

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.

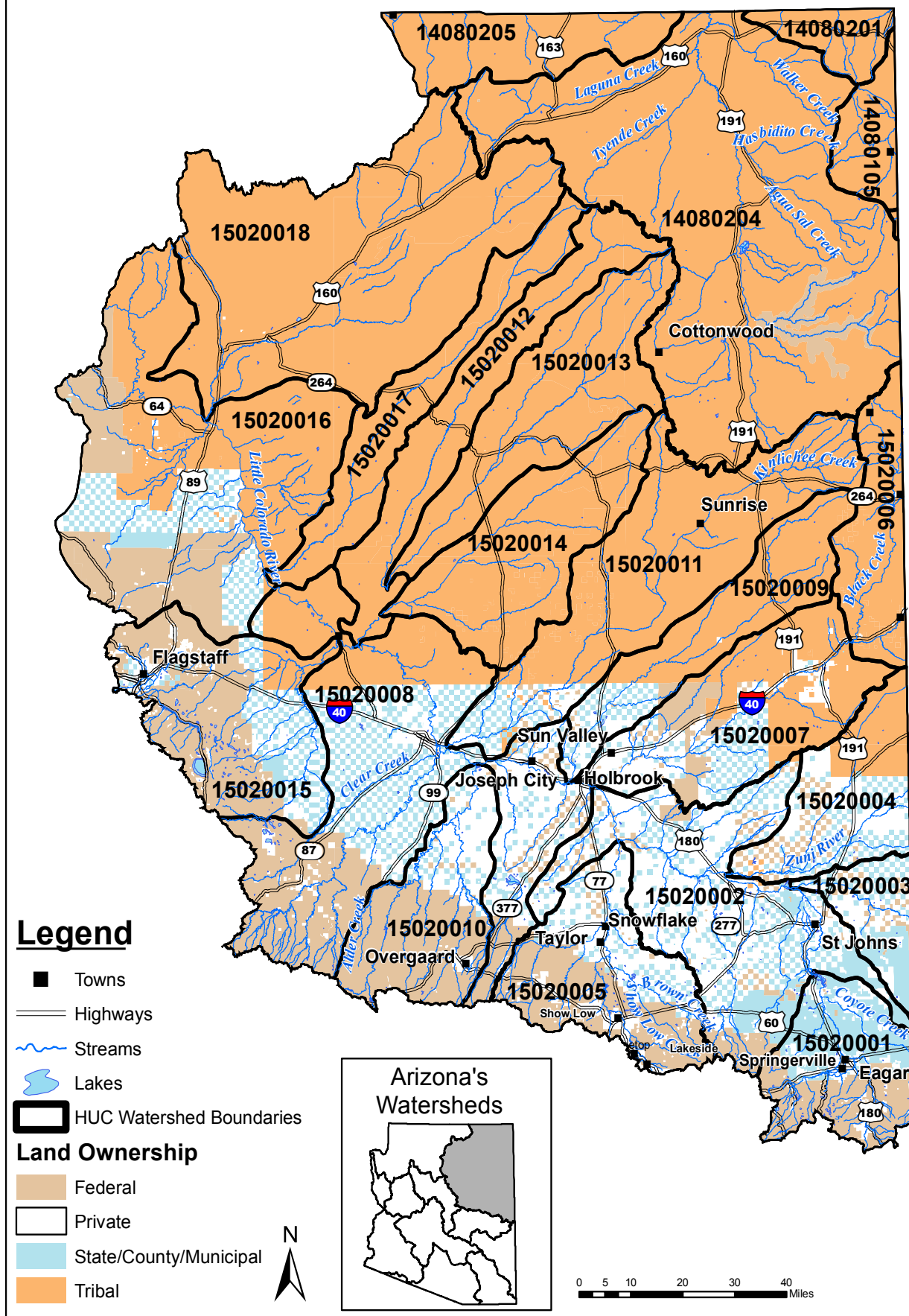
Assessments

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

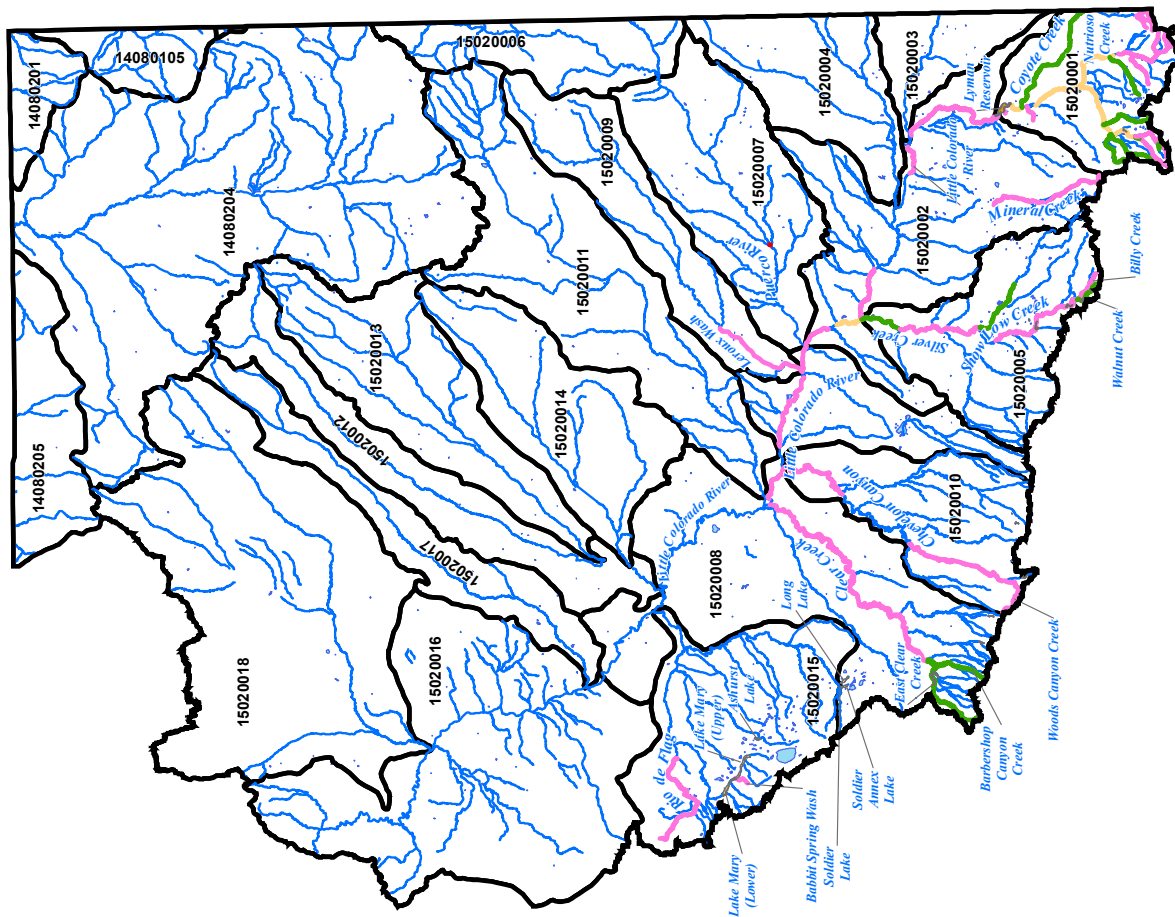
14080105	La Plata River Drainage Area (Tribal Land – Not assessed)
14080106	Charco River Drainage Area (Tribal Land – Not assessed)
14080201	Cottonwood Creek Drainage Area (Tribal Land – Not assessed)
14080204	Chinle Wash Drainage Area (Tribal Land – Not assessed)
14080205	Oljeto Wash Drainage Area (Tribal 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

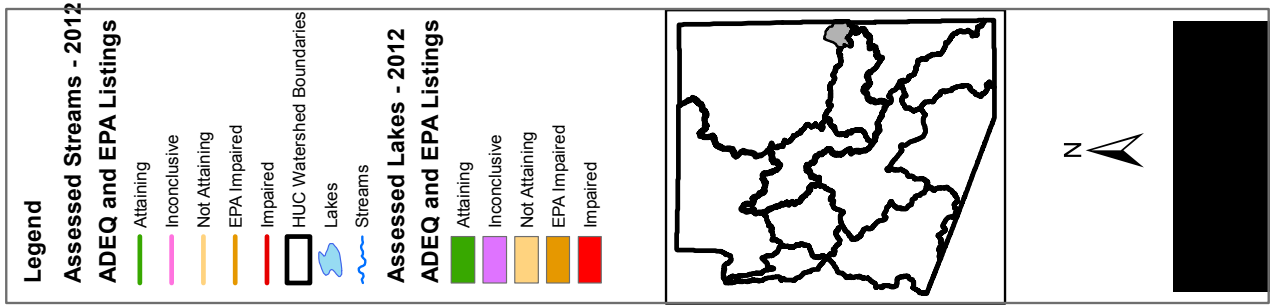
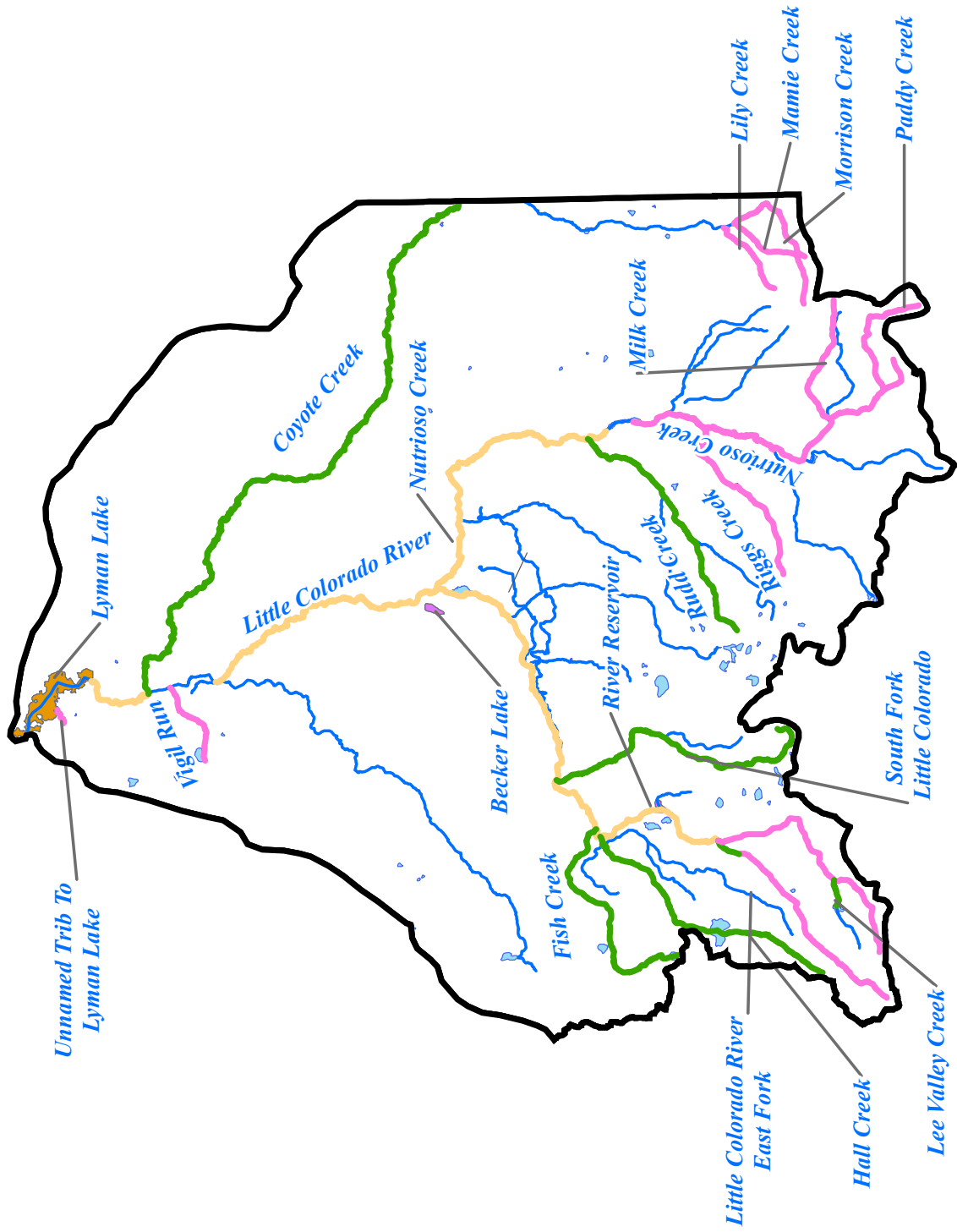


Little Colorado / San Juan Watershed 2012/2014 Assessment for Streams and Lakes

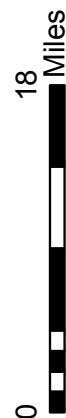
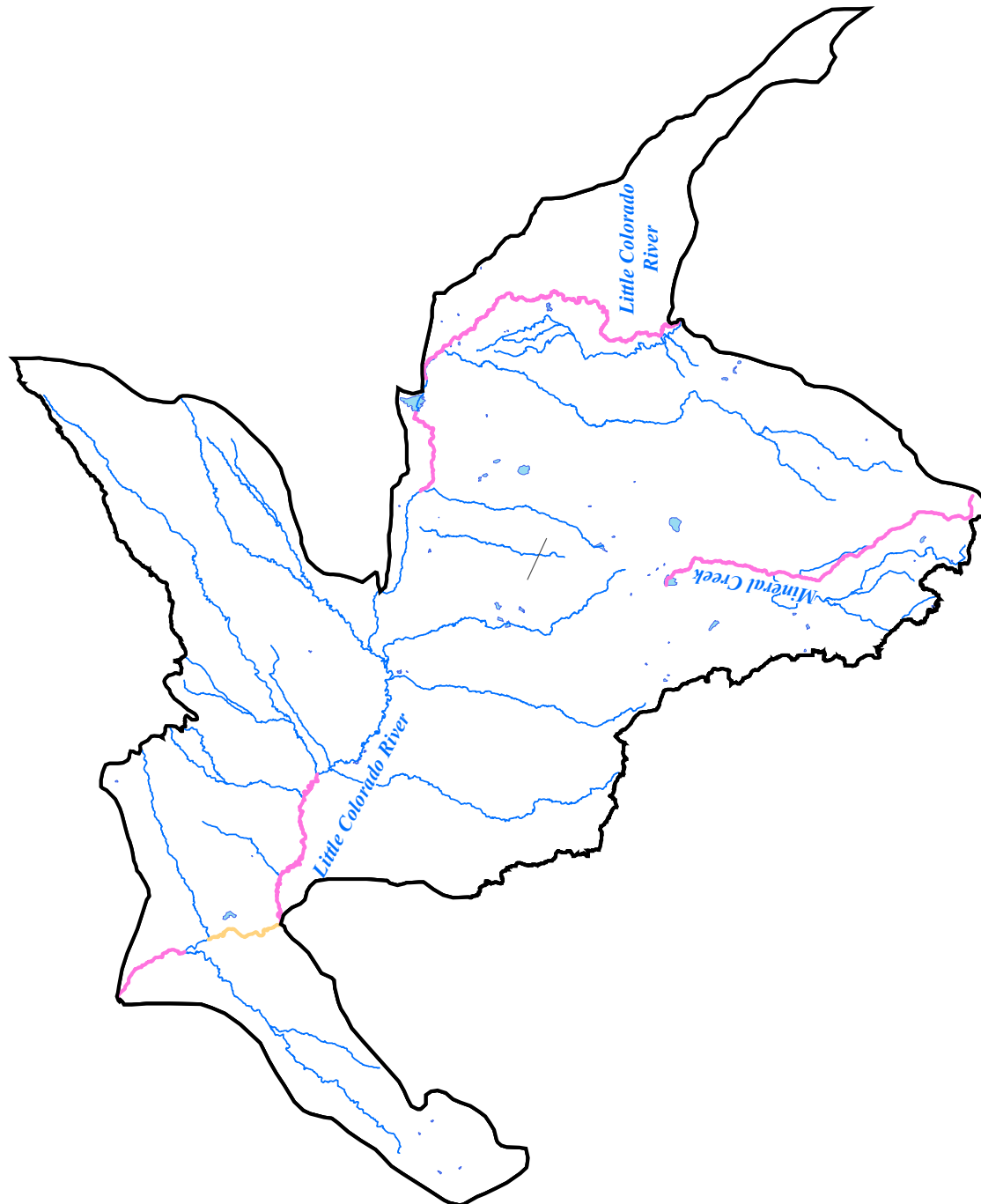
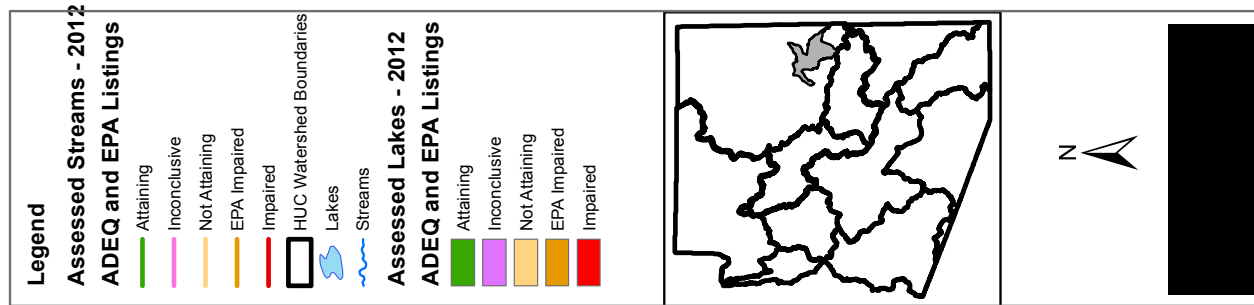


<p>Legend</p> <p>Assessed Lakes - 2012 ADEQ and EPA Listings</p> <ul style="list-style-type: none"> Attaining Inconclusive Not Attaining EPA Impaired Impaired <p>HUC Watershed Boundaries</p> <p>Assessed Streams - 2012 ADEQ and EPA Listings</p> <ul style="list-style-type: none"> Attaining Inconclusive Not Attaining EPA Impaired Impaired <p>Lakes</p> <p>Streams</p>		<p>See Individual HUC Printouts for Waters not Labeled</p> <p>N</p>
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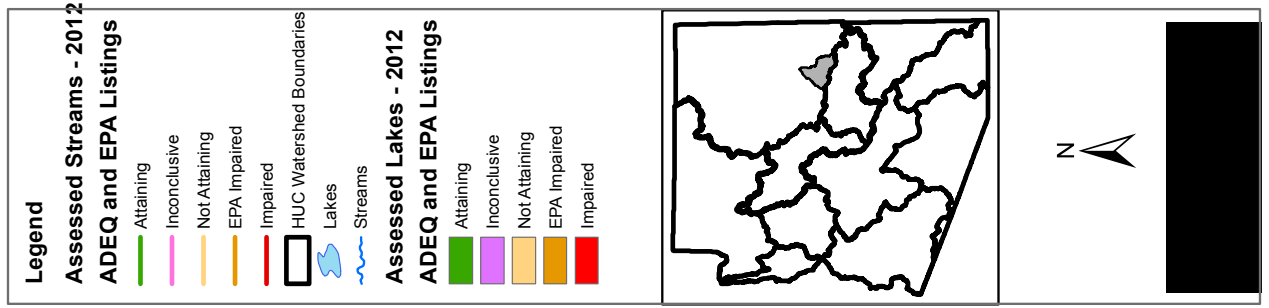
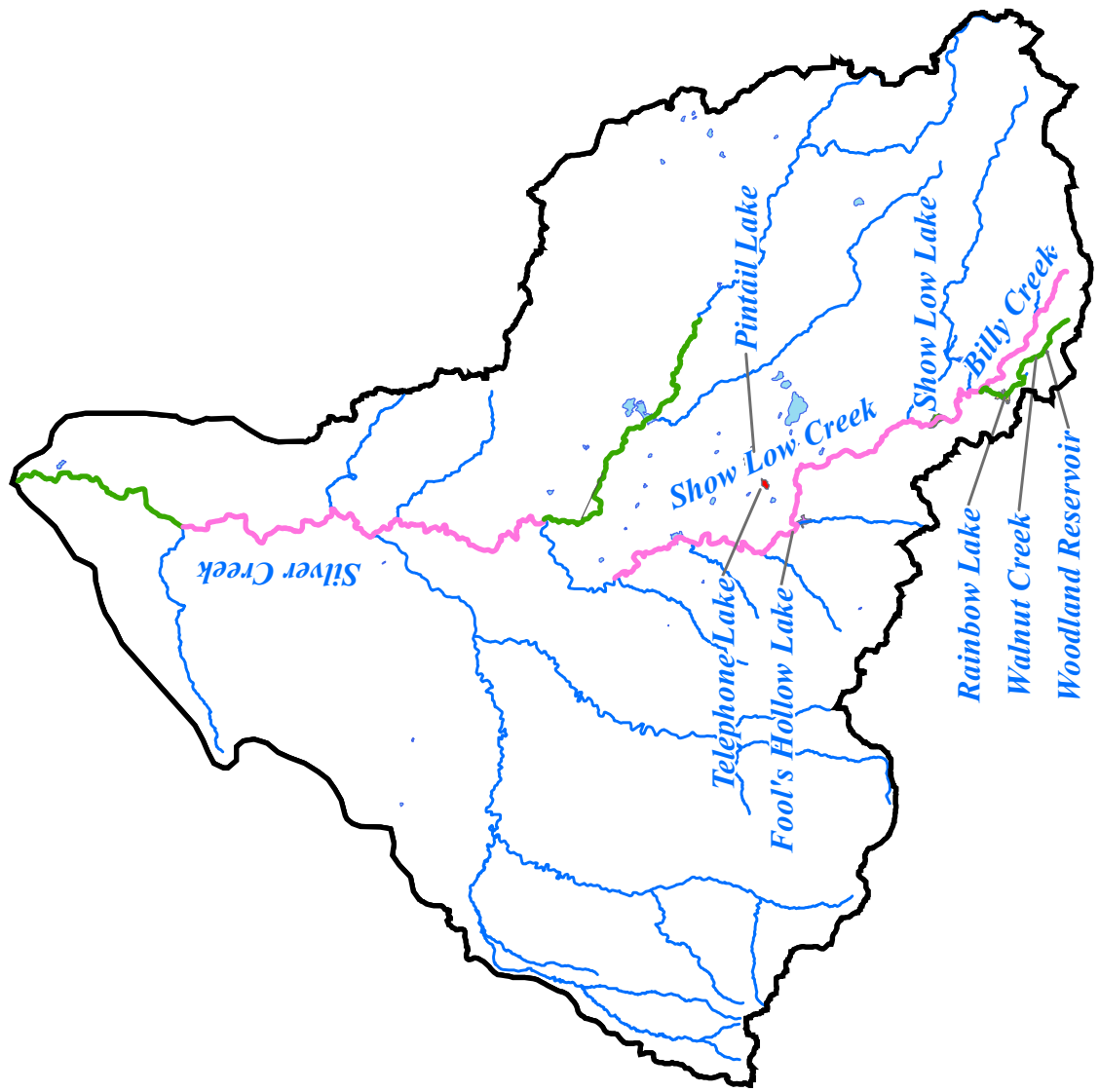
Little Colorado / San Juan Watershed HUC 15020001 2012/2014 Assessment for Streams and Lakes



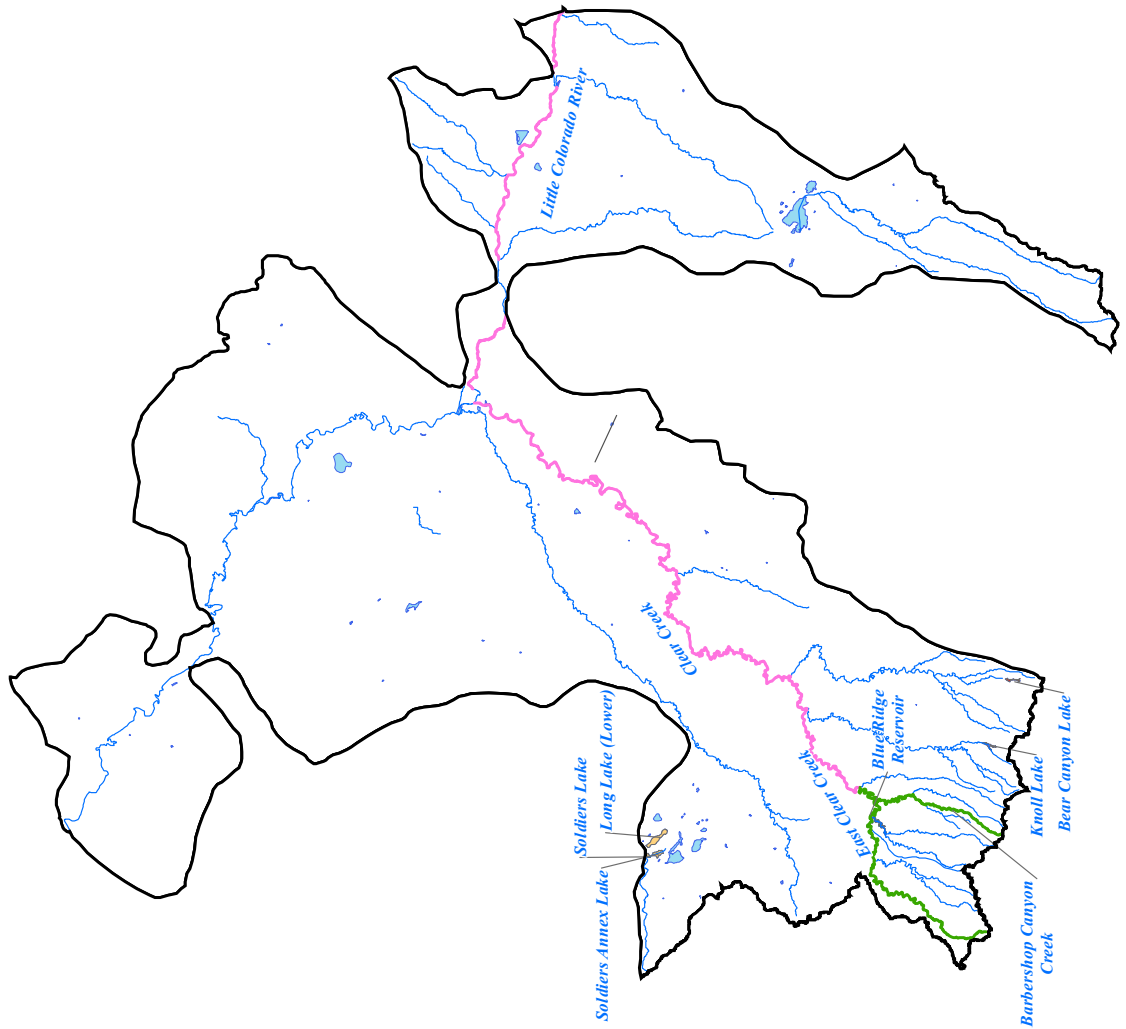
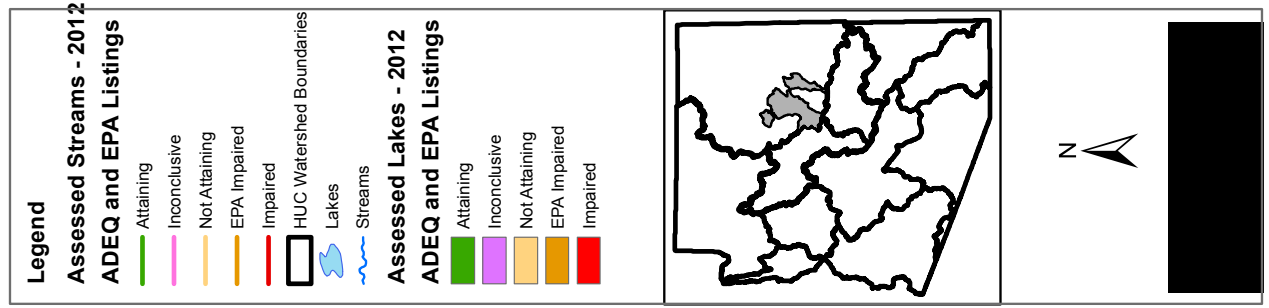
Little Colorado / San Juan Watershed HUC 15020002 2012/2014 Assessment for Streams and Lakes



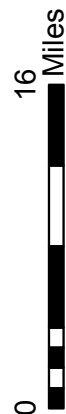
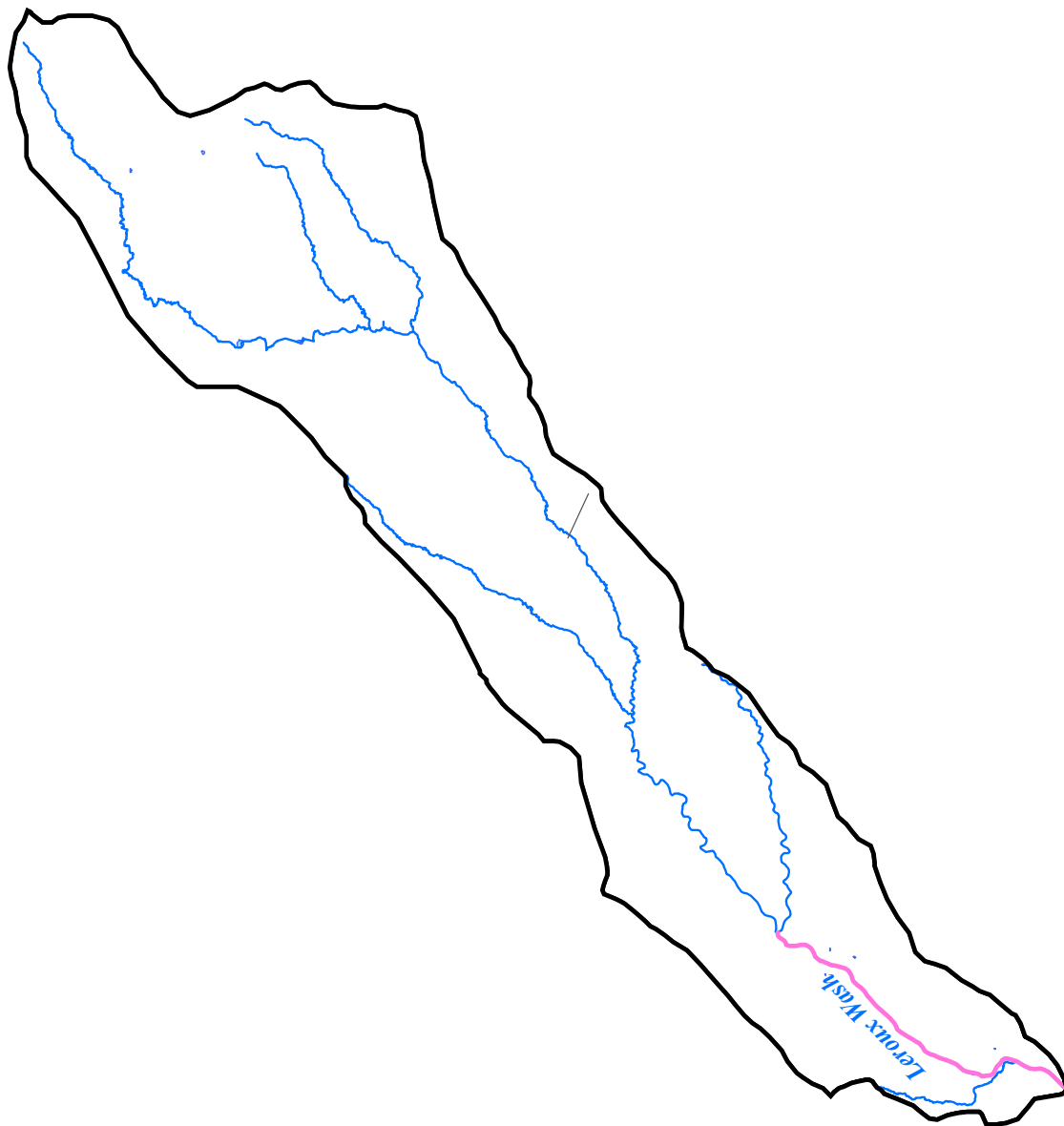
Little Colorado / San Juan Watershed HUC 15020005 2012/2014 Assessment for Streams and Lakes



Little Colorado / San Juan Watershed HUC 15020008 2012/2014 Assessment for Streams and Lakes



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



Legend

Assessed Streams - 2012

ADEQ and EPA Listings

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

HUC Watershed Boundaries

Lakes

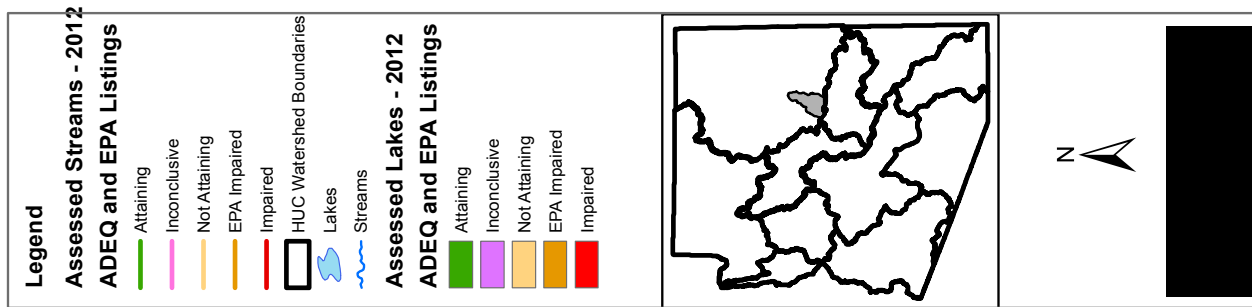
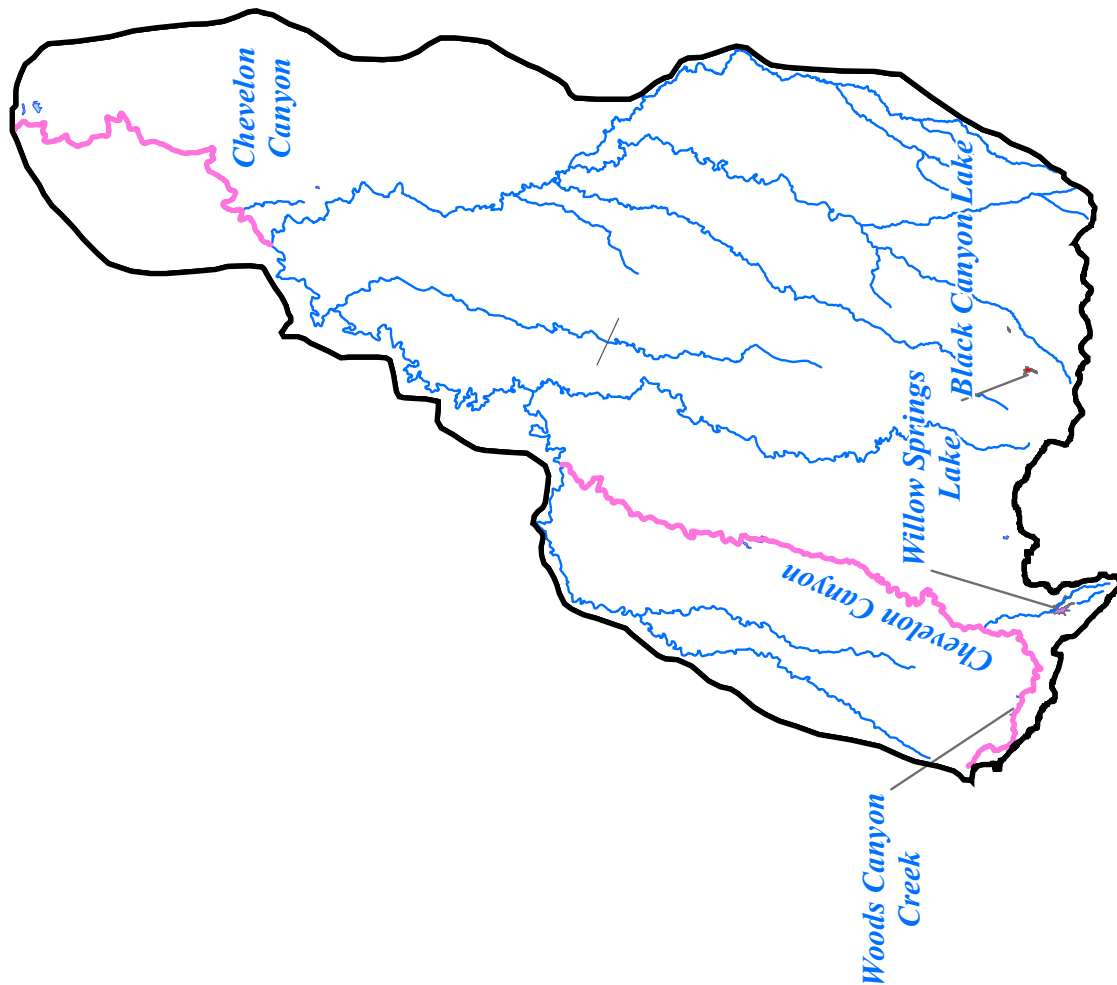
Streams

Assessed Lakes - 2012

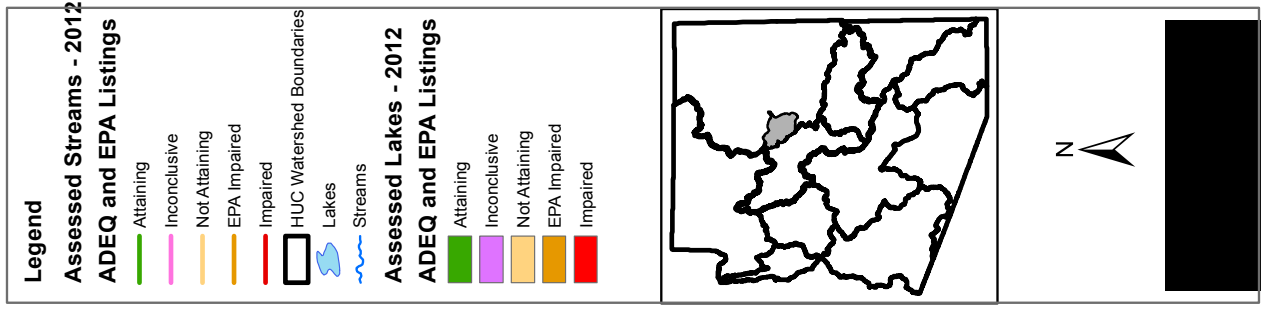
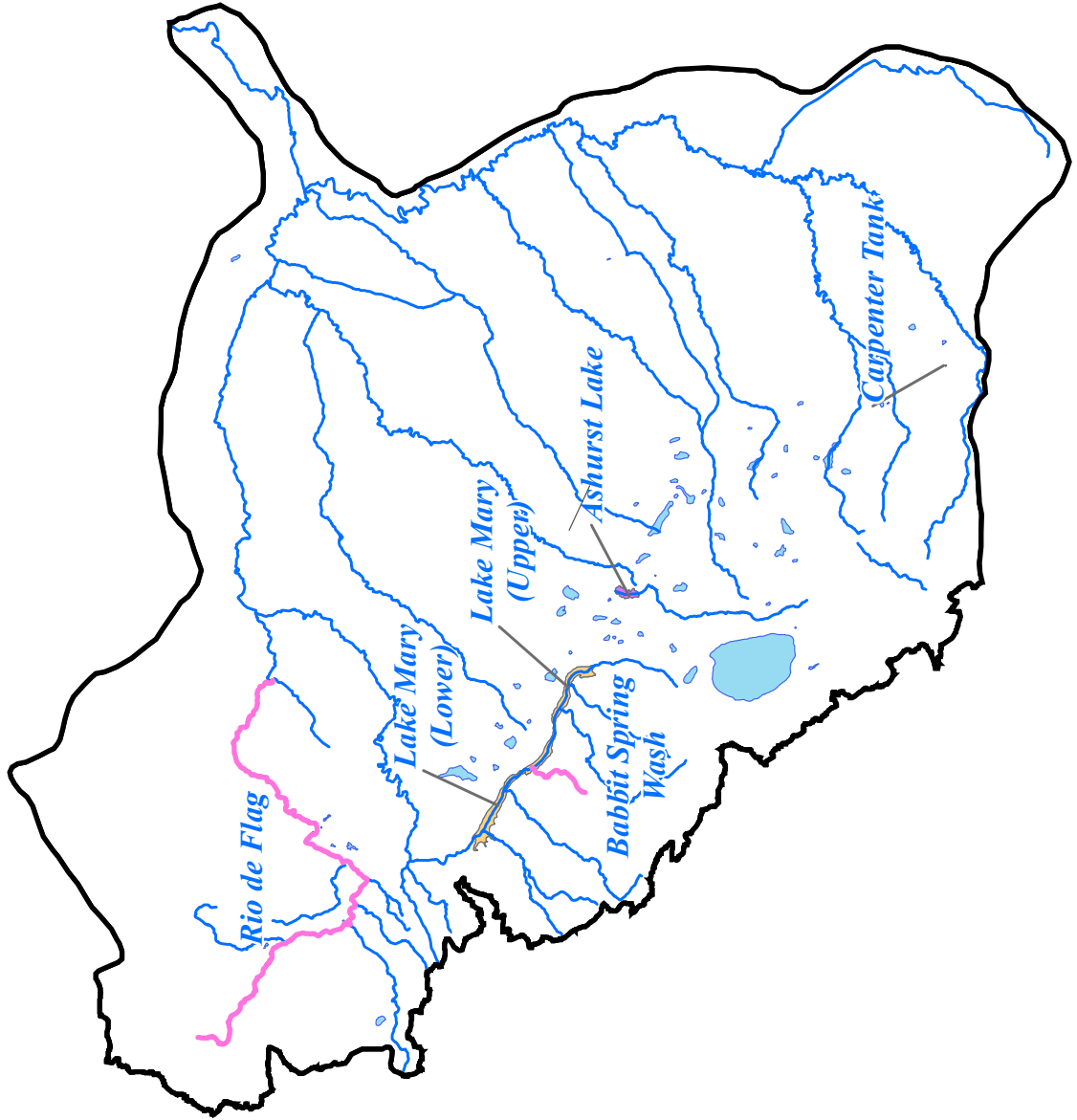
ADEQ and EPA Listings

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

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

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
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 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	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 \geq 52 attaining IBI 46 - 51 inconclusive IBI \leq 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 NUTRIOSO 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	
<i>E. coli</i>	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 ug/L (DWS) 5106 ug/L (FC) 10000 ug/L (AGI)	7/15/2008	3500 ug/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 ug/L	
		9/6/2009	12000 ug/L	
		9/7/2009	7448 ug/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.



SILVER CREEK

Cottonwood Wash - Sevenmile Draw
15020005-003
10.9 Miles

Category 3

Inconclusive

Little Colorado

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

Ammonia (2010)

IMPACT

STATUS

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.