

BEFORE THE
ARIZONA NAVIGABLE STREAM ADJUDICATION COMMISSION

IN THE MATTER OF THE
NAVIGABILITY OF SMALL AND
MINOR WATERCOURSES IN APACHE
COUNTY, ARIZONA, EXCLUDING THE
LITTLE COLORADO RIVER AND THE
PUERCO RIVER

No.: 05-006-NAV

**REPORT, FINDINGS AND DETERMINATION
REGARDING THE NAVIGABILITY OF SMALL AND
MINOR WATERCOURSES IN APACHE COUNTY, ARIZONA**

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LIST OF EXHIBITS

- Exhibit "A" List of all of the small and minor watercourses in Apache County, Arizona, both named and unnamed in report
- Exhibit "B" Copies of the Notices of Intent to Study and Receive, Review and Consider Evidence on the issue of navigability of small and minor watercourses in Apache County
- Exhibit "C" Notices of the public hearings
- Exhibit "D" Agenda and Minutes of the public hearings
- Exhibit "E" List of Evidence and Records
- Exhibit "F" List of the 242 watercourses that received a positive response to one or more of the characteristics of navigability or characteristics indicating susceptibility of navigability evaluated at level two

Pursuant to Title 37, Chapter 7, Arizona Revised Statutes, the Arizona Navigable Stream Adjudication Commission ("Commission") has undertaken to receive, compile, review and consider relevant historical and scientific data and information, documents and other evidence regarding the issue of whether any small and minor watercourse in Apache County, Arizona were navigable or nonnavigable for title purposes as of February 14, 1912. Proper and legal public notice was given in accordance with law and a hearing was held at which all parties were afforded the opportunity to present evidence, as well as their views, on this issue. The Commission, having considered all of the historical and scientific data and information, documents and other evidence, including the oral and written presentations made by persons appearing at the public hearing and being fully advised in the premises, hereby submits its report, findings and determination.

There are 3,577 documented small and minor watercourses in Apache County, of which 3,274 are unnamed. All of these watercourses, both named and unnamed, are the subject of and included in this report. Excluded from this report is the Little Colorado River which is deemed to be major watercourse and is the subject of a separate report. Attached hereto as Exhibit "A" is a list of all of the small and minor watercourses in Apache County, Arizona, both named and unnamed, covered by this report.

I. Procedure

On March 8, 15 and 22, 2005, the Commission gave proper prior notice of its intent to consider the issue of whether small and minor watercourses in Apache County, Arizona, were navigable or nonnavigable for title purposes as of February 14, 1912, in accordance with A.R.S. § 37-1123B. Publication was in The White Mountain Independent, a newspaper of general circulation published at St. Johns, in the County of Apache, State of Arizona. Copy of the Notice of Intent to Study and Receive, Review and Consider Evidence on the issue of navigability of small and minor watercourses in Apache County are attached hereto as Exhibit "B."

After collecting and documenting all reasonably available evidence received pursuant to the Notice of Intent to Study and to Receive, Review and Consider Evidence, the Commission scheduled a public hearing to receive additional evidence and testimony regarding the navigability or nonnavigability of small and minor watercourses located in Apache County, Arizona. Public notice of this hearing was given by legal advertising on March 22, 2005 in the White Mountain Independent at St. Johns in Apache County, Arizona, and on March 22, 2005 in the Arizona Business Gazette, as required by law pursuant to A.R.S. §37-1126 and, in addition, by mail to all those requesting individual notice and by means of the ANSAC website (azstreambeds.com). This hearing was held on April 26, 2005, in St. Johns, the county seat of Apache County to give an opportunity for citizens and residents of Apache County to appear and be heard, since the law requires that such hearing be held in the county in which the watercourses being studied are located. Attached hereto as Exhibit "C" are copies of the notices of the public hearing.

All parties were advised that anyone who desired to appear and give testimony at the public hearings could do so and, in making its findings and determination as to navigability and nonnavigability, the Commission would consider all matters presented to it at the hearing, as well as other historical and scientific data, information, documents and evidence that had been submitted to the Commission at any time prior to the date of the said hearing, including all data, information, documents, and evidence previously submitted to the Commission.

Following the public hearing held on April 26, 2005 in St. Johns, Arizona, all parties were advised that they could file post-hearing memoranda pursuant to the Rules adopted by the Commission. Post-hearing memoranda were filed by Salt River Project Agricultural Improvement and Power District and Salt River Valley Water Users Association. On July 14, 2005, at a public hearing in Flagstaff, Arizona, after considering all of the evidence and testimony submitted, and the post-hearing

memorandum filed with the Commission, and the comments and oral argument presented by the parties, and being fully advised in the premises, the Commission, with a unanimous vote, found and determined in accordance with A.R.S. § 37-1128 that all small and minor watercourses in Apache County, Arizona, were nonnavigable as of February 14, 1912 and were not susceptible of navigability. Attached as Exhibit "D" are the agenda and the minutes of this hearing, as well as the agenda of the earlier hearing in St. John held on April 26, 2005, at which evidence was presented.

II. Apache County, Arizona

Apache County, Arizona, is located in the northeastern portion of the State and is comprised of about 11,216 square miles in land area. A substantial portion of the land in the County is held by the federal government: tribal lands (primarily Navajo), Forest Service, and Bureau of Land Management lands. The County borders the State of Utah to the north, and the County of Navajo to the west, the Counties of Graham and Greenlee to the south, and the State of New Mexico to the east. Apache County lies within the following ranges: latitude 33°29'0" North to latitude 36°59'52" North and longitude 109°02'45" West to longitude 109°53'20" West.

Arizona Revised Statutes Section 11-103 describes the boundaries of Apache County as follows:

Apache County, the county seat of which is St. Johns, is bounded as follows:

Commencing at a point where the boundary line between Arizona and New Mexico intersects the thirty-seventh parallel of north latitude, being the northeast corner of this state, and being more particularly described as the four corners monument, thence south along the boundary line between Arizona and New Mexico to a point where the first standard parallel north intersects such boundary line, being the northeast corner of Greenlee county; thence due west to the Black river; thence westerly and down the Black river along the northern boundary of Greenlee and Graham counties to the east line of range twenty-three east of the Gila and Salt River Guide meridian; thence north along such range line to the former southern boundary line of the Navajo Indian reservation as established by presidential executive order dated January 6, 1880; thence west along such boundary line to the one hundred tenth meridian of west longitude; thence north along such meridian to the boundary line between

Utah and Arizona, being approximately the thirty-seventh parallel of north latitude; thence east along such boundary line to its intersection with the boundary line between Arizona and New Mexico, the point of beginning, being the four corners monument.

Apache County lies in the mountain and plateau range of northeastern Arizona. Its landscape is characterized as rugged mountains, deep canyons, and thick forests of pine, fir, juniper, piñon, aspen and oak. Between the mountains and canyons are high plateaus with some grasslands.

The major population centers of Apache County are the cities of St. John, which is also the county seat, and Springerville. Smaller towns or settlements located in Apache County are Alpine, Eager, Ganado and Chinle and a number of Native American villages and settlements on the Apache Reservation. The major commercial industries of Apache County are ranching and tourism. In earlier days, logging, timber and lumber was very important to the economy of the County, but has since decreased.

Interstate 40 and Highway 60 are the principal corridors running east and west, and Highways 191, 160 and 264 are the main north-south corridors. The main line of the BNSF Railroad (Burlington Northern Santa Fe) runs east and west through the center of the County, generally paralleling Interstate 40. (This railroad was formerly known as the Atchison Topeka and Santa Fe Railroad until merging with Burlington Northern Railroad in 1996).

III. Background and Historical Perspectives

A. Public Trust Doctrine and Equal Footing Doctrine

The reason for the legislative mandated study of navigability of watercourses within the State is to determine who holds title to the beds and banks of such rivers and watercourses. Under the public trust doctrine, as developed by common law over many years, the tidal lands and beds of navigable rivers and watercourses, as well as the banks up to the high water mark, are held by the sovereign in a special title for the benefit of all the people. In quoting the U.S. Supreme Court, the Arizona Court of

Appeals described the public trust doctrine in its decision in *The Center for Law v. Hassell*, 172 Ariz. 356, 837 P.2d 158 (App.1991), review denied October 6, 1992.

An ancient doctrine of common law restricts the sovereign's ability to dispose of resources held in public trust. This doctrine, integral to watercourse sovereignty, was explained by the Supreme Court in *Illinois Cent. R.R. v. Illinois*, 146 U.S. 387, 13 S.Ct. 110, 36 L.Ed. 1018 (1892). A state's title to lands under navigable waters is a title different in character from that which the State holds in lands intended for sale. . . . It is a title held in trust for the people of the State that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein freed from the obstruction or interference of private parties. *Id.* at 452, 13 S.Ct. at 118; *see also Martin v. Waddell*, 41 U.S. (16 Pet.) at 413 (describing watercourse sovereignty as "a public trust for the benefit of the whole community, to be freely used by all for navigation and fishery, as well for shellfish as floating fish").

Id., 172 Ariz. at 364, 837 P.2d at 166.

This doctrine is quite ancient and was first formally codified in the Code of the Roman Emperor Justinian between 529 and 534 A.D.¹ The provisions of this Code, however, were based, often verbatim, upon much earlier institutes and journals of Roman and Greek law. Some historians believe that the doctrine has even earlier progenitors in the rules of travel on rivers and waterways in ancient Egypt and Mesopotamia. This rule evolved through common law in England which established that the king, as sovereign, owned the beds of commercially navigable waterways in order to protect their accessibility for commerce, fishing and navigation for his subjects. In England, the beds of nonnavigable waterways where transportation for commerce was not an issue were owned by the adjacent landowners.

This principle was well established by English common law long before the American Revolution and was a part of the law of the American colonies at the time of the Revolution. Following the American Revolution, the rights, duties and responsibilities of the crown passed to the thirteen new independent states, thus making them the owners of the beds of commercially navigable streams, lakes and other waterways within their boundaries by virtue of their newly established

¹ *Putting the Public Trust Doctrine to Work*, David C. Slade, Esq. (Nov. 1990), pp. xvii and 4.

sovereignty. The ownership of trust lands by the thirteen original states was never ceded to the federal government. However, in exchange for the national government's agreeing to pay the debts of the thirteen original states incurred in financing the Revolutionary War, the states ceded to the national government their undeveloped western lands. In the Northwest Ordinance of 1787, adopted just prior to the ratification of the U. S. Constitution and subsequently re-enacted by Congress on August 7, 1789, it was provided that new states could be carved out of this western territory and allowed to join the Union and that they "shall be admitted . . . on an equal footing with the original states, in all respects whatsoever." (Ordinance of 1787: The Northwest Territorial Government, § 14, Art. V, 1 stat. 50. See also U. S. Constitution, Art. IV, Section 3). This has been interpreted by the courts to mean that on admission to the Union, the sovereign power of ownership of the beds of navigable streams passes from the federal government to the new state. *Pollard's Lessee v. Hagan, et al.*, 44 U.S. (3 How.) 212 (1845), and *Utah Division of State Lands v. United States*, 482 U.S. 193 (1987).

In discussing the equal footing doctrine as it applies to the State's claim to title of beds and banks of navigable streams, the Court of Appeals stated in *Hassell*:

The state's claims originated in a common-law doctrine, dating back at least as far as Magna Charta, vesting title in the sovereign to lands affected by the ebb and flow of tides. See *Martin v. Waddell*, 41 U.S. (16 Pet.) 367, 412-13, 10 L.Ed. 997 (1842). The sovereign did not hold these lands for private usage, but as a "high prerogative trust . . . , a public trust for the benefit of the whole community." *Id.* at 413. In the American Revolution, "when the people . . . took into their own hands the powers of sovereignty, the prerogatives and regalities which before belong either to the crown or the Parliament, became immediately and rightfully vested in the state." *Id.* at 416.

Although watercourse sovereignty ran with the tidewaters in England, an island country, in America the doctrine was extended to navigable inland watercourses as well. See *Barney v. Keokuk*, 94 U.S. 324, 24 L.Ed. 224 (1877); *Illinois Cent. R.R. v. Illinois*, 146 U.S. 387, 434, 13 S.Ct. 110, 111, 36 L.Ed. 1018 (1892). Moreover, by the "equal footing" doctrine, announced in *Pollard's Lessee v. Hagan*, 44 U.S. (3 How.) 212, 11 L.Ed. 565 (1845), the Supreme Court attributed watercourse sovereignty to future, as well as then-existent, states. The Court reasoned that the United States government held lands under territorial navigable waters in trust for future states, which would accede to sovereignty on an "equal footing"

with established states upon admission to the Union. *Id.* at 222-23, 229; accord *Montana v. United States*, 450 U.S. 544, 101 S.Ct. 1245, 67 L.Ed.2d 493 (1981); *Land Department v. O'Toole*, 154 Ariz. 43, 44, 739 P.2d 1360, 1361 (App. 1987).

The Supreme Court has grounded the states' watercourse sovereignty in the Constitution, observing that "[t]he shores of navigable waters, and the soils under them, were not granted by the Constitution to the United States, but were reserved to the states respectively." *Pollard's Lessee*, 44 U.S. (3 How.) at 230; see also *Oregon ex rel. State Land Board v. Corvallis Sand & Gravel Co.*, 429 U.S. 363, 374, 97 S.Ct. 582, 589, 50 L.Ed.2d 550 (1977) (states' "title to lands underlying navigable waters within [their] boundaries is conferred . . . by the [United States] constitution itself").

Id., 172 Ariz. 359-60, 837 P.2d at 161-162.

In the case of Arizona, the "equal footing" doctrine means that if any stream or watercourse within the State of Arizona was navigable on February 14, 1912, the date Arizona was admitted to the Union, the title to its bed is held by the State of Arizona in a special title under the public trust doctrine. If the stream was not navigable on that date, ownership of the streambed remained in such ownership as it was prior to statehood--the United States if federal land, or some private party if it had previously been patented or disposed of by the federal government--and could later be sold or disposed of in the manner of other land since it had not been in a special or trust title under the public trust doctrine. Thus, in order to determine title to the beds of rivers, streams, and other watercourses within the State of Arizona, it must be determined whether or not they were navigable or nonnavigable as of the date of statehood.

B. Legal Precedent to Current State Statutes

Until 1985, most Arizona residents assumed that all rivers and watercourses in Arizona, except for the Colorado River, were nonnavigable and accordingly there was no problem with the title to the beds and banks of any rivers, streams or other watercourses.² However, in 1985 Arizona officials upset this long-standing assumption

² In 1865, the Arizona Territorial Legislature declared the Colorado river to be "navigable." See Memorial of the Legislature of Arizona, 38th Cong. 2nd Sess., Mis. Doc. No. 17 (January 25, 1865). The Territorial Legislature, in its first session, expressly held that "the Colorado River is the only navigable water in this Territory . . ." *Id.* (emphasis added)

and took action to claim title to the bed of the Verde River. *Land Department v. O'Toole*, 154 Ariz. 43, 739 P.2d 1360 (App. 1987). Subsequently, various State officials alleged that the State might hold title to certain lands in or near other watercourses as well. *Id.*, 154 Ariz. at 44, 739 P.2d at 1361. In order to resolve the title questions to the beds of Arizona rivers and streams, the Legislature enacted a law in 1987 substantially relinquishing the State's interest in any such lands.³ With regard to the Gila, Verde and Salt Rivers, this statute provided that any record title holder of lands in or near the beds of those rivers could obtain a quitclaim deed from the State Land Commissioner for all of the interest the State might have in such lands by the payment of a quitclaim fee of \$25.00 per acre. The Arizona Center for Law in the Public Interest filed suit against Milo J. Hassell in his capacity as State Land Commissioner, claiming that the statute was unconstitutional under the public trust doctrine and gift clause of the Arizona Constitution as no determination had been made of what interest the State had in such lands and what was the reasonable value thereof so that it could be determined that the State was getting full value for the interests it was conveying. The Superior Court entered judgment in favor of the defendants and an appeal was taken. In its decision in *Hassell*, the Court of Appeals held that this statute violated the public trust doctrine and the Arizona Constitution and further set forth guidelines under which the State could set up a procedure for determining the navigability of rivers and watercourses in Arizona. In response to this decision, the Legislature established the Arizona Navigable Stream Adjudication Commission and enacted the statutes pertaining to its operation. 1992 Arizona Session Laws, Chapter 297 (1992 Act). The charge given to the Commission by the 1992 Act was to conduct full evidentiary public hearings across the State and to adjudicate the State's claims to ownership of lands in the beds of watercourses. See, generally, former A.R.S. §§ 37-1122 to 37-1128.

³ Prior to the enactment of the 1987 statute, the Legislature made an attempt to pass such a law, but the same was vetoed by the Governor. The 1987 enactment was signed by the Governor and became law. 1987 Arizona Sessions Law, Chapter 127.

The 1992 Act provided that the Commission would make findings of navigability or nonnavigability for each watercourse. See, former A.R.S. § 37-1128(A). Those findings were based upon the “federal test” of navigability in former A.R.S. § 37-1101(6). The Commission would examine the “public trust values” associated with a particular watercourse only if and when it determined that the watercourse was navigable. See, former A.R.S. §§ 37-1123(A)(3), 37-1128(A).

The Commission began to take evidence on certain watercourses during the Fall of 1993 and Spring of 1994. In light of perceived difficulties with the 1992 Act, the Legislature revisited this issue during the 1994 session and amended the underlying legislation. See, 1994 Arizona Session Laws, Ch. 178 (“1994 Act”). Among other things, the 1994 Act provided that the Commission would make a recommendation to the Legislature, which would then hold additional hearings and make a final determination of navigability by passing a statute with respect to each watercourse. The 1994 Act also established certain presumptions of nonnavigability and exclusions of some types of evidence.

Based upon the 1994 Act, the Commission went forth with its job of compiling evidence and making a determination of whether each watercourse in the State was navigable as of February 14, 1912. The Arizona State Land Department issued technical reports on each watercourse, and numerous private parties and public agencies submitted additional evidence in favor of or opposed to navigability for particular watercourses. See, *Defenders of Wildlife v. Hull*, 199 Ariz. 411, 416, 18 P.3d 722, 727 (App. 2001). The Commission reviewed the evidence and issued reports on each watercourse which were transmitted to the Legislature. The Legislature then enacted legislation relating to the navigability of each specific watercourse. The Court of Appeals struck down that legislation in its *Hull* decision, finding that the Legislature had not applied the proper standards of navigability. *Id.* 199 Ariz. at 427-28, 18 P.2d at 738-39.

In 2001, the Legislature again amended the underlying statute in another attempt to comply with the Court's pronouncements in *Hassell* and *Hull*. See, 2001 Arizona Session Laws, Ch. 166, § 1. The 2001 legislation now governs the Commission in making its findings with respect to the small and minor watercourses in Apache County.

IV. Issues Presented

The applicable Arizona statutes state that the Commission has jurisdiction to determine which, if any, Arizona watercourses were "navigable" on February 14, 1912 and for any watercourses determined to be navigable, to identify the public trust values. A.R.S. § 37-1123. A.R.S. § 37-1123A provides as follows:

A. The commission shall receive, review and consider all relevant historical and other evidence presented to the commission by the state land department and by other persons regarding the navigability or nonnavigability of watercourses in this state as of February 14, 1912, together with associated public trust values, except for evidence with respect to the Colorado river, and, after public hearings conducted pursuant to section 37-1126:

1. Based only on evidence of navigability or nonnavigability, determine which watercourses were not navigable as of February 14, 1912.

2. Based only on evidence of navigability or nonnavigability, determine which watercourses were navigable as of February 14, 1912.

3. In a separate, subsequent proceeding pursuant to section 37-1128, subsection B, consider evidence of public trust values and then identify and make a public report of any public trust values that are now associated with the navigable watercourses.

A.R.S. §§ 37-1128A and B provide as follows:

A. After the commission completes the public hearing with respect to a watercourse, the commission shall again review all available evidence and render its determination as to whether the particular watercourse was navigable as of February 14, 1912. If the preponderance of the evidence establishes that the watercourse was navigable, the commission shall issue its determination confirming the watercourse was navigable. If the preponderance of the evidence fails to establish that the watercourse was navigable, the commission shall issue its determination confirming that the watercourse was nonnavigable.

B. With respect to those watercourses that the commission determines were navigable, the commission shall, in a separate,

subsequent proceeding, identify and make a public report of any public trust values associated with the navigable watercourse.

Thus, in compliance with the statutes, the Commission is required to collect evidence, hold hearings, and determine which watercourses in existence on February 14, 1912, were navigable or nonnavigable. This report pertains to all of the small and minor watercourses in Apache County, Arizona and excludes the Little Colorado River and the Puerco River. In the hearings to which this report pertains, the Commission considered all of the available historical and scientific data and information, documents and other evidence relating to the issue of navigability of the small and minor watercourses in Apache County, Arizona, as of February 14, 1912.

Public trust values were not considered in these hearings but will be considered in separate, subsequent proceedings, if required. A.R.S. §§ 37-1123A3 and 37-1128B. In discussing the use of an administrative body such as the Commission on issues of navigability and public trust values, the Arizona Court of Appeals in its decision in *Hassell* found that the State must undertake a “particularized assessment” of its “public trust” claims but expressly recognized that such assessment need not take place in a “full blown judicial” proceeding.

We do not suggest that a full-blown judicial determination of historical navigability and present value must precede the relinquishment of any state claims to a particular parcel of riverbed land. An administrative process might reasonably permit the systematic investigation and evaluation of each of the state’s claims. Under the present act, however, we cannot find that the gift clause requirement of equitable and reasonable consideration has been met.

Id., 172 Ariz. at 370, 837 P.2d at 172.

The 2001 *Hull* court, although finding certain defects in specific aspects of the statute then applicable, expressly recognized that a determination of “navigability” was essential to the State having any “public trust” ownership claims to lands in the bed of a particular watercourse:

The concept of navigability is “essentially intertwined” with public trust discussions and “[t]he navigability question often resolves whether any public trust interest exists in the resource at all.” Tracy Dickman

Zobenica, *The Public Trust Doctrine in Arizona's Streambeds*, 38 Ariz.L.Rev. 1053, 1058 (1996). In practical terms, this means that **before a state has a recognized public trust interest in its watercourse bedlands, it first must be determined whether the land was acquired through the equal footing doctrine. However, for bedlands to pass to a state on equal footing grounds, the watercourse overlying the land must have been "navigable" on the day that the state entered the union.**

199 Ariz. at 418, 18 P.3d at 729 (also citing *O'Toole*, 154 Ariz. at 45, 739 P.2d at 1362 (emphasis added)).

The Legislature and the Court of Appeals in *Hull* have recognized that, unless the watercourse was "navigable" at statehood, the State has no "public trust" ownership claim to lands along that watercourse. Using the language of *Hassell*, if the watercourse was not "navigable," the "validity of the equal footing claims that [the State] relinquishes" is **zero**. *Hassell*, 172 Ariz. at 371, 837 P.2d at 173. Thus, if there is no claim to relinquish, there is no reason to waste public resources determining (1) the value of any lands the State **might** own if it had a claim to ownership, (2) "equitable and reasonable considerations" relating to claims it might relinquish without compromising the "public trust," or (3) any conditions the State might want to impose on transfers of its ownership interest. See, *id.*

V. Burden of Proof

The Commission, in making its findings and determinations, utilized the standard of the preponderance of the evidence as the burden of proof as to whether or not a stream was navigable or nonnavigable. A.R.S. § 37-1128A provides as follows:

After the commission completes the public hearing with respect to a watercourse, the commission shall again review all available evidence and render its determination as to whether the particular watercourse was navigable as of February 14, 1912. If the preponderance of the evidence establishes that the watercourse was navigable, the commission shall issue its determination confirming that the watercourse was navigable. If the preponderance of the evidence fails to establish that the watercourse was navigable, the commission shall issue its determination confirming that the watercourse was nonnavigable.

This statute is consistent with the decision of the Arizona courts that have considered the matter. *Hull*, 199 Ariz. at 420, 18 P.3d at 731 ("... a 'preponderance' of the evidence

appears to be the standard used by the courts. See, e.g., *North Dakota v. United States*, 972 F.2d 235-38 (8th Cir. 1992)"); *Hassell*, 172 Ariz. at 363, n. 10, 837 P.2d at 165, n. 10 (The question of whether a watercourse is navigable is one of fact. The burden of proof rests on the party asserting navigability . . ."); *O'Toole*, 154 Ariz. at 46, n. 2, 739 P.2d at 1363, n. 2.

The most commonly used legal dictionary contains the following definition of "preponderance of the evidence":

Evidence which is of greater weight or more convincing than the evidence which is offered in opposition to it; that is, evidence which as a whole shows that the fact sought to be proven is more probable than not. *Braud v. Kinchen*, La.App., 310 So.2d 657, 659. With respect to burden of proof in civil actions, means greater weight of evidence, or evidence which is more credible and convincing to the mind. That which best accords with reason and probability. The word "preponderance" means something more than "weight"; it denotes a superiority of weight, or outweighing. The words are not synonymous, but substantially different. There is generally a "weight" of evidence on each side in case of contested facts. But juries cannot properly act upon the weight of evidence, in favor of the one having the onus, unless it overbears, in some degree, the weight upon the other side.

Black's Law Dictionary, 1064 (5th ed. 1979).

The "preponderance of the evidence" standard is sometimes referred to as requiring "fifty percent plus one" in favor of the party with the burden of proof. One could imagine a set of scales. If the evidence on each side weighs exactly evenly, the party without the burden of proof must prevail. In order for the party with the burden to prevail, sufficient evidence must exist in order to tip the scales (even slightly) in its favor. See, generally, *United States v. Fatico*, 458 U.S. 388, 403-06 (E.D. N.Y. 1978), *aff'd* 603 F.2d 1053 (2nd Cir. 1979), *cert. denied* 444 U.S. 1073 (1980); *United States v. Schipani*, 289 F.Supp. 43, 56 (E.D. N.Y. 1968), *aff'd*, 414 F.2d 1262 (2nd Cir. 1969).⁴

⁴ In a recent Memorandum Decision of the Arizona Court of Appeals, the Defenders of Wildlife and others through their representative, Arizona Center for Law in the Public Interest, attacked the constitutionality of the burden of proof for navigability determination by the Commission specified in A.R.S. § 37-1128(A). In that case, the Defenders claimed that the burden of proof specified in the statute conflicts with federal law and should be declared invalid because it is contrary to a presumption favoring sovereign ownership of bedlands. In discussing and rejecting *Defenders* position the Court stated: ". . . In support of this argument, Defenders cite to our decision in *Defenders*, see 199 Ariz. at

VI. Standard for Determining Navigability

The statute defines a navigable watercourse as follows:

“Navigable” or “navigable watercourse” means a watercourse that was in existence on February 14, 1912, and at that time was used or was susceptible to being used, in its ordinary and natural condition, as a highway for commerce, over which trade and travel were or could have been conducted in the customary modes of trade and travel on water.

A.R.S. § 37-1101(5).

The foregoing statutory definition is taken almost verbatim from the U.S. Supreme Court decision in *The Daniel Ball*, 77 U.S. (10 Wall) 557, 19 L.Ed. 999 (1870), which is considered by most authorities as the best statement of navigability for title purposes.⁵ In its decision, the Supreme Court stated:

Those rivers must be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water.

77 U.S. at 563.

In a later opinion in *U. S. v. Holt Bank*, 270 U.S. 46 (1926), the Supreme Court stated:

[Waters] which are navigable in fact must be regarded as navigable in law; that they are navigable in fact when they are used, or are susceptible of being used, in their natural and ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the

426, ¶ 54, 18 P.3d at 737, and to *United States v. Oregon*, 295 U.S. 1, 14 (1935). But neither of these decisions held that the burden of proof in a navigability determination must be placed on the party opposing navigability. Moreover, this court has twice stated that the burden of proof rests on the party asserting navigability. *Hassell*, 172 Ariz. at 363 n. 10, 837 P.2d at 165 n. 10; *O'Toole*, 154 Ariz. at 46 n. 2, 739 P.2d at 1363 n. 2. We have also recognized that a ‘preponderance’ of the evidence appears to be the standard used by the courts” as the burden of proof. *Defenders*, 199 Ariz. at 420, ¶ 23, 18 P.3d at 731 (citing *North Dakota v. United States*, 972 F.2d 235, 237-38 (8th Cir. 1992)). *Defenders* have not cited any persuasive authority suggesting that these provisions in § 37-1128(A) are unconstitutional or contrary to federal law. We agree with this court’s prior statements and conclude that neither placing the burden of proof on the proponents of navigability nor specifying the burden as a preponderance of the evidence violates the State or Federal Constitutions or conflicts with federal law.” *State of Arizona v. Honorable Edward O. Burke* 1 CA-SA 02-0268 and 1 CA-SA 02-0269 (Consolidated); Arizona Court of Appeals, Division One, (Memorandum Decision filed December 23, 2004).

⁵ The *Daniel Ball* was actually an admiralty case, but the U.S. Supreme Court adopted its definition of navigability in title and equal footing cases. *Utah v. United States*, 403 U.S. 9, 91 S.Ct. 1775, 29 L.Ed.2 279 (1971) and *United States v. Oregon*, 295 U.S. 1, 55 S.Ct. 610, 70 L.Ed.2 1263 (1935).

customary modes of trade and ravel on water; and further that navigability does not depend on the particular mode in which such use is or may be had—whether by steamboats, sailing vessels or flatboats—nor on an absence of occasional difficulties in navigation, but on the fact, if it be a fact, that the [water] in its natural and ordinary condition affords a channel for useful commerce.

270 U.S. at 55-56.

The Commission also considered the following definitions contained in A.R.S. § 37-1101 to assist it in determining whether small and minor watercourses in Apache County were navigable at statehood.

11. "Watercourse" means the main body or a portion or reach of any lake, river, creek, stream, wash, arroyo, channel or other body of water. Watercourse does not include a manmade water conveyance system described in paragraph 4 of this section, except to the extent that the system encompasses lands that were part of a natural watercourse as of February 14, 1912.

5. "Navigable" or "navigable watercourse" means a watercourse that was in existence on February 14, 1912, and at that time was used or was susceptible to being used, in its ordinary and natural condition, as a highway for commerce, over which trade and travel were or could have been conducted in the customary modes of trade and travel on water.

3. "Highway for commerce" means a corridor or conduit within which the exchange of goods, commodities or property or the transportation of persons may be conducted.

2. "Bed" means the land lying between the ordinary high watermarks of a watercourse.

6. "Ordinary high watermark" means the line on the banks of a watercourse established by fluctuations of water and indicated by physical characteristics, such as a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation or the presence of litter and debris, or by other appropriate means that consider the characteristics of the surrounding areas. Ordinary high watermark does not mean the line reached by unusual floods.

8. "Public trust land" means the portion of the bed of a watercourse that is located in this state and that is determined to have been a navigable watercourse as of February 14, 1912. Public trust land does not include land held by this state pursuant to any other trust.

Thus, the State of Arizona in its current statutes follows the federal test for determining navigability.

VII. Evidence Received and Considered by the Commission

Pursuant to A.R.S. § 37-1123, and other provisions of Title 37, Chapter 7, Arizona Revised Statutes, the Commission received, compiled, and reviewed evidence and records regarding the navigability and nonnavigability of small and minor watercourses located in Apache County, Arizona. Evidence consisting of studies, written documents, newspapers and other historical accounts, pictures and testimony were submitted. Comprehensive studies entitled "Final Report - Small & Minor Watercourses Analysis for Apache County, Arizona" prepared by Stantec Consulting Inc., in association with JE Fuller/Hydrology & Geomorphology, Inc., under supervision of the Arizona State Land Department, dated December, 2000 and February, 2001, were submitted. The list of evidence and records, together with a summarization is attached as Exhibit "E". The Commission also heard testimony and received and considered evidence at the public hearing on small and minor watercourses located in Apache County, Arizona, held in St. John, Arizona on April 26, 2005. The agenda and minutes of the hearing are attached hereto as Exhibit "D".

A. Small & Minor Watercourses Analysis for Apache County, Arizona

1. Analysis Methods

Due to the large number of small and minor watercourses located in Apache County, Arizona (3,577 watercourses, of which most are unnamed), it is impractical and unnecessary to consider each watercourse with the same detail that the Commission considered major watercourses. The studies of small and minor watercourses developed by Stantec Consulting Inc. and its associate, J. E. Fuller Hydrology & Geomorphology, Inc., provided for an evaluation using a three-level process which contained criteria that would be necessarily present for a stream to be considered navigable.⁶ A master database listing all small and minor watercourses was developed

⁶ The three-level process begins with a presumption and hypothesis that each stream is navigable. Analysis at each level attempts to reject that hypothesis.

from the Arizona Land Resource Information System (ALRIS) with input from the U.S. Geological Survey, the U.S. Environmental Protection Agency and other agencies and sources. The final version of the master database called "Streams" includes a hydrologic unit code (HUC), segment number, mileage, watercourse type and watercourse name, if available. Thus there is a hydrologic unit code for each of the segments of the 3,577 small and minor watercourses in Apache County, Arizona. In addition, the database locates each segment by section, township, and range. Some of the satellite databases discussed below also locate certain significant reference points by latitude and longitude.

Using the master database, the contractor also set up six satellite databases, each relating to a specific stream characteristic or criterion, that would normally be found in a watercourse considered to be navigable or susceptible of navigability. These stream criteria are as follows:

1. Perennial stream flow;
2. Dam located on stream;
3. Fish found in stream;
4. Historical record of boating;
5. Record of modern boating; and
6. Special status (other water related characteristics, including in-stream flow application and/or permit, unique waters, wild and scenic, riparian, and preserve).

All watercourses were evaluated at level one which is a binary (yes or no) sorting process as to whether or not these characteristics are present. For a stream or watercourse not to be rejected at level one, it must be shown that at least one of these characteristics is present. If none of these characteristics are present, the stream or watercourse is determined to require no further study and is rejected at level one as having no characteristics of navigability.

All streams and watercourses surviving the level one sorting (i.e., determined to have one or more of the above characteristics) are evaluated at level two. The level two analysis is more qualitative than level one and its assessment requires a more in-depth analysis to verify and interpret the reasons that caused a particular stream to advance from level one. Each of the above characteristics on which there was an affirmative answer at level one is analyzed individually at level two to determine whether the stream is potentially susceptible to navigation or not susceptible to navigation; for example, a watercourse that at first appears to be perennial in flow but upon further analysis is determined to have only a small flow from a spring for a short distance and therefore cannot be considered perennial for any substantial portion of the watercourse.

In addition, the level two analysis utilized a refinement with value engineering techniques analyzing watercourses with more than one affirmative response at level one and assigned values to each of the six categories mentioned above. Clearly, perennial flow, historical boating, and modern boating are more important to the issue of navigability than the categories of dam-impacted, special status, or fish. Thus, for the purpose of the value engineering study, the following rough values were assigned to each of the six categories: historical boating-10, modern boating-8, perennial stream-7, dam-impacted-4, fish-4, and special status-2. These values were arrived at after much calculation, analysis and evaluation of each stream having affirmative responses at level one. This system is a recognized tool used in value engineering studies, and seven qualified engineers from the Arizona State Land Department and consulting staff of the contractor participated in determining the values used for each category. This system establishes that a value in excess of 11 is required for a stream to survive the level two evaluation and pass to level three for consideration.⁷ Thus, a stream having both

⁷ When this procedure was first developed, a cutoff value of 11 was established for a stream to survive level two and pass to level three for evaluation. As the procedure was refined, the cutoff value of 13 was substituted for 11 as it was felt to be more accurate. In this case, it makes no difference which value is used since no stream has a value between 11 and 13.

perennial flow and historical boating (sum value of 17), or a combination of the values set for other criteria equaling more than 11, would require that the stream pass to evaluation at level three. If a stream does not have a sum value greater than 11, it is determined to require no further study and is rejected at level two as having insufficient characteristics of navigability.

If a stream survives the evaluation at level two, it goes on to level three which uses quantitative hydrologic and hydraulic analysis procedures including any stream gauge data available, as well as engineering estimates of depth, width and velocity of any water flow in the subject watercourse and comparing the same to minimum standards required for different types of vessels. Also considered is the configuration of the channel and whether it contains rapids, boulders, sand bars or other obstacles. If a stream or watercourse is not rejected or eliminated at level three, it is removed from this process and subjected to a separate detailed study similar to that performed on a major watercourse, and a separate report will be issued on that stream or watercourse. Since one stream survived the level three analysis, a separate detailed stream navigability study was performed on it and a separate report was issued.

2. Application of Analysis Methods to Small and Minor Watercourses in Apache County

The application of the level one analysis to the 3,577 small and minor watercourses located in Coconino County resulted in 3,335 watercourses or 93.2% being determined as not having any of the six characteristics listed above, and these 3,276 were therefore rejected or eliminated and did not proceed to a further evaluation at level two. Only 242 watercourses, approximately 6.8%, received an affirmative response to one or more of the above characteristics or criteria and were evaluated at level two. One hundred fifty-six of these watercourses had only one positive response at level one and, after further analysis of that affirmative response, were rejected and determined not to have characteristics of navigability requiring further study. Eighty-

six of the watercourses received an affirmative response to more than one of the characteristics listed but, after further analysis, 66 were determined to have a total value of 11 or less and were rejected and determined to have insufficient characteristics of navigability or susceptibility of navigability to warrant further study. In the value engineering analysis, it was determined that only 21 of those watercourses had a sum value of more than 11 when analyzed pursuant to the value engineering techniques and therefore should be advanced for further study at level three. It was thus determined that 221 of the streams analyzed at level two could not be considered as susceptible of navigability and were therefore rejected at level two. Attached as Exhibit "F" is a list of the 242 watercourses that received a positive response to one or more of the characteristics listed above and were evaluated at level two. The 21 streams that survived the value engineering analysis at level two and were considered at level three are: Billy Creek, Black River, Diamond Creek, East Fork White River, North Fork White River, Show Low Creek, Bog Creek, Boneyard Creek, Bonita Creek, East Fork of the Little Colorado River, Hurricane Creek, Lee Valley Creek, Nutrioso Creek, Pacheta Creek, Reservation Creek, Sand Creek, South Fork Little Colorado River, Sun Creek, Tonto Creek, Trout Creek and Tsaile Creek.

3. Level Three Analysis for Billy Creek

Billy Creek is located in the southern portion of Apache and Navajo Counties. It received three affirmative responses in the level one analysis including perennial stream flow, fish, and dam-impacted, thus justifying it for a level three analysis. The total rating evaluated for Billy Creek using the refined approach at level two is 11.88.

Billy Creek trends its way to the north from the headwaters in the Mogollon Rim in the Sitgraves National Forest to its confluence with Show Low Creek, approximately 4.5 miles southeast of Show Low, Arizona. The total drainage area of Billy Creek at the mouth is about 36.8 square miles. Elevations in the watershed range from a maximum of 7,725 feet at the headwaters to about 6,510 feet at the Show Low Creek confluence. It

is about 18.5 miles in length. Billy Creek is not completely a perennial stream. It is perennial from its confluence with Show Low Creek to Lake of the Woods and is non-perennial from the Lake of the Woods to its headwaters. Records of hydrologic data for Billy Creek were not available, however, the U.S. Geological Survey stream gauge located at Show Low Creek could be used as a basis for estimating flow in Billy Creek. Based on this flow data, it is estimated that a two-year peak discharge of 194 cfs should not be assumed to be representative of typical flow. A two-year peak discharge represents the event that is exceeded less than about 0.50% of the time. It is estimated that the mean annual flow ranges somewhere between 8.0 and 18.5 cfs.

Comparing the boating criteria from the detailed navigability studies prepared for the Arizona Land Department (1996, 1997) with the evaluated hydrologic geometry for Billy Creek, the perennial reach at the mouth could barely support recreational watercrafts, particularly canoes and kayaks, about 10% of the time. During the site investigation, significant navigation obstructions were observed along Billy Creek that included thick vegetation, low overhanging tree branches and hydrologic structures. The site visit also confirmed that the upper segment of the watercourse is relatively dry and that the average slope of the main channel is relatively steep. In view of the foregoing, Billy Creek was considered as not susceptible to navigability and was therefore rejected at level three.

4. Level Three Analysis for Black River

Black River crosses Apache, Greenlee, Navajo, Graham and Gila Counties in the mountainous areas of Central Arizona and is part of the boundary between Greenlee and Graham Counties with Apache County. According to the level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total rating evaluated for Black River using the level two refined approach was 19.26.

It received four affirmative responses in the level one analysis – modern boating, fish, special status, and perennial stream. It runs in a general south by west direction from its headwaters in Williams Valley and Big Lake, in Apache County, to its confluence with the Salt River, approximately 13 miles southwest of White River, Arizona. It is 113.4 miles long and drains a total area of about 1,252 square miles. Elevations along the watercourse range from a maximum of 7,840 feet at the headwaters to about 4,230 feet at its confluence with the Salt River. For hydrology purposes, the Black River can be divided into three reaches. At the upper reach and the lower reach, it flows through deep canyons in Apache County which have only limited access to the river itself. In the middle reach, the slope flattens out, and in the lower reach, the slope and banks are much more accessible to persons desiring to go to the river.

There are three U.S. Geological Survey gauging stations along Black River which have the following mean annual flows. The upper gauging station near Maverick, Arizona has a mean annual flow of 141 cfs. The gauging station near Point of Pines below the pumping plant has a mean annual flow of 221 cfs. The gauging station near Apache, Arizona, close to where it flows into the Salt River, has a mean annual flow of 438 cfs. Near Freeze Out Creek, 8 miles north of Point of Pines, the Phelps Dodge Corporation has constructed a pumping plant to transfer water from the Black River to Eagle Creek for use in processing plants in the mines near Morenci, which reduces the average flow down the Black River and increases the flow in Eagle Creek.

The overall depth of the river averages between one and one-half to three and one-half feet, and is between 15 and 25 feet in width. The river has numerous rapids and even some waterfalls which inhibit the use of boats on the river. Notwithstanding this, due to the amount of water, canoes, kayaks and rubber rafts can be used for recreational purposes some of the time on portions of the river. Due to obstructions in the river such as rapids and waterfalls, overgrowth and rock outcrops, shallow-flow depths, and steep slopes in the canyon areas, continuous access to the river is nearly

impossible, except on a localized recreational use basis the river itself is not conducive to commercial transportation. In view of the overall condition of the river, it was determined that Black River was not susceptible to navigability at level three and a detailed study was not conducted.

5. Level Three Analysis for Diamond Creek

Diamond Creek is located in the southern portion of Apache County. Diamond Creek had three affirmative responses in the level one analysis: fish, dam-impacted, and perennial stream. According to the level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total rating assigned to Diamond Creek using the refined approach at level two was 15.0.

Diamond Creek trends its way to the southwest from the headwaters of Mount Baldy Wilderness, located in Apache County, to its confluence with the North Fork White River about four miles north of White River, Arizona, located in Navajo County. The total drainage area of Diamond Creek at its mouth is about 67.5 square miles. Elevations of the water shed range from a maximum of about 10,400 feet at the headwaters in Apache County to about 5,320 feet at the confluence with the North Fork White River. Diamond Creek is about 21.4 miles long. The estimated main channel slope from the headwaters to the confluence of the North Fork White River is about 210.9 ft/mi. Diamond Creek is not entirely a perennial stream. The upper 1.75 mile segment of the headwaters is not perennial.

Hydrologic data for Diamond Creek is not available since it is an ungauged watercourse. In the absence of hydrologic data for Diamond Creek, recession analysis was used. Based on this analysis, it was estimated that the mean annual flow is 26 cfs. The median flow rate (50% duration flow) is 9.3 cfs. Based on the boating criteria studies prepared for the Arizona Land Department (1996, 1997), the channel geometry and the hydrologic parameters indicated that the Diamond Creek could not support

recreational watercrafts due to insufficient flows and steep slopes. The stream is predominantly steep, making it difficult to support small watercrafts and the flows within the steep, rocky channels are not sufficient enough to carry or support small watercrafts. Due to the afore-mentioned reasons, Diamond Creek was not considered to be susceptible to navigability and a detailed study was not recommended for Diamond Creek.

6. Level Three Analysis for the East Fork White River

The East Fork White River is located in the southern portion of Apache County. It received three affirmative responses in the level one analysis: fish, dam-impact and perennial stream classification. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total grading evaluated for the East Fork White River using the refined approach at level two is 15.00.

The East Fork White River trends its way west from its headwaters on the upper slopes on the west slope of Baldy Peak, located in Apache County, to its confluence with the White River near Fort Apache, Arizona, located in Navajo County. The total drainage area of the East Fork White River at its mouth is about 140 square miles. Elevations of the water shed range from a maximum of about 11,100 feet at the headwaters on Mount Baldy in Apache County to about 4,920 feet at the White River confluence in Fort Apache, Arizona. The reach is approximately 31 miles long and the estimated average main channel slope is about 239 ft/mi. or 0.0453 ft/ft. The typical channel roughness ranges from 0.030 to 0.050.

The East Fork White River is not completely a perennial stream. It can be divided into three reaches: the first reach, being 4.54 miles from the mouth of the river to the gauging station, is non-perennial; the second reach, from the gauging station to a point near the headwaters of 25.57 miles, is perennial; and the last 0.89 miles of the upper reach at the headwaters is non-perennial. The mean annual flow of the North

Fork White River at the gauging station is approximately 37 cfs. The average monthly flow rates are all above zero. The typical flow rate is around 20-40 cfs, with higher flows occurring the winter months and the beginning of summer (March-June).

Based on the boating criteria studies prepared for the Arizona Land Department (1996, 1997) and the hydrologic data for the East Fork White River, indications are that the reach could possibly support canoeing and kayaking about 50%-90% of the time, and 10% of the time hydrologic conditions would allow other types of non-motorized craft access along the reach. The reach would not support any type of motorized craft. It should be noted that this tributary to the White River is very steep and most likely would be difficult even for recreational craft mentioned above to transverse the reach easily, especially toward the upper ends of the water shed in Apache County. For this reason, it was considered not susceptible to navigability and a detailed study was not recommended for the East Fork White River.

7. Level Three Analysis for the North Fork White River

The North Fork White River is located in the southern portion of Apache County. The river had four affirmative responses in the level one analysis: fish, dam-impacted, and the perennial stream classification. According to the level two criteria, the watercourse was classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total rating assigned to the North Fork White River using the refined approach at level two was 14.0.

The North Fork White River trends its way to the west and then south from the headwaters in Mount Ord of the Mount Baldy wilderness area in Apache County to the confluence of the White River at Fort Apache, Arizona in Navajo County. The total drainage area of the North Fork White River at its mouth is about 330 square miles. Elevations of the water shed range from a maximum of 11,357 feet at the headwaters to about 4,920 feet at the White River confluence. The North Fork White River is about

50.8 miles long and can be divided into three stream reaches: 1) the lower reach is about 27.8 miles long and extends from the confluence with the White River in Fort Apache, Arizona to Trout Creek. The average channel slope is about 51 ft/mi. or 0.0096 ft/ft; 2) the middle reach is about 9.7 miles long and extends from Trout Creek to the confluence of Paradise Creek. The average channel slope is about 153 ft/mi. or 0.0290 ft/ft.; 3) the upper reach is about 13.3 miles long and extends from Paradise Creek to the headwaters. The average channel slope of this reach is about 216 ft/mi. or 0.04091 ft/ft. The North Fork is not a completely perennial stream.

The hydrologic data for the North Fork White River is available from three U.S. Geological Survey stream gauges. The mean annual flow discharge at the confluence is 68.3 cfs, while the discharge at the upper two gauges is approximately 25 cfs. In the lower reach, the mean annual flow is about 68.3 cfs, with an average depth of 0.92 – 1.50 feet and an average width of the river at 10 – 20 feet. In the middle reach, the mean annual flow is 25.8 cfs, with an average depth of 0.43 – 0.68 feet and an average width of the river of 7.5 – 15 feet. The upper reach has a mean annual flow of 25 cfs with an average depth of 0.38 – 0.60 feet and the average width of the river at 7.5 – 15 feet.

Using the boating criteria prepared for the Arizona State Land Department (1996, 1997) with the hydrologic data for the North Fork White River, it would indicate that the lower reach could support recreational watercraft, particularly canoes and kayaks about 90% of the time. For the middle reach, the hydrologic conditions 50% of the time would be sufficient to allow canoes or kayaks access to the reach. 10% of the time, hydrologic conditions would allow other types of non-motorized crafts access along the reach. For the upper reach, the hydrologic conditions would allow canoes and kayaks access 50% of the time, while the other non-motorized boats and motorized boats would have access only during two-year flood flows. Considering that the middle and the upper reach are very steep with slopes of about 2.9% and 4.1%, respectively, these steep gradients allow for shallow flow depths in the channel with significant rapids occurring

everywhere as the flows are super critical. With shallow depths, any watercraft cannot navigate freely. The assessments made on the stream characteristics of the watercourse and the hydrologic characteristics of susceptibility to navigation for the North Fork White River are very weak. For the reasons described above, the river was not considered navigable and a detailed study was not recommended for the North Fork White River.

8. Level Three Analysis for Show Low Creek

Show Low Creek is located in the southwestern part of Apache County above the Mogollon Rim. Show Low Creek has three affirmative responses in the level one analysis: fish, dam-impacted, and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total rating evaluated for Show Low Creek using the refined approach at level two is 15.0.

Show Low Creek trends its way north from the headwaters in Mogollon Rim in the Sitgraves National Forest to its confluence with Silver Creek, approximately six miles south of Snowflake, Arizona. The total drainage area of Show Low Creek at its mouth is about 411 square miles. The main channel elevations range from a maximum of about 8,005 feet at the headwaters in the Sitgraves National Forest to about 5,670 feet at the Silver Creek confluence. Show Low Creek is about 52.7 miles long, with a main channel slope estimated at 77.2 ft/mi. or 0.0146 ft/ft. The typical roughness data for the creek is from 0.045 (grassy bed) to 0.05 (rocky channel bed). Show Low Creek is not a completely perennial stream, but an interrupted stream.

The hydrologic data for Show Low Creek is available from one U.S. Geological Survey stream gauging station located approximately 1.9 miles northwest of Lakeside. The flow data for Show Low Creek at the U.S. Geological Survey gauging station discloses a mean annual flow of 15 cfs and a two-year flood peak of 362 cfs.

Comparing the boating criteria from the detailed navigability studies prepared for the Arizona Land Department (1996, 1997) with the evaluated hydrologic geometry of Show Low Creek, indicates that the creek near the gauge could barely support recreational watercrafts about 50% of the time. During the site investigation, significant navigation obstructions were observed along Show Low Creek that included thick vegetation, low overhanging trees and branches, fences, hydrologic structures and rock outcrops. The natural obstructions, particularly the rock outcrops, are assumed to have been not changed over the years, making the current channel similar to the stream condition during Arizona's statehood in 1912. The insufficient hydrologic condition in the stream to meet minimum boating criteria and the predominant channel obstructions make Show Low Creek incapable to exhibit the characteristics conducive to navigation. A detailed study was therefore not recommended for Show Low Creek.

9. Level Three Analysis for Bog Creek

Bog Creek is located in the southwestern portion of Apache County, above the Mogollon Rim. Bog Creek had three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream. According to level two criteria, the watercourse was classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total rating evaluated for Bog Creek using the refined approach at level two was 15.0.

Bog Creek trends its way to the west from the headwaters in the Sitgraves National Forest to its confluence with the North Fork White River, approximately 45 miles southeast of McNary, Arizona. The total drainage area of Bog Creek at its mouth is about 31.5 square miles. The elevations in the watershed range from a maximum of about 8,990 feet near the headwaters in the upper watershed to about 7,020 feet at the confluence with the North Fork White River. Bog Creek is about 10.7 miles long. Its estimated main channel slope from the headwaters to the confluence with the North

Fork White River is about 149.0 ft/mi. or 0.02822 ft/ft. The typical channel roughness is estimated to range from 0.030 to 0.05. Bog Creek is an entirely perennial stream.

There was no hydrologic data available for Bog Creek since it is an ungauged watercourse. In the absence of hydrologic data, a regression analysis was used. Using the regression analysis, the mean annual flow appeared to be 17.0 cfs and the two-year flood peak of 240 cfs, with ordinary flow observed between 3 - 7.5 cfs. Comparison of the boating criteria, as set forth in the detailed navigability studies prepared for the Arizona State Lane Department (1996, 1997), with the hydrologic evaluation of Bog Creek indicates that it cannot support recreational watercraft due to insufficient flow depths. Additionally, the stream is shallow and overgrown with vegetation downstream, and narrow upstream, making it difficult to support small watercrafts. Stream obstructions would hinder watercraft access, including dense trees and overgrown vegetation along the stream, which is generally very steep. The hydrologic conditions and the channel geometry of the stream do not meet the minimum boating criteria and it was, therefore, not considered to be susceptible to navigability. A detailed study was not recommended for Bog Creek.

10. Level Three Analysis for Boneyard Creek

Boneyard Creek is located in the southern portion of Apache County. It received three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating assigned to Boneyard Creek using the refined approach at level two was 15.0.

Boneyard Creek trends its way to the southwest from the headwaters west of Noble Mountain in Apache National Forest to its confluence with the North and East Forks of the Black River at "Three Forks." Boneyard Creek's total drainage, at its mouth, is about 18.5 square miles. Elevations in the watershed range from a maximum

of 9,585 feet at the headwaters to approximately 8,210 feet at its confluence with the North and East Forks of the Black River. Boneyard Creek is about 7.8 miles long and has an estimated main channel slope of about 57.5 ft/mi. or 0.01089 ft/ft. The typical channel roughness ranges from 0.035 to 0.045. Boneyard Creek is not entirely a perennial stream with its upper 1.4 mile segment at the headwaters being non-perennial.

Hydrologic data for Boneyard Creek was not available since it is an ungauged watercourse. In the absence of hydrologic data, regression equations were developed for the flows. The mean annual flow is 12.5 cfs and the two-year peak flood is 114 cfs. Comparison of the boating criteria, as set forth in the detailed navigability studies for the Arizona State Land Department (1196, 1997), with a hydrologic evaluation for the hydrologic geometry of Silver Creek indicates that it could not support recreational watercrafts due to insufficient flow depths. Additionally, the stream is narrow, making it difficult to support small watercrafts and has obstructions that include dense brush and vegetation. The stream is generally steep and rocky at the downstream end and non-perennial at the upstream end. Thus, Boneyard Creek did not exhibit characteristics conducive of navigability. For that reason, a detailed study was not recommended for Boneyard Creek.

11. Level Three Analysis for Bonita Creek

Bonita Creek is located in the west north central portion of Apache County near Fort Defiance. It had three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream. According to level two criteria, the watercourse was classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse for a level three analysis. The total rating evaluated for Bonita Creek using the refined approach at level two is 14.0.

Bonita Creek trends to the south from its headwaters on the Defiance Plateau to its confluence with Black Creek in Fort Defiance, Arizona, about 1.5 miles of the New

Mexico border. The total drainage area of Bonita Creek at the mouth is about 77.3 square miles. Elevation of the watershed ranges from a maximum of 8,030 feet at the headwaters in the Defiance Plateau to about 6,750 feet at Black Creek confluence. Bonita Creek is about 19.6 miles long, with an estimated channel slope from the headwaters to the confluence at about 62 ft/mi. or 0.0117 ft/ft. The estimated roughness along the reach ranges from 0.035 (grassy bed) to 0.050 (rocky channel bed). Bonita Creek is not completely a perennial stream but is an interrupted stream.

There is no hydrologic data available for Bonita Creek since it is an ungauged watercourse. However, the most reliable gauge that could be used to assess the hydrologic data of Bonita Creek is a gauge station near Lipton, Arizona, which is located about 20 miles south of Bonita Creek's confluence with Black Creek. Using this information, it is calculated the mean annual flow from the gauging station is 8.0 cfs, while the two-year flood peak flow is 2,550 cfs. Hydrologic data of the gauge station could be used for Bonita Creek as a way to evaluate the hydrologic condition of the watercourse. Justification for using this data is that Bonita Creek and Black Creek are in the same hydrologic unit and Bonita Creek is a tributary of Black Creek. Additionally, the drainage area contributing to Bonita Creek is approximately 77.3 square miles. The drainage area at the gauging station is approximately 500 square miles. Based on this information, Bonita Creek could not have flows exceeding the flows monitored at the Black Creek gauge site.

Comparison of the boating criteria study prepared for the Arizona Land Department (1996, 1997) with the estimated hydrologic data for Bonita Creek indicates that there are insufficient hydrologic conditions to meet the minimum boating criteria. Additionally, it is noted from field observations that Bonita Creek is a sharp and frequently meandering stream with steep drop-offs and rocky sections, and overgrowth near the confluence with Black Creek. Therefore, it appears that Bonita Creek is not

conducive to navigability and a detailed study was, therefore, not recommended for Bonita Creek.

12. Level Three Analysis for the East Fork Little Colorado River

The East Fork Little Colorado River is located in the southeastern portion of Apache County. The East Fork Little Colorado River received three affirmative responses at the level one analysis: fish, dam-impacted and perennial stream. In the level two analysis, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding it for level three analysis. The total rating evaluated for the East Fork Little Colorado River using the refined approach at level two was 15.0.

The East Fork Little Colorado River White River trends its way north from its headwaters to the confluence with the South Fork and East Fork Little Colorado River just south of Greer, Arizona. The total drainage area of the East Fork Little Colorado River at its mouth is about 13.5 square miles. The upper drainage area originates around Lee Valley Reservoir to the southwest of Greer. The elevations of the watershed range from a maximum of 10,595 feet at its headwaters to approximately 8,365 feet at its confluence with the Little Colorado River. The reach is approximately 10.6 miles long and has a very steep average channel slope of 149 ft/mi. or 0.0281 ft/ft. The typical channel resistance is from 0.030 to 0.045. The East Fork Little Colorado River is entirely a perennial stream.

Hydrologic data for the East Fork Little Colorado River is not available since it is an ungauged watercourse. A regression analysis was used which shows a mean annual flow of 10.5 cfs and a two-year flood peak of 67.5 cfs. Comparing the boating criteria from the previous detailed navigability studies prepared for the Arizona State Land Department (1996, 1997) with the hydrologic geometry for the East Fork Little Colorado River indicates that it could barely support recreational watercraft 10% of the time because the stream has a generally steep slope of about 2.8%. The stream does not meet

minimum boating criteria and, therefore, does not exhibit characteristics conducive for navigation. As a result, a detailed study was not recommended for the East Fork Little Colorado River.

13. Level Three Analysis for Hurricane Creek

Hurricane Creek is located in the southern part of Apache County. It received three affirmative responses at the level one analysis: fish, dam-impacted and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total rating evaluated for Hurricane Creek using the refined approach at level two was 14.0.

Hurricane Creek trends its way to the southwest from the headwaters south of Baldy Peak on Mount Baldy Wilderness to its confluence with Big Bonita Creek. The total drainage area of Hurricane Creek at its mouth is about 5.1 square miles. Elevations of the watershed range from a maximum of about 9,286 feet at the headwaters to about 8,100 feet at the confluence with Big Bonita Creek. Hurricane Creek is about 7.5 miles long, with an estimated channel slope from its headwaters to its confluence at about 120 ft/mi. or 0.0227 ft/ft. The typical roughness data is from 0.025 to 0.045. Hurricane Creek is entirely a perennial stream.

There was no hydrologic data for Hurricane Creek since it is an ungauged watercourse. In the absence of this, a regression analysis was used. The regression equations for Hurricane Creek show a mean annual flow of 9 cfs and a two-year flood peak of 35 cfs. Comparing the boating criteria from the previous detailed navigability studies prepared for the Arizona State Land Department (1996, 1997) with the hydrologic data indicates that the hydrologic geometry for Hurricane Creek could not support recreational watercrafts due to insufficient flow. Hurricane Creek is thus incapable of exhibiting characteristics conducive for navigation. Therefore, a detailed study was not recommended for Hurricane Creek.

14. Level Three Analysis for Lee Valley Creek

Lee Valley Creek is located in the southern portion of Apache County. It received three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating evaluated for Lee Valley Creek using the refined approach at level two is 15.0.

Lee Valley Creek trends to the south from its headwaters north of Baldy Peak in the Mount Baldy Wilderness area to its confluence with the East Fork Little Colorado River at Lee Valley, about five miles south of Greer, Arizona. The total drainage area of Lee Valley Creek at its mouth is about 2.4 square miles. The elevations of the watershed range from a maximum of about 11,403 feet (9,940 feet at the headwaters) to about 9,315 feet at its confluence with the East Fork Little Colorado River. Lee Valley Creek is about 3.6 miles long. The estimated channel slope from the headwaters is about 174 ft/mi. or 0.0329 ft/ft. Typical roughness data indicates 0.035 to 0.045. Lee Valley Creek is not an entirely perennial stream. Hydrologic data for Lee Valley Creek was not available since it is an ungauged watercourse. In the absence of hydrologic data, a regression analysis was used. The hydrologic data estimated the mean annual flow at 9 cfs and a two-year flood peak of 35 cfs.

Comparing the boating criteria set forth in the studies prepared for the Arizona State Land Department (1996, 1997) with the evaluated hydrologic geometry for Lee Valley Creek indicates that it could not support recreational watercrafts due to insufficient flows. Lee Valley Creek is incapable of exhibiting characteristics conducive for navigation and, therefore, a detailed study was not recommended.

15. Level Three Analysis for Nutrioso Creek

Nutrioso Creek is located in the southeastern portion of Apache County. It received three affirmative responses in the level one analysis: fish, dam-impacted and

perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating assigned to Nutrioso Creek using the refined approach at level two is 14.0.

Nutrioso Creek trends its way to the north from its headwaters in Nutrioso, Arizona in the Apache National Forest to its confluence with the Little Colorado River, about three miles north of Springerville, Arizona. The total drainage area of Nutrioso Creek at its mouth is about 170 square miles. The elevation of the watershed ranges from about 10,080 feet (8,270 feet at the headwaters) in Apache National Forest to about 6,910 feet at its confluence with the Little Colorado River. Nutrioso Creek is about 30.3 miles long. The estimated channel slope from the headwaters is about 78.0 ft/mi. or 0.01477 ft/ft. The overall channel slope, including the flatter reach near the confluences, is 44.9 ft/mi. or 0.0085 ft/ft. Typical channel roughness ranges from 0.030 (grassy, meandering) to 0.050 (rocky, overgrown vegetation). Nutrioso Creek is mostly a perennial stream, although 0.9 miles is non-perennial at the headwaters in Nutrioso, Arizona.

Hydrologic data for Nutrioso Creek is available from one U. S. Geological Survey gauging station located above Nelson Reservoir near Springerville, Arizona. The flow data for Nutrioso Creek at the gauging station shows a mean annual flow of 5.9 cfs and a two-year flood peak of 117 cfs. Comparison of the boating criteria reported in the previous navigability studies prepared for the Arizona State Land Department (1996, 1997) with the hydrologic conditions for Nutrioso Creek indicates that the reach could, near the gauge, barely support recreational watercrafts about 10% of the time. Significant obstructions were observed along Nutrioso Creek, which include thick vegetation, low overhanging branches and rock outcrops. The natural obstructions, particularly the outcrops, are assumed to have not changed over the years, making the current channel condition to be similar to the stream conditions during Arizona's

statehood in 1912. The insufficient hydrologic conditions in the stream to meet minimum boating criteria and the shallow, narrow channel geometry in the upper reach, the obstructed middle reach and the flatter narrow lower reach make Nutrioso Creek nearly impossible to navigate and, therefore, not susceptible to navigation. A detailed study was, therefore, not recommended.

16. Level Three Analysis for Pacheta Creek

Pacheta Creek is located in the southern portion of Apache County. Pacheta Creek had three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating evaluated for Pacheta Creek using the refined approach at level two is 15.0.

Pacheta Creek trends its way to the south from its headwaters below Baldy Peak, south of Mount Baldy Wilderness in Apache National Forest, to its confluence with the Black River, approximately 8 miles south of Maverick, Arizona. The total drainage area of Pacheta Creek at its mouth is about 29.5 square miles. The elevations of the watershed range from a maximum of about 9,775 feet at the headwaters in the southern slopes of Baldy Peak to about 6,430 feet at the Black River confluence. Pacheta Creek is about 20 miles long with an estimated main channel slope of 160 ft/mi. or 0.0303 ft/ft. Typical roughness data is from 0.030 to 0.050. Pacheta Creek is mostly a perennial stream, although about 1.3 miles is non-perennial at the headwaters south of Baldy Peak.

Hydrologic data for Pacheta Creek is available from one U. S. Geological Survey gauging station at Maverick, Arizona. The flow data for Pacheta Creek at the gauging station shows a mean annual flow of 9.1 cfs and a two-year flood peak of 106 cfs. Using the boating criteria reported in the previous detailed navigability studies prepared for the Arizona State Land Department (1996, 1997), it appears that the evaluated

hydrologic geometry for Pacheta Creek indicates that the reach near the gauge could barely support recreational watercrafts about 10% of the time. The insufficient hydrologic conditions of the stream to meet minimum boating criteria and the significant steep slopes (about 3.0%) evaluated make Pacheta Creek incapable of exhibiting characteristics conducive for navigation. A detailed study, therefore, was not recommended for Pacheta Creek.

17. Level Three Analysis for Reservation Creek

Reservation Creek is located in the southern portion of Apache County. It received three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating evaluated for Reservation Creek using the refined approach at level two is 15.0.

Reservation Creek trends its way south from its headwaters south of Baldy Peak in Mount Baldy Wilderness to its confluence with Black River at Lee Valley Lake, about 11 miles southwest of Sprucedale, Arizona. The total drainage area of Reservation Creek at its mouth is about 26.8 square miles. The elevations of the watershed range from a maximum of about 11,403 feet at Baldy Peak (about 10,234 feet at the headwaters) to about 6,755 feet at its confluence with Black River. Reservation Creek is about 22.6 miles long with an estimated main channel slope from the headwaters to the confluence at Black River of 154 ft/mi. or 0.02914 ft/ft. Typical roughness data indicates 0.030 to 0.045. Reservation Creek is not entirely perennial, with the lower 3.92 segment at the confluence with Black River being non-perennial.

The hydrologic data for Reservation Creek is not available since it is an ungauged watercourse. In the absence of hydrologic data, a regression analysis was used. This analysis showed a mean annual flow of 16 cfs and a two-year flood peak of 190 cfs. Comparing the boating criteria set forth in the previous navigability studies

prepared for the Arizona State Land Department (1996, 1997) with the hydrologic geometry for Reservation Creek indicates that it could not support recreational watercrafts due to insufficient flows. Additionally, it was noted that the flows are shallow and are not sufficient to carry or support small watercrafts, except for kayaks or canoes which is only possible about 10% of the time. Additionally, the stream is very steep with a main channel slope estimated at 3.0%. The insufficient hydrologic condition of the stream to meet minimum boating criteria and the evaluated steep slopes of the main channel make Reservation Creek incapable of exhibiting characteristics conducive for navigation. A detailed study was, therefore, not recommended for Reservation Creek.

18. Level Three Analysis for Sand Creek

Sand Creek is located in the southern part of Apache County. It received three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating evaluated for Sand Creek using the refined approach at level two is 15.0.

Sand Creek trends its way south from the headwaters west of Mount Baldy Wilderness to its confluence with the North Fork White River, about four miles southeast of McNary, Arizona. The total drainage area of Sand Creek at its mouth is about 9.2 square miles. The elevations of the watershed range from a maximum of 9,090 feet (8,790 feet at the headwaters) to about 6,220 feet at its confluence with the North Fork White River. Sand Creek is about 9.0 miles long with an estimated channel slope from the headwaters to the confluence with Black River of 208 ft/mi. or 0.03934 ft/ft. Typical roughness of the stream channel is from 0.035 to 0.055. Sand Creek is not entirely a perennial stream with the upper 3.65 miles at the headwaters being non-perennial.

The hydrologic data for Sand Creek is not available since it is an ungauged watercourse. In the absence of hydrologic data for Sand Creek, a regression analysis was used. The regression equations developed for Sand Creek disclose a mean annual flow of 9 cfs and a two-year flood peak of 35 cfs. Comparing the boating criteria set forth in the previous navigability studies prepared for the Arizona State Land Department (1996, 1997) with the evaluated hydrologic geometry for Sand Creek indicates that it could not support recreational watercrafts due to insufficient flows. The stream is predominantly narrow and obstructions exist along the stream in the form of dense trees and vegetation. The insufficient hydrologic condition of the stream to meet minimum boating criteria makes Sand Creek incapable of exhibiting characteristics conducive for navigation. A detailed study was, therefore, not recommended for Sand Creek.

19. Level Three Analysis for the South Fork Little Colorado River

The South Fork Little Colorado River is located in the southern part of Apache County. It received four affirmative responses in the level one analysis: dam-impacted, fish, special status and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating evaluated for the South Fork Little Colorado River using the refined approach at level two is 11.5.

The South Fork Little Colorado River trends its way from the headwaters south to its confluence with the Little Colorado River, about 6.5 miles west of Springerville, Arizona. The total drainage area of the South Fork Little Colorado River at its mouth is about 24.6 square miles. The elevations of the watershed range from 9,155 feet at its headwaters to about 7,410 feet at its confluence with the Little Colorado River. The South Fork Little Colorado River is about 11.9 miles long with an estimated channel slope of 147 ft/mi. or 0.027777 ft/ft. Typical roughness of the stream channel is from 0.025

to 0.050. The upper 5.1 miles of the South Fork Little Colorado River are non-perennial. The hydrologic data for the South Fork Little Colorado River was not available since it is an ungauged watercourse. In the absence of hydrologic data for the South Fork Little Colorado River, a regression analysis was used. The regression equations developed indicated a mean annual flow of 14.7 cfs and a two-year flood peak of 170 cfs.

Comparing the boating criteria reported in the navigability studies prepared for the Arizona State Land Department (1996, 1997) with the evaluated hydrologic geometry for the South Fork Little Colorado River indicates that it could not support recreational watercrafts due to insufficient flows. Additionally, the stream is predominantly narrow, making it difficult to support small watercrafts, and obstructions such as dense trees and vegetation along the stream would interfere with watercraft. The insufficient hydrologic condition of the stream to meet minimum boating criteria makes the South Fork Little Colorado River incapable of exhibiting characteristics conducive for navigation. A detailed study was, therefore, not recommended for the South Fork Little Colorado River.

20. Level Three Analysis for Sun Creek

Sun Creek is located in the southern part of Apache County. It had three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating evaluated for Sun Creek using the refined approach at level two is 15.0.

Sun Creek trends its way south from the headwaters west of Mount Baldy Wilderness to its confluence with Diamond Creek downstream at Christmas Tree Lake, about 11 miles east of the North Fork White River. The total drainage area of Sun Creek at its mouth is about 6.4 square miles. The elevations of the watershed range from a maximum of 10,624 feet at Baldy Peak (about 9,740 feet at the headwaters) to about

8,150 feet at its confluence with Diamond Creek. Sun Creek is about 6.8 miles long with an estimated channel slope of about 234 ft/mi. or 0.04431 ft/ft. Typical roughness data ranges from 0.025 to 0.050. Sun Creek is entirely a perennial stream. The hydrologic data for Sun Creek was not available since it is an ungauged watercourse. In the absence of hydrologic data for Sun Creek, a regression analysis was used. The regression equations developed disclose a mean annual flow of 9 cfs and a two-year flood peak of 35 cfs.

Comparing the boating criteria set forth in the previous detailed navigability studies prepared for the Arizona State Land Department (1996, 1997) with the evaluated hydrologic geometry for Sun Creek indicates that it could not support recreational watercrafts due to insufficient flows. The stream is generally very steep and the flows are shallow, and are therefore not sufficient to carry or support small watercrafts. The insufficient hydrologic condition of the stream to meet minimum boating criteria and the steep stream slope make Sun Creek incapable to exhibit characteristics conducive for navigation. A detailed study was, therefore, not recommended for Sun Creek.

21. Level Three Analysis for Tonto Creek

Tonto Creek is located in the southern portion of Apache County. It had four affirmative responses in the level one analysis: dam-impacted, fish, special status and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating evaluated for Tonto Creek using the refined approach at level two is 15.26.

Tonto Creek trends its way to the southwest from its headwaters west of Maverick, Arizona to its confluence with Bonita Creek, about 2.0 miles east of the Apache-Navajo County border. The total drainage area of Tonto Creek at its mouth is about 59.6 square miles. The elevations of the watershed range from a maximum of about 8,230 feet west of Maverick, Arizona to about 5,674 feet at its confluence with

Bonita Creek. Tonto Creek is about 26.2 miles long with an estimated main channel slope of about 90 ft/mi. or 0.01707 ft/ft. Typical roughness data is from 0.025 to 0.050. Tonto Creek is not entirely perennial with the upper 0.56 mile segment at the headwaters being non-perennial.

The hydrologic data for Tonto Creek was not available since it is an ungauged watercourse. In the absence of hydrologic data, a regression analysis was used. The regression equations developed disclose a mean annual flow of 24.4 cfs and a two-year flood peak of 480 cfs. Comparison of the boating criteria set forth in the previous navigability studies prepared for the Arizona State Land Department (1996, 1997) with the evaluated hydrologic geometry for Tonto Creek indicates that it could support recreational watercrafts only about 10% of the time. It is noted that the shallow flows are not sufficient enough to carry or support small watercrafts and that the stream is generally steep with an average slope of about 1.7%. The insufficient hydrologic condition of the stream to meet minimum boating criteria and the evaluated steep slopes of the main channel make Tonto Creek incapable of exhibiting characteristics conducive for navigation. A detailed study was, therefore, not recommended for Tonto Creek.

22. Level Three Analysis for Trout Creek

Trout Creek is located in the southeastern portion of Apache County. It had four affirmative responses in the level one analysis: dam-impacted, fish, special status and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating evaluated for Trout Creek using the refined approach at level two is 15.0.

Trout Creek trends its way to the northwest from its headwaters west of Mount Baldy Wilderness to its confluence with the North Fork White River, about 2.5 miles southeast of McNary, Arizona. The total drainage area of Trout Creek at its mouth is

about 22.3 square miles. The elevations of the watershed range from a maximum of about 9,380 feet in the headwaters of Earl Creek, which is the major tributary of Trout Creek, to about 6,395 feet at the confluence with the North Fork White River. Trout Creek is about 13.5 miles long with an estimated main channel slope from the headwaters to its confluence of about 148 ft/mi. or 0.02807 ft/ft. Typical roughness data for the main channel is from 0.025 to 0.045. Trout Creek is not entirely a perennial stream.

The hydrologic data for Trout Creek was not available since it is an ungauged watercourse. In the absence of hydrologic data, a regression analysis was used. The regression equations developed for Trout Creek indicate a mean annual flow of 13.9 cfs and a two-year flood peak of 149 cfs. Comparison of the boating criteria set forth in the previous detailed navigability studies prepared for the Arizona State Land Department (1996, 1997) with the evaluated hydrologic geometry for Trout Creek indicates that it could barely support recreational watercrafts about 10% of the time. The stream is predominantly narrow, with shallow flows, stream obstructions such as trees and rock outcrops. The insufficient hydrologic condition of the stream to meet minimum boating criteria makes Trout Creek incapable of exhibiting characteristics conducive for navigation. A detailed study was, therefore, not recommended for Trout Creek.

23. Level Three Analysis for Tsaile Creek

Tsaile Creek is located in the northeastern portion of Apache County above Canyon del Muerto and the Canyon De Chelly National Monument. Tsaile Creek had three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating evaluated for Tsaile Creek using the refined approach at level two is 14.0.

Tsaile Creek trends its way to the southwest from its headwaters of Chuska Mountains to its confluence with the Canyon de Muerto, about 2.0 miles west of Tsaile, Arizona. The total drainage area of Tsaile Creek at its mouth is about 77.2 square miles. The elevations of the watershed range from a maximum of about 9,784 feet at its headwaters near Roof Butte in the Chuska Mountains to about 7,050 feet in Tsaile Lake to about 6,400 feet from the confluence with Canyon del Muero, which is six miles downstream of Tsaile Lake. Tsaile Creek is about 28.8 miles long with an estimated main channel slope of about 88 ft/mi. or 0.01667 ft/ft. Typical roughness ranges from 0.025 to 0.035. Tsaile Creek is a perennial stream.

The hydrologic data for Tsaile Creek was not available since it is an ungauged watercourse. In the absence of hydrologic data, a regression analysis was used. The regression equations developed for Tsaile Creek indicate a mean annual flow of 28.3 cfs and a two-year flood peak of 630 cfs. The ordinary flows for Tsaile Creek are 5-15 cfs. Comparison of the boating criteria set forth in the previous detailed navigability studies prepared for the Arizona State Land Department (1996, 1997) with the evaluated hydrologic geometry for Tsaile Creek indicates that it could not support recreational watercrafts due to insufficient flows. The stream is generally steep and narrow. The insufficient hydrologic condition of the stream to meet minimum boating criteria makes Tsaile Creek incapable of exhibiting characteristics conducive for navigation. A detailed study was, therefore, not recommended for Tsaile Creek.

24. Summary of Results of Small and Minor Watercourses Analysis for Apache County, Arizona

Of the 3,577 small and minor watercourses evaluated in Apache County, 3,335 did not survive the level one screening process, while 242 watercourses were forwarded to level two analysis. At level two analysis, 21 watercourses survived and were forwarded for the level three analysis.

The 21 watercourses in Apache County that were studied at level three were Billy Creek, Black River, Bog Creek, Boneyard Creek, Bonita Creek, Diamond Creek, East Fork Little Colorado River, East Fork White River, Hurricane Creek, Lee Valley Creek, North Fork White River, Show Low Creek, Nutrioso Creek, Pacheta Creek, Reservation Creek, Sand Creek, South Fork Little Colorado River, Sun Creek, Tonto Creek, Trout Creek, and Tsaile Creek. Based on this engineering analysis performed on the 21 watercourses evaluated, characteristics suggest that these 21 watercourses are not susceptible to navigation as that term is defined in A.R.S. §37-1128. In summary, no watercourse in Apache County survived the three level screening process to be forwarded for a detailed study.

B. Prehistoric and Historical Conditions Affecting Small and Minor Watercourses in Apache County, Arizona

In addition to the small and minor watercourse analysis and other evidence described above, the Commission also considered evidence of prehistoric conditions in Apache County and the historical development of Apache County as disclosed in the various studies, reports and testimony presented to the Commission, including the reports on the Little Colorado River, the Puerco River and other watercourses which flow through parts of Apache County.

1. Prehistory or Pre-Columbian Conditions

Archaeological evidence shows that Apache County has had extensive human occupation from the earliest paleoindian times (9,500 B.C. – 6,000 B.C.). Numerous archaeological sites remain in and near the Valley of the Little Colorado River in Apache and Navajo Counties and have long attracted the attention of scholars and archaeologists and have provided a great deal of data and research in archaeology. Approximately 50 projectile points of the Clovis type have been found at one site on the upper Little Colorado River, providing evidence of use around the region and the early

paleoindian period, when hunters exploited the now-extinct megafauna, such as woolly mammoths and longhorned bison.

During the Archaic period (6,000 – 500 B.C.), after the extinction of the megafauna, the occupants in the region hunted and gathered more modern species of plants and animals. Maze, or corn, was first introduced into the region as early as 1,500 B.C., which allowed for the development of sedentary settlement systems with seasonally occupied dwellings. Pottery was introduced around 500 A.D., which increased and trended toward sedentariness and by approximately 700 A.D., most of the population was living on small farming communities that were occupied year around.

The culture in Apache County was greatly influenced by the traditional Anasazi and the Chaco Canyon cultures, as evidenced by pottery and kivas. While the people of Apache County, at that time, were closely related to or classified as part of the Anasazi culture, some influence from the Mogollon culture is indicated, which lies to the south of the White Mountain area. Three ring studies (dendro chronology) indicate that the annual precipitation in the Apache County area was relatively stable from 400 A.D. to 800 A.D. But, from approximately 800 A.D. to 1250 A.D., the annual precipitation was highly variable from year to year and from 1276 A.D. for about 25 to 30 years, the area experienced severe droughts.

There is little evidence of prehistoric irrigation in the Apache County and no evidence whatsoever that any of the rivers in Apache County were used by prehistoric cultures for boating or travel on water. On the other hand, the Puerco River Basin was a major corridor through which communications between Hopis, Mesas and the Zuni Tribes, as well as between the Hopi, Zuni and Rio Grande Pueblos. In prehistoric time, travel was almost exclusively by foot. Prior to the arrival of Coronado in 1540, American Indians had no horses, mules or draft animals such as oxen. The trails existing in Apache County have continued down to historic times.

2. Historical Settlement of Apache County

Historical documentation of Apache County, the Little Colorado River and the Puerco River watersheds is extensive and covers over 450 years. The first European exploration in the area took place in 1539 and is documented as early as 1540 by the Coronado Expedition. In 1540-1542, the time of the Coronado Expedition, Hopi and Zuni Indians lived in the area. They are probably descendants of the Anasazi culture in the Four Corners and Kayenta area and the Mogollon culture of the White Mountains. Most archaeologists and anthropologists believe that the Navajos and Apaches are relatively recent arrivals in the southwest, having migrated into the region after Coronado's Expedition. The Navajos and Apaches speak mutually intelligible dialects of a single language in the Athabascan family of languages. The number of Navajos increased during the 1600's and by 1700, they were a major population in the area. There was not much Spanish exploration in the southwest until 1595, when Juan de Oñate sent a small party to investigate mines described by Antonio de Espejo and they most likely followed the route of the Puerco River valley to Holbrook, the Little Colorado River to Winslow, and then south to the Mogollon Rim, and west into the Verde Valley.

In 1821, Mexico won its independence from Spain. The Mexican government sponsored a few expeditions into northern Arizona. Expeditions against the Navajos and Apaches were undertaken, but only with limited success. Mexico tried to discourage incursions into the territories by the citizens of the United States, which was rapidly expanding westward, but fur trappers began trapping in Arizona in the 1820's. In the dry desert southwest mountains, the mountainmen trappers generally rode horseback. There is little evidence of their using boats and no evidence at all of boating in Apache County. None of the accounts of mountainmen during this era refer to any trapping or any significant water flowing in the Little Colorado River or Puerco River.

The Mexican-American War culminated in 1848 by the Treaty of Guadalupe Hidalgo, with the secession of New Mexico and Arizona, north of the Gila River, from Mexico to the United States. In 1851, Lorenzo Sitgraves conducted a survey determining that reasonable route for travel from Fort Defiance to the Colorado River and, in particular, to Fort Yuma. They crossed Apache County and through the Little Colorado River basin. Little mention of the flow conditions of the Colorado River or its tributaries was made in any of his reports.

In 1863, Arizona was created as a separate territory from New Mexico and on December 29th, 1863, the new officers of the Arizona territory government took their oath at Navajo Springs near the Puerco River, just south of Interstate 40, about 39 miles east of Holbrook. These new officers traveled across what was to become Apache County on their way to the new seat of government at Fort Whipple, near Prescott, Arizona. In 1867 and in 1868, William Jackson Palmer conducted a survey along the 32nd and 35th parallels to evaluate the routes for a railroad to the Pacific Ocean. He travelled down the Puerco River and the middle reach of the Colorado until it turns north at Winslow. He described the rivers as being dry at that time.

Colonization by settlers of European descent may have begun as early as 1860, although Mormon settlements in the area began approximately a decade later. In the 1860's and 1870's, Mormon colonists sent by Brigham Young from Utah explored the area and established towns of Joseph City, St. John's, Springerville, Taylor and Snowflake, and other locations along the Little Colorado River watershed basin. In the middle and lower reaches of the Little Colorado River, farmers complained that the water was very muddy and filled their ditches and ponds with sediment. The dams they built to contain the river and divert its waters were for irrigation and were frequently washed out due to floods.

In 1881, the Atlantic and Pacific began construction of a railroad across northeastern Arizona. Railroad construction reached the present site of Holbrook in

September of 1881. The railroad generally paralleled the Puerco River from Gallup, New Mexico across Apache County to Holbrook. Cattle and sheep were driven through the area in the 1860's and 1870's, and became a major industry with the arrival of the railroad. There was little farming on the Little Colorado River, mostly by Mormon settlers who put in gardens, orchards and pasturelands.

VIII. Present Climate, Weather and Physical Conditions Same or Similar to that of 1912

Testimony presented at the hearing for all small and minor watercourses in Apache County established that the present climate, weather and physical conditions in Apache County are the same or very similar to those which existed in 1912 when Arizona became a state.

IX. Findings and Determination

The Commission has conducted a particularized assessment of the equal footing claims the State of Arizona might have to the beds and banks of the 3,577 small and minor watercourses in Apache County, Arizona and, based on all of the historical and scientific data and information, documents, and other evidence produced, finds that none of the said small and minor watercourses were used or were susceptible to being used, in their ordinary and natural condition, as a highway for commerce, over which trade and travel were or could have been conducted in the customary modes of trade and travel on the waters as of February 14, 1912.

The Commission also finds that none of the small and minor watercourses in Apache County, Arizona are or were truly perennial throughout their length and that as of February 14, 1912 and currently, they flow/flowed only in direct response to precipitation and are or were dry at all other times.


The Commission also finds that there is no evidence of any historical or modern commercial boating having occurred on any of the small and minor watercourses in Apache County, Arizona.

The Commission also finds that there is no evidence of any fishing, except recreational fishing, having occurred on the small and minor watercourses in Apache County, Arizona.


The Commission further finds that all notices of these hearings and proceedings were properly and timely given.

In view of the foregoing, the Commission, pursuant to A.R.S. § 37-1128A, finds and determines that the small and minor watercourses mentioned above in Apache County, Arizona, were not navigable nor susceptible of navigability as of February 14, 1912.

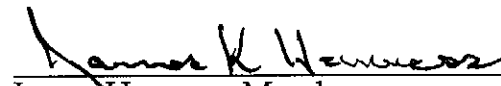
DATED this 14 day of December 2011.



Earl Eisenhower, Chair



Cecil Miller, Member



James Henness, Member


Dolly Echeverria, Vice Chair
Deceased July 1, 2010

Jay Brashear, Member
Deceased September 15, 2007

STAFF MEMBERS:



George Mehneft
Executive Director



William F. Haug
Legal Counsel to the Commission

EXHIBIT A

**Table A-3
List of Small and Minor Watercourses in Apache County**

a - Seg 17 Apache	Burnt Corral Creek - Apache
a - Seg 25 Apache	Burnt Pinon Wash
Agua Sal Creek	Burntwater Wash
Alamo Wash - Apache	Burro Wash - Apache
Amity Ditch	Butterfly Creek
Aspen Wash - Apache	Campbell Blue Creek
Auger Creek	Cane Valley Wash
b - Seg 10 Apache	Canyon Creek 2
b - Seg 13 Apache	Canyon De Chelly
Badger Creek 1 - Apache	Canyon Del Muerto
Balakai Wash	Carnero Creek
Bar H Creek	Carrizo Wash
Basin Creek	Cedar Lake Wash
Battleground Creek	Centerfire Creek
Bear Cienega Creek	Chambers Draw
Bear Flat Creek	Cheney Draw
Bear Wallow Creek	Chimney Wash
Beaver Dam Wash - Apache	Chinle Creek
Becker Creek	Chinle Wash
Benny Creek	Cienega Creek
Bent Knee Wash	Cienega Creek 1 - Apache
Benton Creek - Apache	Cienega Creek 2 - Apache
Beshbito Wash	Cienega Creek 3 - Apache
Big Bonito Creek	Cienega Creek 4 - Apache
Big Dam Wash	Cold Spring Wash - Apache
Big Ditch	Coleman Creek
Big Hollow Wash	Colter Creek
Big Wilderness Wash	Concho Creek
Bill Riley Creek	Coon Creek - Apache
Billy Creek	Corn Creek
Bis li Ah Wash	Cottonwood Wash - Apache
Bitter Water Wash	Cottonwood Wash 3 - Navajo
Black Creek	Cove Wash
Black Horse Wash	Coyote Creek 1 - Apache
Black Mountain Wash - Apache	Coyote Creek 2 - Apache
Black River	Coyote Creek 3 - Apache
Black Rock Canyon	Coyote Wash - Apache
Black Soil Wash	Crazy Creek
Blackhorse Creek	Crooked Creek
Blackrock Wash	d - Seg 21 Apache
Bluff Cienega Creek	Davis Creek
Bobcat Creek	Dead Wash
Bog Creek	Deep Creek - Apache
Boggy Creek	Deer Creek - Apache
Boiling Over Wash	Diamond Creek
Boneyard Creek	Digger Wash
Bonito Creek	Dry Creek - Apache
Brown Creek	Dry Farms Wash
Brown Wash - Apache	Dry Wash
Buell Wash	Earl Creek
Bull Creek	East Fork Black River
Bull Creek - Apache	East Fork Dry Wash
Burnt Corn Creek	East Fork Little Colorado River

Table A-3
List of Small and Minor Watercourses in Apache County

East Fork White River	Lower Lyman Ditch
Elk Canyon	Lukachukai Creek
Erosion Wash	Lukachukai Wash
Ess Creek	Malay Creek
Firebox Creek	Mamie Creek
Fish Creek - Apache	McDonald Creek
Fish Wash	McNary Ditch
Flash Creek	Meadow Wash
Gomez Creek	Middle Layman Ditch
Gooseberry Creek	Milk Creek - Apache
Gothic Creek	Milk Creek 1 - Apache
Grapevine Creek	Milky Wash - Apache
Greasewood Wash	Milligan Creek
Greer Wash	Mineral Creek - Apache
Gypsum Creek	Mineral Ditch - Apache
Hall Creek	Moon Creek
Hardscrabble Wash	Morgan Canyon St
Hasbidito Creek	Morrison Creek
Hay Creek	Nazlini Wash
Heifer Branch Beaver Creek	Ninemile Wash
Hipbone Creek	No Name Creek
Hipbone Wash	North East Fork
Home Creek	North Fork Diamo
Horse Creek - Apache	North Fork White
Horse Mesa Wash	Nutriosio Creek
Horseshoe Creek	Oak Ridge Wash
Hosteen Tso Wash	Open Draw Creek
Hughey Creek	Oraibi Wash
Hulsey Creek	Ord Creek
Hurricane Creek	Oso Draw
Jackson Creek	Pace Creek
Jadito Wash	Pacheta Creek
Jaralosa Draw	Paddy Creek 1
Jarvis Wash	Paddy Creek 2
Jim Camp Wash	Palisade Creek
Jimson Weed Wash	Paradise Creek
K L Creek	Peasoup Creek
Kinlichee Creek	Perry Creek
Kit Sili Wash	Picnic Creek
Laguna Creek	Pine Creek - Navajo
Lang Creek	Pine Springs Wash
Lee Valley Creek	Pine Wash
Lithodendron Wash	Piney Hill Creek
Little Bog Creek	Pistol Creek - Apache
Little Bonito Creek	Poker Gap Creek
Little Creek	Polacca Wash
Little Diamond Creek	Porcupine Creek
Little Milky Wash	Pueblo Colorado
Lizard Wash	Pulcifer Creek
Lofer Cienega Creek	Quartzite Wash
Lone Pine Creek	Querino Wash
Lone Tule Wash	Ramhead Wash
Long Cienega	Red Clay Wash

Table A-3
List of Small and Minor Watercourses in Apache County

Red Wash 1	Tse Bonito Wash
Red Wash 2	Tse Chizzi Wash
Red Water Wash	Tse Deeshzhaai Wash
Reservation Creek	Tsitah Wash
Riggs Creek	Tso Tsosie Wash
Rock Canyon - Apache	Turkey Creek - Apache
Rocky Arroyo	Turkey Creek 1
Romero Creek	Turkey Creek 2
Rosey Creek	Twin Buttes Wash
Rudd Creek	Tyende Creek
Ruin Wash	Upper Lyman Ditch
Sabito Wash	Vernon Creek
Sage House Wash	Vigil Run
Sand Creek - Apache	Walker Creek - Apache
Sanostee Wash	Walton Creek
Scattered Willow	Water Canyon Creek
Sepulveda Creek	Watts Creek
Seven Springs Wash	Wepo Wash
Sharp Creek - Apache	West Fork Black 1
Sheep Dip Creek	West Fork Black 2
Show Low Creek	West Fork Little Colorado River
Sitting Giant Ro	West Gypsum Creek
Slick Rock	West Turkey Creek
Smith Creek	Wheatfields Creek
Snow Stake Creek	Whiskey Creek
Soldier Creek - Apache	White Rock Wash
South Fork Little Colorado River	White Spring Wash
Spud Creek	Whitewater Arroyo
Squaw Creek - Apache	Wide Ruin Wash
Standing Redrock	Wild Cow Wash
Steamboat Wash	Wildcat Creek 1
Stinky Creek	Wildcat Creek 2
Stone Creek	Williams Creek
Sun Creek	Willow Creek - Apache
Surprise Creek	Willow Spring Wash
Sweater Creek	Woods Creek
Sweetwater Wash	Yellow Water
Tah Chee Wash	Zuni River
Teds Wash	3,274 Unnamed Washes
Teec Nos Pos Wash	
Ten of Diamonds	
Tezinie Wash	
Thomas Creek - Apache	
Thompson Creek - Apache	
Thsohotso Wash	
Tiis Ndiitsooi Wash	
Toh Dahstini Wash	
Tohache Wash	
Tohotso Creek	
Tonto Creek - Apache	
Trading Post Wash	
Trout Creek - Apache	
Tsaile Creek	

EXHIBIT B

State of Arizona)
County of Apache)

ss.

Affidavit of Publication

White Mountain Independent

STATEMENT OF INTENT For Navajo and Apache Counties State of Arizona

Navajo Stream Adjudication Commission
Pursuant to A.R.S. §37-1101, et seq., the Arizona Navigable Stream Adjudication Commission (ANSAC) is planning to hold watercourse navigability hearings regarding the Little Colorado River and Puerco River in Navajo County, Arizona, the Little Colorado River and Puerco River in Apache County, Arizona and all of the small and minor watercourses in each county. There will be a hearing in Holbrook, Arizona regarding Navajo County watercourses, and a hearing in St. Johns, Arizona regarding Apache County watercourses. There will be a hearing in each county regarding the Little Colorado River and a hearing in each county regarding the Puerco River. Notice is hereby given, pursuant to A.R.S. §37-1123 (B), that ANSAC intends to receive, review, and consider evidence regarding the navigability or nonnavigability of the Little Colorado River and Puerco River in both Navajo and Apache Counties. Interested parties are requested to file all documentary and other physical evidence they propose to submit to ANSAC by April 28, 2005. All evidence submitted to ANSAC will be the property of ANSAC and the State of Arizona. Evidence submitted will be available for public inspection at the ANSAC offices during regular office hours.

Pursuant to A.R.S. §37-1101, et seq., the Arizona Navigable Stream Adjudication Commission (ANSAC) is planning to hold a watercourse navigability hearing regarding all of the small and minor watercourses in Navajo County, Arizona and in Apache County, Arizona. Notice is hereby given, pursuant to A.R.S. §37-1123 (B), that ANSAC intends to receive, review, and consider evidence regarding the navigability or nonnavigability of all small and minor watercourses in Navajo County and in Apache County. Interested parties are requested to file all documentary evidence they propose to submit to ANSAC by April 28, 2005. All evidence submitted to ANSAC will be the property of ANSAC and the State of Arizona. Evidence submitted will be available for public inspection at the ANSAC offices during regular office hours.


The list of small and minor watercourses in Navajo County includes:

Bagnal Wash, Bear Creek - Navajo, Bear Flat Creek, Bear Wash, Begashibito Wash, Beahito Wash, Bidahochi Wash, Big Bonito Creek, Billy Creek, Billy Wash, Black Canyon - Navajo, Black River, Blair Spring Wash, Bluebird Canyon, Brookbank Canyon, Brown Creek, Bull Creek, Burnt Corn Creek, C.I. Wash, Canyon Creek 1, Carr L. Wash, Carrizo Creek, Castle Creek - Navajo, Chevelon Canyon, Cibecua Creek, Clear Creek 1, Colbath Wash, Concho Flat Wash, Cottonwood Wash 1 - Navajo, Cottonwood Wash 2 - Navajo, Cottonwood Wash 3 - Navajo, Cottonwood Wash 4 - Navajo, Couduroy Creek, Cow Creek - Navajo, Coyote Wash, Coyote Wash 1 - Navajo, Cutoff Wash, Day School Wash, Day Wash, Decker Wash, Deer Spring Creek, Deer Springs Canyon, Diamond Creek, Digger Wash, Dinnebito Wash, Dinnebito Wash E, Dodson Wash - Navajo, Dry Wash, East Cedar Creek, East Fork White, East Twin Wash, East Washboard Wash, El Capitan Wash, Ellison Creek, Fern Feather Wash, Fish Creek, Flymile Wash - Navajo, Foot Canyon, Forstdale Creek, Gentry Creek, Gomez Creek, Gooseberry Creek, Gypsum Creek, Ha Whi Yalin Wash, Hay Hollow Draw, Hees Wash, Hog Wash, Humpy Wash, Indian Creek, Jacks Canyon 2, Jadito Wash, Jim Camp Wash, Joseph City Wash, Jumpoff Canyon, Keams Canyon, Laguna Creek, Leroux Wash, Linda Wash, Lithodendron Wash, Little Milky Wash, Lone Pine Creek, Lukai Wash, Manila Wash, Modonada Canyon, Meesa Wash - Navajo, Mexican Hollow Wash, Middle Cedar Creek, Moenkopi Wash, Mud Creek, Nakai Canyon, Narrow Wash, Nash Creek, Neskahi Wash, North Fork White, Oak Creek - Navajo, Ojo Wash, Oraibi Wash, Oraibi Wash W. Fork, Parrish Creek, Petrified Creek, Phoenix Park Wash, Plerob Wash, Pine Creek - Navajo, Pinedale Wash, Plute Creek, Polacca Wash, Porter Creek, Porter Tank Draw, Potatoe Wash, Purple Colorado, Rock Creek - Navajo, Rocky Arroyo, Sabito Wash, Salt Creek - Navajo, Scott Wash, Sears Wash, Sevenmile Draw, Shorto Wash, Show Low Creek, Silver Creek - Navajo, Spring Creek 1, Squaw Wash, Steamboard Wash, Stinson Wash - Navajo, Swamp Creek, Tanner Wash - Navajo, Tees Toh Wash, The Canal, Thompson Creek - Navajo, Tee Chizzi Wash, Tsegi Canyon, Turkey Canyon - Navajo, Turkey Creek 1, Tyende Creek, V Eighteen Wash, Walnut Creek - Navajo, Washboard Wash, Wepo Wash, West Cedar Creek, West Fork Cotton, West Gypsum Creek, West Turkey Creek, West Twin Wash, White-Da Sah Wash.

I, Diane R. Janot, being first duly sworn, depose and say: I am the agent of the White Mountain Publishing Company, publisher of the White Mountain Independent, a semi-weekly newspaper of general circulation published at St. Johns, County of Apache, Arizona and that the copy hereto attached is a true copy of the advertisement as published in the White Mountain Independent on the following dates:

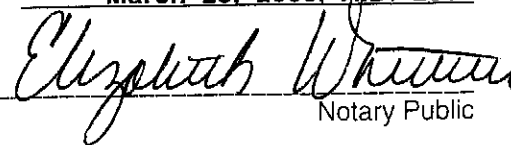
March 08, 2005
March 15, 2005
March 22, 2005

White Mountain Independent

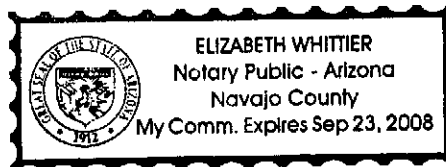


Sworn to me this day of

March 23, 2005, A.D. 2005



Notary Public



Creek - Navajo, Rocky Arroyo, Sabito Wash, Salt Creek - Navajo, Scott Wash, Sears Wash, Sevenmile Draw, Shonto Wash, Show Low Creek, Silver Creek - Navajo, Spring Creek 1, Squaw Wash, Steamboat Wash, Stinson Wash - Navajo, Swamp Creek, Tanner Wash - Navajo, Tees Toh Wash, The Canal, Thompson Creek - Navajo, Tse Chizz Wash, Tsegi Canyon, Turkey Canyon - Navajo, Turkey Creek 1, Tyende Creek, V Eighteen Wash, Walnut Creek - Navajo, Washboard Wash, Wepo Wash, West Cedar Creek, West Fork Cotton, West Gypsum Creek, West Turkey Creek, West Twin Wash, Whe-Yol-Da Sah Wash, White River, Wide Ruin Wash, Wildcat Canyon, Wildhorse Wash, Willow Creek - Navajo, Willow Wash - Navajo.

The list of small and minor watercourses in Apache County includes:

Agua Sal Creek, Alamo Wash - Apache, Amity Ditch, Aspen Wash - Apache, Auger Creek, Badger Creek 1 - Apache, Balakal Wash, Bar H Creek, Basin Creek, Battleground Creek, Bear Cienega Creek, Beaver Dam Wash - Apache, Becker Creek, Benny Creek, Bent Knee Wash, Beriton-Creek - Apache, Beshbito Wash, Big Bonito Creek, Big Dam Wash, Big Ditch, Big Hollow Wash, Big Wildermees Wash, Bill Riley Creek, Bis Ji Ah Wash, Bitter Water Wash, Black Creek, Black Horse Wash, Black Mountain Wash - Apache, Black River, Black Rock Canyon, Black Soil Wash, Blackhorse Creek, Blackrock Wash, Bluff Cienega Creek, Bog Creek, Boggy Creek, Bolling Over Wash, Boneyard Creek, Bonito Creek, Brown Creek, Brown Wash - Apache, Buell Wash, Bull Creek, Bull Creek - Apache, Burnt Corn Creek, Burnt Corral Creek - Apache, Burnt Pinon Wash, Burntwater Wash, Burro Wash - Apache, Butterfly Creek, Campbell Blue Creek, Cane Valley Wash, Canyon Creek 2, Canyon De Chelly, Canyon Del Muert, Carnero Creek, Carrizo Wash, Cedar Lake Wash, Centerfire Creek, Chambers Draw, Cheney Draw, Chimney Wash, Chinle Creek, Chinle Wash, Cienega Creek, Cienega Creek 1 - Apache, Cienega Creek 2 - Apache, Cienega Creek 3 - Apache, Cienega Creek 4 - Apache, Cold Spring Wash - Apache, Coleman Creek, Colter Creek, Concho Creek, Coon Creek - Apache, Corn Creek, Cottonwood Wash - Apache, Cove Wash, Coyote Creek 1 - Apache, Coyote Creek 2 - Apache, Coyote Creek 3 - Apache, Coyote Wash - Apache, Crazy Creek, Crooked Creek, Davis Creek, Dead Wash, Deep Creek - Apache, Deer Creek - Apache, Diamond Creek, Dry Creek - Apache, Dry Farms Wash, Dry Wash, Ear Creek, East Fork Black, East Fork Dry Wash, East Fork Little, East Fork White, Elk Canyon, Erosion Wash, Ess Creek, Firehook Creek, Fish Creek - Apache, Fish Wash, Flash Creek, Gooseberry Creek, Gothic Creek, Grapevine Creek, Greasewood Wash, Greer Wash, Hall Creek, Hartschorn Wash, Hasblito Creek, Hay Creek, Heifer Branch, Hipbone Creek, Hipbone Wash, Home Creek, Horse Creek - Apache, Horse Mesa Wash, Horseshoe Creek, Hosten Tso Wash, Hughey Creek, Hulsey Creek, Hummer Creek, Jackson Creek, Jaldito Wash, Jaralosa Draw, Jarvis Wash, Jimson Weed Wash, K L Creek, Killdove Creek, Kit Sill Wash, Laguna Creek, Lang Creek, Lee Valley Creek, Lithodendron Wash, Little Bog Creek, Little Bonito Creek, Little Creek, Little Diamond Creek, Little Milky Wash, Lizard Wash, Lofar Cienega Creek, Lorie Tule Wash, Long Cienega, Lower Lyman Ditch, Lukachukal Creek, Lukachukal Wash, Mamie Creek, McDonald Creek, Nairy Ditch, Meadow Wash, Middle Layman Ditch, Milk Creek - Apache, Milk Creek 1 - Apache, Milky Wash - Apache, Milligan Creek, Mineral Creek - Apache, Mineral Ditch - Apache, Moon Creek, Morgan Canyon St, Morrison Creek, Nazlini Wash, Ninemile Wash, No Name Creek, North East Fork, North Fork Diamo, North Fork White, Pinoso Creek, Oak Ridge Wash, Open Draw Creek, Pabbi Wash, Ord Creek, Oso Draw, Pace Creek, Pacheta Creek, Paddy Creek 1, Paddy Creek 2, Pallsade Creek, Paradise Creek, Peasoup Creek, Perry Creek, Picnic Creek, Pine Springs Wash, Pine Wash, Piney Hill Creek, Pot Creek - Apache, Poker Gap Creek, Polacca Wash, Popline Creek, Pueblo Colorado, Pulcifer Creek, Quartzite Wash, Querino Wash, Ramhead Wash, Red Wash, Red Wash 1, Red Wash 2, Red Water Wash, Reclamation Creek, Riggs Creek, Rock Canyon - Apache, Rocky Arroyo, Romero Creek, Rosey Creek, Rudd Creek, Sand Wash, Sabito Wash, Sage House Wash, Sand Creek - Apache, Sanostee Wash, Scattered Willow, Sepulveda Creek, Seven Springs Wash, Sharp Creek - Apache, Sheep Dip Creek, Show Low Creek, Sitting Giant Ro, Slick Creek, Smith Creek, Snow Stake Creek, Soldier Creek - Apache, South Fork Little, Spud Creek, Squaw Creek - Apache, Standing Redrock, Steamboat Wash, Stinky Creek, Stone Creek, Sun Creek, Surprise Creek, Sweater Creek, Sweetwater Wash, Tah Chee Wash, Teds Wash, Ten Nos Pos Wash, Ten of Diamonds, Tezinie Wash, Tinas Creek - Apache, Thompson Creek - Apache, Tshotso Wash, Ttis Nditsool Wash, Tsh Dahstini Wash, Tshotso Wash, Tohotso Creek, Toronto Creek - Apache, Trout Post Wash, Trout Creek - Apache, Tsaille Creek, Bonito Wash, Tse Deeshzhaal Wash, Tsitah Wash, Tsoosie Wash, Turkey Creek - Apache, Turkey Creek 1, Turkey Creek 2, Twin Buttes Wash, Tyende Creek, Upper Canyon Ditch, Vernon Creek, Vigil Run, Walker Creek - Apache, Walton Creek, Water Canyon Creek, Watts Creek, West Fork Black 1, West Fork Black 2, West Fork Little, West Gypsum Creek, West Turkey Creek, Wheatfields Creek, Whiskey Creek, White Rock Wash, White Spring Wash, Whitewater Arroyo, Wide Ruin Wash, Wild Cow Wash, Wildcat Creek 1, Wildcat Creek 2, Williams Creek, Willow Creek - Apache, Willow Spring Wash, Woods Creek - Apache, Yellow Water, Zuni River, a - Seg 17 Apache, a - 25 Apache, b - Seg 10 Apache, b - Seg 13 Apache, d - Seg 21 Apache

bound original plus seven bound copies of documentary evidence is to be submitted. ANSAC offices are located at 1700 West Washington, Room 304, Phoenix, AZ 85007

EXHIBIT C

1 county

Affidavit of Publication

State of Arizona,)
)ss.
County of Navajo,)

I, Francie Payne, being duly sworn, depose and say: I am

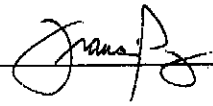
General Manager of THE HOLBROOK TRIBUNE-NEWS, a newspaper of general circulation published at Holbrook, County of Navajo and State of Arizona; that the Legal #8595 Notice of Public Hearing in Apache County April 26, 2005

attached hereto, was published in said newspaper, THE HOLBROOK TRIBUNE-NEWS, for 1 issues, and said notice was published in the regular and entire issue of every number of the paper during the period of the time of publication and was published in the newspaper proper and not in a supplement, the first

publication being dated March 23, 2005 and the last

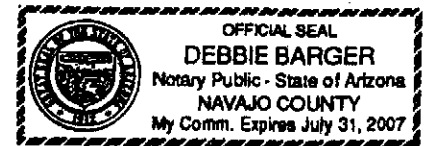
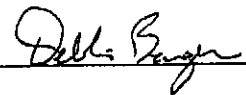
publication being dated March 23, 2005.

Publication Dates: 3/23



SUBSCRIBED AND SWORN TO before me this 23rd day of

March, 2005.



NOTARY PUBLIC

My commission expires July 31, 2007

NOTICE OF PUBLIC HEARING
In Apache County, April 26, 2005
State of Arizona
Navigable Stream Adjudication Commission
Pursuant to A.R.S. § 37-1126 (A), notice is hereby given that the Navigable Stream Adjudication Commission will hold public hearings to receive physical evidence and testimony relating to the navigability or non-navigability of all watercourses in Apache County. The hearings will be held in Apache County on April 26, 2005 beginning at 10:00 a.m. in an order established by the chair in the Apache County Supervisors' Meeting Room located at 75 West Cleveland, St. John's, Arizona. The following are presently the only hearings scheduled:
The Little Colorado River and the Puerco River, and all of the small and minor watercourses in Apache County.
The list of small and minor watercourses in Apache County includes:
Agua Sal Creek, Alamo Wash, Apache, Army Ditch, Aspen Wash, Apache, Auger Creek, Badger Creek 1 - Apache, Balakal Wash, Bar H Creek, Basin Creek, Battleground Creek, Bear Clans Creek, Beaver Dam Wash - Apache, Becker Creek, Benny Creek, Bent Knee Wash, Benton Creek - Apache, Beuhlin Wash, Big Bonito Creek, Big Dam Wash, Big Ditch, Big Hollow Wash, Big Wilderness Wash, Bill Riley Creek, Bis E Ah Wash, Blitter Water Wash, Black Creek, Black Horse Wash, Black Mountain Wash - Apache, Black River, Black Rock Canyon, Black Soil Wash, Blackhorse Creek, Blackrock Wash, Bluff Clans Creek, Bog Creek, Boggy Creek, Bolling Over Wash, Bonnyard Creek, Bonito Creek, Brown Creek, Brown Wash - Apache, Buell Wash, Bull Creek, Bull Creek - Apache, Burnt Corn Creek, Burnt Corral Creek - Apache, Burnt Pindia Wash, Burnt Wash, Burnt Wash, Apache, Butterfly Creek, Canyon Side Creek, Cave Valley Wash, Canyon Creek, Canyon de Chelly, Canyon Del Muerto, Cataract Creek, Carrizo Wash, Cedar Lake Wash, Centaine Creek, Chambers Draw, Cheney Draw, Chimney Wash, Chino Creek, Chino Wash, Clans Creek, Clans Creek 1 - Apache, Clans Creek 2 - Apache, Clans Creek 3 - Apache, Clans Creek 4 - Apache, Cold Spring Wash - Apache, Coleman Creek, Colter Creek, Concho Creek, Coon Creek - Apache, Corn Creek, Cottonwood Wash - Apache, Cove Wash, Coyote Creek 1 - Apache, Coyote Creek 2 - Apache, Coyote Creek 3 - Apache, Coyote Wash - Apache, Crazy Creek, Crooked Creek, Davis Creek, Dead Wash, Deer Creek - Apache, Deer Creek - Apache, Diamond Creek, Dry Creek - Apache, Dry Farms Wash, Dry Wash, Earl Creek, East Fork Black, East Fork Dry Wash, East Fork Little, East Fork White, Elk Canyon, Erosion Wash, Es Creek, Firebox Creek, Fish Creek - Apache, Fish Wash, Fish Creek, Gooseberry Creek, Gothic Creek, Grapevine Creek, Greasewood Wash, Greer Wash, Hall Creek, Handscrabble Wash, Hasbidito Creek, Hay Creek, Haifer Branch, Be, Hipbone Creek, Hipbone Wash, Home Creek, Horse Creek - Apache, Horse Mesa Wash, Horseshoe Creek, Hosteen Top Wash, Highway Creek, Hulsey Creek, Hurricane Creek, Jackson Creek, Jadito Wash, Jaralosa Draw, Jarvis Wash, Jimson Weed Wash, K.L. Creek, Kinlichee Creek, Kit Sill Wash, Laguna Creek, Lang Creek, Lee Valley Creek, Lithodendron Wash, Little Bog Creek, Little Bonito Creek, Little Creek, Little Diamond Creek, Little Milky Wash, Lizard Wash, Lofer Clans Creek, Lone Tule Wash, Long Clans, Lower Lyman Ditch, Lukachukai Creek, Lukachukai Wash, Mammie Creek, McDonald Creek, McNary Ditch, Meadow Wash, Middle Lyman Ditch, Milk Creek, Apache, Milk Creek 1 - Apache, Milky Wash - Apache, Milligan Creek, Mineral Creek - Apache, Mineral Ditch - Apache, Moon Creek, Morgan Canyon St, Morrison Creek, Nazini Wash, Ninemile Wash, No Name Creek, North East Fork, North Fork Diamo, North Fork White, Nutrioso Creek, Oak Ridge Wash, Open Draw Creek, Oraibi Wash, Ord Creek, Old Draw, Pace Creek, Pachera Creek, Paddy Creek 1, Paddy Creek 2,

State of Arizona)
County of Apache)

Affidavit of Publication

ss.

White Mountain Independent

NOTICE OF PUBLIC HEARING
In Apache County, April 26, 2005
State of Arizona

19291 Navigable Stream Adjudication Commission
Pursuant to A.R.S. § 37-1126 (A), notice is hereby given that the Navigable Stream Adjudication Commission will hold public hearings to receive physical evidence and testimony relating to the navigability or non-navigability of all watercourses in Apache County. The hearings will be held in Apache County on April 26, 2005 beginning at 10:00 a.m. in an order established by the chair in the Apache County Supervisors' Meeting Room located at 75 West Cleveland, St. Johns, Arizona. The following are presently the only hearings scheduled:

The Little Colorado River and the Puerco River, and all of the small and minor watercourses in Apache County. The list of small and minor watercourses in Apache County includes:

Agua Sal Creek, Alamo Wash - Apache, Amity Ditch; Aspen Wash - Apache, Auger Creek, Badger Creek 1 - Apache, Balsak Wash, Bar H Creek, Basin Creek, Battleground Creek, Bear Clenega Creek, Beaver Dam Wash - Apache, Becker Creek, Benny Creek, Bent Knee Wash, Bertrons Creek - Apache, Beechito Wash, Big Bonito Creek, Big Dam Wash, Big Ditch, Big Hollow Wash, Big Wilderness Wash, Big Riley Creek, Big II Ah Wash, Bitter Water Wash, Black Creek, Black Horse Wash, Black Mountain Wash - Apache, Black River, Black Rock Canyon, Black Soil Wash, Blackhorse Creek, Blackrock Wash, Bluff Clenega Creek, Bog Creek, Bogy Creek, Bolling Over Wash, Bonnyard Creek, Bonito Creek, Brown Creek, Brown Wash - Apache, Buell Wash, Bull Creek, Bull Creek - Apache, Burnt Corn Creek, Burnt Coral Creek - Apache, Burnt Pinon Wash, Burntwater Wash, Buro Wash - Apache, Butterfly Creek, Campbell Blue Creek, Cane Valley Wash, Canyon Creek 2, Canyon De Chelly, Canyon Del Muerto Creek, Canyon Wash, Cedar Lake Wash, Centerline Creek, Chambers Draw, Cheney Draw, Chino Wash, China Creek, China Wash, Clenega Creek, Clenega Creek 1 - Apache, Clenega Creek 2 - Apache, Clenega Creek 3 - Apache, Clenega Creek 4 - Apache, Cold Spring Wash - Apache, Coleman Creek, Colter Creek, Corcho Creek, Coon Creek - Apache, Corn Creek, Cottonwood Wash - Apache, Coye Wash, Coyote Creek 1 - Apache, Coyote Creek 2 - Apache, Coyote Creek 3 - Apache, Coyote Wash - Apache, Crazy Creek, Crooked Creek, Devils Creek, Dead Wash, Deep Creek - Apache, Deer Creek - Apache, Diamond Creek, Dry Creek - Apache, Dry Earth Wash, Dry Wash, Earl Creek, East Fork Black, East Fork Dry Wash, East Fork Little, East Fork White, Elk Canyon, Ereton Wash, Esa Creek, Firebox Creek, Flah Creek - Apache, Fish Wash, Flash Creek, Gooseberry Creek, Gothic Creek, Grapevine Creek, Greasewood Wash, Greer Wash, Hall Creek, Hardscrabble Wash, Hasblitto Creek, Hay Creek, Heifer Branch, Be, Hipbone Creek, Hipbone Wash, Home Creek, Horse Creek - Apache, Horse Mesa Wash, Horsetoe Creek, Hosteen Tao Wash, Hughey Creek, Huley Creek, Hurricane Creek, Jackson Creek, Jado Wash, Jaralosa Draw, Jarvis Wash, Jimson Weed Wash, K L Creek, Kinlichee Creek, Kit Sill Wash, Laguna Creek, Lang Creek, Lee Valley Creek, Lithodendron Wash, Little Bog Creek, Little Bonito Creek, Little Creek, Little Diamond Creek, Little Milky Wash, Lizard Wash, Lower Clenega Creek, Lone Tule Wash, Long Clenega, Lower Lyman Ditch, Lukachukai Creek, Lukachukai Wash, Marble Creek, McDonald Creek, McNary Ditch, Meadow Wash, Middle Layman Ditch, Milk Creek - Apache, Milk Creek 1 - Apache, Milky Wash - Apache, Milligan Creek, Mineral Creek - Apache, Mineral Ditch - Apache, Moon Creek, Morgan Canyon St, Morrison Creek, Nazini Wash, Ninemile Wash, No Name Creek, North East Fork, North Fork Diarno, North Fork White, Nutrioso Creek, Oak Ridge Wash, Open Draw Creek, Orabi Wash, Ord Creek, Old Draw, Pace Creek, Pacheta Creek, Paddy Creek 1, Paddy Creek 2, Palisade Creek, Paradise Creek, Peasoup Creek, Perry Creek, Picnic Creek, Pine Springs Wash, Pine Wash, Pinney Hill Creek, Pistol Creek - Apache, Poker Gap Creek, Polacca Wash, Porcupine Creek, Pueblo Colorado, Pulcifer Creek, Quartzite Wash, Querino Wash, Ramhead Wash, Red Clay Wash, Red Wash 1, Red Wash 2, Red Water Wash, Reservation Creek, Riggs Creek, Rock Canyon - Apache, Rocky Arroyo, Romero Creek, Rosy Creek, Rudd Creek, Ruin Wash, Sabito Wash, Sage House Wash, Sand Creek - Apache, Sanostee Wash, Scattered Willow, Sapuhveda Creek, Seven Springs Wash, Sharp Creek - Apache, Sheep Dip Creek, Show Low Creek, Sitting Giant Ro, Slick

I, Diane R. Janot, being first duly sworn, depose and say: I am the agent of the White Mountain Publishing Company, publisher of the White Mountain Independent, a semi-weekly newspaper of general circulation published at St. Johns, County of Apache, Arizona and that the copy hereto attached is a true copy of the advertisement as published in the White Mountain Independent on the following dates:

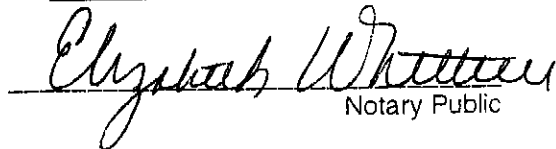
March 22, 2005

White Mountain Independent

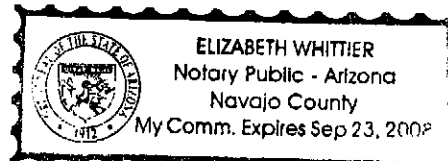


Sworn to me this day of

March 23, 2005, A.D. 2005



Notary Public



NOTICE OF PUBLIC HEARING
in Apache County April 26,
2005

State of Arizona
Navigable Stream
Adjudication Commission

Pursuant to A.R.S. § 37-1126
(A), notice is hereby given
that the Navigable Stream
Adjudication Commission
will hold public hearings to
receive physical evidence
and testimony relating to the
navigability or non-
navigability of all watercours-
es in Apache County. The
hearings will be held in
Apache County on April 26,
2005 beginning at 10:00 a.m.
in an order established by
the chair in the Apache County
Supervisors' Meeting
Room located at 75 West
Cleveland, St. Johns, Arizona.
The following are presently
the only hearings scheduled.

The Little Colorado River and
the Puerco River, and all of
the small and minor water-
courses in Apache County.
The list of small and minor
watercourses in Apache
County includes:

- Agua Sal Creek, Alamo Wash,
- Apache, Amity Ditch, Aspen
- Wash - Apache, Auger Creek,
- Badger Creek 1 - Apache,
- Balakai Wash, Bar H Creek,
- Basin Creek, Battleground
- Creek, Bear Clenega Creek,
- Beaver Dam Wash - Apache,
- Becker Creek, Benny Creek,
- Bent Knee Wash, Benton
- Creek - Apache, Beshbito
- Wash, Big Bonito Creek, Big
- Dam Wash, Big Ditch, Big Hor-
- low Wash, Big Williams
- Wash, Bill Riley Creek, Bis'il
- Wash, Bitter Water Wash,
- Black Creek, Black Horse
- Wash, Black Mountain Wash
- Apache, Black River, Black
- Rock Canyon, Black Soil
- Wash, Blackhorse Creek,
- Blackrock Wash, Bluff
- Clenega Creek, Bog Creek,
- Boggy Creek, Boiling Over
- Wash, Boneyard Creek, Boni-
- to Creek, Brown Creek,
- Brown Wash, Apache, Bull
- Wash, Bull Creek, Bull Creek
- Apache, Burnt-Corn Creek,
- Burnt Corral Creek - Apache,
- Burnt Pinon Wash,
- Burntwater Wash, Burro
- Wash - Apache, Butterfly
- Creek, Campbell Blue Creek,
- Cane Valley Wash, Canyon
- Creek 2, Canyon De Chelly,
- Canyon Del Muert, Carriero
- Creek, Garrizo Wash, Cedar
- Lake Wash, Centerfire Creek,
- Chambers Draw, Cheney
- Draw, Chinney Wash, Clenega
- Creek, Chinley Wash, Clenega
- Creek, Clenega Creek 1 -
- Apache, Clenega Creek 2 -
- Apache, Clenega Creek 3 -
- Apache, Clenega Creek 4 -
- Apache, Cold Spring Wash,
- Apache, Coleman Creek,
- Colter Creek, Concho Creek,
- Coon Creek - Apache, Corn
- Creek, Cottonwood Wash,
- Apache, Cove Wash, Coyote
- Creek 1 - Apache, Coyote
- Creek 2 - Apache, Coyote
- Creek 3 - Apache, Coyote
- Wash - Apache, Crazy Creek,
- Crooked Creek, Davis Creek,
- Dead Wash, Deep Creek,
- Apache, Deer Creek,
- Apache, Diamond Creek, Dry
- Creek - Apache, Dry Farms
- Wash, Dry Wash, East Creek,
- East Fork Black, East Fork

- Black 2, West Fork, Little,
- West Gypsum Creek, West
- Turkey Creek, Wheatfields
- Creek, Whiskey Creek, White
- Rock Wash, White Spring
- Wash, Whitewater Creek,
- Wide Ruin Wash, Wild Cow
- Wash, Wildcat Creek 1, Wild-
- cat Creek 2, Williams Creek,
- Willow Creek - Apache, Wil-
- low Spring Wash, Woods
- Creek, Yellow Water, Zuni
- River, a - Seg 17 Apache, a
- Seg 25 Apache, b - Seg 10
- Apache, b - Seg 13 Apache, d
- Seg 21 Apache, as well as
- all other named and un-
- named small and minor
- watercourses.

Interested parties may submit
evidence to the commission
office prior to the hearing
and/or during the appropri-
ate public hearing. The com-
mission will conduct its hear-
ings informally without ad-
herence to judicial rules of
procedure or evidence. An
unbound original plus seven
bound copies of documenta-
ry evidence is to be submit-
ted. ANSAC offices are locat-
ed at 1700 West Washington,
Room 304, Phoenix, AZ
85007. The telephone num-
ber is (602) 542-9214. The
web site address is
<http://www.azstreambeds.com>.

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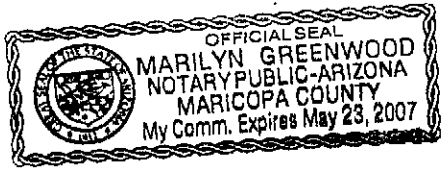
STATE OF ARIZONA }
COUNTY OF MARICOPA } SS.

Diana Chavez, being first duly sworn, upon oath deposes and says: That she is a legal advertising representative of the Arizona Business Gazette, a newspaper of general circulation in the county of Maricopa, State of Arizona, published at Phoenix, Arizona, by Phoenix Newspapers Inc., which also publishes The Arizona Republic, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates as indicated.

The Arizona Republic

March 22, 2005

Sworn to before me this
22ND day of
March A.D. 2005



Notary Public

EXHIBIT D



STATE OF ARIZONA
NAVIGABLE STREAM ADJUDICATION COMMISSION

1700 West Washington, Room 304, Phoenix, Arizona 85007
Phone (602) 542-9214 FAX (602) 542-9220

JANET NAPOLITANO
Governor

E-mail: streams@mindspring.com Web Page: <http://www.azstreambeds.com>

GEORGE MEHNERT
Executive Director

AGENDA AND NOTICE OF A PUBLIC HEARING TO BE HELD
April 26, 2005, at 10:00 A.M., in St. Johns, Arizona

Pursuant to A.R.S. §38-431.02, notice is hereby given that the Navigable Stream Adjudication Commission will hold a meeting open to the public on April 26, 2005 at 10:00 a.m. in the Apache County Supervisors Meeting Room located at 75 W. Cleveland, St. Johns, Arizona

Pursuant to A.R.S. §38-431.03(A)(3), the Navigable Stream Adjudication Commission may vote to go into Executive Session for purposes of obtaining legal advice from the Commission's attorney on any matter listed on the agenda, or pursuant to A.R.S. §38-431.03(A) or for discussion of records exempt by law from public inspection on any matter listed on the agenda, or for personnel matters listed on the agenda.

Title 2 of the American with Disabilities Act (ADA) prohibits the Commission from discriminating on the basis of disability in its public meetings. Individuals with disabilities who need a reasonable accommodation to attend or communicate at the Commission's meeting, or who require this information in alternate format, may contact George Mehnert at (602) 542-9214 to make their needs known. Requests should be made as soon as possible so the Commission will have sufficient time to respond. For those individuals who have a hearing impairment, this Commission can be reached through the Arizona Relay Service at 1-800-367-8939 (TTY) or 1-800-842-4681 (Voice). The agenda for the meeting is as follows:

1. CALL TO ORDER.
2. ROLL CALL.
3. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE SMALL AND MINOR WATERCOURSES IN APACHE COUNTY, 05-009-NAV.
4. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE LITTLE COLORADO RIVER, 05-007-NAV.
5. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE PUERCO RIVER, 05-008-NAV.
6. BUDGET AND COMMISSION STATUS UPDATE.
7. HEARINGS UPDATE.
8. CALL FOR PUBLIC COMMENT (comment sheets).
(Pursuant to Attorney General Opinion No. 199-006 [R99-002]. Public Comment: Consideration and discussion of comments and complaints from the public. Those wishing to address the Commission need not request permission in advance. Action taken as a result of public comment will be limited to directing staff to study the matter or rescheduling the matter for further consideration and decision at a later date.)
9. FUTURE AGENDA ITEMS AND ESTABLISHMENT OF FUTURE HEARINGS AND OTHER MEETINGS.
10. ADJOURNMENT.

The chair reserves the right to alter the order of the agenda.

Dated this 16th day of March, 2005, George Mehnert, Director, Navigable Stream Adjudication Commission



JANET NAPOLITANO
Governor

STATE OF ARIZONA
NAVIGABLE STREAM ADJUDICATION COMMISSION

1700 West Washington, Room 304, Phoenix, Arizona 85007

Phone (602) 542-9214 FAX (602) 542-9220

E-mail: streams@mindspring.com Web Page: <http://www.azstreambeds.com>

GEORGE MEHNERT
Executive Director

MEETING MINUTES

St. Johns, Arizona, April 26, 2005

COMMISSION MEMBERS PRESENT

Earl Eisenhower, Jim Henness, and Cecil Miller.

COMMISSION MEMBERS ABSENT

Jay Brashear, Dolly Echeverria

STAFF PRESENT

George Mehnert, and Commission Legal Counsel Curtis Jennings.

1. **CALL TO ORDER.**

Chair Eisenhower called the meeting to order at approximately 10:03 a.m.

2. **ROLL CALL.**

See above.

3. **ROLL CALL.**

3. **HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE SMALL AND MINOR WATERCOURSES IN APACHE COUNTY, 05-009-NAV.** Cheryl Doyle of the State Land Department read a prepared statement, and Engineer Jon Fuller appeared.

4. **HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE LITTLE COLORADO RIVER, 05-007-NAV.** Cheryl Doyle of the State Land Department indicated the prepared statement she read regarding item #3 applied to all of today's hearings, and Engineer Jon Fuller appeared.

5. **HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE PUERCO RIVER, 05-008-NAV.** Cheryl Doyle of the State Land Department indicated the prepared statement she read regarding item #3 applied to all of today's hearings, and Engineer Jon Fuller appeared.

6. **BUDGET AND COMMISSION STATUS UPDATE.** No comments were made except that the matter had been discussed at the meeting of April 25, 2005.



STATE OF ARIZONA
NAVIGABLE STREAM ADJUDICATION COMMISSION

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Governor

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GEORGE MEHNERT
Executive Director

AGENDA AND NOTICE OF A PUBLIC HEARING TO BE HELD
July 14, 2005, at 10:00 a.m., in Flagstaff, Arizona

Pursuant to A.R.S. §38-431.02, notice is hereby given that the Navigable Stream Adjudication Commission will hold a meeting open to the public on July 14, 2005 at 10:00 a.m. in the Coconino County Supervisors Meeting Room located at 219 East Cherry Street, Flagstaff, Arizona.

Pursuant to A.R.S. §38-431.03(A)(3), the Navigable Stream Adjudication Commission may vote to go into Executive Session for purposes of obtaining legal advice from the Commission's attorney on any matter listed on the agenda, or pursuant to A.R.S. §38-431.03(A) or for discussion of records exempt by law from public inspection on any matter listed on the agenda, or for personnel matters listed on the agenda.

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1. **CALL TO ORDER.**
2. **ROLL CALL.**
3. **APPROVAL OF MINUTES** (discussion and action).
 - A. April 25, 2005, Navajo County.
 - B. April 25, 2005, Navajo County Executive Session.
 - C. April 26, 2005, Apache County.
4. **HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE SMALL AND MINOR WATERCOURSES IN COCONINO COUNTY, 05-010-NAV.**
5. **HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE LITTLE COLORADO RIVER, 05-007-NAV.**
6. **CALL FOR PUBLIC COMMENT** (comment sheets).

(Pursuant to Attorney General Opinion No. 199-006 [R99-002]. Public Comment: Consideration and discussion of comments and complaints from the public. Those wishing to address the Commission need not request permission in advance. Action taken as a result of public comment will be limited to directing staff to study the matter or rescheduling the matter for further consideration and decision at a later date.)
7. **FUTURE AGENDA ITEMS AND ESTABLISHMENT OF FUTURE HEARINGS AND OTHER MEETINGS.**
8. **ADJOURNMENT.**

The chair reserves the right to alter the order of the agenda.

Dated this 7th day of June, 2005, George Mehnert, Director, Navigable Stream Adjudication Commission



STATE OF ARIZONA
NAVIGABLE STREAM ADJUDICATION COMMISSION

1700 West Washington, Room 304, Phoenix, Arizona 85007

Phone (602) 542-9214 FAX (602) 542-9220

JANET NAPOLITANO
Governor

E-mail: streams@mindspring.com Web Page: <http://www.azstreambeds.com>

GEORGE MEHNERT
Executive Director

AGENDA AND NOTICE OF A PUBLIC HEARING TO BE HELD

July 14, 2005, at 10:00 a.m., in Flagstaff, Arizona

(First Amended Agenda)

Pursuant to A.R.S. §38-431.02, notice is hereby given that the Navigable Stream Adjudication Commission will hold a meeting open to the public on July 14, 2005 at 10:00 a.m. in the Coconino County Supervisors Meeting Room located at 219 East Cherry Street, Flagstaff, Arizona.

Pursuant to A.R.S. §38-431.03(A)(3), the Navigable Stream Adjudication Commission may vote to go into Executive Session for purposes of obtaining legal advice from the Commission's attorney on any matter listed on the agenda, or pursuant to A.R.S. §38-431.03(A) or for discussion of records exempt by law from public inspection on any matter listed on the agenda, or for personnel matters listed on the agenda.

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1. CALL TO ORDER.
2. ROLL CALL.
3. APPROVAL OF MINUTES (discussion and action).
 - A. April 25, 2005, Navajo County.
 - B. April 25, 2005, Navajo County Executive Session.
 - C. April 26, 2005, Apache County.
4. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE SMALL AND MINOR WATERCOURSES IN COCONINO COUNTY, 05-010-NAV.
5. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE LITTLE COLORADO RIVER, 05-007-NAV.
6. NAVIGABILITY DETERMINATION OF THE SMALL AND MINOR WATERCOURSES IN YAVAPAI COUNTY (DISCUSSION AND ACTION).
7. NAVIGABILITY DETERMINATION OF THE SMALL AND MINOR WATERCOURSES IN NAVAJO COUNTY (DISCUSSION AND ACTION).
8. NAVIGABILITY DETERMINATION OF THE SMALL AND MINOR WATERCOURSES IN APACHE COUNTY (DISCUSSION AND ACTION).
9. NAVIGABILITY DETERMINATION OF THE PUERCO RIVER (DISCUSSION AND ACTION).
10. CALL FOR PUBLIC COMMENT (comment sheets).
(Pursuant to Attorney General Opinion No. 199-006 [R99-002]. Public Comment: Consideration and discussion of comments and complaints from the public. Those wishing to address the Commission need not request permission in advance. Action taken as a result of public comment will be limited to directing staff to study the matter or rescheduling the matter for further consideration and decision at a later date.)
11. FUTURE AGENDA ITEMS AND ESTABLISHMENT OF FUTURE HEARINGS AND OTHER MEETINGS.
12. ADJOURNMENT.

The chair reserves the right to alter the order of the agenda.

Dated this 6th day of July, 2005, George Mehnert, Director, Arizona Navigable Stream Adjudication Commission.



STATE OF ARIZONA
NAVIGABLE STREAM ADJUDICATION COMMISSION

1700 West Washington, Room 304, Phoenix, Arizona 85007

Phone (602) 542-9214 FAX (602) 542-9220

JANET NAPOLITANO
Governor

E-mail: streams@mindspring.com Web Page: <http://www.azstreambeds.com>

GEORGE MEHNERT
Executive Director

MEETING MINUTES
Flagstaff, Arizona, July 14, 2005

COMMISSION MEMBERS PRESENT

Jay Brashear, Earl Eisenhower, Jim Henness, and Cecil Miller.

COMMISSION MEMBERS ABSENT

Dolly Echeverria.

STAFF PRESENT

George Mehnert, and Commission Legal Counsel Curtis Jennings.

1. CALL TO ORDER.

Chair Eisenhower called the meeting to order at approximately 10:06 a.m.

2. ROLL CALL.

See above.

3. APPROVAL OF MINUTES (discussion and action).

A. April 25, 2005, Navajo County.

Motion by: Jim Henness Second by: Cecil Miller

Motion: To approve the minutes of April 25, 2005.

Vote: All aye.

B. April 25, 2005, Navajo County Executive Session.

Motion by: Cecil Miller Second by: Jim Henness

Motion: To approve the Executive Session Minutes of April 25, 2005.

Vote: All aye.

C. April 26, 2005, Apache County.

Motion by: Jim Henness Second by: Cecil Miller

Motion: To approve the minutes of April 26, 2005.

Vote: All aye.

4. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE SMALL AND MINOR WATERCOURSES IN COCONINO COUNTY, 05-010-NAV. Persons who spoke and responded to

questions regarding this matter were Cheryl Doyle representing the State Land Department and Hydrologist for the State Land Department, Jon Fuller. The Chair announced this hearing was closed for the purpose of taking evidence.

5. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE LITTLE COLORADO RIVER, 05-007-NAV.

Persons who spoke and responded to questions regarding this matter were Cheryl Doyle representing the State Land Department and Hydrologist for the State Land

Department, Jon Fuller. The Chair announced this hearing was closed for the purpose of taking evidence.

6. **NAVIGABILITY DETERMINATION OF THE SMALL AND MINOR WATERCOURSES IN YAVAPAI COUNTY (DISCUSSION AND ACTION).**

Motion by: Jay Brashear Second by: Jim Henness

Motion: That all of the Small and Minor Watercourses in Yavapai County were non-navigable as of statehood.

Vote: All aye.

7. **NAVIGABILITY DETERMINATION OF THE SMALL AND MINOR WATERCOURSES IN NAVAJO COUNTY (DISCUSSION AND ACTION).**

Motion by: Cecil Miller Second by: Jim Henness

Motion: That all of the Small and Minor Watercourses in Navajo County were non-navigable as of statehood.

Vote: All aye.

8. **NAVIGABILITY DETERMINATION OF THE SMALL AND MINOR WATERCOURSES IN APACHE COUNTY (DISCUSSION AND ACTION).**

Motion by: Jim Henness Second by: Cecil Miller

Motion: That all of the Small and Minor Watercourses in Apache County were non-navigable as of statehood.

Vote: All aye.

9. **NAVIGABILITY DETERMINATION OF THE PUERCO RIVER (DISCUSSION AND ACTION).**

Motion by: Jim Henness Second by: Jay Brashear

Motion: That Puerco River was non-navigable as of statehood.

Vote: All aye.

10. **CALL FOR PUBLIC COMMENT (comment sheets).**

(Pursuant to Attorney General Opinion No. I99-006 [R99-002]. Public Comment: Consideration and discussion of comments and complaints from the public. Those wishing to address the Commission need not request permission in advance. Action taken as a result of public comment will be limited to directing staff to study the matter or rescheduling the matter for further consideration and decision at a later date.)

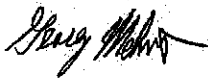
11. FUTURE AGENDA ITEMS AND ESTABLISHMENT OF FUTURE HEARINGS AND OTHER MEETINGS.

The Commissioners, representatives of the State and of the Salt River Project spoke regarding hearing dates. The Chair concluded that likely future hearing dates beyond those scheduled in Mohave and La Paz Counties on August 8, 2005 and August 9, 2005, respectively, will be hearings regarding the navigability of the Agua Fria River, the Hassyampa River and the Maricopa County Small and Minor Watercourses during September 2005. Commissioner Brashear asked about Roosevelt Lake, since it existed at time of statehood. The Chair said Roosevelt Lake will likely be considered during the hearing regarding the Gila County Small and Minor Watercourses. The Chair indicated that hearings will likely be held during October 2005 regarding the navigability of the Upper Salt River and of the Gila County Small and Minor Watercourses. The Chair stated that hearings will likely be held during November 2005, on two consecutive days, regarding the navigability of the Gila River and the Verde River.

12. ADJOURNMENT.

Motion by: Cecil Miller Second by: Jim Henness
Motion: To adjourn. Vote: All aye.
Meeting adjourned at approximately 11:05 a.m.

Respectfully submitted,



George Mehnert, Director
July 14, 2005

EXHIBIT E

Evidence Log

Hearing No. 05-009-NAV

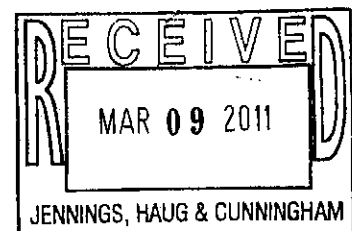
Page No.

1

Arizona Navigable Stream Adjudication Commission

Apache County Small and Minor Watercourses
April 26, 2005

Item Number	Received Date	Source to ANSAC	Description	Entry By
1	02/18/97	Evidence on Hand at AN-SAC	Letter from David Baron dated February 18, 1997.	George Mehnert
2	9/?/98	Evidence on hand at AN-SAC	Small and Minor Watercourse Criteria Final Report.	George Mehnert
3	9/?/99	Evidence on hand at AN-SAC	Final Report, 3 County Pilot Study.	George Mehnert
4	12/2000	Evidence on hand at AN-SAC	Draft Final Report, Small & Minor Watercourses Analysis for Apache County, Arizona.	George Mehnert
5	02/2001	Evidence on hand at AN-SAC.	Final Report, Small & Minor Watercourses Analysis for Apache County, Arizona.	George Mehnert
6	07/20/04	Coby Muckelroy	Single Page Letter	George Mehnert



Post Hearing Memorandums

Hearing No. 05-009-NAV

Page No.

1

Arizona Navigable Stream Adjudication Commission

Apache County Small & Minor Watercourses

Entry Number	Date	Entry	Entry By
		Opening Memorandums	
1	05/31/05	Salt River Project's Opening Memorandum.	George Mehnert
		Response Memorandums	
		None	

EXHIBIT F

4.2 LEVEL 2 ANALYSIS

The NRL1 data set resulting from Level 1 analysis contains 242 watercourses. Results from the application of the Level 2 approach to the 242 watercourses are presented and discussed in the sections that follow. Employing the first-cut screening process shown in Figure 5 for the NRL1 data set leads to the classification of the watercourses as follows:

A. Stream Category A – potentially susceptible to navigation

1. Black River

B. Stream Category B – navigation possible, not likely.

- | | |
|-------------------------------------|------------------------------|
| 1. Auger Creek | 32. Firebox Creek |
| 2. Basin Creek | 33. Fish Creek - Apache |
| 3. Bear Cienega Creek | 34. Flash Creek |
| 4. Bear Wallow Creek | 35. Gooseberry Creek |
| 5. Becker Creek | 36. Hall Creek |
| 6. Big Bonito Creek | 37. Hay Creek |
| 7. Billy Creek | 38. Home Creek |
| 8. Bog Creek | 39. Horse Creek - Apache |
| 9. Boggy Creek | 40. Horseshoe Creek |
| 10. Boneyard Creek | 41. Hughey Creek |
| 11. Bonito Creek | 42. Hulsey Creek |
| 12. Brown Creek | 43. Hurricane Creek |
| 13. Campbell Blue Creek | 44. Lee Valley Creek |
| 14. Canyon De Chelly | 45. Little Bonito Creek |
| 15. Canyon Del Muerto | 46. Little Diamond Creek |
| 16. Carnero Creek | 47. Lofer Cienega Creek |
| 17. Centerfire Creek | 48. Lukachukai Wash |
| 18. Chambers Draw | 49. Mamie Creek |
| 19. Coleman Creek | 50. Mineral Creek - Apache |
| 20. Colter Creek | 51. Moon Creek |
| 21. Concho Creek | 52. North East Fork |
| 22. Coyote Creek 1 - Apache | 53. North Fork Diamond Creek |
| 23. Crooked Creek | 54. North Fork White River |
| 24. Deep Creek - Apache | 55. Nutrioso Creek |
| 25. Deer Creek - Apache | 56. Open Draw Creek |
| 26. Diamond Creek | 57. Ord Creek |
| 27. Earl Creek | 58. Pacheta Creek |
| 28. East Fork Black River | 59. Paddy Creek 1 |
| 29. East Fork Little Colorado River | 60. Paddy Creek 2 |
| 30. East Fork White River | 61. Paradise Creek |
| 31. Elk Canyon | 62. Pueblo Colorado |

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| 63. Reservation Creek | 75. Sun Creek |
| 64. Rock Canyon - Apache | 76. Thompson Creek - Apache |
| 65. Rudd Creek | 77. Tonto Creek - Apache |
| 66. Sand Creek - Apache | 78. Trout Creek - Apache |
| 67. Sheep Dip Creek | 79. Tsaille Creek |
| 68. Show Low Creek | 80. Water Canyon Creek |
| 69. Smith Creek | 81. West Fork Black 2 |
| 70. Snow Stake Creek | 82. West Fork Little Colorado River |
| 71. Soldier Creek - Apache | 83. Wheatfields Creek |
| 72. South Fork Little Colorado River | 84. Whiskey Creek |
| 73. Squaw Creek - Apache | 85. Wildcat Creek 1 |
| 74. Stinky Creek | 86. 5 Unnamed Washes |

C. Stream Category C – navigation unlikely.

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|--------------------------------|----------------------------|
| 1. Bar H Creek | 27. Long Cienega |
| 2. Benny Creek | 28. Lukachukai Creek |
| 3. Benton Creek - Apache | 29. McNary Ditch |
| 4. Black Rock Canyon | 30. Milk Creek - Apache |
| 5. Black Soil Wash | 31. Mineral Ditch - Apache |
| 6. Blackhorse Creek | 32. Morrison Creek |
| 7. Bluff Cienega Creek | 33. No Name Creek |
| 8. Bobcat Creek | 34. Pace Creek |
| 9. Bull Creek - Apache | 35. Peasoup Creek |
| 10. Butterfly Creek | 36. Porcupine Creek |
| 11. Chinle Creek | 37. Pulcifer Creek |
| 12. Chinle Wash | 38. Quartzite Wash |
| 13. Cienega Creek 1 - Apache | 39. Riggs Creek |
| 14. Cienega Creek 4 - Apache | 40. Rosey Creek |
| 15. Coon Creek - Apache | 41. Scattered Willow |
| 16. Coyote Creek 2 - Apache | 42. Sepulveda Creek |
| 17. Coyote Creek 3 - Apache | 43. Stone Creek |
| 18. Davis Creek | 44. Thomas Creek - Apache |
| 19. Ess Creek | 45. Turkey Creek 1 |
| 20. Gomez Creek | 46. Turkey Creek 2 |
| 21. Gypsum Creek | 47. Vigil Run |
| 22. Heifer Branch Beaver Creek | 48. Walker Creek - Apache |
| 23. Jackson Creek | 49. Wide Ruin Wash |
| 24. Laguna Creek | 50. Williams Creek |
| 25. Little Creek | 51. Zuni River |
| 26. Lone Tule Wash | 52. 100 Unnamed Washes |