 ug/L	
		8/7/2007	74 ug/L	
		12/9/2007	19.5 ug/L	
SSC	80 mg/L	2/15/2007	1540 mg/L	A&Ww is inconclusive. All single sample exceedances except for 2/27 excluded from median calculation due to storm event within 48 hours of sampling. Insufficient number of samples left to calculate a median.
		2/27/2007	540 mg/L	
		3/26/2007	1470 mg/L	
		7/11/2007	512.5 mg/L	
		8/7/2007	1770 mg/L	
		12/9/2007	859.5 mg/L	

Monitoring Summary

Sampling period: 9/6/2006 - 12/9/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE SAFFORD BRIDGE	UGGLR471.49	100809	ADEQ	SPS
BELOW GILLARD HOT SPRINGS	UGGLR466.91	105459	ADEQ	TMDL
ABOVE GILLARD HOT SPRINGS	UGGLR467.02	105458	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2-10) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-6) Ammonia, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-11) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Lead
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), boron, manganese, copper, mercury
Lab Detection Limits Not Low Enough	Arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect <i>E. coli</i> samples to support TMDL development. Collect more lead and suspended sediment samples due to exceedances. Several core parameters need seasonal coverage.

Impairment Discussion
Remains impaired for <i>E. coli</i> (2010) with exceedances in lead and suspended sediment. This reach falls within the larger Gila River <i>E. coli</i> TMDL. No new data since last assessment.

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	8/22/2006	1.47 mg/L	A&Ww is inconclusive. Only 1 exceedance in 2 samples (binomial).
<i>E. coli</i>	235 cfu/100 ml, SSM	8/22/2006	1915 cfu/100 mL	FBC is inconclusive. 2 exceedances, both storm related, outside last 3 year window (7/08-6/11).
		9/6/2006	910 cfu/100 mL	

Monitoring Summary

Sampling period: 8/22/2006 - 9/6/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW THATCHER BRIDGE	UGGLR428.32	104624	ADEQ	SPS
BELOW SAFFORD WWTP	UGGLR429.83	104625	ADEQ	SPS

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(2-4) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, <i>E. coli</i>
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, <i>E. coli</i> , cadmium (dissolved), copper (dissolved), copper, lead, pH, boron, manganese, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect additional <i>E. coli</i> and dissolved oxygen samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	8/23/2006	5.74 mg/L	A&Ww is inconclusive. Only 1 exceedance in 1 sampling event (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	8/23/2006	1725 cfu/100 mL	FBC is inconclusive. Only 1 single sample maximum exceedance. Flood event in progress at time of sampling.

Monitoring Summary

Sampling period: 8/23/2006 - 8/23/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT FT THOMAS RIVER ROAD	UGGLR407.48	104622	ADEQ	SPS
BELOW CARLAND WASH	UGGLR401.85	103619	ADEQ	SPS

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(2) Dissolved oxygen, <i>E. coli</i> , pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, <i>E. coli</i>
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), lead, <i>E. coli</i> , copper, boron, manganese
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), lead, <i>E. coli</i> , copper, boron, manganese
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect additional <i>E. coli</i> and dissolved oxygen samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	8/22/2006	2169 cfu/100 mL	FBC is inconclusive. 2 exceedances, both storm related, outside last 3 year window (7/08-6/11).
		9/5/2006	1935 cfu/100 mL	

Monitoring Summary

Sampling period: 8/22/2006 - 10/3/2006

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR TIDWELL WASH	UGGLR438.78	103624	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(1-3) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), copper, lead, boron, manganese
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead, boron, manganese
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect additional <i>E. coli</i> samples due to exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

KP CREEKHeadwaters - Blue River
15040004-029
12.1 Miles**Category 3**
InconclusiveFC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive**No Exceedances****M**onitoring Summary

Sampling period: 9/24/2008 - 7/30/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW KP CIENEGA	UGKPK011.18	100888	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-3) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), <i>E. coli</i> , lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium, zinc (dissolved)

Priority	Monitoring Recommendations
Low	Collect core parameters to include at least 3 samples distributed over 3 seasons.



LANPHIER CANYON CREEK

Headwaters - Blue River
15040004-500
7.0 Miles

Category 1

Attaining all uses

Upper Gila

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Attaining

No Exceedances

Monitoring Summary

Sampling period: 9/23/2008 - 7/29/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOREST ROAD #51	UGLAN000.60	100579	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-4) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Good core parameter coverage for reach that was 'inconclusive' in last assessment.

LUNA LAKE
15040004-0840
119.7 Acres

Category 4A
Not attaining

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Not Attaining
Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	9.0 SU	10/28/2010	9.4 SU	AGL, A&Wc and FBC are inconclusive with 1 exceedance in 2 samples (binomial).
Ammonia	0.309 ug/L	8/6/2008	0.5 ug/L	A&Wc is not attaining.

Monitoring Summary

Sampling period: 10/28/2010 - 5/11/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	UGLUN-B	100979	ADEQ	CLP
AT DAM	UGLUN-A	100036	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(2-4) Arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), arsenic, copper, zinc

Priority	Monitoring Recommendations
High	Collect ammonia samples in support of TMDL development. Collect more <i>E. coli</i> and all core parameters to cover 3 seasons. Many parameters with detection limit issues.

Impairment Discussion

TMDL completed in 2000. Recent ammonia data indicate an impairment but lake was placed in Category 4A as the sources causing the ammonia exceedances are the same as those causing low dissolved oxygen and high pH values.

IMPAIRMENT STATUS

E. coli (2006/8)

FC - Attaining • FBC - Impaired • AGI - Attaining
AGL - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	9/5/2006	602 cfu/100 mL	FBC remains impaired. 2 exceedances in last 3 years. (10/15 sample storm related) .
		10/15/2008	640 cfu/100 mL	
SSC	80 mg/L	10/15/2008	210 mg/L	A&Ww is inconclusive with 0 exceedances in 3 samples.

Monitoring Summary

Sampling period: 9/5/2006 - 6/25/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE CLIFTON, AZ	UGSFR019.04	100708	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-6) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Beryllium, cadmium (dissolved), lead (dissolved), manganese, mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> samples to support TMDL development.

Impairment Discussion
Remains impaired for <i>E. coli</i> (2006/8). No new data since last assessment.

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	6/18/2009	3.27 mg/L	A&Wc is attaining. Low dissolved oxygen measured in pooled water in spatially intermittent reach.
SSC	25 mg/L	6/18/2009	37.5 mg/L	A&Wc is inconclusive. 1 single sample exceedance in assessment period. Insufficient samples to calculate median (minimum 4 samples).

Monitoring Summary

Sampling period: 11/17/2008 - 6/18/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE LUNA LAKE	UGSFR151.22	100381	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Copper (dissolved)
Missing Seasonal Distribution	Copper (dissolved)
Lab Detection Limits Not Low Enough	Cadmium (dissolved), manganese, selenium

Priority	Monitoring Recommendations
Medium	Collect SSC samples to determine A&Wc status. Collect more dissolved copper samples in 3 different seasons to complete core parameter coverage.

SAN FRANCISCO RIVER

Limestone Gulch - Gila River
15040004-001
12.8 Miles

Category 5
Impaired

IMPAIRMENT STATUS

E. coli (2010)

FC - Attaining • FBC - Not Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	9/5/2006	1020 cfu/100 mL	FBC remains impaired. No new data since last assessment.
		8/7/2007	3629 cfu/100 mL	
		12/9/2007	816 cfu/100 mL	
		8/27/2008	620 cfu/100 mL	
Lead	15 ug/L	8/7/2007	22 ug/L	FBC is attaining with 1 exceedance in 12 samples (binomial).
SSC	80 mg/L	3/27/2007	228 mg/L	A&Ww is attaining with no median exceedances.
		8/7/2007	1590 mg/L	
		12/9/2007	593 mg/L	
		8/27/2008	358 mg/L	

Monitoring Summary

Sampling period: 9/5/2006 - 6/25/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW CLIFTON, AZ	UGSFR006.42	100382	ADEQ	TMDL
UPSTREAM OF MORENCI GULCH	UGSFR006.08	106562	ADEQ	Ambient
AT LIMESTONE GULCH NEAR CLIFTON, AZ	UGSFR012.54	103604	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2-12) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(1-8) Ammonia, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(9-15) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Arsenic, arsenic (dissolved), cadmium (dissolved), copper (dissolved), <i>E. coli</i> , lead (dissolved), mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> samples to support TMDL development. Good core parameter coverage.

Impairment Discussion
Remains impaired for <i>E. coli</i> (2010). No new data since last assessment.

SAN FRANCISCO RIVER

New Mexico border - Blue River
15040004-004
20.9 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	10/15/2008	980 cfu/100 mL	FBC is inconclusive with 1 storm-related exceedance in 4 samples.
SSC	80 mg/L	10/15/2008	241 mg/L	A&Ww is inconclusive - not enough samples to calculate median. Exceedance occurred within 48 hours of local storm event.

Monitoring Summary

Sampling period: 10/15/2008 - 5/12/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR MARTINEZ RANCH	UGSFR034.57	100834	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i> , SSC
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Lead (dissolved), manganese, mercury (dissolved), cadmium (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> and SSC samples to determine FBC and A&W status. Good core parameter coverage.

TURKEY CREEK (TRY)

Headwaters - Campbell Blue
15040004-060
4.7 Miles

Category 1

Attaining all uses

Upper Gila

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	6/17/2009	27 mg/L	A&Wc is attaining with no median exceedances.

Monitoring Summary

Sampling period: 9/22/2008 - 6/17/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
1.5 MI US FROM CONFL W/CAMPBELL BLUE CRK	UGTRY001.56	106507	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-4) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), selenium

Priority	Monitoring Recommendations
Low	Good core parameter coverage with few samples.

Verde Watershed

Watershed Description

This watershed is defined by the Verde River drainage that flows into the Salt River, including Big Chino Wash and its tributaries. This 6,624 square mile watershed has an approximate population of 153,000 people (2000 census), but is growing rapidly. Although this is only 3% of the state population, several communities are located in this watershed: Payson, Sedona, Cottonwood, Verde Valley, Prescott, and the southern outskirts of Flagstaff. Land ownership is 65% federal, 23% private, 10% state, and 2% tribal. Primary land uses are open range grazing, irrigated agriculture, recreation, forestry, and some mining.

Elevations range from more than 12,000 feet (above sea level) in the San Francisco Mountains to about 1,600 feet as the Verde River flows into the Salt River. The watershed is split between warmwater communities below 5,000 feet and coldwater communities above 5,000 feet where perennial waters exist.

Water Resources

The Verde Watershed receives slightly more precipitation than most watersheds in this state, with some areas receiving about 20 inches of rain and 3 inches of snow. Therefore, the Verde River and many of its tributaries are perennial waters.

An estimate of surface water resources in the Verde Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

Estimated Surface Water Resources in the Verde Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	450	2,115	5,990
	Perennial	Non-perennial	
Lake acres	4,603	3,636	

Additional Surface Water Resources located on Tribal Land – Not Assessed

	Perennial	Intermittent	Ephemeral
Stream miles	15	5	230
	Perennial	Non-perennial	
Lake acres	6	0	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.

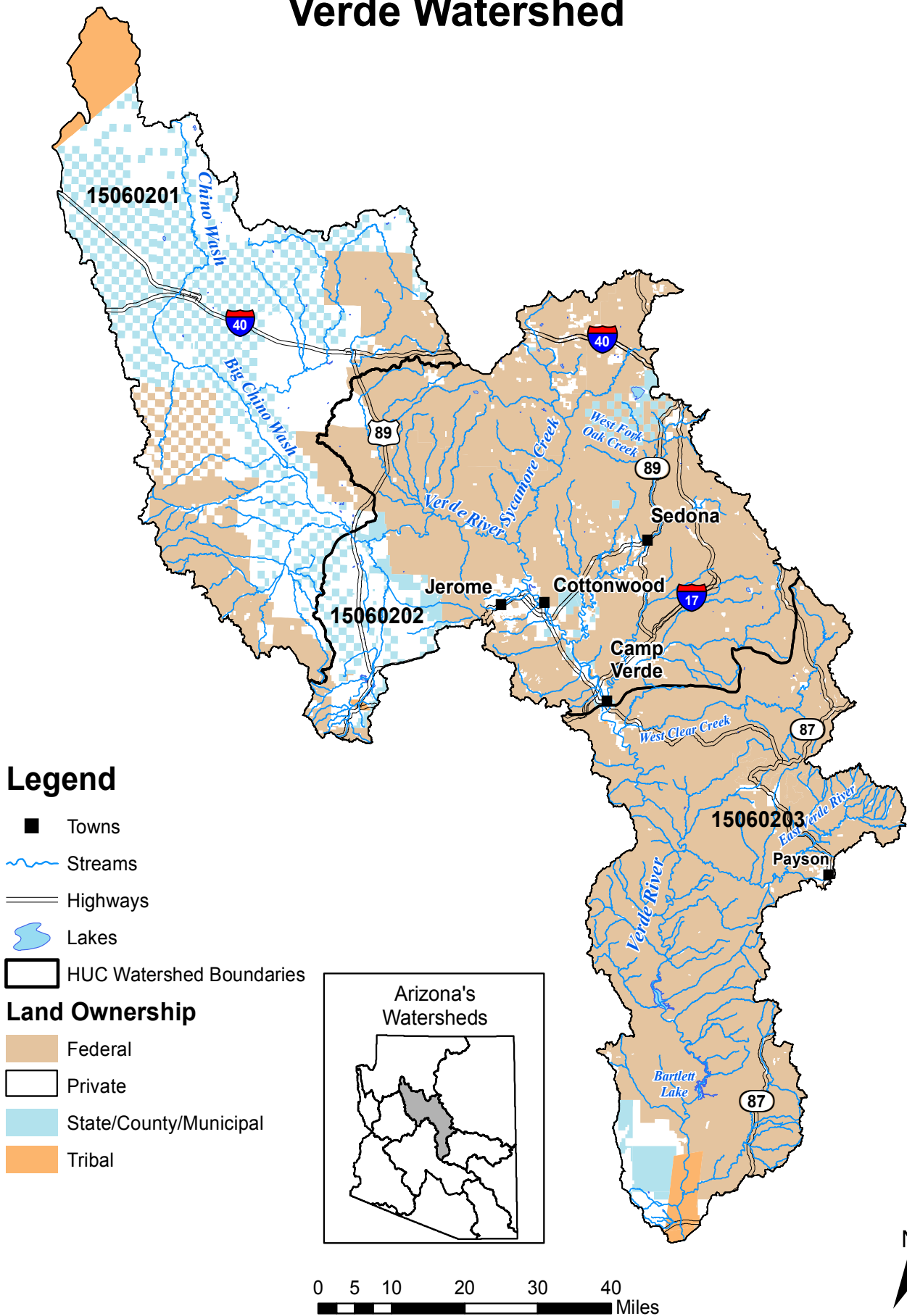
Assessments

The Verde Watershed can be separated into the following drainage areas (subwatersheds):

- 15060201 Big Chino Wash Drainage Area
- 15060202 Upper Verde River Drainage Area
- 15060203 Lower Verde River Drainage Area

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

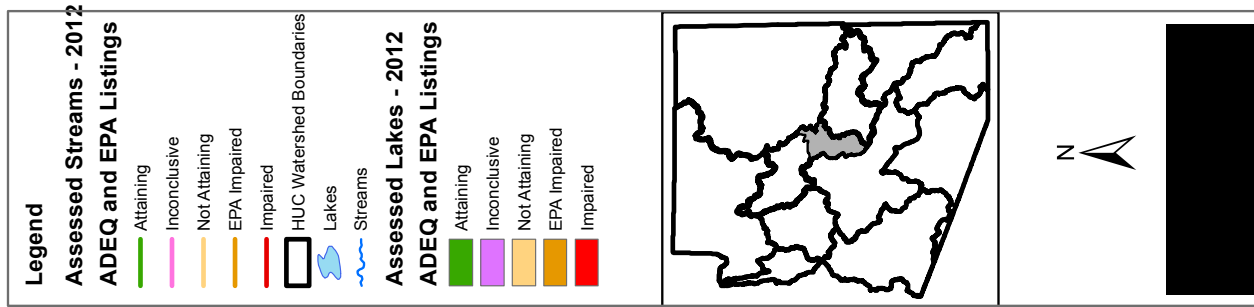
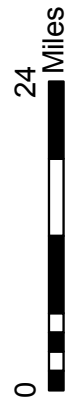
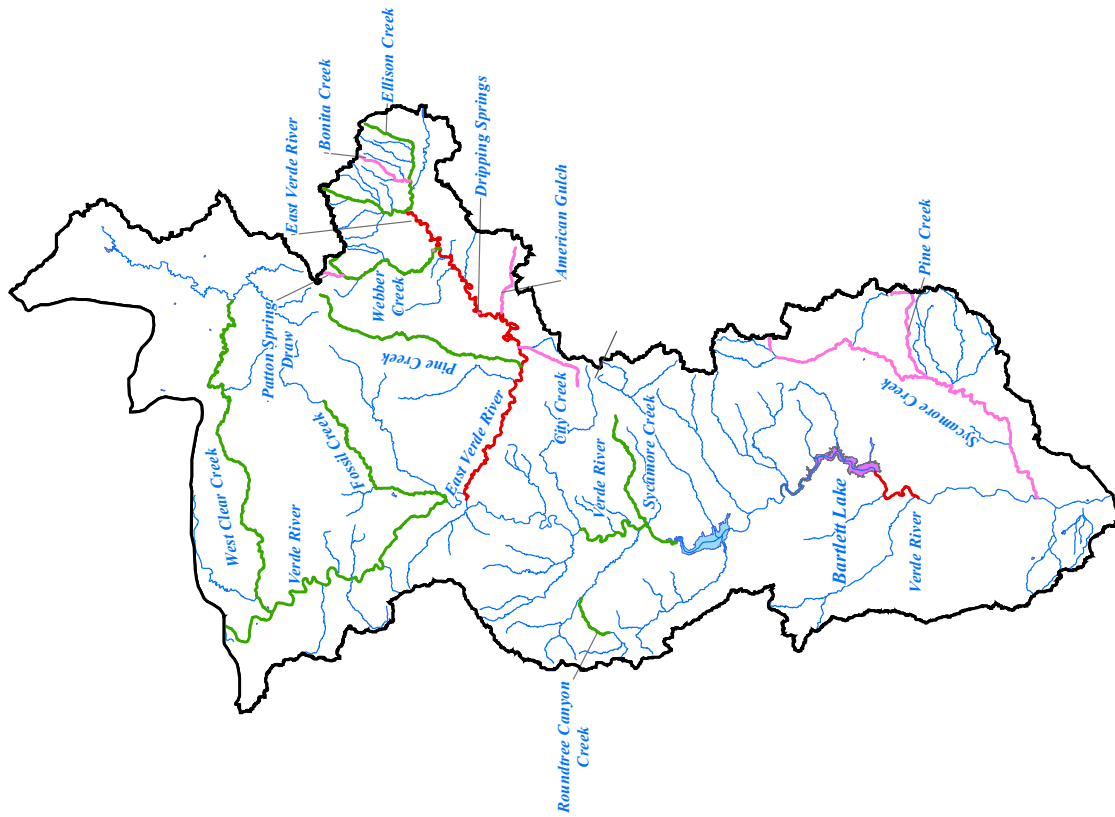
Verde Watershed







Verde Watershed HUC 15060203 2012/2014 Assessment for Streams and Lakes



AMERICAN GULCH

Headwaters - No. Gila Co. WWTP
15060203-448A
2.6 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	12/8/2009	3629 cfu/100 mL	FBC is inconclusive with 1 exceedance in the last three years of the assessment (7/08-6/11), 2 samples total.

Monitoring Summary

Sampling period: 12/8/2009 - 3/30/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ONE QUARTER MILE BELOW WWTP	VRAMG003.62	108582	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Arsenic, boron, manganese, selenium	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> samples due to exceedance. All core parameters need both sample number and seasonal distribution coverage.



AMERICAN GULCH

No. Gila County WWTP - East Verde River
15060203-448B
3.6 Miles

Category 3
Inconclusive

Verde

PBC - Inconclusive • A&Wedw - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	576 cfu/100 mL, SSM	3/29/2011	4611 cfu/100 mL	PBC is inconclusive with 1 exceedance in last three years of assessment period, 1 sample total.

Monitoring Summary

Sampling period: 3/29/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOREST SERVICE ROAD # 67	VRAMG000.76	108723	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, manganese, selenium	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> samples due to exceedance. All core parameters need sample number and seasonal distribution.

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	1/6/2008	387 cfu/100 mL	FBC is inconclusive with 1 exceedance within the last three years of the assessment period (7/08-6/11), 9 samples total. Exceedance (12/8/09) occurred during a storm event.
		12/8/2009	2419 cfu/100 mL	
Nitrogen	3 mg/L, SSM	1/27/2008	12.3 mg/L	A&Wc and FBC are attaining with 1 SSM exceedance in 11 samples (binomial).
Phosphorus	1 mg/L, SSM	1/27/2008	2.9 mg/L	A&Wc and FBC are attaining with 1 SSM exceedance in 11 samples (binomial).
SSC	25 mg/L	2/14/2009	61.4 mg/L	A&Wc is inconclusive with 0 median exceedance in 1 sample. Not enough samples to calculate a median.

Monitoring Summary

Sampling period: 12/12/2007 - 5/13/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
COPPER BASIN ROAD AT FS BOUNDARY	VRASP005.07	106183	ADEQ	TMDL
ABOVE PARK AVENUE	VRASP000.37	107545	ADEQ	TMDL
BELOW HASSYAMPA VILLAGE LANE BY GOLF COURSE	VRASP001.61	107546	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(15) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-14) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	SSC, <i>E. coli</i>
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> and SSC samples to determine assessment status. All core parameters need seasonal distribution and many need sample number coverage as well. Ongoing water quality improvements being implemented through a 319(h) grant to Prescott Creek-Preservation Association.

BANNON CREEK

Headwaters - Granite Creek
15060202-774
6.2 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	12/12/2007	6.24 mg/L	A&Wc is inconclusive with 1 exceedance in 5 samples (binomial).

Monitoring Summary

Sampling period: 12/12/2007 - 5/13/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE GRANITE CREEK AND ROAD CROSSING	VRBAN000.06	106186	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(5) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-6) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Cadmium (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect more dissolved oxygen samples to determine attainment status. All core parameters need seasonal distribution and several need sample number coverage as well.

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	10 ug/L	12/1/2006	19 ug/L	DWS is inconclusive with 5 exceedances in 6 samples (binomial, a minimum of 20 samples is required to determine impairment).
		7/13/2007	18.1 ug/L	
		9/18/2007	21 ug/L	
		11/6/2008	13 ug/L	
		3/19/2009	10.5 ug/L	
Dissolved oxygen	6.0 mg/L	9/18/2007	5.36 mg/L	A&Ww is inconclusive with 2 exceedances in 5 samples (binomial).
		11/6/2008	5.51 mg/L	

Monitoring Summary

Sampling period: 12/1/2006 - 3/19/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
RIVERINE ZONE	VRBAR-C	100011	ADEQ	CLP
MID LAKE	VRBAR-B	100010	ADEQ	CLP
AT DAM	VRBAR-A	100009	ADEQ, AGFD	CLP
BACK OF THE LAKE	VRBAR-C1	105899	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(12-15) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(3-15) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-15) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, arsenic
Missing Core Parameters	None
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Lead (dissolved), nickel (dissolved), selenium, thallium, mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more arsenic and dissolved oxygen samples to determine assessment status. Good core parameter coverage – just need seasonal distribution on <i>E. coli</i> to complete.

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	10/9/2007	6.52 mg/L	A&Wc is inconclusive with 1 exceedance in 2 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	6/13/2008	250 cfu/100 mL	FBC is attaining with no exceedances in the last 3 years of monitoring.
SSC	25 mg/L	10/9/2007	952.5 mg/L	A&Wc is inconclusive with 1 exceedance in 3 samples. Not enough samples to calculate median.

Monitoring Summary

Sampling period: 10/9/2007 - 11/13/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
UPSTREAM OF FULLER CREEK	VRBON002.71	106922	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, SSC
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Dissolved oxygen, SSC

Priority	Monitoring Recommendations
Medium	Collect dissolved oxygen and SSC samples to investigate exceedances. All core parameters in need of sample number and seasonal distribution coverage.

Add E. coli to the 303(d) list

FC - Inconclusive • FBC - Impaired • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 ml, SSM	1/7/2008	631 cfu/100 mL	FBC is impaired with 2 exceedances in the last 3 years of monitoring. Although they were both stormwater exceedances, the exceedance rate was greater than 10% (3 exceedances in 10 samples). 1 geomean exceedance (1/08).
		1/27/2008	260 cfu/100 mL	
		12/18/2008	326 cfu/100 mL	
		12/8/2009	2419 cfu/100 mL	

Monitoring Summary

Sampling period: 8/6/2007 - 5/13/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MILLER CREEK	VRBTT000.06	107550	ADEQ	TMDL
AT HEAD WATERS	VRBTT005.70	106189	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(12) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-10) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> samples to support TMDL development. Most core parameters need seasonal distribution and/or sample number coverage. Dissolved copper, cadmium, and mercury need lower detection limits.

Impairment Discussion
Impairments based on flood related <i>E. coli</i> exceedances are only considered when ten or more samples have been collected, and there is a greater than 10% exceedance rate. Ongoing water quality improvements being implemented through a 319(h) grant to Prescott Creeks Preservation Association.

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive**No Exceedances****M**onitoring Summary

Sampling period: 3/30/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOREST SERVICE ROAD # 406	VRCIT000.37	108726	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, manganese, selenium	None	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead, nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

D RIPPING SPRINGS

Springs Headwater - East Verde River
15060203-524
0.03 Miles

Category 3
Inconclusive

PBC - Inconclusive • AGL - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 3/29/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
JUST ABOVE CONFLUENCE WITH EAST VERDE RIVER	VRDRP000.01	108743	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, manganese, selenium	None	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	pH, <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	pH, <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	80 mg/L	1/6/2008	400 mg/L	A&Ww is attaining. This exceedance occurred during a storm event and was excluded from assessment.

Monitoring Summary

Sampling period: 1/6/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT YAVAPAI CO. STAGE LOGGER	VRDRY007.02	101877	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(1) <i>E. coli</i> , pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	All core parameters need sample number and seasonal distribution coverage.

EAST VERDE RIVER

American Gulch - Verde River
15060203-022C
25.8 Miles

Category 5
Impaired

IMPAIRMENT

Arsenic(2006/8)

DWS - Impaired • FC - Attaining • FBC - Impaired
AGI - Attaining • AGL - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	10 ug/L (DWS) & 30 ug/L (FBC)	12/22/2009	41.3 ug/L	DWS remains impaired with 11 exceedances in 17 samples, and FBC remains impaired with 4 exceedances in 17 samples (binomial).
		5/4/2010	14.2 ug/L	
		5/26/2010	26.3 ug/L	
		6/29/2010	22.9 ug/L	
		7/27/2010	17.7 ug/L	
		8/31/2010	12.9 ug/L	
		9/28/2010	58.4 ug/L	
		10/26/2010	42.1 ug/L	
		11/30/2010	37.7 ug/L	
		12/28/2010	20.7 ug/L	
		3/31/2011	23.2 ug/L	
Dissolved oxygen	6.0 mg/L	6/30/2011	5.3 mg/L	A&Ww is attaining. Low dissolved oxygen due to groundwater upwelling.
Zinc	2100 ug/L (DWS) 5106 ug/L (FBC)	8/31/2010	6281 ug/L	DWS and FBC are attaining with 1 exceedance in 16 samples (binomial).
Biocriteria	IBI ≥ 50 attaining IBI 40 - 49 inconclusive IBI ≤ 39 violating	6/24/2008	IBI 46	A&Ww is inconclusive.

Monitoring Summary

Sampling period: 8/14/2007 - 6/30/2011

Verde

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW CRACKER JACK	VREVR023.59	105441	ADEQ	Ambient
NEAR CHILDS, AZ USGS 09507980	VREVR002.62	100739	ADEQ	TMDL
BELOW CONFLUENCE WITH AMERICAN GULCH	VREVR023.23	108724	ADEQ	TMDL
BELOW BABY DOLL RANCH, NEAR PAYSON, AZ	VREVR016.28	100473	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(16-20) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3-16) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-21) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Biocriteria
Missing Core Parameters	None
Missing Seasonal Distribution	<i>E. coli</i>
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more arsenic samples to support TMDL development. Collect an additional macroinvertebrate sample to verify the bioassessment result.

Impairment Discussion
There were no boron exceedances in 17 aggregated samples. Boron is delisted based on the following reasons: new data from critical sites indicated that the reach was no longer impaired for boron (0 exceedances in 12 critical samples, binomial), and the standard for DWS designated use has been increased from 630 ug/L to 1400 ug/L, and reassessment of the original data with the new standard does not indicate impairment. It should also be noted that original data used for listing came from an outside agency and did not meet our surface water sampling criteria.

EAST VERDE RIVER

Ellison Creek - American Gulch
15060203-022B
20.3 Miles

Category 5
Impaired

IMPAIRMENT STATUS

Selenium (2004)

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	12/8/2009	816 cfu/100 mL	FBC is inconclusive with 1 non storm related exceedance (12/8/09) in 6 samples.
		6/29/2011	345 cfu/100 mL	

Monitoring Summary

Sampling period: 12/7/2009 - 6/29/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW HIGHWAY 87 BRIDGE, NEAR PAYSON	VREVR034.80	100474	ADEQ	TMDL
EAST VERDE RIVER - BELOW ELLISON CREEK	VREVR044.96	108562	ADEQ	TMDL
ABOVE CONFLUENCE WITH AMERICAN GULCH	VREVR027.67	108722	ADEQ	TMDL
EAST VERDE RIVER - BELOW ELLISON CREEK	VREVR044.96	100548	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-5) Arsenic, boron, manganese, selenium	None	(6) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), nitrate, chromium, lead, copper, lead, <i>E. coli</i> , nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), nitrate, fluoride, chromium, lead, manganese, copper, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more selenium in support of TMDL development and more <i>E. coli</i> due to exceedance. Many core parameters need sample number and/or seasonal distribution coverage.

Impairment Discussion
This reach was originally listed for selenium in 2004 with the last known exceedance occurring in January 2001. All 5 selenium samples collected in this assessment period were below the chronic criterion. TMDL sampling is ongoing.

EAST VERDE RIVER

Headwaters - Ellison Creek
15060203-022A
8.1 Miles

Category 2
Attaining some uses

DWS - Attaining • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 ml, SSM	8/14/2007	600 cfu/100 mL	FBC is attaining with no exceedances in the last three years of the assessment period(7/08-6/11), 6 samples total.
Biocriteria	IBI ≥ 52 attaining IBI 46 - 51 inconclusive IBI ≤ 45 violating	6/24/2008	IBI 51	A&Wc is inconclusive.

Monitoring Summary

Sampling period: 8/14/2007 - 06/29/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW WASHINGTON PARK	VREVR051.15	100546	ADEQ	Ambient, TMDL
ABOVE 2ND CROSSING	VREVR045.50	100786	ADEQ	Ambient, TMDL
ABOVE WILLOW SPRING CANYON	VREVR046.18	108842	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(8-11) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(2-8) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(7-11) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect an additional macroinvertebrate sample to verify the bioassessment result. Collect more <i>E. coli</i> samples to ascertain attainment status. Good core parameter coverage.

ELLISON CREEK

Headwaters - East Verde River
15060203-459
10.8 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Wc - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	6/15/2011	272 cfu/100 mL	FBC is inconclusive with 1 exceedance in the last 3 years of monitoring.

Monitoring Summary

Sampling period: 5/13/2009 - 6/15/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE EAST VERDE RIVER	VRELL000.18	100543	ADEQ	TMDL
AT HEADWATERS	VRELL009.02	100542	ADEQ	TMDL, Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4-6) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(5-6) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect more <i>E. coli</i> samples due to exceedance. Good core parameters coverage.

FC - Attaining • FBC - Attaining • AGL - Attaining
 A&Ww - Attaining

No Exceedances

Monitoring Summary

Sampling period: 8/30/2007 - 6/14/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
EAST OF MUD SEEP	VRFOS011.88	105624	ADEQ	Ambient
AT FOSSIL SPRINGS HEADWATER	VRFOS014.33	106422	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(8-9) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(6-7) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(5-9) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Good core parameter coverage with low number of samples. Need lower detection limit for dissolved mercury and selenium.

GOLDWATER LAKE (UPPER)

15060202-0575
20.6 Acres

Category 3
Inconclusive

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 9/8/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
DAM SITE	VRGWU-A	108862	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, beryllium, cadmium, chromium, copper, lead, manganese, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrate, lead, fluoride, arsenic, chromium, nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrate, lead, fluoride, arsenic, chromium, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need seasonal distribution and many need sample number coverage as well.

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	1/7/2008	866 cfu/100 mL	FBC is attaining. No exceedances in last three years of assessment period (7/08 - 6/11).
		1/27/2008	238 cfu/100 mL	

Monitoring Summary

Sampling period: 1/7/2008 - 12/18/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
VETERANS HOSPITAL	VRGOC000.60	107563	ADEQ	TMDL
BELOW EAST PINE RIDGE DRIVE	VRGOC003.03	107562	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Mercury	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-3) Dissolved oxygen, <i>E. coli</i> , pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	All core parameters need seasonal and many need sample number coverage as well.

Granite Creek

Headwaters to Yavapai Reservation @ 34° 33' 06.382" / 112° 27' 44.2"
15060202-059A
6 Miles

Category 5
Impaired

E. coli (2010) and low dissolved oxygen (EPA 2004)

FC - Inconclusive • FBC - Impaired • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	12/12/2007	6.15 mg/L	A&Wc remains impaired with 3 exceedances in 11 samples (binomial).
		4/3/2008	6.04 mg/L	
		7/31/2010	4.52 mg/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	1/28/2008	1553 cfu/100 mL	FBC remains impaired with new exceedances in this assessment period.
		12/18/2008	488 cfu/100 mL	
		12/8/2009	1300 cfu/100 mL	
Nitrogen	3 mg/L, SSM	12/12/2007	10.7 mg/L	A&Wc and FBC are inconclusive with 1 annual mean exceedance.
		1/27/2008	4.14 mg/L	
	1 mg/L, Annual mean	2008	1.41 mg/L	
Phosphorus	1 mg/L, SSM	1/27/2008	3.7 mg/L	A&Wc and FBC are inconclusive with 1 annual mean exceedance.
	0.1 mg/L, Annual mean	2008	0.47 mg/L	

Monitoring Summary

Sampling period: 1/10/2007 - 4/21/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BANNON CREEK	VRGRA032.67	104926	ADEQ	TMDL
ABOVE PONDEROSA ROAD	VRGRA034.39	107502	ADEQ	TMDL
AT USGS GAGE 09503300	VRGRA023.85	104925	ADEQ	TMDL
AT LEROUX STREET	VRGRA031.19	107504	ADEQ	TMDL

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MANZANITA CREEK	VRGRA031.98	107503	ADEQ	TMDL
UPSTREAM OF WHITE SPAR CAMPGROUNDS	VRGRA033.51	106185	ADEQ	Ambient
AT GRANITE PARK	VRGRA029.97	106184	ADEQ	TMDL, Ambient
AT PRESCOTT, AZ USGS 09502960	VRGRA029.64	101580	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2-6) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(21) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(15-21) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, nitrogen, phosphorus
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> samples to support TMDL under development. Collect more SSC, dissolved mercury, total nitrogen, and total phosphorus samples due to exceedances. Several core parameters need seasonal distribution. Ongoing water quality improvements being implemented through a 319(h) grant to Prescott Creeks Preservation Association.

Granite Creek

Yavapai Reservation @ 34° 33' 55.558" / 112° 26' 31.627" to Watson Lake
15060202-059B
2.5 Miles

Category 5
Impaired

IMPAIRMENT STATUS

E. coli (2010)

FC - Inconclusive • FBC - Impaired • AGI - Inconclusive
AGL - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	1/7/2008	2419 cfu/100 mL	FBC remains impaired with new exceedances in this assessment period.
		1/27/2008	547 cfu/100 mL	
		1/28/2008	1986 cfu/100 mL	
		12/18/2008	1300 cfu/100 mL	
		12/8/2009	2419 cfu/100 mL	
		1/25/2010	261 cfu/100 mL	
Mercury ^d	0.01 ug/L	12/8/2009	0.2 ug/L	A&Wc is attaining with 0 exceedance in 1 sample.
Nitrogen	3 mg/L, SSM	1/25/2010	3.03 mg/L	A&Wc and FBC are inconclusive with 1 exceedance.
Phosphorus	1 mg/L, SSM	1/11/2008	1.04 mg/L	A&Wc and FBC are inconclusive with 1 exceedance.
SSC	25 mg/L	12/18/2008	34.6 mg/L	A&Wc is inconclusive with 0 median exceedances in 3 samples. Not enough data to calculate median.

Monitoring Summary

Sampling period: 1/10/2007 - 4/21/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID WATSON WOODS	VRGRA027.35	107522	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(2-9) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(16) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(9-18) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved mercury, nitrogen, phosphorus, dissolved mercury, SSC
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> samples to support TMDL under development. Collect more SSC, dissolved mercury, samples due to exceedances. Several core parameters need seasonal distribution. Ongoing water quality improvements being implemented through a 319(h) grant to Prescott Creeks Preservation Association.

MANZANITA CREEK

Headwater - Granite Creek
15060202-772
2.8 Miles

Category 5
Impaired

Add E. coli to the 303(d) list

FC - Inconclusive • FBC - Impaired • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 ml, SSM	1/6/2008	344 cfu/100 mL	FBC is impaired with 2 exceedances in the last 3 years of monitoring. Although both exceedances were storm-related, the exceedance rate was greater than 10% (4 exceedances in 10 samples).
		1/27/2008	1300 cfu/100 mL	
		12/18/2008	397 cfu/100 mL	
		12/8/2009	2419 cfu/100 mL	

Monitoring Summary

Sampling period: 12/12/2007 - 5/13/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE GRANITE CREEK	VRMAN000.01	107548	ADEQ	TMDL
ABOVE TIMBER RIDGE ROAD	VRMAN002.15	107547	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	(12) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-12) Dissolved oxygen, <i>E. coli</i> , pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> samples in support of TMDL development. All core parameters need seasonal distribution and several need sample number coverage as well.

Impairment Discussion
Impairments based on flood related <i>E. coli</i> exceedances are only considered when ten or more samples have been collected, and there is a greater than 10% exceedance rate. Ongoing water quality improvements being implemented through a 319(h) grant to Prescott Creeks Preservation Association.

MILLER CREEK

Headwaters - Granite Creek
15060202-767
7.2 Miles

Category 5
Impaired

IMPACTMENT STATUS

E. coli (2010)

FC - Inconclusive • FBC - Impaired • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	1/7/2008	2419 cfu/100 mL	FBC remains impaired with 2 single sample exceedances in the last three years of the assessment period (7/08-6/11), 11 samples total. 1 geomean exceedance (1/08 - inconclusive for geomean exceedance).
		1/27/2008	313 cfu/100 mL	
		1/28/2008	2419 cfu/100 mL	
		12/28/2008	479 cfu/100 mL	
		12/8/2009	2419 cfu/100 mL	
Nitrogen	1 mg/L, Annual mean	2008	1.3 mg/L	A&Wc and FBC are inconclusive with 1 annual mean exceedance.
Phosphorus	0.1 mg/L, Annual mean	2008	0.22 mg/L	A&Wc and FBC are inconclusive with 1 annual mean exceedance.
SSC	25 mg/L	2/14/2009	283 mg/L	A&Wc is inconclusive with 0 median exceedances in 2 samples. Not enough data to calculate median.

Monitoring Summary

Sampling period: 12/12/2007 - 5/13/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT THUMB BUTTE PARK	VRMIL003.64	107523	ADEQ	TMDL
ABOVE BUTTE CREEK AND GRANITE PARK	VRMIL000.32	107525	ADEQ	TMDL
AT OREGON AVENUE	VRMIL001.71	107524	ADEQ	TMDL
ON THUMB BUTTE ROAD ABOVE DEARING ROAD CROSSING	VRMIL006.07	106188	ADEQ	Ambient
DOWNSTREAM OF BUTTE CREEK AT GRAINTE PARK	VRMIL000.22	106187	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(2-3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(20) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-18) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Nitrogen, phosphorus, SSC
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> to support TMDL development and total nitrogen, total phosphorus, and SSC samples due to exceedances. All core parameters need seasonal distribution coverage.

Impairment Discussion
Remains impaired for <i>E. coli</i> with 2 exceedances in last three years of this assessment period (7/08-6/11). Ongoing water quality improvements being implemented through a 319(h) grant to Prescott Creeks Preservation Association.

MUNDS CREEK

Headwaters - Oak Creek
15060202-415
17.0 Miles

Category 3
Inconclusive

FC - Inconclusive • PBC - Inconclusive
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 1/10/2008 - 2/13/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
SITE C	VRMUN006.31	107243	Pinewood Sanitary District	Permittee Ambient
SITE D	VRMUN006.17	107262	Pinewood Sanitary District	Permittee Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	(5) Nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	All core parameters need seasonal distribution and many need sample number coverage as well.

NORTH GRANITE CREEK

Headwaters - Granite Creek
15060202-757
1.6 Miles

Category 3
Inconclusive

Verde

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	7/31/2010	4.53 mg/L	A&Wc is inconclusive with 1 exceedance in 1 sample (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	7/31/2010	2419 cfu/100 mL	FBC is inconclusive with 1 exceedance in 3 samples.

Monitoring Summary

Sampling period: 1/25/2010 - 7/31/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT 6TH AND NAVAJO	VRNGC000.14	107622	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-3) Dissolved oxygen, <i>E. coli</i> , pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, <i>E. coli</i>
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect dissolved oxygen and <i>E. coli</i> samples to ascertain assessment status. Most core parameters need sample number and seasonal distribution coverage.



AK CREEK

Dry Creek - Spring Creek
15060202-017
10.0 Miles
Outstanding Arizona Water

Category 4A

Not Attaining

IMPAIRMENT STATUS

E. coli (2006)

DWS - Inconclusive • FC - Attaining • FBC - Not attaining
AGI - Attaining • AGL - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	10 ug/L	7/20/2010	19 ug/L	DWS is inconclusive with 4 exceedances in 4 samples (binomial).
		11/16/2010	15 ug/L	
		3/24/2011	12 ug/L	
		4/27/2011	16 ug/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	8/15/2006	387 cfu/100 mL	FBC remains not attaining with 13 exceedances in 52 samples. 3 geometric mean exceedances (7-9/2008).
		7/24/2007	1413 cfu/100 mL	
		8/7/2007	1203 cfu/100 mL	
		9/2/2007	687 cfu/100 mL	
		9/25/2007	326 cfu/100 mL	
		1/6/2008	921 cfu/100 mL	
		5/13/2008	307 cfu/100 mL	
		7/15/2008	1120 cfu/100 mL	
		8/5/2008	816 cfu/100 mL	
		8/12/2008	387 cfu/100 mL	
		8/19/2008	980 cfu/100 mL	
		8/26/2008	687 cfu/100 mL	
		9/2/2008	2419 cfu/100 mL	
SSC	80 mg/L	1/6/2008	340 mg/L	A&Ww is inconclusive with 0 median exceedances in 1 sample (not enough samples to calculate a median).

Monitoring Summary

Sampling period: 7/11/2006 - 4/27/2011

Verde

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MORMON CROSSING	VROAK013.95	101880	ADEQ	TMDL
ABOVE PAGE SPRINGS HATCHERY	VROAK017.30	101811	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(5) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-51) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Arsenic, SSC
Missing Core Parameters	Nitrate
Missing Seasonal Distribution	Nitrate
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect arsenic and sediment samples due to exceedances. Collect at least 3 nitrate samples over 3 seasons of year to complete core parameter coverage. Continue effectiveness monitoring for <i>E. coli</i> .

Impairment Discussion
Oak Creek <i>E. coli</i> TMDL approved by EPA in late 2010. Ongoing water quality improvements being implemented through a 319(h) grant to Oak Creek Watershed Council.



AK CREEK

Headwaters - West Fork Oak Creek
15060202-019
7.4 Miles
Outstanding Arizona Water

Category 4A
Not attaining

IMPAIRMENT STATUS

E. coli (2006)

DWS - Attaining • FC - Attaining • FBC - Not attaining
AGI - Attaining • AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	7.0 mg/L	4/24/2008	6.22 mg/L	A&Wc is inconclusive with 1 exceedance in 9 samples (binomial).
<i>E. coli</i>	235 cfu/100 ml, SSM	1/6/2008	345 cfu/100 mL	FBC remains not attaining. During the last three years of monitoring (7/08-6/11), 0 exceedance in 2 samples.
Nitrogen	2.5 mg/L, SSM	11/1/2007	4.21 mg/L	A&Wc and FBC are inconclusive with 1 exceedance in 5 samples (binomial).
Phosphorus	1 mg/L, SSM	11/1/2007	4.59 mg/L	A&Wc and FBC are inconclusive with 1 exceedance in 5 samples (binomial).
SSC	25 mg/L	1/6/2008	40 mg/L	A&Wc is attaining with no median exceedances in 5 samples.

Monitoring Summary

Sampling period: 8/13/2007 - 6/16/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW PINE FLATS SUB-DIVISION	VROAK048.92	101864	ADEQ	Ambient
AT PINE FLATS CROSS-ING	VROAK049.20	106502	ADEQ	TMDL
BELOW STERLING SPRINGS FISH HATCH-ERY	VROAK050.55	101882	ADEQ	TMDL
AT CAVE SPRINGS CAMPGROUND NEAR SEDONA	VROAK048.36	104020	ADEQ	Ambient
AT BROPHY RETREAT	VROAK049.31	106503	ADEQ	TMDL
AT COCONINO CO. STAGE LOGGER	VROAK050.30	101863	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-5) Antimony, arsenic, beryllium, cadmium, copper, lead, mercury	(8-13) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(5-16) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, phosphorus
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more dissolved oxygen and phosphorus samples to ascertain A&W attainment status. Good core parameter coverage with few samples.

Impairment Discussion
Oak Creek <i>E. coli</i> TMDL approved by EPA in late 2010. Ongoing water quality improvements being implemented through a 319(h) grant to Oak Creek Watershed Council.



AK CREEK

Slide Rock boundary - Dry Creek
15060202-018C
20 Miles
Outstanding Arizona Water

Category 4A

Not attaining

IMPAIRMENT STATUS

E. coli (2006)

DWS - Inconclusive • FC - Attaining • FBC - Not attaining
AGI - Attaining • AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Cadmium ^d	3.7 ug/L ^{chronic} @ 187 mg/L hardness	8/3/2006	5.1 ug/L	A&Ww chronic is attaining. Unstable flow conditions around the time of this sampling event. Note: DWS is inconclusive with 1 exceedance in 9 samples (binomial).
Dissolved oxygen	6.0 mg/L	7/19/2010	4.68 mg/L	A&Ww is attaining with 1 exceedance in 10 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	8/8/2006	411 cfu/100 mL	FBC remains not attaining with 10 SSM exceedances in 60 samples and 1 geo-mean exceedance (8/2008).
		7/24/2007	308 cfu/100 mL	
		7/31/2007	488 cfu/100 mL	
		9/2/2007	2419 cfu/100 mL	
		9/25/2007	579 cfu/100 mL	
		1/6/2008	1986 cfu/100 mL	
		7/15/2008	240 cfu/100 mL	
		8/19/2008	649 cfu/100 mL	
		8/26/2008	2419 cfu/100 mL	
		9/2/2008	488 cfu/100 mL	
		12/18/2008	276 cfu/100 mL	

Monitoring Summary

Sampling period: 7/11/2006 - 4/25/2011

Verde

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT RED ROCK CROSSING	VROAK031.38	100926	ADEQ, AGFD	Ambient
AT GRASSHOPPER POINT	VROAK031.52	101874	ADEQ, AGFD, Friends of the Forest	TMDL, Volunteer
BELOW MANZANITA CAMPGROUND	VROAK042.78	101871	ADEQ	TMDL, Ambient
AT SHANGRI LA LANE	VROAK038.78	105369	AGFD	Ambient
AT GRASSHOPPER POINT	VROAK038.67	101876	ADEQ, Friends of the Forest	TMDL, Volunteer
BELOW BEE CANYON NEAR INDIAN GARDENS	VROAK040.78	105919	ADEQ	TMDL
ABOVE MUNDS CANYON	VROAK040.62	105920	ADEQ	TMDL
BELOW HIGHWAY 179 BRIDGE	VROAK035.79	100460	ADEQ	TMDL
BELOW ENCINOSO PICNIC AREA	VROAK041.69	101872	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4-11) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(10-11) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(5-104) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Cadmium (dissolved)
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Copper (dissolved), lead (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
High	Collect more cadmium due to the exceedance. Good core parameter coverage.

Impairment Discussion
Oak Creek <i>E. coli</i> TMDL approved by EPA in late 2010. Ongoing water quality improvements being implemented through a 319(h) grant to Oak Creek Watershed Council.

OAK CREEK

Spring Creek - Verde River
15060202-016
12.7 Miles
Outstanding Arizona Water

Category 2
Attaining some uses

DWS - Inconclusive • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	10 ug/L	8/28/2007	21 ug/L	DWS is inconclusive with 2 exceedances in 4 samples (binomial).
		4/28/2008	17 ug/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	1/7/2008	408 cfu/100 mL	FBC is attaining with 0 exceedance in last three years of assessment period (7/08-6/11). Exceedance reported occurred with flood event in progress.
SSC	80 mg/L	8/28/2007	98 mg/L	A&Ww is attaining with 0 median exceedances in 4 samples.
		1/7/2008	99 mg/L	

Monitoring Summary

Sampling period: 6/21/2007 - 4/28/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BY ANDERSON STREET	VROAK002.96	105439	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2-3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Arsenic
Missing Core Parameters	Nitrate
Missing Seasonal Distribution	Nitrate
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect more arsenic due to exceedances. Collect at least 3 nitrate samples over 3 seasons of year to complete core parameter coverage.



AK CREEK

West Fork Oak Creek - Unnamed Trib at 345709 / 1114513
15060202-018A
5.0 Miles
Outstanding Arizona Water

Category 4A

Not attaining

IMPAIRMENT STATUS

E. coli (2006)

DWS - Attaining • FC - Attaining • FBC - Not attaining
AGI - Attaining • AGL - Attaining • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Cadmium ^d	0.341 µg/L ^{chronic} @ 160 mg/L hardness	7/19/2010	1.8 µg/L	A&Wc is inconclusive with 1 exceedance in 4 samples.
Selenium	2 µg/L	7/19/2010	2.6 µg/L	A&Wc is inconclusive with 1 exceedance in 4 samples.

Monitoring Summary

Sampling period: 8/3/2006 - 5/17/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT SLIDE ROCK CAMP-GROUND	VROAK045.64	105370	ADEQ	Ambient
AT BANJO BILL CAMP-GROUND	VROAK044.98	101867	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4-5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(6) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-6) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Cadmium (dissolved), selenium
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), selenium, zinc (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more selenium and dissolved cadmium samples to ascertain A&W attainment. Good core parameter coverage with small number of samples.

Impairment Discussion
Oak Creek <i>E. coli</i> TMDL approved by EPA in late 2010. Ongoing water quality improvements being implemented through a 319(h) grant to Oak Creek Watershed Council. No <i>E. coli</i> exceedances in 4 samples during the last 3 years of monitoring.



AK CREEK

Tributary at 345709 / 1114513 - Slide Rock SP
15060202-018B
1.5 Miles
Outstanding Arizona Water

Category 4A
Not attaining

IMPACTMENT

***E. coli* (2006)**

DWS - Inconclusive • FC - Inconclusive • FBC - Not attaining
AGI - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

STATUS

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	7/10/2006	275 cfu/100 mL	FBC remains not attaining with 23 SSM exceedances in 77 samples. No geometric mean exceedances.
		7/18/2006	3628 cfu/100 mL	
		7/25/2006	3628 cfu/100 mL	
		7/31/2006	3628 cfu/100 mL	
		8/8/2006	3628 cfu/100 mL	
		8/14/2006	1046 cfu/100 mL	
		8/21/2006	272 cfu/100 mL	
		8/28/2006	687 cfu/100 mL	
		9/4/2006	1300 cfu/100 mL	
		10/3/2006	579 cfu/100 mL	
		5/28/2007	261 cfu/100 mL	
		6/5/2007	261 cfu/100 mL	
		6/11/2007	2419 cfu/100 mL	
		6/26/2007	816 cfu/100 mL	
		7/2/2007	345 cfu/100 mL	
		7/9/2007	980 cfu/100 mL	
		7/16/2007	2419 cfu/100 mL	
		7/23/2007	325 cfu/100 mL	
		7/30/2007	2419 cfu/100 mL	
		8/6/2007	2419 cfu/100 mL	
		9/3/2007	648 cfu/100 mL	
		9/23/2007	307 cfu/100 mL	
		1/6/2008	435 cfu/100 mL	

Monitoring Summary

Sampling period: 7/2/2006 - 6/16/2009

Verde

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
SRSP AT HIGHWAY BRIDGE	VROAK043.73	100609	SRSP	Ambient
SRSP FOOT BRIDGE	VROAK043.79	102692	ADEQ	TMDL
SRSP LARGE POOL	VROAK043.81	102693	SRSP	Ambient
SRSP MIDSLIDE	VROAK043.83	102694	SRSP	Ambient
SRSP UPSTREAM	VROAK043.88	102695	SRSP	Ambient
ABOVE SLIDE ROCK STATE PARK	VROAK044.04	101868	Friends of the Forest	Volunteer

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-297) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids,

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), fluoride, arsenic, chromium, lead, boron, manganese, copper, lead, nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), fluoride, arsenic, chromium, lead, boron, manganese, copper, lead, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	All core parameters except <i>E. coli</i> , pH and DO need sample number and seasonal coverage.

Impairment Discussion
Oak Creek <i>E. coli</i> TMDL approved by EPA in late 2010. Ongoing water quality improvements being implemented through a 319(h) grant to Oak Creek Watershed Council.

PATTON SPRING DRAW

Headwaters - Webber Creek
15060203-506
2.2 Miles

Category 3
Inconclusive

PBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 5/11/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NORTH OF RIM ROAD WEST OF BAKER BUTTE	VRPSD001.63	107224	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, selenium	None	(1) pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead, nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

Low dissolved oxygen and high pH (1998)

A&Wc - Not Attaining • AGI - Inconclusive

AGL - Inconclusive • FBC - Inconclusive • FC - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: no current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Mid Lake	VRPEC-A	100063	ADEQ	Clean Lakes Program

Metals Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	N/A
Missing Core Parameters	All
Missing Seasonal Distribution	All
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Collect seasonally distributed core parameters for all designated uses. Collect samples during critical conditions to determine the effectiveness of watershed improvements to reduce nutrient loadings.

Impairment Discussion
There were not enough data to assess this lake. It remains not-attaining for low dissolved oxygen and pH. Nutrient TMDL completed in 2002.

PINE CREEK (PIE)

Headwaters - Unnamed tributary
15060203-049A
8.5 Miles

Category 1
Attaining all uses

DWS - Attaining • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Wc - Attaining

No Exceedances

Monitoring Summary

Sampling period: 5/11/2009 - 6/14/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR HEADWATERS	VRPIE016.49	100621	ADEQ	TMDL, Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4-5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-5) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Good core parameter coverage with small number of samples.

PINE CREEK (PIE)

Unnamed Trib at 342151 / 1112646 - East Verde River
15060203-049B
11.9 Miles

Category 2
Attaining some uses

Verde

DWS - Inconclusive • FC - Attaining • FBC - Inconclusive
AGI - Attaining • AGL - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	10 ug/L	8/15/2007	13 ug/L	DWS is inconclusive with 1 exceedance in 7 samples (binomial).
Dissolved oxygen	6.0 mg/L	8/15/2007	4.14 mg/L	A&Ww is inconclusive with 1 exceedance in 7 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM	7/30/2010	238 cfu/100 mL	FBC is inconclusive with only 1 exceedance in 6 samples in last three years of assessment period.

Monitoring Summary

Sampling period: 8/15/2007 - 6/23/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE EAST VERDE RIVER	VRPIE000.29	100620	ADEQ	Ambient
AT TONTO NATURAL BRIDGE	VRPIE008.19	108362	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4-7) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc, mercury	(1-7) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-7) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, arsenic, <i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Lead (dissolved), selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more arsenic, <i>E. coli</i> and dissolved oxygen samples due to exceedances. Good core parameter coverage with small number of samples.

PINE CREEK (PIN)

Headwaters - East Verde River
15060203-048
10.0 Miles

Category 3
Inconclusive

Verde

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 4/7/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
UPSTREAM OF SR 87 NEAR SUNFLOWER	VRPIN001.31	106984	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrate, lead, fluoride, arsenic, chromium, boron, manganese, copper, nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrate, lead, fluoride, arsenic, chromium, boron, manganese, copper, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Copper (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

ROUNDTREE CANYON CREEK

Headwaters - Tangle Creek
15060203-853
10.7 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 8/13/2007 - 4/30/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
3 MILES ABOVE TANGLE CREEK	VRR0U002.93	100631	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(1-4) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Nitrogen and phosphorus need seasonal distribution coverage.

FC - Inconclusive • FBC - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	1/7/2008	1733 cfu/100 mL	FBC is attaining. No exceedances in the last three years of the assessment period (7/08-6/11). Note: This exceedance was storm-related.

Monitoring Summary

Sampling period: 1/7/2008 - 2/7/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MOUNTAIN HOLLOW DRIVE	VRSHG000.77	107564	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2) Dissolved oxygen, <i>E. coli</i> , pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> samples to verify attainment status. All core parameters need seasonal distribution and sample number coverage.

SPRING CREEK (SPN)Coffee Creek - Oak Creek
15060202-022
6.4 Miles**Category 4A**

Not attaining

E. coli (2006)
IMPACT
STATUSFC - Attaining • FBC - Not attaining • AGI - Attaining
AGL - Attaining • A&Ww - Inconclusive**Exceedances**

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 ml, SSM	8/22/2006	1413 cfu/100 mL	FBC remains not attaining. No new data since last assessment.
		5/27/2007	770 cfu/100 mL	
		7/24/2007	1986 cfu/100 mL	
		8/7/2007	387 cfu/100 mL	
		8/14/2007	340 cfu/mL	

Monitoring Summary

Sampling period: 7/11/2006 - 6/16/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE WILLOW POINT ROAD	VRSPN002.09	101879	Friends of the Forest	Volunteer
ABOVE DIVERSION DAM	VRSPN000.78	100195	ADEQ	SEM

Metal Samples	Nutrients & Related Samples	Other Samples
(4-7) Antimony, arsenic, beryllium, cadmium, copper, lead, mercury	(2-4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-30) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	Nitrogen, phosphorus
Missing Seasonal Distribution	Nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Copper (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect at least 3 each nitrogen and phosphorus to represent 3 seasons of year and complete core parameter coverage.

Impairment Discussion
Oak Creek <i>E. coli</i> TMDL, expanded to include this reach, was approved by EPA in late 2010. Ongoing water quality improvements being implemented through a 319(h) grant to Oak Creek Watershed Council.

STERLING CANYON

Headwaters - Oak Creek
15060202-424
3.0 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	1/6/2008	41 mg/L	A&Wc is attaining. This exceedance occurred during a storm event and was excluded from assessment.

Monitoring Summary

Sampling period: 1/6/2008 - 4/24/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE STERLING SPRING HATCHERY	VRSTC000.10	101923	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-2) Dissolved oxygen, <i>E. coli</i> , pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	All core parameters need sample number and seasonal distribution coverage.

High pH and low dissolved oxygen (1998)

FC - Not attaining • FBC - Not attaining • AGI - Not attaining
AGL - Not attaining • A&Wc - Not attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	9.0 SU	4/16/2008	9.2 SU	AGI, AGL, A&Wc, and FBC remain not attaining with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 4/16/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM	VRSTN-A	100086	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved)

Priority	Monitoring Recommendations
High	Not enough data to assess – all core parameters need sample number and seasonal coverage.

Impairment Discussion
Remains not attaining for high pH and low DO (1998). TMDL completed in 2001.

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L	8/13/2007	43 ug/L	FBC is inconclusive with 1 exceedance in 4 samples (binomial).
Dissolved oxygen	6.0 mg/L	8/13/2007	5.58 mg/L	A&Ww is inconclusive with 1 exceedance in 4 samples (binomial).

Monitoring Summary

Sampling period: 8/13/2007 - 5/16/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE SHEEPS BRIDGE	VRSYH000.25	100656	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(1-4) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen, arsenic
Missing Core Parameters	None
Missing Seasonal Distribution	Nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect more arsenic and dissolved oxygen samples due to exceedances. Nitrogen and phosphorus need seasonal distribution coverage.

SYCAMORE CREEK (SYM)

Headwaters - Verde River
15060203-002
34.6 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	6/4/2008	4.31 mg/L	A&Ww is inconclusive with 1 exceedance in 2 samples (binomial).

Monitoring Summary

Sampling period: 6/4/2008 - 3/14/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT ROUND VALLEY UP-STREAM OF BRIDGE	VRSYM022.45	106402	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-2) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-2) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	Collect more dissolved oxygen samples to determine assessment status. All core parameters need sample number and seasonal distribution coverage.

SYCAMORE CREEK (SYW)

Cedar Creek - Verde River
15060202-026
11.7 Miles

Category 2

Attaining some uses

Verde

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 8/15/2007 - 11/4/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MOUTH	VRSYW000.77	100198	ADEQ	Ambient
BELOW SUMMERS SPRING	VRSYW001.72	100199	ADEQ	Ambient
AT MOUTH USGS	VRSYW000.05	101558	USGS	USGS Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2-4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i> , nitrogen, phosphorus
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect at least 3 dissolved oxygen, nitrogen, phosphorus, and <i>E. coli</i> samples over 3 seasons of year to complete core parameter coverage.

UNNAMED TRIB (UPM) TO PUMPHOUSE WASH

Headwaters - Pumphouse Wash
15060202-463
2.4 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 1/6/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW HIGHWAY 89	VRUPM000.01	106383	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(1) <i>E. coli</i> , pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/4/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FR 25 CROSSING	VRUES000.33	106803	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Mercury	None	(1) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

UNNAMED TRIB TO WILLOW CREEK

Headwaters - Willow Creek
15060202-756
8.2 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • A&Wc - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 1/26/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE RIFLE RANGE	VRUWC000.71	107602	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Lead	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) <i>E. coli</i>

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

FBC - Inconclusive • A&We - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 1/27/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW PRESCOTT LAKES GOLF COURSE	VRUWR000.47	107603	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

U

NNAMED TRIB (UOA) TO OAK CREEK
Headwaters - Oak Creek
15060202-938
1.2 Miles

Category 3
Inconclusive

PBC - Inconclusive • A&We - Inconclusive

No Exceedances

M

onitoring Summary
Sampling period: 1/6/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW PINE FLATS	VRUOA000.04	106382	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(1) <i>E. coli</i> , pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

FC - Attaining • FBC - Attaining • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 12/2/2006 - 9/16/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW PERKINSVILLE BRIDGE	VRVER164.63	100487	Sierra Club	Volunteer

Metal Samples	Nutrients & Related Samples	Other Samples
(5-9) Arsenic, mercury	(9) Nitrogen, phosphorus, total Kjeldahl nitrogen	(9-11) <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Most core parameters need seasonal distribution and/or sample number coverage. Originally listed under the turbidity standard (since repealed) and then SSC but with no evidence of continuing solids problems, this reach has been delisted.

VERDE RIVER

15060203 boundary - West Clear Creek
15060203-027
6.4 Miles

Category 2

Attaining some uses

FC - Attaining • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L	8/28/2007	33 ug/L	FBC is attaining with 1 exceedance in 13 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL	8/16/2008	3630 cfu/100 mL	FBC is inconclusive with 1 exceedance in 11 sample.
pH	9.0 SU	2/17/2007	9.4 SU	AGI, AGL, A&Ww, and FBC are attaining with 1 exceedance in 13 samples (binomial).

Monitoring Summary

Sampling period: 12/2/2006 - 8/16/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
WHITE BRIDGE	VRVER112.98	106101	Sierra Club	Volunteer
ABOVE WEST CLEAR CREEK USGS 09505570	VRVER107.53	100750	ADEQ	Ambient
0.25 MILE BELOW STATION 095055.50	VRVER112.88	104139	USGS	USGS
ABOVE DAMND S FINAL WASTE NEAR CAMP VERDE, AZ.	VRVER108.95	104120	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
(3-13) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2-12) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-15) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	Mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> samples due to exceedances. A number of core parameters need seasonal distribution.

IMPACT STATUS

Arsenic (2010)

DWS - Impaired • FC - Attaining • FBC - Attaining
 AGI - Attaining • AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	10 ug/L	8/22/2006	11 ug/L	DWS remains impaired with 23 exceedances in 31 samples. No new data in this assessment period.
		1/16/2007	14 ug/L	
		2/7/2007	14.5 ug/L	
		2/13/2007	13 ug/L	
		3/14/2007	13.1 ug/L	
		4/17/2007	12 ug/L	
		5/10/2007	11.3 ug/L	
		5/14/2007	12 ug/L	
		6/11/2007	14 ug/L	
		7/16/2007	15 ug/L	
		7/24/2007	14.2 ug/L	
		8/13/2007	15 ug/L	
		9/10/2007	16 ug/L	
		10/15/2007	16 ug/L	
		11/12/2007	19 ug/L	
		12/11/2007	14 ug/L	
		1/14/2008	11 ug/L	
		9/15/2008	11 ug/L	
		9/25/2008	11 ug/L	
		10/13/2008	11 ug/L	
		11/10/2008	11 ug/L	
		12/8/2008	12 ug/L	
		12/18/2008	11.9 ug/L	

Monitoring Summary

Sampling period: 7/11/2006 - 12/18/2008

Verde

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW BARTLETT LAKE	VRVER024.22	103133	SRP	Ambient
BELOW BARTLETT DAM USGS 09510000	VRVER022.53	100741	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(21-40) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(10-40) Nitrate, nitrite, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-40) Dissolved oxygen, <i>E. coli</i> , naphthalene, pH, SSC, total dissolved solids, styrene, , tetrachloroethylene, toluene, trichlorobenzene, trichloroethane 111, trichloroethane 112, trichloroethylene, trihalomethanes, vinylchloride, xylene, tetrachloroethane

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Arsenic
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Beryllium, dibromochloropropane, lead (dissolved), nitrate, selenium, tetrachloroethylene, thallium, hexachlorobutadiene, tetrachloroethane

Priority	Monitoring Recommendations
High	Collect more arsenic samples in support of TMDL development. Good core parameter coverage.

Impairment Discussion
Remains impaired for arsenic (2010).

FC - Attaining • FBC - Attaining • AGI - Inconclusive
 AGL - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 12/2/2006 - 9/16/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT BULL BASIN CANYON USGS	VRVER177.42	101566	Sierra Club	Volunteer
BELOW GRANITE CREEK USGS	VRVER187.15	101556	Sierra Club	Volunteer

Metal Samples	Nutrients & Related Samples	Other Samples
(6-10) Arsenic, mercury	(10) Nitrogen, phosphorus, total Kjeldahl nitrogen	(10-12) <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Most core parameters need seasonal distribution and/or sample number coverage.

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	6.5 SU	11/16/2010	6.28 SU	AGL, FBC, & AGL are attaining with 1 exceedance in 20 samples (binomial).
SSC	80 mg/L	8/14/2007	117 mg/L	A&Ww is attaining with 0 median exceedances in 4 samples.

Monitoring Summary

Sampling period: 12/2/2006 - 4/26/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT US MINE 2, USGS	VRVER169.04	101570	Sierra Club	Volunteer
ABOVE PERKINSVILLE BRIDGE	VRVER165.07	100672	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(8-17) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(7-15) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(5-20) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Low	Good core parameter coverage though possibly more sampling than warranted by overall water quality situation.

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
 AGL - Inconclusive • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 6/21/2007 - 6/21/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE BEAVER CREEK NEAR CAMP VERDE, AZ.	VRVER115.33	104144	USGS	USGS
ABOVE I-17 BRIDGE, CAMP VERDE, AZ	VRVER117.07	100484	USGS	USGS
BELOW HEAD OF EURE- KA DITCH NEAR CAMP VERDE, AZ.	VRVER121.99	104119	USGS	USGS
BELOW OK DITCH TURN OUT NEAR CORNVILLE, AZ.	VRVER124.79	104160	USGS	USGS

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	(3-4) Dissolved oxygen, pH

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead, nitrogen, phosphorus
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	All core parameters need seasonal distribution and most need sample number coverage as well.

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Mercury ^d	0.010 ug/L	2/27/2008	0.011 ug/L	A&Ww chronic is attaining. This exceedance occurred during a storm event and does not represent chronic conditions.
SSC	80 mg/L	8/10/2006	91 mg/L	A&Ww is attaining with no median exceedances in 14 samples. One single sample exceedance (8/14/2007) occurred during a storm event.
		8/14/2007	119 mg/L	
		8/23/2007	137 mg/L	

Monitoring Summary

Sampling period: 8/10/2006 - 12/3/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR CLARKDALE, AZ USGS 09504000	VRVER150.65	100738	USGS	Ambient
AT TUZIGOOT BRIDGE USGS	VRVER139.99	101546	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(10-31) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4-29) Ammonia, nitrite/nitrate, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-32) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	SSC does not appear to be a problem here and was delisted in 2010 from original impairment status under the old turbidity standard. With no other exceedances, large number of samples seems out of proportion to overall water quality situation.

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	9/26/2007	530 cfu/100 mL	FBC is attaining. No exceedances in last three years of assessment period (7/08-6/11), 10 samples total.
SSC	80 mg/L	9/27/2006	81 mg/L	A&Ww is attaining with no median exceedances in 10 samples.
		3/28/2007	99 mg/L	
		9/26/2007	282 mg/L	

Monitoring Summary

Sampling period: 9/27/2006 - 11/26/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW TANGLE CREEK USGS 09508500	VRVER053.21	100740	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(10) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(10) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(10) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect more <i>E. coli</i> to ascertain assessment status. Good core parameter coverage with relatively low number of samples.

VERDE RIVER

West Clear Creek - Fossil Creek
15060203-025
23.6 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	9.0 SU	2/17/2007	9.5 SU	AGI, AGL, A&Ww, and FBC are attaining with 1 exceedance in 10 samples (binomial).

Monitoring Summary

Sampling period: 12/2/2006 - 8/16/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BEASLEY FLAT	VRVER103.19	106122	Sierra Club	Volunteer
AT BEASLEY FLAT	VRVER103.73	100677	USGS	Ambient
NEAR CAMP VERDE, AZ USGS 09506000	VRVER099.45	100766	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(5-9) Arsenic, mercury	(8-9) Nitrogen, phosphorus, total Kjeldahl nitrogen	(2-10) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), boron, manganese, copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Several core parameters need both sample number and seasonal distribution coverage.

VERDE RIVER

Wet Bottom Mesa - Tangle Creek
15060203-019
8.2 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 7/11/2006 - 12/8/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE HORSESHOE RESERVOIR	VRVER054.62	103408	SRP	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(21-30) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(24-30) Nitrate, nitrite, phosphorus	(1-30) Naphthalene, pH, total dissolved solids, styrene, , tetrachloroethane, tetrachloroethylene, toluene, trichlorobenzene, trichloroethane 111, trichloroethane 112, trichloroethylene, trihalomethanes, vinylchloride, xylene

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , nitrogen
Lab Detection Limits Not Low Enough	Nitrate, selenium

Priority	Monitoring Recommendations
Low	Completing A&W and FBC core parameter coverage will move reach to attaining all uses status.

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Attaining

No Exceedances

Monitoring Summary

Sampling period: 7/20/2010 - 4/25/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW FOREST SERVICE ROAD 618	VRWLK000.99	108382	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved)

Priority	Monitoring Recommendations
Low	Good core parameter coverage with small number of samples.

Nitrogen, low dissolved oxygen, and high pH (EPA 2004)

FC - Inconclusive • FBC - Impaired • AGI - Impaired
 AGL - Impaired • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
pH	9.0 SU	8/8/2007	9.2 SU	AGI, AGL, A&Ww, and FBC remain impaired with 4 exceedances in 12 samples.
		7/22/2009	9.8 SU	
		6/25/2010	9.4 SU	
		6/16/2011	9.5 SU	

Monitoring Summary

Sampling period: 1/10/2007 - 6/16/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	VRWAT-B	101354	ADEQ	CLP
AT DAM	VRWAT-A	101353	AGFD	CLP
SOUTH END	VRWAT-SO	102564	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1-14) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-21) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(10-26) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), boron
Lab Detection Limits Not Low Enough	Cadmium (dissolved), lead (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more pH, nitrogen, and dissolved oxygen samples to support TMDL development. Collect boron and dissolved zinc to represent 3 seasons to complete core parameter coverage.

Impairment Discussion
Remains impaired for nitrogen, dissolved oxygen, and pH (EPA, 2004).

WEBBER CREEK

Headwaters - East Verde River
15060203-058
14.3 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Wc - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	7/20/2010	313 cfu/100 mL	FBC is inconclusive with 1 exceedance in 4 samples in last three years of assessment period. Single exceedance occurred during flood event.

Monitoring Summary

Sampling period: 5/12/2009 - 6/22/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW GERONIMO BOY SCOUT CAMP	VRWEB009.13	100690	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(3-5) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(4) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-5) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> samples to investigate exceedance. Good core parameter coverage.

PBC - Inconclusive • AGL - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 3/28/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE CONFLUENCE WITH WEBBER CREEK	VRWES000.03	108742	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(1) Arsenic, boron, manganese, selenium	None	(1) Dissolved oxygen, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	pH, <i>E. coli</i> , copper, lead
Missing Seasonal Distribution	pH, <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Not enough data to assess. All core parameters need sample number and seasonal distribution coverage.

WEST CLEAR CREEK

Headwaters - Meadow Canyon
15060203-026A
13.1 Miles

Category 2
Attaining some uses

FC - Attaining • FBC - Inconclusive • AGL - Attaining
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	8/31/2007	41 mg/L	A&Wc is inconclusive. Not enough samples to calculate a median.

Monitoring Summary

Sampling period: 8/31/2007 - 7/9/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT MAXWELL TRAIL	VRWCL036.37	100205	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	SSC
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Cadmium (dissolved), nickel (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more SSC samples to investigate exceedance. Good core parameter coverage with small number of samples.

WEST CLEAR CREEK

Meadow Canyon - Verde River
15060203-026B
23.5 Miles

Category 2

Attaining some uses

Verde

FC - Attaining • FBC - Attaining • AGI - Attaining
AGL - Attaining • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Biocriteria	IBI \geq 50 attaining IBI 40 - 49 inconclusive IBI \leq 39 violating	4/29/2008	IBI 48	A&Ww is inconclusive.

Monitoring Summary

Sampling period: 7/6/2006 - 6/9/2011

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT CAMPGROUND	VRWCL005.10	100689	ADEQ	Ambient
NEAR CAMP VERDE, AZ USGS 0950580	VRWCL010.66	100749	ADEQ, USGS	USGS, Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4-8) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1-15) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(3-20) Dissolved oxygen, <i>E. coli</i> , pH, SSC, simazine, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Biocriteria
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Mercury (dissolved), nickel (dissolved), nitrate (dissolved), nitrite (dissolved), selenium, dipthalate

Priority	Monitoring Recommendations
Medium	Collect more biocriteria to determine A&WW attainment status. Good core parameter coverage with relatively low number of samples.

WEST FORK OAK CREEK

Headwaters - Oak Creek
15060202-020
15.8 Miles
Outstanding Arizona Water

Category 2

Attaining some uses

FC - Attaining • FBC - Attaining • AGL - Attaining
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
SSC	25 mg/L	1/6/2008	133 mg/L	A&Wc is attaining with 0 median exceedances in 4 samples.

Monitoring Summary

Sampling period: 8/13/2007 - 6/16/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE FOURTH TRAIL CROSSING	VRWOK000.82	100693	ADEQ	Ambient
AT MOUTH	VRWOK000.10	101865	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc	(3-5) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(5-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved)

Priority	Monitoring Recommendations
Low	Collect nitrogen and phosphorus samples to reflect 3 seasons of year to complete core parameter coverage.

WET BEAVER CREEK

Long Canyon - Rarick
15060202-004
6.5 Miles

Category 2
Attaining some uses

Verde

FC - Attaining • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • A&Ww - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 8/29/2007 - 11/6/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT CAMPGROUNDS	VRWBV009.31	100684	USGS	USGS
UPSTREAM OF USGS GAGE NEAR RIMROCK	VRWBV012.56	102468	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2-3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(3-5) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Copper (dissolved), <i>E. coli</i>
Lab Detection Limits Not Low Enough	Lead (dissolved), nickel (dissolved), mercury (dissolved), selenium

Priority	Monitoring Recommendations
Low	Collect dissolved copper and <i>E. coli</i> samples to represent 3 seasons of year to complete core parameter coverage.

WET BEAVER CREEK

Rarick - Dry Beaver Creek
15060202-003
6.6 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Arsenic	30 ug/L	8/28/2007	49 ug/L	FBC is inconclusive with 2 exceedances in 4 samples (binomial).
		11/6/2007	32 ug/L	
<i>E. coli</i>	235 cfu/100 mL, SSM	8/28/2007	480 cfu/100 mL	FBC is inconclusive with 1 exceedance in 2 samples.
pH	6.5 SU	8/28/2007	6.05 SU	A&Ww, AGL, and FBC are inconclusive. Only one exceedance in the assessment period.
Biocriteria	IBI ≥ 50 attaining IBI 40-49 inconclusive IBI ≤ 39 violating	4/28/2008	IBI 45	A&Ww is inconclusive.
SSC	80 mg/L	8/28/2007	106 mg/L	A&Ww is attaining with no median exceedances.

Monitoring Summary

Sampling period: 8/28/2007 - 4/28/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW MONTEZUMA ROAD	VRWBV002.97	105440	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, zinc, selenium	(2-3) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-4) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, biocriteria

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Arsenic, <i>E. coli</i> , biocriteria
Missing Core Parameters	<i>E. coli</i>
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Mercury (dissolved), nickel (dissolved), selenium

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> , arsenic, pH, and biocriteria samples to determine attainment status. All core parameters need seasonal coverage.

WILLOW CREEK

Headwaters - Willow Creek Reservoir
15060202-762
17.6 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGL - Inconclusive
A&Wc - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
<i>E. coli</i>	235 cfu/100 mL, SSM	1/27/2008	308 cfu/100 mL	FBC is inconclusive with 1 exceedance in last three years of assessment period (7/08-6/11), 7 samples total.
		12/18/2008	365 cfu/100 mL	
SSC	25 mg/L	12/18/2008	268 mg/L	A&Wc is attaining. This exceedance occurred within 48 hours of a local storm event.

Monitoring Summary

Sampling period: 12/12/2007 - 1/26/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT PLEASANT VALLEY ABOVE JACK DRIVE	VRWIL004.32	107543	ADEQ	TMDL
AT WILDWOOD BELOW RIFLE RANGE	VRWIL007.25	107544	ADEQ	TMDL

Metal Samples	Nutrients & Related Samples	Other Samples
(4) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(8) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	<i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , copper, lead
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), pH

Priority	Monitoring Recommendations
Medium	Collect more <i>E. coli</i> samples to determine assessment status. All core parameters need seasonal distribution coverage.

WILLOW CREEK RESERVOIR

15060202-1660
294 Acres

Category 5
Impaired

Add Ammonia to the 303(d) list

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Ammonia	0.35 mg/L ^{chronic} @ pH > 9.0 and T = 19.4 °C	7/23/2009	1.04 mg/L	A&Ww is impaired with 2 exceedances in 3 samples.
	0.36 mg/L ^{chronic} @ pH > 9.0 and T = 19.3 °C	6/24/2010	0.39 mg/L	
Dissolved oxygen	6.0 mg/L	8/7/2007	4.1 mg/L	A&Ww is inconclusive with 1 exceedance in 4 samples (binomial).
pH	9.0 SU	8/7/2007	10 SU	AGI, AGL, A&Ww, and FBC are inconclusive with 3 exceedances in 4 samples (binomial).
		7/23/2009	10 SU	
		6/24/2010	9.9 SU	

Monitoring Summary

Sampling period: 8/7/2007 - 6/24/2010

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT DAM	VRWIC-A	101922	ADEQ	TMDL
AT MID LAKE	VRWIC-NLS	105804	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(1-3) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1-4) Ammonia, nitrate, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-4) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	pH, dissolved oxygen
Missing Core Parameters	<i>E. coli</i> , boron
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , boron, manganese, copper, lead, nitrogen, phosphorus
Lab Detection Limits Not Low Enough	Lead (dissolved), selenium

Priority	Monitoring Recommendations
High	Collect more ammonia samples to support TMDL development. Collect more dissolved oxygen and pH samples due to exceedances. All core parameters need seasonal coverage, <i>E. coli</i> and boron need sample number coverage as well.

Impairment Discussion
Add ammonia to the 303(d) list.

CHAPTER III

SUMMARY INFORMATION

This chapter provides a summary of assessed surface waters. Progress and comparisons with previous assessments are illustrated in the following chapter. Statewide summary statistics can provide a general sense of the status of water quality in Arizona. The statistics in this chapter exclude surface waters on tribal lands. Also, the statistics include waters that EPA listed as impaired in previous assessments.

Assessed Waters

Overall 54 (97801 acres) lakes and 370 (3763 miles) stream segments were assessed in this report. The following tables show the change in stream miles and lake acres assessed from the 2002 to 2012/14 assessment. These tables exclude the surface waters assessed in Category 3 (all uses “inconclusive”) because by default any water from which no data existed would belong in this category.

Total Waters Assessed

Support Type	Lakes/Acres					Streams/Miles				
	2002	2004	2006/8	2010	2012/14	2002	2004	2006/8	2010	2012/14
Estimated Waters	289630	289630	295590	295590	295590	90375	90375	90375	90375	90375
Water Assessed	40948	67340	88672	86234	93821	1671	2227	2806	2538	2098
Percent Assessed	14%	23%	30%	29%	32%	2.0%	2.5%	3.0%	2.8%	2.3%

*Waters Assessed excludes Category 3 – all uses assessed as “inconclusive”

*Estimated lake water size increased in 2006/08 due to enlargement of reservoirs.

The Total Waters Assessed table (above) indicates that a very low percentage of the state’s surface waters are assessed. This is primarily due to the fact that the majority of waters in Arizona are ephemeral (flowing in response only to precipitation events) and not easily sampled. The Total Perennial Waters Assessed table (below) adjusts for this by only looking at perennial lake acres and stream miles. Most ADEQ ambient monitoring is focused on perennial waters (waters that flow year round). Monitoring ephemeral and intermittent waters is limited to special investigations, such as TMDL development. In order increase the waters assessed ADEQ incorporates external data into the assessment. ADEQ requested external data submissions in January 2009 however; additional data was received outside of this formal request. Data from 22 external entities were used in the 2012/14 assessment. The largest data contributors are the Salt River Project, United States Geological Survey and Army Corp of Engineers. Approximately 50% of the data used in the assessment was from external sources.

External Data Contributors

Salt River Project	ASARCO	Slide Rock State Park	Sierra Club
United States Geological Survey	Friends of the Santa Cruz	BHP	United States Forest Service
Army Corp of Engineers	Arizona Game and Fish	National Park Service	Apache Nitrogen Products
Pinal Creek Group	Freeport McMoRan	Resolution Copper	Northern Arizona University
Various Volunteer Groups	City of Tempe		

Total Perennial Waters Assessed

Support Type	Lakes/Acres					Streams/Miles				
	2002	2004	2006/8	2010	2012/14	2002	2004	2006/8	2010	2012/14
Estimated Perennial Waters	168590	168590	174558	174558	174558	3530	3530	3530	3530	3530
Perennial Water Assessed	39873	66264	87773	85192	83588	1405	2081	2685	2102	1804
Percent Perennial Waters Assessed	24%	39%	50%	49%	48%	40%	59%	76%	60%	51%

* Perennial Waters Assessed excludes Category 3 – all uses assessed as “inconclusive”

As shown in the Perennial Waters Assessed table (above), a steady increase in the percent of perennial surface waters occurred from 2002 to 2008. However, the percent perennial waters assessed fell from 2008 to 2012/14, due to declining monitoring resources.

Another way to look at the effort and effectiveness of monitoring programs is to look at the number of lakes and stream reaches assessed. This is particularly revealing with lakes, as their sizes vary from less than an acre to 27,000 acres. Therefore, monitoring and assessing 20 small, but significant lakes might account for fewer acres than one large reservoir but provides for a larger sampling program in terms of the number of lakes sampled and assessed. This is shown when comparing 2006/8 to 2010 where the number of lakes assessed as attaining or impaired decreased by about 50% but the number of acres only decreased by approximately 2400 acres.

Number of Units and Acres/Miles Assessed

Support Type	Lakes					Stream Reaches				
	2002	2004	2006/8	2010	2012/14	2002	2004	2006/8	2010	2012/14
Assessment Units Assessed	30	51	79	39	39	137	172	298	213	193
Waters Assessed - Acres/ Miles	40948	67340	88672	86234	93821	1671	2227	2806	2538	2208

*Excluding Category 3 – all uses assessed as “inconclusive”

Assessed Waters by Category

The table below illustrates how the 54 lakes and 370 streams reaches were assessed in 2012/14. The greatest number of waters were assessed as inconclusive (Category 3).

Status of Assessed Waters 2012/14

Use Support Category	Lakes	Acres	Reaches	Miles
Category 1 (Attaining all uses)	0	0	18	189
Category 2 (Attaining some uses)	5	21233	73	978
Category 3 (Inconclusive)	15	3980	180	1585
Category 4 (4A,4A/4B,4B) (Not attaining)	12	2732	47	351
Category 5 (Impaired)	22	69857	55	689
Total	54	97801	373	3793

Approximately 22% of the lake acres and 28% of the stream miles assessed are attaining all or some of their uses, as compared to 78 and 50% respectively in the 2006/8 Assessment. Lake acres impaired or not attaining equal approximately 74% of the lake acres assessed. Impaired and not attaining stream miles equal approximately 28% of the stream miles assessed.

Designated Use Support

Narrative and numeric criteria were developed to protect the designated uses assigned to a surface water. Designated uses include agriculture, aquatic and wildlife, consumption, and recreation. The largest number of impairments is shown for the aquatic and wildlife designated use within both lakes and streams. The following table summarizes the designated use support by category for lakes and streams.

Lake Designated Use Support 2012/14

Support Type (Units)	Attaining	Inconc.	Impaired
Agricultural Irrigation	7	23	6
Agricultural Livestock Watering	5	30	6
Aquatic & Wildlife	2	31	21
Domestic Water Source	1	13	0
Fish Consumption	8	31	13
Body Contact	3	42	9
Support Type (Acres)	Attaining	Inconc.	Impaired
Agricultural Irrigation	29563	63604	600
Agricultural Livestock Watering	29382	65819	2013
Aquatic & Wildlife	20805	44456	32540
Domestic Water Source	8000	83102	0
Fish Consumption	3090	53247	40774
Body Contact	271	95493	2037

Stream Designated Use Support 2012/14

Support Type (by Units)	Attaining	Inconc.	Impaired
Agricultural Irrigation	66	81	3
Agricultural Livestock Watering	103	140	11
Aquatic & Wildlife	33	264	74
Domestic Water Source	15	30	3
Fish Consumption	120	156	7
Body Contact	66	255	52
Support Type (by Miles)	Attaining	Inconc.	Impaired
Agricultural Irrigation	987	1022	45
Agricultural Livestock Watering	1381	1653	97
Aquatic & Wildlife	406	2641	752
Domestic Water Source	178	481	48
Fish Consumption	1597	1739	63
Body Contact	906	2378	508

Fish Consumption Advisories

Fish consumption advisories have been issued on 16 lakes and portions of several rivers (see table and map below). The numbers in the table correspond to the labels on the map. These advisories are issued to inform the public about possible adverse health effects and they contain recommendations for how many fish meals (8-ounce portions) can safely be

consumed. Advisories may be directed at a specific subset of the population because some people are at greater risk (pregnant women and children). Additional information about fish tissue screening and fish advisories can be obtained by contacting ADEQ at (602) 771-4536 or Arizona Game and Fish Department (AGFD) at (602) 789-3260. Additional information can be obtained from the ADEQ (<http://www.azdeq.gov/environ/water/assessment/download/fish-0409.pdf>) and AGFD (http://www.azgfd.gov/h_f/fish_consumption.shtml) websites.

Fish Consumption Advisories (2012/14)

SURFACE WATER (year advisory issued)	SIZE	POLLUTANT OF CONCERN	ADVISORY
Bill Williams Watershed			
1. Alamo Lake (2004)	1414 a	Mercury	Meal = up to 8-ounces of largemouth bass or black crappie <ul style="list-style-type: none"> Children under age 6: no consumption Women of all ages: one meal/month Adult men: six meals/month
2. Coors Lake (2004)	229 a	Mercury	Meal = up to 8-ounces of largemouth bass or black crappie <ul style="list-style-type: none"> Children under age 6: no consumption Women of all ages: one meal/month Adult men: six meals per month
Colorado- Grand Canyon			
3. Lake Powell (2010)	9770 a	Mercury	<ul style="list-style-type: none"> Pregnant women and children under age of 6: One 4 oz meal per month of striped bass Women of childbearing age and children between 6 and 16 years of age: Two 8 oz meals per month of striped bass Adult women past childbearing age and men older than 16: eight 8 oz fish meals per month of striped bass
Colorado – Lower Gila Watershed			
No fish Consumption Advisories			
Little Colorado Watershed			
4. Lake Mary, Upper & Lower (2002)	1625 a	Mercury	Do not consume walleye fish and limit consumption of other fish to one 8-ounce fillet per month.
5. Long Lake (2003)	594 a	Mercury	Do not consume any fish.
6. Lyman Lake (2004)	1500 a	Mercury	<ul style="list-style-type: none"> Children under age 6: no consumption Women of childbearing age and children under age of 16: one meal/month Women not childbearing age: Consult healthcare provider Adult men: meals meals/month
7. Soldiers Lake (2003)	28 a	Mercury	Do not consume any fish.
8. Soldiers Annex Lake (2003)	122 a	Mercury	Do not consume any fish.
Middle Gila Watershed			
9. Lake Pleasant (2006)	8000 a	Mercury	<ul style="list-style-type: none"> Children under 6: no consumption of largemouth bass Women of all ages and children under 16: one 8-ounce meal per month of largemouth bass Adult men: Five 8-ounce meals per month largemouth bass
Santa Cruz Watershed			
10. Arivaca Lake (1996)	120 a	Mercury	Do not consume fish or other aquatic organisms.
11. Parker Canyon Lake (2002)	130 a	Mercury	<ul style="list-style-type: none"> Children under age of 6: no consumption of largemouth bass, bluegill or pike Children between ages 6 and 16: no consumption of largemouth bass, one 8-ounce meal/month of bluegill or pike Women of all ages: one 8-ounce meal/month largemouth bass or bluegill, two 8-ounce meals/month pike Adult men (above 15): Up to five 8-ounce meals/month.
12. Pena Blanca Lake (1995)	50 a	Mercury	Do not consume fish or other aquatic organisms.
Salt Watershed			
13. Roosevelt Lake (2006)	18345 a	Mercury	<ul style="list-style-type: none"> Children under 6: no consumption of largemouth bass or channel catfish Women of all ages and children under 16: one 8-ounce meal per month of largemouth bass or channel catfish Pregnant women: only consume one 8-ounce largemouth bass below 13 inches in length per month Adult men: Five 8-ounce meals per month largemouth bass or channel catfish
14. Tonto Creek (Bear Flat Campground to Roosevelt Lake) (2011)	62 mi	Mercury	<ul style="list-style-type: none"> Do not consume smallmouth bass, green sunfish and black bullhead catfish For common carp in this area: <ul style="list-style-type: none"> Pregnant women and children under the age of 6: No consumption Children between six and sixteen years of age: One 8 oz. fish meal/month All adults (16 years or older): Two 8 oz. fish meals per month

2012/2014 Statewide Fish Consumption Advisories

The map illustrates the distribution of fish consumption advisories across Arizona's major watersheds. Advisories are marked with red dots and numbers 1 through 14. The watersheds shown are Colorado-Grand Canyon, Little Colorado, Verde, Bill Williams, Middle Gila, Salt, Upper Gila, Santa Cruz, San Pedro, and Colorado-Lower Gila. Major streams are depicted in blue, and incorporated city boundaries are shown in grey. Indian Reservations are highlighted in orange. A legend, north arrow, and scale bar are included.

Legend

- Surface Water
- Major Streams
- Incorporated City Boundaries
- Indian Reservations
- Arizona's Ten Major Watersheds

Pollutants Causing Impairments

Although nutrients impair the greatest number of lakes, mercury impairs the greatest number of lake acres. Metals impair the largest number of stream reaches and miles followed by *Escherichia coli* (*E. coli*). The pollutants causing impairments are summarized in the following table.

Biocriteria and bottom deposit data are included in the waterbody data summary tables for informational purposes only and no assessment determinations will be made until the Impaired Water Identification Rule (A.A.C. R 18-11, Article 6) is updated.

Pollutants or Stressors Causing Impairment 2012/14

Pollutant Stressor Category	# Lakes	Acres	# Reaches	Miles
Nutrients and Related	33	7732.3	18	204.4
nitrogen	2	166	3	24.1
phosphorus	1	15	2	15.5
dissolved oxygen	10	3337.3	7	97.3
ammonia	8	1956	6	67.5
pH	10	2132	(see Metals & related)	
narrative nutrients	1	111	0	0
chlorophyll	1	15	0	0
Metals and related	12	67093	125	957.1
mercury in fish tissue	11	40049	6	61.7
selenium	1	27044	15	276.5
copper	0	0	40	259.6
zinc	0	0	17	65
pH	0	0	14	86.4
cadmium	0	0	14	55
beryllium	0	0	8	41.4
lead	0	0	4	40.9
arsenic	0	0	4	35.6
boron	0	0	2	33.6
manganese	0	0	1	1.4
Other	1	12.5	46	495.13
E. coli	1	12.5	30	312.5
SSC	0	0	13	162.43
chlorine	0	0	3	20.2

*Cannot total miles or acres because some waters are impaired by multiple stressors

CHAPTER IV

ACTION PLAN

Monitoring and assessments are part of a process to identify impaired waters and then reduce discharges of pollutants in the watershed. Surface waters in Appendix B Categories 4 and 5 are impaired for one or more of their designated uses. Impaired waters that require a Total Maximum Daily Load Analysis (TMDL) are in Category 5. Waters that are not attaining a designated use and do not require a TMDL (at this time) are in Category 4. For example, once the TMDL is completed, the surface water is moved from Category 5 to Category 4A. If actions are being implemented so that surface water standards will be met during the next assessment cycle, ADEQ and EPA may agree to place the surface water in Category 4B, rather than Category 5. See the Assessment Methods document for further information.

It is important to recognize that all waters in Category 4 and 5 are protected under Arizona's Antidegradation Rule (Arizona Administrative Code R18-11-107), as a "Tier 1" water. No further degradation by that pollutant is allowed. Potential pollutant loadings must be considered by ADEQ and several federal agencies before permits or certifications are issued (e.g. AZPDES discharge permits, grazing permits).

Water Quality Improvement Strategies- A New Approach

Historically, ADEQ's approach to improving water quality began with developing TMDLs for impaired waters. TMDLs identify sources of pollution, conditions leading the impairment and reductions necessary to attain water quality standards. Pollutant loading can originate from two types of sources: point and nonpoint. Point sources are discrete conveyances of pollutants discharged directly to a surface water, such as wastewater treatment plant outfalls. Nonpoint sources are non-discrete discharges, including stormwater runoff generated by activities such as grazing, agriculture and forestry.

Waste load reductions from point sources can be managed through permitting programs such as AZPDES. However, there are few regulatory actions available to control nonpoint pollution, so load reductions from these sources are primarily voluntary. Nonpoint source pollution may include excessive sediment caused by the denudation of grasslands, the location of roads, bacteria from wildlife and/or recreation, metals from road cuts through ore bodies, and pesticides from historic agricultural practices.

Historically, TMDLs would include a TMDL Implementation Plan (TIP) that identified generic strategies, agencies or groups who potentially would be involved in implementation, a tentative schedule, and how effectiveness of improvements would be determined. Once a TMDL study was complete the ADEQ Water Quality Improvement Grant Program (WQIGP) would then work with interested stakeholders to implement water quality improvement projects. Unfortunately, this approach has proven to be ineffective for reducing nonpoint source pollution.

IN 2013 ADEQ revised our approach by coordinating the TMDL and WQIPG programs with a goal of improving water quality. The focus has shifted from simply completing TMDLs to

developing plans that will be implemented. The combined ADEQ Nonpoint Source (NPS) Program considers many different factors when prioritizing nonpoint source activities:

- Human health concerns
- Ecosystem health including ecological risk
- The beneficial uses of water
- Value of the watershed or groundwater basin to the public
- Vulnerability of the surface or ground water to additional environmental degradation
- Implement-ability
- Likelihood of achieving demonstrable environmental results
- Extent of alliance with other federal agencies and states to coordinate resources and actions
- Readiness to proceed.

NPS Program staff meets routinely to discuss Arizona's impaired waters and what management strategies can be applied to them in order to work towards meeting water quality standards. The Impaired Waters Table is the tool that showcases these coordination efforts. Arizona reports on updates to this table annually in its Nonpoint Source Annual Report- <http://www.azdeq.gov/envIRON/water/watershed/download/nonpoint2013.pdf> This tool allows the program to focus efforts on high priority Targeted Watersheds, while keeping track of the potential role that nonpoint source resources may be able to play in other waters throughout the state. Arizona's current Targeted Watersheds and pollutants of concern are:

- San Francisco River/Blue River watershed (Blue River from headwaters to San Francisco River, San Francisco River from Blue River to Limestone Gulch and from Limestone Gulch to the Gila River; *E. coli*)
- Granite Creek watershed (headwaters to Watson Lake; nutrients and *E. coli*)
- Oak Creek watershed (headwaters to Spring Creek and the Spring Creek drainage; *E. coli*)
- San Pedro River watershed (Babocomari Creek to Dragoon Wash; *E. coli*)
- Little Colorado River Headwaters watershed (West Fork LCR to Lyman Lake – four reaches; sediment/turbidity).
- Santa Cruz River watershed (Mexico border to Sapor Wash; *E. coli*)
- Boulder Creek watershed (Wilder Creek to Butte Creek; arsenic, copper, and zinc)

Impaired Waters List (303(d)-List)

Appendix C contains the 2012/14 303(d)List of Impaired Waters while Appendix G contains the priority ranking of the 303(d) Listed waters. Waters located in Targeted Watershed are high priority as are those waters that ADEQ anticipates TMDL completion within the next two years.

Water Quality Improvement Grants

Clean Water Act Section 319(h) funds are used to implement on-the-ground water quality improvement projects that address nonpoint sources of pollution. ADEQ administers these grants through our WQIGP. Projects designed to reduce loadings of pollutants causing impairment are given highest priority. As documented in the table in Appendix F, even before a TMDL can be developed, funds are often distributed to implement projects that will reduce pollutant loadings.

The Water Quality Improvement Grant Manual provides details about the grant process. A copy of the manual and other information about this program can be obtained by contacting the grant coordinator at (602) 771-4635 or toll free at (800) 234-5677 (extension 771-6535) or from the internet at www.azdeq.gov/environ/water/watershed/fin.html

Determining Water Quality Improvements

Once a TMDL has been developed, the surface water is removed from the 303(d) list, but usually the water is still impaired and simply moves from the Category 5 to the Category 4A list of not attaining (still impaired) waters. To determine that a water is no longer impaired by a pollutant, ADEQ must conduct additional monitoring. These new data must be collected during critical conditions – those environmental factors (stream flow, season, runoff events, location, runoff events) during which an exceedance of a water quality standard or criterion is most likely to occur based on past exceedances or modeling results. There may also be critical locations or sites where exceedances are most likely to occur. Critical conditions and locations are identified in Appendix D. This list is constantly being revised as new information is analyzed.

The number of samples required to establish that a surface water is no longer impaired varies by type of pollutant, but the factors are specified in the Impaired Water Identification Rule (see 2012/14 Assessment Methods document). The delisting criteria vary depending on the criteria used during the listing. Waters that have been delisted in the 2012/14 Assessment are contained in Appendix E.

Although assessments are not compliance based actions, once an assessment unit is identified as impaired, there are indirect consequences on dischargers or potential activities in the drainage area. For example, any entity seeking a permit for a new discharge or renewing an existing permitted discharge under the National (or Arizona) Pollutant Discharge Elimination System (NPDES/AZPDES) Program must demonstrate that it will not increase loadings for the parameter identified as causing the impairment. During the permit review cycle, additional monitoring may be required for the pollutant of concern. If discharge monitoring data or ambient in-stream monitoring data is available from a permitted facility, it may be used to model the discharge load during the TMDL. Such data can be used to accurately quantify the contribution from waste loads. After the TMDL is completed, ADEQ may renegotiate the permit discharge levels if the TMDL indicates that a waste load reduction is necessary. Discharge monitoring and ambient in-stream monitoring is invaluable in developing realistic discharge limitations.

Another example is that federally approved actions, such as grazing permits, may also be restricted when a stream is listed as impaired, if those actions would contribute pollutant loadings. ADEQ actively coordinates with the U.S. Forest Service and the Bureau of Land Management to identify strategies that would minimize load reductions especially to impaired waters.

APPENDIX A

ASSESSMENT UNITS

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Agua Fria River	341853.9 / 1120358.6 - 341804.8 / 1120319.2	15070102-023	Middle Gila
Agua Fria River	State Route 169 - Yarber Wash	15070102-031B	Middle Gila
Alamo		15030204-0040A	Bill Williams
Alum Gulch	Headwaters - 312820/1104351	15050301-561A	Santa Cruz
Alum Gulch	312820 / 1104351 - 312917 / 1104425	15050301-561B	Santa Cruz
Alum Gulch	312917 / 1104425 - Sonoita Creek	15050301-561C	Santa Cruz
Alvord Park Lake		15060106B-0050	Middle Gila
American Gulch	Headwaters - No. Gila Co. WWTP	15060203-448A	Verde River
American Gulch	No. Gila County WWTP - East Verde River	15060203-448B	Verde River
Apache Lake		15060106A-0070	Salt River
Aravaipa Creek	Aravaipa Cyn Wilderness - San Pedro River	15050203-004C	San Pedro
Aravaipa Creek	Stowe Gulch - end Aravaipa C	15050203-004B	San Pedro
Arivaca Cienega		15050304-0001	Santa Cruz
Arivaca Creek	Headwaters - Puertocito/Alta Wash	15050304-008	Santa Cruz
Arivaca Lake		15050304-0080	Santa Cruz
Arnett Creek	Headwaters - Queen Creek	15050100-1818	Middle Gila
Arrastra Creek	Headwaters - Turkey Creek	15070102-848	Middle Gila
Ashurst Lake		15020015-0090	Little Colorado
Aspen Creek	Headwaters - Granite Creek	15060202-769	Verde River
Babbit Spring Wash	Headwaters - Upper Lake Mary	15020015-210	Little Colorado
Babocomari River	Banning Creek - San Pedro River	15050202-004	San Pedro
Bannon Creek	Headwaters - Granite Creek	15060202-774	Verde River
Barbershop Canyon Creek	Headwaters - East Clear Creek	15020008-537	Little Colorado
Bartlett Lake		15060203-0110	Verde River
Bear Canyon Lake		15020008-0130	Little Colorado
Bear Creek	Headwaters - Turkey Creek	15070102-046	Middle Gila
Bear Wallow Creek	N. and S. Forks Bear Wallow - Indian Res.	15060101-023A	Salt River
Beaver Creek	Headwaters - Black River	15060101-008	Salt River
Beaver Dam Wash	Utah border - Virgin River	15010010-009	Colorado-Grand Canyon
Becker Lake		15020001-0150	Little Colorado
Big Bug Creek	Eugene Gulch - Agua Fria River	15070102-034B	Middle Gila
Big Bug Creek	Headwaters - Eugene Gulch	15070102-034A	Middle Gila
Big Lake		15060101-0160	Salt River
Big Sandy River	Rupley - Alamo Lake North	15030201-001	Bill Williams
Big Sandy River	Stove Spring - Sycamore	15030201-006	Bill Williams
Big Sandy River	Sycamore - Burro Creek	15030201-004	Bill Williams
Bill Williams River	Alamo Lake - Castaneda Wash	15030204-003	Bill Williams
Bill Williams River	Mohave Wash - Colorado River	15030204-001	Bill Williams

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Billy Creek	Headwaters - Show Low Creek	15020005-019	Little Colorado
Black Canyon Lakes		15020010-0180	Little Colorado
Black River East Fork	Headwaters - Black River	15060101-009	Salt River
Black River West Fork	Indian Reservation Boundary - Black River	15060101-048	Salt River
Black River	Beaver Creek - Reservation Creek	15060101-007	Salt River
Bloody Tanks Wash	Schultze Ranch - Miami Wash	15060103-034B	Salt River
Blue Ridge Reservoir		15020008-0200	Little Colorado
Blue River	New Mexico border - KP Creek	15040004-026	Upper Gila
Blue River	strayhorse to san francisco	15040004-025B	Upper Gila
Boggy Creek (Bgy)	Headwaters - Centerfire Creek	15060101-361	Salt River
Boneyard Creek	Headwaters - East Fork Black	15060101-305	Salt River
Bonita Creek	Headwaters - East Verde River	15060203-478	Verde River
Bonita Creek	Park Creek - Gila River	15040005-030	Upper Gila
Boulder Creek	Butte Creek - Copper Creek	15030202-005B	Bill Williams
Boulder Creek	Copper Creek - Burro Creek	15030202-005C	Bill Williams
Boulder Creek	Tributary at 344114 / 1130334 - Wilder Creek	15030202-006B	Bill Williams
Boulder Creek	Wilder Creek - Butte Creek	15030202-005A	Bill Williams
Brewery Gulch	Headwaters - Mule Gulch	15080301-337	San Pedro
Bridle Creek	Headwaters - Santa Maria River	15030203-027	Bill Williams
Bright Angel Creek	Phantom Creek to Colorado River	15010001-019	Colorado-Grand Canyon
Burro Creek	Boulder Creek - Black Canyon Creek	15030202-004	Bill Williams
Burro Creek	Francis Creek - Boulder Creek	15030202-008	Bill Williams
Butte Creek	Headwaters - Burro Creek	15030202-163	Bill Williams
Butte Creek	Headwaters - Miller Creek	15060202-768	Verde River
Campaign Creek	Headwaters - Pinto Creek	15060103-037	Salt River
Canyon Creek	Headwaters - White Mtn. Apache	15060103-014	Salt River
Canyon Lake		15060106A-0250	Salt River
Carpenter Tank		15050304-0002	Santa Cruz
Carr Canyon Creek	Headwaters - Tributary at 31	15050202-406A	San Pedro
Cash Mine Creek	Headwaters - Hassayampa River	15070103-349	Middle Gila
Cave Creek South Fork	Headwaters - Cave Creek	15040006-849	Upper Gila
Cave Creek	Headwaters - Cave Creek Dam	15060106B-026A	Middle Gila
Cave Creek	Headwaters - South Fork Cave Creek	15040006-852A	Upper Gila
Cedar Canyon (Cedar Creek)	Headwaters - Turkey Creek	15070102-053	Middle Gila
Centerfire Creek	Headwaters - Black River	15060101-356	Salt River
Chaparral Gulch Arroyo	Headwaters - Agua Fria	15070102-739	Middle Gila
Chaparral Park Lake		15060106B-0300	Middle Gila
Cherry Creek	Tributary at 340509 / 110560	15060103-015B	Salt River
Chevelon Canyon	Black Canyon - Little Colorado River	15020010-001	Little Colorado
Chevelon Canyon	Headwaters - West Chevelon Creek	15020010-006	Little Colorado

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Chimenea Creek	Headwaters - Rincon Creek	15050302-140	Santa Cruz
Christopher Creek	Headwaters - Tonto Creek	15060105-353	Salt River
Cienega Creek	Headwaters - Gardner Canyon	15050302-006A	Santa Cruz
Cima Creek	Headwaters - Cave Creek	15040006-862	Upper Gila
City Creek	Headwaters - East Verde River	15060203-036	Verde River
Clear Creek	E. Clear Creek - Sand Draw	15020008-007	Little Colorado
Clear Creek	Sand Draw - Little Colorado	15020008-006	Little Colorado
Coleman Creek	Headwaters - Campbell Blue	15040004-040	Upper Gila
Collins Canyon	Headwaters - Parker Canyon Lake	15050301-226	Santa Cruz
Colorado River	Hoover to Mohave	15030101-015	Colorado-Lower Gila
Colorado River	Bill Williams River - Osborne Wash	15030104-020	Colorado-Lower Gila
Colorado River	Imperial Dam - Gila River	15030107-003	Colorado-Lower Gila
Colorado River	Lake Powell - Paria River	14070006-001	Colorado-Grand Canyon
Colorado River	Main Canal - Mexico border	15030107-001	Colorado-Lower Gila
Colorado River	Parashant Canyon - Diamond Creek	15010002-003	Colorado-Grand Canyon
Conklin Creek	Headwaters - Black River	15060101-026	Salt River
Coon Creek (Coo)	Tributary at 334642 / 110542	15060103-039B	Salt River
Coors Lake		15030202-5000	Bill Williams
Copper Basin Wash	Headwaters - Tributary at 342811/1123531	15030203-032A	Bill Williams
Cortez Park Lake		15060106B-0410	Middle Gila
Cottonwood Gulch	Headwaters - Pinto Creek	15060103-891	Salt River
Cox Gulch		15050301-560	Santa Cruz
Coyote Creek (Coy)	Headwaters - East Fork Black River	15060101-027	Salt River
Coyote Creek	New Mexico border - Little Colorado River	15020001-018	Little Colorado
Crescent Lake		15060101-0420	Salt River
Crystal Creek	Tributary at 361342 / 1121148 - Colorado River	15010002-018B	Colorado-Grand Canyon
Deer Creek (D4E)	Headwater - Rye Creek	15060105-018	Salt River
Deer Creek	Tributary at 362616 / 1122816 - Colorado River	15010002-019B	Colorado-Grand Canyon
Devils Canyon	Headwaters - Mineral Creek	15050100-1662	Middle Gila
Devils Chasm Creek	Tributary at 334846 / 110523	15060103-801B	Salt River
Dodson Wash	Headwaters - Rattlesnake Canyon	15050203-006	San Pedro
Dripping Springs	Springs Headwater - East Verde River	15060203-524	Verde River
Dry Creek	Headwaters - Oak Creek	15060202-021	Verde River
Dubacher Canyon	Headwaters - Mule Gulch	15080301-075	San Pedro
Eagle Creek	Headwaters - Tributary at 33	15040005-028A	Upper Gila
Eagle Creek	Sheep Wash - Gila River	15040005-025	Upper Gila
East Clear Creek	Headwaters - Yeager Canyon	15020008-009	Little Colorado
East Clear Creek	Yeager Canyon - Willow Creek	15020008-008	Little Colorado
East Turkey Creek	Headwaters - Tributary at 31	15040006-837A	Upper Gila
East Verde River	American Gulch - Verde River	15060203-022C	Verde River

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
East Verde River	Ellison Creek - American Gulch	15060203-022B	Verde River
East Verde River	Headwaters - Ellison Creek	15060203-022A	Verde River
Ellison Creek	Headwaters - East Verde River	15060203-459	Verde River
Eugene Gulch	Headwater - Big Bug Creek	15070102-768	Middle Gila
Fish Creek	Headwaters - Little Colorado River	15020001-211	Little Colorado
Fish Creek-Lower Salt River	Headwaters - Salt River	15060106A-583	Salt River
Fish Creek-Upper Salt River	Headwaters - Black River	15060101-032	Salt River
Five Point Mountain Tributary	Headwaters - Pinto Creek	15060103-885	Salt River
Flux Canyon	Headwaters - Alum Gulch	15050301-562	Santa Cruz
Fool'S Hollow Lake		15020005-0530	Little Colorado
Fossil Creek	Headwaters - Verde River	15060203-024	Verde River
Francis Creek	Headwaters - Burro Creek	15030202-012	Bill Williams
French Gulch	Headwaters - Hassayampa River	15070103-239	Middle Gila
Frye Canyon Creek	Headwaters - Frye Mesa Reservoir	15040005-988A	Upper Gila
Gibson Mine Tributary	Headwaters - Pinto Creek	15060103-887	Salt River
Gila River	Sand Tank - Painted Rock Reservoir	15070101-001	Middle Gila
Gila River	Rainbow Wash - Sand Tank	15070101-005	Middle Gila
Gila River	Gillespie Dam - Rainbow Wash	15070101-007	Middle Gila
Gila River	Rainbow Wash - Hassayampa	15070101-008	Middle Gila
Gila River	Hassayampa - Centennial Wash	15070101-009	Middle Gila
Gila River	Waterman Wash - Hassayampa River	15070101-010	Middle Gila
Gila River	Agua Fria River - Waterman Wash	15070101-014	Middle Gila
Gila River	Salt River - Agua Fria River	15070101-015	Middle Gila
Gila River	Coyote Wash - Fortuna Wash	15070201-003	Middle Gila
Gila River	San Pedro - Mineral Creek	15050100-008	Middle Gila
Gila River	Dripping Spring - San Pedro River	15050100-009	Middle Gila
Gila River	Apache Creek - Skully Creek	15040002-002	Upper Gila
Gila River	Bonita Creek - Yuma Wash	15040005-022	Upper Gila
Gila River	New Mexico border - Bitter Creek	15040002-004	Upper Gila
Gila River	Peck Wash - Underwood Wash	15040005-014	Upper Gila
Gila River	Skully Creek - San Francisco	15040002-001	Upper Gila
Gila River	Stockton Wash - Watson Wash	15040005-017	Upper Gila
Gila River	Underwood Wash - Bylas Salt	15040005-012	Upper Gila
Gila River	Yuma Wash - San Simon Creek	15040005-020	Upper Gila
Gold Gulch	Headwaters - Pinto Creek	15060103-894	Salt River
Goldwater Lake (Upper)		15060202-0575	Verde River
Gordon Canyon Creek	Headwaters - Hog Canyon	15060105-336A	Salt River
Government Canyon	Headwaters - Granite Creek	15060202-775	Verde River
Granite Creek	Headwaters - Willow Creek	15060202-059A	Verde River
Grant Creek	Headwaters - Tributary at 323809 / 1095635	15050201-033A	San Pedro

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Greenbush Draw	Tributary at 312156 / 1100214 - Tributary at 312257 / 1100417	15050202-425	San Pedro
Haigler Creek	Headwaters - Trib at 341223 / 1110011	15060105-012A	Salt River
Hall Creek	Headwaters - Little Colorado River	15020001-012	Little Colorado
Hannagan Creek	Headwaters - Beaver Creek	15060101-034	Salt River
Harshaw Creek	Headwaters - Sonoita Creek	15050301-025	Santa Cruz
Hassayampa River	Buckeye Canal - Gila River	15070103-001B	Middle Gila
Hassayampa River	Cottonwood Creek - Martinez Wash	15070103-004	Middle Gila
Hassayampa River	Headwaters - Copper Creek	15070103-007A	Middle Gila
Hassayampa River	Sols Wash - 8 Miles Below Wickenburg	15070103-002A	Middle Gila
Haunted Canyon	Headwaters - Pinto Creek	15060103-879	Salt River
Havasupai Creek	Havasupai Reservation - Colorado River	15010004-001	Colorado-Grand Canyon
Hay Creek	Headwater - West Fork Black River	15060101-353	Salt River
Hermit Creek	Hermit Pack Trail crossing - Colorado River	15010002-020B	Colorado-Grand Canyon
Hot Springs Canyon	Headwaters - San Pedro River	15050203-013	San Pedro
Humboldt Canyon	Headwaters - Alum Gulch	15050301-340	Santa Cruz
K P Creek	Headwaters - Blue River	15040004-029	Upper Gila
Kanab Creek	Jump - up Canyon - Colorado River	15010003-001	Colorado-Grand Canyon
Knight Creek	Wheeler Wash - Big Sandy Creek	15030201-019	Bill Williams
Knoll Lake		15020008-0750	Little Colorado
Lake Havasu		15030101-0590	Colorado-Lower Gila
Lake Mary (Upper)		15020015-0900	Little Colorado
Lake Mary Lower		15020015-0890	Little Colorado
Lake Mohave		15030101-0960	Colorado-Lower Gila
Lake Pleasant		15070102-1100	Middle Gila
Lake Powell		14070006-1130	Colorado-Grand Canyon
Lakeside Lake		15050302-0760	Santa Cruz
Lanphier Canyon Creek	Headwaters - Blue River	15040004-500	Upper Gila
Lee Valley Creek	Headwaters - Lee Valley Reservoir	15020001-232A	Little Colorado
Leroux Wash	Digger Wash - Little Colorado River	15020009-001	Little Colorado
Leslie Creek	Headwaters - Whitewater Draw	15080301-007	San Pedro
Lily Creek	Headwaters - Coyote Creek	15020001-350	Little Colorado
Little Ash Creek (Las)	Headwaters - Ash Creek	15070102-039	Middle Gila
Little Colorado East Fork	Headwaters - Little Colorado River	15020001-230	Little Colorado
Little Colorado River	Chevelon Creek - Cottonwood Wash	15020008-014	Little Colorado
Little Colorado River	Coyote Creek - Lyman Lake	15020001-005	Little Colorado
Little Colorado River	Lyman Lake - Diversion Dam	15020002-024	Little Colorado
Little Colorado River	Milky Wash - Silver Creek	15020002-005	Little Colorado
Little Colorado River	Nutrios Creek - Carnero Creek	15020001-009	Little Colorado
Little Colorado River	Porter Tank Draw - McDonalds Creek	15020008-017	Little Colorado
Little Colorado River	Puerco River - Leroux Wash	15020008-020	Little Colorado

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Little Colorado River	Unnamed Trib 342812/1092127-Big Hol-low Wash	15020002-023	Little Colorado
Little Colorado River	Silver Creek - Carr L Wash	15020002-004	Little Colorado
Little Colorado River	Washboard Wash - Puerco River	15020002-001	Little Colorado
Little Colorado River	Water Canyon - Nutrioso Creek	15020001-010	Little Colorado
Little Colorado River	West Fork Little Colorado -Water Canyon	15020001-011	Little Colorado
Little Colorado River	Zion Reservoir - Concho Creek	15020002-016	Little Colorado
Little Wolf Creek	Headwaters - Wolf Creek	15070102-834	Middle Gila
Locklin Canyon	Headwaters - Mule Gulch	15080301-345	San Pedro
Loma Verde	Headwaters - Tanque Verde Wash	15050302-268	Santa Cruz
Long Lake		15020008-0820	Little Colorado
Luna Lake		15040004-0840	Upper Gila
Lyman Reservoir		15020001-0850	Little Colorado
Lynx Creek	Headwaters - Unnamed Trib at 343429/1122105	15070102-033A	Middle Gila
Mamie Creek	Headwaters - Coyote Creek	15020001-351	Little Colorado
Mansfield Canyon	Headwaters - Temporal Gulch	15050301-621	Santa Cruz
Manzanita Creek	Headwater - Granite Creek	15060202-772	Verde River
Mckellips Park Lake		15060106B-0920	Middle Gila
Merritt Canyon	Headwaters - Parker Canyon Lake	15050301-346	Santa Cruz
Milk Creek	Headwaters - Nutrioso Creek	15020001-309	Little Colorado
Miller Canyon	Headwaters - Broken Arrow Ranch	15050202-409A	San Pedro
Miller Creek	Headwaters - Granite Creek	15060202-767	Verde River
Miller Springs Gulch	Headwaters - Pinto Creek	15060103-892	Salt River
Mineral Creek (Min)	Devil's Canyon - Gila River	15050100-012B	Middle Gila
Mineral Creek (Mnr)	Headwaters - Cedar Canyon Creek	15070102-823	Middle Gila
Mineral Creek	Headwaters - Concho Creek	15020002-648	Little Colorado
Monument Creek	Headwaters - Colorado River	15010002-845	Colorado-Grand Canyon
Morales Creek	Headwaters - Mule Gulch	15080301-331	San Pedro
Morrison Creek	Headwaters - Coyote Creek	15020001-020	Little Colorado
Mule Gulch	Bisbee WWTP Outfall - Highway 80 bridge	15080301-090C	San Pedro
Mule Gulch	Headwaters - Lavender Pit	15080301-090A	San Pedro
Mule Gulch	Lavender Pit - Bisbee WWTP Discharge	15080301-090B	San Pedro
Munds Creek	Headwaters - Oak Creek	15060202-415	Verde River
National Canyon Creek	Headwaters - Colorado River	15010002-016	Colorado-Grand Canyon
Nogales Wash	Mexico Border - Portrero Creek	15050301-011	Santa Cruz
North Granite Creek	Headwaters - Granite Creek	15060202-757	Verde River
Nutrioso Creek	Headwaters - Nelson Reservoir	15020001-017A	Little Colorado
Nutrioso Creek	Nelson Reservoir - Picnic Creek	15020001-017B	Little Colorado
Nutrioso Creek	Picnic Creek - Little Colorado River	15020001-015	Little Colorado
Oak Creek	Dry Creek - Spring Creek	15060202-017	Verde River
Oak Creek	Headwaters - West Fork Oak Creek	15060202-019	Verde River
Oak Creek	Slide Rock boundary - Dry Creek	15060202-018C	Verde River

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Oak Creek	Spring Creek - Verde River	15060202-016	Verde River
Oak Creek	Tributary at 345709 / 1114513 - Slide Rock SP	15060202-018B	Verde River
Oak Creek	West Fork Oak Creek - Unnamed Trib at 345709 / 1114513	15060202-018A	Verde River
Paddy Creek	Headwaters - Nutrioso Creek	15020001-305	Little Colorado
Painted Rock		150700201-1010	Middle Gila
Painted Rock Reservoir		15070101-1020A	Middle Gila
Paria River	Paria River, Utah border - Colorado River	14070007-123	Colorado-Grand Canyon
Parker Canyon Creek	Headwaters - Tributary at 312417 / 1102845	15050301-234A	Santa Cruz
Parker Canyon Lake		15050301-1040	Santa Cruz
Patton Spring Draw	Headwaters - Webber Creek	15060203-506	Verde River
Peachville Wash	Headwaters - Fortuna Wash	15050100-1846	Middle Gila
Peck Canyon	Headwaters - Bear Creek	15070102-858	Middle Gila
Peck's Lake		15060202-1060	Verde River
Pena Blanca Lake		15050301-1070	Santa Cruz
Pinal Creek	Lower Pinal Creek WTP discharge	15060103-280D	Salt River
Pine Creek	Headwaters - Unnamed Tributary	15060203-049A	Verde River
Pine Creek)	Unnamed Trib at 342151 / 1112646 - East Verde River	15060203-049B	Verde River
Pine Creek	Headwaters - East Verde Rive	15060203-048	Verde River
Pine Creek	Headwaters - Turkey Creek	15070102-069	Middle Gila
Pintail Lake		15020005-5000	Little Colorado
Pinto Creek	Headwaters - Tributary at 331927/1105456	15060103-018A	Salt River
Pinto Creek	Trib at 331927 / 110545 To West Fork Pinto Creek	15060103-018B	Salt River
Pinto Creek	West Fork Pinto Creek - Roosevelt Lake	15060103-018C	Salt River
Poland Walker Tunnel	Headwater - Big Bug Creek	15070102-334	Middle Gila
Potrero Creek	Interstate 19 - Santa Cruz River	15050301-500B	Santa Cruz
Potts Canyon	Headwater - Queen Creek	15050100-1856	Middle Gila
Powers Gulch	Headwaters - Haunted Canyon	15060103-884	Salt River
Puerco River	Dead Wash - NineMilesWash	15020007-007	Little Colorado
Queen Creek	Headwaters - Superior Mining Div. Outfall	15050100-014A	Middle Gila
Queen Creek	Potts Canyon - Whitlow Canyon	15050100-014C	Middle Gila
Queen Creek	Superior Mining WWTP - Potts Canyon	15050100-014B	Middle Gila
Rainbow Lake		15020005-1170	Little Colorado
Ramsey Canyon	Headwaters - Forest Road 110	15050202-404A	San Pedro
Reservation Creek	Indian Reservation - Black River	15060101-010	Salt River
Reynolds Creek	Headwaters - Workman Creek	15060103-202	Salt River
Riggs Creek	Headwaters - Nutrioso Creek	15020001-025	Little Colorado
Rio De Flag	Flagstaff WWTP outfall - San Francisco Wash	15020015-004B	Little Colorado

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Rio De Flag	Headwaters - Flagstaff WWTP outfall	15020015-004A	Little Colorado
River Reservoir		15020001-1220	Little Colorado
Roosevelt Lake		15060103-1240	Salt River
Rose Canyon Lake		15050302-1260	Santa Cruz
Roundtree Canyon Creek	Headwaters - Tangle Creek	15060203-853	Verde River
Royal Arch Creek	Headwaters - Colorado River	15010002-871	Colorado-Grand Canyon
Rudd Creek	Headwaters - Nutrioso Creek	15020001-026	Little Colorado
Rye Creek	Headwaters - Tonto Creek	15060105-014	Salt River
Sabino Creek	Tributary at 322328 / 1104700 - Tanque Verde Wash	15050302-014B	Santa Cruz
Saguaro Lake		15060106A-1290	Salt River
Salt River	23rd Ave. WWTP - Gila River	15060106B-001D	Middle Gila
Salt River	Canyon Creek - Cherry Creek	15060103-007	Salt River
Salt River	Pinal Creek - Roosevelt Lake	15060103-004	Salt River
Salt River	Stewart Mountain Dam - Verde River	15060106A-003	Salt River
San Francisco River	Blue River - Limestone Gulch	15040004-003	Upper Gila
San Francisco River	Headwaters - New Mexico Border	15040004-023	Upper Gila
San Francisco River	Limestone Gulch - Gila River	15040004-001	Upper Gila
San Francisco River	New Mexico border - Blue River	15040004-004	Upper Gila
San Pedro River	Aravaipa Creek - Gila River	15050203-001	San Pedro
San Pedro River	Babocomari Creek - Dragoon Wash	15050202-003	San Pedro
San Pedro River	Buehman Wash - Peppersauce Wash	15050203-008	San Pedro
San Pedro River	Charleston - Walnut Gulch	15050202-006	San Pedro
San Pedro River	Dragoon Wash - Tres Alomos Wash	15050202-002	San Pedro
San Pedro River	Hot Springs Creek - Redfield Canyon	15050203-011	San Pedro
San Pedro River	Mexico Border - Charleston	15050202-008	San Pedro
San Pedro River	Peppersauce Wash - Aravaipa	15050203-003	San Pedro
Santa Cruz River	Canada del Oro - HUC 1	15050301-001	Santa Cruz
Santa Cruz River	HUC 15050303 Boundary - Baum	15050301-005A	Santa Cruz
Santa Cruz River	Josephine Canyon - Tubac Bridge	15050301-008A	Santa Cruz
Santa Cruz River	Mexican border - Nogales WWTP	15050301-010	Santa Cruz
Santa Cruz River	Nogales WWTP - Josephine Canyon	15050301-009	Santa Cruz
Santa Cruz River	Roger Road WWTP Outfall - Intermittent Reach	15050301-003B	Santa Cruz
Santa Cruz River	Tubac Bridge - Sopori Wash	15050301-008B	Santa Cruz
Shinumo Creek	Tributary at 361821 / 1121803 - Colorado River	15010002-029B	Colorado-Grand Canyon
Show Low Creek	Headwaters - Linden Wash	15020005-012	Little Colorado
Show Low Lake		15020005-1380	Little Colorado
Silver Creek	Cottonwood Wash - SevenMilesDraw	15020005-003	Little Colorado
Silver Creek	Headwaters - Show Low Creek	15020005-013	Little Colorado
Silver Creek	SevenMilesDr - Little Colorado River	15020005-001	Little Colorado

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Silver Creek	Show Low Creek - Cottonwood	15020005-009	Little Colorado
Silver King Wash	Headwaters - Queen Creek	15050100-2085	Middle Gila
Skull Valley Wash	Headwaters - Kirkland Wash	15030203-017	Bill Williams
Slaughterhouse Gulch	Headwaters - Granite Creek	15060202-777	Verde River
Snake Creek	Headwaters To Black River	15060101-045	Salt River
Soldier Annex Lake		15020008-1430	Little Colorado
Soldier Lake		15020008-01440	Little Colorado
Sonoita Creek	1600 Feet Below Patagonia WWTP - Patagonia Lake	15050301-013C	Santa Cruz
Sonoita Creek	Patagonia WWTP Outfall - 1600 Feet Below	15050301-013B	Santa Cruz
South Fork Little Colorado	Headwaters - Little Colorado River	15020001-027	Little Colorado
Spring Canyon Creek	Headwaters - Colorado River	15010002-318	Colorado-Grand Canyon
Spring Creek (Spi)	Headwaters - Tonto Creek	15060105-010	Salt River
Spring Creek (Spn)	Coffee Creek - Oak Creek	15060202-022	Verde River
Sterling Canyon	Headwaters - Oak Creek	15060202-424	Verde River
Stinky Creek	Headwaters - Fort Apache Res	15060101-352A	Salt River
Stoneman Lake		15060202-1490	Verde River
Sycamore Creek (Syd)	Tank Canyon - Agua Fria River	15070102-024B	Middle Gila
Sycamore Creek (Syh)	Headwaters - Verde River	15060203-055	Verde River
Sycamore Creek (Sym)	Headwaters - Verde River	15060203-002	Verde River
Sycamore Creek (Syw)	Cedar Creek - Verde River	15060202-026	Verde River
Tapeats Creek	Headwaters - Colorado River	15010002-696	Colorado-Grand Canyon
Telegraph Canyon	Headwaters - Arnett Creek	15050100-1819	Middle Gila
Telephone Lake		15020005-1500	Little Colorado
Tempe Town Lake		15060106B-1588	Middle Gila
Temporal Gulch	Headwaters - Mansfield Canyon	15050301-617	Santa Cruz
Thompson Draw	Headwaters - Billy Creek	15060105-378	Salt River
Three R Canyon	Headwaters - 312819/1104558	15050301-558A	Santa Cruz
Three R Canyon	312819/1104558 - 312827/1104712	15050301-558B	Santa Cruz
Three R Canyon	312827/1104712 - Sonoita Creek	15050301-558C	Santa Cruz
Tonto Creek	Gun Creek - Greenback Creek	15060105-006	Salt River
Tonto Creek	Rye Creek - Gun Creek	15060105-008	Salt River
Tonto Creek (Ton)	Greenback Creek - Roosevelt Lake	15060105-004	Salt River
Tonto Creek (Ton)	Haigler Creek - Spring Creek	15060105-011	Salt River
Tonto Creek (Ton)	Headwaters - Tributary at 34 18 10 / 111 04 14	15060105-013A	Salt River
Tonto Creek (Ton)	Spring Creek - Rye Creek	15060105-009	Salt River
Tonto Creek (Ton)	Tributary at 341810 / 111041	15060105-013B	Salt River
Trib (Uq2) To Queen Creek	Headwaters - Queen Creek	15050100-1000	Middle Gila
Trib (Uq3) To Queen Creek	Headwaters (Near King's Crown Peak) - Queen Creek	15050100-1843	Middle Gila
Trib (Uqe) To Queen Creek	Headwaters - Queen Creek	15050100-991	Middle Gila

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Trib (Ut1) To Tonto Creek	Headwaters - Tonto Creek	15060105-647	Salt River
Trib (Ut2) To Tonto Creek	Headwaters - Tonto Creek	15060105-365	Salt River
Trib (Uto) To Tonto Creek	Headwaters - Tonto Creek	15060105-372	Salt River
Trib To Big Bug Creek (Ub1)	Headwater - Big Bug Creek	15070102-234	Middle Gila
Trib To Big Bug Creek	Headwater - Big Bug Creek	15070102-134	Middle Gila
Trib To Cash Mine Creek	Headwaters - Cash Mine Creek	15070103-415	Middle Gila
Trib To Christopher Creek	Headwaters - Christopher Creek	15060105-362	Salt River
Trib To Dry Mineral Creek	Headwaters - Dry Mineral Creek	15050100-212	Middle Gila
Trib To Thompson Draw	Headwaters - Thompson Draw	15060105-379	Salt River
Trout Creek	Cow Creek - Knight Creek	15030201-014	Bill Williams
Turkey Creek (Try)	Headwaters - Campbell Blue	15040004-060	Upper Gila
Turkey Creek	Headwaters - Tributary At 341928/1122128	15070102-036A	Middle Gila
Turkey Creek	Tributary At 341928 / 1122128 - Poland Creek	15070102-036B	Middle Gila
Tuscumbia Creek	Headwaters - Bear Creek	15070102-850	Middle Gila
Twin Pond		15080302-0001	San Pedro
Unnamed Adit To Alum Gulch	Headwaters - Alum Gulch	15050301-891	Santa Cruz
Unnamed Adit To Alum Gulch	Headwaters - Alum Gulch	15050301-892	Santa Cruz
Unnamed Trib (Ua2) To Alum Gulch	Headwaters - Alum Gulch	15050301-641	Santa Cruz
Unnamed Trib (Ua3) To Alum Gulch	Headwaters - Alum Gulch	15050301-642	Santa Cruz
Unnamed Trib (Ua5)To Alum Gulch	Headwaters - Alum Gulch	15050301-893	Santa Cruz
Unnamed Trib (Ual) To Alum Gulch	Headwaters - Alum Gulch	15050301-640	Santa Cruz
Unnamed Trib (Uoa) To Oak Creek	Headwaters - Oak Creek	15060202-938	Verde River
Unnamed Trib (Upm) To Pumphouse Wash	Headwaters - Pumphouse Wash	15060202-463	Verde River
Unnamed Trib To Alum Gulch	Headwaters - Alum Gulch	15050301-894	Santa Cruz
Unnamed Trib To Copper Basin Wash Trib	Headwaters - Unnamed Trib to Copper Basin Wash	15030203-045	Bill Williams
Unnamed Trib To Copper Basin Wash	Headwaters - Copper Basin Wash	15030203-4291	Bill Williams
Unnamed Trib To Cox Gulch	Headwaters - Cox Gulch	15050301-890	Santa Cruz
Unnamed Trib To Finch Wash	Headwaters - Finch Wash	15030203-044	Bill Williams
Unnamed Trib To Harshaw Creek	Headwaters - Harshaw Creek	15050301-888	Santa Cruz
Unnamed Trib To Lyman Lake (Uly)	Headwaters - Lyman Lake	15020001-772	Little Colorado
Unnamed Trib To Parker Canyon Lake	Headwaters - Parker Canyon Lake	15050301-877	Santa Cruz

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Unnamed Trib To Sycamore Cr E. Fork	Headwaters - Sycamore Creek East Fork	15060203-262	Verde River
Unnamed Trib To Three R Canyon	Headwaters - Three R Canyon	15050301-889	Santa Cruz
Unnamed Trib To Willow Creek	Headwaters - Willow Creek	15060202-756	Verde River
Unnamed Trib To Willow Reservoir	Headwaters to Willow Reservoir	15060202-758	Verde River
Unnamed Trib To Winwood Canyon	Headwater - Winwood Canyon	15080301-342	San Pedro
Unnamed Trib2 To Alum Gulch	Headwaters - Alum Gulch	15050301-895	Santa Cruz
Verde River	15060203 boundary-West Clear Creek	15060203-027	Verde River
Verde River	Bartlett Dam - Camp Creek	15060203-004	Verde River
Verde River	Granite Creek - Hell Canyon	15060202-052	Verde River
Verde River	Hell Canyon - Unnamed Trib (065)	15060202-038	Verde River
Verde River	Oak Creek - Beaver Creek	15060202-015	Verde River
Verde River	Sycamore Creek - Oak Creek	15060202-025	Verde River
Verde River	Tangle Creek - Ister Flat	15060203-018	Verde River
Verde River	Unnamed Trib (065) - Railroad Draw	15060202-037	Verde River
Verde River	West Clear Creek - Fossil Creek	15060203-025	Verde River
Verde River	Wet Bottom Mesa - Tangle Creek	15060203-019	Verde River
Vigil Run	Cienega - Little Colorado River	15020001-174	Little Colorado
Virgin River	Beaver Dam Wash - Big Bend Wash	15010010-003	Colorado-Grand Canyon
Virgin River	Black Rock Gulch - Sullivans Canyon	15010010-006	Colorado-Grand Canyon
Virgin River	Sullivans Canyon - Beaver Dam Wash	15010010-004	Colorado-Grand Canyon
Walker Creek	Head Water to Wet Beaver Creek	15060202-259	Verde River
Walnut Creek (Wan)	Pine Lake - Billy Creek	15020005-238	Little Colorado
Ward Canyon	Headwaters - Turkey Creek	15050201-433	San Pedro
Watson Lake		15060202-1590	Verde River
Webber Creek	Headwaters - East Verde River	15060203-058	Verde River
Webber Spring	Spring Headwater - Webber Creek	15060203-516	Verde River
West Clear Creek	Headwaters - Meadow Canyon	15060203-026A	Verde River
West Clear Creek	Meadow Canyon - Verde River	15060203-026B	Verde River
West Fork Little Colorado	Government Springs - Little Colorado River	15020001-013B	Little Colorado
West Fork Little Colorado	Headwaters - Government Springs	15020001-013A	Little Colorado
West Fork Oak Creek	Headwaters - Oak Creek	15060202-020	Verde River
West Fork Pinto Creek	Headwaters - Pinto Creek	15060103-066	Salt River
Wet Beaver Creek	Long Canyon - Rarick	15060202-004	Verde River
Wet Beaver Creek	Rarick - Dry Beaver Creek	15060202-003	Verde River
Whitford Canyon	Wood Camp Canyon - Potts Canyon	15050100-1860	Middle Gila
Willow Creek Reservoir		15060202-1660	Verde River
Willow Creek	Headwaters - Willow Creek Reservoir	15060202-762	Verde River

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUM	WATERSHED
Willow Springs Lake		15020010-1670	Little Colorado
Winwood Canyon	Headwaters - Mule Gulch	15080301-340	San Pedro
Woodland Reservoir		15020005-1690	Little Colorado
Woods Canyon Creek	Headwaters - Chevelon Creek	15020010-084	Little Colorado
Workman Creek	Headwaters - Reynolds Creek	15060103-195A	Salt River

APPENDIX B

ASSESSMENT UNITS BY CATEGORIES

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/ MILES
Salt Watershed			
Bear Wallow Creek	N. and S. Forks Bear Wallow - Indian Res.	15060101-023A	5.9 m
Boggy Creek (Bgy)	Headwaters - Centerfire Creek	15060101-361	7.1 m
Boneyard Creek	Headwaters - East Fork Black	15060101-305	7.6 m
Canyon Creek	Headwaters - White Mtn. Apache	15060103-014	8.6 m
Centerfire Creek	Headwaters - Black River	15060101-356	8.7 m
Cherry Creek	Tributary at 340509 / 110560	15060103-015B	40.9 m
Hay Creek	Headwater - West Fork Black River	15060101-353	4.5 m
Santa Cruz Watershed			
Sonoita Creek	Patagonia WWTP Outfall - 1600 Feet Below	15050301-013B	0.3 m
Upper Gila Watershed			
Bonita Creek	Park Creek - Gila River	15040005-030	14.6 m
East Turkey Creek	Headwaters - Tributary at 31	15040006-837A	7.8 m
Lanphier Canyon Creek	Headwaters - Blue River	15040004-500	7 m
Turkey Creek (Try)	Headwaters - Campbell Blue	15040004-060	4.7 m
Verde Watershed			
Fossil Creek	Headwaters - Verde River	15060203-024	19.9 m
Pine Creek (Pie)	Headwaters - Unnamed Tributary	15060203-049A	8.5 m
Verde River	Sycamore Creek - Oak Creek	15060202-025	25.2 m
Verde River	Hell Canyon - Unnamed Trib (065)	15060202-038	6 m
Verde River	Tangle Creek - Ister Flat	15060203-018	4.1 m
Walker Creek	Head Water - Wet Beaver Creek	15060202-259	7.8 m
Category 1 summary: 18 stream reaches (189 miles)			

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/ MILES	PARAMETERS WITH EXCEED-ANCES*
Bill Williams Watershed				
Bill Williams River	Mohave Wash - Colorado River	15030204-001	17.5 m	
Boulder Creek	Copper Creek - Burro Creek	15030202-005C	4.5 m	arsenic
Burro Creek	Francis Creek - Boulder Creek	15030202-008	13.8 m	biocriteria
Copper Basin Wash	Headwaters - Tributary at 342811/1123531	15030203-032A	4.6 m	copper, cadmium, selenium
Colorado/Grand Canyon Watershed				
Colorado River	Lake Powell - Paria River	14070006-001	16.3 m	dissolved oxygen, mercury in fish tissue
Colorado - Lower Gila Watershed				
Lake Havasu		15030101-0590	19783 a	beryllium, <i>E. coli</i>
Little Colorado Watershed				
Barbershop Canyon Creek	Headwaters - East Clear Creek	15020008-537	10.229 m	biocriteria
Blue Ridge Reservoir		15020008-0200	292 a	ph
Chevelon Canyon	Headwaters - West Chevelon Creek	15020010-006	31.58 m	dissolved oxygen, SSC, biocriteria
Coyote Creek	New Mexico border - Little Colorado River	15020001-018	29 m	dissolved oxygen, <i>E. coli</i> , SSC
East Clear Creek	Headwaters - Yeager Canyon	15020008-009	38 m	biocriteria
Fish Creek	Headwaters - Little Colorado River	15020001-211	9 m	
Hall Creek	Headwaters - Little Colorado River	15020001-012	14.3 m	mercury in fish tissue, biocriteria
Lee Valley Creek	Headwaters - Lee Valley Reservoir	15020001-232A	1.6 m	dissolved oxygen, SSC, bottom deposits
Little Colorado East Fork	Headwaters - Little Colorado River	15020001-230	10.6 m	<i>E. coli</i> , mercury in fish tissue, SSC, lead,
Rudd Creek	Headwaters - Nutrioso Creek	15020001-026	10.6 m	ammonia ,copper, dissolved oxygen
Silver Creek	Cottonwood Wash - SevenMiles-Draw	15020005-003	10.9 m	SSC
Show Low Lake		15020005-1380	129.5 a	dissolved oxygen
Silver Creek	SevenMilesDr - Little Colorado River	15020005-001	9.3 m	biocriteria
Silver Creek	Headwaters - Show Low Creek	15020005-013	33.6 m	dissolved oxygen, <i>E. coli</i> , SSC
South Fork Little Colorado	Headwaters - Little Colorado River	15020001-027	11.9 m	dissolved oxygen
Walnut Creek (Wan)	Pine Lake - Billy Creek	15020005-238	6.2 m	dissolved oxygen, pH, SSC
West Fork Little Colorado	Government Springs - Little Colorado River	15020001-013B	2.2 m	SSC, copper

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/ MILES	PARAMETERS WITH EXCEED- ANCES*
Middle Gila Watershed				
Agua Fria River	State Route 169 - Yarber Wash	15070102-031B	17.8 m	<i>E. coli</i>
Hassayampa River	Buckeye Canal - Gila River	15070103-001B	2.3 m	
Hassayampa River	Sols Wash - 8 Miles Below Wickenburg	15070103-002A	9.2 m	dissolved oxygen
Hassayampa River	Cottonwood Creek - Martinez Wash	15070103-004	32.1 m	dissolved oxygen, manganese, bottom deposits
Little Ash Creek (Las)	Headwaters - Ash Creek	15070102-039	17.7 m	<i>E. coli</i>
Mckellips Park Lake		15060106B-0920	6 a	
Salt Watershed				
Beaver Creek	Headwaters - Black River	15060101-008	13.121 m	dissolved oxygen ,biocriteria
Black River West Fork	Indian Reservation Boundary - Black River	15060101-048	14.6 m	dissolved oxygen, SSC
Campaign Creek	Headwaters - Pinto Creek	15060103-037	16.579 m	
Coon Creek (Coo)	Tributary at 334642 / 110542	15060103-039B	10.1 m	dissolved oxygen, SSC
Coyote Creek (Coy)	Headwaters - East Fork Black River	15060101-027	8.9 m	
Devils Chasm Creek	Tributary at 334846 / 110523	15060103-801B	1.6 m	<i>E. coli</i>
Fish Creek-Up- per Salt River	Headwaters - Black River	15060101-032	13.8 m	copper, nitrogen
Gold Gulch	Headwaters - Pinto Creek	15060103-894	3.3 m	
Haigler Creek	Headwaters - Trib at 341223 / 1110011	15060105-012A	15.4 m	copper
Hannagan Creek	Headwaters - Beaver Creek	15060101-034	7.2 m	
Haunted Canyon	Headwaters - Pinto Creek	15060103-879	6.8 m	
Pinal Creek	Lower Pinal Creek WTP discharge	15060103-280D	6.4 m	selenium
Reynolds Creek	Headwaters - Workman Creek	15060103-202	6.8 m	ph, selenium
Saguaro Lake		15060106A-1290	1022 a	dissolved oxygen, <i>E. coli</i> , nitrogen
Spring Creek (Spi)	Headwaters - Tonto Creek	15060105-010	20.5 m	dissolved oxygen, pH, thallium, nitrogen, phosphorus
West Fork Pinto Creek	Headwaters - Pinto Creek	15060103-066	11.6 m	nitrogen, bottom deposits
Workman Creek	Headwaters - Reynolds Creek	15060103-195A	7.1 m	dissolved oxygen

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/ MILES	PARAMETERS WITH EXCEED- ANCES*
San Pedro Watershed				
Aravaipa Creek	Stowe Gulch - end Aravaipa Creek	15050203-004B	15.5 m	dissolved oxygen
Babocomari River	Banning Creek - San Pedro River	15050202-004	32.7 m	<i>E. coli</i> , SSC
Grant Creek	Headwaters - Tributary at 323809 / 1095635	15050201-033A	6.8 m	biocriteria
Ramsey Canyon	Headwaters - Forest Road 110	15050202-404A	4.4 m	dissolved oxygen, biocriteria
Santa Cruz Watershed				
Parker Canyon Creek	Headwaters - Tributary at 312417 / 1102845/1	15050301-234A	3 m	dissolved oxygen, iron, mercury in fish tissue, SSC
Sabino Creek	Tributary at 322328 104700 - Tanque Verde Wash	15050302-014B	14.1 m	<i>E. coli</i> , biocriteria
Santa Cruz River	Tubac Bridge - Sopori Wash	15050301-008B	8.9 m	dissolved oxygen
Santa Cruz River	Mexican border - Nogales WWTP	15050301-010	17 m	<i>E. coli</i>
Upper Gila Watershed				
Blue River	New Mexico border - KP Creek	15040004-026	21.4 m	dissolved oxygen, biocriteria, SSC
Coleman Creek	Headwaters - Campbell Blue	15040004-040	7.3 m	biocriteria
Eagle Creek	Sheep Wash - Gila River	15040005-025	41.8 m	biocriteria
Eagle Creek	Headwaters - Tributary at 33	15040005-028A	11.8 m	<i>E. coli</i> , lead, manganese, SSC
Frye Canyon Creek	Headwaters - Frye Mesa Reservoir	15040005-988A	5 m	biocriteria
San Francisco River	New Mexico border - Blue River	15040004-004	20.9 m	<i>E. coli</i> , SSC
San Francisco River	Headwaters - New Mexico Border	15040004-023	13.1 m	dissolved oxygen, SSC
Verde Watershed				
East Verde River	Headwaters - Ellison Creek	15060203-022A	8.1 m	<i>E. coli</i> , biocriteria
Ellison Creek	Headwaters - East Verde River	15060203-459	10.8 m	<i>E. coli</i>
Oak Creek	Spring Creek - Verde River	15060202-016	12.7 m	arsenic, <i>E. coli</i> , SSC
Pine Creek (Pie)	Unnamed Trib at 342151 112646 - East Verde River	15060203-049B	11.9 m	arsenic, dissolved oxygen, <i>E. coli</i>
Roundtree Canyon Creek	Headwaters - Tangle Creek	15060203-853	10.7 m	
Sycamore Creek (Syh)	Headwaters - Verde River	15060203-055	13.1 m	arsenic, dissolved oxygen
Sycamore Creek (Syw)	Cedar Creek - Verde River	15060202-026	11.7 m	
Verde River	Unnamed Trib (065) - Railroad Draw	15060202-037	10.7 m	arsenic, <i>E. coli</i> , pH
Verde River	Granite Creek - Hell Canyon	15060202-052	16.4 m	
Verde River	Wet Bottom Mesa - Tangle Creek	15060203-019	8.2 m	
Verde River	West Clear Creek - Fossil Creek	15060203-025	23.6 m	pH
Verde River	15060203 boundary - West Clear Creek	15060203-027	6.4 m	
Webber Creek	Headwaters - East Verde River	15060203-058	14.3 m	<i>E. coli</i>

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/ MILES	PARAMETERS WITH EXCEED- ANCES*
West Clear Creek	Headwaters - Meadow Canyon	15060203-026A	13.1 m	SSC
West Clear Creek	Meadow Canyon - Verde River	15060203-026B	23.5 m	biocriteria
West Fork Oak Creek	Headwaters - Oak Creek	15060202-020	15.8 m	SSC
Wet Beaver Creek	Long Canyon - Rarick	15060202-004	6.5 m	
Category 2 summary: 5 lakes (21233 acres), 73 stream reaches (978 miles)				
*Parameters with exceedances observed in monitoring data. Sites with no exceedances are in this category due to insufficient information to determine full attainment (datagaps).				

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/MILES	PARAMETERS WITH EXCEEDANCES*
Bill Williams Watershed				
Big Sandy River	Rupley - Alamo Lake North	15030201-001	10.2 m	bottom deposits
Big Sandy River	Sycamore - Burro Creek	15030201-004	13.8 m	SSC, bottom deposits
Big Sandy River	Stove Spring - Sycamore	15030201-006	2.8 m	dissolved oxygen, SSC, bottom deposits, biocriteria,
Bridle Creek	Headwaters - Santa Maria River	15030203-027	25.773 m	<i>E. coli</i>
Burro Creek	Boulder Creek - Black Canyon Creek	15030202-004	17.2 m	
Butte Creek	Headwaters - Burro Creek	15030202-163	2.8 m	
Francis Creek	Headwaters - Burro Creek	15030202-012	23.8 m	biocriteria
Knight Creek	Wheeler Wash - Big Sandy Creek	15030201-019	9.9 m	selenium, SSC
Skull Valley Wash	Headwaters - Kirkland Wash	15030203-017	19.9 m	
Trout Creek	Cow Creek - Knight Creek	15030201-014	32.1 m	lead, selenium
Unnamed Trib To Copper Basin Wash	Headwaters - Copper Basin Wash	15030203-4291	1.2 m	copper
Unnamed Trib To Copper Basin Wash Trib	Headwaters - Unnamed Trib to Copper Basin Wash	15030203-045	0.5 m	copper ,lead
Unnamed Trib To Finch Wash	Headwaters - Finch Wash	15030203-044	0.5 m	
Colorado/Grand Canyon Watershed				
Beaver Dam Wash	Utah border - Virgin River	15010010-009	9.6 m	<i>E. coli</i> , lead, SSC
Bright Angel Creek	Phantom Creek - Colorado River	15010001-019	1.9 m	
Crystal Creek	Tributary at 361342 121148 - Colorado River	15010002-018B	9.1 m	arsenic
Deer Creek	Tributary at 362616 122816 - Colorado River	15010002-019B	4.9 m	
Havas Creek	Havasupai Reservation - Colorado River	15010004-001	3.3 m	
Hermit Creek	Hermit Pack Trail crossing - Colorado River	15010002-020B	3.5 m	selenium
Kanab Creek	Jump - up Canyon - Colorado River	15010003-001	12.8 m	selenium
Monument Creek	Headwaters - Colorado River	15010002-845	3.5 m	dissolved oxygen, selenium
National Canyon Creek	Headwaters - Colorado River	15010002-016	3.2 m	selenium
Royal Arch Creek	Headwaters - Colorado River	15010002-871	5.1 m	selenium
Shinumo Creek	Tributary at 361821 121803 - Colorado River	15010002-029B	8.8 m	
Spring Canyon Creek	Headwaters - Colorado River	15010002-318	6 m	selenium
Tapeats Creek	Headwaters - Colorado River	15010002-696	12.8 m	
Virgin River	Black Rock Gulch - Sullivans Canyon	15010010-006	10.3 m	<i>E. coli</i> , selenium, SSC, bottom deposits

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/ MILES	PARAMETERS WITH EXCEED-ANCES*
Little Colorado Watershed				
Ashurst Lake		15020015-0090	201 a	
Babbit Spring Wash	Headwaters - Upper Lake Mary	15020015-210	2.3 m	dissolved oxygen
Becker Lake		15020001-0150	88.6 a	dissolved oxygen, pH
Billy Creek	Headwaters - Show Low Creek	15020005-019	7.6 m	dissolved oxygen
Chevelon Canyon	Black Canyon - Little Colorado River	15020010-001	19.3 m	dissolved oxygen
Clear Creek	Sand Draw - Little Colorado	15020008-006	35.5 m	
Clear Creek	E. Clear Creek - Sand Draw	15020008-007	28.3 m	
East Clear Creek	Yeager Canyon - Willow Creek	15020008-008	17.4 m	biocriteria
Fool'S Hollow Lake		15020005-0530	152 a	dissolved oxygen
Knoll Lake		15020008-0750	59 a	lead
Leroux Wash	Digger Wash - Little Colorado River	15020009-001	19.8 m	chromium
Lily Creek	Headwaters - Coyote Creek	15020001-350	3.1 m	
Little Colorado River	Washboard Wash - Puerco River	15020002-001	6.3 m	
Little Colorado River	Milky Wash - Silver Creek	15020002-005	16.5 m	dissolved oxygen, SSC
Little Colorado River	Zion Reservoir - Concho Creek	15020002-016	7.3 m	arsenic, barium, beryllium, chromium, copper
Little Colorado River	Unnamed Trib 342812/1092127 - Big Hollow Wash	15020002-023	16.3 m	antimony, arsenic, barium, beryllium, boron
Little Colorado River	Lyman Lake - Diversion Dam	15020002-024	13.9 m	antimony, arsenic, barium, beryllium, boron
Little Colorado River	Chevelon Creek - Cottonwood Wash	15020008-014	8.5 m	dissolved oxygen, SSC
Little Colorado River	Porter Tank Draw - McDonalds Creek	15020008-017	17.4 m	antimony, arsenic, barium, beryllium, chromium
Little Colorado River	Puerco River - Leroux Wash	15020008-020	5.8 m	SSC
Mamie Creek	Headwaters - Coyote Creek	15020001-351	4.6 m	
Milk Creek	Headwaters - Nutrioso Creek	15020001-309	5 m	SSC, biocriteria
Mineral Creek	Headwaters - Concho Creek	15020002-648	25.8 m	dissolved oxygen
Morrison Creek	Headwaters - Coyote Creek	15020001-020	4.1 m	dissolved oxygen, SSC
Nutrioso Creek	Headwaters - Nelson Reservoir	15020001-017A	13.3 m	copper, dissolved oxygen, SSC
Paddy Creek	Headwaters - Nutrioso Creek	15020001-305	5 m	

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/MILES	PARAMETERS WITH EXCEEDANCES*
Riggs Creek	Headwaters - Nutrioso Creek	15020001-025	7.8 m	SSC
Rio De Flag	Headwaters - Flagstaff WWTP outfall	15020015-004A	34.5 m	
Rio De Flag	Flagstaff WWTP outfall - San Francisco Wash	15020015-004B	3.7 m	
River Reservoir		15020001-1220	140 a	pH
Show Low Creek	Headwaters - Linden Wash	15020005-012	19.5 m	SSC, biocriteria
Silver Creek	Show Low Creek - Cottonwood	15020005-009	10.7 m	dissolved oxygen, <i>E. coli</i> , SSC
Unnamed Trib To Lyman Lake (Uly)	Headwaters - Lyman Lake	15020001-772	1 m	
Vigil Run	Cienega - Little Colorado River	15020001-174	1.9 m	dissolved oxygen
West Fork Little Colorado	Headwaters - Government Springs	15020001-013A	9.1 m	dissolved oxygen
Willow Springs Lake		15020010-1670	160.5 a	
Woodland Reservoir		15020005-1690	15.8 a	dissolved oxygen, pH
Woods Canyon Creek	Headwaters - Chevelon Creek	15020010-084	12.9 m	dissolved oxygen
Middle Gila Watershed				
Arrastra Creek	Headwaters - Turkey Creek	15070102-848	2 m	
Bear Creek	Headwaters - Turkey Creek	15070102-046	8.1 m	
Big Bug Creek	Headwaters - Eugene Gulch	15070102-034A	5.7 m	copper, lead
Big Bug Creek	Eugene Gulch - Agua Fria River	15070102-034B	23.3 m	
Cave Creek	Headwaters - Cave Creek Dam	15060106B-026A	32.909 m	
Cedar Canyon (Cedar Creek)	Headwaters - Turkey Creek	15070102-053	11.6 m	lead
Chaparral Gulch Arroyo	Headwaters - Agua Fria	15070102-739	9.9 m	lead, zinc
Devils Canyon	Headwaters - Mineral Creek	15050100-1662	12.9 m	copper
Eugene Gulch	Headwater - Big Bug Creek	15070102-768	3.1 m	copper
Gila River	23rd Ave WWTP - Gila River	15060106B-001D	14.1 m	
Gila River	Salt River - Agua Fria River	15070101-001	18.9 m	
Gila River	Agua Fria River - Waterman Wash	15070101-005	16.9 m	
Gila River	Waterman Wash - Hassayampa River	15070101-007	5.1 m	
Gila River	Hassayampa - Centennial Wash	15070101-009	7 m	
Gila River	Gillespie Dam - Rainbow Wash	15070101-010	13.9 m	
Gila River	Rainbow Wash - Sand Tank	15070101-014	11.9 m	
Gila River	Sand Tank - Painted Rock Reservoir	15070101-015	3.7 m	
Gila River	Dripping Spring - San Pedro River	15050100-009	11 m	<i>E. coli</i> , SSC

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/ MILES	PARAMETERS WITH EXCEED-ANCES*
Little Wolf Creek	Headwaters - Wolf Creek	15070102-834	3 m	cadmium, copper, lead, zinc
Lynx Creek	Headwaters - Unnamed Trib at 343429/1122105	15070102-033A	13.1 m	
Mineral Creek (Mnr)	Headwaters - Cedar Canyon Creek	15070102-823	4 m	
Painted Rock Reservoir		15070101-1020A	100 a	lead
Peachville Wash	Headwaters - Fortuna Wash	15050100-1846	2.1 m	
Peck Canyon	Headwaters - Bear Creek	15070102-858	7 m	
Pine Creek	Headwaters - Turkey Creek	15070102-069	6.3 m	cadmium, copper, lead, zinc
Poland Walker Tunnel	Headwater - Big Bug Creek	15070102-334	0.4 m	arsenic, copper, lead
Potts Canyon	Headwater - Queen Creek	15050100-1856	5.6 m	
Silver King Wash	Headwaters - Queen Creek	15050100-2085	5.1 m	arsenic, opper, lead
Sycamore Creek (Syd)	Tank Canyon - Agua Fria River	15070102-024B	17.6 m	
Telegraph Canyon	Headwaters - Arnett Creek	15050100-1819	6.1 m	lead
Tempe Town Lake		15060106B-1588	220 a	pH
Trib To Big Bug Creek	Headwater - Big Bug Creek	15070102-134	0.8 m	copper,lead, zinc
Trib To Big Bug Creek (Ub1)	Headwater - Big Bug Creek	15070102-234	1.34 m	copper,lead,zinc
Trib To Dry Mineral Creek	Headwaters - Dry Mineral Creek	15050100-212	1.4 m	copper, pH
Turkey Creek	Headwaters - Tributary At 341928/1122128	15070102-036A	9.1 m	
Tuscumbia Creek	Headwaters - Bear Creek	15070102-850	4.1 m	
Whitford Canyon	Wood Camp Canyon - Potts Canyon	15050100-1860	4.1 m	lead
Salt Watershed				
Big Lake		15060101-0160	439.6 a	
Black River	Beaver Creek - Reservation Creek	15060101-007	13.1 m	
Black River East Fork	Headwaters - Black River	15060101-009	26.7 m	
Bloody Tanks Wash	Schultze Ranch - Miami Wash	15060103-034B	6.645 m	copper
Conklin Creek	Headwaters - Black River	15060101-026	7.4 m	
Cottonwood Gulch	Headwaters - Pinto Creek	15060103-891	1.9 m	
Deer Creek (D4E)	Headwater - Rye Creek	15060105-018	11.9 m	
Fish Creek-Lower Salt River	Headwaters - Salt River	15060106A-583	16.3 m	
Gordon Canyon Creek	Headwaters - Hog Canyon	15060105-336A	12.7 m	
Miller Springs Gulch	Headwaters - Pinto Creek	15060103-892	1.6 m	

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/ MILES	PARAMETERS WITH EXCEED-ANCES*
Powers Gulch	Headwaters - Haunted Canyon	15060103-884	3.8 m	copper
Reservation Creek	Indian Reservation - Black River	15060101-010	3.3 m	
Rye Creek	Headwaters - Tonto Creek	15060105-014	17.8 m	
Snake Creek	Headwaters - Black River	15060101-045	6.2 m	
Stinky Creek	Headwaters - Fort Apache Res	15060101-352A	2.1 m	dissolved oxygen, SSC
Thompson Draw	Headwaters - Billy Creek	15060105-378	7.1 m	<i>E. coli</i>
Trib (Ut1) To Tonto Creek	Headwaters - Tonto Creek	15060105-647	1.2 m	
Trib (Ut2) To Tonto Creek	Headwaters - Tonto Creek	15060105-365	1.8 m	
Trib (Uto) To Tonto Creek	Headwaters - Tonto Creek	15060105-372	2.9 m	
Trib To Christo-pher Creek	Headwaters - Christopher Creek	15060105-362	2.4 m	
Trib To Thomp-son Draw	Headwaters - Thompson Draw	15060105-379	0.8 m	
San Pedro Watershed				
Aravaipa Creek	Aravaipa Cyn Wilderness - San Pedro River	15050203-004C	12.6 m	dissolved oxygen, <i>E. coli</i> , lead, SSC
Carr Canyon Creek	Headwaters - Tributary at 31	15050202-406A	3.8 m	
Dodson Wash	Headwaters - Rattlesnake Canyon	15050203-006	20.5 m	selenium
Dubacher Can-yon	Headwaters - Mule Gulch	15080301-075	1 m	copper, pH
Greenbush Draw	Tributary at 312156 / 1100214 - Tributary at 312257 / 1100417	15050202-425	11.5 m	<i>E. coli</i> , lead
Hot Springs Canyon	Headwaters - San Pedro River	15050203-013	25.9 m	
Leslie Creek	Headwaters - Whitewater Draw	15080301-007	24.5 m	
Locklin Canyon	Headwaters - Mule Gulch	15080301-345	1 m	lead, pH
Miller Canyon	Headwaters - Broken Arrow Ranch	15050202-409A	4.3 m	biocriteria
Morales Creek	Headwaters - Mule Gulch	15080301-331	2 m	copper
San Pedro River	Dragoon Wash - Tres Alomos Wash	15050202-002	15.4 m	arsenic, chromium, copper, dissolved oxygen, <i>E. coli</i> , lead, SSC, selenium
San Pedro River	Charleston - Walnut Gulch	15050202-006	8.9 m	<i>E. coli</i> , lead, SSC, bottom deposits
San Pedro River	Peppersauce Wash - Aravaipa	15050203-003	21.3 m	
San Pedro River	Buehman Wash - Peppersauce Wash	15050203-008	16.4 m	
San Pedro River	Hot Springs Creek - Redfield Can-yon	15050203-011	16 m	arsenic, chromium, copper ,dissolved oxygen, <i>E. coli</i> , lead, mercury in fish tissue, SSC, selenium

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/ MILES	PARAMETERS WITH EXCEED-ANCES*
Twin Pond		15080302-0001	1 a	
Unnamed Trib To Winwood Canyon	Headwater - Winwood Canyon	15080301-342	0.2 m	copper, lead
Ward Canyon	Headwaters - Turkey Creek	15050201-433	3 m	dissolved oxygen
Winwood Canyon	Headwaters - Mule Gulch	15080301-340	1.4 m	
Santa Cruz Watershed				
Arivaca Cienega		15050304-0001	3 a	
Arivaca Creek	Headwaters - Puertocito/Alta Wash	15050304-008	14.9 m	dissolved oxygen
Carpenter Tank		15050304-0002	3 a	
Chimenea Creek	Headwaters - Rincon Creek	15050302-140	8 m	
Cienega Creek	Headwaters - Gardner Canyon	15050302-006A	18 m	
Collins Canyon	Headwaters - Parker Canyon Lake	15050301-226	3 m	
Flux Canyon	Headwaters - Alum Gulch	15050301-562	3.9 m	copper, pH, zinc
Loma Verde	Headwaters - Tanque Verde Wash	15050302-268	4 m	pH
Mansfield Canyon	Headwaters - Temporal Gulch	15050301-621	5.2 m	copper, lead, pH
Merritt Canyon	Headwaters - Parker Canyon Lake	15050301-346	4.3 m	
Temporal Gulch	Headwaters - Mansfield Canyon	15050301-617	14 m	
Unnamed Adit To Alum Gulch	Headwaters - Alum Gulch	15050301-891	1 m	pH
Unnamed Adit To Alum Gulch	Headwaters - Alum Gulch	15050301-892	1 m	copper, pH
Unnamed Trib (Ua3) To A.G.	Headwaters - Alum Gulch	15050301-642	0.3 m	copper, pH, zinc
Unnamed Trib (Ua5) To A.G.	Headwaters - Alum Gulch	15050301-893	0.4 m	
Unnamed Trib (Ua1) To A.G.	Headwaters - Alum Gulch	15050301-640	0.3 m	
Unnamed Trib To A.G.	Headwaters - Alum Gulch	15050301-894	1 m	copper, pH
Unnamed Trib To Parker Canyon Lake	Headwaters - Parker Canyon Lake	15050301-877	1 m	
Unnamed Trib2 To Alum Gulch	Headwaters - Alum Gulch	15050301-895	1 m	copper, pH, zinc
Upper Gila Watershed				
Cave Creek S.F.	Headwaters - Cave Creek	15040006-849	8.1 m	
Cima Creek	Headwaters - Cave Creek	15040006-862	3.1 m	
Gila River	Underwood Wash - Bylas Salt	15040005-012	9.2 m	<i>E. coli</i>
Gila River	Peck Wash - Underwood Wash	15040005-014	4.9 m	dissolved oxygen, <i>E. coli</i>
Gila River	Stockton Wash - Watson Wash	15040005-017	7 m	dissolved oxygen, <i>E. coli</i>
Gila River	Yuma Wash - San Simon Creek	15040005-020	7.8 m	<i>E. coli</i>
K P Creek	Headwaters - Blue River	15040004-029	12.1 m	

SURFACE WATER	REACH DESCRIPTION	REACH/LAKE NUMBER	ACRES/MILES	PARAMETERS WITH EXCEEDANCES*
Verde Watershed				
American Gulch	Headwaters - No. Gila Co. WWTP	15060203-448A	2.6 m	<i>E. coli</i>
American Gulch	No. Gila County WWTP - East Verde River	15060203-448B	3.6 m	<i>E. coli</i>
Aspen Creek	Headwaters - Granite Creek	15060202-769	5.8 m	<i>E. coli</i> , nitrogen, phosphorus, SSC
Bannon Creek	Headwaters - Granite Creek	15060202-774	6.2 m	dissolved oxygen
Bartlett Lake		15060203-0110	2375.5 a	arsenic, dissolved oxygen
Bonita Creek	Headwaters - East Verde River	15060203-478	5.1 m	dissolved oxygen, <i>E. coli</i> , SSC
City Creek	Headwaters - East Verde River	15060203-036	6.7 m	
Dripping Springs	Springs Headwater - East Verde River	15060203-524	0.03 m	
Dry Creek	Headwaters - Oak Creek	15060202-021	22.7 m	SSC
Goldwater Lake (Upper)		15060202-0575	20.6 a	
Government Canyon	Headwaters - Granite Creek	15060202-775	4.4 m	<i>E. coli</i>
Munds Creek	Headwaters - Oak Creek	15060202-415	17 m	
North Granite Creek	Headwaters - Granite Creek	15060202-757	1.6 m	dissolved oxygen, <i>E. coli</i>
Patton Spring Draw	Headwaters - Webber Creek	15060203-506	2.2 m	
Pine Creek (Pin)	Headwaters - East Verde Rive	15060203-048	10 m	
Slaughterhouse Gulch	Headwaters - Granite Creek	15060202-777	1.2 m	<i>E. coli</i>
Sterling Canyon	Headwaters - Oak Creek	15060202-424	3 m	SSC
Sycamore Creek (Sym)	Headwaters - Verde River	15060203-002	34.6 m	dissolved oxygen
Unnamed Trib (Uoa) To Oak Creek	Headwaters - Oak Creek	15060202-938	1.2 m	
Unnamed Trib (Upm) To Pump-house Wash	Headwaters - Pumphouse Wash	15060202-463	2.4 m	
Unnamed Trib To Sycamore Cr E. Fork	Headwaters - Sycamore Creek East Fork	15060203-262	1.3 m	
Unnamed Trib To Willow Creek	Headwaters - Willow Creek	15060202-756	8.2 m	
Unnamed Trib To Willow Reservoir	Headwaters - Willow Reservoir	15060202-758	3.8 m	
Verde River	Oak Creek - Beaver Creek	15060202-015	12.2 m	
Webber Spring	Spring Headwater - Webber Creek	15060203-516	0.04 m	
Wet Beaver Creek	Rarick - Dry Beaver Creek	15060202-003	6.6 m	arsenic, <i>E. coli</i> , pH, biocriteria, SSC
Willow Creek	Headwaters - Willow Creek Reservoir	15060202-762	17.6 m	<i>E. coli</i> , SSC
Category 3 summary: 15 lakes (3980 acres), 180 stream reaches (1585 miles)				

SURFACE WATER REACH DESCRIPTION REACH/LAKE NUMBER	ACRES/ MILES	Sub cat- egory	CAUSE OF IMPAIRMENT
Bill Williams Watershed			
Boulder Creek / Wilder Creek - Butte Creek / 15030202-005A	1.4 m	4A	copper, arsenic, zinc, beryllium, manganese, pH
Boulder Creek / Butte Creek - Copper Creek / 15030202-005B	1.8 m	4A	arsenic
Little Colorado Watershed			
Lake Mary (Upper) / 15020015-0900	861 a	4A	mercury in fish tissue
Lake Mary (Lower) / 15020015-0890	764 a	4A	mercury in fish tissue
Little Colorado River / Coyote Creek - Lyman Lake / 15020001-005	3.427 m	4A	SSC/turbidity
Little Colorado River / Nutrioso Creek - Carnero Creek / 15020001-009	12.1 m	4A	SSC/turbidity
Little Colorado River / Water Canyon - Nutrioso Creek / 15020001-010	3.8 m	4A	SSC/turbidity
Little Colorado River / West Fork Little Colorado -Water Canyon / 15020001-011	19.8 m	4A	SSC/turbidity
Little Colorado River / Silver Creek - Carr L Wash / 15020002-004	6.1 m	4A	SSC/turbidity
Long Lake / 15020008-0820	323.1 a	4A	mercury in fish tissue
Nutrioso Creek / Picnic Creek - Little Colorado River / 15020001-015	3.5 m	4A	SSC/turbidity
Nutrioso Creek / Nelson Reservoir - Picnic Creek / 15020001-017B	13.5 m	4A	SSC/turbidity
Rainbow Lake / 15020005-1170	111 a	4A	narrative nutrients, dissolved oxygen, pH
Soldier Annex Lake / 15020008-1430	122 a	4A	mercury in fish tissue
Soldier Lake / 15020008-01440	28 a	4A	mercury in fish tissue
Middle Gila Watershed			
Cash Mine Creek / Headwaters to Hassayampa River / 15070103-349	1 m	4A	copper, cadmium, zinc
French Gulch / Headwaters to Hassayampa River / 15070103-239	9.8 m	4A	copper, cadmium, zinc
Hassayampa River / Headwaters - Copper Creek / 15070103-007A	11 m	4A	pH,cadmium,copper,zinc
Trib To Cash Mine Creek / Headwaters to Cash Mine Creek / 15070103-415	1 m	4A	copper, cadmium, zinc
Turkey Creek / Tributary At 341928 122128 - Poland Creek / 15070102-036B	21 m	4A	lead, copper

SURFACE WATER REACH DESCRIPTION REACH/LAKE NUMBER	ACRES/ MILES	Sub cat- egory	CAUSE OF IMPAIRMENT
Salt Watershed			
Christopher Creek / Headwaters - Tonto Creek / 15060105-353	8 m	4A/5	<i>E. coli</i> (4A), phosphorus (5)
Gibson Mine Tributary / Headwaters - Pinto Creek / 15060103-887	1.1 m	4A	copper
Pinto Creek / Tributary at 331927 / 1105456 to West Fork Pinto Creek / 15060103-018A	2.5 m	4A	copper
Pinto Creek / Trib at 331927 / 110545 - West Fork Pinto Creek / 15060103-018B	15.3 m	4A	copper
Pinto Creek / West Fork Pinto Creek - Roosevelt Lake / 15060103-018C	18.4 m	4A/5	copper (4A), selenium (5)
Tonto Creek / Headwaters - Tributary at 34 18 10 / 111 04 14 / 15060105-013A	8.1 m	4A/5	<i>E. coli</i> (4A), nitrogen (4A), dissolved oxygen (5)
Tonto Creek / Tributary at 341810 / 111041 to Haigler Creek / 15060105-013B	8.5 m	4A/5	<i>E. coli</i> (4A), nitrogen (4A), mercury in fish tissue (5)
San Pedro Watershed			
San Pedro River / Aravaipa Creek to Gila River / 15050203-001	13.3 mi	4A	<i>E. coli</i>
Santa Cruz Watershed			
Alum Gulch Headwaters to Tributary at 312820 / 1104351 / 15050301-561A	0.3 m	4A	cadmium,copper, zinc, pH
Alum Gulch / 312820 / 1104351 - 312917 / 1104425 / 15050301-561B	1.4 m	4A	cadmium,copper, zinc, pH
Alum Gulch / 312917 / 1104425 - Sonoita Creek / 15050301-561C	2.3 m	4A	cadmium,copper, zinc, pH
Arivaca Lake / 15050304-0080	118 a	4A	mercury in fish tissue
Cox Gulch / Headwaters to Three R Canyon/ 15050301-560	16.3 m	4A	beryllium, cadmium, copper, zinc, pH
Harshaw Creek / Headwaters to Sonoita Creek/ 15050301-025	14.4 m	4A	copper, pH
Humboldt Canyon / Headwaters - Alum Gulch / 15050301-340	2.6 m	4A	cadmium,copper, zinc, pH
Lakeside Lake / 15050302-0760	15 a	4A	ammonia,nitrogen, phosphorus, pH, dissolved oxygen, chlorophyll-a
Pena Blanca Lake / 15050301-1070	50.5 a	4A	mercury in fish tissue
Santa Cruz River / Canada del Oro - HUC 15050303 Boundary / 15050301-001	8.6 m	4B	ammonia
Santa Cruz River / Roger Road WWTP Outfall - Intermittent Reach / 15050301-003B	2.9 m	4B	ammonia

SURFACE WATER REACH DESCRIPTION REACH/LAKE NUMBER	ACRES/ MILES	Sub cat- egory	CAUSE OF IMPAIMENT
Santa Cruz River / HUC 15050303 Boundary - Baum / 15050301-005A	24.5 m	4B	copper
Santa Cruz River / Nogales WWTP - Jo- sephine Canyon / 15050301-009	9.1 m	4B/5	chlorine (4B), ammonia (4B). <i>E. coli</i> (5), cadmium (5)
Three R Canyon / Headwaters to Tributary at 312819 / 1104556 / 15050301-558A	2.3 m	4A	beryllium, cadmium, copper, zinc, pH
Three R Canyon / Tributary at 312835 / 1104619 to Tributary at 312827 / 1104712 / 15050301-558B	1 m	4A	beryllium, cadmium, copper, zinc, pH
Three R Canyon / Tributary at 312827 / 1104712 to Sonoita Creek 15050301- 558C	3 m	4A	beryllium, cadmium, copper, zinc, pH
Unnamed Trib To Alum Gulch / Headwa- ters - Alum Gulch / 15050301-641	0.3 m	4A	copper, zinc
Unnamed Trib To Cox Gulch / Headwa- ters to Cox Gulch / 15050301-890	1 m	4A	beryllium, cadmium, copper, zinc, pH
Unnamed Trib To Harshaw Creek / Headwaters to Harshaw Creek / 15050301-888	2 m	4A	copper, pH
Unnamed Trib To Three R Canyon / Headwaters to Three R Canyon / 15050301-889	2 m	4A	beryllium, cadmium, copper, zinc, pH
Upper Gila Watershed			
Gila River / New Mexico border - Bitter Creek / 15040002-004	16.3 m	4A	<i>E. coli</i> , SSC
Gila River / Bonita Creek - Yuma Wash / 15040005-022	5.8 m	4A/5	<i>E. coli</i> (4A), lead (5), SSC (4A)
Luna Lake / 15040004-0840	119.7 a	4A	ammonia, dissolved oxygen, pH, nutrients
Verde Watershed			
Oak Creek / Dry Creek - Spring Creek / 15060202-017	10 m	4A	<i>E. coli</i>
Oak Creek / West Fork Oak Creek - Un- named Trib at 345709 / 1114513 / 15060202-018A	5 m	4A	<i>E. coli</i>
Oak Creek / Tributary at 345709 / 1114513 - Slide Rock SP / 15060202- 018B	1.5 m	4A	<i>E. coli</i>
Oak Creek / Slide Rock boundary - Dry Creek / 15060202-018C	20 m	4A	<i>E. coli</i>
Oak Creek / Headwaters - West Fork Oak Creek / 15060202-019	7.4 m	4A	<i>E. coli</i>
Peck's Lake / 15060202-1060	95 a	4A	dissolved oxygen, pH
Spring Creek / Coffee Creek - Oak Creek / 15060202-022	6.4 m	4A	<i>E. coli</i>
Stoneman Lake / 15060202-1490	125 a	4A	dissolved oxygen, pH
Category 4 summary: 12 lakes (2732 acres), 47 stream reaches (351 miles)			

SURFACE WATER REACH DESCRIPTION REACH/LAKE NUMBER	ACRES/ MILES	CAUSE OF IMPAIRMENT
Bill Williams Watershed		
Alamo Lake / 15030204-0040A	1415 a	pH, ammonia, mercury in fish tissue
Bill Williams River / Alamo Lake - Castaneda Wash / 15030204-003	35.9 m	ammonia, pH
Boulder Creek / Tributary at 344114 / 1130334 - Wilder Creek / 15030202-006B	14.4 m	beryllium
Coors Lake / 15030202-5000	230 a	mercury in fish tissue
Colorado/Grand Canyon Watershed		
Colorado River / Parashant Canyon - Diamond Creek / 15010002-003	27.6 m	SSC, selenium
Lake Powell / 14070006-1130	9770 a	mercury in fish tissue
Paria River / Paria River, Utah border - Colorado River / 14070007-123	29.4 m	<i>E. coli</i> , SSC
Virgin River / Beaver Dam Wash - Big Bend Wash / 15010010-003	10.1 m	SSC, selenium, <i>E. coli</i>
Virgin River / Sullivans Canyon - Beaver Dam Wash / 15010010-004	9.7 m	selenium
Colorado/Lower Gila Watershed		
Colorado River / Bill Williams River - Osborne Wash / 15030104-020	13.4 m	selenium
Colorado River / Main Canal - Mexico border / 15030107-001	32.2 m	dissolved oxygen, selenium
Colorado River / Imperial Dam - Gila River / 15030107-003	15.3 m	selenium
Colorado River / Hoover Dam - Lake Mohave / 15030101-015	40.4 m	selenium
Gila River / Coyote Wash to Fortuna Wash / 15070201-003	28.3 m	boron, selenium
Lake Mohave / 15030101-0960	27044 a	selenium
Painted Rock Borrow Pit Lake	186 a	dissolved oxygen

SURFACE WATER REACH DESCRIPTION REACH/LAKE NUMBER	ACRES/ MILES	CAUSE OF IMPAIRMENT
Little Colorado Watershed		
Bear Canyon Lake / 15020008-0130	54 a	pH
Black Canyon Lake / 15020010-0180	37.4 a	ammonia
Lyman Reservoir / 15020001-0850	1308 a	mercury in fish tissue
Pintail Lake / 15020005-5000	25.7 a	ammonia
Puerco River / Dead Wash - NineMilesWash / 15020007-007	0.2 m	copper, <i>E.coli</i>
Telephone Lake / 15020005-1500	22.3 a	ammonia
Middle Gila Watershed		
Agua Fria River / 341853.9 / 1120358.6 - 341804.8 / 1120319.2 / 15070102-023	9.1 m	<i>E. coli</i>
Alvord Park Lake / 15060106B-0050	26.9 a	ammonia
Arnett Creek / Headwaters - Queen Creek / 15050100-1818	11.1 m	copper
Chaparral Park Lake / 15060106B-0300	12.5 a	<i>E. coli</i> , dissolved oxygen
Cortez Park Lake / 15060106B-0410	2 a	dissolved oxygen, pH
Gila River / Centennial Wash - Gillespie Dam / 15070101-008	5.3 m	boron, selenium
Gila River / San Pedro - Mineral Creek / 15050100-008	19.8 m	SSC
Lake Pleasant / 15070102-1100	8000 a	mercury in fish tissue
Mineral Creek / Devil's Canyon - Gila River / 15050100-012B	19.6 m	copper, dissolved oxygen, selenium
Queen Creek / Headwaters - Superior Mining Div. Outfall / 15050100-014A	8.8 m	copper, lead, selenium
Queen Creek / Superior Mining WWTP - Potts Canyon / 15050100-014B	5.9 m	copper
Queen Creek / Potts Canyon - Whitlow Can- yon / 15050100-014C	8 m	copper
Trib (Uq2) To Queen Creek / Headwaters - Queen Creek / 15050100-1000	0.5 m	copper
Trib (Uq3) To Queen Creek / Headwaters (Near King's Crown Peak) - Queen Creek / 15050100-1843	1.7 m	copper
Trib (Uqe) To Queen Creek / Headwaters - Queen Creek / 15050100-991	2 m	copper

SURFACE WATER REACH DESCRIPTION REACH/LAKE NUMBER	Acres/ Miles	CAUSE OF IMPAIRMENT
Salt Watershed		
Apache Lake / 15060106A-0070	2192 a	dissolved oxygen
Canyon Lake / 15060106A-0250	447.8 a	dissolved oxygen
Christopher Creek/ Headwaters - Tonto Creek / 15060105-353 *Also a Category 4A water	8 m	phosphorus
Crescent Lake / 15060101-0420	156.7 a	pH
Five Point Mountain Tributary / Headwaters to Pinto Creek / 15060103-885	2.9 m	copper
Pinto Creek / West Fork Pinto Creek - Roosevelt Lake / 15060103-018C * Also a Category 4A water	18.4 m	selenium
Roosevelt Lake / 15060103-1240	18345 a	mercury in fish tissue
Salt River / Pinal Creek - Roosevelt Lake / 15060103-004	7.5 m	<i>E. coli</i> , SSC, nitrogen, phosphorus
Salt River / Canyon Creek - Cherry Creek / 15060103-007	19.6 m	selenium
Salt River / Stewart Mountain Dam - Verde River / 15060106A-003	10.1 m	dissolved oxygen
Tonto Creek / Gun Creek - Greenback Creek / 15060105-006	18.6 m	mercury in fish tissue
Tonto Creek / Rye Creek - Gun Creek / 15060105-008	4.7 m	mercury in fish tissue
Tonto Creek / Greenback Creek - Roosevelt Lake / 15060105-004	2.6 m	mercury in fish tissue
Tonto Creek / Spring Creek - Rye Creek / 15060105-009	19.5 m	mercury in fish tissue
Tonto Creek / Haigler Creek - Spring Creek / 15060105-011	7.8 m	mercury in fish tissue
Tonto Creek / Headwaters - Tributary at 34 18 10 / 111 04 14 / 15060105-013A * Also a Category 4A water	8.1 m	dissolved oxygen
Tonto Creek / Tributary at 341810 / 111041 - Haigler Creek/ 15060105-013B * Also a Category 4A water	8.5 m	mercury in fish tissue
San Pedro Watershed		
Brewery Gulch / Headwaters - Mule Gulch / 15080301-337	1.1 m	copper
Mule Gulch / Headwaters - Lavender Pit / 15080301-090A	3 m	copper
Mule Gulch / Lavender Pit - Bisbee WWTP Discharge / 15080301-090B	0.8 m	copper
Mule Gulch / Bisbee WWTP Outfall - Highway 80 bridge / 15080301-090C	3.8 m	copper
San Pedro River / Babocomari Creek - Dragon Wash / 15050202-003	17 m	<i>E. coli</i>
San Pedro River / Mexico Border - Charleston / 15050202-008	28.3 m	<i>E. coli</i> , copper

Category 5 – Impaired	SURFACE WATER REACH DESCRIPTION REACH/LAKE NUMBER	ACRES/MILES	CAUSE OF IMPAIRMENT
	Santa Cruz Watershed		
	Nogales Wash / Mexico Border - Portrero Creek / 15050301-011	6.2 m	ammonia, chlorine, copper, <i>E. coli</i>
	Parker Canyon Lake / 15050301-1040	129 a	mercury in fish tissue
	Potrero Creek / Interstate 19 - Santa Cruz River / 15050301-500B	4.9 m	chlorine, dissolved oxygen, <i>E. coli</i>
	Rose Canyon Lake / 15050302-1260	7.3 a	pH
	Santa Cruz River / Nogales WWTP to Josephine Canyon / 15050301-009 *Also on Not Attaining (4B) List	9.1 mi	cadmium, <i>E. coli</i>
	Santa Cruz River / Josephine Canyon - Tubac Bridge / 15050301-008A	4.8 m	ammonia, <i>E. coli</i>
	Sonoita Creek / 1600 Feet Below Patagonia WWTP - Patagonia Lake / 15050301-013C	9 m	zinc, dissolved oxygen
	Upper Gila River		
	Blue River / Strayhorse - San Francisco River / 15040004-025B	25.4 m	<i>E. coli</i>
	Cave Creek / Headwaters - South Fork Cave Creek / 15040006-852A	7.5 m	selenium
	Gila River / Skully Creek - San Francisco / 15040002-001	15.2 m	<i>E. coli</i>
	Gila River / Bonita Creek - Yuma Wash / 15040005-022 *Also a Category 4A water	5.8 m	lead
	Gila River / Apache Creek - Skully Creek / 15040002-002	6.4 m	<i>E. coli</i>
	San Francisco River / Limestone Gulch - Gila River / 15040004-001	12.8 m	<i>E. coli</i>
	San Francisco River / Blue River - Limestone Gulch / 15040004-003	18.7 m	<i>E. coli</i>
	Verde Watershed		
	Butte Creek / Headwaters - Miller Creek / 15060202-768	6.3 m	<i>E. coli</i>
	East Verde River / Ellison Creek - American Gulch / 15060203-022B	20.3 m	selenium
	East Verde River / American Gulch - Verde River / 15060203-022C	25.8 m	arsenic
	Granite Creek / Headwaters - Yavapai Reservation / 15060202-059A	6 m	dissolved oxygen, <i>E. coli</i>
	Granite Creek / Yavapai Reservation - Watson Lake / 15060202-059B	2.5 m	<i>E. coli</i>
	Manzanita Creek / Headwater - Granite Creek / 15060202-772	2.8 m	<i>E. coli</i>
	Miller Creek / Headwaters - Granite Creek / 15060202-767	7.2 m	<i>E. coli</i>
	Verde River / Bartlett Dam - Camp Creek / 15060203-004	6.6 m	arsenic
	Watson Lake / 15060202-1590	151 a	nitrogen, pH, dissolved oxygen
	Willow Creek Reservoir / 15060202-1660	294 a	ammonia
Category 5 summary: 22 lakes (69857 acres), 56 stream reaches (684.1 miles)			

Arizona's 2012/14 Impaired Waters

This list contains assessment units that were assessed as impaired (Category 5) by ADEQ or EPA during the current and previous assessment listing cycles. The year each parameter was listed is located in parentheses after each parameter (2012/14 listings are in **bold**).

Assessment Unit	Size (acres/miles)	Cause(s) of Impairment (year first listed)
Bill Williams Watershed		
Alamo Lake 15030204-0040	1414 a	Ammonia (2004), mercury in fish tissue (2002- EPA), high pH (1996)
Bill Williams River Alamo Lake to Castaneda Wash 15030204-003	35.9 mi	Ammonia and high pH (2006)
Boulder Creek Tributary at 344114/1131800 to Wilder Creek 15030202-006B	14.4 mi	Beryllium (dissolved) (2010)
Coors Lake 15030202-5000	230 a	Mercury in fish tissue (2004- EPA)
Colorado-Grand Canyon Watershed		
Colorado River Parashant Canyon to Diamond Creek 15010002-003	27.6 mi	Selenium (total) and suspended sediment concentration (2004)
Lake Powell 14070006-1130	9770 a	Mercury in fish tissue (2010- EPA)
Paria River Utah border to Colorado River 14070007-123	29.4 mi	Suspended sediment concentration (2004), <i>E. coli</i> (2006)
Virgin River Sullivan's Canyon to Beaver Dam Wash 15010010-004	9.7 mi	Selenium (total) (2012)
Virgin River Beaver Dam Wash to Big Bend Wash 15010010-003	10.1 mi	Selenium (total) and suspended sediment concentration (2004), <i>E. coli</i> (2010)
Colorado-Lower Gila Watershed		
Colorado River Hoover Dam to Lake Mohave 15030101-015	40.4 mi	Selenium (total) (2004)
Colorado River Bill Williams River to Osborne Wash 15030104-020	13.4 mi	Selenium (total) (2010)
Colorado River Main Canal to Mexico border 15030107-001	32.2 mi	Low dissolved oxygen and selenium (total) (2006)
Colorado River Imperial Dam to Gila River 15030107-003	15.3 mi	Selenium (total) (2010)
Gila River Coyote Wash to Fortuna Wash 15070201-003	28.3 mi	Selenium (total) and boron (total) (2004)
Lake Mohave 15030101-0960	27044 a	Selenium (total) (2010)
Painted Rock Borrow Pit Lake 15070201-1010	186 a	Low dissolved oxygen (1992)
Little Colorado Watershed		
Bear Canyon Lake 15020008-0130	55 a	Low pH (2004- EPA)
Black Canyon Lake 15020010-0180	37.4 a	Ammonia (2010)
Lyman Lake 15020001-0850	1308 a	Mercury in fish tissue (2004- EPA)
Pintail Lake 15020005-5000	25.7 a	Ammonia (2010)
Puerco River Dead Wash to Ninemile Wash 15020007-007	0.2 mi	Copper (dissolved) (2010), <i>E. coli</i> (2012)
Telephone Lake 15020005-1500	22.3 a	Ammonia (2010)

Arizona's 2012/14 Impaired Waters

Assessment Unit	Size (acres/miles)	Cause(s) of Impairment (year first listed)
Middle Gila Watershed		
Agua Fria River Sycamore Creek to Bishop Creek 15070102-023	9.1 mi	<i>E. coli</i> (2010)
Alvord Lake 15060106B-0050	27 a	Ammonia (2004)
Arnett Creek Headwaters to Queen Creek 15050100-1818	11.1 mi	Copper (dissolved) (2010)
Chaparral Park Lake 15060106B-0300	12 a	Low dissolved oxygen and <i>E. coli</i> (2004)
Cortez Park Lake 15060106B-0410	2 a	Low dissolved oxygen and high pH (2004)
Gila River San Pedro River to Mineral Creek 15050100-008	19.8 mi	Suspended sediment concentration (2006)
Gila River Centennial Wash - Gillespie Dam 15070101-008	5.3 mi	Selenium (total) (2004), boron (total) (1992)
Lake Pleasant 15070102-1100	8000 a	Mercury in fish tissue (2006- EPA)
Mineral Creek Devil's Canyon to Gila River 15050100-012B	19.6 mi	Copper (dissolved) (1992), selenium (total) (2004), low dissolved oxygen (2006)
Queen Creek Headwaters to Superior WWTP discharge 15050100-014A	8.8 mi	Copper (dissolved) (2002), lead (total) (2010), selenium (total) (2012)
Queen Creek Superior WWTP discharge to Potts Canyon 15050100-014B	5.9 mi	Copper (dissolved) (2004)
Queen Creek Potts Canyon to Whitlow Canyon 15050100-014C	8.0 mi	Copper (dissolved) (2010)
Tributary to Queen Creek Headwaters to Queen Creek 15050100-991	2.0 mi	Copper (dissolved) (2010)
Unnamed Tributary to Queen Creek Headwaters to Queen Creek 15050100-1843	1.7 mi	Copper (dissolved) (2010)
Unnamed Tributary to Queen Creek Headwaters to Queen Creek 15050100-1000	0.5 mi	Copper (dissolved) (2010)
Salt Watershed		
Apache Lake 15060106A-0070	2,190 a	Low dissolved oxygen (2006)
Canyon Lake 15060106A-0250	450 a	Low dissolved oxygen (2004)
Christopher Creek Headwaters to Tonto Creek 15060105-353 *Also on Not Attaining (4A) List	8 mi	Phosphorus (2006)
Crescent Lake 15060101-0420	157 a	High pH (2002- EPA)
Five Point Tributary Headwaters to Pinto Creek 15060103-885	2.9 mi	Copper (dissolved) (2006)
Pinto Creek West Fork Pinto Creek to Roosevelt Lake 15060103-018C *Also on Not Attaining (4A) List	17.8 mi	Selenium (total) (2004)
Roosevelt Lake 15060103-1240	18345 a	Mercury in fish tissue (2006- EPA)
Salt River Canyon Creek to Cherry Creek 15060103-007	19.6 mi	Selenium (total) (2012)

Arizona's 2012/14 Impaired Waters

Assessment Unit	Size (acres/miles)	Cause(s) of Impairment (year first listed)
Salt River Pinal Creek to Roosevelt Lake 15060103-004	7.5 mi	Suspended sediment (2006), nitrogen, phosphorus and <i>E. coli</i> (2010)
Salt River Stewart Mountain Dam to Verde River 15060106A-003	10.1 mi	Low dissolved oxygen (2004)
Tonto Creek Headwaters to 341810/1110414 15060105-013A *Also on Not Attaining (4A) List	8.1 mi	Low dissolved oxygen (2006)
Tonto Creek Tributary @ 341810/1110414 to Haigler Creek 15060105-013B *Also on Not Attaining (4A) List	8.5 mi	Mercury in Fish Tissue (2010- EPA)
Tonto Creek Haigler Creek to Spring Creek 15060105-011	7.8 mi	Mercury in fish tissue (2010-EPA)
Tonto Creek Spring Creek to Rye Creek 15060105-009	19.5 mi	Mercury in fish tissue (2010-EPA)
Tonto Creek Rye Creek to Gun Creek 15060105-008	4.7 mi	Mercury in fish tissue (2010-EPA)
Tonto Creek Gun Creek to Greenback Creek 15060105-006	18.6 mi	Mercury in fish tissue (2010-EPA)
Tonto Creek Greenback Creek to Roosevelt Lake 15060105-0004	2.6 mi	Mercury in fish tissue (2010-EPA)
San Pedro Watershed		
Brewery Gulch Headwaters to Mule Gulch 15080301-337	1 mi	Copper (dissolved) (2004)
Mule Gulch Headwaters to above Lavender Pit 15080301-090A	3 mi	Copper (dissolved) (1990)
Mule Gulch Above Lavender Pit to Bisbee WWTP discharge 15080301-090B	0.8 miles	Copper (dissolved) (1990)
Mule Gulch Bisbee WWTP discharge to Highway 80 bridge 15080301-090C	3.8 mi	Copper (total and dissolved) (1990)
San Pedro River Mexico border to Charleston 15050202-008	28.3 mi	<i>E. coli</i> and copper (dissolved) (2010)
San Pedro River Babocomari Creek to Dragoon Wash 15050202-003	17 mi	<i>E. coli</i> (2004)
Santa Cruz Watershed		
Nogales Wash Mexico border to Potrero Creek 15050301-011	6.2 mi	Ammonia (2004), chlorine (1996), copper (dissolved) (2004), <i>E. coli</i> (1998)
Parker Canyon Lake 15050301-1040	130 a	Mercury in fish tissue (2004- EPA)
Potrero Creek Interstate 19 to Santa Cruz River 15050301-500B	4.9 mi	Chlorine, low dissolved oxygen, and <i>E. coli</i> (2010)
Rose Canyon Lake 15050302-1260	7 a	Low pH (2004- EPA)
Santa Cruz River Josephine Canyon to Tubac Bridge 15050301-008A	4.8 mi	Ammonia and <i>E. coli</i> (2010)

Arizona's 2012/14 Impaired Waters

Assessment Unit	Size (acres/miles)	Cause(s) of Impairment (year first listed)
Santa Cruz River Nogales WWTP to Josephine Canyon 15050301-009 *Also on Not Attaining (4B) List	9.1 mi	Cadmium (dissolved) and <i>E. coli</i> (2012)
Sonoita Creek 1600 feet below Patagonia WWTP discharge to Patagonia Lake 15050301-013C	8.9 mi	Zinc (total) (2004), low dissolved oxygen (1998)
Upper Gila Watershed		
Blue River Strayhorse Creek to San Francisco River 15040004-025B	25.4 mi	<i>E. coli</i> (2006)
Cave Creek Headwaters to South Fork Cave Creek 15040006-852A	7.5 mi	Selenium (total) (2004)
Gila River Apache Creek to Skully Creek 15040002-002	6.4 mi	<i>E. coli</i> (2010)
Gila River Bonita Creek to Yuma Wash 15040005-022 *Also on Not Attaining (4A) List	5.8 mi	Lead (total) (2010)
Gila River Skully Creek to San Francisco River 15040002-001	15.2 mi	<i>E. coli</i> (2010)
San Francisco River Blue River to Limestone Gulch 15040004-003	18.7 mi	<i>E. coli</i> (2006)
San Francisco River Limestone Gulch to Gila River 15040004-001	12.8 mi	<i>E. coli</i> (2010)
Verde Watershed		
Butte Creek Headwaters to Miller Creek 15060202-768	6.3 mi	<i>E. coli</i> (2012)
East Verde River American Gulch to Verde River 15060203-022C	25.8 mi	Arsenic (total) (2006)
East Verde River Ellison Creek to American Gulch 15060203-022B	20.3 mi	Selenium (total) (2004)
Granite Creek Headwaters to Yavapai Prescott Tribal Boundary 15060202-059A	6.0 mi	Low dissolved oxygen (2004- EPA), <i>E. coli</i> (2010)
Granite Creek Yavapai Prescott Tribal Boundary to Watson Lake 15060202-059B	2.5 mi	<i>E. coli</i> (2010)
Manzanita Creek Headwaters to Granite Creek 15060202-772	2.8 mi	<i>E. coli</i> (2012)
Miller Creek Headwaters to Granite Creek 15060202-767	7.2 mi	<i>E. coli</i> (2010)
Verde River Bartlett Dam to Camp Creek 15060203-004	6.6 mi	Arsenic (total) (2010)
Watson Lake 15060202-1590	150 a	Nitrogen, low dissolved oxygen, high pH (2004- EPA)
Willow Creek Reservoir 15060202-1660	294 a	Ammonia (2012)

APPENDIX D

CRITICAL CONDITIONS

To determine whether an assessment unit is no longer impaired, samples must be collected during critical conditions and at critical locations. These conditions and locations were either noted in the TMDL investigations or are based on other factors, such as the fish consumption advisory action level. As TMDLs are completed, more waters will be added to this list.

ASSESSMENT UNIT DESCRIPTION REACH NUMBER	PARAMETERS	TMDL STATUS	CRITICAL CONDITIONS	CRITICAL SITES OR LOCATIONS (ADEQ site number)
Bill Williams Watershed				
Alamo Lake 15030204-0040	Mercury in fish	Ongoing	Methylmercury concentration in fish tissue <0.3 mg/kg	
Alamo Lake 15030204-0040	pH, ammonia	Scheduled	Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Boulder Creek From Wilder Creek to Copper Creek 15030202-005A	Copper, Zinc, Arsenic	Completed 2004	Stream flow less than 0.75 cfs, which is low flow, intermittent, or "base flow"	Below Hillside Mine - 101010 Above Hillside Mine - 102023
Coors Lake 15030204-5000	Mercury in fish	Scheduled	Methylmercury concentration in fish tissue <0.3 mg/kg	
Colorado – Grand Canyon Watershed				
Colorado – Lower Gila Watershed				
Painted Rocks Borrow Pit 15070201-1010	Dissolved oxygen	Scheduled	Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Little Colorado Watershed				
Bear Canyon Lake 15020008-0130	pH	Scheduled	Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Upper Lake Mary and Lower Lake Mary 15020015-0890 15020015-0900	Mercury in fish	Completed 2011	Methylmercury concentration in fish tissue <0.3 mg/kg	
Little Colorado River (near Nutrioso Creek) 15020001-009, -010	Turbidity	Completed 2002	Winter-spring runoff at approximately 29 cfs and summer runoff at approximately 13 cfs	Near USGS gage 09383400 - 101174
Long Lake 15020008-0820	Mercury in fish	Completed 2011	Methylmercury concentration in fish tissue <0.3 mg/kg	
Lyman Lake 15020001-0850	Mercury in fish	Ongoing	Methylmercury concentration in fish tissue <0.3 mg/kg	
Nutrioso Creek From headwaters to Little Colorado River 15020001-017, -015	Turbidity	Completed 2000	Spring runoff at approximately 4 to 14 cfs	Big Wall site - 102112 Old background site - 101982
Rainbow Lake 15020005-1170	Nutrients (N&P) and pH	Completed 2000	Low lake level. Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Soldier's Annex Lake 15020008-1430	Mercury in fish	Completed 2011	Methylmercury concentration in fish tissue <0.3 mg/kg	
Soldier's Lake 15020008-1440	Mercury in fish	Completed 2011	Methylmercury concentration in fish tissue <0.3 mg/kg	
Middle Gila Watershed				
Alvord Park Lake 15060106B-0050	Ammonia	Scheduled	Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Chaparral Lake 15060106B-0300	Dissolved oxygen, <i>E. coli</i>	Scheduled	For the DO, meets narrative nutrient standards once new narrative nutrient implement procedures are adopted.	

ASSESSMENT UNIT DESCRIPTION REACH NUMBER	PARAMETERS	TMDL STATUS	CRITICAL CONDITIONS	CRITICAL SITES OR LOCATIONS (ADEQ site number)
Cortez Park Lake 15060106B-0410	Dissolved oxygen, pH	Scheduled	Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
French Gulch From headwaters to Hassayampa River 15070103-239	Copper, cadmium, zinc	Completed 2005	Storm induced runoff	Below Zonia Mine - 101620
Hassayampa River From headwaters to Copper Creek 15070103-007A	Cadmium, copper, zinc	Completed 2002	Low flow and spring runoff (approximately 4 to 6 cfs)	Above McClellan Mine - 101816 Below McClellan Mine - 101817 Above Cash Mine trib - 101067 Below Cash Mine trib - 101065
Queen Creek From headwaters to Superior Mine discharge 15050100-014A, -014B	Copper	Ongoing	Storm induced from inactive mining areas	
Turkey Creek From headwaters to Poland Creek 15070102-036B	Cadmium, copper, zinc, lead	Completed 2005	Storm induced runoff, snow melt and base flow do not cause impairment	101627- Above Golden Belt and Turkey mines 101251- Below mines
Salt Watershed				
Canyon Lake 15060106A-0250	Dissolved oxygen	Scheduled	Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Christopher Creek and upper Tonto Creek 15060105-353, -013A, -013B	<i>E. coli</i>	Completed 2004	Summer season	
Christopher Creek and upper Tonto Creek 15060105-353, -013A, -013B	Nitrogen	Completed 2005	Summer season	
Crescent Lake 15060101-0420	pH	Scheduled	Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Pinto Creek From headwaters to Roosevelt Lake 15060103-018A, -018B, -018C	Copper	Completed 2001 Phase II ongoing	Storm induced runoff	
San Pedro Watershed				
Mule Gulch Headwaters to Whitewater Draw 15080301-090A, -090B, -090C	Cadmium, copper, zinc, pH	Ongoing	Storm induced runoff	
San Pedro River Aravaipa Creek to Gila River 15050203-001	<i>E. coli</i>	Completed 2013	Storm induced runoff	
Santa Cruz Watershed				
3 R Canyon From headwaters to Sonoita Creek 15050301-558A, -558B, -558C	Cadmium, copper, zinc, pH	Completed 2003	Storm induced runoff	
Alum Gulch From headwaters to Sonoita Creek 15050301-561A, -561B	Cadmium, copper, zinc, pH	Completed 2003	Storm induced runoff	
Arivaca Lake 15050304-0080	Mercury in fish	Completed 1999	Methylmercury concentration in fish tissue <0.3 mg/kg	
Harshaw Creek From headwaters to Sonoita Creek 15050301-025	Copper, pH	Completed 2003	Storm induced runoff	
Lakeside Lake 15050302-0760	Nitrogen, phosphorus, chlorophyll, low DO, ammonia	Completed 2005	Nutrient levels in reclaimed water discharges	
Parker Canyon Lake 15050301-1040	Mercury in fish	Ongoing	Methylmercury concentration in fish tissue <0.3 mg/kg	

ASSESSMENT UNIT DESCRIPTION REACH NUMBER	PARAMETERS	TMDL STATUS	CRITICAL CONDITIONS	CRITICAL SITES OR LOCATIONS (ADEQ site number)
Pena Blanca Lake 15050301-1070	Mercury in fish	Completed 1999	Methylmercury concentration in fish tissue <0.3 mg/kg	
Rose Canyon Lake 15050302-1260	pH	Scheduled	Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Upper Gila Watershed				
Luna Lake 15040004-0840	Nutrients (N&P), pH, and dissolved oxygen	Completed 2000	Low lake levels. Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Verde Watershed				
Oak Creek Headwaters to Spring Creek	<i>E. coli</i>	Completed 2010	Summer recreational season, storm water runoff	Various sites throughout the watershed
Pecks Lake 15060202-1060	Nutrients (N&P), pH, dissolved oxygen	Completed 2002	Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Stoneman Lake 15060202-1490	Nutrients (N&P), pH, and dissolved oxygen	Completed 2000	Ephemeral lake. Do not assess if depth less than 1 meter. Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	
Verde River From Cottonwood Creek to Fossil Creek 15060202-025, -037, -015, -001 and 15060203-027, -025	Turbidity	Completed 2002	Storm induced runoff, approximately 1180 cfs.	USGS gage near Clarkdale 0950400 - 100738
Watson Lake 15060202-1590	Nitrogen, dissolved oxygen, pH	Ongoing	Determine if lake meets narrative nutrient criteria once narrative nutrient implement procedures are adopted.	

APPENDIX E

DELISTING IMPAIRMENTS

Pollutants may be removed from the 303(d) List (delisted) because the TMDL is approved; however, the pollutant is still impairing the reach. A pollutant can be shown to be “no longer impairing” an assessment unit if sufficient data to show that the use is now attaining based on:

- New data, and samples represent critical conditions and critical locations;
- New surface water quality criterion or designated use;
- New assessment criterion or methods;
- Assessment unit is split and no current or historic data from this portion of the surface water would support an impairment decision;
- Naturally occurring conditions are shown to be the sole cause of not meeting the water quality criterion; or
- Reevaluation of the assessment information indicates an error or deficiency in the original analysis resulted in an inappropriate listing.

Colorado - Grand Canyon

Colorado River - Lake Powell to Paria River (Selenium) 14070006-001 16.3 miles
Originally listed for selenium in 2006, but new data (20 samples collected between 2006 and 2011) indicate no evidence of continuing selenium problems. Therefore, ADEQ proposes delisting this reach.

Colorado - Lower Gila

Painted Rock Borrow Pit (Pesticides in fish tissue) 15070201-1010 100 acres
EPA overfile in 2002; ADEQ proposes delisting this water body based on recent fish tissue and water quality data.

Middle Gila

Gila River (multiple reaches, see table below)
(Pesticides in fish tissue)
EPA overfiled in 2002. ADEQ proposes delisting these reaches based on recent fish tissue and water quality data.

HUC-reach	Reach Description	Miles
15070101-015	Salt River - Agua Fria River	3.7
15070101-014	Agua Fria River - Waterman Wash	11.9
15070101-010	Waterman Wash - Hassayampa River	13.9
15070101-009	Hassayampa - Centennial Wash	7
15070101-008	Centennial Wash - Gillespie Dam	5.3
15070101-007	Gillespie Dam - Rainbow Wash	5.1
15070101-005	Rainbow Wash - Sand Tank	16.9
15070101-001	Sand Tank - Painted Rock Reservoir	18.7

Hassayampa River-Buckeye Canal - Gila River (Pesticides in fish tissue) 15070103-001B 2.3 miles
EPA overfile in 2002; ADEQ proposes delisting this water body based on recent fish tissue and water quality data.

Painted Rock Reservoir
(Pesticides in fish tissue)

15070101- 1020A 100 acres
EPA overfile in 2002; ADEQ proposes delisting this water body
based on recent fish tissue and water quality data.

Salt River-23rd Ave WWTP -
Gila River
(Pesticides in fish tissue)

15060106B-001D 14.1 miles
EPA overfile in 2002; ADEQ proposes delisting this water body
based on recent fish tissue and water quality data.

San Pedro

Mule Gulch- Lavendar Pit
to Highway 80 Bridge (Zinc,
cadmium, pH)

15080301-019B 0.8 miles
15080301-019C 3.8 miles

Recent water quality data has shown that the concentrations of dissolved metals have declined and pH has risen within Mule Gulch. Freeport McMoRan Corporation (FMC) has implemented several projects within the last decade that have improved conditions in Mule Gulch. A delist report summarizes the improvements and recommends that low pH and dissolved cadmium and zinc be removed from the 303(d)-list for Mule Gulch 15080301-090B and 90C. Although significant reductions in dissolved copper concentrations have occurred, the copper impairments will remain for the four reaches in the watershed.

Verde

East Verde River- American
Gulch - Verde River
(Boron)

15060203-022C 25.8 miles

Boron is delisted based on the following reasons: new data from critical sites indicated that the reach was no longer impaired for boron (0 exceedances in 12 critical samples, binomial), and the standard for DWS designated use has been increased from 630 ug/L to 1400 ug/L, and reassessment of the original data with the new standard does not indicate impairment.

APPENDIX F

Water Quality Improvements

Water quality improvements have resulted in pollutants no longer impairing an assessment unit. Each is a success story! Significant resources have been used to identify sources and control pollutant contributions in each case.

These water quality improvements are dependent on continued application of the improvement noted in this table. Therefore, decision makers about future activities in the watershed or additional discharges need to be aware and continue to support these improvements.

Colorado - Lower Gila Watershed

Lake Havasu (Thompson Bay)	15030101-0590	19,780 acres
<i>E. coli</i> bacteria Delisted in 2002; first listed in 1996	<ol style="list-style-type: none"> 1. Improved sanitary facilities at beaches. 2. Public education concerning marine wastewater disposal. 3. Improvements in public wastewater treatment facilities to reduce nutrient loading. 4. Improvement in flow into Thompson Bay under London Bridge. No remaining impairments	
Painted Rock Borrow Pit	15070201-1010	185 acres
Dieldrin in fish tissue Delisted in 2002; first listed in 1988	General use of the pesticide dieldrin banned Listed in Category 5 for other pollutants	

Little Colorado Watershed

Nutrios Creek	15020001-017A	Headwaters to Nelson Reservoir	13.3 miles
Turbidity Delisted in 2006; first listed in 1992	Cattle removed from the riparian area through addition of fencing and alternative sources of water. Riparian area improvements noted. TMDL approved in 2002. No remaining impairments		

Middle Gila Watershed

Gila River	15070101-001, 005, 007, 008, 009, 010, 014, 015	Salt River to Painted Rock Reservoir	82.5 miles
Dieldrin in fish tissue Delisted in 2002; first listed in 1988	General use of the pesticide dieldrin banned Listed in Category 5 for other pesticides		
Hassayampa River	15070101-001B	Buckeye Canal to Gila River	2.3 miles
Dieldrin in fish tissue Delisted in 2002; first listed in 1998	General use of the pesticide dieldrin banned Listed in Category 5 for other pesticides		
Mineral Creek	15050100-012B	Devils Canyon to Gila River	19.6 miles
Beryllium, zinc, and low pH Delisted in 2004; first listed in 1992	Mineral Creek is diverted around a large mining operation. Monitoring surface water quality to assure this is sufficient to protect water quality in the stream. Listed in Category 5 for other pollutants		

Middle Gila Watershed - continued

Painted Rock Reservoir	15070101-1020A	100 acres	
Dieldrin in fish tissue Delisted in 2002; first listed in 1988	General use of the pesticide dieldrin banned Listed in Category 5 for other pesticides		
Salt River	15060106B-001D	23rd Avenue WWTP to Gila River	14.1 miles
Dieldrin in fish tissue Delisted in 2002; first listed in 1988	General use of the pesticide dieldrin banned Listed in Category 5 for other pesticides		

Salt Watershed

Pinal Creek	15060103-280D	Lower Pinal Creek WTP to Salt River	6.4 miles
Copper, manganese, zinc, and low pH Delisted in 2002; first listed in 1988	Ground water is pumped so that surface water flow discontinues (flow was intermittent originally in this area). The water is treated and pumped back into the stream, providing clean perennial flow. No remaining impairments		

Verde Watershed

Munds Creek	15060202-415	Headwaters to Oak Creek	17.0 miles
<i>E. coli</i> bacteria, nitrogen and phosphorus Delisted in 2002; first listed in 1994	Wastewater reuse applications modified to keep effluent from contaminating Munds Creek. No remaining impairments		
Ashbrook Wash	15060203-989	Grande Wash to Verde River	2 miles
<i>E. coli</i> bacteria Delisted in 2006; first listed in 2004	Wastewater treatment plant no longer discharging to this wash. No remaining impairments		
Verde River	15060202-037, 025, 015, 15060203-027, 025	Unnamed Trib (15060202-065) - Fossil Creek	78.1 miles
Turbidity Delisted in 2010; first listed in 1990	Turbidity TMDL completed in 2002. Best management practices are implemented to minimize the impact of grazing and reduce soil erosion. No remaining impairments		

Arizona's 2012/14 Impaired Waters Priority Ranking for TMDL Development

This list contains assessment units that were assessed as impaired (Category 5) by ADEQ or EPA during the current and previous assessment listing cycles. The year each parameter was listed is located in parentheses after each parameter.

Assessment Unit	Cause(s) of Impairment (year first listed)	Priority
Bill Williams Watershed		
Alamo Lake 15030204-0040	Ammonia (2004), mercury in fish tissue (2002- EPA), high pH (1996)	Medium
Bill Williams River Alamo Lake to Castaneda Wash 15030204-003	Ammonia and high pH (2006)	Medium
Boulder Creek Tributary at 344114/1131800 to Wilder Creek 15030202-006B	Beryllium (dissolved) (2010)	Low
Coors Lake 15030202-5000	Mercury in fish tissue (2004- EPA)	Low
Colorado-Grand Canyon Watershed		
Colorado River Parashant Canyon to Diamond Creek 15010002-003	Selenium (total) and suspended sediment concentration (2004)	Low
Lake Powell 14070006-1130	Mercury in fish tissue (2010- EPA)	Low
Paria River Utah border to Colorado River 14070007-123	Suspended sediment concentration (2004), <i>E. coli</i> (2006)	Medium
Virgin River Sullivan's Canyon to Beaver Dam Wash 15010010-004	Selenium (total) (2012)	Medium
Virgin River Beaver Dam Wash to Big Bend Wash 15010010-003	Selenium (total) and suspended sediment concentration (2004), <i>E. coli</i> (2010)	Medium
Colorado-Lower Gila Watershed		
Colorado River Hoover Dam to Lake Mohave 15030101-015	Selenium (total) (2004)	Low
Colorado River Bill Williams River to Osborne Wash 15030104-020	Selenium (total) (2010)	Low
Colorado River Main Canal to Mexico border 15030107-001	Low dissolved oxygen and selenium (total) (2006)	Low
Colorado River Imperial Dam to Gila River 15030107-003	Selenium (total) (2010)	Low
Gila River Coyote Wash to Fortuna Wash 15070201-003	Selenium (total) and boron (total) (2004)	Low
Lake Mohave 15030101-0960	Selenium (total) (2010)	Low
Painted Rock Borrow Pit Lake 15070201-1010	Low dissolved oxygen (1992)	Low
Little Colorado Watershed		
Bear Canyon Lake 15020008-0130	Low pH (2004- EPA)	Low
Black Canyon Lake 15020010-0180	Ammonia (2010)	Low
Lyman Lake 15020001-0850	Mercury in fish tissue (2004- EPA)	Medium
Pintail Lake 15020005-5000	Ammonia (2010)	Low
Puerco River Dead Wash to Ninemile Wash 15020007-007	Copper (dissolved) (2010), <i>E. coli</i> (2012)	Low
Telephone Lake 15020005-1500	Ammonia (2010)	Low

Arizona's 2012/14 Impaired Waters Priority Ranking for TMDL Development

Assessment Unit	Cause(s) of Impairment (year first listed)	Priority
Middle Gila Watershed		
Agua Fria River Sycamore Creek to Big Bug Creek 15070102-023	<i>E. coli</i> (2010)	Low
Alvord Lake 15060106B-0050	Ammonia (2004)	Low
Arnett Creek Headwaters to Queen Creek 15050100-1818	Copper (dissolved) (2010)	High
Chaparral Park Lake 15060106B-0300	Low dissolved oxygen and <i>E. coli</i> (2004)	Low
Cortez Park Lake 15060106B-0410	Low dissolved oxygen and high pH (2004)	Low
Gila River San Pedro River to Mineral Creek 15050100-008	Suspended sediment concentration (2006)	Low
Gila River Centennial Wash - Gillespie Dam 15070101-008	Selenium (total) (2004), boron (total) (1992)	High
Lake Pleasant 15070102-1100	Mercury in fish tissue (2006- EPA)	Medium
Mineral Creek Devil's Canyon to Gila River 15050100-012B	Copper (dissolved) (1992), selenium (total) (2004), low dissolved oxygen (2006)	Low
Queen Creek Headwaters to Superior WWTP discharge 15050100-014A	Copper (dissolved) (2002), lead (total) (2010), selenium (total) (2012)	High
Queen Creek Superior WWTP discharge to Potts Canyon 15050100-014B	Copper (dissolved) (2004)	High
Queen Creek Potts Canyon to Whitlow Canyon 15050100-014C	Copper (dissolved) (2010)	High
Tributary to Queen Creek Headwaters to Queen Creek 15050100-991	Copper (dissolved) (2010)	High
Unnamed Tributary to Queen Creek Headwaters to Queen Creek 15050100-1843	Copper (dissolved) (2010)	High
Unnamed Tributary to Queen Creek Headwaters to Queen Creek 15050100-1000	Copper (dissolved) (2010)	High
Salt Watershed		
Apache Lake 15060106A-0070	Low dissolved oxygen (2006)	Low
Canyon Lake 15060106A-0250	Low dissolved oxygen (2004)	Low
Christopher Creek Headwaters to Tonto Creek 15060105-353 *Also on Not Attaining (4A) List	Phosphorus (2006)	Low
Crescent Lake 15060101-0420	High pH (2002- EPA)	Low
Five Point Tributary Headwaters to Pinto Creek 15060103-885	Copper (dissolved) (2006)	High
Pinto Creek West Fork Pinto Creek to Roosevelt Lake 15060103-018C *Also on Not Attaining (4A) List	Selenium (total) (2004)	Low
Roosevelt Lake 15060103-1240	Mercury in fish tissue (2006- EPA)	Medium
Salt River Canyon Creek to Cherry Creek 15060103-007	Selenium (total) (2012)	Low

Arizona's 2012/14 Impaired Waters Priority Ranking for TMDL Development

Assessment Unit	Cause(s) of Impairment (year first listed)	Priority
Salt River Pinal Creek to Roosevelt Lake 15060103-004	Suspended sediment (2006), nitrogen, phosphorus and <i>E. coli</i> (2010)	Medium
Salt River Stewart Mountain Dam to Verde River 15060106A-003	Low dissolved oxygen (2004)	Low
Tonto Creek Headwaters to 341810/1110414 15060105-013A *Also on Not Attaining (4A) List	Low dissolved oxygen (2006)	Low
Tonto Creek Tributary @ 341810/1110414 to Haigler Creek 15060105-013B *Also on Not Attaining (4A) List	Mercury in Fish Tissue (2010- EPA)	Low
Tonto Creek Haigler Creek to Spring Creek 15060105-011	Mercury in fish tissue (2010-EPA)	Low
Tonto Creek Spring Creek to Rye Creek 15060105-009	Mercury in fish tissue (2010-EPA)	Low
Tonto Creek Rye Creek to Gun Creek 15060105-008	Mercury in fish tissue (2010-EPA)	Low
Tonto Creek Gun Creek to Greenback Creek 15060105-006	Mercury in fish tissue (2010-EPA)	Low
Tonto Creek Greenback Creek to Roosevelt Lake 15060105-0004	Mercury in fish tissue (2010-EPA)	Low
San Pedro Watershed		
Brewery Gulch Headwaters to Mule Gulch 15080301-337	Copper (dissolved) (2004)	Low
Mule Gulch Headwaters to above Lavender Pit 15080301-090A	Copper (dissolved) (1990)	Low
Mule Gulch Above Lavender Pit to Bisbee WWTP discharge 15080301-090B	Copper (dissolved) (1990)	Low
Mule Gulch Bisbee WWTP discharge to Highway 80 bridge 15080301-090C	Copper (total and dissolved) (1990)	Low
San Pedro River Mexico border to Charleston 15050202-008	<i>E. coli</i> and copper (dissolved) (2010)	High
San Pedro River Babocomari Creek to Dragoon Wash 15050202-003	<i>E. coli</i> (2004)	High
Santa Cruz Watershed		
Nogales Wash Mexico border to Potrero Creek 15050301-011	Ammonia (2004), chlorine (1996), copper (dissolved) (2004), <i>E. coli</i> (1998)	High
Parker Canyon Lake 15050301-1040	Mercury in fish tissue (2004- EPA)	Low
Potrero Creek Interstate 19 to Santa Cruz River 15050301-500B	Chlorine, low dissolved oxygen, and <i>E. coli</i> (2010)	High
Rose Canyon Lake 15050302-1260	Low pH (2004- EPA)	Low
Santa Cruz River Josephine Canyon to Tubac Bridge 15050301-008A	Ammonia and <i>E. coli</i> (2010)	High

Arizona's 2012/14 Impaired Waters Priority Ranking for TMDL Development

Assessment Unit	Cause(s) of Impairment (year first listed)	Priority
Santa Cruz River Nogales WWTP to Josephine Canyon 15050301-009 *Also on Not Attaining (4B) List	Cadmium (dissolved) and <i>E. coli</i> (2012)	High
Sonoita Creek 1600 feet below Patagonia WWTP discharge to Patagonia Lake 15050301-013C	Zinc (total) (2004), low dissolved oxygen (1998)	Low
Upper Gila Watershed		
Blue River Strayhorse Creek to San Francisco River 15040004-025B	<i>E. coli</i> (2006)	Medium
Cave Creek Headwaters to South Fork Cave Creek 15040006-852A	Selenium (total) (2004)	Low
Gila River Apache Creek to Skully Creek 15040002-002	<i>E. coli</i> (2010)	Medium
Gila River Bonita Creek to Yuma Wash 15040005-022 *Also on Not Attaining (4A) List	Lead (total) (2010)	Low
Gila River Skully Creek to San Francisco River 15040002-001	<i>E. coli</i> (2010)	Medium
San Francisco River Blue River to Limestone Gulch 15040004-003	<i>E. coli</i> (2006)	Medium
San Francisco River Limestone Gulch to Gila River 15040004-001	<i>E. coli</i> (2010)	Medium
Verde Watershed		
Butte Creek Headwaters to Miller Creek 15060202-768	<i>E. coli</i> (2012)	High
East Verde River American Gulch to Verde River 15060203-022C	Arsenic (total) (2006)	
East Verde River Ellison Creek to American Gulch 15060203-022B	Selenium (total) (2004)	Low
Granite Creek Headwaters to Willow Creek 15060202-059A	Low dissolved oxygen (2004- EPA), <i>E. coli</i> (2010)	High
Manzanita Creek Headwaters to Granite Creek 15060202-772	<i>E. coli</i> (2012)	High
Miller Creek Headwaters to Granite Creek 15060202-767	<i>E. coli</i> (2010)	High
Verde River Bartlett Dam to Camp Creek 15060203-004	Arsenic (total) (2010)	Low
Watson Lake 15060202-1590	Nitrogen, low dissolved oxygen, high pH (2004- EPA)	High
Willow Creek Reservoir 15060202-1660	Ammonia (2012)	Low