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**BEFORE THE
ARIZONA NAVIGABLE STREAM ADJUDICATION COMMISSION**

IN THE MATTER OF THE
NAVIGABILITY OF THE GILA
RIVER FROM THE NEW MEXICO
BORDER TO THE CONFLUENCE WITH
THE COLORADO RIVER, GREENLEE,
GRAHAM, GILA, PINAL, MARICOPA
AND YUMA COUNTIES, ARIZONA

No. 03-007-NAV

**ARIZONA STATE LAND
DEPARTMENT'S MEMORANDUM**

On April 27, 2010, the Court of Appeals found that the Arizona Navigable Stream Adjudication Commission ("ANSAC" or the "Commission") misapplied the pertinent test for determining navigability of the Lower Salt River. The Court vacated the superior court's decision and remanded the matter back to ANSAC for further proceedings. *State ex rel. Winkleman v. Arizona Navigable Stream Adjudication Com'n*, 224 Ariz. 230, 229 P.3d 242 (App. 2010) ("*Winkleman*"). On October 24, 2011, the superior court remanded the Gila River matter to ANSAC for all further proceedings consistent with the *Winkleman* decision. At ANSAC's December 14, 2011, meeting, the Commission requested that interested parties submit memoranda with their recommendations on how ANSAC should comply with the *Winkleman*

decision. The Arizona State Land Department (the “ASLD” or the “State”) submits the following Memorandum in response to ANSAC’s request.¹

The Commission’s navigability determination is governed by the federal test of navigability, known as the “*Daniel Ball*” test that provides as follows:

[t]hose 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.

The Daniel Ball, 77 U.S. (10 Wall.) 557, 563 (1870); see *Defenders of Wildlife v. Hull*, 199 Ariz. 411, 420, 18 P.3d 722, 731 (App. 2001) (*Daniel Ball* test correctly paraphrased in A.R.S. § 37-1101(5)). The *Daniel Ball* test requires ANSAC to determine the characteristics of the Gila River in its ordinary and natural condition and whether, at statehood, the River was used or would have been susceptible to use as a highway-for-commerce in that condition. *Winkleman*, 224 Ariz. at 239, 229 P.3d at 251.

In the *Winkleman* decision, the Court of Appeals found that ANSAC failed to evaluate the Lower Salt River’s ordinary and natural condition in light of the numerous dams, canals, and other diversions other than Roosevelt Dam. *Winkleman*, 224 Ariz. at 240, 229 P.3d at 252. The Court of Appeals directed ANSAC to determine “what the River would have looked like on February 14, 1912, in its ordinary (i.e., usual, absent major flooding or drought) and natural (i.e., without man-made dams, canals, or other diversions) condition.” *Winkleman*, 224 Ariz. at 241, 229 P.3d at 253. The Court found that the Lower Salt River was “in its natural condition after many of the Hohokam’s diversions had ceased to affect the River, but before the commencement

¹ The State requests that the Commission delay any action on contested rivers until the U.S. Supreme Court issues its decision in *PPL Montana, LLC v. Montana*, 355 Mont. 402, 229 P.3d 421 (2010), cert. granted in part & denied in part, 79 U.S.L.W. 3102* (U.S. June 20, 2011) (No. 10-218). The *PPL* decision could potentially affect application of the federal test in the contested rivers before ANSAC.

of modern-era settlement and farming in the Salt River Valley, when some of the Hohokam's diversions were returned to use and other man-made diversions and obstructions began to affect the River." *Winkleman*, 224 Ariz. at 242, 229 P.3d at 254. In applying the *Winkleman* Court's instruction to the Gila River, the Gila River's natural condition is before the 1860s when settlers arrived and diverted water from the River to irrigate their crops.² Donald C. Jackson, Ph.D. ("Jackson"), Tr. 11/17/05, 206-207³; see Hjalmar Hjalmarson, P.E., *Navigability Along the Natural Channel of the Gila River (from the confluence with the Salt River to the mouth at the Colorado River near Yuma, Arizona)*, E.I. 23 (2002) ("Hjalmarson Report"), 15. By 1899, on the Upper Gila River, there were 17 diversions in the Duncan Valley and 28 diversions in the Safford Valley. *Arizona State Land Department Rep., Arizona Stream Navigability Study for the Upper Gila River: Safford to the State Boundary* (rev. June 2003 by JE Fuller/Hydrology & Geomorphology, Inc.) ("ASLD Upper Gila Report") E.I. 02, 2, 5-8. By 1899, on the Lower Gila River, the United States Geological Survey ("USGS") recorded that local farmers were diverting water from the Lower Gila through 450 miles of ditches, delivering water for 220,000 acres along the River. ASLD Lower Gila Report, IV-62. Although ANSAC is not limited to considering evidence of the Gila River's natural condition solely from before the 1860s, "that early period should be considered by ANSAC as the best evidence of the River's natural condition." See *Winkleman*, 224 Ariz. at 242, 229 P.3d at 254.

² Indian peoples had been irrigating with river water, but Euro-American diversions created a water shortage starting around 1886 with the construction of the Ashurst-Hayden Dam and Florence Canal. *Arizona State Land Department Rep., Arizona Stream Navigability Study for the Gila River: Colorado River Confluence to the Town of Safford* (rev. June 2003 by JE Fuller/Hydrology & Geomorphology, Inc.), (Evidence Item ["E.I."] 04) ("ASLD Lower Gila Report"), VI-1.

³ ANSAC held its public hearing on the Gila River on November 16 and 17, 2005. References to testimony elicited at the hearings are designated by witness, "Tr.," date, and page number.

Thus, to determine whether the Gila River could have been used as a highway-for-commerce, ANSAC must assess the River's pre-statehood ordinary and natural condition, disregarding all man-made obstructions and diversions.

Ample historical evidence exists in the well-developed record describing the River's ordinary and natural condition in this time frame. For example, trappers in 1825 found plenty of beaver on the River. See ASLD Upper Gila Report, 3-1. The trappers used canoes on the River. Dave Weedman, fishery biologist for Arizona Game & Fish Department ("Weedman"), Tr. 11/16/05, 211; *Arizona's Changing Rivers: How People Have Affected the Rivers*, Barbara Tellman, Richard Yarde, Mary G. Wallace, University of Arizona (March 1997), E.I. 1 ("Arizona's Changing Rivers"), 99. During the Mexican War in 1846, Stephen Watts Kearney led a battalion of men to survey the area, and they mapped the entire River. Lieutenant Emory of that party estimated the River's flow at about one-half of the Colorado's flow, and he saw large fish—weighing between 25 and 30 pounds—in the River. *Arizona's Changing Rivers*, 99. Historically, a large body of native fish species, weighing between five and ten pounds, occupied the River. Weedman, Tr. 11/16/05, 210-18. Pikeminnows, which are usually found in more than three feet of water, could reach 100 pounds in the Lower Gila. Weedman, Tr. 11/16/05, 211, 218-19.

In 1846, Henry Smith Turner noted in his journal that the River about eighty miles west of Gila Bend had attained the width from 100-150 yards and was in average depth about 4 feet - "quite deep enough to float a steamboat." *Assessment of the Navigability of the Gila River Between the Mouth of the Salt River and the Confluence with the Colorado River Prior to and on the Date of Arizona's Statehood, February 14, 1912*, Douglas R. Littlefield, Ph.D. (November 3, 2005), E.I. 12 ("Littlefield Report"), 107. Consistent with that description, the River was then

reportedly 60-80 yards wide and three feet deep at Gila Bend, and in 1846-48 it measured 150 yards wide and three to four feet deep. *Confidential Notes, The Ability to Navigate the Gila River Under Natural Conditions, Below the Confluence with the Salt River to the Mouth at Yuma, Arizona*, Hjalmar W. Hjalmarson, P.E., E.I. 25 (“Hjalmarson Confidential Notes”), 47, citing a U.S. Corps of Engineers 1995 study of the River from Gillespie Dam to Yuma (Reconnaissance Report, FCD 0000028); *The Gila: River of the Southwest*, Edwin Corle, New York; Rinehart (1951) E.I. 1 (“Corle”), 152. A mid-1850s illustration shows that the River was about 300 feet wide with tree-lined banks and contained enough water for swimmers. See Hjalmarson Confidential Notes, 7. However, by the end of second half of the nineteenth century, white settlement and diversions had radically changed the River. By 1899, it was not unusual for irrigation diversions to completely drain the Upper Gila during some months of low flow. ASLD Upper Gila Report, 5-8. By statehood, the River’s waters were over appropriated. Jack L. August, Jr., Ph.D. (“August”), Tr. 11/16/05, 194-95.

Moreover, probative evidence exists that the River’s ordinary and natural physical characteristics could support navigation. Before Anglo settlement of Arizona, the River was perennial, with reliable flows sufficient for shallow draft boating throughout the year. ASLD Upper Gila Report, 5-43, Table 23; Hjalmarson Report, 6. However, the River’s naturally perennial flow has been adversely impacted by irrigation diversions (ASLD Lower Gila Report, IV-52 – IV-59; ASLD Upper Gila Report, 5-8), water supply impoundments behind dams (ASLD Lower Gila Report, IV-61) and groundwater withdrawal (ASLD Upper Gila Report, 5-14). Throughout the River’s length in Arizona, the existing hydrologic condition, as well as the River’s condition in 1912, is substantively different from the River’s natural, predevelopment condition. ASLD Lower Gila Report, VI-9; Hjalmarson Report, 8.

Hjalmar Hjalmarson determined that the River's predevelopment, perennial mean annual flow was 2,330 cubic feet per second ("cfs"), and its median annual flow was 1,750 cfs. Hjalmarson Report, 6, 14-15; Hjalmarson, Tr. 11/17/05, 236-39. The corresponding width, depth, and velocity of flow were between 396 feet to 250 feet, 3.1 feet to 4.8 feet, and 2.34 feet per second ("fps") to 1.84 fps, respectively. Hjalmarson Report, 6; Hjalmarson, Tr. 11/17/05 244, 247-48. These flow rates are further supported by Thomas A.J. Gookin's, a professional hydrologist, estimates of the Lower Gila's predevelopment natural flow. Gookin estimates that the Lower Gila's predevelopment natural flow upstream of the Salt-Gila confluence was about 500,000 acre feet ("af") (690 cfs) a year, and the River's natural flow below the location of Gillespie Dam was 1,792,800 af (2,474 cfs). *Hydrologic History of the Gila River Indian Reservation*, prepared for the Gila River Indian Community Office of Water Rights, Gookin Engineers, Ltd. (November 1, 2000), E.I. 15, 1, 2-23. Collectively, these hydrologic data show that in the River's ordinary and natural condition, it regularly had enough water and was deep enough to support navigation by a variety of boats.

Moreover, floods are not the ordinary condition of the River. Long-term flow records demonstrate that while large flash floods can occur on the River, flood conditions occur less than one percent of the time. ASLD Upper Gila Report, 5-33, Table 21. The dominant low flow channel at ordinary flow rates is a single channel with a pool and riffle pattern. ASLD Upper Gila Report, 4-7 – 4-8. The low flow channel on which boating could occur is inset within a wider, more braided flood channel. Gary Huckleberry, Ph.D. ("Huckleberry"), Tr. 11/16/05, 58-61; deposition of Hjalmarson, January 16, 2003, in *Tumbling-T v. Paloma Investment*, E.I. 24 ("Hjalmarson Depo"), 80; *see* ASLD Lower Gila Report, VII-7 (before 1890, the River had a distinct low-flow channel within a larger, braided flood-flow channel). Federal surveys of the

area reported the presence along the banks of cottonwood, brush, and mesquite, indicating a normally stable river. Hjalmarson, Tr. 11/17/05, 251. Thus, the River's ordinary and natural flow conditions and its natural geomorphology—that is before large-scale irrigation diversions depleted the River's waters—establish that the River was susceptible for use as a highway-for-commerce.

The Court of Appeals declined to consider whether ANSAC misconstrued the “highway-for-commerce” component of the *Daniel Ball* test. See *Winkleman*, 224 Ariz. at 242 n.16, 229 P.3d at 254 n.16. There is substantial evidence that when the River was in its ordinary and natural condition, it was actually used as a highway-for-commerce, or was at least capable of use as a highway-for-commerce within the meaning of the *Daniel Ball* test.⁴ By the time of the Spanish explorations, if not before, rafts were in use (ASLD Upper Gila Report, 3-6); trappers used the River commercially from Safford to Yuma (Arizona's Changing Rivers, 98-99; Weedman, Tr. 11/6/05, 211, 216); and steamboats plied the Gila upstream and downstream for several years on a commercial basis, only one meeting with misfortune on the Colorado, not the Gila (*Assessment of the Navigability of the Gila River Between the Mouth of the Salt River and the Confluence with the Colorado River Prior to and on the Date of Arizona's Statehood, February 14, 1912*, by Douglas R. Littlefield, Ph.D., April 24, 1998, E.I. 1 (Littlefield 4/24/98) 118-19). Nineteenth century travelers used the River to transport their belongings, thereby lightening their wagons, on their way to California (Corle, 152-154; ASLD Lower Gila Report, IV-2 – 3; Dennis Gilpin, Archeologist, SWCA Environmental Consultants (“Gilpin”), Tr. 11/16/05, 38-39; Jackson, 11/17/05, 209-10); ranchers along the River routinely owned boats

⁴ The Arizona State Legislature has broadly defined the highway-for-commerce requirement as “a corridor or conduit within which the exchange of goods, commodities or property or transportation of persons may be conducted.” A.R.S. § 37-1101(3).

(Jackson, Tr. 11/17/05, 216-20); several boating trips were made down the River (Jackson, Tr. 11/17/05, 210-11); and ferries operated commercially for decades at various points (Gilpin, Tr. 11/16/05, 40; ASLD Lower Gila Report, IV-5, 7).

In addition, evidence of modern, recreational boating may demonstrate that a river was susceptible to use as a highway-for-commerce.⁵ See *Alaska v. Ahtna, Inc.*, 891 F.2d 1401, 1405 (9th Cir. 1989) (finding that present recreational guided fishing and sightseeing trips are “commercial activity” under the *Daniel Ball* test and can prove a river’s susceptibility for commercial use at the time of statehood); *Adirondack League Club, Inc. v. Sierra Club*, 706 N.E.2d 1192, 1194 (1998) (holding that evidence of a river’s capacity for recreative use is in line with the traditional test of navigability). Currently, the Upper Gila River is used for recreational boating, primarily during the winter and spring, with limited commercial recreational operations in the Gila Box Reach. See Fuller, Tr. 11/16/05, 64; ASLD Upper Gila Report, 6-4 – 6-6; Jon Colby, of Cimarron Adventures & River Co., (“Colby”), Tr. 11/17/05, 331-33. Recreational boating consists primarily of downstream floating in rubber rafts, canoes, kayaks, and other inflatable boats during seasonal periods of above-average flow. Fuller, Tr. 11/16/05, 64.

The Commission should reconsider its prior findings that the Gila River was neither actually navigable nor susceptible to navigation to ensure that its new findings comply with the applicable legal standard.

The Court directed ANSAC to properly apply the ordinary and natural component of the *Daniel Ball* test. Equally important is the Court’s insistence that ANSAC “may not begin its

⁵ See *Northwest Steelheaders Ass’n, Inc. v. Simantel*, 112 P.3d 383, 391-393 (Or. Ct. App. 2005) (post-statehood use, by comparable vessels, probative because post-statehood conditions were less favorable to navigation than conditions at statehood), *review denied*, 122 P.3d 65 (Or. 2005), *cert. denied*, 547 U.S. 1003 (2006); *Winkleman*, 224 Ariz. at 244, 229 P.3d at 243 (“Even if evidence of the River’s condition after man-made diversions is not dispositive, it may nonetheless be informative and relevant.”)

determination with any presumption *against* navigability.” *Winkleman*, 224 Ariz. at 239, 229 P.3d at 251 (emphasis in original). In reaching its determination, “ANSAC’s approach and analysis must be wholly impartial and objective, while utilizing the proper legal test.” *Winkleman*, 224 Ariz. at 239, 229 P.3d at 251.

Substantial evidence exists clearly demonstrating that the Gila River in its ordinary and natural condition before 1860, was used or was capable of being used as a highway-for-commerce. The Commission should consider the significance of post-1860 use of the River—despite decreasing flows due to significant diversions, groundwater pumping, and the building of the Roosevelt Dam on the Salt—in reaching its determination. The Commission also should consider diversions as merely one special factor in the Gila River Valley’s development rather than as a condition that precludes a navigability finding, and the River’s subsequent limited use as merely a unique circumstance in its overall objective review of the evidence under the *Daniel Ball* test. The ASLD informs the Commission that due to uncertain resources, the ASLD may be restricted in responding, participating or producing additional evidence in the adjudication proceedings.

DATED: January 27, 2012.

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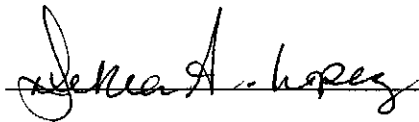
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