

EXHIBIT 8.2.1.1A

ATTACHED

ABSTRACT OF IRRIGATION STORAGE RESERVOIR Little Colorado River Adjudication

HAY LAKE INTEGRATED SYSTEM		
1.	Name of Facility	Hay Lake Integrated System ^A
2.	Owner of Facility.	Bar T Bar Ranch, Inc. ^B
3.	Landowners.	Bar T Bar Ranch, Inc. (Reservoirs, Places of Use) Crater Ranch LLC (Places of Use) United States Department of Agriculture, Coconino National Forest (Reservoirs per land exchange)
4.	Statement of Claimant No.(s).	39-88743 39-88744 39-88746
5.	Statement of Claimant Name(s).	Bar T Bar Ranch, Inc.
6.	Lessee or Permittee.	n/a
7.	Basis of Right.	36-102358 CWR 1372 (R-253; Permit R-135) (A-536; Permit A-759) CWR 3425 (R-1146; Permit R-758) (A-3162; Permit A-2197) App. R-2785; Permit R-2035 33-36109
8.	Beneficial Use.	Irrigation Stockwatering Stockponds
9.	Priority Date.	December 31, 1877 ^C
10.	Quantity. ^D	Soldier Lake Storage Capacity: 550 acre-feet Soldier Lake Annex Storage Capacity: 1,886 acre-feet Tremaine Lake Storage Capacity: 5,150 acre-feet Long Lake Storage Capacity: 1,550 acre-feet Maximum diversion rate = 200 CFS Continuous fill for all reservoirs

HAY LAKE INTEGRATED SYSTEM	
	<p>Irrigation: 850 AFA (200 acres)</p> <p>Irrigation Season: March 15 to October 15</p> <p>Stockwatering: Reasonable use</p> <p>Stockponds (Cumulative storage capacity; continuous fill): 99.60 acre-feet ^E</p>
11.	<p>Places of Use.</p> <p><u>Location of Soldier Lake:</u> Section 6, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Location of Soldier Lake Annex:</u> Section 7, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Location of Tremaine Lake:</u> Sections 18, 19 and 20, Township 16 North, Range 11 East, and Sections 13 and 24, Township 16 North, Range 10 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Location of Long Lake:</u> Sections 6, 8, and 17, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Location of Irrigation Places of Use:</u> Section 32, Township 16 North, Range 11 East, and Section 5, Township 15 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Location of Stockwatering Uses:</u> At the lakes described above, along 47 miles of ditch, and at approximately 31 stockponds filled by the Hay Lake Integrated System on private, state and federal lands in Township 16 North, Range 10 East; Township 16 North, Range 11 East; Township 16 North, Range 12 East; Township 17 North, Range 12 East; Township 17 North, Range 12 ½ East; Township 18 North, Range 12 ½ East; and Township 18 North, Range 13 East,</p>

HAY LAKE INTEGRATED SYSTEM		
		Gila & Salt River Base and Meridian, Coconino County, Arizona
12.	Points of Diversion.	<p><u>Soldier Lake and Soldier Lake Annex:</u> NE ¼ NW ¼ of Section 18, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Tremaine Lake:</u> Near midpoint of eastern section line, Section 19, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Long Lake:</u> During large flood events, water can spill from Soldier Lake Annex into Long Lake (W ½ of Section 6, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona) and then into Chavez Pass Ditch (NW1/4 of Section 17, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona) for stockwatering.</p>
13.	Source of Water.	North & South Forks of Hutch Mountain Draw, Ruth’s Draw, Tremaine Draw, Sawmill Wash, all tributaries to Canyon Diablo, and Jacks Canyon, all tributaries of the Little Colorado River

^A The Hay Lake Integrated System includes Hay Lake that has been developed into irrigated pasture including alfalfa, turf (Kentucky Blue Grass), rye, sod, and improved pasture (“the Hay Lake Farm”), and interconnected reservoirs that are used to store and transport water to the Hay Lake Farm and numerous stockwatering locations. The storage system includes Tremaine Lake and Soldier Lake Annex, which store water for irrigation and stockwatering purposes. Soldier Lake is used for temporary storage of high flows. During wet years, Soldier Lake and Soldier Lake Annex are connected and may appear to be one body of water. Long Lake is a natural depression that is filled with overflow from Soldier and Soldier Annex Lakes. The overflow in Long Lake is carried away by the Chavez Pass Ditch for stockwatering.

^B Since 1998, Bar T Bar Ranch, Inc. and the United States Forest Service-Coconino National Forest have been working on a land exchange that involves an exchange of water rights (“the USFS Proposal”). Not all documents for the USFS Proposal, particularly water right filing amendments and transfers, have been completed. This abstract describes the Bar T Bar Ranch, Inc. and Crater Ranch LLC (collectively, “Bar T Bar”) beneficial water uses and facilities and does not address any claims by the United States.

^C The Hay Lake Farm was settled and farmed approximately 30 years before land was opened up to homesteading pursuant to the Forest Homestead Act of 1906. The 1906 Act was enacted to promote cultivation of lands within forest reserves instead of mere ranch headquarters for running livestock. At Hay Lake Farm and its

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vicinity, some of the early homesteads predated the forest, with settlers drawn to the area because land could be cultivated. Improvements such as irrigation ditches were made by the original settlers and later expanded and developed by the homesteaders and others who acquired their properties after the 1906 Act.

^D At the beginning of each calendar year, Bar T Bar is entitled to use the first one thousand (1,000) acre-feet for irrigation on the Hay Lake Farm and for stockwatering through a complex system of 47 miles of ditches and numerous stockponds that provide stockwater on federal, state and private lands. Additionally, Bar T Bar is entitled to the last one thousand (1,000) acre-feet in storage in Soldier Annex and Tremaine Lakes, meaning that one thousand (1,000) acre-feet will be reserved and stored at the end of each calendar year. This storage arrangement guarantees Bar T Bar the first use of at least one thousand (1,000) acre-feet of water the succeeding year for irrigation, stockponds and stockwatering.

^E 2,500 head of cattle are maintained by Bar T Bar on the ranch. In addition to direct stockwatering, Bar T Bar has a storage right of at least 99.6 acre-feet, representing the total storage capacity for stockponds that are filled with water from the Hay Lake Integrated System. The ponds and their locations are more particularly described in Other Uses Statement of Claimant No. 39-87474.

EXHIBIT 8.2.1.1B

ATTACHED

EXHIBIT 8.2.1.1B
Bar T Bar Ranch, Inc. Abstract

ABSTRACT OF IRRIGATION STORAGE RESERVOIR
Little Colorado River Adjudication

HAY LAKE INTEGRATED SYSTEM		
1.	Name of Facility	Hay Lake Integrated System ^A
2.	Owner of Facility.	Bar T Bar Ranch, Inc. ^B
3.	Landowners.	Bar T Bar Ranch, Inc. (Reservoirs, Places of Use) Crater Ranch LLC (Places of Use) United States Department of Agriculture, Coconino National Forest (Reservoirs per land exchange)
4.	Statement of Claimant No.(s).	39-88743 39-88744 39-88746
5.	Statement of Claimant Name(s).	Bar T Bar Ranch, Inc.
6.	Lessee or Permittee.	n/a
7.	Basis of Right.	36-102358 CWR 1372 (R-253; Permit R-135) (A-536; Permit A-759) CWR 3425 (R-1146; Permit R-758) (A-3162; Permit A-2197) App. R-2785; Permit R-2035 33-36109
8.	Beneficial Use.	Irrigation Stockwatering Stockponds
9.	Priority Date.	December 31, 1877 ^C
10.	Quantity. ^D	Soldier Lake Storage Capacity: 550 acre-feet Soldier Lake Annex Storage Capacity: 1,886 acre-feet Tremaine Lake Storage Capacity: 5,150 acre-feet Long Lake Storage Capacity: 1,550 acre-feet Maximum diversion rate = 200 CFS Continuous fill for all reservoirs

HAY LAKE INTEGRATED SYSTEM	
	<p>Irrigation: 850 AFA (200 acres)</p> <p>Irrigation Season: March 15 to October 15</p> <p>Stockwatering: Reasonable use</p> <p>Stockponds (Cumulative storage capacity; continuous fill): 99.60 acre-feet ^E</p>
11.	<p>Places of Use.</p> <p><u>Location of Soldier Lake:</u> Section 6, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Location of Soldier Lake Annex:</u> Section 7, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Location of Tremaine Lake:</u> Sections 18, 19 and 20, Township 16 North, Range 11 East, and Sections 13 and 24, Township 16 North, Range 10 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Location of Long Lake:</u> Sections 6, 8, and 17, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Location of Irrigation Places of Use:</u> Section 32, Township 16 North, Range 11 East, and Section 5, Township 15 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Location of Stockwatering Uses:</u> At the lakes described above, along 47 miles of ditch, and at approximately 31 stockponds filled by the Hay Lake Integrated System on private, state and federal lands in Township 16 North, Range 10 East; Township 16 North, Range 11 East; Township 16 North, Range 12 East; Township 17 North, Range 12 East; Township 17 North, Range 12 ½ East; Township 18 North, Range 12 ½ East; and Township 18 North, Range 13 East,</p>

HAY LAKE INTEGRATED SYSTEM		
		Gila & Salt River Base and Meridian, Coconino County, Arizona
12.	Points of Diversion.	<p><u>Soldier Lake and Soldier Lake Annex:</u> NE ¼ NW ¼ of Section 18, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Tremaine Lake:</u> Near midpoint of eastern section line, Section 19, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona</p> <p><u>Long Lake:</u> During large flood events, water can spill from Soldier Lake Annex into Long Lake (W ½ of Section 6, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona) and then into Chavez Pass Ditch (NW1/4 of Section 17, Township 16 North, Range 11 East, Gila & Salt River Base and Meridian, Coconino County, Arizona) for stockwatering.</p>
13.	Source of Water.	North & South Forks of Hutch Mountain Draw, Ruth's Draw, Tremaine Draw, Sawmill Wash, all tributaries to Canyon Diablo, and Jacks Canyon, all tributaries of the Little Colorado River

^A The Hay Lake Integrated System includes Hay Lake that has been developed into irrigated pasture including alfalfa, turf (Kentucky Blue Grass), rye, sod, and improved pasture ("the Hay Lake Farm"), and interconnected reservoirs that are used to store and transport water to the Hay Lake Farm and numerous stockwatering locations. The storage system includes Tremaine Lake and Soldier Lake Annex, which store water for irrigation and stockwatering purposes. Soldier Lake is used for temporary storage of high flows. During wet years, Soldier Lake and Soldier Lake Annex are connected and may appear to be one body of water. Long Lake is a natural depression that is filled with overflow from Soldier and Soldier Annex Lakes. The overflow in Long Lake is carried away by the Chavez Pass Ditch for stockwatering.

^B Since 1998, Bar T Bar Ranch, Inc. and the United States Forest Service-Coconino National Forest have been working on a land exchange that involves an exchange of water rights ("the USFS Proposal"). Not all documents for the USFS Proposal, particularly water right filing amendments and transfers, have been completed. This abstract describes the Bar T Bar Ranch, Inc. and Crater Ranch LLC (collectively, "Bar T Bar") beneficial water uses and facilities and does not address any claims by the United States.

^C The Hay Lake Farm was settled and farmed approximately 30 years before land was opened up to homesteading pursuant to the Forest Homestead Act of 1906. The 1906 Act was enacted to promote cultivation of lands within forest reserves instead of mere ranch headquarters for running livestock. At Hay Lake Farm and its

vicinity, some of the early homesteads predated the forest, with settlers drawn to the area because land could be cultivated. Improvements such as irrigation ditches were made by the original settlers and later expanded and developed by the homesteaders and others who acquired their properties after the 1906 Act.

[Ⓓ] At the beginning of each calendar year, Bar T Bar is entitled to use the first one thousand (1,000) acre-feet for irrigation on the Hay Lake Farm and for stockwatering through a complex system of 47 miles of ditches and numerous stockponds that provide stockwater on federal, state and private lands. Additionally, Bar T Bar is entitled to the last one thousand (1,000) acre-feet in storage in Soldier Annex and Tremaine Lakes, meaning that one thousand (1,000) acre-feet will be reserved and stored at the end of each calendar year. This storage arrangement guarantees Bar T Bar the first use of at least one thousand (1,000) acre-feet of water the succeeding year for irrigation, stockponds and stockwatering.

[Ⓔ] 2,500 head of cattle are maintained by Bar T Bar on the ranch. In addition to direct stockwatering, Bar T Bar has a storage right of at least 99.6 acre-feet, representing the total storage capacity for stockponds that are filled with water from the Hay Lake Integrated System. The ponds and their locations are more particularly described in Other Uses Statement of Claimant No. 39-87474.

EXHIBIT 8.2.1.1C

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EXHIBIT 8.2.1.1C
Flying M Ranch LLLP Abstract

ABSTRACT OF IRRIGATION STORAGE RESERVOIR
Little Colorado River Adjudication

FLYING M RANCH		
1.	Name of Reservoir (Facility)	Kinnikinick Lake and Morton Lake, known as the "Twin Lakes" ^A
2.	Owner of Reservoir.	Flying M Ranch LLLP
3.	Landowner. ^B	<u>Twin Lakes:</u> United States (Coconino National Forest) <u>Beneficial Uses:</u> Flying M Ranch LLLP
4.	Statement of Claimant No.(s).	39-88377 39-88378
5.	Statement of Claimant Name(s).	Flying M Ranch LLLP
6.	Lessee or Permittee.	n/a
7.	Basis of Right.	CWR 1463 36-_____ [number pending]
8.	Beneficial Use.	Irrigation Domestic Stockwatering
9.	Priority Date.	March 26, 1903
10.	Quantity.	<u>Storage Capacity:</u> Kinnikinick Lake: 2,532.00 acre-feet Morton Lake: <u>285.00 acre-feet</u> 2,817.00 acre-feet Continuous fill. Maximum diversion rate: 25 CFS <u>Irrigation:</u> 500 AFA (112.53 acres) Irrigation Season: April 1 to September 30 <u>Domestic:</u> 0.15 AFA <u>Stockwatering (and Stockponds Identified in Endnote C below):</u> Reasonable Use ^C
11.	Places of Use.	<u>Location of the Twin Lakes:</u> Sections 35 and 36, Township 18 North, Range 10 East, Gila & Salt River Base and Meridian,

FLYING M RANCH		
		<p>Coconino County, Arizona</p> <p><u>Location of Places of Use</u> are within what is called "Morton Place" in Sections 33 and 34, Township 18 North, Range 11 East, and Sections 3 and 4, Township 17 North, Range 11 East, all in the Gila & Salt River Base and Meridian, Coconino County, Arizona. Occasional domestic uses and stockwatering occur throughout the Morton Place.^D Specific irrigation use locations include:</p> <ul style="list-style-type: none"> • 20.28 acres in N ½ NW ¼ NW ¼ Section 3, Township 17 North, Range 11 East; • 20.25 acres in E ½ NE ¼ NE ¼ Section 4, Township 17 North, Range 11 East; • 5.00 acres in the S ½ SE ¼ NE ¼ SE ¼ Section 33, Township 18 North, Range 11 East; • 17.00 acres in the E ½ SE ¼ SE ¼ Section 33, Township 18 North, Range 11 East; • 40 acres in the SW ¼ SW ¼ Section 34, Township 18 North, Range 11 East; and • 10 acres in the S ½ NW ¼ SW ¼ Section 34, Township 18 North, Range 11 East.
12.	Points of Diversion.	<p><u>Kinnikinick Ditch</u> – SE ¼ SW ¼ SW ¼ Section 34, Township 18 North, Range 10 East</p> <p><u>Kinnikinick Lake</u> – SE ¼ NE ¼ S3 ¼ Section 35, Township 18 North, Range 10 East</p> <p><u>Morton Canyon</u> – NE ¼ SE ¼ SW ¼ Section 5, Township 17 North, Range 11 East</p> <p>All in the Gila and Salt Base & Meridian, Coconino County, Arizona</p>
13.	Source of Water.	Kinnikinick Canyon and Morton Canyon, tributaries to Grapevine Canyon

^A Kinnikinick Lake originated as a natural depression and was once known as Lake Bourne. The other "Twin Lake" is Morton Lake, which also originated as a natural depression and is immediately east of Kinnikinick Lake. The natural drainage feeding each of the Twin Lakes was improved over the years. Kinnikinick Lake is filled by Kinnikinick Ditch that diverts water from Kinnikinick Canyon, also known as Beasley Draw. Morton Lake was

improved in 1942 so that it could more effectively be filled with the overflow from Kinnikinick Lake. Water stored in Morton Lake is released into Morton Draw. At the confluence of Morton Draw and Kinnikinick Canyon, the water is diverted by ditch to the Morton Place. Several stockponds are filled by the Morton Ditch. These storage and diversion facilities are referred to as “the Twin Lakes Facility” in this abstract.

^b Prior to the forest reservation, the land and the Twin Lakes were owned by the Aztec Land & Cattle Company. Aztec Land & Cattle Company exchanged the property with the federal government on March 26, 1903, which is being used as the priority date in this abstract, although stockwatering took place long before then. The lands in Morton Place that serve as the places of use were also part of the Aztec Land & Cattle Company’s operation and later exchanged with the Forest Service.

^c Per a March 13, 1956, agreement with the State of Arizona concerning improvements made by the State to Kinnikinick Lake, there are a number of recognized stockponds directly fed by the Twin Lakes Facility. They include:

Name of Pond	Water Filing	Priority Date in the CWR	Location	Storage Capacity (AF)
Number 2 Tank Reservoir	CWR 1782	February 11 1950	NE-NE Section 23 and NW-NW Section 24 T18N-R11E	27.820
Reserve Tank Reservoir	CWR 1783	February 11, 1950	SW-SW Section 27 T18N-R11E	6.396
Number 3 Tank Reservoir	CWR 1784	February 11, 1950	NW-NW Section 25 T18N-R11E	8.737
Roosevelt Tank Reservoir	CWR 1785	February 11, 1950	NE-SW Section 16 T18N-R12E	25.239
Easter Tank Reservoir	CWR 1786	February 11, 1950	SE-NW Section 8 T18N-R12E	13.144
Olen Tank Reservoir	CWR 1787	February 11, 1950	SE-SE Section 20 and SW-SW Section 21 T18N-R11E	3.766
Number 1 Tank Reservoir	CWR 1788	February 11, 1950	NW-NW Section 11 T18N-R11E	26.777

There are several other tanks associated with sources to the Twin Lakes Facility that are not directly filled by the Kinnikinick Ditch and the Morton Ditch but recognized in the 1956 Agreement.

^d Stockwatering also occurs at the stockponds identified in the above endnote.

EXHIBIT 8.2.1.1D

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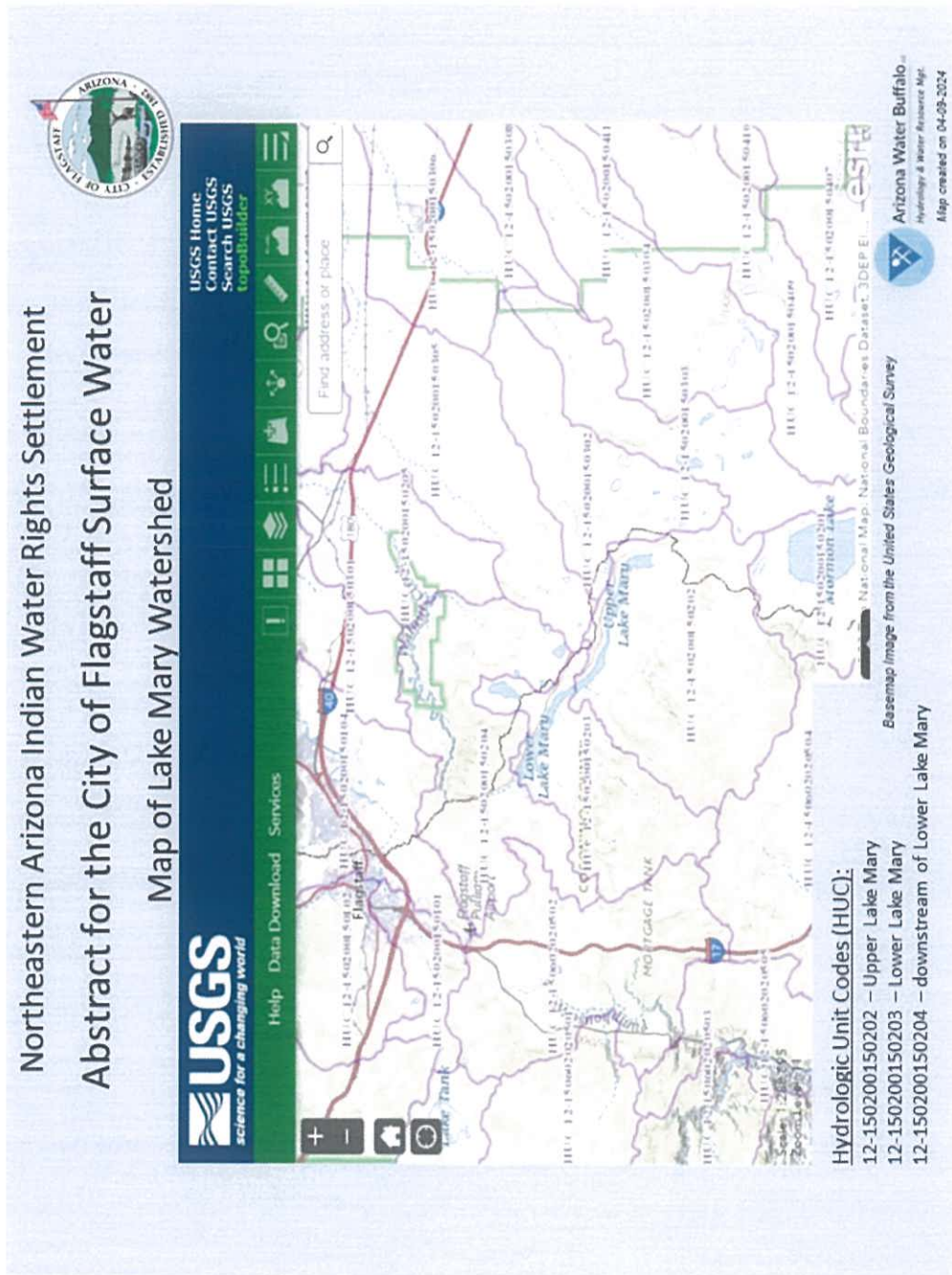
Exhibit 8.2.1.1D

ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Upper & Lower Lake Mary		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Completion Date	Lower Lake Mary - December 31, 1903 Upper Lake Mary - December 31, 1941
4.	Statement of Claimant No.(s).	39-03-83948; 39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWRs1984 and 3998; 1974 Water Rights Registration Act Registry No. 36-104752; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial; recreation, fish, wildlife
9.	Priority Date	December 31, 1903
10.	Storage Capacity	Lower Lake Mary: 8,617 AF Upper Lake Mary: 16,575 AF
11.	Quantity	Historic use includes combined operation for continuous fill; maximum diversion 10,035 AFY
12.	Places of Use	City of Flagstaff Service Area
13.	Points of Diversion	NE SE 18 T20N R8E (Lower Lake Mary) SW SE 27, T20N, R8E (Upper Lake Mary)
14.	Source of Water	Surface Water – Lake Mary watershed - Walnut Creek
15.	Comments	Combined Storage Right: 25,192 AF; Lower Lake Mary constructed in 1903; Upper Lake Mary constructed in 1941 and enlarged in 1951

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ABSTRACT FOR THE CITY OF FLAGSTAFF STIPULATION / NAIWRS Surface Water



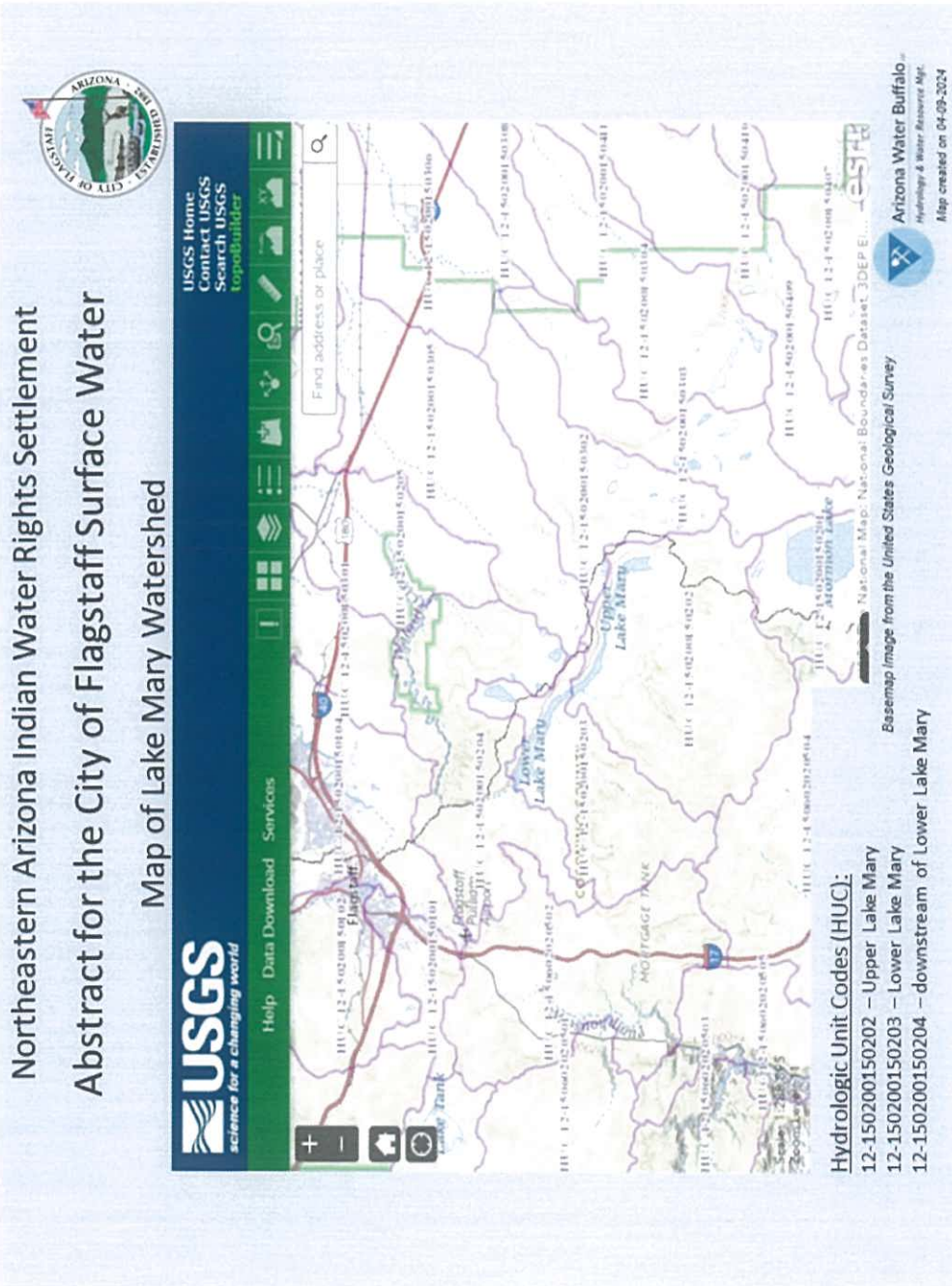
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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Upper Lake Mary		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Completion Date	December 31, 1941
4.	Statement of Claimant No.(s).	39-03-83948; 39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWRs 1984 and 3998; 1974 Water Rights Registration Act Registry No. 36-104752; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial; recreational, fish, wildlife
9.	Priority Date	December 31, 1903
10.	Storage Capacity	16,575 AF; continuous fill
11.	Quantity	6,966.3 AFY
12.	Places of Use	City of Flagstaff Service Area
13.	Points of Diversion	SW SE 27 T20N, R8E
14.	Source of Water	Surface Water – Lake Mary watershed - Walnut Creek
15.	Comments	Lower Lake Mary constructed in 1903; Upper Lake Mary constructed in 1941 and enlarged in 1951; Operation of Lower Lake Mary diversions are from Upper Lake Mary

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ABSTRACT FOR THE CITY OF FLAGSTAFF STIPULATION / NAIWRS Surface Water



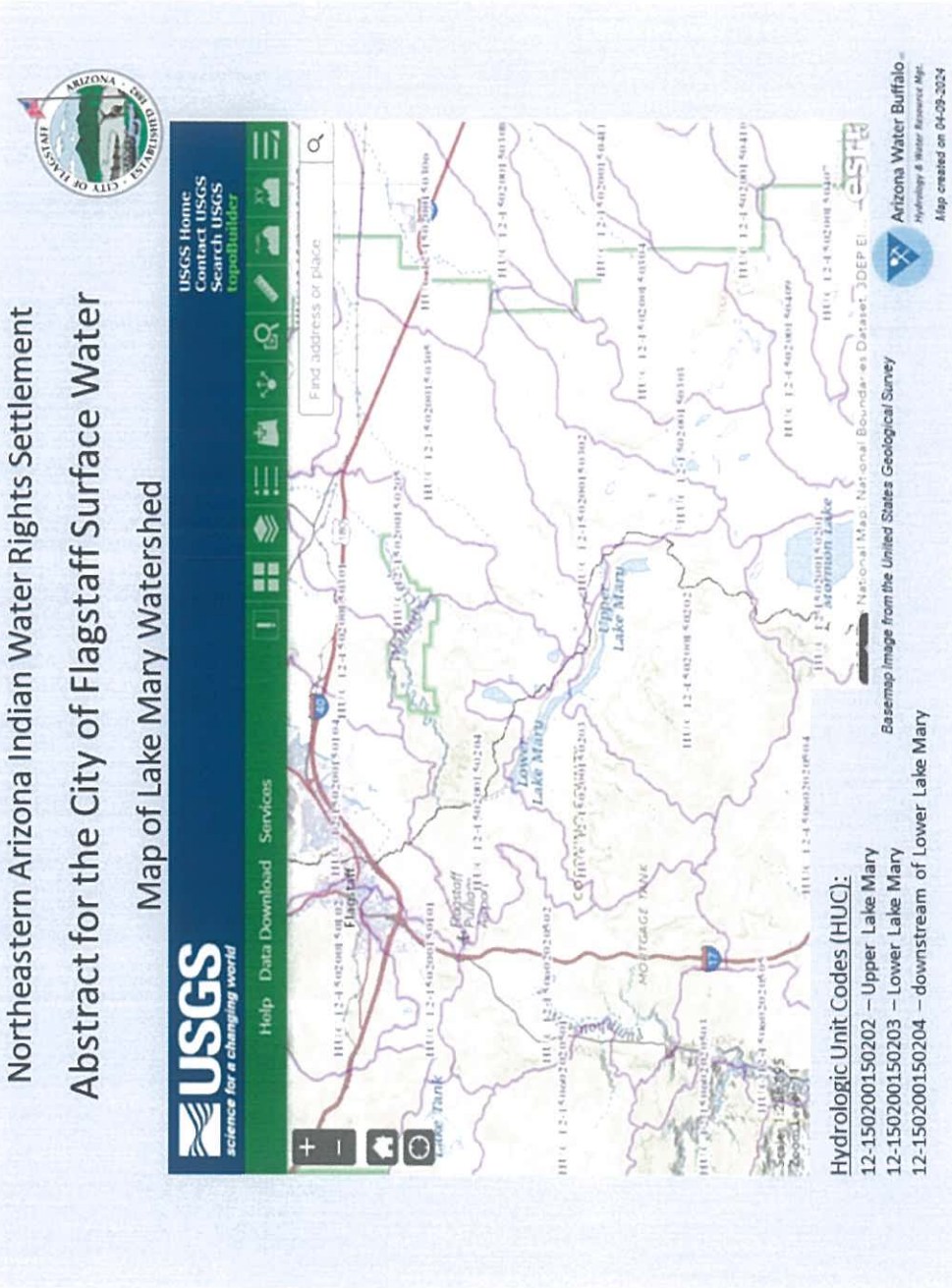
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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Lower Lake Mary		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Completion Date	December 31, 1903
4.	Statement of Claimant No.(s).	39-03-83948; 39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWRs 1984 and 3998; 1974 Water Rights Registration Act Registry No. 36-104752; Permit Application 33-87178; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial, recreational, fish, wildlife
9.	Priority Date	December 31, 1903
10.	Storage Capacity	8,617 AF; continuous fill
11.	Quantity	3,068.8 AFY
12.	Places of Use	City of Flagstaff Service Area
13.	Points of Diversion	SE 18 T20N, R8E; Upper Lake Mary
14.	Source of Water	Surface Water – Lake Mary watershed - Walnut Creek
15.	Comments	Lower Lake Mary constructed in 1903; Upper Lake Mary constructed in 1941 and enlarged in 1951; Lower Lake Mary diversions are from Upper Lake Mary

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ABSTRACT FOR THE CITY OF FLAGSTAFF STIPULATION / NAIWRS Surface Water



ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Arnold Canyon San Francisco Peaks Spring		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Priority Date	December 31, 1880
4.	Statement of Claimant No.(s).	39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWR 3922; Water Rights Registration Act Registry No. 36-105002; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial
9.	Quantity Flow Rate/Volume	30.69 AFY
10.	Places of Use	City of Flagstaff Service Area
11.	Points of Diversion	NE NW 28 T22N, R7E
12.	Source of Water	Surface Water
13.	Comments	1880 – The year in which the City of Flagstaff's predecessors-in-interest began developing the San Francisco Peaks watershed as a source of supply, including the appropriation of water sources in the Inner Basin watershed 1895 – The year in which the City of Flagstaff furthered plans for a San Francisco Peaks pipeline to provide a municipal water supply

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ABSTRACT FOR THE CITY OF FLAGSTAFF
STIPULATION / NAIWRS
Surface Water

Beard Canyon San Francisco Peaks Spring		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Priority Date	December 31, 1880
4.	Statement of Claimant No.(s).	39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWR 3923; Water Rights Registration Act Registry No. 36-105002; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial
9.	Quantity Flow Rate/Volume	33.45 AFY
10.	Places of Use	City of Flagstaff Service Area
11.	Points of Diversion	NW SW 28 T23N, R7E
12.	Source of Water	Surface Water
13.	Comments	1880 – The year in which the City of Flagstaff's predecessors-in-interest began developing the San Francisco Peaks watershed as a source of supply, including the appropriation of water sources in the Inner Basin watershed 1895 – The year in which the City of Flagstaff furthered plans for a San Francisco Peaks pipeline to provide a municipal water supply

ABSTRACT FOR THE CITY OF FLAGSTAFF
STIPULATION / NAIWRS
Surface Water

Little Bear Paw San Francisco Peaks Spring		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Priority Date	December 31, 1880
4.	Statement of Claimant No.(s).	39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWR 3924; Water Rights Registration Act Registry No. 36-105002; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial
9.	Quantity Flow Rate/Volume	85.01 AFY
10.	Places of Use	City of Flagstaff Service Area
11.	Points of Diversion	SE SW 28 T23N, R7E
12.	Source of Water	Surface Water
13.	Comments	1880 – The year in which the City of Flagstaff's predecessors-in-interest began developing the San Francisco Peaks watershed as a source of supply, including the appropriation of water sources in the Inner Basin watershed 1895 – The year in which the City of Flagstaff furthered plans for a San Francisco Peaks pipeline to provide a municipal water supply

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Dunnam Canyon San Francisco Peaks Spring		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Priority Date	December 31, 1880
4.	Statement of Claimant No.(s).	39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWR 3925; Water Rights Registration Act Registry No. 36-105002; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial
9.	Quantity Flow Rate/Volume	26.39 AFY
10.	Places of Use	City of Flagstaff Service Area
11.	Points of Diversion	SE SE 29 T23N, R7E
12.	Source of Water	Surface Water
13.	Comments	1880 – The year in which the City of Flagstaff's predecessors-in-interest began developing the San Francisco Peaks watershed as a source of supply, including the appropriation of water sources in the Inner Basin watershed 1895 – The year in which the City of Flagstaff furthered plans for a San Francisco Peaks pipeline to provide a municipal water supply

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Flagstaff Spring Canyon San Francisco Peaks Spring		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Priority Date	December 31, 1880
4.	Statement of Claimant No.(s).	39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWR 3926; Water Rights Registration Act Registry No. 36-105002; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial
9.	Quantity Flow Rate/Volume	159.58 AFY
10.	Places of Use	City of Flagstaff Service Area
11.	Points of Diversion	NE NE 32 T23N, R7E
12.	Source of Water	Surface Water
13.	Comments	<p>1880 – The year in which the City of Flagstaff’s predecessors-in-interest began developing the San Francisco Peaks watershed as a source of supply, including the appropriation of water sources in the Inner Basin watershed</p> <p>1895 – The year in which the City of Flagstaff furthered plans for a San Francisco Peaks pipeline to provide a municipal water supply</p>

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Snowslide Canyon Diversion No. 1 San Francisco Peaks Spring		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Priority Date	December 31, 1880
4.	Statement of Claimant No.(s).	39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWR 3927; Water Rights Registration Act Registry No. 36-105002; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial
9.	Quantity Flow Rate/Volume	12.28 AFY
10.	Places of Use	City of Flagstaff Service Area
11.	Points of Diversion	SE NE 32 T23N, R7E
12.	Source of Water	Surface Water
13.	Comments	<p>1880 – The year in which the City of Flagstaff's predecessors-in-interest began developing the San Francisco Peaks watershed as a source of supply, including the appropriation of water sources in the Inner Basin watershed</p> <p>1895 – The year in which the City of Flagstaff furthered plans for a San Francisco Peaks pipeline to provide a municipal water supply</p>

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Doyle Canyon Diversion No. 3 San Francisco Peaks Spring		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Priority Date	December 31, 1880
4.	Statement of Claimant No.(s).	39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWR 3928; Water Rights Registration Act Registry No. 36-105002; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial
9.	Quantity Flow Rate/Volume	92.07 AFY
10.	Places of Use	City of Flagstaff Service Area
11.	Points of Diversion	SW SE 33 T23N, R7E
12.	Source of Water	Surface Water
13.	Comments	1880 – The year in which the City of Flagstaff’s predecessors-in-interest began developing the San Francisco Peaks watershed as a source of supply, including the appropriation of water sources in the Inner Basin watershed 1895 – The year in which the City of Flagstaff furthered plans for a San Francisco Peaks pipeline to provide a municipal water supply

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Snowslide Canyon Diversion No. 2 San Francisco Peaks Spring		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Priority Date	December 31, 1880
4.	Statement of Claimant No.(s).	39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWR 3929; Water Rights Registration Act Registry No. 36-105002; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial
9.	Quantity Flow Rate/Volume	61.38 AFY
10.	Places of Use	City of Flagstaff Service Area
11.	Points of Diversion	NE SE 32 T23N, R7E
12.	Source of Water	Surface Water
13.	Comments	1880 – The year in which the City of Flagstaff's predecessors-in-interest began developing the San Francisco Peaks watershed as a source of supply, including the appropriation of water sources in the Inner Basin watershed 1895 – The year in which the City of Flagstaff furthered plans for a San Francisco Peaks pipeline to provide a municipal water supply

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

San Francisco Mountain Area		
1.	Owner	City of Flagstaff
2.	Landowner	U.S. Forest Service
3.	Priority Date	December 31, 1880
4.	Statement of Claimant No.(s).	39-03-83949
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	Pre-1919; State law; CWR 1983; Water Rights Registration Act Registry No. 36-105002; U.S. Forest Service Special Use Permit October 19, 2004
8.	Beneficial Use	Municipal & Industrial
9.	Quantity Flow Rate/Volume	1,461.4 AFY
10.	Places of Use	City of Flagstaff Service Area
11.	Points of Diversion	San Francisco Mountain Area includes Hoffman Canyon, Jack Canyon, Snowslide Canyon, Flagstaff Canyon, Little Bear Paw Canyon, Raspberry Canyon, Doyle Canyon, Arnold Canyon, Schultz Fork No. 1 Canyon, Mexican Mine Canyon, Big O'Brien Canyon, Little O'Brien Canyon, South Spruce Canyon, Freidlein Canyon, Freidlein Tank Canyon, Little Friedlein Canyon, Double Freidlein Canyon, East Freidlein Canyon, Powers Draw, Weatherford Canyon, East Weatherford Canyon, South Fork Sheep Dip Canyon, Sheep Dip Canyon, Barrel Canyon, Bear Canyon, Orion Springs, Bear Jaw Canyon, Ree's Canyon, Aubineau Canyon, Schultz Canyon, Brookbank Canyon, O'Hara Spring, Spencer Canyon, Beard Canyon, Dunnam Canyon and Flagstaff Spring Canyon
12.	Source of Water	Surface Water

ABSTRACT FOR THE CITY OF FLAGSTAFF STIPULATION / NAIWRS Surface Water

13.	Comments	<p>1880 – The year in which the City of Flagstaff’s predecessors-in-interest began developing the San Francisco Peaks watershed as a source of supply, including the appropriation of water sources in the Inner Basin watershed</p> <p>1895 – The year in which the City of Flagstaff furthered plans for a San Francisco Peaks pipeline to provide a municipal water supply</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Diversion Name</u></th> <th style="text-align: left;"><u>Legal Location (G&SRB&M)</u></th> </tr> </thead> <tbody> <tr><td>Hoffman Canyon</td><td>NESW Sec. 27, T23N, R7E</td></tr> <tr><td>Jack Smith Canyon #1</td><td>NESW Sec. 27, T23N, R7E</td></tr> <tr><td>Jack Smith Canyon #2</td><td>NWSW Sec. 27, T23N, R7E</td></tr> <tr><td>Jack Smith Canyon #3</td><td>SESE Sec. 29, T23N, R7E</td></tr> <tr><td>Little Bear Paw Canyon</td><td>SESW Sec. 28, T23N, R7E</td></tr> <tr><td>Beard Canyon</td><td>SESW Sec. 28, T23N, R7E</td></tr> <tr><td>Flagstaff Canyon #1 & 2</td><td>SESE Sec. 29, T23N, R7E</td></tr> <tr><td>Dunnam Canyon #1</td><td>SESE Sec. 29, T23N, R7E</td></tr> <tr><td>Raspberry Canyon #1</td><td>SWSW Sec. 27, T23N, R7E</td></tr> <tr><td>Raspberry Canyon #2,3 & 4</td><td>SESE Sec. 28, T23N, R7E</td></tr> <tr><td>Doyle Canyon #1 & 2</td><td>NESW Sec. , T23N, R7E</td></tr> <tr><td>Arnold Canyon</td><td>NENW Sec. 28, T22N, R7E</td></tr> <tr><td>Schultz Fork #1</td><td>SESW Sec. 21, T22N, R7E</td></tr> <tr><td>Mexican Mine Canyon</td><td>SESW Sec. 21, T22N, R7E</td></tr> <tr><td>Big O'Brien Canyon</td><td>NWSW Sec. 22, T22N, R7E</td></tr> <tr><td>Little O'Brien Canyon</td><td>NWSW Sec. 22, T22N, R7E</td></tr> <tr><td>South Spruce Canyon</td><td>NENW Sec. 22, T22N, R7E</td></tr> <tr><td>Freidlein Canyon</td><td>SWSE Sec. 7, T22N, R7E</td></tr> <tr><td>Freidlein Tank Canyon</td><td>NWNE Sec. 18, T22N, R7E</td></tr> </tbody> </table>	<u>Diversion Name</u>	<u>Legal Location (G&SRB&M)</u>	Hoffman Canyon	NESW Sec. 27, T23N, R7E	Jack Smith Canyon #1	NESW Sec. 27, T23N, R7E	Jack Smith Canyon #2	NWSW Sec. 27, T23N, R7E	Jack Smith Canyon #3	SESE Sec. 29, T23N, R7E	Little Bear Paw Canyon	SESW Sec. 28, T23N, R7E	Beard Canyon	SESW Sec. 28, T23N, R7E	Flagstaff Canyon #1 & 2	SESE Sec. 29, T23N, R7E	Dunnam Canyon #1	SESE Sec. 29, T23N, R7E	Raspberry Canyon #1	SWSW Sec. 27, T23N, R7E	Raspberry Canyon #2,3 & 4	SESE Sec. 28, T23N, R7E	Doyle Canyon #1 & 2	NESW Sec. , T23N, R7E	Arnold Canyon	NENW Sec. 28, T22N, R7E	Schultz Fork #1	SESW Sec. 21, T22N, R7E	Mexican Mine Canyon	SESW Sec. 21, T22N, R7E	Big O'Brien Canyon	NWSW Sec. 22, T22N, R7E	Little O'Brien Canyon	NWSW Sec. 22, T22N, R7E	South Spruce Canyon	NENW Sec. 22, T22N, R7E	Freidlein Canyon	SWSE Sec. 7, T22N, R7E	Freidlein Tank Canyon	NWNE Sec. 18, T22N, R7E
<u>Diversion Name</u>	<u>Legal Location (G&SRB&M)</u>																																									
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Freidlein Tank Canyon	NWNE Sec. 18, T22N, R7E																																									

ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

	Little Freidlein Canyon	NENE Sec. 18, T22N, R7E
	Double Freidlein Canyon	NENE Sec. 18, T22N, R7E
	East Freidlein Canyon	SWNW Sec. 17, T22N, R7E
	Powers Draw	SWNW Sec. 14, T22N, R7E
	Weatherford Canyon	NWNW Sec. 14, T22N, R7E
	East Weatherford Canyon	NWNW Sec. 14, T22N, R7E
	South Fork Sheep Dip Canyon	SENW Sec. 2, T22N, R7E
	Sheep Dip Canyon	NENW Sec. 2, T22N, R7E
	Barrel Canyon	NWSE Sec. 35, T23N, R7E
	Bear Canyon	SESW Sec. 26, T23N, R7E
	Orion Springs	SWNE Sec. 15, T22N, R7E
	Bear Paw Canyon	NENW Sec. 21, T23N, R7E
	Ree's Canyon	SWNW Sec. 21, T23N, R7E
	Aubineau Canyon #1,2 & 3	NWNE Sec. 29, T23N, R7E
	Aubineau Canyon #4	SWNE Sec. 29, T23N, R7E
	Aubineau Canyon #5	SWSE Sec. 20, T23N, R7E
	Schultz Canyon #1	NESW Sec. 33, T22N, R7E
	Schultz Canyon #2	NWNE Sec. 28, T22N, R7E
	Schultz Canyon #3	NENW Sec. 22, T22N, R7E
	Schultz Canyon #4	SWSE Sec. 15, T22N, R7E
	Brookbank Canyon	NWNE Sec. 22, T22N, R7E
	O'Hara Spring	SWNE Sec. 15, T22N, R7E
	Spencer Canyon	NESW Sec. 20, T23N, R7E
	Little Bear Paw Canyon	SESW Sec. 28, T23N, R7E

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ABSTRACT FOR THE CITY OF FLAGSTAFF
STIPULATION / NAIWRS
Surface Water

Pezzonico		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	August 31, 1954
4.	Statement of Claimant No.(s).	39-03-80002
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22612
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	1 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NE SW NE 01 T20N R12E
12.	Source of Water	Surface Water - Atchison Wash
13.	Comments	Stockpond 100-foot maximum length, Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
STIPULATION / NAIWRS
Surface Water

Frye		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	August 31, 1954
4.	Statement of Claimant No.(s).	39-03-80003
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Registration Act Claim No. 22611
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	1.25 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NE NW 01 T20N R12.5E
12.	Source of Water	Surface Water - Atchison Wash
13.	Comments	Stockpond; 5-foot-high dam; 125 foot maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Armijo Dam		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	December 31, 1910
4.	Statement of Claimant No.(s).	39-03-80004
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registration Act Registry No. 36-22624
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	4 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SW NE SE 01 T20N R12.5E
12.	Source of Water	Surface Water - Topeka Wash
13.	Comments	Stockpond; 10-foot-high dam; 225 ft maximum length; Book 2 Page 489 County Records; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Double Tanks		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Prior to December 31, 1954
4.	Statement of Claimant No.(s).	39-03-80006
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockponds Reg. Act Claim No. 22613
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	10 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SE NE 15 T20N R13E
12.	Source of Water	Surface Water - Cow Canyon Wash
13.	Comments	Stockpond; Double Tanks Stockpond (two tanks together 10 ft each); 12-foot-high; maximum length 300 feet; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
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 Surface Water

Melbourne Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	October 31, 1910
4.	Statement of Claimant No.(s).	39-03-80007
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registration Act Registry No. 36-22623
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	4 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NE SE T17 20N R13E
12.	Source of Water	Surface Water - Melbourne Wash
13.	Comments	Stockpond; 10 ft. high; 200 ft. maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
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 Surface Water

King Folly		
1.	Owner	City of Flagstaff
2.	Landowner	Arizona State Land Department
3.	Priority Date	August 31, 1954
4.	Statement of Claimant No.(s).	39-03-80008
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22610
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	1 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NE NE 18, 20N, 13E
12.	Source of Water	Surface Water - Lower Sunshine Wash
13.	Comments	Stockpond; height 4 ft; 100 ft maximum length: Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
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Surface Water

Sunshine Dam		
1.	Owner	City of Flagstaff
2.	Landowner	Arizona State Land Department
3.	Priority Date	February 28, 1912
4.	Statement of Claimant No.(s).	39-03-80009
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22625
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	10 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NE NW 18 T20N, R13E
12.	Source of Water	Surface Water – Sunshine Wash
13.	Comments	Stockpond; 16 ft high; 55 ft maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
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Surface Water

SOS Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	August 31, 1954
4.	Statement of Claimant No.(s).	39-03-80010
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22609
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	0.75 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NE SW 19 T20N R13E
12.	Source of Water	Surface Water - Lower Sunshine Wash
13.	Comments	Stockpond; SOS Tank; height 3 ft; 75 ft maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
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 Surface Water

Opchurch/Homestead Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Pre-1919
4.	Statement of Claimant No.(s).	39-03-80011
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 36-22622
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	12 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SE SE 21 T20N R13E
12.	Source of Water	Surface Water - Beacon Wash
13.	Comments	Stockpond; 16 ft height 450 ft maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
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 Surface Water

Ambrosia Dam		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	December 31, 1910
4.	Statement of Claimant No.(s).	39-03-80012
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22619
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	40 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SE NE 23 T20N R13E
12.	Source of Water	Surface Water - Dennison Wash
13.	Comments	Stockpond; 4 ft high; 600 ft maximum length; Book 2 Page 487-88 Coconino County; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
STIPULATION / NAIWRS
Surface Water

Sixty Six		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	December 31, 1937
4.	Statement of Claimant No.(s).	39-03-80013
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22618
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	1 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SE SE 28 T20N R13E
12.	Source of Water	Surface Water - Beacon Wash
13.	Comments	Stockpond; 8 ft high' 100 ft maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
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 Surface Water

Denny Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	December 31, 1960
4.	Statement of Claimant No.(s).	39-03-80014
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22616
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	0.5 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SW NE 34 T20N R13E
12.	Source of Water	Surface Water - Beacon Wash
13.	Comments	Stockpond; Beacon Wash; 2 ft high; 50 ft maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
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 Surface Water

Tamarack Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	December 31, 1960
4.	Statement of Claimant No.(s).	39-03-80015
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22617
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	0.5 AF
10.	Places of Use	City of Flagstaff
11.	Points of Diversion	SW NW 36 T20N R13E
12.	Source of Water	Surface Water - Dennison Wash
13.	Comments	Stockpond; 2 ft high; 75 ft maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
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 Surface Water

Corner Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Prior to December 31, 1954
4.	Statement of Claimant No.(s).	39-03-80016
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22605
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	4 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NE NE 4 T20N R14E
12.	Source of Water	Surface Water - Tucker Mesa Wash
13.	Comments	Stockpond; 12 feet high; 150 ft maximum length; Filed 11-23-1981

CONFIDENTIAL RULE 408
 SETTLEMENT DRAFT
 Submitted for settlement purposes only.

ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Red Gap Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Pre-1919
4.	Statement of Claimant No.(s).	39-03-80017
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registration Act Registry No. 36-22621
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	1 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NE SW 07 T20N R14E
12.	Source of Water	Surface Water – unnamed draw
13.	Comments	Stockpond; 4 ft height; 100 ft maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Duce Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Prior to December 31, 1954
4.	Statement of Claimant No.(s).	39-03-80019
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22608
8.	Beneficial Use	Stockwater
10.	Quantity Flow Rate/Volume	4 AF
11.	Places of Use	Point of Delivery
12.	Points of Diversion	NE NE 19 T20N R14E
13.	Source of Water	Surface Water - Limestone Wash
14.	Comments	Stockpond; 10 ft high; 200 ft maximum length

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Tom's Well Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Pre-1919
4.	Statement of Claimant No.(s).	39-03-80020
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registration Act Registry No. 36-22620
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	2 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SE SW 29 T20N R14E
12.	Source of Water	Surface Water - Tom's Canyon Wash
13.	Comments	Stockpond; 4 ft high; 150 ft maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Limestone Wash		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	December 31, 1960
4.	Statement of Claimant No.(s).	39-03-80022
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22607
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	12 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SE SW 31 T20N R14E
12.	Source of Water	Surface Water - Limestone Wash
13.	Comments	Stockpond; 6 feet high; 175 feet maximum length; Filed 11-23-1981

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 SETTLEMENT DRAFT
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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

High Drye		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	December 31, 1960
4.	Statement of Claimant No.(s).	39-03-80023
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1977 Stockpond Reg. Act Claim No. 22606
8.	Beneficial Use	Stock
10.	Quantity Flow Rate/Volume	6 AF
11.	Places of Use	Point of Delivery
12.	Points of Diversion	SW SW 33 T20N R14E
13.	Source of Water	Surface Water - Tom's Canyon Wash
14.	Comments	Stockpond; 4 ft high; 150 ft maximum length; Filed 11-23-1981

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Cheshire Estates – Rio de Flag		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	October 31, 1952
4.	Statement of Claimant No.(s).	CWR 2789
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	CWR 2789
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	6.55 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NE SE NE 5 T21N R7E
12.	Source of Water	Surface Water – Rio de Flag
13.	Comments	Stockwater; Height 15 ft; 130 ft length on top; length on bottom 50 ft; Permit No R-775 Application No. R-1181; 6.55 AF storage

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Tank No. 7		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	December 27, 1882
4.	Statement of Claimant No.(s).	39-86721
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registration Act - Registry No. 36-21799
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	0.50 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SW SW 8 T21N R7E
12.	Source of Water	Surface Water-unnamed draw
13.	Comments	Stockpond; Construction-September 1983; Height 5 ft; Maximum length 123 ft; Maximum width 66 ft

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Lang Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Prior to December 31, 1884
4.	Statement of Claimant No.(s).	39-86725
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registration Act – Registry No. 36-21799
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	3.7 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NW SE 12 T21N R6E
12.	Source of Water	Surface Water – Lang Wash
13.	Comments	Stockpond; Construction-December 1951; Maximum height 11.3 ft; Maximum length 240 ft; Maximum width 180 ft

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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Lower Lang Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Prior to December 31, 1884
4.	Statement of Claimant No.(s).	39-86726
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registration Act-Registry Nos. 36-21799; 38-21798
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	1.10 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SE SW 12 T21N R6E
12.	Source of Water	Surface Water – Lang Wash
13.	Comments	Stockpond; Construction-1951; Maximum height 7.5 ft; Maximum length 126 ft; Maximum width 104 feet

CONFIDENTIAL RULE 408
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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Tank No. 2		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	December 27, 1882
4.	Statement of Claimant No.(s).	39-86727
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registry Act Registry No. 36-21799; CWR 33-89549
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	0.32 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SE SE 12 T21N R6E
12.	Source of Water	Surface Water - Lang Draw
13.	Comments	Stockpond; Construction-September 1983; Maximum height 3.6 ft; Maximum length 84 ft; Maximum width 69 ft

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 SETTLEMENT DRAFT
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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Dollar Mark Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Prior to December 31, 1884
4.	Statement of Claimant No.(s).	39-86732
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registration Act Registry No. 36-21799
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	0.05 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NW NE 6 T21N R7E
12.	Source of Water	Surface Water – unnamed draw to Rio de Flag
13.	Comments	Stockpond; Construction June 1952; Maximum height 5 ft; Maximum length 198 ft; Maximum width 114 ft

CONFIDENTIAL RULE 408
 SETTLEMENT DRAFT
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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Lowell Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Prior to December 31, 1884
4.	Statement of Claimant No.(s).	39-86733
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registration Act Registry No. 36-21799
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	0.20 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	NW SE NE 18 T21N R7E
12.	Source of Water	Surface Water-unnamed draw to Lowell Wash
13.	Comments	Stockpond; Construction December 1951; Maximum height 4.3 ft; Maximum length 132 ft; Maximum width 75 ft

CONFIDENTIAL RULE 408
 SETTLEMENT DRAFT
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ABSTRACT FOR THE CITY OF FLAGSTAFF
 STIPULATION / NAIWRS
 Surface Water

Tunnel Spring Tank		
1.	Owner	City of Flagstaff
2.	Landowner	City of Flagstaff
3.	Priority Date	Prior to December 31, 1884
4.	Statement of Claimant No.(s).	39-86735
5.	Statement of Claimant Names	City of Flagstaff
6.	Lessee or Permittee	n/a
7.	Basis of Right	1974 Water Rights Registration Act Registry No. 36-21799
8.	Beneficial Use	Stock
9.	Quantity Flow Rate/Volume	0.50 AF
10.	Places of Use	Point of Delivery
11.	Points of Diversion	SE SE SE 18 T21N R7E
12.	Source of Water	Surface Water-unnamed draw to Sante Fe Wash
13.	Comments	Stockpond; Construction 1951; Maximum height 6.5 ft; Maximum length 165 ft; Maximum width 57 ft

EXHIBIT 8.2.1.1E

ATTACHED

EXHIBIT 8.2.1.1E
Grover's Hill Irrigation District Abstract

ABSTRACT OF IRRIGATION STORAGE RESERVOIR
Little Colorado River Adjudication

GROVER'S HILL IRRIGATION DISTRICT		
1.	Name of Reservoirs (Facility)	Lyman Lake (aka Lyman Reservoir) System ^A
2.	Owner of Reservoir.	Grover's Hill Irrigation District
3.	Landowner.	Grover's Hill Irrigation District
4.	Statement of Claimant No.(s).	39-89196 39-95385
5.	Statement of Claimant Name(s).	Grover's Hill Irrigation District
6.	Lessee or Permittee.	n/a
7.	Basis of Right.	Norviel Decree
8.	Beneficial Use.	Irrigation Rec/Fish/Wildlife
9.	Priority Date.	Multiple per the Norviel Decree (1894 -1908) ^B
10.	Quantity.	Storage Capacity of Lyman Lake: 32,694 acre-feet ^{C D} Maximum diversion rate = 74.0 CFS Irrigation: 15,000 AFA (approximately 2,100 acres) ^E Irrigation Season: March 1 to October 31
11.	Places of Use.	Location of Lyman Lake Storage Reservoir: Section 9, Township 11 North, Range 28 East, Gila & Salt River Base and Meridian, Apache County, Arizona <i>See Item 12 for the locations of the upstream reservoirs that serve as points of diversion and storage facilities in the Lyman Lake System.</i> Approximately 2,100 irrigated acres, all in the Gila & Salt River Base and Meridian, Apache County, Arizona: <ul style="list-style-type: none"> • Section 5, Township 11 North, Range 28 East • Section 3, Township 12 North, Range 27 East • Sections 1, 5, 7, 8, 9, 17, 18, 19, 29 and 30, Township 12 North, Range 28 East • Sections 1, 3, 4, 9, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 33, 34 and 35, Township 13 North, Range 27 East

GROVER'S HILL IRRIGATION DISTRICT		
		<ul style="list-style-type: none"> • Sections 5, 6, 7, 8, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32 and 33, Township 13 North, Range 28 East • Sections 26, 27, 33 and 35, Township 14 North, Range 27 East
12.	Points of Diversion.	<p>Lyman Dam: Section 9, Township 11 North, Range 28 East</p> <p>Colter Reservoir: Section 3, Township 6 North, Range 27 East</p> <p>Mexican Hay Lake: Sections 1 and 2, Township 8 North, Range 28 East</p> <p>Pool Corral Reservoir: Sections 29 and 30, Township 7 North, Range 28 East</p> <p>Hog Wallow Reservoir: Sections 19 and 30, Township 7 North, Range 28 East</p>
13.	Source of Water.	Little Colorado River

^A The Lyman Lake System includes Lyman Lake (aka Lyman Reservoir) and a number of upstream reservoirs, all as described in the Norviel Decree. The Norviel Decree refers to the Final Decree dated April 29, 1918, issued and enforced by the Apache County Superior Court in Case No. CV 569 styled *St. Johns Irrigation Company, et al. v. Round Valley Water Storage & Ditch Company, Eagar Irrigation Company, et al.*, as modified and amended. Grover's Hill Irrigation District holds the following Norviel Decree rights:

- 1921 L1.01 – Lyman Lake and irrigated acreage.
- 1923 R24.02 – Colter Reservoir (aka River No. 1) (724.20 AF storage capacity).
- 1923 R25.02 – Mexican Hay Lake (aka Hay Lake 2) (821.35 AF storage capacity).
- 1923 R26.02 – Pool Corral Reservoir (992.97 AF storage capacity).
- 1923 R27.02 – Hog Wallow Reservoir (1,000.00 AF storage capacity).

The four small reservoirs (R24-R27) store and then release water into Lyman Lake, and for purposes of this abstract, are considered to be points of diversion for Lyman Lake. Water stored and released from Lyman Lake is primarily used for irrigation by the Grover's Hill Irrigation District landowner members.

^B The storage rights of Lyman Reservoir incorporate the Fifth Right under the Norviel Decree for First Salado Reservoir (1894, 1,300 AF) and the Seventh Right under the Norviel Decree for Big Salado Reservoir (1898, 17,260 AF) conveyed by St. Johns Irrigation and Ditch Company to Lyman Water Company on September 3, 1918. The storage rights of Lyman Reservoir also include a waiver for 9,532 AF with a priority date of October 25, 1897 from the Udall Reservoir Company. The 1894 storage appropriation of 900 AF was quit-claimed from the Meadows Reservoir Irrigation Company to the Udall Reservoir Company prior to the waiver given to Lyman Water Company as described above. Additionally, Colter Reservoir, Mexican Hay Lake, Pool Corral Reservoir and Hog Wallow Reservoir are each recognized in the Norviel Decree to have 1908 priority dates.

^c 4,500 acre-feet is dead storage. 28,464 acre-feet is active capacity (Norviel Decree).

^d Lyman Lake has the right to seasonal fill, subject to the provisions of the Order of the Apache County Superior Court issued August 18, 2006, in the Norviel Decree, approving the Water Rights Entitlement and Perpetual Delivery Agreement entered into between Lyman Water Company (predecessor to Grover's Hill Irrigation District), the Zuni Tribe, and the United States of America in its capacity as trustee for the Zuni Indian Tribe. About a decade later, on or about July 25, 2016, Grover's Hill Irrigation District and the Salt River Project Agricultural Improvement and Power District ("SRP") entered into a Water Right, Annual Entitlement and Delivery Agreement, pursuant to which the Apache County Superior Court approved the severance and transfer of 30% of Lyman Reservoir water to SRP. SRP changed the irrigation use to fish and wildlife in the Salado Springs area. As a result, the District's original claim of 2,500 irrigated acres is now approximately 2,100 irrigated acres.

^e The 15,000 AFA claim represents the combined maximum irrigation use from Claimant's wells and reservoir system. The irrigation wells include:

- 55-553974 – Non-exempt irrigation well
Pump capacity = 1,800 GPM; Depth = 700 feet
SW ¼ NW ¼ NW ¼ of Section 29,
Township 13 North, Range 28 East, Apache County
- 55-218823 – Non-exempt irrigation well
Pump capacity = 1,000 GPM; Depth = 650 feet
SW ¼ NE ¼ SW ¼ of Section 7,
Township 12 North, Range 28 East, Apache County
- 55-810473 - Non-exempt irrigation well
Pump capacity = 1,000 GPM; Depth = 324.20 feet
SW ¼ SW ¼ NE ¼ of Section 9,
Township 11 North, Range 28 East, Apache County

EXHIBIT 8.2.1.1F

ATTACHED

Exhibit 8.2.1.1F
ABSTRACT OF STORAGE RESERVOIR
Little Colorado River Adjudication

1. Name of Reservoir (Facility):	C.C. Cragin Dam and Reservoir ^A
2. Owner of Reservoir:	United States of America ^B
3. Landowner:	United States of America ^C
4. Statement of Claimant No.(s):	39-84543
5. Statement of Claimant Name(s):	Salt River Project
6. Lessee or Permittee:	N/A
7. Basis of Right:	CWR 3696.002 ^D
8. Beneficial Use:	Municipal, Irrigation, Stockwater, Recreation/Fish/Wildlife, Power and Mining Purposes
9. Priority Date:	April 11, 1957
10. Quantity:	Storage Capacity: 15,000 acre-feet ^E Historical use includes operation for continuous fill Maximum Diversion: 11,000 acre-feet average per annum Maximum Diversion Rate: 33 cfs
11. Places of Use:	Coconino, Gila and Yavapai Counties, and in Maricopa County on lands that have decreed or contractual rights within the Salt River Reservoir District (SRRD), see attached SRRD map.
12. Point of Diversion:^F	C.C. Cragin Dam is located within the NE ¼ SE ¼ Section 33, Township 14N, Range 11E, Gila & Salt River Base and Meridian, Coconino County, Arizona. Water is diverted from C.C. Cragin Reservoir ^G through a tunnel beginning within the NW ¼ SW ¼ Section 33, Township 14N, Range 11E and extending to a pump station within the NE ¼ NW ¼ Section 5, Township 13N, Range 11E.
13. Source of Water:	East Clear Creek

^A C.C. Cragin Dam and Reservoir were formerly known as Blue Ridge Dam and Reservoir. The dam, spillway, reservoir pool, pipelines, buildings hydroelectric generating facilities, priming tanks, transmission lines, communication lines, pumps, machinery, structures, and other improvements are collectively called the Cragin Project.

^B The Cragin Project land and facilities are owned by the United States of America and the Salt River Project is responsible for the care, operation, and maintenance of the project pursuant to an agreement between the United States of America and the Salt River Valley Water Users' Association dated September 6, 1917.

^C Title to lands under the Cragin Project are held by the United States of America. Lands for the Cragin Project were withdrawn from public entry pursuant to P.L. 112-45 (November 7, 2011).

^D Original Certificate of Water Right (CWR) 3696 was issued to Phelps Dodge Corporation. The CWR has been subsequently severed and transferred with revised certificates issued as follows:

1. Salt River Project: CWR 3696.0002 (Application Nos. A-3906.0003, R-1457.0003).
2. Town of Payson: CWR 3696.0003 (Application No. A-3906.0004, R-1457.0004).

There is an approved application by Payson Water Company – Mesa del Caballo subdivision to partially sever and transfer water rights from Salt River Project to Payson Water Company for use within their water service area. A revised certificate has not yet been issued to that effect. The pending CWR and Application Nos. are as follows:

1. Payson Water Company: CWR 3696.0004 (Application No. A-3906.0005, R-1457.0005).
2. Salt River Project: CWR 3696.0005 (Application Nos. A-3906.0006 and R-1457.0006)

There are pending applications by Bonita Creek Water Company and Cowan Ranch Homeowners' Association to partially sever and transfer water rights from Salt River Project to each entity for use within their respective water service areas. These applications are currently being reviewed by ADWR.

^E The amount of water diverted to the East Verde River for beneficial use is limited to an average of 11,000 acre-feet per year. Current allocations by CWR are as follows:

1. Salt River Project revised CWR 3696.0002: Right to use 11,000 acre-feet average per year less the amount delivered to the Town of Payson pursuant to revised CWR 3696.0003.
2. Town of Payson revised CWR 3696.0003: Right to use 3,000 acer-feet average per year, not to exceed 3,500 acre-feet per year within the Town's water service area.
3. Payson Water Company pending CWR 3696.0004 will provide a right to use an amount not to exceed 52 acre-feet per year for municipal uses within Mesa del Caballo's water service area.

^F Description of Diversion Works: The water diversion and transmission system begins from an 8-foot x 8-foot intake structure at elevation 6,624 feet in the reservoir, which diverts water into a 4,427 foot long, 6-foot diameter tunnel bored into bedrock and leads to a vertical pump shaft below a booster station. A pumping plant is used to lift the water from the tunnel to a 2-million-gallon priming reservoir at elevation 7,265 feet via 5.3 miles of 33-inch diameter steel-reinforced concrete cylinder pipe. Four hydro- pneumatic surge vessels provide surge protection. The water drains from the priming reservoir via gravity, south over the Mogollon Rim, to the East Verde River at elevation 5,788 feet via 4.7 miles of 24-, 30-, and 33-inch steel reinforced concrete cylinder pipe. Water is initially diverted by C. C. Cragin Dam, the pumping plant and piped transmission system. Once the water enters the Verde River system, water is transmitted in the East Verde River to the Verde River and then to the Salt River where it is then diverted by gravity flow into the Arizona Canal and South Canal by means of the Granite Reef Diversion Dam located in the SW NE and the NW SE Section 13; T2N, R6E as shown in the map included with this attachment.

^G Location of Water Storage: The waters of East Clear Creek are stored in C.C. Cragin Reservoir, which has an authorized storage volume of 15,000 acre-feet. The reservoir occupies portions of Sections 31-34, Township 14N, Range 11E; Section 36, Township 14N, Range 10E; and Sections 4-6 and 8, Township 13N, Range 11E. After Diversion from C.C. Cragin Reservoir into the Verde River Watershed, water is stored in reservoirs along the Verde River created by Horseshoe and Bartlett Dams. Horseshoe Dam is located in the N ½ Section 2, Township 7N, Range 6E with the storage reservoir occupying portions of Sections 3, 10, 15, 16, 21, 22, 26-28, and 33-35, Township 8N, Range 6E and Sections 1-4, Township 7N, Range 6E, Yavapai and Maricopa Counties. Bartlett Dam is located in the SE ¼ Section 33, Township 7N, Range 7E, Sections 3-5, 9-11, 13-15, 21-23, 26-28, 33, and 34, Township 6N, R7E, and Sections 3 and 4, Township 5N, Range 7E, Maricopa County.

EXHIBIT 8.2.1.1G

ATTACHED

EXHIBIT 8.2.1.1G
City of Show Low Abstract

ABSTRACT OF IRRIGATION STORAGE RESERVOIR
Little Colorado River Adjudication

SHOW LOW LAKE		
1.	Name of Reservoir.	Show Low Lake
2.	Owner of Reservoir. ^A	City of Show Low, Arizona Show Low/Pinetop-Woodland Irrigation Company
3.	Landowner. ^B	City of Show Low, Arizona
4.	Statement of Claimant No.(s).	39-[Pending]
5.	Statement of Claimant Name(s).	City of Show Low, Arizona Show Low/Pinetop-Woodland Irrigation Company
6.	Lessee or Permittee.	None.
7.	Basis of Right. ^C	[Pending] - 33-096807 (Joint) [Pending] - 33-096808 (Irrigation Company) [Pending] - 33-096809 (City)
8.	Beneficial Use. ^D	Storage Irrigation Stockwatering Municipal
9.	Priority Date. ^E	Storage: June 29, 2005 Irrigation & Stockwatering: December 31, 1874 Municipal: June 29, 2005
10.	Quantity. ^F	Storage Capacity: 6,176 acre-feet Continuous fill Maximum diversion rate = 20 CFS Irrigation: 2,860.00 AFA (650 acres) Irrigation Season: March 15 – November 1 Stockwatering: 13.44 AFA Municipal: 10,000 AFA
11.	Places of Use.	<u>Location of Storage Facility:</u> Sections 10 and 15, Township 9 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona <u>Location of irrigated acreage (and affiliated stockwatering).</u> all in the Gila & Salt River Base and Meridian, Navajo County, Arizona and downstream of Show Low Lake:

SHOW LOW LAKE		
		<p>Sections 4, 5, 8 and 9, Township 9 North, Range 22 East</p> <p>Sections 7, 17, 18, 20, 21, 28, 29 and 33, Township 10 North, Range 22 East</p> <p>Sections 12 and 13, Township 10 North, Range 21 East</p> <p><u>Location of municipal uses</u> within or near the corporate boundaries of the City, all in the Gila & Salt River Base and Meridian, Navajo County, Arizona (and expected to grow as population continues to increase):</p> <p>Sections 10, 11, 12, 13, 14, 15, 23, 24, 25, 26, Township 10 North, Range 21 East</p> <p>Sections 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 32, 33, 34, Township 10 North, Range 22 East</p> <p>Sections 3, 4, 5, 9 and 10, Township 9 North, Range 22 East</p>
12.	Point of Diversion.	NE ¼ NW ¼ Section 15, Township 9 North, Range 22 East, Salt River Base and Meridian, Navajo County, Arizona
13.	Sources of Water.^G	Show Low Creek

^A Show Low Lake (which was originally called Jacques Reservoir) was constructed by Phelps Dodge Corporation. On June 29, 2005, Phelps Dodge Corporation abandoned Show Low Lake. That same day, the City of Show Low ("the City") and the Show Low/Pinetop-Woodland Irrigation Company (together with its predecessors that merged into it, "the Irrigation Company") jointly applied for the Show Low Lake storage right. As of the date of this abstract, the applications remain pending with the Arizona Department of Water Resources.

^B The dam and land submerged by Show Low Lake is municipal property owned by the City. A small portion of the submerged land is owned by the United States Department of Agriculture, Forest Service, and subject to a special use permit granted by the federal government to the City. As to the places of use, the irrigation and stockwatering uses are on lands that are owned by the members of the Irrigation Company. The municipal uses are located within or near the municipal boundaries of the City.

^C Before the Irrigation Company and the City applied for rights to Show Low Lake, the lake was owned and operated by Phelps Dodge Corporation. The lake did not exist until the early 1950s, when Phelps Dodge

constructed what was then called Jacques Reservoir. Before the reservoir was constructed, the Irrigation Company diverted water directly from Show Low Creek for irrigation. The Irrigation Company operated irrigation storage reservoirs upstream which were used in part to regulate Show Low Creek flow through managed releases into the system.

Show Low Creek water was captured in Jacques Reservoir aka Show Low Lake, where Phelps Dodge stored and then released water through an exchange for mining operations outside of the watershed. All water rights to Show Low Creek and all of its tributaries were held by what was then known as Show Low Irrigation Company, which has since merged into the Irrigation Company. Phelps Dodge Corporation obtained the Show Low Irrigation Company's consent to construct the storage facility, as evidenced by a March 20, 1954, agreement ("the 1954 Agreement"). Per the 1954 Agreement, the Irrigation Company retained its prior appropriation to all waters of Show Low Creek and its tributaries. The 1954 Agreement addressed the continued inflows and outflows of water to satisfy the Irrigation Company's first rights and stipulated that if Phelps Dodge abandoned or terminated its storage at Show Low Lake, then the associated storage rights would be transferred to the Irrigation Company.

The Irrigation Company's prior appropriation rights were recognized in historic decrees and notices.

In Huning v. Porter, 6 Ariz. 171, 54 P. 584 (1898) ("the Huning Decree"), Henry Huning was awarded the first right to all waters of Show Low Creek and its tributaries, including but not limited to Porter Creek, Big Springs, Billy Creek, Pinetop Springs, Phipps Spring, Miller Draw, Porter Springs and Elk Springs Draw, Miller Creek (aka Walnut Creek), Pine Lake overflow, and all unnamed springs, seeps, washes and other drainages into Show Low Creek. The Show Low/Pinetop-Woodland Irrigation Company (the successor by merger and reorganization of the Show Low Irrigation Company, the Pinetop-Woodland Irrigation Company and the Woodland Irrigation Company) is the successor-in-interest to the Huning water rights. Various notices of appropriation and other historic filings supplemented the Huning Decree. The storage and irrigation system associated with the Huning Decree includes the following facilities, each of which operate as a component of the entire system:

- Show Low Lake – Jointly owned and operated by the Irrigation Company and the City (documentation pending with ADWR since 2005).
- Facilities formerly operated by Show Low Irrigation Company and currently owned and operated by Show Low/Pinetop-Woodland Irrigation Company:
 - Rainbow Lake
 - Lower Rainbow Lake
 - Scott Reservoir
- Facilities formerly operated by Pinetop-Woodland and Woodland Irrigation Companies and currently owned and operated by Show Low Pinetop-Woodland Irrigation Company:
 - Woodland Reservoir
 - Edlers Lake

The Huning Decree is a basis of right for the irrigation and stockwatering uses of water released from Show Low Lake and the entire irrigation system associated with Show Low Creek. Approximately 1100 acres of land are irrigated by the Irrigation Company pursuant to the Huning Decree.

^D Incidental uses for recreation, wildlife and fish are essentially a non-consumptive use of the water stored in Show Low Lake and are not delineated in this abstract.

^E The Huning Decree gives an 1874 priority but does not specify a month and date. December 31 was arbitrarily used to provide a month and date.

^F The 10,000 AFA for municipal uses is based on the City's projected population data and equal to the claim by Phelps Dodge Corporation, the previous owner of the reservoir. With continuous fill, Show Low Lake is expected to develop up to 10,000 AFA.

The quantities and uses in this abstract are only for Show Low Lake and do not account for the storage and irrigation uses in the entire system. There are incidental fish/wildlife/recreation uses.

⁶ The source of water includes the entire system operated by the Irrigation System that is upstream of Show Low Lake. This includes Show Low Creek and all of its tributaries, including but not limited to Porter Creek, Big Springs, Billy Creek, Pinetop Springs, Phipps Spring, Miller Draw, Porter Springs and Elk Springs Draw, Miller Creek (aka Walnut Creek), Pine Lake overflow, and all unnamed springs, seeps, washes and other drainages into Show Low Creek. It also includes managed releases of stored irrigation water from Rainbow Lake, Lower Rainbow Lake, Scott Reservoir and Woodland Reservoir into the system.

EXHIBIT 8.2.1.1H

ATTACHED

EXHIBIT 8.2.1.1H

Show Low/Pinetop-Woodland Irrigation Company Abstracts

- Rainbow Lake Facility
- Scott Reservoir
- Woodland Lake Facility

ABSTRACT OF IRRIGATION STORAGE RESERVOIR
Little Colorado River Adjudication

RAINBOW LAKE FACILITY		
1.	Name of Reservoir (Facility)	Rainbow Lake Facility ^A
2.	Owner of Reservoir.	Show Low/Pinetop-Woodland Irrigation Company, on behalf of itself and its shareholder members
3.	Landowner.	Show Low/Pinetop-Woodland Irrigation Company, on behalf of itself and its shareholder members
4.	Statement of Claimant No.(s).	39-083787
5.	Statement of Claimant Name(s).	Show Low/Pinetop-Woodland Irrigation Company
6.	Lessee or Permittee.	None.
7.	Basis of Right. ^B	36-11031
8.	Beneficial Use. ^C	Storage Irrigation
9.	Priority Date. ^D	Storage: 4/10/1896 Irrigation: 12/31/1874
10.	Quantity. ^E	Storage Capacity: 1,120 acre-feet Lower Rainbow Capacity: 7 acre-feet Continuous Fill Maximum diversion rate = 25 CFS Irrigation: 4,571.16 AFA (1039 acres) Irrigation Season: March 15 – November 1
11.	Places of Use.	<u>Location of Storage Facility:</u> SW ¼ NE ¼ Section 33, Township 9 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona <u>Location of Irrigated Acreage</u> , all in the Gila & Salt River Base and Meridian, Navajo County, Arizona: <u>133.3 acres:</u> Sections 12 and 13, Township 10 North, Range 21 East <u>905.7 acres:</u> Sections 7, 8, 17, 18, 20, 21, 28, 29 and 33, Township 10 North, Range 22 East

RAINBOW LAKE FACILITY		
12.	Point of Diversion.	NW ¼ Section 23 N ½ SE Section 26, both in Township 9 North, Range 22 East, Salt River Base and Meridian, Navajo County, Arizona
13.	Sources of Water.	Big Springs and Walnut Creek, Tributaries to Show Low Creek

^A The primary reservoir is called Rainbow Lake. Outflow from Rainbow Lake is impounded into a small storage facility called Lower Rainbow Lake.

^B The Rainbow Lake Facility is part of a larger irrigation and storage system serving the Show Low/Pinetop-Woodland Irrigation Company and the City of Show Low, Arizona. In *Huning v. Porter*, 6 Ariz. 171, 54 P. 584 (1898) (“the Huning Decree”), Henry Huning was awarded the first right to all waters of Show Low Creek and its tributaries, including but not limited to Porter Creek, Big Springs, Billy Creek, Pinetop Springs, Phipps Spring, Miller Draw, Porter Springs and Elk Springs Draw, Miller Creek (aka Walnut Creek), Pine Lake overflow, and all unnamed springs, seeps, washes and other drainages into Show Low Creek. The Show Low/Pinetop-Woodland Irrigation Company (the successor by merger and reorganization of the Show Low Irrigation Company, the Pinetop-Woodland Irrigation Company and the Woodland Irrigation Company) and the City of Show Low are the successors-in-interest to the Huning water rights. Various notices of appropriation and other historic filings supplemented the Huning Decree. The storage and irrigation system associated with the Huning Decree includes the following facilities, each of which operate as a component of the entire system:

- Show Low Lake – Jointly owned and operated by the Show Low/Pinetop-Woodland Irrigation Company and the City of Show Low (documentation pending with ADWR since 2005).
- Facilities formerly operated by Show Low Irrigation Company and currently owned and operated by Show Low/Pinetop-Woodland Irrigation Company:
 - Rainbow Lake
 - Lower Rainbow Lake
 - Scott Reservoir
- Facilities formerly operated by Pinetop-Woodland and Woodland Irrigation Companies and currently owned and operated by Show Low Pinetop-Woodland Irrigation Company:
 - Woodland Reservoir
 - Edlers Lake

^C The storage rights for the Rainbow Lake Facility are part of the larger irrigation storage system described in Endnote B above. There are incidental fish/wildlife/recreation uses at the Rainbow Lake Facility.

^D The Huning Decree that covers the entire system (*see* Endnote B above) does not specify a month and date. It only gives an 1874 priority. In 1874, the irrigation system was based on direct diversions. Dams and reservoirs were constructed over the years to make the system more efficient and reliable. The Rainbow Lake Facilities can be traced back to Henry Huning’s notice of appropriation dated April 10, 1896, recorded at Book 1, Page 23, Navajo County Records.

^E The quantity stated is for the Rainbow Lake Facility irrigation and storage and does not account for the entire system. There are incidental fish/wildlife/recreation uses.

ABSTRACT OF IRRIGATION STORAGE RESERVOIR
Little Colorado River Adjudication

SCOTT RESERVOIR		
1.	Name of Reservoir (Facility)	Scott Reservoir
2.	Owner of Reservoir.	Show Low/Pinetop-Woodland Irrigation Company, on behalf of itself and its shareholder members
3.	Landowner.	Show Low/Pinetop-Woodland Irrigation Company, on behalf of itself and its shareholder members
4.	Statement of Claimant No.(s).	39-083786
5.	Statement of Claimant Name(s).	Show Low/Pinetop-Woodland Irrigation Company
6.	Lessee or Permittee.	None.
7.	Basis of Right. ^A	36-11030 36-85686 CWR 1657 (R-456 and A-2287)
8.	Beneficial Use.	Storage Irrigation
9.	Priority Date. ^B	Storage: 12/5/1884 Irrigation: 12/31/1874
10.	Quantity. ^C	Storage Capacity: 1,225 acre-feet Continuous fill Maximum diversion rate = 25 CFS Irrigation: 4,561.16 AFA (1039 acres) Irrigation Season: March 15 to November 1
11.	Places of Use.	<i>Location of Storage Reservoir:</i> W ½ SE Section 13, Township 9 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona <i>Location of Irrigated Acreage, all in the Gila & Salt River Base and Meridian, Navajo County, Arizona:</i> <i>133.3 acres:</i> Sections 12 and 13, Township 10 North, Range 21 East <i>905.7 acres:</i> Sections 7, 8, 17, 18, 20, 21, 28, 29 and 33, Township 10 North, Range 22 East

SCOTT RESERVOIR		
12.	Point of Diversion.	W ½ SE Section 13, Township 9 North, Range 22 East, Salt River Base and Meridian, Navajo County, Arizona
13.	Source of Water.	Show Low Creek

^A Scott Reservoir is part of a larger irrigation and storage system serving the Show Low/Pinetop-Woodland Irrigation Company and the City of Show Low, Arizona. In *Huning v. Porter*, 6 Ariz. 171, 54 P. 584 (1898) (“the Huning Decree”). Henry Huning was awarded the first right to all waters of Show Low Creek and its tributaries, including but not limited to Porter Creek, Big Springs, Billy Creek, Pinetop Springs, Phipps Spring, Miller Draw, Porter Springs and Elk Springs Draw, Miller Creek (aka Walnut Creek), Pine Lake overflow, and all unnamed springs, seeps, washes and other drainages into Show Low Creek. The Show Low/Pinetop-Woodland Irrigation Company (the successor by merger and reorganization of the Show Low Irrigation Company, the Pinetop-Woodland Irrigation Company and the Woodland Irrigation Company) and the City of Show Low are the successors-in-interest to the Huning water rights. Various notices of appropriation and other historic filings supplemented the Huning Decree. The storage and irrigation system associated with the Huning Decree includes the following facilities, each of which operate as a component of the entire system:

- Show Low Lake – Jointly owned and operated by the Show Low/Pinetop-Woodland Irrigation Company and the City of Show Low (documentation pending with ADWR since 2005).
- Facilities formerly operated by Show Low Irrigation Company and currently owned and operated by Show Low/Pinetop-Woodland Irrigation Company:
 - Rainbow Lake
 - Lower Rainbow Lake
 - Scott Reservoir
- Facilities formerly operated by Pinetop-Woodland and Woodland Irrigation Companies and currently owned and operated by Show Low Pinetop-Woodland Irrigation Company:
 - Woodland Reservoir
 - Edlers Lake

^B The Huning Decree that covers the entire system (*see* Endnote A above) does not specify a month and date. It only gives an 1874 priority. As to Scott Reservoir and the irrigation water uses, the reservoir was constructed *after* irrigation was already taking place per Robert Scott’s May 22, 1886, Notice for beneficial uses initiated on December 5, 1884 (Book 1, Page 25, Navajo County Records). Sometime between 1884 and 1929, Scott’s diversion dam was expanded into the storage reservoir now known as Scott Reservoir. The dam failed in 1929 and was reconstructed in 1943. Additionally, Henry Huning also filed a notice of appropriation which covers what is now known as Show Low Lake, Scott Reservoir, Rainbow Lake, Lower Rainbow Lake, Lake of the Woods, the entire flow of Show Low Creek and all named and unnamed tributaries, by instrument dated April 10, 1896 recorded at Book 1, Page 23, Navajo County Records.

^C The quantity stated is for Scotts Reservoir irrigation and storage and does not account for the entire system. There are incidental fish/wildlife/recreation uses.

ABSTRACT OF IRRIGATION STORAGE RESERVOIR
Little Colorado River Adjudication

WOODLAND LAKE FACILITY		
1.	Name of Reservoir / Facility.	Woodland Lake Facility [^]
2.	Owner of Reservoir.	Show Low/Pinetop-Woodland Irrigation Company, on behalf of itself and its shareholder members
3.	Landowner.	Show Low/Pinetop-Woodland Irrigation Company, on behalf of itself and its shareholder members
4.	Statement of Claimant No.(s).	39-084116 39-084117
5.	Statement of Claimant Name(s).	Show Low/Pinetop-Woodland Irrigation Company
6.	Lessee or Permittee.	None.
7.	Basis of Right. ^B	36-045589 CWR 2965 (App. Nos. R-1168 and A-3212; Permit Nos. R-877 and A-2380)
8.	Beneficial Use. ^C	Storage Irrigation
9.	Priority Date.	May 28, 1897
10.	Quantity. ^D	Storage Capacity (Woodland Lake): 152 acre-feet Secondary Storage Capacity (Edlers Lake): 25 acre-feet Continuous fill. Maximum diversion rate = 2.0 CFS Irrigation: 660 AFA (150 acres) Irrigation Season: March 15 – November 1
11.	Places of Use.	<u>Location of Storage Facilities:</u> Woodland Lake SW ¼ SW ¼ Section 31, Township 9 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona Edlers Lake SE ¼ SE ½ Section 36, Township 9 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona

WOODLAND LAKE FACILITY		
		<p><u>Location of Irrigated Acreage</u>, all in the Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p>Section 1, Township 8 North, Range 22 East Section 35, Township 9 North, Range 22 East Section 36, Township 9 North, Range 22 East Section 6, Township 8 North, Range 23 East Section 31, Township 9 North, Range 23 East</p>
12.	Points of Diversion. ^E	<p>Billy Creek Intake:</p> <p>NE ¼ NW ¼ Section 4, Township 8 North, Range 23 East, Salt River Base and Meridian, Navajo County, Arizona</p> <p>Walnut Creek Intakes:</p> <p>SW ¼ SW ¼ Section 31, Township 9 North, Range 23 East, Salt River Base and Meridian, Navajo County, Arizona (a secondary intake is about 300-400 feet downstream of the primary site)</p>
13.	Sources of Water.	Billy Creek and Walnut Creek, Tributaries to Show Low Creek

^A The Woodland Lake Facility includes Woodland Lake and a smaller regulatory reservoir that can collect overflow. Edlers Lake receives overflow from a secondary ditch/point of diversion about 300 feet from the Walnut Creek intake.

^B Woodland Lake is part of a larger irrigation and storage system serving the Show Low/Pinetop-Woodland Irrigation Company and the City of Show Low, Arizona. In *Huning v. Porter*, 6 Ariz. 171, 54 P. 584 (1898) (“the Huning Decree”). Henry Huning was awarded the first right to all waters of Show Low Creek and its tributaries, including but not limited to Porter Creek, Big Springs, Billy Creek, Pinetop Springs, Phipps Spring, Miller Draw, Porter Springs and Elk Springs Draw, Miller Creek (aka Walnut Creek), Pine Lake overflow, and all unnamed springs, seeps, washes and other drainages into Show Low Creek. The Show Low/Pinetop-Woodland Irrigation Company (the successor by merger and reorganization of the Show Low Irrigation Company, the Pinetop-Woodland Irrigation Company and the Woodland Irrigation Company) and the City of Show Low are the successors-in-interest to the Huning water rights. Various notices of appropriation and other historic filings supplemented the Huning Decree. The storage and irrigation system associated with the Huning Decree includes the following facilities, each of which operate as a component of the entire system:

- Show Low Lake – Jointly owned and operated by the Show Low/Pinetop-Woodland Irrigation Company and the City of Show Low (documentation pending with ADWR since 2005).
- Facilities formerly operated by Show Low Irrigation Company and currently owned and operated by Show Low/Pinetop-Woodland Irrigation Company:

-
- Rainbow Lake
 - Lower Rainbow Lake
 - Scott Reservoir
 - Facilities formerly operated by Pinetop-Woodland and Woodland Irrigation Companies and currently owned and operated by Show Low Pinetop-Woodland Irrigation Company:
 - Woodland Lake
 - Edlers Lake

The dam for Woodland Lake is referenced in a Notice of Appropriation dated May 28, 1897, filed by Hans Hansen, Book 1, Page 50, Records of Navajo County, Arizona.

^c The storage rights for the Woodland Lake Facility are part of the larger irrigation storage system described in Endnote B above. There are recreational, fish and wildlife uses at the Woodland Lake Facility that are relied upon by Pinetop-Lakeside for tourism; however, this is generally a non-consumptive use and not detailed in this abstract.

^d The quantity stated is for the Woodland Lake Facility irrigation and storage and does not account for the entire system. There are incidental fish/recreation/wildlife uses.

^e The diversion system for Woodland Lake was once maintained by the Pinetop-Woodland Irrigation Company and the Woodland Irrigation Company, both of which were part of a 1998 merger with Show Low Irrigation Company. The three entities now operate as one unit called the Show Low/Pinetop-Woodland Irrigation Company. The old Pinetop-Woodland Irrigation Company diversion included a small concrete diversion dam and pipeline intake on Billy Creek. About one-quarter of a mile west of the diversion, the main pipeline splits into two branches, with one terminating in a ditch that drains into Walnut Creek approximately half a mile above Woodland Lake. The Woodland Irrigation Company diverted water from Walnut Creek via a pipeline and earthen ditch. A secondary diversion point on Walnut Creek, located about 300-400 feet downstream from the primary point of diversion, diverted water into a small earthen ditch leading to the drainage channel above Edler Lake, a regulatory pond with a 25 AF storage capacity in the SE-SE Section 36, T9N-R22E.

EXHIBIT 8.2.1.1I

ATTACHED

EXHIBIT 8.2.1.1I
Silver Creek Irrigation District Abstract

ABSTRACT OF IRRIGATION STORAGE RESERVOIR
Little Colorado River Adjudication

SILVER CREEK IRRIGATION DISTRICT		
1.	Name of Reservoir (Facility)	The Silver Creek Irrigation Storage & Distribution System (includes Flood Control Infrastructure) ^A
2.	Owner of Reservoir.	Silver Creek Irrigation District ^B
3.	Landowner.	Silver Creek Irrigation District ^C
4.	Statement of Claimant No.(s).	39-88816
5.	Statement of Claimant Name(s).	Silver Creek Irrigation District
6.	Lessee or Permittee.	n/a
7.	Basis of Right.	36-81222 36-81223 36-81224 36-81225 36-81226 33-82842
8.	Beneficial Use.	Irrigation Stockwatering
9.	Priority Date.	12/31/1873 ^D
10.	Quantity.	Storage Capacities: <ul style="list-style-type: none"> • White Mountain Lake & Mexican Lake: 5,160 acre-feet • Little Mormon Lake: 2,000 acre-feet • Schoen's Reservoir: 30,700 acre-feet • Ortega Lake: 2,380 acre-feet • Millet Swale: 994 acre-feet <p>Maximum diversion rate = 46.50 CFS</p> <p>Continuous fill</p> <p>Irrigation: 19,162.50 AFA (2,500 acres) Irrigation Season: March 15 to November 1</p>

SILVER CREEK IRRIGATION DISTRICT		
		Stockwatering: Reasonable use
11.	Places of Use.	<p><u>White Mountain Lake:</u> Section 10, Township 11 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Mexican Lake:</u> Section 10, Township 11 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Little Mormon Lake:</u> Section 12, Township 10 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Schoen's Reservoir:</u> Sections 23 and 27, Township 12 North, Range 21 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Ortega Lake:</u> Section 6, Township 10 North, Range 24 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Millet Swale:</u> Section 20, Township 12 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Location of Irrigated Acreage:</u> Within the boundaries of the Silver Creek Irrigation District's service area in:</p> <ul style="list-style-type: none"> • Sections 23, 24, 25, 26, 35 and 36, Township 13 North, Range 21 East; • Sections 1, 2, 11, 12, 13, 24 and 25, Township 12 North, Range 21 East; and • Sections 18, 19, 30 and 31, Township 12 North, Range 22 East, <p>All in the Gila & Salt River Base and Meridian, Navajo County, Arizona.</p> <p><u>Stockwatering:</u> At the reservoir locations, open ditches operated by the Silver Creek Irrigation District, and within the Silver Creek Irrigation District's service area.</p>

SILVER CREEK IRRIGATION DISTRICT

<p>12.</p>	<p>Points of Diversion.</p>	<p><u>White Mountain Lake:</u> Section 10, Township 11 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Mexican Lake:</u> Section 10, Township 11 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Little Mormon Lake:</u> Section 12, Township 10 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Schoen's Reservoir:</u> Sections 23 and 27, Township 12 North, Range 21 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Ortega Lake:</u> Section 6, Township 10 North, Range 24 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Millet Swale:</u> Section 20, Township 12 North, Range 22 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>Irrigation Diversions</u> (all in the Gila & Salt River Base and Meridian, Navajo County, Arizona):</p> <ul style="list-style-type: none"> • West Shumway: SE ¼ NW ¼ SW ¼ Section 31, Township 12 North, Range 22 East • East Shumway: NW ¼ SW ¼ NW ¼ Section 31, Township 12 North, Range 22 East • East Taylor: SW ¼ NW ¼ NW ¼ Section 30, Township 12 North, Range 22 East • West Taylor: SW ¼ SE ¼ SW ¼ Section 12, Township 12 North, Range 21 East
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SILVER CREEK IRRIGATION DISTRICT

		<ul style="list-style-type: none"> • East Snowflake: SW ¼ NW ¼ NW ¼ Section 36, Township 13 North, Range 21 East • West Snowflake: NW ¼ NW ¼ NW ¼ Section 36, Township 13 North, Range 21 East <p>Supplemented by the following wells, all in the Gila & Salt River Base and Meridian, Navajo County, Arizona:</p> <ul style="list-style-type: none"> • 55-625330 – NW ¼ SW ¼ NW ¼ Section 30, Township 12 North, Range 22 East • 55-625331 – SW ¼ SW ¼ SW ¼ Section 19, Township 12 North, Range 22 East • 55-625332 – NW ¼ NW ¼ NW ¼ Section 1, Township 12 North, Range 21 East • 55-625333 – NE ¼ NE ¼ NE ¼ Section 35, Township 13 North, Range 21 East • 55-625334 – NE ¼ SW ¼ NW ¼ Section 25, Township 13 North, Range 21 East • 55-625335 – NW ¼ SW ¼ NW ¼ Section 31, Township 12 North, Range 22 East
13.	Source of Water.	<p><u>Surface Water:</u> Rocky Arroyo, Show Low Creek, Brown Creek, Millet Swale, and flood water, all of which are tributaries of Silver Creek, and Silver Creek, a tributary of the Little Colorado River</p> <p><u>Groundwater:</u> Non-appropriable groundwater from all wells listed as points of diversion. To the extent that any of the wells serving as supplemental points of diversion are not pumping strictly groundwater, the subflow of Rocky Arroyo, Show Low Creek, Brown Creek, Millet Swale, all of which are tributaries of Silver Creek, and Silver Creek, a tributary of the Little Colorado River</p>

^A The Silver Creek Irrigation District's storage and irrigation system includes six storage reservoirs that are used for the irrigation of acreage within the District's boundaries. Some of these double as flood control infrastructure that not only protects the irrigation system but serves an important public safety role in Navajo County. Features of the system include dams and storage reservoirs, pipelines and ditches, and flood/erosion control structures. The reservoirs in Silver Creek Irrigation District's storage and irrigation system include:

SOURCE	FACILITY NAME(S)	OWNERSHIP OF LAND UNDERLYING THE RESERVOIR	REMARKS
Rocky Arroyo; Silver Creek	<ul style="list-style-type: none"> White Mountain Lake (formerly known as Daggs Dam and Reservoir) Mexican Lake Little Mormon Lake 	<ul style="list-style-type: none"> White Mountain Lake & Mexican Lake – Silver Creek Irrigation District Little Mormon Lake – Apache-Sitgreaves National Forest 	White Mountain Lake is on the Silver Creek channel. Mexican Lake is a natural depression northeast of White Mountain Lake. When water levels are high, White Mountain Lake and Mexican Lake join to become essentially the same reservoir. Little Mormon Lake is an off-channel natural depression supplied by a diversion from Rocky Arroyo. Water released from Little Mormon Lake supplements the water stored in White Mountain Lake. Water from all three reservoirs is conveyed in the Silver Creek channel to the irrigation uses in the District.
Above the confluence of Show Low Creek and Silver Creek	Schoens Reservoir	<ul style="list-style-type: none"> Silver Creek Irrigation District Apache-Sitgreaves National Forest Church of Jesus Christ of Latter Day Saints 	The facility is operated in conjunction with the Navajo County Public Works Department for flood control and irrigation. Schoens Reservoir encompasses the Lone Pine Dam water right. Lone Pine Dam is no longer operated.
Brown Creek, a tributary of Silver Creek	Ortega Lake	Silver Creek Flood Control District (Pending transfer to Silver Creek Irrigation District.)	This is an off-channel reservoir jointly owned and operated by Silver Creek Irrigation District and Silver Creek Flood Control District for flood control.
Millet Swale, a tributary of Silver Creek	Millet Swale Reservoir	Silver Creek Flood Control District	Silver Creek Irrigation District's stored irrigation water mixes with Silver Creek for irrigation in the West Snowflake and Taylor areas. The reservoir is also used for flood control by the Silver Creek Flood Control District.

^B The storage rights in all reservoirs are owned by the Silver Creek Irrigation District; however, the land underlying where the reservoirs are located are owned by a combination of parties, including the Silver Creek Irrigation District, the Silver Creek Flood Control District, the Church of Jesus Christ of Latter Day Saints, and the Apache-Sitgreaves National Forests as set forth in the table in Endnote A above.

^c See the table in Endnote A above.

^d All of the waters of Silver Creek were claimed in 1875 by James Stinson, who in 1873 settled in Snowflake, developed the early irrigation system, and irrigated about 300 acres. The waters of Silver Creek and the flood waters of the East Fork of Show Low Creek, the flood waters of Rocky Arroyo, and the flood waters of other streams and tributaries were claimed by Z. B. Decker, Jr., President of the Snowflake & Taylor Irrigation Company (predecessor to Silver Creek Irrigation District) on May 20, 1896. Improvements to the storage and irrigation system such as better dams, pipelines and other infrastructure, were made by Stinson, the irrigation district and its predecessor companies since the system was first developed in 1873.

EXHIBIT 8.2.1.1J

ATTACHED

EXHIBIT 8.2.1.1J
City of Winslow Abstract

ABSTRACT OF IRRIGATION STORAGE RESERVOIR
Little Colorado River Adjudication

CITY OF WINSLOW		
1.	Name of Facility	Clear Creek and Chevelon Creek Facilities ^A
2.	Owner of Facilities.	Clear Creek Reservoir and Clear Creek Ditch: City of Winslow, Arizona Chevelon Ditch (shared with the City of Winslow): Winslow Irrigation Company
3.	Landowner.	City of Winslow, Arizona
4.	Statement of Claimant No.(s).	39-84980 39-[pending]
5.	Statement of Claimant Name(s).	City of Winslow, Arizona Winslow Irrigation Company
6.	Lessee or Permittee.	n/a
7.	Basis of Right.	O'Haco Decree ^B 36-32774 CWR 4168 36-29054 CWR 870
8.	Beneficial Use.	Irrigation Rec/Fish/Wildlife Municipal Stockwatering (includes stockponds)
9.	Priority Date.	December 31, 1878, December 31, 1902, and July 10, 1937, as applicable
10.	Quantity.	<u>Clear Creek:</u> Storage Capacity: 500 acre-feet Maximum diversion rate =15 CFS Continuous fill Irrigation: 9,050 AFA (1,680 acres) Irrigation Season: March 1 to November 15 <u>Chevelon Creek:</u> Maximum diversion rate = 15 CFS Irrigation: 1959 AFA (362.70 acres) Irrigation Season: March 1 to November 15

CITY OF WINSLOW		
11.	Places of Use.	<p><u>Location of Clear Creek Reservoir:</u> Sections 9, 10, 15 and 16, Township 18 North, Range 16 East, Gila & Salt River Base and Meridian, Navajo County, Arizona</p> <p><u>The Places of Use</u> generally include the following, all in the Gila & Salt River Base and Meridian, Navajo County, Arizona:</p> <ul style="list-style-type: none"> • Sections 13, 14, 15, 23, 24, 25, 26, 27, 35, and 36, Township 19 North, Range 15 East • Sections 18, 19, 20, 29, 30, and 33, Township 19 North, Range 16 East • Sections 1 and 2, Township 18 North, Range 15 East
12.	Points of Diversion.	<p><u>Clear Creek:</u> SW ¼ NW ¼ of Section 10, Township 18 North, Range 16 East, Gila and Salt Base & Meridian, Navajo County, Arizona</p> <p><u>Chevelon Creek:</u> NE ¼ SW ¼ of Section 23, Township 18 North, Range 17 East, Gila and Salt River Base & Meridian, Navajo County, Arizona</p>
13.	Sources of Water.	Clear Creek and Chevelon Creek, tributaries of the Little Colorado River

^A The Clear Creek Facility includes dams, the Clear Creek Reservoir (aka McHood Reservoir), pipelines and other structures, including the flume, pipelines, and the Chevelon Creek Diversion Dam and Ditch that supplements the Clear Creek Facility pursuant to an agreement with Winslow Irrigation Company, the claimant/registrant named in 36-29054 and CWR 870. Chevelon Creek is a tributary to Clear Creek.

^B Judgment and Order No. 16,394 entered September 27, 1983, in the Superior Court of the State of Arizona in and for the County of Navajo in re: *Michael J. O'Haco and Teresa O'Haco v. Harry G. Hancock and Marilyn Hancock*. The Decree recognized the City of Winslow's perfected and superior "old timer's" right to 4,700 acre-feet of Clear Creek Water.

EXHIBIT 8.3A

ATTACHED

Zuni Hunt Valley Area Irrigation Diversions—Surface Water

Facility Name:	Zuni Hunt Valley Area Historic Irrigation Diversions—Surface Water	Data Source*
Water Right Holder:	Zuni Tribe	
Water Right Number:	DV 1,2,3,4, & 5	
Statement of Claimant #:	39-88868 & 39-82094 (see remark 4.)	

Water Source(s)	Little Colorado River (LCR), Concho Creek	1,2,4
Acres Served	2493 (see remarks 2,6, & 7)	2,4
Total Diversion	Maximum historical beneficial use (see remarks 8,9, & 11)	
Diversion Capacity	DV1: North side LCR -- 5.3 cfs (see remarks 8 & 11) DV2: South side LCR -- max. historical capacity (see remarks 8 & 11) DV3: Concho Creek -- maximum historical capacity DV4: North side LCR -- max. historical capacity (see remark 4) DV5: Concho Creek -- maximum historical capacity	2
Beneficial Use	Irrigation (see remark 7)	1,2,4
Diversion Location(s)	DV1: SESE, S15, T14N,R26E (North side LCR) (see remark 3) DV2: SWSE, S15, T14N,R26E (South side LCR) (see remark 3) DV3: SESW, S27, T14N,R26E (Concho Creek) (see remark 3) DV4: NENW, S17, T14N,R26E (North side LCR) (see remarks 3 & 4) DV5: NESW, S34, T14N, R26E (Concho Creek) (see remark 3)	1,2,4
Use Locations	DV1: S6,7,8,9,10,15,16, T14N,R26E (see remarks 7 & 10) DV2: S15,16,T14N,R26E (see remarks 7 & 10) DV3: S27,T14N,R26E (see remarks 6, 7 & 10) DV4: S8, T14N,R26E (see remark 4) DV5: S34,T14N, R26E (see remarks 6,7, & 10)	1,2,4
Period of Use	February through December	1,2,4
Priority Dates	10/25/1897 (see remarks 5 & 9) for 2291 acres (see remark 2) from LCR 1890 for 202 acres from Concho Creek (see remarks 6 & 9)	2,4
Basis of Right	1921 Supplemental Decree, CWR 559, 39-82094, 39-88868, 36-27960, 36-29377, 36-72667, 36-72668 (see remarks 4,5, & 6)	1,4
Remarks:	<ol style="list-style-type: none"> 1. Data Source 4—1921 Supplemental Decree, CWR 559, 36-27960, 36-29377, 36-72667, 36-72668, 10-0102239.0301(1897 Notice of Appropriation by Isaac Isaacson), and aerial photos of the Hunt Valley area. 2. Acres served—determined by measuring irrigated areas shown on maps in Data Source 2, plus CWR 559 for that portion of surface water irrigation in section 27. 3. Diversion locations -- based on aerial photographs & USGS quad maps (with guidance from Data Sources 1 & 2), CWR 559, & 36-72668 4. Claims 39-88868 & 36-27960 filed by the Seven Springs Ranch apply to irrigation on the north side of the LCR from DV1 (see remark 5 regarding Zion Reservoir). Claim 36-29377 applies to irrigation on the south side of the LCR on Zuni & Isaacson lands. Claim 36-72668 applies to DV4. Claim 39-82094 filed by Ellsworth applies to irrigation from DV5. 5. A 1921 Supplemental Decree ruling on the Udall Reservoir Company awarded irrigation from the LCR for 4550 acres with a October 25, 1897 priority date in an area generally including the current use area listed in this abstract. See the Lyman Reservoir abstract for discussion of the waiver of Udall (Zion) Reservoir storage rights to the Lyman Water Company. 6. The 1890 priority date for the Concho Creek diversions DV3 & DV5 is based on filing 36-72667. The amount of irrigated acres served from Concho Creek is 101 acres in section 34 (based on maps in Data Source 2) and 101 acres (based on CWR 559) of the 232 irrigated acres mapped by ADWR in section 27, T14N,R26E. The remaining irrigation in section 27 is from groundwater. 7. This abstract includes irrigation uses on the Zuni Reservation as well as the recently acquired Seven Springs Ranch, and includes associated land leased from the State in section 34, T14N,R26E. 8. Total Diversion and Diversion Capacities -- DV1 & DV2 are shared prorata based on acreage historically irrigated from these facilities (see the Isaacson & Crosby abstracts). 9. The service area described in this abstract has historically never made a call and will not make a call on upstream Norviel Decree and Concho Decree rights. 10. Pursuant to the settlement agreement, the Tribe can use water as deemed appropriate anywhere on the Reservation. 11. Any new water right acquisitions by the Tribe, not associated with either DV1 or DV2, do not have to be shared prorata with Isaacson or Crosby 	

*Data Source
1= Statement of Claimant
2= ADWR Inventory of Water Uses
3= Silver Creek HSR
4= Other—See remarks

Zuni Hunt Valley Large Irrigation Wells

Facility Name: Zuni Hunt Valley Large Irrigation Wells
Water Right Holder: Zuni Tribe
Water Right Number: N/A
Statement of Claimant #: N/A

Well Registration Number	Well Legal Description
55-600440	SESE, S27, T14N, R26E
55-626054	SESE, S6, T14N, R26E
55-626055	NENE, S7, T14N, R26E
55-626056	SE, S18, T14N, R26E
55-626057	SE, S18, T14N, R26E

Zuni Meadows Area Acquisition Irrigation Diversions

Facility Name: Zuni Meadows Area Historic Irrigation Diversions
Water Right Holder: Zuni Tribe
Water Right Number: DV 1,2,3,4, 5 & 6
Statement of Claimant #: 39-89021

Data Source*

Water Source(s)	Little Colorado River (LCR), Carrizo Wash, Big Hollow Wash	1,2,4
Acres Served	1594 (see remarks 2,4,& 5)	2
Total Diversion	Maximum historical beneficial use	
Diversion Capacity	DV1: West Side LCR -- 10.95 cfs DV2: East Side LCR -- 13.00 cfs DV3: Big Hollow Wash --maximum historical capacity DV4: North Side LCR -- 2.00 cfs DV5: Carrizo Wash -- maximum historical capacity DV6: North Side LCR--maximum historical capacity	2
Beneficial Use	Irrigation	1,2,4
Diversion Location(s)	DV1: NESE, S5, T13N,R28E (West side LCR) (see remark 3) DV2 : NESE, S5, T13N,R28E (East side LCR) (see remark 3) DV3: SWNW, S31,T14N,R28E (Big Hollow Wash)(see remark 3) DV4: NWNW, S30, T14N,R28E (North side LCR) (see remark 3) DV5: NENE, S24, T14N,R27E (Carrizo Wash) (see remark 3) DV6: SESE, S24, T14N,R27E (North side LCR) (see remark 3)	1,2,4
Use Locations	DV1 & 2: S25,T14N,R27E; S19,29,30,31,T14N,R28E (see remark 4) DV3: S25,T14N,R27E; S30,T14N,R28E (see remark 4) DV4 & 5: S13,23,24,T14N,R27E (see remark 4) DV6: S23,24,T14N,R27E (see remark 4)	2,4
Period of Use	April 15 to September 15 for decreed acres. Non-decreed acres receive water outside the irrigation season and during flood flows.	4
Priority Dates	1881 for 170 decreed acres from LCR (rights #1918-13G & 13I) 1882 for 15 decreed acres from LCR (right #1923-61A) 1882 for 80 decreed acres from LCR flood water (right #1923-61B) 1884 for same 150 acres as right #1918-13G from LCR (right #1918-16C) 1916 for 30 decreed acres from LCR (right #1923-60A) 1916 for 35 decreed acres from Big Hollow Wash flood water (right #1923-60B) 1916 (per 36-28628 & 28629) for remaining 1164 non-decreed acres from LCR 1940 for 100 acres from Carrizo Wash, per CWR 1174	1,2,4
Basis of Right	Norviel Decree, CWR's 74,75,& 1174, 39-89021, 36-28628, 36-28629 , & shares in St. Johns Irrigation Company.	1,2,4
Remarks:	1. Data Source 4—Norviel Decree, CWR 74 (covers decreed right #60 A & B), CWR 75 (covers decreed right #61A & B), CWR 1174 (Carrizo Wash), 36-28628 & 36-28629(LCR) and aerial photos of the Meadows area. 2. Acres served—determined by measuring irrigated areas shown on maps in Data Source 2. 3. Diversion locations are based on aerial photographs & USGS quad maps with guidance from Data Sources 1 & 2. Data Source 2 lists 3 diversions in NESE,S5,T13N,R28E; however, claims and filings indicate only 2 diversions at this location. 4. This abstract includes irrigation uses on the former Platt & Wilhelm ranches but does not include claimed irrigation by the State on associated leased State land. 5. In addition to the above decreed rights, the Zuni Meadows area is also served by 322 shares of St. Johns Irr. Co. based on work sessions with St. Johns Irr. Co.	
*Data Source	1=Statement of Claimant 2=ADWR Inventory of Water Uses 3= Silver Creek HSR 4= Other—See remarks	

Zuni River Area Historic Irrigation

Facility Name: Zuni River Area Historic Irrigation
Water Right Holder: Zuni Tribe
Water Right Number: N/A
Statement of Claimant #: 39-89022 (see remark 2)

Data Source*

Water Source	Zuni River flood waters	1,4
Acres Served	801 (see remark 3)	4
Total Diversion	Maximum historical beneficial use	
Diversion Capacity	Maximum historical capacity	
Beneficial Use	Irrigation	1,4
Diversion Location	NE, S5, T14N,R28E plus other locations on various channels throughout S 6, T14N,R28E & S 1,T14N,R27E (see remark 4)	1,4
Use Locations	S 1, T14N,R27E (see remark 4)	1,4
Period of Use	July through October (per 36-28627)	4
Priority Date	1916	1,4
Basis of Right	39-89022 and 36-28627 (see remark 2)	1,4
Remarks:	<ol style="list-style-type: none"> 1. Data Source 4: 36-28627 and 1984 aerial photos of the Zuni River area 2. 39-89022 was originally filed by Limited Partnership of Meadows Ranch, while 36-28627 was filed by H.B. Heap. Both are former owners of land now owned by the Zuni Tribe. 3. Acres served based on measurements from aerial photo interpretation within section 1,T14N,R27E (see remark 4). 4. Diversion and Use Locations—aerial photos indicate a major diversion point from the main channel of the Zuni River in the NE, section 5, T14N,R28E upstream of the irrigated area. Claim 39-89022 indicates and aerial photos verify that the Zuni River water also spreads out into several channels or stringers in section 6,T14N,R28E and sections 1 & 2, T14N,R27E from which a network of several spreaders and headgates further spread out the water onto the land in these sections . This abstract covers irrigation only in section 1,T14N,R27E owned by Zuni Tribe, and does not include claimed irrigation on land it leases from the State of Arizona in section 6,T14N,R28E, and section 2,T14N, R27E. 	

***Data Source**
 1=Statement of Claimant
 2=ADWR Inventory of Water Uses
 3= Silver Creek HSR
 4= Other—See remarks

EXHIBIT 8.3B

Zuni Indian Tribe Water Rights Settlement Judgment and Decree

IN PROCESS OF FINALIZATION

EXHIBIT 8.5.2

ATTACHED



Exhibit 8.5.2

EXHIBIT 8.5.3

ATTACHED

Prepared for:
MODRALL SPERLING
P.O. Box 2168
Albuquerque, NM 87103

**BALLEAU GROUNDWATER, INC.'S REBUTTAL REPORT
TO NAVAJO NATION'S APRIL 30, 2021 INITIAL DISCLOSURES**

**In Re the General Adjudication of All Rights to Use Water
in the Little Colorado River System and Source
Case No. 6417-300**

OCTOBER 2021

BALLEAU GROUNDWATER, INC.
901 Rio Grande Blvd. NW, Suite F-242
Albuquerque, New Mexico 87104
(505) 247-2000



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Prepared for:
MODRALL SPERLING
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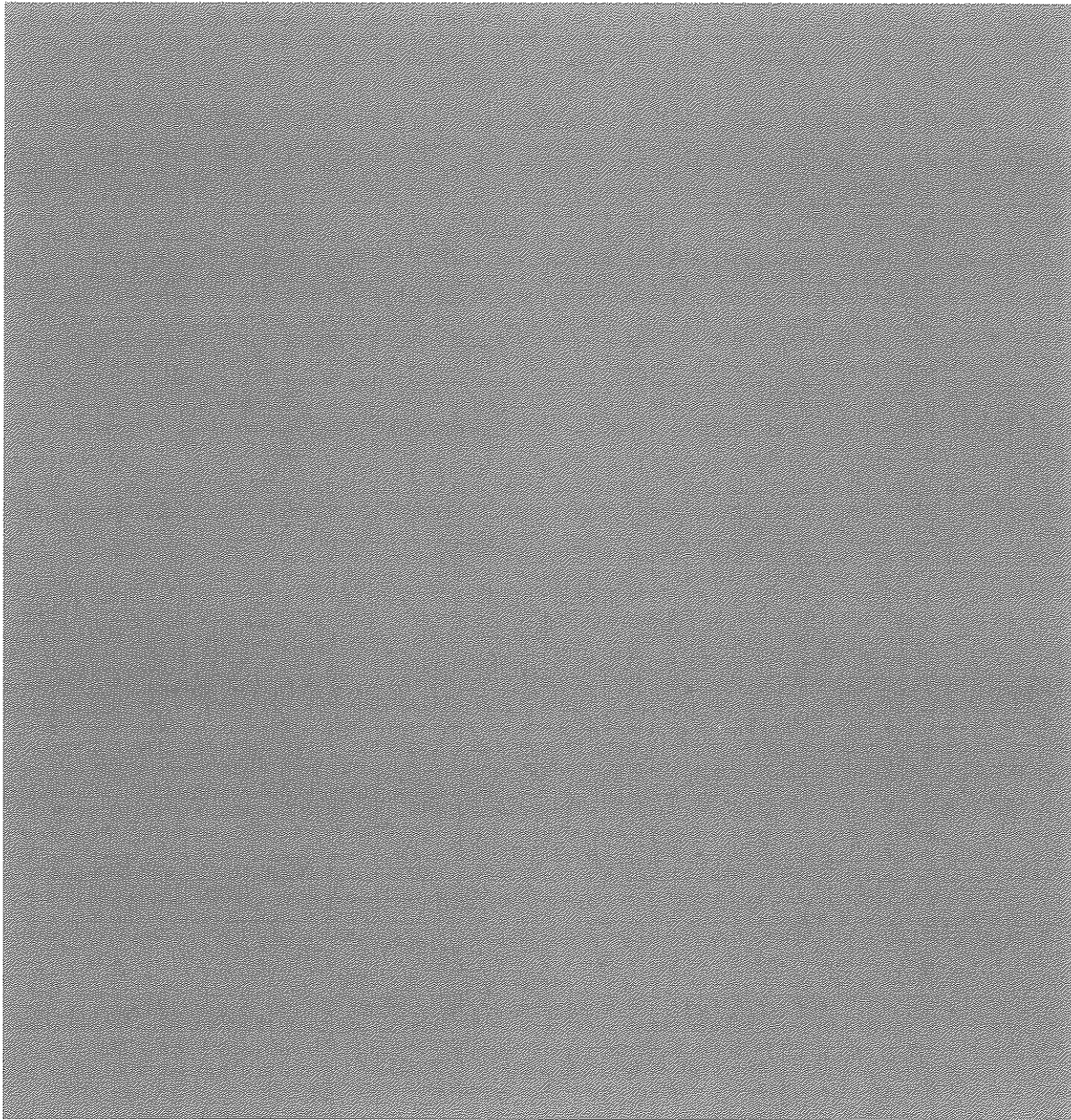


Dave M. Romero, P.H.

Date October 14, 2021



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Issue 2: Sustainable Supply of 1,660 AFY from the Cameron Area Alluvial Aquifer

In the Wood Report, Dr. Leeper analyzes the Cameron water supply in support of plans for an expanded alluvial aquifer wellfield along the LCR. The alluvial aquifer is characterized as having a limited width, a limited thickness and variable recharge from the LCR resulting in variable static water levels, which translate to variable aquifer thickness.

Dr. Leeper's analysis implements a Theis calculation (Theis, 1935) with assumptions that limit the ability of the calculation to consider the limited width of the alluvial aquifer and variability of aquifer thickness from river recharge.

Dr. Leeper's analysis raises a question with regard to sustainability of yield from the Cameron alluvial aquifer. As set forth herein, I analyze the sustainable yield of the alluvial aquifer in the Cameron area with a numerical model that accounts for the limiting assumptions of the Theis calculation. My intent is to perform additional analysis to improve the understanding of sustainable yield from the Cameron alluvial aquifer. I am particularly interested in simulating long-term sustainability, as Dr. Leeper indicates he is in the Wood Report. (Wood Report, p. 1). Since ATC's water is supplied by two wells in the alluvial aquifer, the findings from my additional analysis will provide insight to whether yield from the Cameron alluvial aquifer can sustain both the Navajo Nation's projected 1,600 AFY as well as ATC's water use.

Methodology

My analysis is based on a model implemented with MODFLOW 6 Version 6.2.2 (Langevin and others, 2017). This report section presents a general description of the model. More specific model details and the data sources relied on are described in Appendix B.

The model domain spans 14 miles of LCR river reach generally centered on the Cameron area with a grid that has square cells 100 feet on a side (Figure 3). The bottom of the alluvial aquifer thickness is 30 feet beneath the streambed. The land surface is from a 1/3 arc second digital elevation model with refinements on the stream channel based on USGS field surveys near Cameron.

The model has a standard set of parameters, but it operates with 15 different realizations to examine the sensitivity of wellfield yield results to a plausible range of model

parameters and other specifications related to aquifer structure and boundary conditions. That is, each model scenario is run through 15 simulations to examine a range of potential

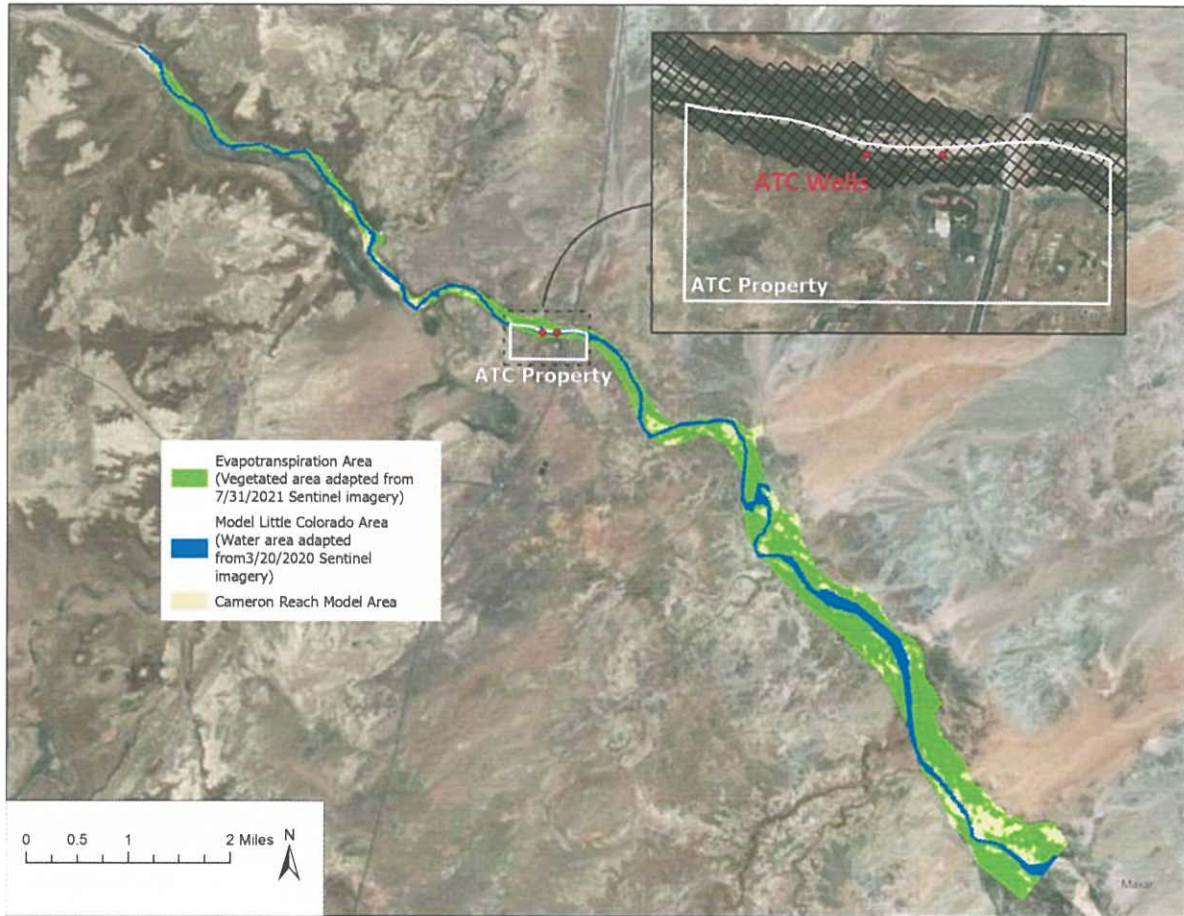


Figure 3. Model of Cameron area alluvial aquifer.

outcomes on sustainable yield from well development. The standard set of model parameters are based on aquifer transmissivity, T , of 2,500 ft^2/day and specific yield of 0.20. The T values reported by Dr. Leeper (4,970 and 9,461 ft^2/day) are included in the plausible range of model parameters examined.

The model has a component of riparian evapotranspiration (ET) from the alluvium. The net ET is based on an estimate of potential evaporation from the North American Land Data Assimilation System reduced by precipitation (NLDAS-2). NLDAS is maintained by NASA.

Alluvial aquifer water-level data is limited in the Cameron area. Data from the two existing NTUA wells shows static water levels have fluctuated over a range up to 9 feet. I set up the model boundary conditions and found simulated water levels fluctuate over a similar range. Assuming that the magnitude of variation characterizes general water-level variations throughout the alluvial aquifer in the Cameron area, the model is calibrated to that dynamic condition.

Aquifer recharge from LCR is based on a water balance method with a model catchment scaling factor related to the observed average monthly flow change between the Winslow and Cameron USGS flow gages over the last 20 years.¹ The width and depth of the simulated river is adjusted based on observed flow at the Cameron gage assuming the same relationship between channel depth and width characterized by the USGS at the Winslow gage.

A key component of the model is that it simulates groundwater diversions with a well hydraulics component that accounts for the pumping water level (PWL) in individual wells. A threshold above the pump intake can be specified to maintain net positive suction head (NPSH) above the pump inlet when the well is pumped. For the analysis herein, a threshold of 10 feet above the base of the alluvial aquifer is specified. If NPSH is not maintained on the well pump impeller, air bubbles will form resulting in pump cavitation, which damages the pump. A schematic of this concept is shown on Figure 4. The utility of the well simulation is that a target wellfield yield can be specified, and the model solves for individual well yields considering the declining yield that must occur to maintain NPSH as the PWL lowers toward the pump inlet. The simulation technique is ideal for assessments of source water availability from aquifers with limited depth.

¹ See Wood Report Figure 2 for a map of the USGS Winslow and Cameron gages.

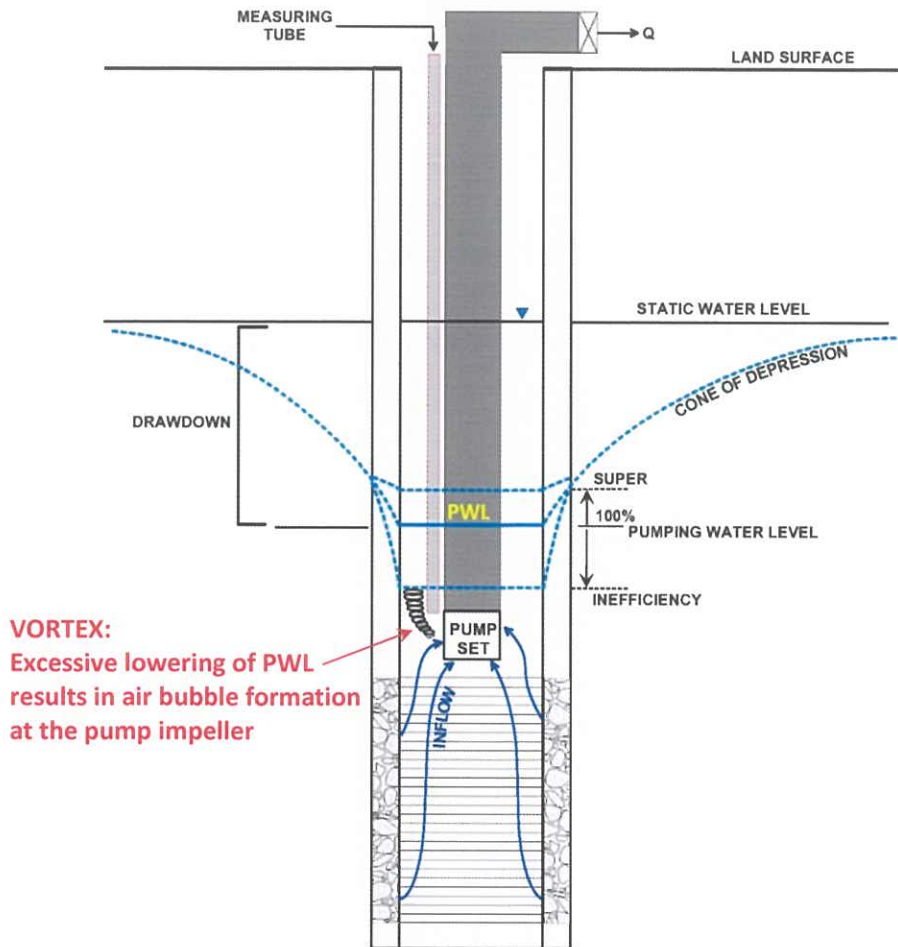


Figure 4. Schematic of well hydraulics concept represented in model.

Analysis and Results

The analysis involves four model scenarios. The evaluation considers the Navajo Nation diverting 1,660 AFY in conjunction with ATC water use (75 AFY) to examine sustainability of the alluvial aquifer in the Cameron area. The model scenarios represent example variations in the layout of the proposed Navajo Nation alluvial wellfield to evaluate how the amount of water produced from the alluvial aquifer is affected. In all scenarios the three conceptual Navajo Nation wells that are currently plotted on ATC Property (Figure 2) are moved onto the Navajo Reservation. The scenarios are then run

based on placement of wells in the alluvial aquifer in the Navajo Nation analyzing the wellfield with 12 wells and with 24 wells.

Each scenario runs for 40 years with a target pumping rate of 1,660 AFY for the proposed Navajo Nation wellfield and 75 AFY for ATC's two currently active wells. The 40-year simulation is based on a repeat of hydrologic conditions of the last 20 years (additional detail is in Appendix B). The model results are summarized into the number of months that the target pumping rate is met (or not met) over the 40-year period. As previously described, each scenario is run through 15 variations within a plausible range of model parameters; the results below are based on the average result from those 15 variations (realizations). Appendix C includes additional details regarding results from each scenario.

Scenario 1



Figure 5. Example Navajo Nation wellfield layout for Scenario 1.

As is shown on Figure 5, the Navajo Nation wellfield in Scenario 1 is simulated like the layout planned by Dr. Leeper (12 wells), except the three (western) wells are moved north across the river, which relocates them off ATC Property and onto the Navajo Reservation. In Scenario 1, the Navajo Nation wells do not meet the target yield of 1,660 AFY for 146 months (30 percent) out of 40 years. ATC does not meet the target yield of 75 AFY for 86 months (18 percent) of 40 years. Interference between the ATC wells and the Navajo Nation wells across the river results in reduced wellfield yield for both ATC and the Navajo Nation.

Scenario 2



Figure 6. Example Navajo Nation wellfield layout for Scenario 2.

The Navajo Nation wellfield layout in Scenario 2 differs from Scenario 1 in that it increases the Navajo Nation wells from 12 to 24 with a well spacing of at least 500 feet. The result is each Navajo Nation well diverts less water, than in Scenario 1, to produce a target yield of 1,660 AFY. The result is the Navajo Nation wellfield does not meet the target yield for 5 months (1 percent) over 40 years. The three Navajo Nation wells across the river from ATC's wells still cause interference resulting in ATC not meeting the target yield of 75 AFY for 46 months (10 percent) out of 40 years. However, ATC is short of meeting its target yield about half as much as in Scenario 1.

Scenario 3



Figure 7. Example Navajo Nation wellfield layout for Scenario 3.

The Navajo Nation wellfield in Scenario 3 has 12 wells similar to Scenario 1, except the three wells across the river from ATC's wells are moved upstream (east) of the ATC Property to reduce interference between the ATC and Navajo Nation wellfields. The result, in comparison to Scenario 1, is the Navajo Nation and ATC wellfield yields are improved. The number of months the Navajo Nation target wellfield yield is not met is reduced from 146 to 53 months. For ATC, the number of months target yield is not met reduces from 86 to 0 months (ATC's target yield is met 100 percent of the time).

Scenario 4

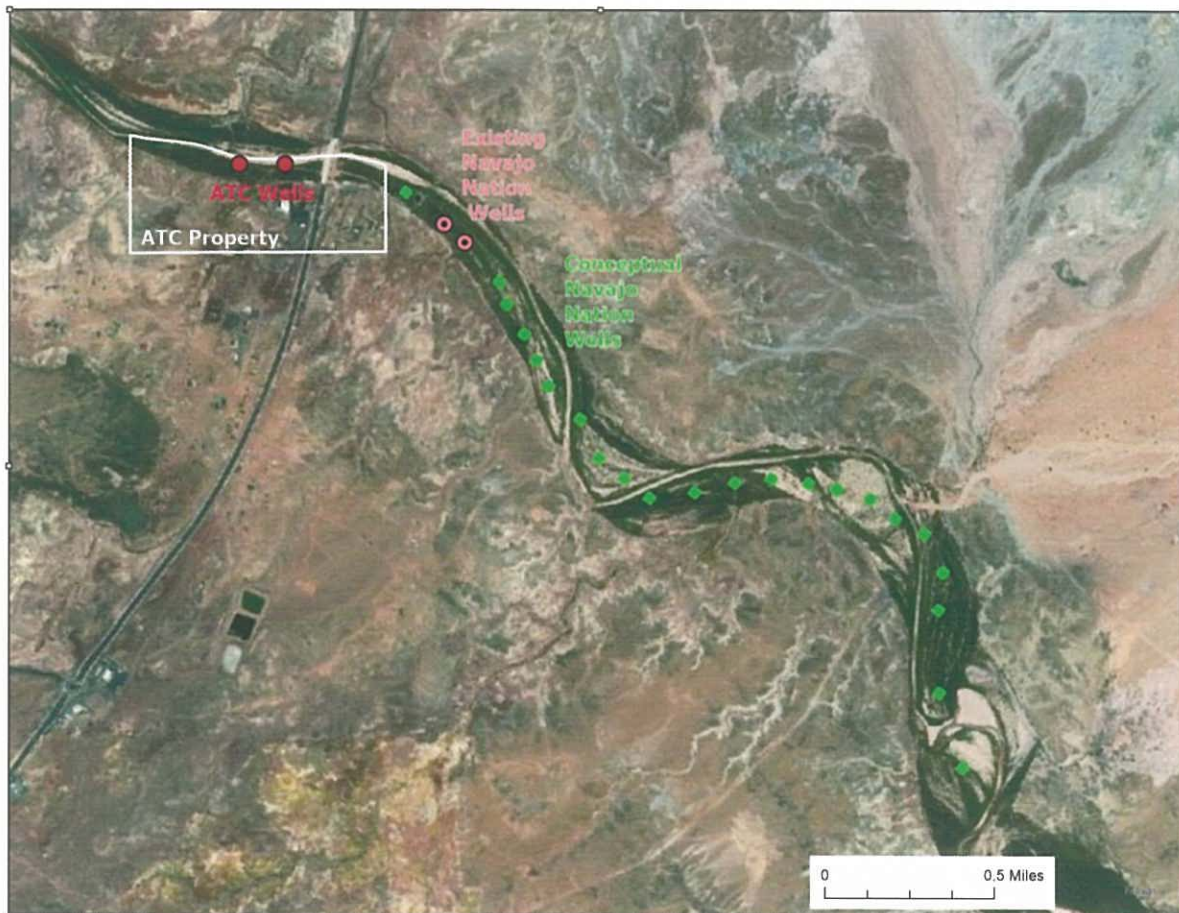


Figure 8. Example Navajo Nation wellfield layout for Scenario 4.

The Navajo Nation wellfield in Scenario 4 has 24 wells similar to Scenario 2, except the three wells across the river from ATC's wells are moved upstream (east) of the ATC Property to reduce interference between the ATC and Navajo Nation wellfields. In terms of

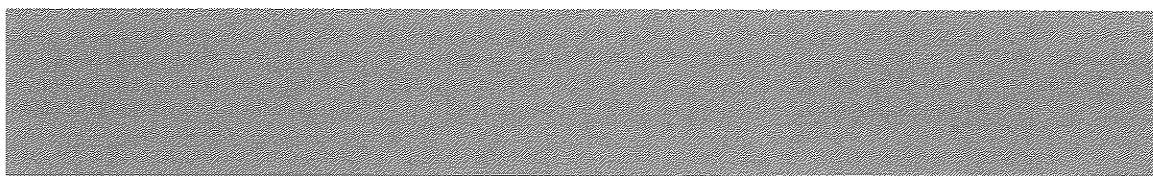
reducing interference and meeting target well yield, this wellfield layout is most favorable among the scenarios. Both the Navajo Nation and the ATC wellfield meet target yields for all months (100 percent) out of 40 years. Table 1 lists a summary of the four scenarios and results. Appendix C includes additional details regarding the results described herein.

Table 1. Model scenario specification and summary of well yield results.

Scenario	Well Specification	Target Pumping Rate (AFY)	Well Placement	Number of months in 40 years when target pumping rate is not met (average of 15 model realizations)
1	12 NN Wells	1,660	Three wells moved off ATC Property (north of river)	146
	2 ATC Wells	75	Wells currently active	86
2	24 NN Wells	1,660	Three wells moved off ATC Property (north of river)	5
	2 ATC Wells	75	Wells currently active	46
3	12 NN Wells	1,660	All wells located upstream (east) of ATC Property	53
	2 ATC Wells	75	Wells currently active	0
4	24 NN Wells	1,660	All wells located upstream (east) of ATC Property	0
	2 ATC Wells	75	Wells currently active	0

Note: NN = Navajo Nation and ATC = Atkinson Trading Company, Inc.

SUMMARY OF OPINIONS



Issue 2: I analyzed a number of variations of the proposed Navajo Nation wellfield in the Cameron area to develop a better understanding of how to achieve sustainable yield from the Cameron alluvial aquifer system with limited water storage. A key concept of groundwater development from this aquifer system is based on recognizing the importance of variable flow from the Little Colorado River that provides recharge to replenish water stored in the aquifer that is removed by wells. The analysis used herein is based on limited

water-level and aquifer structure data. As future wells are drilled and additional data are collected, I recommend an updated analysis and, if needed, adjustments to associated water development plans. Given the data and interpretations currently available, which were considered in this analysis, and assuming the river flow conditions of the last 20 years as a baseline, if the aquifer supply is managed by minimizing well interference, the aquifer is prospective for sustaining development of 1,660 AFY of water for use by the Navajo Nation and 75 AFY of water for use by ATC. Well interference can be minimized by pumping smaller quantities of water from individual wells over larger areas, rather than pumping from smaller areas with larger individual well pumping rates. Ideally, if the proposed Navajo Nation wellfield is located upstream (east) of the ATC Property, the prospect of sustainable yield for both the Navajo Nation and ATC is improved. I note that the concept of improved alluvial aquifer yield from management of well interference applies regardless of however variable the future hydrologic conditions may be.

REFERENCES

Theis C.V., 1935, The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Ground-Water Storage: American Geophysical Union, Volume 16, pp. 519-524.

Langevin, C.D., Hughes, J.D., Banta, E.R., Niswonger, R.G., Panday, S., Provost, A.M., 2017, Documentation for the MODFLOW 6 Groundwater Flow Model: U.S. Department of the Interior, Chapter 55 of Book 6. Modeling Techniques, Section A. Groundwater, U.S. Geological Survey Techniques and Methods 6-A55.

Wood Resilient Environments, 2021, Little Colorado River Alluvial Water Supply at Leupp and Cameron: Prepared for: the Navajo Department of Justice, Window Rock, Arizona, For: General Adjudication of All Rights to Use Water in the Little Colorado River System and Sources.

APPENDIX B - Description of Cameron Area Alluvial Aquifer Model

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MODEL DESCRIPTION

The model is of the shallow aquifer system that interacts with the Little Colorado River (LCR) along a 14-mile reach of the river (Figure B1). The water supply for Atkinson Trading Company, Inc. (ATC) is diverted from two wells that are completed in this aquifer. The Navajo Nation plans to develop this aquifer system. Balleau Groundwater, Inc. (BGW) developed the model to analyze groundwater yield of the aquifer system with use by ATC combined with use by the Navajo Nation.

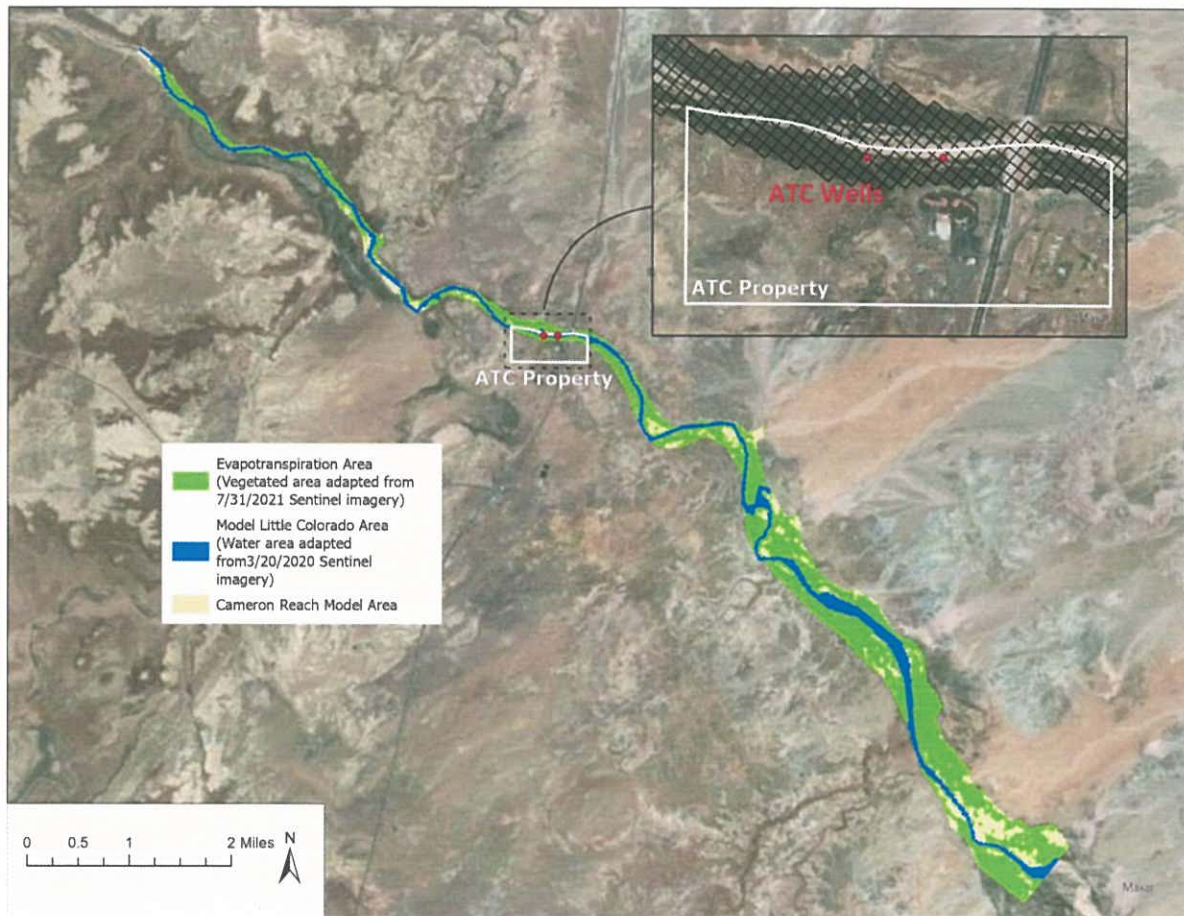


Figure B1. Model of Cameron area alluvial aquifer.

Simulation Method

The model is based on MODFLOW 6 version 6.2.2 (Langevin and others, 2017). The model operates with 15 different realizations to examine the sensitivity of aquifer yield results to a plausible range of model parameters and other specifications related to aquifer structure and boundary conditions. Details of the model realizations are described in the *Aquifer Properties* section below.

Langevin, C.D., Hughes, J.D., Banta, E.R., Niswonger, R.G., Panday, S., Provost, A.M., 2017, Documentation for the MODFLOW 6 Groundwater Flow Model: U.S. Department of the Interior, Chapter 55 of Book 6. Modeling Techniques, Section A. Groundwater, U.S. Geological Survey Techniques and Methods 6-A55.
<https://www.usgs.gov/software/modflow-6-usgs-modular-hydrologic-model>

Model Grid Development

The groundwater system is spatially represented by a grid with 2 layers, 110 rows and 634 columns (Figure B1). The grid is constructed of square cells that have sides of 100 feet. The active grid area covers an area of 2024 acres along a 15-mile reach of the LCR.

The model grid layers represent the stratigraphic column depicted on Figure B2.

Layer	Geologic Column ¹				Thickness (ft)	Kxy (ft/d)	Kz (ft/d)	Sy (-)	Ss (-ft)
1 ²	Qs/Qf - Stream-channel/Flood-plain deposits				+/-30	41.5 - 315	0.415 - 31.5	0.1 - 0.2	2.00E-06
2 ³	Qs/Qf - Older Alluvium	Trcs - Chinle Formation, Shinarump Member	Tm - Moenkopi Formation	Pk - Kaibab Formation	40	7 - 15	0.7 - 1.5	0.1 - 0.2	2.00E-06

Figure B2. Modeled geologic column and aquifer parameters.

Figure B2 notes:

1) Geologic column adapted from Billingsley and others (2007).

Billingsley, G.H., Priest, S.S. and Felger, T.J., 2007, Geologic Map of the Cameron 30' x 60' Quadrangle, Coconino County, Northern Arizona: U.S. Geological Survey Scientific Investigations Map 2977 (<https://pubs.er.usgs.gov/publication/sim2977>).

2) The top of layer one is derived from 1/3 arc-second digital elevation model (DEM) data (USGS National Elevation Dataset (NED) accessed via ESRI Online, August 13, 2021) and stream channel elevations. Stream channel elevations are derived by linear interpolation through elevation data (surveys) from Dean and Topping (2019, Figures DR8 and DR10) and the DEM.

ESRI Digital Elevation Models: <https://pro.arcgis.com/en/pro-app/latest/tool-reference/spatial-analyst/exploring-digital-elevation-models.htm>

Dean, D.J., and Topping, D.J., 2019, Geomorphic change and biogeomorphic feedbacks in a dryland river: The Little Colorado River, Arizona, USA: GSA Bulletin, <https://doi.org/10.1130/B35047.1> (GSA Data Repository Item 2019158).

The bottom of model Layer 1 is 30 feet below the streambed. The 30-foot thickness of Qs/Qf is adapted from Billingsley (2007, page 13) and well log 03T-551(Greenslade 2021, Appendix A) and

well log 55-918880 (AZDWR, <https://gisweb.azwater.gov/WellRegistry/SearchWellReg.aspx>, accessed 4/30/2020). ATC owns well 55-918880 (shown as the west well on Figure B1). Since the land surface adjacent to the streambed is based the DEM and the Dean and Topping (2019) elevation surveys, the thickness of floodplain deposits in model Layer 1 can be somewhat greater than or less than 30 feet.

3) Model Layer 2 represents bedrock or older alluvium adjacent to Qs/Qf (Layer 1) with a thickness interpreted from well log 55-918880 (AZDWR, accessed 4/30/2020).

Aquifer Properties

Each model scenario is simulated with 15 realizations to examine sensitivity of aquifer yield results to a plausible range of model parameters and other specifications related to aquifer structure and boundary conditions. Table B1 shows the variations to model parameters and aquifer structure.

Table B1. Model realizations for examining sensitivity of well yield from aquifer.

Model Realization	Layer 1 K _{xy}	Layer 2 K _{xy}	Layer 1 K _z	Layer 2 K _z	Layer 1 S _y	Layer 2 S _y	Model Area	Layer 2	Riverbed K _z	ET	General Head Boundary
1	83	15	8.3	1.5	0.20	0.20			1	50%	
2	83	15	8.3	1.5	0.15	0.15			1	50%	
3	83	15	8.3	1.5	0.10	0.10			1	50%	
4	83	15	8.3	1.5	0.20	0.20			0.1	50%	
5	83	15	8.3	1.5	0.20	0.20			10	50%	
6	83	15	8.3	1.5	0.20	0.20			1	25%	
7	83	15	8.3	1.5	0.20	0.20			1	100%	
8	83	15	8.3	1.5	0.20	0.20			1	50%	Inactive
9	83	--	8.3	--	0.20	--		Inactive	1	50%	L2 Inactive
10	83	15	8.3	1.5	0.20	0.20	Reduced		1	50%	Inactive
11	315	15	31.5	1.5	0.20	0.20			1	50%	
12	166	15	16.6	1.5	0.20	0.20			1	50%	
13	166	7	16.6	0.7	0.20	0.20			1	50%	
14	41.5	15	4.15	1.5	0.20	0.20			1	50%	
15	83	15	8.3	1.5	0.10	0.10			0.1	50%	

Note: K is in units of ft/day. ET is percentage of net ET shown on Figure B5 in section *Riparian Evapotranspiration* below.

Standard Case

The standard case is Realization 1, which translates to a transmissivity, T , in layers 1 and 2 of 2,500 and 600 ft²/day, respectively. T of model layer 2 is estimated based on a 7-hour specific capacity test on ATC's well 55-918880.¹ T of model layer 1 is based on our observation that specific capacity of Navajo Nation wells (03T-551 and 037-552) translates to a T that is less than the range reported by Dr. Leeper in the Wood Report ($T = 4,970$ and $9,461$ ft²/day). Accordingly, the standard case uses

¹ T is estimated from specific capacity using the equation $Q/s = T/2000$ as described in Driscoll, F., 1987, *Groundwater and Wells*: copyright 1986 by Johnson Division, St. Paul Minnesota 55112, second printing 1987, ISBN 0-9616456-0-1, p. 1021).

a T that is about half of Dr. Leeper's low-end value. Dr. Leeper's reported T values, however, are included in the analysis in realizations 11, 12 and 13. Vertical hydraulic conductivity, K , is assumed to be 1/10 of horizontal K .² Specific yield, S_y , is assumed to be 0.20 in the standard case.

Other Cases

Realizations 2 and 3 examine the variability of specific yield. Well yield results are sensitive to this parameter as it directly relates to the unit volume of water released from storage (sediment porosity) per volume of aquifer.

Realizations 4 and 5 inspect the sensitivity of well yield to vertical hydraulic conductivity of the streambed. Results are sensitive to this parameter because it affects the amount of recharge to the aquifer from river flow. The sustainable yield from the alluvial aquifer is not very sensitive to the change from 1 to 10 ft/day; however, the change from 1 to 0.1 ft/day limits recharge and reduces the well yield sustainable from the aquifer.

Realizations 6 and 7 vary the amount of ET available for capture by well pumping in the alluvial aquifer. Aquifer yield results are not significantly sensitive to this parameter.

Realizations 8, 9 and 10 examine the effect that aquifer boundary conditions and structure have on alluvial aquifer sustainability. It turns out that results are not sensitive to these parameters indicating the boundary conditions are far enough away from the simulated wellfields to prevent an artificial effect in the analyses.

Realizations 11 and 12 represent the T values reported by Dr. Leeper ($T = 4,970$ and $9,461$ ft²/day). T affects sustainable yield from the alluvial aquifer.

Realization 13, as is the case with Realization 9, indicates model layer 2 hydraulic conductivity does not significantly affect well yield from the alluvial aquifer.

Realization 14 analyzes the lowest range of T in the alluvial aquifer (1,250 ft²/day).

Realization 15 simultaneously evaluates the sensitivity of alluvial aquifer sustainable yield to the two most sensitive parameters: specific yield and vertical hydraulic conductivity of the streambed. Sustainable yield from the alluvial aquifer is highly sensitive to Realization 15.

Simulated Time Period

Model simulated time represents 40-year water development scenarios with monthly stress periods. The 40-year period is based on a repeat of the last 20 years of river flow and evapotranspiration on the LCR, which is the driest 20 years on record (Figure B3). The development period projects from a steady initial condition.

² As it turns out, vertical K of the model layers is not a significant factor in the analysis because alluvial aquifer yield is not significantly sensitive to the presence of model layer 2.

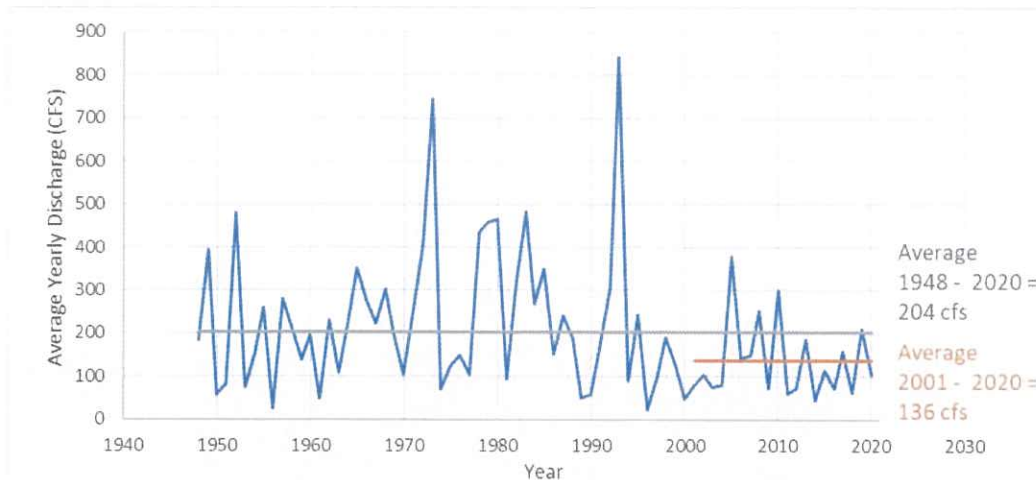


Figure B3. Historical record of flow at USGS Cameron gage on Little Colorado River.

Groundwater Inflow and Outflow

General head boundaries (GHB) are set on the upstream and downstream ends of the model domain to account for groundwater inflow and outflow to unmodeled portions of the alluvial aquifer. The parameter is set up by first specifying the head on the boundary and observing head and flow conditions in the model domain. We observed a head gradient of 4 feet per mile when simulated river flow is less than 1 cubic foot per second (cfs) and a head gradient of 5 feet per mile during months with greater river flow. The GHB is specified to project these conditions beyond the extent of the model domain. The gradient is referenced to the stream bed elevation at the model ends. The GHB transmissivity is $2850 \text{ ft}^2/\text{d}$, which is similar to the Standard Case model.

Little Colorado River

The interaction of the LCR with the alluvial aquifer is simulated with the MODFLOW RIV6 Package. Data from the USGS Cameron flow gage indicates the LCR has been dry about 43 percent of the time over the last 20 years. The model concept is that the LCR naturally provides recharge to the alluvial aquifer. When wells divert water from the alluvial aquifer, stored water in the aquifer is removed, resulting in potential for a greater quantity of recharge than otherwise would occur without the groundwater development. That is, well diversions provide space in the aquifer that can be recharged from the LCR when it flows. Managing a limited-storage aquifer supply, such as the LCR alluvial aquifer, involves a balance between developing stored groundwater at a rate per well that can be reasonably sustained during periods when the river is not flowing, while also creating space in the aquifer that can be replenished when the river flows. Of course, additional water management operations can be implemented to store water during extended periods without river recharge; however, striving to develop a reliable supply from the aquifer is a prudent management approach.

Below we describe how the LCR is simulated in the model to account for recharge that occurs to the alluvial aquifer when the river flows. The active river area is shown on Figure B1.

We interpreted the active river area from remote sensing imagery (Sentinel scene S2A_MSIL2A_20200320T180031 on March 20, 2020 (ESA data,

<https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-2>, via <https://cloud.google.com/storage/docs/public-datasets/sentinel-2>) on a day (Mar 20, 2020) with LCR mean monthly flow near 1,500 cfs, which results in an active stream area that envelopes most flood flows (the actual monthly average flow on Mar 20, 2020 was 1,470 cfs). That river condition is adjusted in the model based on the magnitude of river flow in the 40-year simulation. Additional detail is below.

The model simulates width and stage of the river under variable flow conditions. The active river area is based on USGS field data at the USGS Winslow Gage on the LCR (Figure B4).³ These channel width and depth relationships are applied to average monthly LCR flow values across the model reach for groundwater development scenarios.⁴ The average monthly flow values are derived from the difference in flow between the USGS Winslow and Cameron flow gages. The catchment for the model area represents 28 percent of the total catchment area between the two USGS gages.⁵ Accordingly, 28 percent of the average monthly flow change between the two gages represents a quantity of flow that defines a channel width and stage along the active river area in the model. Additionally, we subtract 19.7 cubic feet per second from river flow upstream of the model to account for 15,000 acre-feet per year (AFY) planned to be developed by the Navajo Nation in the Leupp and Birdsprings area alluvial aquifer (see Wood Report, p. 14).

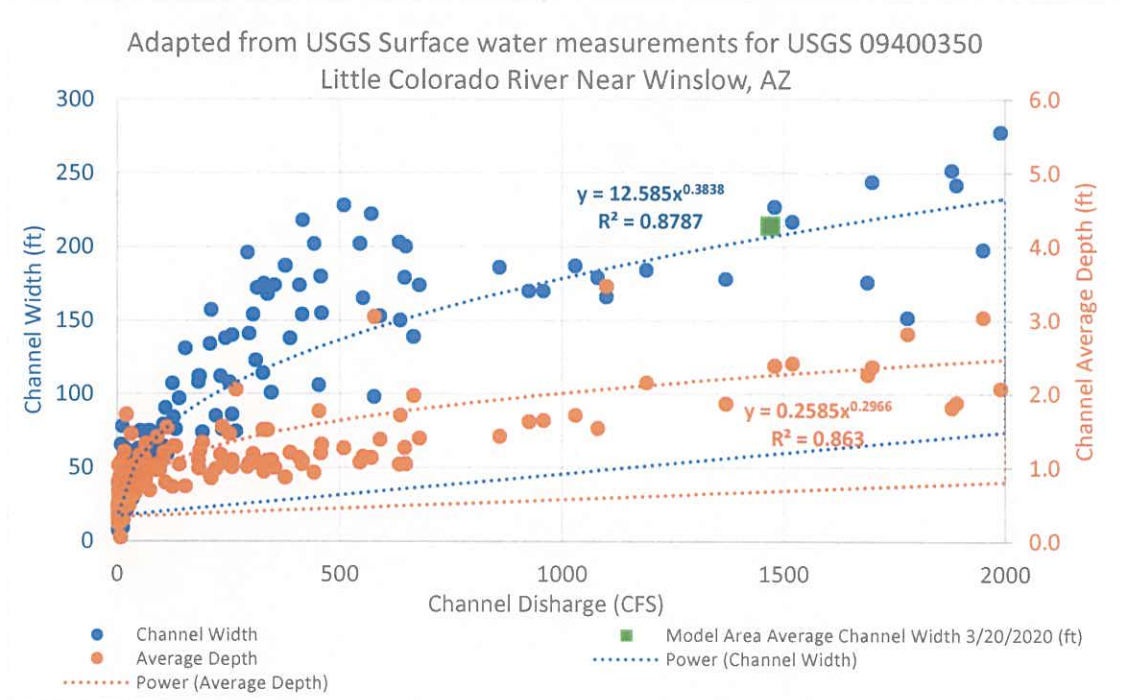


Figure B4. Little Colorado River channel geometry.

³ Monthly flow at Winslow and Cameron gages accessed Aug 18, 2020. Winslow Gage: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=09400350, Cameron Gage: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=09402000.

⁴ The average active channel width observed on remote sensing imagery on March 20, 2020 is charted on Figure B4 and shown to reasonably fit the flow/channel width relationship observed by the USGS at the Winslow gage.

⁵ Drainage areas of the Little Colorado River are derived from 30-meter digital elevation model data obtained from ESRI (ArcGIS Pro ...Ready To Us toolbox/Hydrology toolset: <https://pro.arcgis.com/en/pro-app/latest/tool-reference/ready-to-use/watershed.htm>).

Riparian Evapotranspiration

We inspected recent imagery and identified 1,053 acres of riparian vegetation (August 2021 Sentinel imagery (L2A_T12SVE_A023090_20210807T181027)). (ESA data, <https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-2>, via <https://cloud.google.com/storage/docs/public-datasets/sentinel-2>). NASA manages and distributes data through its North American Land Data Assimilation System (NLDAS-2), which includes an estimation of potential evaporation and precipitation in the model area along the LCR. Details of the analyses are available at NASA, [https://disc.gsfc.nasa.gov/datasets/NLDAS FORA0125 H 002/summary](https://disc.gsfc.nasa.gov/datasets/NLDAS_FORA0125_H_002/summary). We subtracted precipitation from potential evaporation to quantify net evapotranspiration (ET) from the model area. The monthly values from Jan 2001 to Dec 2020 are shown on Figure B5. Net ET includes source water contributions from moisture content in the vadose zone and the root zone that accesses the regional water table. Accordingly, we analyze the net ET component of the model by considering the sensitivity of model results to the full net ET on Figure B5 and by scaling that quantity down to 50 percent and 25 percent (see the *Note* on Table B1). The modeled extinction depth is 15 feet below the land surface, which typically envelopes the root zone of salt cedar and willow (McAda and Barroll, 2002, p. 38, <https://pubs.er.usgs.gov/publication/wri20024200>).

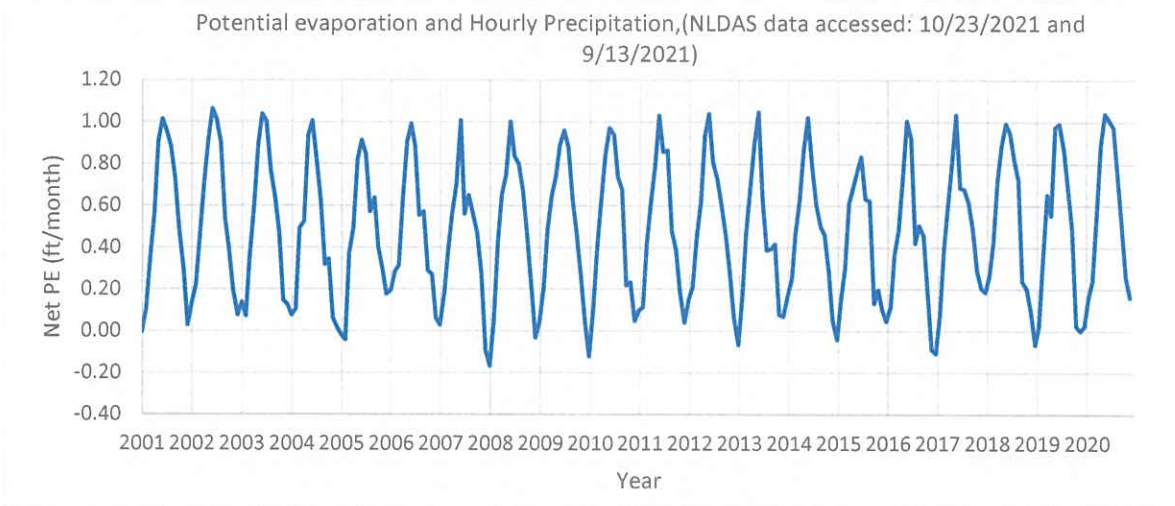


Figure B5. Net monthly potential evaporation.

MODEL FLOW BUDGET

A general flow budget for the model over the 40-year simulation period is shown on Figure B6, which is a stacked area chart of modeled flow components. The simulation represents an example baseline with ATC pumping 75 AFY. The pumping is represented in the Multi-Aquifer Well (MAW) component of MODFLOW 6. Other flow components include net General Head Boundary (GHB), net storage (aquifer specific yield (SY)), net river (interaction of the LCR with the

aquifer) and net ET (evapotranspiration from riparian vegetation). A key observation in behavior of the system is the balanced response between river recharge, aquifer storage and ET. After drier than average periods, aquifer water levels decrease. When the river floods, the water source recharges the aquifer resulting in rising water levels (increased aquifer storage) and an associated increase in ET.

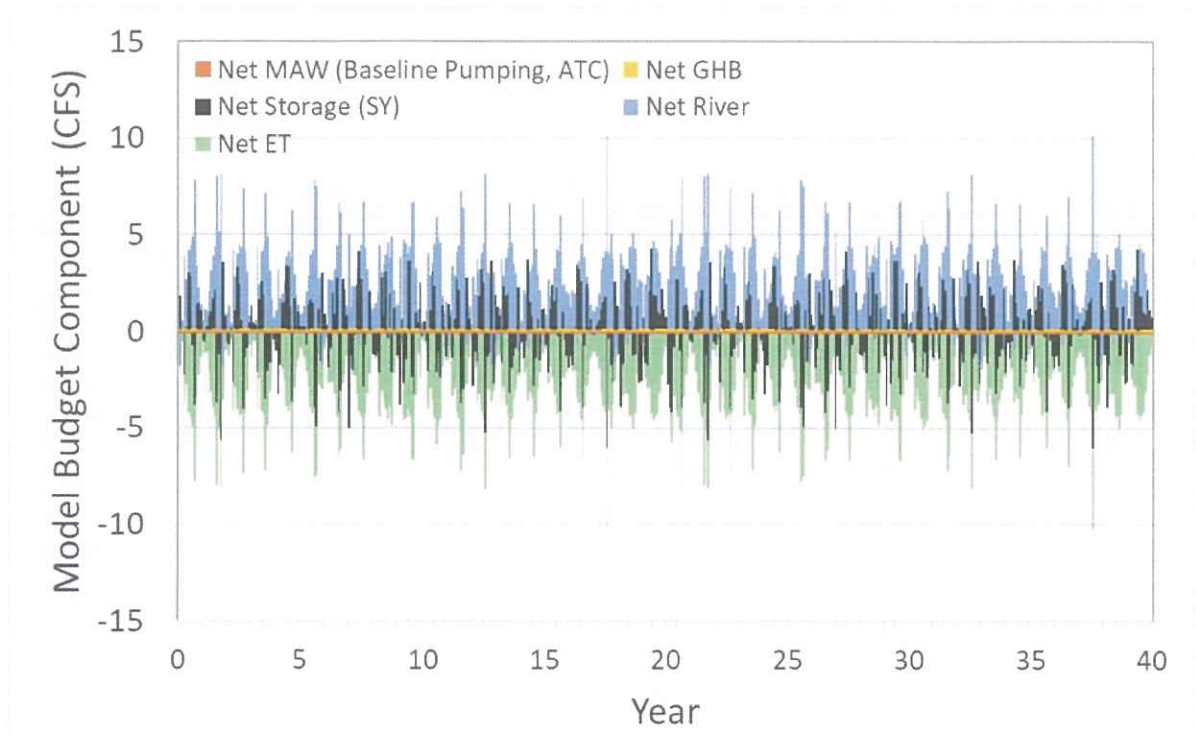


Figure B6. Monthly flow budget over 40 years.

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APPENDIX C - Model Scenario Results

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This appendix presents a set of charts that illustrate the method for interpreting the number of months that the target pumping rate is not met (see Table 1 on p. 14 the report). The approach involves using a pumping water level (PWL) that, over a 40-year simulation, is a combined average of the number of wells in the simulated wellfield and of the 15 realizations of the model. That number is then compared to the average pumping reserve of the of the 12-well pumping case for the Navajo Nation (NN) wellfield. The PWL lowering into the pumping reserve, represents a condition in which the well yield must decline to maintain net positive suction head (NPSH). Accordingly, we interpret the condition of the average pumping water level (described above) lowering into the pumping reserve to represent a case in which the target yield is not met. Summary charts for each of the four scenarios are below.

SCENARIO 1

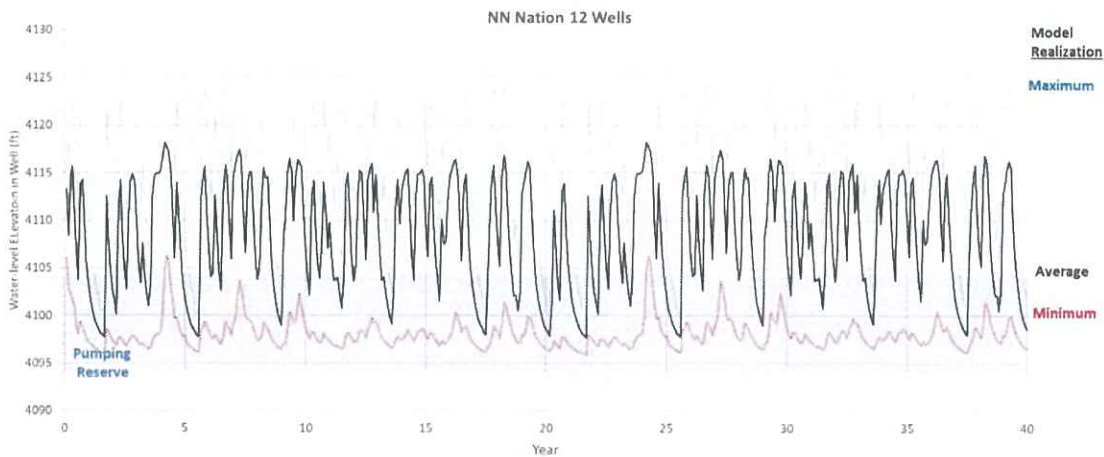


Figure C1. Scenario 1: Average PWL relative to pumping reserve in wellfield. The maximum and minimum PWLs from the 15 realizations are also shown to indicate range of PWL results.

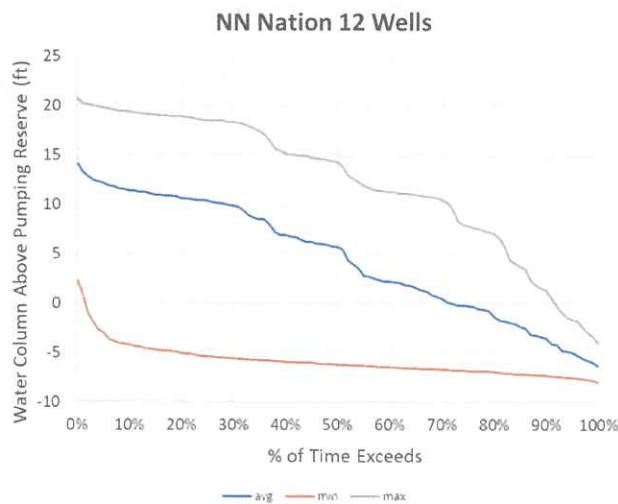


Figure C2. Scenario 1: Percent of time that average PWL is above the pumping reserve over the 40-year simulation.

SCENARIO 2

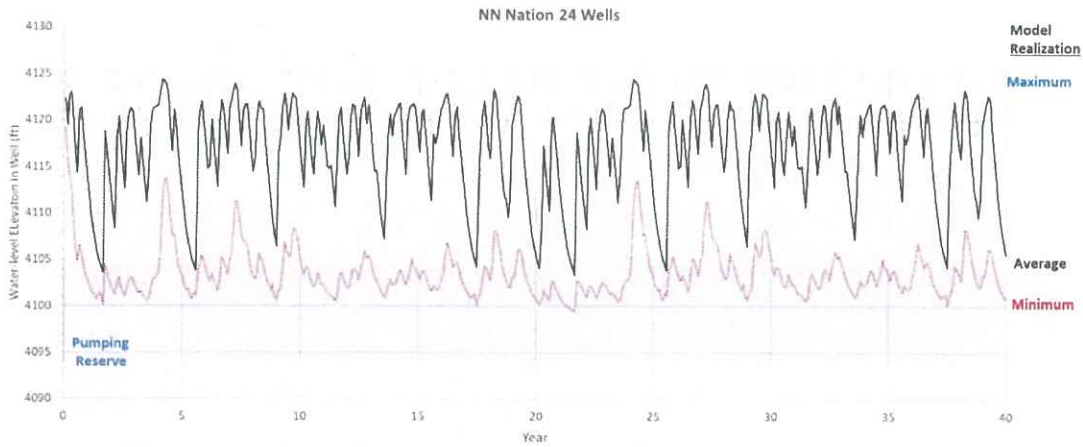


Figure C3. Scenario 2: Average PWL relative to pumping reserve in wellfield. The maximum and minimum PWLs from the 15 realizations are also shown to indicate range of PWL results.

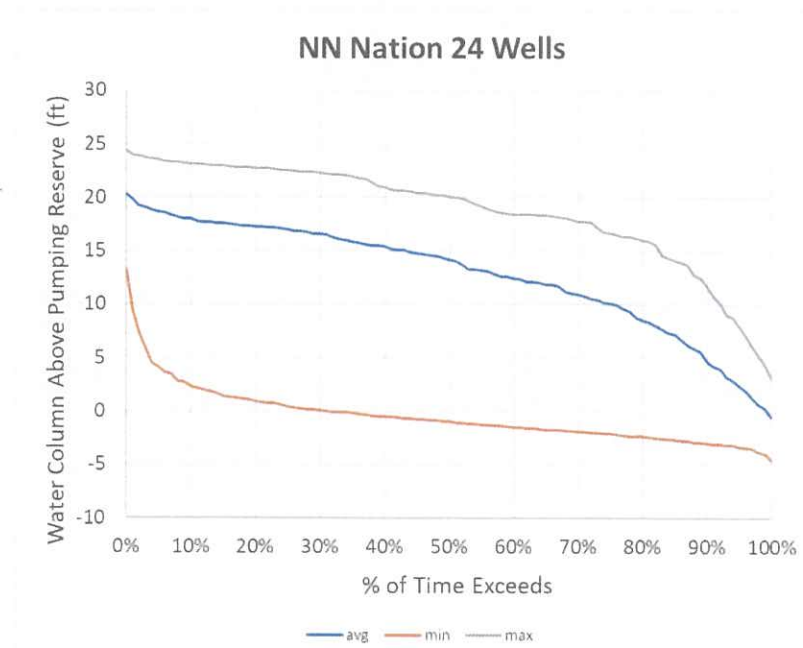


Figure C4. Scenario 2: Percent of time that average PWL is above the pumping reserve over the 40-year simulation.

SCENARIO 3

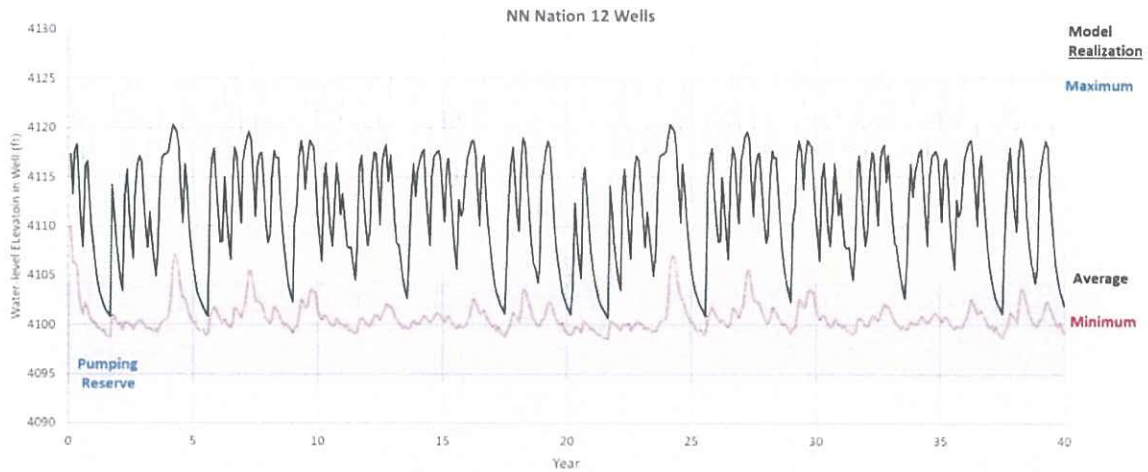


Figure C5. Scenario 3: Average PWL relative to pumping reserve in wellfield. The maximum and minimum PWLs from the 15 realizations are also shown to indicate range of PWL results.

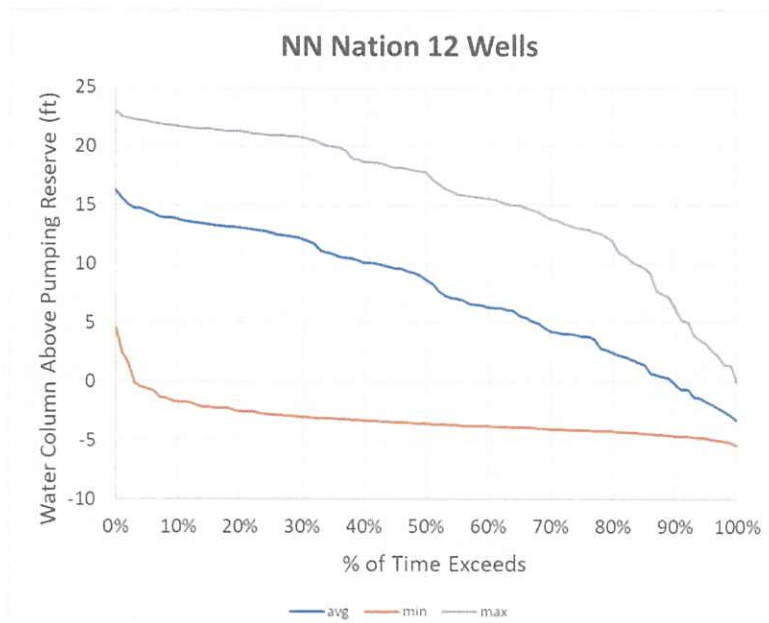


Figure C6. Scenario 3: Percent of time that average PWL is above the pumping reserve over the 40-year simulation.

SCENARIO 4

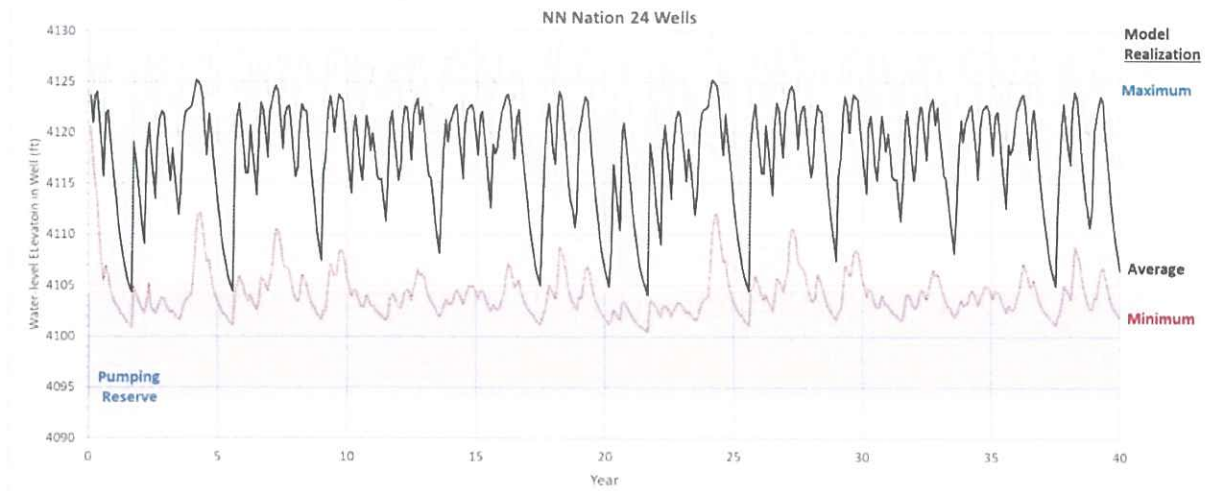


Figure C7. Scenario 4: Average PWL relative to pumping reserve in wellfield. The maximum and minimum PWLs from the 15 realizations are also shown to indicate range of PWL results.

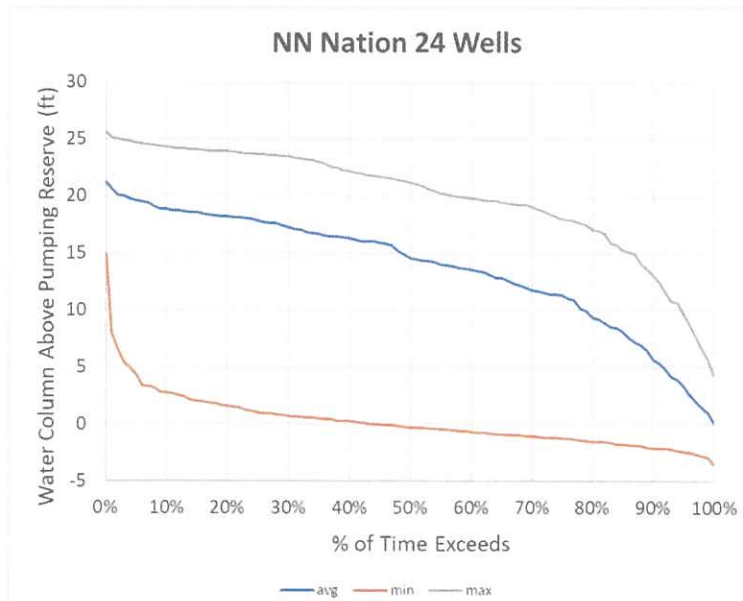


Figure C8. Scenario 4: Percent of time that average PWL is above the pumping reserve over the 40-year simulation.



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EXHIBIT 8.5.4

ATTACHED

**ABSTRACT OF ATKINSON TRADING COMPANY, INC.
Little Colorado River Adjudication**

ATKINSON TRADING COMPANY, INC.		
1.	Name of Reservoirs (Facility)	n/a
2.	Owner of Reservoir.	n/a
3.	Landowner.	Atkinson Trading Company, Inc. dba Cameron Trading Post
4.	Statement of Claimant No.(s)/Certificate	39-84050 39-88848 (Certificate 3930.0001)
5.	Statement of Claimant Name(s).	Atkinson Trading Company, Inc. d/b/a Cameron Trading Post
6.	Lessee or Permittee.	n/a
7.	Beneficial Use.	Domestic, Commercial, to support operation of the Cameron Trading Post
8.	Priority Date.	Pre-1919 (1916)
9.	Quantity.	24,000,000 gallons annually
10.	Places of Use.	Off-Reservation land owned in fee by the Atkinson Trading Company upon which is situated the Cameron Trading Post and associated facilities and infrastructure, including two water wells, described in Arizona Department of Water Resources Certificate of Water Right 3930.0001 as land within the SW1/4SE1/4 and the SE1/4SE1/4, the wells located as within the NW1/4SE1/4 all being within Section 22, Township 29 North, Range 9 East, Gila and Salt River Base and Meridian, Coconino County, Arizona; comprising approximately 141 acres and as more particularly described in the map attached hereto.

ATKINSON TRADING COMPANY, INC.

11.	Points of Diversion.	Two wells located within the following: NW ¼ SE ¼, Section 22, Township 29' North, Range 9 East, Gila and Salt River Basin and Meridian, Coconino County, Arizona
12.	Source of Water.	Little Colorado River



Little Colorado River

89

Atkinson Trading Co. Wells

Atkinson Trading Co. /
Cameron Trading Post Fee Property

Flagstaff
(Approx. 50 mi)



0.5 Mile

0

EXHIBIT 8.8.2

ATTACHED

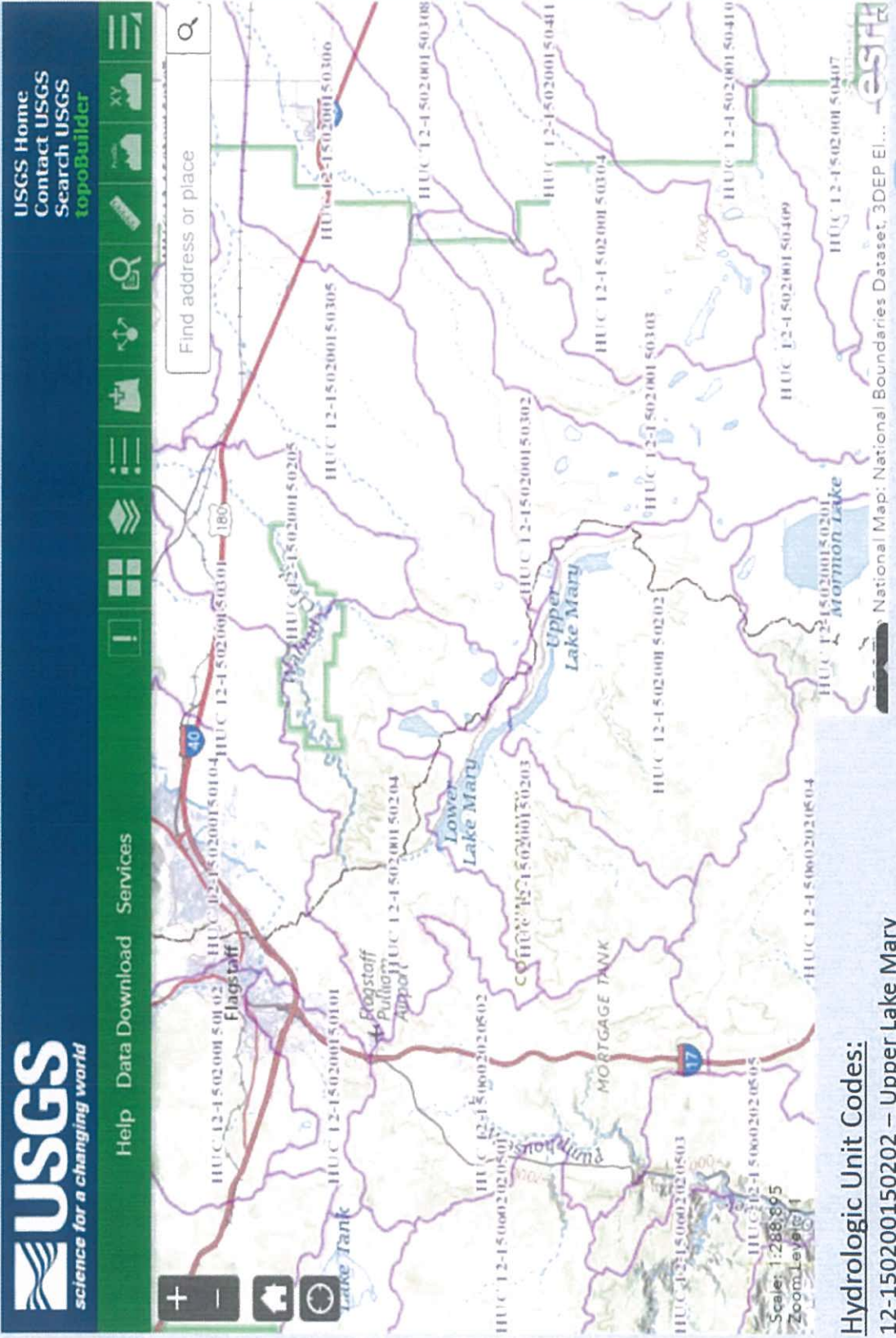
EXHIBIT 8.8.3

ATTACHED

Northeastern Arizona Indian Water Rights Settlement

EXHIBIT 8.8.3

Map of Lake Mary Watershed



Hydrologic Unit Codes:

- 12-150200150202 – Upper Lake Mary
- 12-150200150203 – Lower Lake Mary
- 12-150200150204 – downstream of Lower Lake Mary

Basemap image from the U.S. Geological Survey

National Map: National Boundaries Dataset, 3DEP El...