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BEFORE THE ARIZONA NAVIGABLE STREAM ADJUDICATION COMMISSION

In re Determination of Navigability of the Upper Salt River	No. 04-008-NAV
	SALT RIVER PROJECT'S OPENING POST-HEARING MEMORANDUM

The Salt River Project Agricultural Improvement and Power District and Salt River Valley Water Users' Association (collectively, "SRP") submit their opening post-hearing memorandum regarding this Commission's determination of whether the Upper Salt River (upstream from Granite Reef Dam) was "navigable" when Arizona became a state on February 14, 1912. A table of contents appears on the following page. Section III of this memorandum summarizes the evidence presented to the Commission at and before its hearings held on November 15, 2004 (in Globe) and on October 20, 2005 (in Phoenix). Section IV presents SRP's legal argument.

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I. INTRODUCTION

The question of whether the Upper Salt River was "navigable" when Arizona became a state on February 14, 1912 is perhaps best answered by the 1873 exploits of Charles Hayden, who was the founder and a long-time resident of Tempe and the father of United States Senator Carl Hayden. Mr. Hayden attempted to boat the river in an effort to determine whether it was susceptible to the flotation of logs from the mountain forests to the central deserts:

> The Hayden party, left up Salt River to come down in a canoe and drive some logs with them, have returned, and pronounce the scheme a failure. With much toil and difficulty, on account of rapids and boulders in the river, they ascended a long way when, having lost their arms, ammunition and provisions, excepting flour, they arrived in a canon so narrow as not to admit of the passage of a log, and were compelled to abandon their boat and foot it. Mr. Hayden is still sanguine of getting sufficient timber on this side of the canons *[Arizona Weekly Miner 1873c]*.

See JE Fuller/Hydrology & Geomorphology, Inc., Arizona Stream Navigability Study for the Salt River: Granite Reef Dam to the Confluence of the White and Black Rivers 2-1 (revised June 2003) (EI 27) ("Fuller"). If there was ever a person who had the incentive and ability to undertake commercial navigation on the Upper Salt River, it was Charles Hayden. His "failure" to float logs down the river, along with the respective failures of other statehood-era residents who tried to boat the river, is persuasive evidence that the river was not "navigable."

The Upper Salt River is not, was not in 1912, and never has been used or susceptible to being used as a "highway for commerce." All the evidence submitted prior to and at the Commission's hearings supports a finding of "non-navigability," and no evidence was presented to support a finding that the river is now or ever was "navigable." SRP requests that the Commission find the river "non-navigable."

II. THIS COMMISSION'S TASK

This Commission has an important job to do. Under the applicable statutes, the Commission has exclusive jurisdiction to determine which, if any, Arizona watercourses were

"navigable" on February 14, 1912. See A.R.S. § 37-1123(G). The Commission's statutory obligation for determining navigability is relatively succinct:

> 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 in question was nonnavigable.

A.R.S. § 37-1128(A). The statute defines "navigable" or "navigable watercourse" as:

> 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 mode of trade and travel on water.

Id. § 37-1101(5).[1]

The statutes provide that the proponents of navigability have the burden of proof. In order for the Commission to determine that a particular watercourse is "navigable," the proponents of navigability must establish that fact by the "preponderance of the evidence." See A.R.S. § 37-1128(A).[2] If sufficient evidence is not presented to show navigability for a particular watercourse, the Commission must find the watercourse non-navigable. Under the "preponderance of the evidence" standard, "a party who has the burden of proof must persuade you, by the evidence, that the claim is probably more true than not true." Recommended Arizona Jury Instructions (Civil) Standard 9 (1997). "Preponderance of the evidence" requires "[e]vidence which is of greater weight or more convincing than the

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[1] The Arizona statutory definition is a codification of the "federal test" of navigability first articulated by the United States Supreme Court in 1870 and applied by over one hundred courts in the last 135 years. E.g., The Daniel Ball, 77 U.S. (10 Wall.) 557, 563, 19 L.Ed. 999 (1870). Thus, court decisions construing the Daniel Ball test should be persuasive for this Commission in applying the definition in A.R.S. § 37-1101(5).

[2] This allocation of the burden of proof is consistent with the pronouncements of the Arizona courts. See Defenders of Wildlife v. Hull, 199 Ariz. 411, 420, 18 P.2d 722, 731 (App. 2001); Memorandum Decision, State v. Burke, No. 1 CA-SA 02-0268, at 12 (consolidated) (December 23, 2004) (citing Hull, 199 Ariz. at 420, 18 P.3d at 731); Arizona Ctr. for Law in the Public Interest v. Hassell, 172 Ariz. 356, 363 n.10, 837 P.2d 158, 165 n.10 (App. 1991), review dismissed (Oct. 6, 1992); Land Dep't v. O'Toole, 154 Ariz. 43, 46 n.2, 739 P.2d 1360, 1363 n.2 (App. 1987).

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." Black's Law Dictionary 1064 (5th ed. 1979).[3]

III. REVIEW OF THE EVIDENCE IN THE RECORD

This Commission solicited and received voluminous evidence with respect to the navigability of the Upper Salt River. The Commission held two hearings, in two different county seats. The transcript of the October 2005 Phoenix hearing consists of 169 pages.[4] This memorandum discusses the historical, hydrologic, geomorphologic, and judicial evidence in the record.

A. History of the Salt River Valley and the Upper Salt River

None of the historical evidence introduced in this proceeding supports a finding of navigability. To the contrary, all of the evidence weighs in favor of non-navigability.

1. The prehistoric Upper Salt River

The report submitted by the State Land Department's consultants, and their hearing testimony, provide evidence regarding the condition of the Upper Salt River in the period before settlement by non-natives. "Although the archaeological data suggests few changes in the flow regime in the Upper Salt River and little in the way of agricultural diversions or impediments to navigation, archaeological research has not documented any use of the river for commercial trade and travel or for any regular flotation of logs." See Fuller, supra, at 2-1. In fact, Mr. Fuller testified at the hearing that archaeological research has revealed no evidence of any prehistoric boating on the river (commercial or otherwise) or any flotation of logs (regular or irregular). Tr. at 28-29 (Fuller).

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[3] See also generally Maricopa County Juvenile Action No. J-84984, 138 Ariz. 282, 283, 674 P.2d 836, 837 (1983) (quoting Cole v. Town of Miami, 52 Ariz. 488, 497, 83 P.2d 997, 1001 (1938)) ("the ultimate test is, does the evidence convince the trier of fact that one theory of the case is more probable than the other"); Hewett v. Industrial Comm'n, 72 Ariz. 203, 209, 232 P.2d 850, 854 (1951).

[4] "Tr. at [page]" refers to the Reporter's Transcript of the October 20 hearing.

2. Early exploration of the Salt River Valley

No evidence exists that any of the early explorers who ventured into the Salt River Valley ever used the Upper Salt River as a means of transportation or commerce. Francisco Vasquez de Coronado, for example, is reported to have used rafts on the Salt River, but the evidence shows that Coronado used the rafts only to cross the river (not to travel up or down it), and the evidence also suggests that Coronado's use of the river was perhaps on some other river entirely. See Fuller, supra, at 3-4, 3-9; Tr. at 29 (Gilpin). Trappers such as James Ohio Pattie and Ewing Young are reported to have traveled along the river, but all indications are that their travels were by foot or on horseback, not in boats or canoes—**even though** these same trappers are known to have used canoes on the navigable Colorado River during these same trips. See Fuller, supra, at 3-6; Tr. at 29-30 (Gilpin). In 1849, Lt. Beckwith traveled from present-day New Mexico to the Upper Colorado River, and a portion of his route appears to have included the Salt River. Again, however, the evidence shows that his travels along the river were by foot or on horseback, not in a boat or a canoe. See Fuller, supra, at 3-9; Tr. at 29-30 (Gilpin).

Of the many early explorers who traveled near or along the Upper Salt River, no evidence exists that any of them ever used a boat to travel on the river—upstream or downstream. See Tr. at 29-30 (Gilpin). The travels of each of these individuals took them along the Upper Salt River. If the river had been navigable, it surely would have been easier for them to travel by boat rather than by foot or on horseback through this harsh desert land.

3. Federal land surveys and patents

Another group of individuals who were present in the Salt River Valley at a relatively early date were the federal land surveyors who were responsible for conducting the rectangular survey in the new territory. As Dr. Douglas Littlefield testified during the October hearing, each of these surveyors was under specific instructions to distinguish between navigable and non-navigable streams. See Littlefield, Assessment of the Parts of the Upper Salt River and Tonto Creek Between Granite Reef Dam and the Inundation Lines of

Roosevelt Lake Prior to and On the Date of Arizona's Statehood, February 14, 1912 9-32 (October 5, 2005) (EI 29); Tr. at 111-17 (Littlefield). None of these Government representatives ever once indicated that the Upper Salt River was navigable. See Littlefield, supra, at 32-44. "Significantly, surveys undertaken for the Upper Salt River above Granite Reef Dam and Tonto Creek and below the inundation lines of Theodore Roosevelt Lake gave no indication that the federal surveyors in charge of the work believed either stream to be navigable." Id. at 44.

Similarly, the federal and state land patents issued along the river are persuasive evidence of non-navigability. The Federal Government granted eighteen separate patents that touched or overlay the lower portions of the Upper Salt River and Tonto Creek to private individuals. See id. at 59; Tr. at 117-23 (Littlefield). In not one case did any of those patents (or the supporting patent files) indicate that acreage was being withheld because the river was navigable. See Littlefield, supra, at 60; Tr. at 117-23 (Littlefield). Dr. Littlefield, summarizing his conclusions based upon hundreds of hours of historical research from a wide variety of sources (including survey records, land patents, other government documents, and newspapers), stated: "From this wealth of information, covering the huge array of documentary sources, only one conclusion can be reached: The Upper Salt River and Tonto Creek were not navigable on or before February 14, 1912." Littlefield, supra, at 139.

4. The Upper Salt River from the 1870s to 1911

Additional evidence in support of a finding of **non-navigability** comes from the accounts of the Upper Salt River in the last few decades prior to statehood, including the early settlers' efforts to tame the river for irrigation purposes and the accounts of attempts by a few "daring adventurers"[5] to actually float boats on the river.

a. Water storage efforts

Much of the local community's energy during the period prior to statehood was focused toward building a water storage project, so that the landowners could "take control of

[5] See Fuller, supra, at 3-21 (quoting Arizona Gazette (June 5, 1885)).

the unpredictable waterway." See LeRoy, "Salt River Centennial," Phoenix Magazine 67 (February 2003) (EI 6). That water storage project, completed after decades of fits and starts, became the Salt River Federal Reclamation Project, one of the first Federal Reclamation projects undertaken after passage of the 1902 Reclamation Act:

> For Valley residents, the [completion of Roosevelt Dam] was the culmination of years of work and planning. The temperamental Salt River had vexed farmers with alternative floods and droughts. In February 1903, a group of local farmers hoped to turn the tide by forming the Salt River Valley Water Users' Association. They pledged more than 200,000 acres of their own land as collateral for a government loan to build the massive dam, which would control the river's erratic flow, generate electric power and provide a water reserve. The plan was called the Salt River Project.

Id.

Several things had to happen before the Federal Government could build Roosevelt Dam. See K. Smith, The Magnificent Experiment: Building the Salt River Reclamation Project, 1890-1917 72 (1986) (EI 16). First, a local entity needed to be created to contract with the Government on behalf of the landowners. The Salt River Valley Water Users' Association became that entity.

Second, the Government needed to obtain lumber to build the framework for the masonry dam. A sawmill was constructed in the Sierra Ancha Mountains, upstream from the dam site. See Smith, supra, at 72-73; see also E. Zarbin, Roosevelt Dam: A History to 1911 89 (1984) (EI 14). A road was constructed to cover the twenty-three miles from the sawmill to the dam: "The lumber road was, by necessity, the first piece of construction on the project; wood was needed for construction of the permanent camp, culverts, and bridges for the roads, tunnel timbering, and building forms for concrete structures." Smith, supra, at 73; see also Zarbin, supra, at 75. The historical record contains no mention of floating the timber downstream on the river. Rather, all of the timber was transported from the sawmill to the dam site using the lumber road. See Smith, supra, at 73; Zarbin, supra, at 75.

Third, the Government had to figure out a way to get workers and supplies from Phoenix to the dam site. See Fuller, supra, at 3-21 to 3-22 ("Lumber, bricks, lime, fuel oil, and other supplies had to be transported to the site."). "[N]o freight road existed from the construction site to Mesa . . . , and the road to Globe was treacherous, winding through several mountain ranges." See Smith, supra, at 73; Zarbin, supra, at 75. If the Upper Salt River had been navigable, it would have been an easy task to float barges or other vessels up the river to haul workers and supplies. Instead, the Government constructed the Apache Trail (initially known as the Roosevelt Road), a remote, twisting route from Mesa to Roosevelt, including a stretch of eleven miles "in very rough country known as Fish Creek Hill." Zarbin, supra, at 76; see also Smith, supra, at 75.[6]

Construction of the road required the work of at least 200 men and involved a "3,700-foot-long crossing over Tonto Creek and the removal of rock and other material eighteen to twenty miles, primarily by hand." Smith, supra, at 75; Zarbin, supra, at 77. These difficulties made construction of the road extremely expensive. The total cost of building the road was $350,644, in turn-of-the-century dollars.[7] Zarbin, supra, at 104; see also Smith, supra, at 76 (some portions of the road cost as much as $25,000 per mile). Still, no evidence exists in the record that the Government ever seriously considered transporting workers or supplies up the Salt River using water-borne vessels.[8]

Between 1903 and 1911, the Federal Government, with substantial assistance and participation from the local citizenry, constructed Roosevelt Dam—the largest stone masonry dam in the world—on the Upper Salt River. This Herculean undertaking required the transport of hundreds of men and many tons of supplies from Phoenix to the dam site.

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[6] Photographs of construction and early use of the Apache Trail appear in Zarbin, supra, at 91, 114, 133, and 146 and in Littlefield, supra, at 121-28.

[7] This amount is equivalent to more than $7 million in 2005 dollars. See U.S. Department of Labor, Bureau of Labor Statistics (www.bls.gov). This figure is particularly remarkable when one considers that the road was constructed primarily by Apache Indians working at relatively low wage rates. See Tr. at 127 (Littlefield).

[8] See also generally Tr. at 125-26 (Littlefield).

Despite the magnitude of the task and the presence of the Salt River running directly from Phoenix to the destination, the historical record contains no mention that the project participants ever used, attempted to use, or even talked about using the river as a means by which to transport the workers and supplies necessary to build the dam and related facilities.

b. Attempts to boat the river near statehood

That the Federal Government never attempted to use the Salt River to transport workers or materials from Phoenix to the Roosevelt Dam site during construction is perhaps not surprising when one considers the calamitous record of those few brave souls who actually did attempt to navigate the river between 1873 and 1910. Section 3 of Mr. Fuller's report discusses "at least eight accounts of attempts, successful or otherwise, to boat or transport goods down the Salt River between about 1873 and 1910." Fuller, supra, at 3-34 to 3-40. Those attempts are discussed in detail in Appendix A attached hereto. This scattered collection of boating expeditions on the river does not provide evidence that the Upper Salt River is "navigable" as defined in A.R.S. § 37-1101(5). To the contrary, these eight accounts not only are insufficient to satisfy the navigability proponents' burden of proof under A.R.S. § 37-1128(A), they are persuasive evidence that the river was **non-navigable**, for several reasons.

First, the accounts of attempted boating consist entirely of anecdotal evidence from local newspaper articles. These articles do not provide a sufficient basis to support a finding of navigability. For example, the only documentation for one trip, which purportedly occurred sometime in 1883 (Account No. 2), is what appears to be an obituary of one of the participants written twenty-six years later, in 1909. See Fuller, supra, at 3-35 to 3-36. Another attempt that is said to have occurred in June 1885 (Account No. 4) is mentioned in several newspaper articles, one of which states that "the fish were so thick that the boat floated on their backs." Id. An alleged episode of floating some form of timber down the river, which occurred in either 1890 or 1891 (Account No. 6), is based upon a modern-day historian's recollection of a newspaper article he **thinks he recalls seeing,** but no such article has ever been located. See

Appendix A. The evidentiary basis for each of these eight "attempts" is shaky, to say the least.[9]

Second, and perhaps more important, the eight accounts of attempted boating on the river are so full of mishaps and misery that they themselves prove that the river was not used or susceptible to being used as a "highway for commerce." On at least two of the trips (Accounts Nos. 1 and 4), the boats were capsized and the parties lost all or nearly all of their supplies. See Appendix A. Two of the participants (in Accounts Nos. 5 and 7) are known to have died as a result of their boating adventures. Id. In other instances (Accounts Nos. 4 and 8), the boats were destroyed or badly damaged. Id.

Third, the only recorded opinions on navigability by the participants themselves show that the river was not suitable as a "highway for commerce." As discussed above, Charles Hayden and the other participants in a June 1873 trip to float logs down the Salt River to Tempe (Account No. 1), the only known actual attempt to float logs on the river, "pronounce[d] the scheme a failure." Id.[10] Two men who apparently managed to survive an adventurous trip from Roosevelt Dam to Granite Reef Dam in 1910 (Account No. 8) concluded after the voyage that they had "no serious intention of attempting to go into competition with the stage company." Id.

These eight anecdotal accounts of boating on the river over the course of thirty-seven years are not sufficient to satisfy the burden of proof for navigability and, in fact, they prove just the opposite. People generally met with disastrous consequences, with some people dying, others losing their supplies, and virtually all of them encountering steep narrow

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[9] These newspaper reports must also be considered in the context of the nature of 19th century Western newspapers, which often acted not only as reporters of news but also as "boosters" for the local community in an effort to attract settlers to growing towns. See Littlefield, supra, at 100-01; Tr. at 124 (Littlefield). These early newspapers had substantial incentive to exaggerate the benefits of their local communities. See Littlefield, supra, at 100; see also Fuller, supra, at 3-34 (referring to Account No. 3, wherein the newspaper promoted the Salt River as a candidate for federal funding under the Rivers and Harbors Act).

[10] See also id. at 23 (Gilpin) ("In the first instance, which was the Hayden experiment, they were unsuccessful.").

canyons and dangerous rapids. These ill-fated attempts show that the Upper Salt River is not and never has been "navigable."

c. Commercial operations near the river

The river's lack of susceptibility to navigation is further evidenced by the pre-statehood commercial operations on the banks of the river that could have benefited greatly from a direct water route to the Phoenix area. Despite this substantial potential benefit, no evidence exists that any of these commercial entities ever used the Upper Salt River as a "highway for commerce."

For example, Mr. Fuller reports that King Woolsey operated a salt works on the banks of the river in the 1870s. See Fuller, supra, at 3-15; Tr. at 30-31 (Gilpin). The river would have provided a direct water route to Phoenix if it had been navigable, but all evidence indicates that Woolsey instead had to pack the loads of heavy salt out of the Salt River Canyon by land. See Fuller, supra, at 3-15; Tr. at 30-31 (Gilpin).

Similarly, Mr. Fuller's report notes that the completion of the Apache Trail in 1906 was an important event for the residents of Globe, giving them "a much shorter wagon route to Phoenix than the existing road over the Pinal Mountains." Fuller, supra, at 3-33. Substantial pre-statehood mining activities occurred in the "Globe Mining District," which stretched from the Upper Salt River to the Gila River. See id. at Appendix A (Historical Maps of the Upper Salt River). By the early 1900s, Phoenix was a center of population and a transportation hub. Still, although the Upper Salt River constituted a direct route from the Globe Mining District to Phoenix, no evidence exists that any miner ever succeeded in (or even attempted) transporting ore down the river on water. See Tr. at 35-36 (Gilpin).

5. Post-statehood use of the river

In his report, Mr. Fuller states: "By 1912, use of boats on the river had declined, but was still possible during most years, a condition which persists today." Fuller, supra, at 4. The fact that post-statehood boating on the river represented a "decline" from the pre-statehood activity (which consisted of eight largely unsuccessful attempts over the course of

thirty-seven years) shows the paucity of boating on the river in general. Furthermore, that the best the Land Department's consultant can say is that boating is "still possible during most years" speaks volumes about the river's susceptibility for use as a "highway for commerce."

Although some modern-day boating occurs on the Upper Salt River, the vast majority of this takes place upstream from Roosevelt Dam. As Mr. Fuller noted in his report, boating below Roosevelt is neither recommended nor regularly undertaken. See id. at 3-39 to 3-40. The stretch of the river between Stewart Mountain Dam and Granite Reef Dam attracts visitors using inner tubes. Id. at 3-40. The flows in this stretch of the river are, however, largely dependent upon releases from the man-made reservoirs upstream. See id. at 5-3 (referring to "Reach 3"); Tr. at 23, 49-50 (Fuller). In addition, no evidence in the record suggests that this lower stretch of the river can support travel by any boats (as opposed to floating on your backside on a rubber tube). See Fuller, supra, at 3-40; Tr. at 23 (Fuller).

Boating upstream of Roosevelt Dam is sporadic at best, and largely consists of thrill-seekers looking for a white-water adventure.[11] "The 48 miles of river upstream from Roosevelt Lake . . . is known nation-wide as a first-class whitewater river." U.S. Forest Service, Evaluation of Navigability at the Time of Statehood: Salt River 2 (January 1998) (EI 8) ("USFS"). The same braided channel and bedrock outcroppings that make commercial transport difficult also make the river attractive to kayakers and others. "The gradient of the river is one of the reasons for the wild ride encountered by today's boaters." Id. at 2-3. Even this recreational activity occurs only under certain flow conditions that exist only in limited portions of normal years, and some years exist in which the flows never reach the minimum acceptable level even for these types of activities. See Tr. at 19, 21 (Fuller).

The presence of impediments to navigation, even for "daring adventurers," is further buttressed by the 1993 conviction of eight men who used explosives to alter the rapids at Quartzsite Falls, located above the mouth of Cherry Creek. See Fuller, supra, at 3-40; Tr. at

[11] See Tr. at 19 (Fuller) ("The rafters are after the big water, it's the most fun, the people have the biggest thrill ride for."); see also id. at 48-49 (Fuller).

50. The obvious purpose of this action was to attempt to clear the river of rocks, rapids, and other obstructions that made the river not susceptible to even the most basic and risky boating efforts. See Fuller, supra, at 3-40; see also Tr. at 50 (Fuller) ("They were frustrated with the tie-ups at that point."). Prior to this destruction, "[e]ven with modern technology, boaters routinely portaged around this rapid. Such portages took two to four hours, even when traveling light." USFS, supra, at 3-4.[12]

In the prior proceedings before this Commission regarding the navigability of the Lower Salt River, Mr. Fuller stated that "modern boat use on the river does not provide proof of susceptibility of a stream to navigation at statehood."[13] Although that statement does not appear in Mr. Fuller's report on the Upper Salt River, it is consistent with the conclusion in the report submitted by the Forest Service: "River-runners today, with their high-tech equipment and improved techniques, simply cannot be compared with the situation in 1912; to do so would be like comparing a delicate, bruise-prone apple with a thick-skinned, practically indestructible orange." USFS, supra, at 7.[14]

Nothing in the historical record before this Commission indicates that the Upper Salt River was used or susceptible to being used as a "highway for commerce" at statehood, or at any time before or after statehood. In fact, every piece of historical evidence (from the archaeological information to the records of the early explorers and the accounts of actual

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[12] "Even though Quartzsite Falls would have been the most dangerous rapid encountered in 1912, there are many others which would have been extremely dangerous to someone attempting sustained trade and travel." USFS, supra, at 4.

[13] See JE Fuller/Hydrogeology & Geomorphology, Inc., Arizona Stream Navigability Study for the Salt River: Granite Reef Dam to the Gila River Confluence 8-4 (Sept. 1996); see also Reporter's Transcript of Proceedings, Lower Salt River, at 69 (April 7, 2003).

[14] See also Harrison v. Fite, 148 F. 781, 785-86 (8th Cir. 1906); Toledo Liberal Shooting Club v. Erie Shooting Club, 90 F. 680, 682-83 (6th Cir. 1898); United States v. Crow, Pope & Land Enters., Inc., 340 F. Supp. 25, 32 (N.D. Ga. 1972), appeal dismissed, 474 F.2d 200 (5th Cir. 1973); Hannigan v. New York, 629 N.Y. Supp. 2d 509, 512 (1995); State v. Brace, 36 N.W.2d 330, 333-34 (N.D. 1949); Taylor Fishing Club v. Hammett, 88 S.W.2d 127, 129-30 (Tex. 1935); Webb v. Board of Comm'rs of Neosho County, 257 P. 966, 967 (Kan. 1927).

attempts to boat the river around statehood) shows that the river is and always has been non-navigable.

B. Climate, Hydrology, and Geomorphology of the Upper Salt River

The other evidence presented to the Commission is similarly insufficient to constitute a "preponderance of the evidence" in favor of navigability. All of the climatic evidence indicates that the desert climate provided for brief, violent periods of precipitation and runoff, rather than the type of weather that would produce a particularly large or regularly flowing stream. The hydrologic evidence, which is limited in degree, shows that the river was erratic and never included sufficient flows to support a "highway for commerce." The geomorphic evidence shows that the river was braided in long reaches and also contained bedrock controls, including numerous rapids, that would be impediments to navigation.

As anyone who has lived in central Arizona for any period of time is aware, precipitation in the Salt River Valley and the adjoining watersheds "occurs during two major seasons: in late summer as intense, localized orographic thunderstorms; and in winter as large-scale cyclonic storms which originate over the Pacific Ocean." Fuller, supra, at 4-4.[15] This weather pattern is reflected in the data relating to the monthly average flows of the river. In Table 14 of his report, Mr. Fuller summed gauge data on the Upper Salt River at Roosevelt and the Verde River at Tangle Creek to yield an estimated combined flow number at the confluence of the Salt and Verde Rivers (near the lower end of the reach at issue in this proceeding). See Fuller, supra, at 5-18. That data shows a variation in monthly average flows from 3,420 cubic-feet per second ("cfs") in March to 501 cfs in June. See id. These variable flows reflect the erratic nature of the Upper Salt River, even on an average basis.

The hydrologic information submitted to the Commission is no more supportive of a finding of navigability than is the climate data. There were few stream gauge records available for this reach of the river at or before statehood. See Fuller, at 5-18. No flow

[15] "Orographic" refers to the fact that the storms are "associated with or induced by the presence of mountains." Webster's New Collegiate Dictionary 810 (1977).

records exist for the actual day of statehood—February 14, 1912. See id. at 5-14.[16] Due to this almost complete lack of any real data, what Mr. Fuller did was to add the Upper Salt and Verde figures discussed above and arrive at an **estimate** of average annual flow on the Upper Salt River below its confluence with the Verde. See id. at 5-18 (Table 14).

Knowing the average annual flow of a river is of dubious value in determining whether that river is or was "navigable," however. The average annual flow data is skewed due to high flood volumes relative to "typical" flow rates. For instance, a flow of 285,000 cubic-feet per second ("cfs") occurred during a flood in 1891 (one of the years a modern-day historian thinks he recalls seeing an article about floating timber down the river). See Fuller, supra, at 3-36. If that flood had lasted for only two days, the average annual flow for the entire year 1891 would have been 1,561.5 (117 cfs more than the actual annual average)—**even** if there had been absolutely no flow whatsoever for any of the other 363 days that year. It should be beyond dispute that the Upper Salt River cannot act as a "highway for commerce" during a flood flow of 285,000 cfs. It is likewise indisputable that the river cannot be navigated with 363 days of no flow. Knowing the average annual flow of an erratic stream like the Upper Salt River provides little information about whether that river is or ever was navigable.[17]

Even if the Commission finds the "average annual flow" information to be important, that information does not support a finding of navigability. A document compiled and submitted by SRP, Information Regarding Navigability of Selected U.S. Watercourses (April 2003) (EI 17) ("Watercourse Information"), contains information on every federal or state court decision SRP could locate in which the "navigability" of a river was actually determined using the Daniel Ball test. Appendix B attached hereto summarizes the annual mean (average) flow information, compiled by the United States Geological Survey, for each of the twenty-one watercourses discussed in that document.

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[16] It is known, however, that the month of February 1912 "was unusually dry." See Fuller, supra, at 5-13.

[17] Knowing (or estimating) the "average depth" of a river is likewise of limited value to determining whether it was "navigable." See Tr. at 60-61 (Fuller).

Mr. Fuller estimated the average annual flow of the Upper Salt River, without considering the presence of any dams or diversion structures, at 1,445 cfs. See Fuller, supra, at 5-18 (Table 14). Four of the twenty-one watercourses listed in Appendix B have been found "navigable," in whole or in part, by a state or federal court. Of those four "navigable" watercourses, the lowest annual average flow is 2,277 cfs—for the Great Miami River in Ohio, which was found navigable in part and non-navigable in part. See Appendix B. The other three "navigable" watercourses had average annual flow rates of 7,316 cfs (the Colorado River in Utah), 6,930 cfs (the Green River in Utah), and 4,066 cfs (the McKenzie River in Oregon). Id. Five rivers that courts have specifically determined to be non-navigable (the Arkansas River in Oklahoma, the Chattahoochee River in Georgia, the Little River in Arkansas, the Neosho River in Kansas, and the Red River on the border between Oklahoma and Texas) have average annual flow rates higher than Mr. Fuller's estimated 1,445 cfs. See Appendix B; Watercourse Information, supra.[18] The hydrologic evidence in the record does not support a finding of navigability for the Upper Salt River.

The geomorphic evidence in the record also refutes, rather than supports, a finding of navigability. Substantial portions of the river consist of a braided channel, which is associated with sand bars and other impediments to navigation. See Schumm, Geomorphic Character of the Upper Salt River 1, 3-4, 9, 12 (January 2005) (EI 28) ("Schumm"). Geomorphologist Dr. Stanley Schumm stated, for example, that "many bedrock controls, including 18 rapids and steep gradients ranging from 17 to 31 feet per mile," exist in the river between Roosevelt Lake and the Highway 60 bridge. Id. at 2. Dr. Schumm opined: "Clearly, the bedrock controls along the Upper Salt River prohibit navigation." Id.; see also id. at 5-8, 12; Tr. at 83-89 (Schumm).

[18] The Rio Grande in New Mexico, which the United States Supreme Court determined to be non-navigable in 1899 before any major water storage or diversion facilities were constructed, has an average annual flow of 1,513 cfs. See Appendix B; Watercourse Information, supra, Tab 17; United States v. Rio Grande Dam & Irr. Co., 174 U.S. 690 (1899).

Mr. Fuller reached a similar conclusion regarding the geomorphology of the Upper Salt River in his report:

> Review of the geology of the Upper Salt River indicates that the channel geomorphology is substantially unchanged from its condition at or before statehood, except where the river has been inundated by reservoir impoundments. Most of the Upper Salt River is formed in bedrock canyons. Bedrock along the channel margins in these canyons precludes significant movement of the river channel or other channel changes. In addition, the bedrock geology of the Upper Salt River made access to the river difficult during the period around statehood, prevented development of extensive irrigation systems, and prevented the development of large population centers near the river. Bedrock outcrops in the channel created waterfalls, rapids, and narrow canyons which may have been potential impediments to navigation for some types of boats such as keel boats, steamboats and powered barges.

Fuller, supra, at 4-15.[19]

Large floods on the Upper Salt River prior to statehood created a wide-braided channel, especially in the lower portions of the river. The upstream canyon reaches of the river are "very steep and rapids are frequent." See Schumm, supra, at 12. "These conditions make navigation impossible." Id.

C. Prior Judicial Opinions Regarding Navigability of the Salt River

This Commission is only the most recent of several adjudicatory bodies that have been required to consider whether some or all of the Salt River was navigable. At least three courts have previously stated that the river was **not** navigable on or before February 14, 1912.[20]

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[19] See also Fuller, supra, at 4-10 ("Historical accounts of boating the Upper Salt River describe the waterfalls and rapids, and sheer canyon reaches that lacked beaches or bars on which to land."); id. at 5-6 ("Within the Upper Salt River study reach, the river is located almost entirely within steep bedrock canyons.").

[20] These three judicial decisions are in addition to the Commission's own finding that the Lower Salt River was non-navigable.

1. Wormser v. Salt River Valley Canal Co. (Kibbey Decree)

The first decision regarding the navigability of the Salt River was issued by Judge Joseph H. Kibbey of the Territorial District Court in 1892.[21] That suit was initiated by downstream water users and canal companies against upstream appropriators. See generally Kibbey Decree, supra, at 1-5. The court characterized the plaintiffs' complaint as follows: "[The plaintiffs] filed their complaint in this court against the Arizona canal company, alleging that the Salt River is a natural **unnavigable** stream rising in the mountains in the eastern part of the territory and running thence in a westerly direction to its junction with the Gila River in Maricopa County." Kibbey Decree, supra, at 4-5 (emphasis added); see also Tr. at 108 (Littlefield).

In ruling on the water rights at issue in that case, Judge Kibbey relied upon the 1864 "Howell Code" and the Desert Land Act of 1877. Judge Kibbey decided that territorial law applied and went on to apply that law to the water rights dispute. See Kibbey Decree, supra.

A finding of non-navigability was necessary to Judge Kibbey's decision in that case. When the case was decided in 1892, the United States retained control over all navigable streams. See generally Federal Power Comm'n v. Oregon, 349 U.S. 435, 454 n.2 (1955). Had the river been navigable, it is much less clear that Judge Kibbey would (or could) have applied the territorial law of prior appropriation. Judge Kibbey found, however, that because the Salt River was "unnavigable," territorial law applied.

2. Hurley v. Abbott (Kent Decree)

The Kibbey Decree set forth the rights to water from the Salt River as between the various canal companies, but Judge Kibbey did not "attempt to define the rights of individual irrigators." Kibbey Decree, supra, at 74. Events subsequent to the issuance of the Kibbey

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[21] Wormser v. Salt River Valley Canal Co., No. 708, Second Judicial District, Territory of Arizona, County of Maricopa (March 31, 1892) ("Kibbey Decree"). A copy of the Kibbey and Kent Decrees was submitted to the Commission as part of SRP's Motion to Dismiss filed on January 14, 1994, and resubmitted on August 27, 1996 and on October 17, 2005 (EI 31, 32). SRP incorporates by reference herein the facts presented in its 1994 Motion to Dismiss.

Decree, including the pending development of the Salt River Federal Reclamation Project, made it necessary that rights be established as between individual appropriators and not just between the canal companies. The determination of these individual rights was set forth in the 1910 Kent Decree.[22]

In determining the rights of individual appropriators, Judge Kent relied heavily on the legal rules set forth in the Kibbey Decree. Judge Kent expressly stated that the river was a **"non-navigable stream"** and, therefore, applied territorial prior appropriation law. Id. at 3. The finding of non-navigability was essential to the adjudication of water rights in the Kent Decree, as it was in the Kibbey Decree, because it determined what law applied. See also Tr. at 108 (Littlefield).

3. SRPMIC v. Arizona Sand & Rock Co.

A more recent court decision addressed the navigability of the Salt River. See Salt River Pima-Maricopa Indian Community v. Arizona Sand & Rock Co., D. Ariz. (April 13, 1977) (Cause No. CIV 72-376-PHX) ("SRPMIC"). In 1972, the Salt River Pima-Maricopa Indian Community filed an action in federal court to eject certain defendants from lands claimed to be part of the Salt River Indian Reservation. A portion of the lands in dispute was situated within the banks of the river just below Granite Reef Dam. SRP and the State were parties to that consolidated action.

The State initially argued that it held title to the disputed lands because the river was navigable and the State owned its bed. In the final judgment, the court held that the title to the lands was vested in the United States, not the State of Arizona. The court based its finding upon its conclusion that "[t]he Salt River is not now [1977] and never has been a navigable river."

Because the SRPMIC litigation involved title as between the United States and the State of Arizona, the issue of navigability as of February 14, 1912, was important to the

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[22] Hurley v. Abbott, No. 4564, Third Judicial District, Territory of Arizona, County of Maricopa (March 1, 1910) (EI 31).

court's decision. The court's finding was based upon the conclusion that the river was not navigable.

IV. LEGAL ARGUMENT

The Commission must review all of the evidence and determine whether the Upper Salt River was "navigable" on February 14, 1912. SRP submits that, although the task of reviewing the evidence is perhaps time-consuming and tedious, making the actual decision should be easy. No evidence supports a finding that the Upper Salt River is or ever was used or susceptible to being used as a "highway for commerce."

A. Based upon the Evidence in the Record, the Upper Salt River is Not "Navigable" as Defined in A.R.S. § 37-1101(5).

In its 2001 decision in Defenders of Wildlife v. Hull, the Arizona Court of Appeals stated that "all evidence should be examined during navigability determinations and no relevant facts should be excluded." 199 Ariz. at 425, 18 P.3d at 736.[23] "[A] river is navigable in law when it is navigable in fact." Muckleshoot Indian Tribe v. FERC, 993 F.2d 1428, 1431 (9th Cir. 1993). Thus, the Commission must consider all of the evidence in the record before it. SRP submits that, when the Commission reviews the evidence submitted at and before the two hearings, and considers the totality of that evidence, it must determine that the Upper Salt River never has been used or susceptible to being used as a "highway for commerce,"

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[23] It is important to note the procedural posture of the Court of Appeals' decision in Hull. That court **did not** decide whether any particular watercourse was navigable. See 199 Ariz. at 430, 18 P.3d 741 (Thompson, J., concurring in part, dissenting in part). Rather, the court was faced with deciding the constitutionality of the 1994 statute, which contained a variety of presumptions and evidentiary exclusions. The court considered each of the provisions of the 1994 statute as though it was an all-or-nothing proposition. For example, the Court stated: "[W]e conclude that a mandatory finding of non-navigability for watercourses that flow in direct response to precipitation, **although such a fact may be probative**, is contradictory to the *Daniel Ball* test." Id. at 422, 18 P.3d at 733 (emphasis added). The court determined that the provisions of Section 37-1128 in effect under the 1994 statute created a "one strike and you're out" test. The court found that these individual restrictions did not comply with the federal standard. The court recognized, however, that the Commission could and should consider most (if not all) of the factors contained in those statutes as part of the totality of the evidence in determining navigability. See id. at 425, 18 P.3d at 736. The Legislature simply could not require that each watercourse satisfy **all** of the factors in order to be navigable.

regardless of how the Commission interprets the particular legal details of the test for "navigability."

1. The Upper Salt River has never actually been used as a "highway for commerce."

A watercourse can meet the test for "navigability" under the Arizona statute and the case law if it satisfies either of two elements: (1) If it was actually used as a "highway for commerce," or (2) if it was "susceptible to being used" as a "highway for commerce." See A.R.S. § 37-1101(5).

It is beyond reasonable dispute that the Upper Salt River has never been actually used as a "highway for commerce." No evidence exists of any prehistoric boating or flotation of logs on the river. See Section III(A)(4), supra. Likewise, no evidence exists that the early explorers or soldiers in the Salt River Valley, who traveled through the area on several occasions, ever used the river—for "commerce" or otherwise. See Section III(A)(2), supra. No credible evidence exists in the record that any successful "tie drive" or any other effort to float logs or timber down the river was ever conducted on the Upper Salt River. See Section III(A)(4), supra. The evidence of the eight accounts of attempted boating on the river between 1873 and 1910, discussed in detail in Appendix A, does not establish that the river was used for any type of regular (or even periodic) trade or transportation during the period immediately before and at statehood. See id.[24] Any adventurous attempts to float boats on the river since 1911 have been sporadic, recreational, and almost uniformly unsuccessful (and, at times, disastrous). See Section III(A)(5), supra.[25]

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[24] See also Tr. at 16 (Gilpin) ("It is very clear from many of these accounts that people themselves regarded their trip down the Salt as an experimental sort of thing.").

[25] Even the Land Department's hydrologist conceded that the river "in its ordinary and natural condition is not suitable" for navigation such as "hauling cattle or hauling salt from the salt mines." Tr. at 145 (Fuller).

2. The Upper Salt River has never been "susceptible to being used" as a "highway for commerce."

Because it is abundantly clear that the river was never actually used as a "highway for commerce," the only way it can be considered navigable is if it was "susceptible" to such use. No evidence exists in the record to show that the river, in any condition at any time, was capable of acting as "a corridor or conduit within which the exchange of goods, commodities or property or the transportation of persons may be conducted." A.R.S § 37-1101(3) (defining "highway for commerce").

Although the river existed in close proximity to much of the exploration and settlement in early Arizona, it was never used for any type of trade or transportation. In order for the Commission to determine that the river was "susceptible to being used . . . as a highway for commerce," it must find that the prehistoric inhabitants, the early explorers, the soldiers at Fort McDowell, Mr. Woolsey who operated a salt works on the banks of the river, the miners in Globe, and thousands of citizens who resided in the general area prior to statehood simply failed to comprehend the potential usefulness of the river as an avenue for navigation. No evidence exists to support such a finding.

It might be theoretically possible that, on one or more occasions in particular years, it would have been feasible for a person to boat or float logs down some portion of the river. Occasional use in exceptional times does not, however, support a finding of navigability. "The mere fact that a river will occasionally float logs, poles, and rafts downstream in times of high water does not make the river navigable." Crow, Pope & Land, 340 F. Supp. at 32 (citing Rio Grande Dam, 174 U.S. at 690). "The waterway must be susceptible for use as a channel of useful commerce and not merely capable of exceptional transportation during periods of high water." Id. (citing Brewer-Elliott Oil & Gas Co. v. United States, 260 U.S. 77 (1922)).[26]

[26] See also United States v. Harrell, 926 F.2d 1036, 1040 (11th Cir. 1991) ("susceptibility of use as a highway for commerce should not be confined to 'exceptional conditions or short periods of temporary high water'") (quoting United States v. Utah, 283 U.S. 64, 87 (1931)).

Perhaps the best evidence that the river was not "susceptible to being used" for navigation at or before statehood are the accounts of those "daring adventurers" who actually tried to use the river for that purpose. See Section III(A)(4), supra; Appendix A. The record of those eight accounts of attempted boating is replete with evidence of "much toil and difficulty" and "great hardships." See, e.g., Appendix A (Accounts Nos. 1, 4, and 8). Those who actually tried to boat the river "pronounce[d] the scheme a failure" and stated that they had "no serious intention of attempting to go into competition with the stage company." See id. (Accounts Nos. 1 and 8). The Commission can be certain that the river was not "susceptible to being used" for navigation because several individuals tried it and failed.

B. The Commission Should Not Find that Roosevelt Lake is a "Navigable Watercourse."

SRP submits that the Commission should not find that Roosevelt Lake is a "navigable watercourse" as defined in A.R.S. § 37-1101(5), for two reasons. First, because the lake is a "man-made water conveyance system" under A.R.S. § 37-1101(4), it is excluded from the definition of watercourse in Section 37-1101(11). Second, even if Commission proceeds to the substantive issue of determining the lake's navigability, it should find the lake non-navigable.

1. The Commission lacks subject matter jurisdiction to determine the navigability of Roosevelt Lake because it does not meet the statutory definition of a "watercourse."

On September 15, 2005, SRP filed a motion with this Commission, requesting that the Commission find that it lacks statutory subject matter jurisdiction to determine the navigability of Roosevelt Lake or any of the former stream reaches lying thereunder, because they had become part of a "man-made water conveyance system" prior to February 14, 1912. See A.R.S. § 37-1101(4), (11). Although the State Land Department submitted a response disagreeing with SRP regarding the portions of the former streams lying beneath the lake, no party disputed SRP's contention that the lake bed itself (except for, perhaps, the former streambeds) was not within this Commission's jurisdiction. For the reasons set forth in SRP's

motion (which is incorporated herein by this reference), the Commission should refrain from making a determination of whether the lake itself was "navigable" on February 14, 1912.

2. If the Commission reaches the substantive issue of whether Roosevelt Lake is "navigable," it should determine that the lake is not "navigable" as defined by A.R.S. § 37-1101(5).

Roosevelt Lake is a man-made reservoir that was constructed by the United States pursuant to the 1902 Reclamation Act. Prior to construction, the United States acquired title to the land that would be inundated by the reservoir. See Various deeds and other documents relating to the United States' acquisition of the site for Roosevelt Lake in the early 1900s (EI 30); see also Fuller, supra, at 3-17 to 3-21 (discussing the Federal Government's acquisition of the community of Catalpa and other nearby farms and ranches); Tr. at 31-32 (Gilpin). The express congressional purpose of this acquisition and construction was to create a reservoir for water storage purposes, not for navigation.

The lake is not a "navigable watercourse" as defined in A.R.S. § 37-1101(5). In addition to not satisfying the definition of "watercourse" under Section 37-1101(11) as discussed above, the lake does not meet the definition of "navigable" under Section 37-1101(5) because, in its "ordinary and natural condition," the lake does not exist. The lake is not a "natural" feature; it is an artificial reservoir created by the efforts of the United States Bureau of Reclamation.

Furthermore, the "federal test," which is set forth in Section 37-1101(5), requires that the watercourse be useful as a "highway for commerce." In other words, the watercourse has

to be capable of being used for getting goods or people from somewhere to somewhere else.[27] Roosevelt Lake is a man-made reservoir located in the middle of a national forest. If someone were to traverse the entire lake in a boat, she would not be significantly closer to getting to another location than she would have been by driving or walking around the outside of the lake. Roosevelt Lake is not used or susceptible to being used as a "highway for commerce," so it is not "navigable" under the federal test or the Arizona statute.

V. SUMMARY AND REQUESTED ACTION

The Commission should find the Upper Salt River "non-navigable." Nothing in the record supports a finding that the river is, was at statehood, or ever has been used or susceptible to being used as a "highway for commerce."

The Commission should refrain from addressing the navigability of Roosevelt Lake in this proceeding. If it does reach that substantive issue, it should determine that the lake itself is "non-navigable."

DATED this 9th day of December, 2005.

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

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[27] See State v. Adams, 89 N.W.2d 661, 676 (Minn. 1958), cert. denied, 358 U.S. 826 (1958) ("The beginning and the end of a highway [for commerce] must be such that useful commerce would naturally go between them."); Taylor Fishing Club, 88 S.W.2d at 130 ("While Stanmire Lake is large enough to float a boat, it is not wide enough or long enough to provide a practical route for the transportation of commodities in any direction and does not connect any points between which it would be useful as a practical route for navigation.") (finding lake non-navigable); cf. Lykes Bros., Inc. v. Corps of Eng'rs, 821 F. Supp. 1457, 1463 (M.D. Fla. 1993), aff'd, 64 F.3d 630 (11th Cir. 1995) (to be considerable "navigable," a waterway "must be able to sustain commercial navigation on a predictable and reliable basis.").

ORIGINAL AND SIX COPIES of the foregoing, with attachments, hand-delivered for filing this 9th day of December, 2005 to:

Arizona Navigable Stream Adjudication Commission
1700 West Washington, Suite 304
Phoenix, AZ 85007

AND COPY, with attachments, mailed this 9th day of December, 2005 to:

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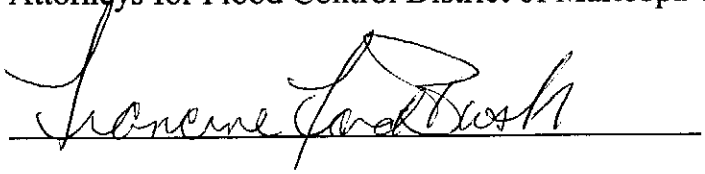

APPENDIX A

APPENDIX A

INFORMATION ON "AT LEAST EIGHT ACCOUNTS OF ATTEMPTS, SUCCESSFUL OR OTHERWISE, TO BOAT OR TO TRANSPORT GOODS DOWN THE SALT RIVER BETWEEN 1873 AND 1910"[1]

1. **June 1873:** Charles Hayden and others attempted to float logs down the river to establish a lumber mill at Tempe. The trip involved "much toil and difficulty," and the Hayden party itself "pronounce[d] the scheme a failure." The group "lost their arms, ammunition and provisions, excepting flour." At one point, they came to a canyon so narrow that a log could not pass through it. Eventually, they "were compelled to abandon their boat and foot it." See Fuller, supra, at 3-34; see also Tr. at 12 (Gilpin) ("We don't know what his starting point was, but he did try to get them all the way down to Phoenix, and of course they got hung up in the box canyons."); see also id. at 36-37 (Gilpin).

2. **1883:** What appears to be Mr. Jim Meadows' obituary in 1909 states that Mr. Meadows and three other men floated the river from near present-day Roosevelt Dam to Tempe in 1883. See Tr. at 38 (Gilpin). No contemporaneous report of this voyage has been located. The 1909 article recounts navigational difficulties that the crew experienced. Nothing in the 1909 article indicates what time of year this trip took place (if it did take place) or whether it occurred during a flood. A substantial possibility exists that this 1909 article is a belated account of the June 1885 trip discussed in Paragraph 4. Jim Meadows (or Meaders) is involved in both accounts. The described length of the trip (Livingstone to Tempe vs. "4 miles above Tonto Creek confluence" to Phoenix) is roughly the same. See Fuller, supra, at 3-34; Tr. at 38-41 (Gilpin).

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[1] JE Fuller/Hydrology & Geomorphology, Inc., Arizona Stream Navigability Study for the Salt River: Granite Reef Dam to the Confluence of the White and Black Rivers, 3-34 to 3-40 (revised June 2003) (EI 27) ("Fuller").

3. **February 1883:** A local newspaper article states that the "Salt River is a navigable stream and should be included in the river and harbor appropriation." The river was not, however, included in any appropriation under the Rivers and Harbors Act. See Tr. at 41 (Gilpin). The same 1883 article reports on a purported trip from McDowell to a pier on the Salt River Valley Canal. The trip was reportedly made in a "canvas skiff." See Fuller, supra, at 3-34; Tr. at 41 (Gilpin). This trip apparently occurred in February, which, according to Mr. Fuller, is typically a month of high runoff. See Fuller, supra, at 5-18 (Table 14 shows average February runoff at 2,240 cubic feet per second, the third-highest month of the year.). Mr. Fuller's report also notes that a major flood occurred in 1883. See Fuller, supra, at 3-29.

4. **June 1885:** Five men attempted to float a boat on the river as an experiment to see if logs could be successfully floated down the river. The article refers to the Salt River Canyon as one "through which a boat was never known to pass." "The rapids with numerous projecting boulders [made] the trip a hazardous one," and, "on one occasion, they were wrecked, losing provisions, fire arms, etc." An article published on June 6 states: "The boat on one occasion shot under a cave, but a few feet high, and where its inmates commenced to fear that the end had come." Nothing in any of the newspaper articles suggests that these individuals actually floated logs down the river, as opposed to simply trying to float a boat and investigate whether logs could be floated. A substantial possibility exists that this is the same trip described in the 1909 obituary discussed in Paragraph 2 above. See Fuller, supra, at 3-35 to 3-36; Tr. at 45 (Fuller).

5. **December 1888:** Two soldiers from Fort McDowell tried to float a canoe on the Verde and Salt Rivers to Phoenix. One of the soldiers was killed when he accidentally shot himself while lifting the boat over a dam. See Fuller, supra, at 3-35; Tr. at 43-44 (Fuller). This trip apparently occurred in December, which, according to Mr. Fuller, is typically a month of high runoff. See Fuller, supra, at 5-18 (Table 14 shows average December runoff at 1,589 cubic feet per second.); Tr. at 44 (Fuller).

6. **1890 or 1891:** A modern-day historian thinks he remembers seeing a newspaper article from 1890 or 1891, indicating that logs or sawn timber from Fort McDowell were floated down the Verde River to be used in constructing headgates for the Consolidated Canal. No such article has ever been found. See Tr. at 13-14 (Gilpin) (describing this account as "not nearly as well documented" as others and "one of the least reliable accounts"); see also id. at 24 (Gilpin). Even the historian's recollection, as described in Mr. Fuller's report, does not indicate that the timber was actually floated on the Salt (as opposed to the Verde) River. Furthermore, even if this recollection were correct and documented, nothing exists in the record to show that this event did not occur during the major flood in 1890 (143,288 cfs on February 22, 1890) or 1891 (258,000 cfs in February 1891). See Fuller, supra, at 3-36; id. at 5-25 (Table 18 shows 143,288 cfs flood in 1890 and 285,000 cfs flood in 1891); Tr. at 45 (Fuller).

7. **1908:** George Greenwald was drowned while rafting down the Salt River toward Roosevelt Dam. The newspaper article describing this death gives no indication of where Mr. Greenwald started or how long the trip was. The article states that Mr. Greenwald was drowned after his raft was swept away by "rushing current" and tipped over. The article further states that the "reservoir had begun to fill during the February floods of that year." This trip, or at least the newspaper account of it, also occurred in February. See Fuller, supra, at 3-38; Tr. at 45-46 (Fuller). February is, according to Mr. Fuller, typically a month of high runoff. See Fuller, supra, at 5-18 (Table 14 shows average February runoff at 2,420 cubic feet per second, the third-highest of any month).

8. **June 1910:** Roy Thorpe and James Crawford reportedly took a rowboat from Roosevelt Dam to Granite Reef Dam, and then to Mesa via the South Canal. The record is replete with evidence that this was not a successful boating trip: "The row boat which was used throughout the journey was in a very dilapidated condition at the end of the trip. Before the start was made three bottoms had been placed in the craft and one of these bottoms had been worn through by the constant friction of the boulders and sands

found in shallow waters." On several occasions, "the men were compelled to lift their craft from the water and carry it over obstacles and at other times to haul it along the stands." The newspaper article reporting on their adventure expressly states that they "have no serious intention of attempting to go into competition with the stage company." See Fuller, supra, at 3-37; Tr. at 46-48 (Fuller).

APPENDIX B

APPENDIX B

COMPARISON OF ANNUAL MEAN FLOW RATE FOR VARIOUS STREAMS (cubic-feet per second)

River	Navigable?	Cfs	Data Source
Upper Salt River (AZ)	To be determined	1,455	Fuller Report, at 5-18 (Table 14)
Lower Salt River (AZ)	No	1,455	Fuller Report
Arkansas River (OK)	No	7,561	USGS data at Tulsa, OK (1926-1999)
Cedar River (WA)	No	164	USGS data near Cedar Falls, WA (1946-2000)
Chattahoochee River (GA)	No	2,031	USGS data at Buford Dam, GA (1943-2000)
Colorado River (UT)	Yes	7,316	USGS data near Cisco, UT (1914-2000)
Fisheating Creek (FL)	No	252	USGS data at Palmdale, FL (1932-2000)
Great Miami River (OH)	In part	2,277	USGS data at Dayton, OH (1914-1999)
Green River (UT)	Yes	6,930	USGS data at Green River, UT (1895-2000)
Little River (AR)	No	2,892	USGS data at Rivervale, AR (1948-1976)
Little Missouri River (ND)	No	555	USGS data near Watford City, ND (1935-1999)
McKenzie River (OR)	Yes	4,066	USGS data near Vida, OR (1925-2000)
Neosho River (KS)	No	2,764	USGS data near Parsons, KS (1922-2000)
Red River (OK/TX)	No	9,363	USGS data at Arthur City, TX (1906-1999)
Rio Grande (NM)	No	1,513	USGS data at Otowi Bridge, NM (1896-2000)
Sinnemahoning Creek (PA)	No	399	USGS data at Sinnemahoning, PA (1954-2000)
White River (AR)	No	563	USGS data at Fayetteville, AR (1964-1993)
Wolf River (TN)	No	1,107	USGS data at Germantown, TN (1970-2000)

Source: For all rivers other than Upper and Lower Salt, see Information Regarding Navigability of Selected U.S. Watercourses (April 2003) (EI 17).