

BEFORE THE ARIZONA NAVIGABLE STREAM
ADJUDICATION COMMISSION



In re: Determination of)
Navigability of the Upper Salt) No. 04-008-NAV
River, Small and Minor) No. 04-010-NAV
Watercourses in Gila County,) No. 04-014-NAV
Small and Minor Watercourses in) No. 03-007-NAV
Maricopa County, the Gila River,) No. 04-009-NAV
and the Verde River)
_____)

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BY: *gjm*

MEETING OF THE
ARIZONA NAVIGABLE STREAM ADJUDICATION
COMMISSION

Phoenix, Arizona
October 20, 2005

(Original)

Prepared by:
Gerard T. Coash, RPR, RMR
Certified Reporter
Certification No. 50503



1 MEETING OF THE ARIZONA NAVIGABLE STREAM ADJUDICATION
2 COMMISSION was taken on October 20, 2005, commencing at
3 9:33 a.m., at the La Quinta Inn, 2510 West Greenway Road,
4 Phoenix, Arizona, before Gerard T. Coash, a Certified
5 Reporter in the State of Arizona.

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8 APPEARANCES:

9 For Salt River Project:
10 SALMON LEWIS & WELDON, P.L.C.
11 By: Mark A. McGinnis, Esq.
12 Rebecca C. Goldberg, Esq.
13 2850 East Camelback Road
14 Suite 200
15 Phoenix, Arizona 85016
16 602-801-9066

17 For the State of Arizona:
18 ATTORNEY GENERAL'S OFFICE
19 By: Laurie A. Hachtel, Esq.
20 1275 West Washington Street
21 Phoenix, Arizona 85007
22 602-542-7793

23 For San Carlos Apache Tribe, Tonto Apache Tribe,
24 and Yavapai Apache Nation:
25 SPARKS TEHAN AND RYLEY, P.C.
By: John H. Ryley, Esq.
Joe P. Sparks, Esq.
7503 First Street
Scottsdale, Arizona 85251
480-949-1339

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From the Arizona Navigable Stream Adjudication
Commission:

Mr. George Mehnert, Director
Mr. Earl Eisenhower, Chairman
Ms. Dolly Echeverria, Vice-Chair
Mr. Jay Brashear, Member
Mr. James Henness, Member

Also Present:

Mr. Jonathan E. Fuller, PE, RG, PH, MS, CFM
Mr. Dennis Gilpin, RPA
Mr. David Weedman
Mr. Stanley Schumm
Mr. Doug Littlefield, Ph.D.

1 TRANSCRIPT OF PROCEEDINGS

2 CHAIRMAN EISENHOWER: The time has come to
3 call the meeting of the Arizona Navigable Stream
4 Adjudication Commission to order.

09:33:24 5 Mr. Mehnert, will you call roll, please.

6 MR. MEHNERT: Commissioner Brashear?

7 COMMISSIONER BRASHEAR: Here.

8 MR. MEHNERT: Commissioner Echeverria?

9 COMMISSIONER ECHEVERRIA: Here.

09:33:29 10 MR. MEHNERT: Commissioner Miller?

11 Commissioner Henness?

12 COMMISSIONER HENNESS: Present.

13 MR. MEHNERT: Chairman Eisenhower?

14 CHAIRMAN EISENHOWER: Here.

09:33:40 15 MR. MEHNERT: We have four members here,

16 Mr. Chairman, one absent, and so there's sufficient number
17 for a quorum.

18 CHAIRMAN EISENHOWER: Okay. Thank you.

19 Our first item of business is approval of

09:33:48 20 the minutes from our last meeting which was held in

21 Phoenix.

22 COMMISSIONER BRASHEAR: Mr. Chairman?

23 CHAIRMAN EISENHOWER: Yes.

24 COMMISSIONER BRASHEAR: Before we consider

33:55 25 that, I wonder if you could make an administrative

1 announcement saying that if any cell phones that go off or
2 people who have them will be given 20 lashes with
3 cat-o'-nine tails. There's one already.

09:34:14 4 CHAIRMAN EISENHOWER: I think he was turning
5 his off.

6 COMMISSIONER HENNESS: Mr. Chairman, since
7 I'm -- I'll move for adoption of the minutes.

8 CHAIRMAN EISENHOWER: We have a motion. Do
9 I have a motion of a second on the minutes from the
09:34:24 10 Phoenix meeting of September 21st?

11 COMMISSIONER BRASHEAR: I wasn't here, so
12 maybe I shouldn't.

13 CHAIRMAN EISENHOWER: I'll second the
14 motion.

09:34:35 15 All those in favor.

16 COMMISSIONER ECHEVERRIA: Aye.

17 CHAIRMAN EISENHOWER: Aye.

18 COMMISSIONER BRASHEAR: Aye.

19 CHAIRMAN EISENHOWER: Opposed?

09:34:41 20 Hearing none, the minutes are approved as
21 presented.

22 Our next item of business is a -- I don't
23 know -- kind of a matter of discussion of whether or not
24 the Navigable Streams Adjudication Commission has
34:57 25 authority to adjudicate Roosevelt Lake. Since our counsel

1 is not present today, what we will do is hear evidence on
2 both sides, and I know there has been some memorandums
3 given to the commission already on both sides of that
4 equation, so if there are any other speakers that would
09:35:27 5 like to say anything about their submissions, I'd be glad
6 to hear it right now.

7 We have -- the State Land Department has
8 submitted a memorandum, as has the Salt River Project. So
9 is there anybody else wanting to speak on whether or not
09:35:53 10 we have jurisdiction to adjudicate Roosevelt Lake?

11 MR. MCGINNIS: I'm not sure I'm somebody
12 else.

13 Mark McGinnis on behalf of SRP. We filed
14 this motion back on September 15th. The only response I
09:36:09 15 ever got, I received about five minutes ago when it was
16 handed to me. So we just would like to have maybe a week
17 to file a reply, which is a normal practice.

18 CHAIRMAN EISENHOWER: Yes.

19 MR. MCGINNIS: Other than that, I don't have
09:36:21 20 anything else to say that isn't already in our motion and
21 what we'll say in our reply.

22 CHAIRMAN EISENHOWER: So noted.

23 COMMISSIONER BRASHEAR: Did we just get this
24 today when we walked in here?

09:36:34 25 CHAIRMAN EISENHOWER: The State Land

1 Department, yes. They just brought it in today, which is
2 okay.

3 COMMISSIONER BRASHEAR: This would be a
4 great chance to ask questions, I guess, but we only got it
09:36:45 5 when we walked in. And I think that there is a question
6 of whether we do Roosevelt Lake or not and --

7 CHAIRMAN EISENHOWER: What we're going to do
8 is, since Curtis isn't here to give us that technical
9 legal advice, what we'll do is any evidence will be
09:37:01 10 submitted and we'll rule on it later.

11 COMMISSIONER BRASHEAR: I want to ask Mark
12 questions now. I won't have any other opportunity, but I
13 don't know what to ask.

14 CHAIRMAN EISENHOWER: Mark's memorandum has
09:37:13 15 been filed with us for some time.

16 MR. MCGINNIS: Point of clarification, you
17 were asking, I think, the Commissioner -- Mr. Chairman
18 possibly was talking about the Land Department's response.
19 I saw you were handed our motion that was filed
09:37:23 20 September 15th, so I don't know if you just got it, but we
21 filed it a long time ago. But I will be glad to answer
22 questions if you have some.

23 COMMISSIONER BRASHEAR: Well, is it the --
24 let me ask you, is the Salt River Project's intention that
09:37:36 25 it is within our jurisdiction or it is not?

1 MR. MCGINNIS: Our position, based upon the
2 statute, is that it is a man-made water conveyance system
3 as defined by the statute. And the definition of water
4 course in the statute excludes man-made water conveyance
09:37:51 5 systems. So it's not within your jurisdiction.

6 COMMISSIONER BRASHEAR: Okay. I think the
7 basic contention is there was something -- some discussion
8 in an earlier meeting we had about somehow the other --
9 the federal government had withdrawn this from a trust
09:38:05 10 value or something and -- but that's not -- the contention
11 is -- the major contention is because of the way the
12 statute reads, we can't do it or shouldn't do it or
13 authorized to.

14 MR. MCGINNIS: That's the basis of our
09:38:19 15 motion. There really are two other issues that we've
16 talked about in the past, one of which is the reservation
17 and withdrawals of the dam site prior to statehood, and I
18 think Dr. Littlefield is going to talk about that today.

19 There's another issue, a more practical
09:38:33 20 issue, with this and that is that Roosevelt Lake -- the
21 only person who holds title to any of the land in
22 Roosevelt Lake is the United States. The United States
23 has sovereign immunity to a federal doctrine. And I'm not
24 sure, if you made a finding about Roosevelt Lake, it would
09:38:49 25 be binding on the United States because they are not here

1 and they're not waiving their sovereignty, only Congress
2 can do that, so maybe we're fighting about nothing in the
3 end, but that's what lawyers do, I guess. But our motion
4 is based upon the definitions in the statute.

09:39:04 5 COMMISSIONER BRASHEAR: Thank you.

6 CHAIRMAN EISENHOWER: Thank you, Mark.

7 Are there any other questions? If not, we
8 will take this under advisement and we will give a ruling
9 on this little issue of jurisdiction at a later date and

09:39:22 10 all of you will be so notified. Okay. That takes care of
11 that.

12 Our next item is hearing evidence on the
13 navigability of the Upper Salt River and with that, I have
14 several speakers' requests here. I assume that we'll
09:39:48 15 start with Mr. Fuller. I don't see Cheryl here this
16 morning, and I assume that her statement from prior
17 appearances still holds true.

18 And Mr. Fuller, if you would come forward.

19 MR. FULLER: I'm Jon Fuller, owner of
09:40:24 20 JE Fuller Hydrology & Geomorphology. I'm the primary
21 author of the State Land Department's navigable study for
22 the Upper Salt River. And I brought with me today Dennis
23 Gilpin with SWCA, and he was the archaeologist historian
24 that worked on that study with me.

40:44 25 For those who have not heard me speak

1 before, I'm a registered professional engineer -- civil
2 engineer in six states from the western U.S. and also a
3 registered geologist. I'm also a professional hydrologist
4 certified by the American Institute of Hydrology. I've
09:41:01 5 been practicing in Arizona for a little more than 21 years
6 now, and I specialize in the areas of hydrology and
7 geomorphology.

8 Dennis Gilpin is the author of the
9 archaeology and history sections of the Upper Salt River
09:41:15 10 report. He was also an author in a similar role on a
11 total of 12 navigability studies that have been before you
12 previously. He's an archaeologist, historian and proctor
13 by practice, and his practice has extended over 30 years
14 in Arizona since coming here to get his master's at the
09:41:36 15 University of Arizona.

16 Our objective today is to present the report
17 that was submitted a little more than two years ago for
18 the Upper Salt River, answer any questions that you or
19 anyone else may have on that. The report, as I mentioned,
09:41:51 20 has been in front of you for about two years, submitted to
21 the commission at that time. And like the other reports,
22 it includes information on the archaeology, history,
23 hydrology, geomorphology, voting records, and has land use
24 information as well for the Upper Salt River.

42:10 25 In that report, we were tasked to

1 identifying two -- or answering two primary questions, the
2 first of which is, "Was the river used for navigation? Is
3 there historical evidence that, in fact, those kinds of
4 things went on?" And the second question was, "Could it
09:42:25 5 have been used for navigation?" And that addresses the
6 question of susceptibility.

7 For the Upper Salt River, we've identified
8 15 accounts of -- historical accounts of boatings. The
9 type of boats used included canoes, flatboats, rowboats,
09:42:44 10 rafts. There were bigger boats that were used on the
11 impounded areas of the lakes, if you will, during
12 construction at Roosevelt, Granite Reef. I haven't
13 included those in the -- in my enumeration of these
14 accounts. Those were large boats, gas powered, diesel
09:43:03 15 powered, a number of different kind of boats, but they
16 were used on anything that was considered part of the
17 natural part of the stream.

18 There were instances of attempts to float
19 logs and floating logs and the season in which those
09:43:16 20 occurred throughout the year. Different periods. The
21 accounts that we've provided to you were successful
22 accounts of boating, people achieved their vision of
23 getting from point A to point B. And with that, I'm going
24 to take a brief pause and ask Dennis Gilpin to speak on --
43:36 25 ask questions of the history that he determined in his

1 portion of the report.

2 MR. GILPIN: Good morning, Mr. Chairman, and
3 members of the commission.

4 CHAIRMAN EISENHOWER: Would you identify
09:43:54 5 yourself, sir.

6 MR. GILPIN: I'm Dennis Gilpin.

7 CHAIRMAN EISENHOWER: Thank you, sir.

8 MR. GILPIN: And I'm the author of the
9 historical and archaeological chapters of the navigability
09:44:03 10 report.

11 As Jon mentioned, we identified -- with
12 regard to the natural portions of the river, we identified
13 about two attempts to float logs down portions of the
14 river, about five occasions in which canoes and boats and
09:44:25 15 a skiff were used to travel down the -- to float down the
16 natural portions of the river. We also got a couple of
17 photographs of boating on the river. Those dating from --
18 they were first published in 1908 and 1910.

19 The floating of the logs occurred in two
09:44:50 20 instances. The first was in 1873 when Hayden, with the
21 canoe, tried to float some logs from pretty much the
22 length of the Upper Salt River, the course that we are
23 interested in. We don't know what his starting point was,
24 but he did try to get them all the way down to Phoenix,
45:12 25 and of course they got hung up in the box canyons.

1 There's another account that is not nearly
2 as well documented about -- that occurred about 1890 or
3 1891 in which there was an attempt to float timbers down
4 the Verde from Fort McDowell and then down the Salt to
09:45:33 5 Phoenix.

6 The accounts of boating include two trips
7 that went from Fort McDowell to Phoenix, so they just
8 included a really small portion of the study area. And
9 then there were three that ran from the Tonto Basin down
09:45:55 10 to Phoenix. And then there was also, of course, another
11 one which was the Hayden one that I just mentioned in 1873
12 in which they tried to boat -- or to float the logs, but
13 they used a canoe, is what they traveled in. The trips
14 down the Salt occurred -- there were two attempts in 1883,
09:46:19 15 one in 1885, one in 1888, and one in 1910.

16 It's really important for us and all
17 historical research to try to critically evaluate the
18 resources that you're using, and historians generally look
19 at several criteria in evaluating these things. First of
09:46:41 20 all, we want to know what the writer's source of
21 information was. Was it his or her direct experience or
22 was it hearsay or what?

23 Second, we want to know what the writer's
24 intent or objective was in evaluating -- in writing this
09:47:03 25 account. We also want to know whether the things

1 mentioned in the account are consistent with what is
2 generally known about the time and place that this event
3 occurred, and then we also look for corroborating
4 evidence.

09:47:22

5 Most of our accounts -- you know, I
6 mentioned that there were a couple of photographs, but
7 most of our actual accounts are newspaper accounts, and we
8 felt sort of a range of variability in the reliability of
9 those accounts. I would say one of the least reliable

09:47:42

10 accounts is one where we were interviewing a historian who
11 said that he remembered reading a newspaper account that
12 described floating logs from -- or timbers from Fort
13 McDowell down to Phoenix and that occurred in year 1890 or
14 1891. He was, however, unable to provide for a reference

09:48:09

15 to that, you know, the actual newspaper article, and we
16 were unable to find it.

17 Perhaps the best -- strongest, most reliable

18 article, I think -- or account that we got was the one

19 that described how the commanding officer at Fort McDowell

09:48:26

20 was floating -- taking a canoe with one other person from

21 Fort McDowell to Phoenix. And when they reached the Mesa

22 Dam, they were lifting the canoe over the dam and the gun

23 discharged -- they had been hunting duck along the way --

24 so they lift the canoe over the dam, the gun discharged,

48:53

25 and the commanding officer, Major Spaulding, was killed.

1 What is important about that account, I
2 think, are a couple of things. Number one, it's
3 corroborated in the post accounts -- or the post returns,
4 the official post returns for Fort McDowell, so we have
09:49:14 5 some corroborating evidence there. And also what's
6 newsworthy about that event was not the fact that people
7 were canoeing but the fact that this man, an officer at
8 Fort McDowell, was killed in a hunting accident. And the
9 canoeing was actually sort of incidental to that.

09:49:37 10 Overall, I think what these -- and when you
11 are thinking about, you know, the general consistency of
12 all of these accounts, it's pretty clear that this was a
13 fairly rare occurrence for people to be floating the Salt
14 River -- or the Upper Salt River.

09:49:58 15 We do have -- again, being critical of our
16 sources, we have to realize that we have -- only have a
17 sample. I mean, these newspaper accounts constitute only
18 a sample of what was occurring and we don't know whether
19 that's a 10 percent sample or a 90 percent sample or what.
09:50:17 20 But it does appear that it was a relatively rare
21 occurrence, rare enough that when it did occur, it was
22 usually newsworthy. In most of these situations, it was
23 being reported on because it was a newsworthy event.
24 There is that one case where Major Spaulding was killed,
50:37 25 of course, where it was -- the canoeing itself was not

1 newsworthy but his death was.

2 It's also very clear from many of these
3 accounts that people themselves regarded their trip down
4 the Salt as an experimental sort of thing. I mean, they
09:50:56 5 were attempting to see if it was possible to do this. But
6 again, on the other hand, you look at the Major Spaulding
7 death and that indicates that in some cases this was
8 probably fairly routine in a sense.

9 And finally, I think overall I have to look
09:51:20 10 at this and the overall assemblage of accounts and
11 recognize that people were looking for opportunities to
12 float the Upper Salt, they were investigating these
13 opportunities, and they were prepared to take advantage of
14 these opportunities.

09:51:40 15 COMMISSIONER BRASHEAR: What period did your
16 study cover? When did you conclude that it was -- what
17 was the -- what period was -- what was the end date of
18 when you stopped looking at things?

19 MR. GILPIN: You know, we did
09:51:57 20 archaeological -- we studied archaeological accounts -- or
21 accounts of archaeological studies back into antiquity.
22 We included information on the -- in the 1950s the Boy
23 Scouts and the Sierra Club starting doing recreational
24 rafting of the Salt River. And I think -- actually the
52:16 25 last instance that's mentioned in the report was -- and I

1 don't know -- I've forgotten the exact date of it, but it
2 was in 1990s when one river rafter dynamited one of the
3 rapids in the Upper Salt to make it more easily rafted.
4 The -- so we were looking at essentially all human history
09:52:41 5 in our study. We were focusing on that period leading up
6 to statehood, and most of these accounts, as I mentioned,
7 date from 1873 to about 1910 is when most of these
8 accounts --

9 COMMISSIONER BRASHEAR: I was wondering if
09:53:00 10 you founded -- the reason I'm asking the question is if
11 you came on to any evidence of any indication of
12 commercial, regularly scheduled boating trips done by --
13 like I say, commercial -- from about where the Highway 60
14 crosses the Salt River down to Roosevelt Lake, that it's
09:53:22 15 done on a regular basis, during an extended period of
16 time, where they carried hundreds of people and lots of
17 stuff. Did you come on to any of that?

18 MR. GILPIN: No. No. I mean, that's a
19 post-World War II.

09:53:40 20 COMMISSIONER BRASHEAR: Okay. That was why
21 I was asking. When do you stop looking at this -- at the
22 history. Okay. Thank you.

23 MR. GILPIN: Yes.

24 MR. FULLER: Just to clarify to your
53:48 25 question --

1 COMMISSIONER BRASHEAR: Excuse me.

2 Mr. Gilpin -- does anybody in the audience have any
3 questions for Mr. Gilpin?

4 MR. FULLER: Mr. Chairman, if we could
09:53:56 5 finish our presentation together and then entertain
6 questions after, because I may answer some of the
7 questions. I would just request.

8 CHAIRMAN EISENHOWER: We'll let you continue
9 then. Mr. Gilpin, just stand by, might have some
09:54:08 10 questions for you.

11 MR. FULLER: So to clarify. SWCA and
12 Mr. Gilpin were focused on the period around and prior to
13 statehood. The accounts of boating afterwards are
14 addressed in a separate chapter of the report -- of the
09:54:23 15 boating chapter, and there is a fairly extensive record of
16 modern recreation boating that's done for commercial
17 purposes. So we have records of people regularly using
18 the Upper Salt River from U.S. 60 down to Roosevelt Lake.
19 Seasonally, there's a number of companies that offer trips
09:54:43 20 and they carry lots and lots of people from year to year,
21 but that's something that really wasn't a part of the
22 history.

23 His discussion includes that they just had
24 started around the '50s, and then it includes this account
09:54:56 25 of somebody blowing up Fort St. Paul as the most recent

1 historical event.

2 COMMISSIONER HENNESS: What is considered
3 the season for these rafters?

4 MR. FULLER: For the rafting season for
09:55:11 5 commercial rafting, most of those folks will come in
6 starting in some years in late January. Typically it's
7 going to be late February to May, depends on how much flow
8 we have.

9 COMMISSIONER HENNESS: Understood. I was
09:55:23 10 just curious.

11 MR. FULLER: The rafters are after the big
12 water, it's the most fun, the people have the biggest
13 thrill ride for.

14 COMMISSIONER HENNESS: Sure. Understood.
09:55:34 15 But it's three or four months.

16 MR. FULLER: Yes.

17 And I will also state with clarity that
18 there are some years -- we had some extensive drought over
19 the last several years. There were some years when very
09:55:42 20 few of the commercial operators operated for that long.

21 COMMISSIONER HENNESS: Thank you.

22 MR. FULLER: So that's a little bit about
23 the history of what we found for the Upper Salt River.

24 And I would like to move to the
55:59 25 susceptibility discussion, and that focuses on the

1 hydrology, hydraulics, and the geomorphology of the river.
2 And what we present in our report, you'll find in chapters
3 four and five. The hydrology in chapter five, we provided
4 average flow rates, both for the average annual flow
09:56:15 5 rates. We have averages, medians, minimums, maximums. We
6 have seasonal flow rates by month. Again, climatic
7 cycles, the -- address over the period of record that we
8 have focusing on three periods of time: prestatehood
9 leading up to statehood; the year of statehood itself; the
09:56:36 10 month of statehood, the day of statehood, whatever data
11 were available, and then we have the modern record. We
12 compare those records to see how reliable and comparable
13 they are.

14 We also provided minimum flow rates that we
09:56:48 15 could see the range of expected flows; hydraulics provide
16 rating curves that would give us estimates of what the
17 typical or normal or ordinary flow depth and widths and
18 velocities might be, and those are summarized in our
19 report under geomorphology. We considered the river in
09:57:13 20 three reaches. We have the reach that Mr. Brashear just
21 asked about, that is essentially upstream of Roosevelt --
22 Lake Roosevelt, extends from about -- I think it's the 288
23 bridge crossing there at the extreme end of the lake up
24 past U.S. 60 to the complements of the White and Black
09:57:24 25 Rivers. That's the pristine reach, it's untouched. There

1 are no impoundments upstream -- significant impoundments
2 upstream.

3 Then we have the reach that is now covered
4 by lakes that includes Roosevelt, the four -- the chain of
09:57:37 5 four lakes down the Stewart Mountain Dam and then from
6 Stewart Mountain Dam down to Granite Reef, which the Verde
7 River comes in, so those are the three reaches. The
8 lowest reach below Stewart Mountain, Stewart Mountain
9 through Roosevelt, Roosevelt and upstream.

09:57:52 10 Finally, we included in the chapter
11 discussing modern boating, as I mentioned just a second
12 ago, most of the boating is recreational. Although there
13 are these commercial operations that operate on a regular
14 basis -- regular season -- seasonal basis, boating can
09:58:08 15 occur in the -- of course in the lakes reaches all year
16 long because it's now impounded -- but in its natural
17 condition, boating could occur throughout the year. The
18 accounts of boating we have occurred at the low flow
19 period of time and also during other parts of the year.
09:58:25 20 The type of boats that were used, again, are typically low
21 draft boats -- in fact, all of our records are for low
22 draft boats -- canoes, kayaks, and rafts.

23 Most of the boating activity is focused in
24 the spring when it's the most fun, there's the most water.
09:58:41 25 That's where most of the recreation occurs, obviously, and

1 that's not atypical for any river that has a season of use
2 but most people go to it, and we find that people do use
3 it throughout the year.

4 Now, that's a very brief summary of what's
09:58:59 5 in our report. The report, again, has been in front of
6 you for quite a while. The central fact of this report, I
7 think, was first presented in 1996, so it's been almost 10
8 years you've been digesting this information. So rather
9 than regurgitate it all again, I would be happy just to --

09:59:13 10 Dennis and I will answer any questions from either you
11 or --

12 COMMISSIONER BRASHEAR: There is a modern
13 boating -- I don't think you mentioned it, and I don't
14 have the report here to look at it, but I presume you
09:59:23 15 covered the tubing business, that we have 20,000 people a
16 day floating down this river. That is in your report?

17 CHAIRMAN EISENHOWER: That is primarily on
18 the Verde.

19 MR. FULLER: There is tubing, Mr. Brashear,
09:59:39 20 that there are commercial outfits that carry tubers back
21 and forth and rent tubes and that runs downstream of
22 Stewart Mountain Dam. Most of the people take out above
23 the confluence of the Verde River, and that's the reach
24 that's tubed. That reach -- I don't know about 20,000
59:59 25 people per day, but there are a lot of people on Saturday,

1 July 4th, and all sorts of days in the summer when the
2 river is flowing. That reach is controlled by the
3 releases from Stewart Mountain Dam, so when there's a need
4 for water delivery downstream, it's typically May through
5 September, it's flowing and people are out there using it.

6 This year, SRP has extended their releases
7 because of the big flow year we had last year -- and I
8 understand they're going to be releasing in February --
9 but that's a dam-controlled reach. The rate typically
10 released is generally in the ballpark or lower than the
11 median or average flow rate of the Upper Salt River, so
12 it's actually a pretty representative depiction of what
13 kind of flow may occur. Now, whether a tube is a boat or
14 not, I guess is a different question, but it certainly
15 indicates a flow is deep enough to float things.

16 COMMISSIONER BRASHEAR: It's also a
17 commercial activity, is it not?

18 MR. FULLER: It is a commercial activity.

19 CHAIRMAN EISENHOWER: I have a question for
20 Mr. Gilpin.

21 When the two instances you talked about of
22 trying to float timber or logs down the Salt River, did
23 the logs or the timber ever reach their destination?

24 MR. GILPIN: In the first instance, which
25 was the Hayden experiment, that was unsuccessful. They

1 were not -- the logs got hung up in the canyon. The
2 second one, the 1890 one, where they were supposed to go
3 to Fort McDowell down to Phoenix, apparently that was
4 successful. But we -- as I mentioned, we -- that's a
5 pretty unreliable account because we were not able to
6 actually find the original documentation.

7 CHAIRMAN EISENHOWER: Okay. Thank you.

8 COMMISSIONER ECHEVERRIA: It would appear
9 that if it was a successful operation -- commercially
10 successful -- that there would have been other instances
11 of successful use in that regard.

12 MR. GILPIN: I would agree with that.

13 CHAIRMAN EISENHOWER: Is there anybody in
14 the audience that would like to ask Mr. Fuller or
15 Mr. Gilpin any questions?

16 (Mr. Fuller is answering questions.)

17 BY MR. MCGINNIS:

18 Q. Mark McGinnis on behalf of SRP. Actually I've
19 got several, and I'm not sure which one is for which so
20 we'll just start -- and Jon, if you want to go first, feel
21 free to defer to Mr. Gilpin.

22 By the way, I just wanted to say I thought
23 your report was very well done. It was very interesting
24 for both of you guys. I know that we read lots of your
25 reports in the last 10 years or whatever this has been.

1 If I'm asking a question that's about nitpicking, you
2 didn't do a bad job, it's just to make things clear for
3 the commission.

4 Do you have your report there, Jon?

10:02:46 5 A. I do.

6 Q. The one I have is June 2003. Is that the right
7 one?

8 A. Yes, it is.

9 Q. If you look in the executive summary, page 2 --
10:02:59 10 to start with and again, this might be a question that's
11 better for Mr. Gilpin.

12 The bottom of that page, very last sentence
13 says, "Early Anglo residents floated canoes, flatboats...
14 logs..." do you see that?

10:03:12 15 A. I do.

16 Q. When you're referring to those -- to that
17 quotation of logs and canoes, are you referring to the
18 instance of boating that are in chapter 3?

19 A. Yes.

10:03:25 20 Q. So every place in the report where you talk about
21 historical boating, you're referring to those eight
22 instances of boating or 15 or whatever it is?

23 A. Boating is referenced in chapter 3, and then
24 also, I think, it's -- chapter 6 is the boating chapter in
25 there as well.

1 Q. The rest of that sentence talks about the primary
2 mode of transportation being "foot, horseback, or wagon"?

3 A. That is correct.

4 Q. Would you agree that other than those instances
10:03:51 5 of boating you talked about in chapter 3 and other places
6 in the report, that really the only means of
7 transportation was foot, horseback, or wagon as far as you
8 know from your report?

9 A. Well, there's railroad in the state of Arizona,
10:04:01 10 but not along the alignment of the river. In fact, along
11 the alignment of the river, I think I only know of one
12 instance where somebody was on foot, and then, of course,
13 the Apache Trail was built. I guess that could be
14 considered along the river. Upstream of Roosevelt there
10:04:20 15 is no road.

16 Q. Next page, on page 3. First full sentence of
17 that paragraph says, "Some types of boating occurred
18 throughout the year during the period leading up to
19 statehood." Do you see that?

10:04:31 20 A. Yes.

21 Q. It's true, isn't it, that there was -- you don't
22 have an account of boating for every month of the year,
23 it's just scattered sometimes through the year?

24 A. That's correct.

10:04:41 25 Q. Did Mr. Gilpin work on this report, the 2003

1 version?

2 A. The revision of the report in 2003 was orientated
3 as making the report reflect the change in statute, and
4 Mr. Gilpin did not participate in that updating the
10:05:01 5 report. Of course, the information that's in there is --
6 that's his information from previous reports.

7 Q. You incorporated what he had done in prior
8 versions?

9 A. That's correct.

10:05:07 10 Q. Next question I have deals with section one,
11 page 1-1. The barometer of the first -- last sentence of
12 the first paragraph says you do not make recommendation
13 regarding navigability.

14 A. That's correct.

10:05:21 15 Q. Is that still right?

16 A. That is right.

17 Q. Moving on to chapter 2. I've got a question
18 about --

19 A. Let me clarify, Mark. I'm not making a
10:05:31 20 recommendation of navigability or non-navigability. I'm
21 not -- at this time, not making my point either way.

22 Q. I just wanted to make sure that was still the
23 case.

24 Chapter 2, last sentence of that -- sorry,
05:45 25 page 2-1, last sentence there says, "...archaeological

1 research has not documented any use of the river for
2 commercial trade and travel or for any regular flotation
3 of logs." Do you see that?

4 A. I do see that.

10:05:57 5 Q. It's true, isn't it, that none of the
6 archaeological research showed up any evidence of any sort
7 of trade or travel, let alone commercial or any other
8 kind?

9 A. No sort of trade or travel on the water.

10:06:09 10 Q. Right. Excuse me. That's --

11 And no flotation of logs, whether it was
12 regular or irregular?

13 A. That is correct.

14 Q. We're talking about archaeology, so really old
10:06:23 15 stuff?

16 A. That's correct.

17 Q. Okay.

18 A. Although we did -- any archaeology section, we
19 talk about historical archaeology as well. So there are
10:06:34 20 archaeological data on the --

21 Q. Okay.

22 A. When you say "archaeology," you mean pre-Anglo
23 history?

24 Q. Yes. That was my question.

10:06:45 25 Page 3-4 of the report, moving to section

1 three. And in section three -- and this, again, may be
2 something Mr. Gilpin may want to answer to -- there are
3 several places where you talk about early explorers like
4 Coronado and several other people. It's true, isn't it,
10:07:02 5 based upon work you guys did, there's no evidence that
6 those folks did any travel on the water as opposed to
7 along the river by foot or on horseback?

8 CHAIRMAN EISENHOWER: Mr. Gilpin, would you
9 come up to the microphone, please? We are trying to tape
10:07:15 10 it over here so we need to get it all down.

11 MR. GILPIN: The Coronado expedition did
12 cross one river on rafts, and that's the only one of the
13 early Spanish expeditions where some sort of boat was
14 used. And we don't know -- we know the Rim -- Coronado
10:07:35 15 expedition through the Mogollon Trail is really pathetic.
16 We really don't know where that went. So we're not sure
17 which river they crossed on rafts.

18 (Mr. Gilpin is answering questions.)

19 BY MR. MCGINNIS:

10:07:44 20 Q. But even with respect to whatever river it was,
21 it appears they crossed the river and didn't travel up and
22 down -- didn't use it to travel?

23 A. That's correct.

24 Q. Same question, just to make it clear, with
25 respect to the mountain men that you talk about on page

1 3-6, it's true that we don't have any evidence that those
2 folks used the river for travel?

3 A. That's true as well. And I think it's probably
4 significant to note that we discussed in there that there
10:08:11 5 is evidence that the mountain men rafted and canoed the
6 Colorado River, but there is no evidence that they did it
7 on the Salt.

8 Q. And it was the same people -- you think it's the
9 same people who were on the Colorado and also on the Salt
10:08:25 10 or is it different mountain men?

11 A. It was actually -- we have accounts of
12 expeditions going down the Salt, reaching the Colorado,
13 canoeing or rafting, and then returning back.

14 Q. And those same expeditions that they were rafting
10:08:40 15 on the Colorado, you couldn't say they were rafting on the
16 Salt?

17 A. That's right.

18 Q. Move on now to page 3-15. There's a discussion
19 there -- and again, this might be another Mr. Gilpin
10:08:56 20 question. There's a discussion there about the salt mines
21 or the salt works on the river. Are you familiar with
22 that? One of you? There is not any evidence that you
23 found, is there, that the folks who operated that salt
24 mine used the river to transport salt to a market, is
10:09:08 25 there?

1 A. That's correct. There is no evidence of that.

2 Q. It looks like, from your report, that they
3 actually packed it out of the canyon and went some other
4 way over land.

10:09:23 5 A. Yes, that's correct.

6 Q. Pages 3-17 and 3-18 deal with a town called --
7 I'm not sure I'm pronouncing it right -- Catalpa. And my
8 question with respect to Catalpa -- Catalpa looks like it
9 was something that was under what's now Roosevelt Lake.

10:09:43 10 Is that right? You might as well stand up. I don't think
11 Jon is going to get any for a while.

12 A. Okay.

13 Q. Was it under what is now Roosevelt Lake?

14 A. That's correct.

10:09:53 15 Q. It's true, isn't it, that prior to the
16 construction of the lake, the United States went out and
17 either purchased or condemned all private land that was
18 under what became the lake?

19 A. That's correct.

10:10:07 20 Q. On page 3-21, bottom -- the last sentence
21 actually runs over onto the next page. Talks about
22 getting supplies to Roosevelt Lake dam while they were
23 building the dam. It's true, isn't that, that there is no
24 evidence that you found that any of those supplies were
10:27 25 ever transported up and down the river as opposed to over

1 land?

2 A. That is correct. I would -- there are accounts
3 of floating material down, timbers and so forth, down --
4 downstream to the reservoir site. And one example is the
10:10:53 5 Greenwald death. They were trying to get some material
6 down to the dam when he was killed, when he drowned.

7 Q. In terms of floating supplies upriver?

8 A. Yes. All of that stuff came in from --

9 Q. We'll be talking about Greenwald in a little bit.

10:11:09 10 And it's true, isn't it, that on
11 February 14th, 1912, Roosevelt Dam had been constructed
12 and was filling. Is that right?

13 A. Right.

14 Q. So it was capturing water that otherwise would
10:11:18 15 have gone down the river?

16 A. Correct.

17 Q. On page 3-29 there's a discussion of floods --
18 and I'm not sure who this question is for so feel free to
19 answer in unison or stereo or whatever you want to do. I
10:11:38 20 just want to make it clear that it's true, isn't it, that
21 for the period of recorded history that you folks looked
22 at, there were relatively regular and sometimes severe
23 floods on the river. Is that true?

24 A. There were definitely floods; as to whether they
11:51 25 were regular or not, there's certainly seasonal high flow.

1 There were a fair number of floods in that period leading
2 up to statehood in contrast to the period after
3 statehood -- after, say, the 26th flood, where there was
4 fewer floods, but yeah, there were a bunch of floods in
5 that time period.

10:12:10 6 Q. As a matter of fact, on page 3-29, the first full
7 paragraph, you talk about -- I don't know how many there
8 are -- several floods that occurred in the 1800s. First
9 paragraph there.

10:12:24 10 A. Yes. There are citations to years there were
11 historical records that said these were years when floods
12 occurred.

13 Q. Back on page 5-25 you actually have a table 18
14 that looks like 10 or 20 floods.

10:12:36 15 A. You said 5-18?

16 Q. 5-25. Sorry.

17 A. Yes. Table 18 is a table of floods over 20,000
18 cfs.

19 Q. And 20,000 cfs you would consider a relatively
10:12:54 20 large flood on the river?

21 A. Yes. That would be a significant flood. I'm not
22 saying I'm going to use the word "large flood." I would
23 say these are floods that somebody would take notes and
24 say, "Yes, it's flooding." We all agree that over 20,000
13:07 25 is flooding.

1 Q. Page 3-29, the last full paragraph there talks
2 about Dr. Palmer -- excuse me, Dr. Ralph Palmer, and the
3 second sentence in that paragraph says, "One of his
4 descriptions is of a ride down the Salt River from
10:13:22 5 Roosevelt to Harpham's Camp at Government Wells..." do
6 you see that?

7 A. Yes.

8 Q. It's true, isn't it, that at least based upon the
9 quote that you have there, that ride was not on the boat
10:13:33 10 or anything on the river, it was along the river on foot
11 or on horseback?

12 A. That's correct.

13 Q. Please look at 3-33. There's a bullet on 3-33
14 that talks about the importance of the construction of the
10:13:58 15 Apache Trail to the residents of Globe. Do you see that
16 block quote there?

17 It's true, isn't it, that based upon your
18 research, in the late 1800s, there was quite a bit of
19 mining going on in the area around Globe. Is that right?

10:14:11 20 A. Yes.

21 Q. As a matter of fact, you have in one of your
22 exhibits -- it's back at Appendix A, I think, on 3. You
23 have a map of the Globe mining district?

24 A. Uh-huh.

14:22 25 Q. That's a pretty -- relatively large district.

1 A. Yes.

2 Q. Runs all the way from the Salt River all the way
3 down to the Gila River. Is that right?

4 A. Huh-uh.

10:14:33

5 Q. You can look at it if you want. I'm not trying
6 to trick -- it's not a memory test.

7 And it's true also, isn't that, that the
8 nearest major population area -- relatively, I guess -- at
9 that time, the nearest railroad was likely in Phoenix from
10:14:45 10 that Globe area?

11 A. Depends on, I guess, what period. At one point,
12 the railroad did reach Globe.

13 Q. It's the late 1800s.

14 A. I'm not sure when the railroad reached Globe.

10:15:00

15 Q. But it's also true, isn't it, that perhaps the
16 most direct is a straight line route from Globe to
17 Phoenix -- is along the river?

18 A. Yes.

19 Q. And you didn't find any evidence that any of the
10:15:11 20 folks who mined in Globe used the river to transport
21 ore -- whatever they mined down to Phoenix?

22 A. No.

23 Q. Let's talk about the boating incidences. You
24 want a small one? There are several places in your report
15:38 25 where you talk about eight incidents -- of at least eight

1 incidents of boating on the river prior to statehood. Is
2 that right? And I tried to summarize them in this table.
3 Jon has seen this before because it's actually a subset of
4 the ones we talked about a couple years ago on the Lower
10:15:57 5 Salt. And I wanted to talk about each one of these
6 events. We talked about them a little bit already. The
7 first one is the Hayden trip in 1873. We talked about
8 that already, right?

9 A. Yes.

10:16:10 10 Q. It's true, isn't it, that the participants in
11 that trip actually pronounced the scheme a failure.

12 A. Yes, that's right. Let me add that Mr. Hayden
13 was also quoted as saying he was "still sanguine of
14 getting ... timber from it..." so he still had the
10:16:30 15 optimism that that sort of thing could be done.

16 Q. Well, let me ask you a question about that
17 because the newspaper article says, "Mr. Hayden is still
18 sanguine of getting sufficient timber on this side of the
19 canyons." So are you sure that means getting it from the
10:16:42 20 other side to this side or getting it on this side?

21 A. Depends on what canyon you mean, I guess.

22 Q. So it's not clear that that's what he was
23 planning?

24 A. I think there is some ambiguity, yes.

16:55 25 Q. And that trip, according to the newspaper

1 account, involved "much toil and difficulty." Is that
2 right?

3 A. That's how it's described.

4 Q. And at one point they actually lost their
10:17:04 5 supplies?

6 A. Yes. I believe they gave up and came home on
7 foot.

8 Q. At one point they got -- "...they arrived in a
9 canyon so narrow as not to admit the passage of a log..."

10:17:14 10 A. That's the way it's described.

11 Q. And your report on 5-25 of the floods doesn't
12 start early enough to tell us whether there is a flood in
13 1873 or not. Isn't that right?

14 A. Yes. But we just had a page a moment ago that
10:17:28 15 had some of the historical accounts. Let's look at that.
16 That was 3-18 you were asking questions about?

17 Q. 3-29. I think 1873 is not listed.

18 A. That's correct. So it's not listed. And I also
19 point out that June is not typically a flood month.

10:17:51 20 The other interesting thing about that
21 account, Mark, is that Hayden conceived of this idea to
22 float logs down to Tempe and the part of the river he was
23 most familiar with would be the part that he lived on and
24 that was in Tempe. So at least we could assume that he
18:07 25 would think, "Well, I know I can float them at least down

1 to Tempe," and the part of the river that he was
2 unfamiliar with was the part of the canyon where he had
3 his problem.

10:18:15 4 Q. And the part of the river in Tempe is not part of
5 this proceeding today, is it?

6 A. No. The characteristics of it are pretty similar
7 once we get below the Verde, so I would say that those
8 characteristics -- and also in other areas, he would be
9 familiar with because it's closer.

10:18:27 10 Q. Let's talk about the second one, Mr. Meadows, in
11 1883. It's true, isn't it, that the only information we
12 have -- this is maybe one of the ones that I considered to
13 be less reliable -- the only ones -- I don't mean to
14 testify, I'm just filling that in. The only information
10:18:44 15 we have about this trip is from a 1909 newspaper article
16 26 years later, it looks like it might even be
17 Mr. Meadows' obituary. Is that right?

18 A. That's correct.

19 Q. And the 1909 article talks about problems they
10:19:02 20 had with rocks and things in the river. Is that right?

21 A. There is an account -- in that brief account
22 where it says they got their boat, which was an 18-by-5
23 flatboat, homemade boat, where they got stuck on some
24 rocks and they rode rocks in the river before the boat
19:16 25 came on downstream. It also said that at one point they

1 actually flipped the boat or tipped the boat and lost some
2 of their supplies.

3 Q. Mr. Gilpin, when you testified earlier you said
4 that it was important to critically evaluate the sources
10:19:29 5 of information?

6 A. Yes.

7 Q. When you looked at this, did you come to any
8 conclusions about whether number two, the 1883 trip, and
9 number 4, the 1885 trip, which both involved Mr. Meadows,
10:19:44 10 might have actually been the same trip?

11 A. I've considered that. And there are actually
12 probably more differences between those two accounts than
13 there are similarities. I guess the two similarities are
14 that you have somebody named Meadows involved in both of
10:20:02 15 them, and the other is that both of them described
16 floating the Salt. And yet the first one, I believe, is a
17 Jim Meadows and the later one is John Meadows. The number
18 of people involved was different. The dates obviously are
19 different. So I did consider that as a possibility, that
10:20:31 20 those were, in fact, two accounts of the same event and
21 they have just got a lot of things wrong. But again, the
22 differences outweigh the similarities, I believe.

23 Q. Especially since one of them was 26 years after
24 the fact.

20:47 25 A. Right.

1 Q. So it's also true, isn't it, even the June 1885
2 newspaper articles that appeared on -- basically in same
3 week referred to Mr. Meadows -- Mr. Meadows and then
4 Mr. Meaders at one other point -- even in those same
5 articles, they get his name different. Again, I'm not
6 trying to test your memory. If you want to look at 3-35.
7 The first article talks about Meadows, the second article
8 talks about Meaders.

9 A. Right. And the way I interpreted that is that
10 there are -- there were five men and one was Meaders and
11 one was Meadows. And then we also have William Burch, Lew
12 Robinson, and James Logan.

13 This one statement says "a party of five
14 men," and it lists Burch, Meadows, and Robinson. And then
15 as you go through other accounts, you see Meadows
16 mentioned. And compiling all those accounts I came up
17 with the five names which were Burch, Meaders, Meadows,
18 Roberts, and Logan.

19 Q. So there was a John Meadows and a John Meaders on
20 the same boat trip?

21 A. That's my interpretation.

22 Q. I bet that was confusing.

23 It's true also, isn't it, that one of them
24 went from -- started at Livingstone and the other one
25 says, starts "four miles above the Tonto Creek

1 confluence"?

2 A. Right.

3 Q. Isn't Livingstone roughly four miles above the
4 Tonto Creek confluence?

10:22:25 5 A. Yeah. Roughly that. I haven't measured that.

6 Q. I haven't either and don't plan to.

7 Let's move on to number three, it's the one
8 with Mr. Willcox and Mr. Andrews. It's true, isn't it,
9 that this article refers to -- says, "The Salt River is a
10 navigable stream and should be included in the river and
11 harbor appropriation." That's on 3-34 of your report.
12 Last paragraph on 3-34. That right?

10:22:45

13 A. That's correct.

14 Q. As far as you know, Salt River never was included
15 in any appropriation of the Rivers and Harbors Act?

10:23:01

16 A. It was not.

17 Q. This was a February trip, it looks like. Is that
18 right?

19 A. That's correct.

10:23:11

20 Q. February, according to your report, table 14 on
21 5-18, is one of the high flow months?

22 A. It is a high flow month, correct. Typically.

23 Q. And the boat in this one was a canvas skiff.

24 A. Yes.

23:24

25 Q. Can you describe what that is?

1 A. Canvas skiff is usually canvas stretched over a
2 frame.

3 Q. And that --

4 A. It's a shallow draft boat.

10:23:41 5 Q. And then on 3-29 we look at the list of floods in
6 the narrative portion of it. 1883 is one the areas -- one
7 of the years when there was a flood. Is that right?

8 Looks like -- if you want to go back to 3-29. It's not in
9 your table. It's in the paragraph we talked about before.

10:23:53 10 A. Yeah, it is. Actually this one, Mark, you asked
11 me the same line of questions last time, so I went back
12 and looked up some of this information.

13 Q. Good.

14 A. And in fact, the average flow rate for that month
10:24:03 15 is 2,420, and in February, the river was not actually
16 flooding.

17 Q. Okay.

18 A. So this was not on the flood.

19 Q. And you have information by month on the flows
10:24:11 20 for February of 1883.

21 A. We know when the flood of 1883 was. I have it
22 listed in my table that I went and looked at last time and
23 it's just -- it's not being on a flood.

24 Q. And that information is not in your report
24:24 25 anywhere?

1 A. I -- information that's available in our report
2 in the appendices.

3 Q. Number four we talked about a little bit already,
4 which is the other -- maybe the other Mr. Meadows trip.

10:24:36 5 That one is on 3-35 of your report, and again, they
6 had lots of problems on that trip. Isn't that true?

7 A. Yes.

8 MR. FULLER: Which one are we talking about?

9 MR. MCGINNIS: Number four, June 1885.

10:24:55 10 That's maybe one of the more documented ones that you had.
11 Is that right?

12 MR. GILPIN: There's a series of newspaper
13 articles filed at the time of that trip.

14 BY MR. MCGINNIS:

10:25:01 15 Q. And one of those newspaper articles actually
16 refers to these folks as "daring adventurers." Is that
17 right?

18 A. That's true. They did.

19 Q. Number five we talked about, Mr. -- Major
10:25:17 20 Spaulding. Major Spaulding actually died on this trip.
21 Is that right?

22 A. He died of a gunshot wound, so it really had
23 nothing to do with boating. Go back to the -- your daring
24 adventurer comment, you used that term in your
25:29 25 post-hearing memorandum.

1 Q. You used it in your report so I thought it was --

2 A. It was quoted in the article here.

3 Q. Yeah.

4 A. I'll just note that, you know -- for instance,

10:25:36 5 you read Arizona Highways about people canoeing the Gila

6 River, they use those same kind of terms -- that that

7 language is not particularly adventurers' trip. You don't

8 know what you're doing, if you are unfamiliar with

9 canoes -- maybe that's implied, but these guys, they made

10:25:52 10 it from point A to point B.

11 Q. They had a wreck in the middle, didn't they?

12 A. Yeah, but -- and again --

13 Q. Lost all their supplies?

14 A. And lost all their supplies. But they continued

10:26:02 15 on.

16 Q. At one point, they "commenced to fear that the

17 end had come," which maybe it's exaggerating and maybe

18 not.

19 Major Spaulding we talked about a little

10:26:15 20 bit. This was in December which, again, according to your

21 reports, is relatively -- a month that had high flows. Is

22 that right?

23 A. December is higher than the lowest months, sure.

24 Q. And there was a flood in 1888?

26:28 25 A. That's correct.

1 Q. Number six --

2 A. According to my notes here, when I went back to
3 look -- we're talking about Mr. Spaulding still?

4 Q. Yes.

10:26:39 5 A. That when -- there was no flood in December of
6 1888, according to the records that I have -- or the
7 information I have from --

8 Q. When was the flood?

9 A. I don't have that written here, just that it
10:26:48 10 wasn't in December.

11 Q. We don't know if it was in November?

12 A. I could look it up, but I don't have it in front
13 of me.

14 Q. Number five's the one you talked about with --
10:26:56 15 excuse me, number six, the one you talk about Mr. Soliday,
16 that one -- I think you said earlier that there's not any
17 support for that, of his statement?

18 A. That's correct.

19 Q. And there was a flood in February of 1880 --
10:27:11 20 sorry. There was flood in February of 1890 and also a
21 flood in February of 1891. Is that right?

22 A. Yes.

23 Q. Number seven is Mr. Greenwald. And that's one we
24 hadn't seen last time, I think; at least, I don't remember
25 this from the last time. Mr. Greenwald actually drowned
27:26

1 on this trip. Isn't that right?

2 A. Yes.

3 Q. And the article says that he was going downstream
4 toward Roosevelt Dam. Is that right?

10:27:41 5 A. That's correct.

6 Q. So the dam was already done, completed?

7 A. What year was that -- No, it was under
8 construction. Yes, 1908.

9 Q. Okay. Well, on 3-38 you say, "The reservoir had
10:28:01 10 begun to fill during the February floods of that year." I
11 guess I was just assuming it was starting to fill up,
12 there is something there to stop the water?

13 A. I believe the dam was closed in 1911, but that's
14 your client.

10:28:10 15 MR. BRASHEAR: It's your fault. That's why
16 I'm asking you.

17 MR. GILPIN: It's in the report. You could
18 look it up if you like.

19 BY MR. MCGINNIS:

10:28:21 20 Q. The last one of these is the Roy Thorpe and James
21 Crawford trip in 1910. The rowboat trip. This is another
22 one where it looks like they had lots of problems. Isn't
23 that right? That's on 3-37 of your report?

24 A. What are you basing that on?

28:39 25 Q. Well, this is one where they actually had a boat

1 with three bottoms in it, one of them was gone by the time
2 the trip was over. 3-37, second paragraph.

3 A. Okay. So these three guys came down in a rowboat
4 and they said at the end the boat was in a dilapidated
10:28:57 5 condition at the end of the trip. "Before the start ...
6 three bottoms had been placed in the craft and one of
7 these had been worn through by the constant friction with
8 the boulders and sands found in shallow waters ...men were
9 compelled to lift their craft from water and carry it over
10:29:10 10 obstacles and at other times had to haul it along the
11 stands... the men are well pleased with their adventure,
12 but have no serious intention of attempting to go into
13 competition with the stage company, nor did they attempt
14 to break any speed regulations."

10:29:22 15 And I looked up this one because you asked
16 me about it last time. And it was in June, it was not
17 during a flood, and it was actually during that period
18 when the reservoir was filling and so you would expect
19 that it was very low. In June, the river is typically at
10:29:37 20 its lowest. The fact that they got down this river in a
21 three-man and -- one boat, made of wood, I guess I would
22 call that a success, the boat survived. And it sounded
23 like they anticipated they were going to be having those
24 kinds of problems because they put three -- three bottoms
10:29:53 25 on the boat.

1 Q. So the folks who lived around the area in 1910
2 knew that if you were going to try to boat the river, you
3 were going to have some problems and needed three bottoms
4 in your boat?

10:30:06 5 A. You would need to take certain precautions.

6 Q. That's all I have on those.

7 Page 3-39 of your report says -- toward the
8 end says that, "Anderson and Hopkinson," and some other
9 authors, "consider the section from U.S. 60 to Roosevelt
10:30:26 10 ... to be one of the premier floats in the Southwest." Do
11 you see that?

12 A. Yes.

13 Q. What makes a river good for kayaking? Do you
14 know? Do you kayak?

10:30:36 15 A. I do.

16 Q. What makes a river good for kayaking?

17 A. If you're a kayaker like me, it's remote, chance
18 to see a lot of wildlife. Enough water that you can float
19 your boat and not have to drag it. And the rapids are not
10:31:00 20 too hazardous so that I have a reasonable chance of
21 getting to other end.

22 Now, there are other kayakers you've
23 probably seen on television that are, like, going off
24 waterfalls and things like that; for them the big water
10:31:08 25 falls and the nasty rapids makes -- It kind of varies from

1 person to person. But I would say in the context of this
2 article right here that they're probably speaking of the
3 remoteness, the scene in this, and the fact that it's a
4 fun ride regardless of the big rapids there.

10:31:23 5 Q. And those same things that would make it a fun
6 ride would create problems for somebody who's trying to do
7 it for a commercial product transportation-type purpose?

8 A. If you're trying to haul heavy loads like
9 products from the salt mine you mentioned earlier from
10:31:37 10 Globe, they would impede, yes, for that type of
11 commercial transport.

12 Q. On 3-40, the next page, the one we just talked
13 about. It deals with the question Mr. Brashear asked
14 earlier about the tubing on the Salt River to Stewart
10:31:55 15 Mountain -- excuse me, from Stewart Mountain to Granite
16 Reef, that area -- I think you said this earlier -- that
17 area below the Stewart Mountain is -- the flows are based
18 upon the releases that SRP does?

19 A. Right.

10:32:04 20 Q. So it's not necessarily the same flows that would
21 have occurred absent this?

22 A. Like I said, they're similar to the
23 median-to-average range of what we talked about earlier
24 from all the data that were available, but without as much
32:19 25 fluctuation as there would have been in past. So

1 certainly we tend to see less floods, less
2 unpredictability, if you have four reservoirs upstream
3 that are storing water.

10:32:31

4 Q. So some of the water that's going through there
5 when somebody is tubing actually is water that captured
6 during the flood and released later, correct?

7 A. If you went out there today and paddled that
8 reach, you could. You would be paddling on water,
9 probably, that is stored from last year.

10:32:44

10 Q. Then the next paragraph talks about the 1993
11 incident with Quartzite Falls. Were you familiar with
12 that when it happened?

13 A. Yes.

10:32:54

14 Q. It's true, isn't it, that the reason those folks
15 did that was to try to make the river more subject to
16 being boated?

17 A. Yes. They were frustrated with the tie-ups at
18 that point.

10:33:04

19 MR. MCGINNIS: Next question deals with -- a
20 few pages over -- deals with some of the photos.

21 COMMISSIONER BRASHEAR: Can I interrupt the
22 colloquy for a moment?

23 MR. MCGINNIS: Sure.

24 COMMISSIONER BRASHEAR: Very interesting.

10:33:15

25 The transitions that you talk about in the prestatehood

1 times, was the river in those times about the same as it
2 is now that we have, at least according to one of the
3 entries here, hundreds of people going down in commercial
4 rafting operations? You sounded like it was -- the
10:33:38 5 testimony here sounds like that it was, you know, sort of
6 like a -- trying to march to the north pole. But
7 apparently now today is that we have a number of people,
8 at least it says here "hundreds," who have gone down this
9 thing and have -- maybe they can regard it as an
10:33:59 10 adventure, but is that there have not been any -- well, I
11 guess the one death there was a noncombat weapons
12 discharge, but it looks to me like today that this is a
13 very common thing that anybody can do, and so why was it
14 so dangerous then? Did something change to make it safer
10:34:23 15 now or is it just that we're getting different accounts
16 from the few periods?

17 MR. GILPIN: There are a number of things
18 that have changed. The upstream of Roosevelt -- let's
19 take it in reaches. Upstream of Roosevelt, the flow is
10:34:36 20 essentially unchanged. There are some slight variations
21 such as, but not released to the degree that it affects
22 any kind of boating -- any kind of boating that's able to
23 be done there.

24 One of the biggest differences in that reach
10:34:49 25 is that the route you use to get there. So instead of

1 loading up my wagon in a time period where I didn't have a
2 lot of free time or excess spare cash, I can now drive
3 there in two hours, and I can pump up my inflatable raft
4 or get into my kayak or canoe and get there a lot quicker
10:35:08 5 and get home in the same day rather than having a
6 week-long or month-long expedition. It's a lot safer now.
7 I can carry my satellite phone with me in case I have a
8 problem, so I'm not risking life and limb where I might
9 have been at that time.

10:35:24 10 Another important difference that's pointed
11 out in some of the documentation you've seen is the type
12 of boats has changed. So while there were inflatable
13 boats back as early as the '50s and there were canoes and
14 kayaks, which essentially take the same level of water to
10:35:40 15 flow, the durability has improved. So whereas I don't
16 need three bottoms on the kayak that I own or the canoe
17 that I own and expect to have them wear off during the
18 course of this trip, I can go out there, do it, and come
19 back and reuse my boat. The boats have changed a little
10:35:57 20 bit, the access has changed, and the safety has changed.
21 And you've got a lot more people with a lot more free
22 time. There are a lot more people instead of, I don't
23 know, 10,000, 20,000 people in the Valley at statehood.
24 We have 6,000,000 people here with a lot more cash than
36:14 25 the time on their hands.

1 When it comes to the reach underneath the
2 reservoirs, of course it's all impounded now, there's a
3 lot of different kinds of boating that really don't
4 reflect the natural condition of the river. And then
10:36:24 5 downstream we have this dam-released river, which is not
6 unusual, there are lots of dam-released or dam-controlled
7 rivers, some of which are navigable, some of which are
8 not, that people use and they float in summertime for
9 merely recreation. And why do we do it now more than the
10:36:40 10 past? Again, probably it has to do with access. I can
11 drive from my house in Ahwatukee to Stewart Mountain Dam
12 in 40 minutes. It doesn't take me a two-day wagon ride to
13 get there.

14 COMMISSIONER BRASHEAR: I guess what I'm
10:36:51 15 asking is if this is a -- the susceptibility thing is that
16 the -- if we had the cell phones and all that in 1912 on
17 the date of statehood -- is that if somebody had gotten
18 there, they would have found the river essentially like it
19 is, at least in that reach where the commercial boating
10:37:06 20 takes place now?

21 MR. GILPIN: I think physical
22 characteristics of the river in the upper reach above
23 Roosevelt are essentially unchanged.

24 COMMISSIONER BRASHEAR: Okay.

37:12 25 MR. GILPIN: So the answer to the question,

1 yes.

2 Downstream of Stewart Mountain, the physical
3 characteristics are essentially the same. There are some
4 subtle changes that happen from flood to flood, but the
10:37:24 5 overall character is essentially the same. The water
6 discharged has changed.

7 COMMISSIONER BRASHEAR: Okay. Thank you.

8 BY MR. MCGINNIS:

9 Q. And it's changed because it's more regular now.
10:37:31 10 Is that right?

11 A. It's regulated, yeah.

12 Q. Let's look at B-10. The two photos, I want to
13 ask you questions about. The first one is B-10 -- and you
14 probably have better copy of it than I do -- says that's
10:37:44 15 the junction of the Verde and Salt. We don't know what
16 year this photo was taken, do we?

17 A. We do not.

18 Q. We don't know what time of year it was taken?

19 A. No.

10:37:58 20 Q. Next photo on the next page says "boating on the
21 Salt River."

22 A. Mark, can you hold on just a second?

23 Q. Sure.

24 A. I believe that in the text it refers to the --
38:06 25 this was circa 1910 from the Hayden collection.

1 We also -- I mean, that was published, and I
2 believe the earliest -- either 1908 or 1910 was when that
3 photo was first published. But we don't know when it was
4 taken. So we know it's not the 1990s.

10:38:24 5 MR. FULLER: That's true.

6 MR. GILPIN: We know a little bit about --
7 we don't know the date or the time of year.

8 BY MR. MCGINNIS:

9 Q. Sometime before 1910?

10:38:35 10 A. Yes.

11 Q. The second one on B-11, this is another one, we
12 don't know what time of year it was taken, do we?

13 A. No, we don't.

14 Q. And we don't know how long this trip was?

10:38:47 15 A. No.

16 Q. Same question on the one before, we don't know
17 how long that trip was either?

18 A. No.

19 Q. As a matter of fact, they may have left their dog
10:38:56 20 on the shore?

21 A. That's right.

22 Q. Dog might have had a long run.

23 A. Less flies in the boat.

24 Q. The narrative for one -- B-11 says, "the general
39:09 25 terrain pictured suggests that it was taken of Granite

1 Reef dam perhaps in the Roosevelt area." That's on a
2 couple pages earlier.

3 A. Right.

4 Q. There's no way to know really whether this might
10:39:18 5 have been on Roosevelt, is there?

6 A. The only way to do it would be to do a -- go back
7 to Roosevelt and see if one could match up landmarks,
8 which we have not done.

9 MR. FULLER: We couldn't do it now because
10:39:40 10 the river -- the lake is, what, 70 feet high.

11 BY MR. MCGINNIS:

12 Q. Let's look at page 4-11, which is in the
13 geomorphology section, and I just have one question about
14 this and that's probably for Jon, and that is, this reach
10:39:56 15 of the river, this stretch of the river that we're talking
16 about today is pretty steep, isn't it?

17 A. It's steeper than some rivers, flatter than
18 others.

19 Q. And this one says -- for example, Reach 2 on this
10:40:10 20 Table 4 -- says that slope is 0.4 feet per foot. That's
21 pretty steep, isn't it?

22 A. There's a --

23 Q. That's a typo, isn't it?

24 A. Yes, it is.

10:40:22 25 Q. Okay.

1 A. It's supposed to be .4 percent, according to the
2 text -- well, it says .4 feet per feet, and it should say
3 per hundred feet, it's .4 percent.

4 Q. All three of those listings in that table are a
5 couple of decimal points off. Is that right?

6 A. Yes.

7 Q. 5-22, next question. First bullet there at the
8 top of the page says, "Base flow in the Verde River
9 portion of the watershed is controlled by springs, rather
10 than climatic factors. Below-average precipitation does
11 not generally affect discharge from springs." Do you see
12 that? This is from the portion you wrote, Jon.

13 A. Yes, I see that.

14 Q. Conversely, it's true, isn't it, that the Salt
15 River portion is primarily influenced by climatic factors
16 as opposed to springs?

17 A. Primary -- the question you're asking me is, is
18 the Salt River primarily impacted by climatic factors as
19 opposed to springs? Let's say it's less impacted by
20 springs than the Verde is at low flow.

21 Q. Okay. So below average precipitation on the Salt
22 side would effect discharge on the river?

23 A. At low flow, yes. To a greater degree than the
24 Verde. There are springs along the Salt River.

25 Q. But fewer of them than on the Verde?

1 A. Yes, as a relative percent of flow.

2 Q. Page 5-28, you talk about the -- a third of the
3 way down -- "...reservoirs are suitable for year-round
4 operation of wide variety of boats, including at least one
10:41:59 5 commercially operated riverboat."

6 A. Yes.

7 Q. This is the part you wrote?

8 A. Yes, it is.

9 Q. There's not a riverboat on Roosevelt, is there?

10:42:11 10 A. I'm not aware of one.

11 Q. And Saguaro and the rest of the other dams were
12 not in existence in 1912?

13 A. That's right.

14 Q. Let's look at 5-31. I'm getting close to being
10:42:27 15 done, I promise. On 5-31 you have a Table 22, it says
16 "Upper Salt River Flow Characteristics," and I have a
17 couple questions. And the first one is, down where it
18 says "Reach 2" -- do you see that about halfway down the
19 table?

10:42:39 20 A. Yes, I do.

21 Q. Reach 2 says the depth is greater than 10 feet?

22 A. Yes.

23 Q. That wasn't that way at statehood -- excuse me,
24 that wasn't that way before the construction of the dam,
12:47 25 was it?

1 A. That would not be the average depth, no. And
2 that's why it says "Reach 2 ... Existing Conditions."

3 Q. And that's because there's a dam there?

4 A. Because there's multiple dams, yes.

10:42:58 5 Q. There's a bunch of dams there?

6 A. Yes.

7 Q. And with respect to Reach 3, those numbers under
8 Reach 3 again are somewhat based upon the fact that this
9 area is south of -- downstream from Stewart Mountain. Is
10 that right?

10:43:08

11 A. I'm not sure exactly -- I think that you intend
12 to say that -- I'm not supposed to anticipate what you're
13 trying to say.

14 Q. Let me ask you again.

10:43:22 15 A. Ask a different way.

16 Q. Is it true that the data here for Reach 3 is
17 affected by the fact that there are reservoirs upstream
18 that release water?

19 A. The menial flow value that's given right there is
20 intended to be a without-dam condition of annual flow.

10:43:38

21 Q. What about the average did he want?

22 A. The average depth is -- relates to that flow
23 rate. So this is -- at least for this first row right
24 here, those are -- without a dam, without any dam in place
25 in its ordinary natural condition, that would be the flow

13:55

1 depth and velocity and top would be expected at that flow
2 rate nearer the Verde confluence. As I sit here today, I
3 don't recall whether the 2-year and 5-year flood --
4 whether that's post- or predam.

10:44:14

5 Q. Okay. Let me ask you one question about average
6 depth. If I have a river that has a average depth of 2
7 feet, that doesn't necessarily mean you can float a boat
8 on it, does it?

10:44:28

9 A. Doesn't necessarily mean that you can float a
10 boat on it. I could float a boat on where it was 2 feet.
11 An average depth of 2 feet -- I'm trying to think of any
12 exception to at that point.

13 Q. Well, go ahead.

10:44:46

14 A. And I can't as I stand here today. But if the
15 average depth were 2 feet at a given cross-section, you
16 could have lower depths other places that would make it
17 difficult or perhaps impossible to float a boat.

10:45:03

18 Q. So it's possible that you could have reaches of
19 river where half that reach was, say, 3 feet 11 inches in
20 depth and the other half of the reach was 1 inch in depth
21 and it undulated between 3 feet 11 inches and 1 inch?

22 A. It's hypothetically possible, but I don't believe
23 that characteristic to the point of the Salt River.

10:45:15

24 Q. But in my scenario, you would have an average
25 depth of 2 feet?

1 A. That's correct.

2 Q. And you couldn't float a boat down the river?

3 A. Couldn't float a boat down the river --

4 Q. On a 1-inch section?

10:45:22 5 A. On a 1-inch section, it would be a special boat.

6 The boat would be --

7 Q. When you get that one, I want to see it.

8 A. Actually there's a picture of one in one of the
9 reports. That's really not what we're talking about.

10:45:37 10 Q. No, but feel free.

11 6-3. Page 6-3, there's a statement toward
12 the bottom of the page that says, "Whenever a boat was
13 needed to cross a flooded river, even during the period of
14 early exploration, boats were borrowed from local
15 residents, used and returned." Do you see that?

10:45:53

16 A. Yes.

17 Q. And you don't have any evidence to show that
18 every time somebody needed a boat there was one handy, do
19 you?

10:46:00

20 A. No. And that's not the intent of the statement.
21 The intent of the statement is to say there were accounts
22 where people crossed the river or it was in flood, it was
23 just striking to me that they -- when they went over to
24 the next guy, he had a boat there. He wondered why he had
25 a boat.

46:12

1 Q. Well, there weren't very many bridges across the
2 rivers of Arizona in 1800.

3 A. There were not.

10:46:21

4 Q. So if you wanted to cross the river, it wouldn't
5 be a bad idea to have a boat there in case there was a
6 bear, or in case there was water there, in case it was
7 flooding?

10:46:31

8 A. If you had a need to cross the river. It is
9 interesting that people had boats so there must have been
10 times that they needed a boat. That's the only point I'm
11 trying to make, is people have them.

12 MR. MCGINNIS: That's all I have. I
13 appreciate it -- you know, I really enjoyed your report so
14 I appreciate your candor on the questions.

10:46:48

15 CHAIRMAN EISENHOWER: Are there any other
16 questions?

17 MR. RYLEY: Mr. Chairman?

18 CHAIRMAN EISENHOWER: Yes.

10:47:02

19 MR. RYLEY: My name is John Ryley. I
20 represent San Carlos Apache Tribe, Tonto Apache Tribe, and
21 Yavapai Apache Nation. Present today with me is my
22 partner, Joe Sparks.

23 I had some questions of Mr. Fuller, if I
24 could proceed?

10:47:13

25 CHAIRMAN EISENHOWER: Okay.

1 MR. RYLEY: Thank you.

2 (Mr. Fuller is answering questions.)

3 BY MR. RYLEY:

10:47:19

4 Q. Mr. Fuller, in your report that you prepared, at
5 page 6-6, you stated -- and I'm quoting -- "...most
6 commercial boating is done during the late winter and
7 [early] spring during the annual high flow period." And I
8 wanted to ask you some questions about that.

10:47:37

9 Are you -- was that -- were you referring to
10 primarily the Reach 1 that we have been talking about this
11 morning?

12 A. Can you show me exactly where or which part of
13 the page you're referring? Is that possible?

14 Q. Right there.

10:47:51

15 A. Thank you.

10:48:05

16 Q. I take it you were referring primarily to the
17 Reach 1, which I'm assuming we're talking about, for the
18 commercial rafting trips, the departure point on White
19 Mountain Apache Reservation above the Salt River Bridge
20 off of Highway 60.

21 A. That's correct.

22 Q. And how far down -- that's a long trip down the
23 Salt River Canyon, how long would that be?

10:48:20

24 A. Most of the trips are day trips and they take
25 about 11 miles downstream. There's a smaller number of

1 trips that go down to Gleason Flat and then the rarer
2 trip -- commercial trips go down to the bridge at the 288
3 or 188, just below Roosevelt.

10:48:35 4 Q. So most of the commercial rafting trips would
5 start at the Highway 60, though?

6 A. Just upstream.

7 Q. And they might come out earlier or they might go
8 all way to the Verde?

9 A. That's right.

10:48:47 10 Q. With respect to that quote, "during the annual
11 high flow period," I wanted to know how you defined "high
12 flow period" in terms of cubic feet per second?

13 A. With respect to rafting, it's my understanding
14 that most of the current --

10:49:02 15 Q. And I just want to focus in on commercial
16 rafting, not private recreational rafting.

17 A. In commercial rafting -- private rafting are
18 generally -- the private rafters might be inclined with a
19 little lower flow, but the numbers I'll give you are for
10:49:16 20 commercial rafting. What I have been told is those folks
21 they don't like to go in the river if the gauge at
22 Cristeel is like 700 cfs.

23 Q. Okay. And where is Cristeel located.

24 A. Cristeel gauge is right at the bridge there, just
19:29 25 upstream you can see from bridge -- upstream or

1 downstream, I forget.

2 Q. Okay. And who are these folks that you talked
3 to?

4 A. About?

10:49:35 5 Q. The 700 feet.

6 A. Commercial rafters. Blue sky. Usually go with
7 an outfit that's named -- it escapes me now.

8 Q. Okay. But you actually did talk to owners or
9 operators of the commercial rafting trips?

10:49:49 10 A. Yes.

11 Q. Because I didn't see that information reported in
12 your report.

13 Have you ever gone down the Salt River in
14 the Reach 1 yourself?

10:49:58 15 A. Yes.

16 Q. And when you went down, do you -- do you recall
17 either -- what the gauge reading was at that time?

18 A. The first time I went down -- we started -- it
19 was, I believe, 790 and we quick took off and it was just
10:50:16 20 below 700.

21 Q. Okay. And that would be considered -- you're
22 saying -- you're testifying that would be the minimal for
23 what's the desired cfs flow rate? Or is there a desired
24 rate?

50:24 25 A. The desired rate, I would say, is 800 to, say,

1 6,000, in that range. 800 to 4,000, maybe.

2 Q. Okay. And you're saying the rafting -- the
3 commercial rafting takes place in the winter and spring,
4 is that primarily because of the snow melt?

10:50:40 5 A. Yes.

6 Q. And there are -- aren't there a number of creeks
7 that enter the Upper Salt River as it flows down through
8 the Upper Salt canyon?

9 A. There are.

10:50:51 10 Q. What are some of those creeks?

11 A. The first creek I believe is Cibecue -- Cibecue,
12 Front Stream, Canyon Creek is after that. Cherry Creek
13 comes in around Horseshoe Bend, Pinal Creek is very small,
14 that comes in just upstream of Roosevelt. And then
10:51:08 15 downstream of that the Verde is the next significant.

16 Q. And can you explain, for commercial rafting, what
17 type of boat did you take yourself for that trip?

18 A. Inflatable raft.

19 Q. Okay. And how many people were on the raft?

10:51:25 20 A. The boat -- let's see. Depends on the flow rate,
21 but the smaller boat is a smaller flow rate. The first
22 trip I went down, we had six people and a guide in that
23 raft. I've been down other trips where we've had 10
24 people in the boat.

51:40 25 Q. Did you do this for purposes of preparing your

1 report?

2 A. Yes.

3 Q. Taking the trip?

4 A. Yes. The first trip was -- when I did the first

10:51:44 5 Salt float.

6 Q. And do you remember about what year that was?

7 A. '96, might have been.

8 Q. And about how many trips have you taken since

9 then?

10:52:01 10 A. Eight.

11 Q. And do you recall what the flow rates were on

12 some of those trips? Were they higher than 700?

13 A. Yes.

14 Q. What would be some of the --

10:52:13 15 A. Most of the trips we've had are between 1,500 and

16 3,000.

17 Q. Isn't it true that 1,500 is reported as a desired

18 level to do rafting -- the commercial rafting trip?

19 A. I'm not aware of that. I was really not asking

10:52:28 20 the question of where -- where would you like to boat at,

21 it's what canyon you boated at, where do you begin, where

22 do you stop?

23 Q. Isn't there a safety factor too?

24 A. Yes.

52:38 25 Q. Below, say, 700 might not be that safe?

1 A. I would say that below 700 is not so much fun.
2 You tend to get hung up on rocks in those big rafts, and
3 you need a smaller boat to get through, and you're going
4 to spend more time picking your way through rocks.

10:52:52

5 Q. When you come down on your trips, do you -- how
6 long does that take you?

7 A. On the commercial trip?

8 Q. Commercial trip.

9 A. The one-day trip.

10:53:03

10 Q. Well, the longest.

11 A. All the way through.

12 Q. Yeah.

13 A. It depends on the paddlers you've got with you,
14 most of them are taking four days.

10:53:13

15 Q. And do you have to -- are there places where you
16 have to get out and portage the raft because of bedrock
17 canyon?

10:53:30

18 A. A lot of people stop and carry their raft or line
19 their raft through Quartzite Falls and it depends on the
20 skill of the boater, but a skilled boater can take those
21 kinds of rafts at the ideal flow rate and can ride it down
22 to the Verde dam.

10:53:43

23 Q. And on the commercial rafts, are they able to
24 take the boat all the way down one way or another,
25 portaging the raft?

1 A. That's my understanding, yes.

2 Q. But in your personal experience, you have not
3 portaged?

4 A. I have not portaged.

10:53:49 5 Q. You have not portaged. Okay.

6 In that same -- on that same page, you had a
7 survey by -- that was apparently conducted of the Central
8 Arizona Boater's Club?

9 A. That's correct.

10:54:05 10 Q. Is that survey -- and I notice that in the reach
11 above Roosevelt Lake it mentions a flow rate of 200 cfs.

12 A. Yes.

13 Q. Is that for private recreational rafting or
14 canoeing?

10:54:20 15 A. I don't have that data in front of me, but that
16 -- typically there are commercial boaters that -- who are
17 part of the Central Arizona Boater's Club. I don't know
18 if that club is active anymore, there's a different club
19 now. But there were commercial boaters that were a part
10:54:32 20 of that, but most of their members are private boaters so
21 I'm going to assume this is private boating. And I'm
22 going to assume also that the 200 cfs does not apply to
23 rafts.

24 Q. Okay. That would apply to canoes?

54:44 25 A. Kayaks mostly.

1 Q. Private recreational.

2 A. Able kayaks.

3 Q. Okay. Because that number is different than the
4 700 cfs you were talking about for commercial.

10:54:54

5 A. Yeah. Yeah. Canoe or a kayak -- hard shell
6 kayak, you can get into a lot less water and you're going
7 to have an easier time picking your way through rocks in
8 the river.

10:55:07

9 Q. Now, we're talking about the commercial rafting.
10 Did you make any attempts to determine how many commercial
11 raft trips have been taken down the Upper Salt, say, since
12 1985?

13 A. No.

10:55:22

14 Q. And I think you said previously this morning
15 there are years when the flow is too low, that no rafting
16 trips can be taken?

17 A. Yes.

18 Q. Are there years when rafting can only be done in,
19 say, in like one month out of the year?

10:55:31

20 A. Yes.

21 Q. What -- do you -- do you recall what years that
22 might have been?

23 A. I don't recall.

24 Q. Would that be -- would that be typical, though?

10:55:40

25 A. I know it is typical. We had a pretty extensive

1 drought over the last 10 years so there were a few years
2 of fewer than normal -- years, I would say, where it was
3 floatable.

4 There was one year where I don't remember
10:55:52 5 that any commercial raft company that I've associated with
6 or am aware of -- not associated with, but I'm not aware
7 of any that ran that year. There was another year within
8 the last three years -- and I just don't remember the
9 date, I'm sorry -- where I know it was, "Hey, we're
10:56:12 10 running this week, come and do it," and it was a two- or
11 three-week period.

12 Q. Do you know how many commercial rafting
13 operations have commercial leases or permits from the
14 forest service?

10:56:22 15 A. I don't.

16 Q. To run the -- I'm assuming they have to have the
17 permits to run through the Upper Salt Canyon?

18 A. I believe they need a permit from the forest
19 service as well as your clients.

10:56:34 20 Q. White Mountain Apache Tribe? White Mountain is
21 not -- we represent San Carlos.

22 Are you aware of any boating along the Upper
23 Salt River on the San Carlos Apache Reservation in
24 connection with these commercial rafting trips?

56:50 25 A. No, I'm not. I know the commercial trips they go

1 from -- put in just above the bridge down to the bridge at
2 Roosevelt. This boater survey people said that -- they
3 had people that had done the White and Black Rivers, which
4 are not part of the study, and gone the confluence down to
10:57:07 5 the bridge. I don't know whether they did it with permits
6 or without.

7 Q. So let me ask the question again. Are you aware
8 of how many commercial rafting operations currently have
9 permits?

10:57:20 10 A. No, I don't know the specific number.

11 Q. It's reported -- I believe it's reported several
12 of them. Would that be in your report?

13 A. I think when I've been on the river, I have seen
14 as many four different companies operating.

10:57:33 15 Q. And some of those companies are -- operate with
16 their headquarters outside the state of Arizona?

17 A. Yes.

18 Q. Most of them do?

19 A. Yeah. Rafters typically follow the rivers.

10:57:42 20 They'll raft here in the months where it's here, and then
21 they'll move up the Colorado.

22 Q. Do they have to wait -- do these operations have
23 to wait until there's a certain minimum river flow? And
24 then -- I assume there's sometimes signs listed that
57:57 25 notify these people that they are ready to take the raft

1 trip. Is that how --

2 A. I'm not exactly sure how they operate or what
3 their legal requirements are in terms of flow rate or
4 anything, but from talking to the guide and people that we
10:58:09 5 talked to, they liked to boat it when it gets over a
6 certain rate. If there's been snow pack, they anticipate
7 what kind of year they might have. And then they would
8 hire their guides and send out their flyers or web
9 announcements or whatever they do.

10:58:26 10 Q. Now, in your report at page 5-20, Table 17 --

11 COMMISSIONER BRASHEAR: There's been several
12 references to a page, and I don't remember the number,
13 you've been talking about it for some time -- could you
14 repeat that number that you were --

10:58:41 15 MR. FULLER: We've been looking at Table 4
16 which is on page 6-6.

17 COMMISSIONER BRASHEAR: Okay. Thank you.

18 BY MR. RYLEY:

19 Q. Directing your attention to Table 17 of your
10:58:50 20 study, page 5-20?

21 A. Yes.

22 Q. And I just wanted to talk a little bit about
23 median flow rates here. You have reported here that the
24 median flow rate for long -- the median flow rate
59:06 25 estimated for long term for the Upper Salt River in Reach

1 1 varies from 210 to 340 cfs.

2 A. Yes.

3 Q. Now, could you define for us what you mean by
4 "median flow rate"?

10:59:19 5 A. A median would be a value that is 50 percent of
6 the sample is -- general population is higher and
7 50 percent is lower. So for instance, if I gave you the
8 numbers, let's say, 1, 2, and 97, the median would be two
9 because there's one number above and one number below.

10:59:42 10 Q. So would it be fair to say that 50 percent of the
11 time in any given year the flow rate would be -- would be
12 approximately 210 to 340 cfs?

13 A. That's correct.

14 Q. And is that based on a gauging station where you
10:59:58 15 took those numbers?

16 A. Yes. Based on the gauging data that were
17 available for that reach.

18 Q. And that reach -- how long is that reach, though?
19 You mentioned the Cristeel gauging station near Highway 60
11:00:10 20 bridge.

21 A. I don't know the reach as I stand here today, but
22 I believe it's recorded somewhere in the report. I don't
23 have it.

24 Q. Well, I was wondering whether that was -- did
:00:27 25 that include flows from Tonto Creek, for example?

1 A. No.

2 Q. No?

3 A. Reach 1 would be upstream of Roosevelt.

4 Q. Okay. But that could be -- but you're not sure

11:00:38 5 if that's at the lower end of the Upper Salt River?

6 A. I believe that's why we gave it as a range. The
7 flow rate on this particular river increases the
8 downstream direction and we have some of these creek areas
9 that you mentioned that kind of --

11:00:50 10 Q. And that's what I thought you meant. So that you
11 may have used the -- for example, the Cristeel gauge to
12 get the lower number and then maybe a range. Would there
13 be gauging downstream in the commercial rafting reach that
14 would have a higher cfs?

11:01:05 15 A. There's a gauge at Roosevelt upstream of the
16 bridge, whatever that route is, 288.

17 Q. Okay. And that's where they get off at the
18 Highway 288?

19 A. Yes.

11:01:19 20 Q. Okay. And you also reported the average annual
21 flow rate at approximately 600 cfs for the Upper Salt
22 River Reach 1?

23 A. The average annual flow rate, is that what you
24 said?

11:01:29 25 Q. Right.

1 A. Yes.

2 Q. And that would include flood flows then?

3 A. Yes. Well, all of this would include flood
4 flows. It's just a different way of looking at -- let me
11:01:41 5 go back to my example, 1, 2, and 97 -- the average is 33,
6 the median is 2.

7 Q. But the average annual flow rate is higher than
8 the median flow rate because of the fact that there are,
9 in any given year, most years, some floods or
11:02:03 10 precipitation events?

11 A. It has to do with when the volume of water comes
12 down the Salt River, and like most rivers in the west --
13 near west, we get a lot of our runoff during floods, so
14 that takes the average higher than the median.

11:02:15 15 Q. And when you get the floods, that could be --
16 that might be, for example, during the monsoon summer
17 rains? Would that be possible?

18 A. You can get the floods during monsoon summer
19 rains. They're typically not the Upper Salt, they're
11:02:28 20 typically not our largest floods with possibly the
21 exception being post-fire, after the Rodeo-Chediski fire.
22 In general, in its natural and ordinary condition, I would
23 say that our largest floods are occurring in the winter
24 during snow melt.

11:02:42 25 Q. And there would be times, then, during those

1 flood periods when there wouldn't be any commercial
2 rafting because the river would be too high?

3 A. Yes.

4 Q. So there's -- for commercial rafting there are
5 limited windows of opportunities? Is that fair?

6 A. I would say most of the commercial rafters choose
7 to boat within a window of opportunity that's most fun,
8 and people are used to going to that area, and when they
9 have the crew available to do it.

10 Q. And -- okay. And your estimate of the average
11 annual flow rate at 600 is still below the -- what you're
12 saying is the minimum flow for commercial rafting in
13 Reach 1?

14 A. That's true.

15 Q. Did the -- I -- did you read the forest service
16 report that was filed in this case?

17 A. Yes, I did.

18 Q. They reported in there, I believe, that the first
19 commercial leases that they issued for rafting was in
20 1985.

21 A. I don't recall.

22 Q. Are you aware of when the commercial rafting
23 started?

24 A. In our report, the section that Dennis wrote, it
25 said that it was post-World War II, 1950s when people

1 started -- when they had the availability of the rubber
2 raft.

3 Q. Well, I wanted to ask you about that. There's a
4 report that Girl Scouts and the Sierra Club, doing some --
11:04:07 5 I think that Mr. Gilpin testified that he prepared this
6 part of the report.

7 A. Boy Scouts or Girl Scouts?

8 Q. Girl Scouts and the Sierra Club, I think,
9 reported --

11:04:17 10 A. I remember Boy Scouts.

11 Q. Something in the 1950s about rafting on the Upper
12 Salt River. And I had assumed that was not -- I assume,
13 first of all, that it was probably inner tubes? Maybe,
14 Mr. Gilpin?

11:04:36 15 MR. GILPIN: I actually don't recall
16 specifically, but we should look at the last -- basically
17 the last paragraph of the report.

18 MR. FULLER: Yeah. On page 3-39 the text
19 states, "Recreational rafting of the Salt River Canyon
11:05:20 20 above the Tonto Basin appears to have begun after World
21 War II, when rubber rafts became available to the public."
22 According to Nelson in 1990 -- this is a quote -- "The
23 Theodore Roosevelt Council of the Boy Scouts of America
24 and the Sierra Club began organizing Salt River trips in
11:05:36 25 the late 1950s... the early adventurers used Army Or Air

1 Force surplus rafts, running the river at water levels as
2 low as 400 and as high as 3000 cubic feet per second."
3 Nelson on page 60. That's the end of the quote.

4 BY MR. RYLEY:

11:05:51 5 Q. And what reach is that where they were doing
6 that?

7 A. It says "above the Tonto Basin."

8 Q. Where would that be?

9 A. That would be the reach that we have been
11:05:59 10 discussing, commercial reach.

11 Q. But you don't know where they would start out on
12 that?

13 A. No, I don't know specifically from the text here,
14 but there are very few river access points in that reach.

11:06:09 15 One is U.S. 60, the next is at the end of the dirt road, I
16 forget the name of the access point there.

17 MR. HENNESS: Gleason Flat.

18 MR. FULLER: Before Gleason Flat. Before
19 you go up the hill. So it's just where the dirt road
11:06:22 20 along the road turns up, there's a little takeout there.

21 MR. HENNESS: The lower end 11 miles down
22 for commercial boating?

23 MR. FULLER: Yeah. Yeah. There is that
24 point, and I don't know -- there's Gleason Flat you can
11:06:32 25 get in to and then -- I don't know if Horseshoe Bend is

1 open now, it has been in past, and then there's the 288
2 bridge.

3 BY MR. RYLEY:

4 Q. Well, what about the Sierra Club? Are they -- do
11:06:41 5 you know if they were doing any or sponsoring any rafting
6 trips down the Salt River?

7 A. I'm unaware of whether they still are.

8 Q. What about the Boy Scouts or Girl Scouts?

9 A. I'm not a scout so I don't know.

11:06:51 10 Q. Are you aware of any other private groups that
11 might be doing rafting down the Salt River?

12 A. Yes.

13 Q. What are those?

14 A. "Private" meaning like clubs?

11:07:01 15 Q. Clubs.

16 A. We have the Desert Paddlers Club. They -- their
17 members routinely go down there and they poll their
18 members, "Who wants to go this weekend? I've got a
19 permit," et cetera. There are other paddle groups.

11:07:14 20 There's one in Tucson, there's in one Prescott, there's
21 one in Flagstaff. There are people that come from a long
22 ways away to go paddle there. I don't know specifically.
23 It is a hard permit to get.

24 Q. Why is it a hard permit to get?

11:07:28 25 A. More applicants than there are spaces.

1 Particularly for weekend permits.

2 Q. How many -- do you know how many people they
3 would allow or how many permits they issue?

4 A. I don't.

11:07:40 5 Q. Would there be a maximum number per day?

6 A. Yes. And I don't know that number.

7 Q. You don't have any idea, approximately?

8 A. No.

9 Q. I may have asked this question before, but were

11:07:55 10 you ever able to analyze any data that would show the
11 amount of income that commercial rafters are making from
12 these commercial rafting trips, say, on an average per
13 year?

14 A. I did not.

11:08:18 15 MR. RYLEY: That's all the questions that I
16 have.

17 CHAIRMAN EISENHOWER: Are there any other
18 questions for Mr. Fuller or Mr. Gilpin?

19 If not --

11:08:30 20 MS. HACHTEL: I have some. I would just
21 like to --

22 CHAIRMAN EISENHOWER: Identify yourself.

23 MS. HACHTEL: I'm Laurie Hachtel for the
24 State Land Department.

11:08:38 25 I would just ask if we could take like a 10-

1 or 15-minute break to regroup, then I will decide if I
2 need to put on Mr. Fuller or Mr. Gilpin for some redirect.

3 CHAIRMAN EISENHOWER: Well, we'll do that in
4 a minute because I think one of our members has some
11:08:55 5 medical appointments he has to make.

6 MS. HACHTEL: Okay.

7 CHAIRMAN EISENHOWER: So we'll do that in
8 due time.

9 MS. HACHTEL: Okay.

11:09:03 10 CHAIRMAN EISENHOWER: But for the time
11 being, thank you, and we'll have you come back later
12 today.

13 I want to move forward with -- we have some
14 people who came from out of town to testify. I'd like to
11:09:18 15 have them do that now. Mr. McGinnis, do you have your
16 people ready?

17 MR. MCGINNIS: Yes, sir.

18 MS. GOLDBERG: I'm Rebecca Goldberg on
19 behalf of Salt River Project. We have two experts this
11:09:32 20 morning, Dr. Stan Schumm and Dr. Littlefield, who --

21 COMMISSIONER ECHEVERRIA: Could you move the
22 mic closer to your mouth?

23 MS. GOLDBERG: Sorry.

24 MR. HENNESS: There's no speaker in here,
09:41 25 that's just for the tape recording.

1 COMMISSIONER ECHEVERRIA: It's difficult to
2 hear.

3 MS. GOLDBERG: Dr. Stanley Schumm and
4 Dr. Doug Littlefield prepared reports that were submitted
11:09:51 5 to the commission regarding the navigability of the Upper
6 Salt.

7 First, we would like to have Dr. Schumm
8 testify he prepared his report, The Geomorphic Character
9 of the Upper Salt River. It was prepared in January,
11:10:06 10 earlier this year and submitted to the commission earlier.
11 With the permission of the commission, I would just like
12 to have Dr. Schumm testify. If there is any question
13 afterwards, he's prepared to answer that.

14 CHAIRMAN EISENHOWER: Dr. Schumm?

11:10:27 15 DR. SCHUMM: I got stiff sitting there.

16 CHAIRMAN EISENHOWER: I know the feeling.

17 COMMISSIONER ECHEVERRIA: : We know. We
18 know.

19 DR. SCHUMM: I'm Stanley Schumm. I'm a
11:10:39 20 geomorphologist. I appeared before you before so I don't
21 think I need to go into my background. I'm a modest but
22 brilliant geomorphologist.

23 Do you have copies of my report?

24 CHAIRMAN EISENHOWER: Yes, we do, sir.

10:56 25 DR. SCHUMM: Because I'd like to talk to

1 some of the illustrations.

2 CHAIRMAN EISENHOWER: I don't believe we
3 have it here today, but that's okay. We have been given
4 it and I have it at home, so, yes. So please continue.

11:11:11 5 Mr. McGinnis is going help us out.

6 DR. SCHUMM: Okay, good. I was interested
7 to learn that gentleman and lady have decided that the
8 Lower Salt River was not navigable. And based upon the
9 geo- --

11:11:34 10 CHAIRMAN EISENHOWER: Go ahead. You have
11 the platform.

12 DR. SCHUMM: Based upon the geomorphology of
13 the drainage basin as one goes upstream, the channel
14 should get smaller, the width and depth should decrease,
11:11:47 15 and the gradient should increase. It gets steeper. So
16 based upon that, it would it seem to me if it's not
17 navigable downstream in a general sense, and drainage
18 systems, it shouldn't be navigable upstream. But that's
19 for you to decide.

11:12:06 20 COMMISSIONER ECHEVERRIA: : There's logic
21 and there's law. We'll not get them mixed up, okay?

22 DR. SCHUMM: Okay.

23 COMMISSIONER BRASHEAR: Excuse me. Where
24 would that be shown downstream? When we adjudicated the
12:18 25 Lower Salt, it spreads out, it abrades itself, and changes

1 channels all the time, at least that's my memory of it.
2 But as it gets up into the Upper Salt, it's contained,
3 it's pretty much flowing between canyons where it was, and
4 it's not abraded, and so I don't understand why if it's
11:12:37 5 non-navigable down at the lower part, why it would
6 therefore be non-navigable in the upper reaches?

7 DR. SCHUMM: Well, because you have less
8 water and the channel is responding to that and -- now
9 this is a general sense. The width should be less, the
11:12:54 10 depth should be less, the gradient should be steeper. If
11 you collect data throughout a watershed, you'll find that
12 that's the case.

13 COMMISSIONER BRASHEAR: But then you're
14 talking about a general principle, not necessarily the
11:13:06 15 Upper Salt River?

16 DR. SCHUMM: That's right.

17 COMMISSIONER BRASHEAR: Okay.

18 DR. SCHUMM: That's right. Because the Salt
19 is quite different upstream.

11:13:16 20 Last time I spoke to you, you used my
21 Figure 1 to describe very different types of channels, and
22 you concluded that Lower Salt was a braided river. And
23 this figure pertains to alluvial streams, streams that --
24 the beds and the banks for the stream are composed of the
13:42 25 sediment transported by the stream today. And so if

1 Figure 2 shows -- and this is 1934 -- aerial photograph
2 showing how graded the channel is downstream from the
3 junction with the Verde River.

4 So we have a portion of the Upper Salt River
11:14:01 5 that's very much like the Lower Salt River that I
6 described at that time. But then we go upstream and
7 Figure 4 is not -- is not as dramatic a canyon as
8 Figure 5, but generally most of the upper part of the
9 Upper Salt River appears to be in the canyon, and Figure 5
11:14:27 10 shows that, I think, very well -- the Salt River
11 three miles upstream of Cherry Creek. And Cherry Creek --
12 there's a map of this reach of the river, which is
13 Figure 10, and it shows how steep and confined the river
14 really is. And in Figure 5, about an inch up from the
11:14:52 15 bottom you see some white water, indicating that there is
16 a rapid there.

17 And then a good headed river downstream from
18 Roosevelt and is also impounded by dams downstream. But I
19 think if that water were not there, the reservoirs were
11:15:17 20 not there, you'd have a valley in the channel very much
21 like Figure 5. The river would be confined by bedrock.
22 And in fact in Figure 6, we see a bedrock island poking up
23 above the level of the reservoir. And Figure 7, again,
24 just shows the Salt River upstream from Mormon Flat Dam to
15:47 25 the reservoir, and if that water were not there, again,

1 the river would be in a pretty deep and rugged canyon.

2 Now, the forest service has prepared a

3 report of rafters. We heard a lot about that this

4 morning. In Table 1, I think you have their report and

5 listed things that they considered to be important for

6 rafters. And for the 60 miles above Roosevelt Dam

7 spillway, which is river mile zero, there's a rapid on

8 average every 3.3 miles. What's even more interesting is

9 the indications of the gradient of the river up there.

10 For example, at 14.7 miles, the river drops 17 feet per

11 mile. At 20.8 miles, the river drops 16 feet per mile,

12 and then finally at 30.1 feet, the river drops 31 feet per

13 mile. We're dealing with a relatively steep portion of

14 the channel with numerous rapids. And I like the names of

15 the rapids: Corkscrew Shoot at 28.2; Cliff Hanger Rapid

16 at 25.7; the Rat Trap, 46; Little Boat Eater, 48.3;

17 Overboard Rapid at 57.2 -- that's a typo, it's showing as

18 27 but it's 57 -- so a rugged reach of the river. And I

19 think that this is important because in Mr. Littlefield's

20 report, he has a quotation from a captain -- well, in any

21 event, he said that if the river is steeper than 4 feet

22 per mile, you can't -- river borne commerce cannot compete

23 with railroads or other means of travel. So it sounds as

24 if it's steeper than 4 feet per mile. You're not going to

25 get any sizeable boat up and down the river; and here

1 we're talking about a maximum of 31 feet per mile,
2 suggesting that, pretty clearly, at least this 60 miles of
3 the river would not be suitable for any sort of
4 navigation.

11:18:38 5 And I might say that Captain Mellon -- I
6 found a reference to him in another book -- he was a
7 captain of steamboats on the Colorado River for 25 years,
8 so he was apparently pretty knowledgeable about these
9 situations.

11:18:54 10 And in my Table 2, the hydrology, the menial
11 discharge is quite high starting about 1905 and continuing
12 to 1911. This suggests to me that at the time of
13 statehood, the river would be at its widest and most
14 dynamic as a result of these high discharges. And clearly
11:19:41 15 Figures 10 and 11 by American USGS and Huckleberry for the
16 Arizona geological survey shows that during this period of
17 high discharges -- and we're now looking at the Gila
18 River, not looking at the Salt -- during the periods 1905
19 up to about 1930, the channel width of the Gila was very,
11:20:15 20 very large. The river was quite wide. And then after
21 that period of high discharge, again, the channel
22 narrowed. And again, the examples here are of the Gila,
23 but it seems to me the same thing should apply to the
24 Upper Salt except where it's currently confined by bedrock
20:36 25 and unable to change its character.

1 I think from what I have said in terms of
2 the character of the river, the great effect of bedrock --
3 I forgot to mention Figure 8 which shows a really dramatic
4 example of the effect of bedrock. This is at the junction
11:21:11 5 of the Verde and the Salt Rivers. And right where that
6 dark blemish comes down through the photograph you can see
7 bedrock exposed in the river which makes it impossible to
8 take any size of boat up and down through that reach. And
9 in fact, I went out there yesterday to look at it and it
11:21:37 10 was pretty clear there was bedrock exposed on the left
11 bank of the river upstream from this. So clearly at this
12 particular reach, the way to get any sort of shipping up
13 and down the river would be to build a big lock and dam
14 there. I'm sure the Corps of Engineers would be happy to
11:21:59 15 do it for you.

16 I think based upon the -- you can see the
17 rapids, clearly the bedrock here, the high flood
18 discharges during the time of statehood, and just in
19 general the confined nature of the river, to my mind,
11:22:28 20 makes it unnavigable. Thank you.

21 CHAIRMAN EISENHOWER: Are there any
22 questions?

23 Are there any questions from anybody in the
24 audience for Dr. Schumm?

25 (Dr. Schumm is answering questions.)

1 BY MS. HACHTEL:

2 Q. Again, I'm Laurie Hachtel for the State Land
3 Department. I have a few points that I just would like to
4 clarify for the court if you could explain them to me.

11:23:00 5 A. Sure.

6 Q. First, I wanted to make -- find out, other than
7 this report that you prepared for Salt River Project, have
8 you prepared any other reports on the Upper Salt River?

9 A. No.

11:23:14 10 Q. And have you ever -- Withdraw that.

11 On page 1 of your report, you listed the
12 information that you based your analysis of subsequent
13 periods on. And they -- you list -- you said you reviewed
14 published and unpublished reports. Can you -- are all of
11:23:44 15 those the ones listed in your bibliography that's attached
16 to the back page of your report, or are there other things
17 that you looked that you haven't listed and attached to
18 your report?

19 A. The only other reports that -- of course, I wrote
11:23:57 20 a report on the Lower Salt, this one on the Upper Salt,
21 and one of the Verde and one of the Lower Gila.

22 Q. But that would have been the extent of what you
23 looked at in order to write your report and what you
24 considered?

24:13 25 A. Yes.

1 Q. And as far as the nature of the field work that
2 you completed for this report, was the helicopter tour
3 that you mentioned here as far as what you -- well, you
4 mentioned a helicopter flight; was there any other field
11:24:28 5 work other than the helicopter flight that you did on the
6 Upper Salt?

7 A. No, not really.

8 Q. And --

9 A. Except for the trip yesterday. I was looking at
11:24:40 10 bedrock.

11 Q. And where did you go yesterday?

12 A. The junction of the Verde and the Salt.

13 Q. Did you get out at any point to look at any part
14 of that?

11:24:49 15 A. We just went to the recreational area and walked
16 along the bank.

17 Q. Okay. And what kind of study of USGS topographic
18 maps did you use specifically for your report?

19 A. For this report?

11:25:05 20 Q. Yes.

21 A. I think that I tried to calculate gradient of the
22 river near the junction of the Verde and the Salt and then
23 just -- and came up with a number, say, 10 feet per mile.
24 And then just looked at the topographic maps to get a
25:35 25 general impression of the river and the valley.

1 Q. And the 1934 aerial photograph that you mentioned
2 that you examined, did they extend upstream of Granite
3 Reef dam?

4 A. Yes.

11:25:51 5 Q. And how about Stewart Mountain Dam?

6 A. I don't recall.

7 Q. And Roosevelt --

8 A. I think there were topographic maps prepared by
9 the Bureau of Reclamation, but I didn't -- I heard about
11:26:12 10 them, but I haven't seem them.

11 Q. But as far as the 1934 aerial map, though, you
12 don't recall if they extended past Stewart Mountain Dam?

13 A. I don't recall.

14 Q. And how about the -- did the 1934 aerial
11:26:29 15 photograph examined, did they extend upstream of Roosevelt
16 Dam, do you recall?

17 A. I would think if I had photographs of the reach
18 that I discussed in my report, they certainly -- they must
19 have been taken for some purpose, and I would assume that
11:26:49 20 they would have gone upstream, but I certainly didn't --
21 haven't seem them.

22 Q. Do you know what percentage of the reach that
23 those aerial -- 1934 aerial photographs represent?

24 A. No.

27:00 25 Q. And did you look -- in preparation for your

1 report or your testimony today, did you look at modern or
2 historical USGS stream gauge radiant curves?

3 A. I didn't look at the radiant curves. I just
4 looked at the median discharge data numbers in the water
11:27:22 5 supply papers.

6 Q. And how did you use the -- that data?

7 A. Just as I said, to determine if the period near
8 statehood was different from the period before and after.

9 Q. And did you look at any hydraulic modeling
11:27:47 10 showing flow, width, depth, or velocity?

11 A. No.

12 Q. And did you look at any information regarding
13 historical or modern boating on the Salt River in
14 preparation of your report or testimony?

11:27:59 15 A. No. I read the available reports that discussed
16 that.

17 Q. You mean as far as the U.S. Forest Service guide,
18 is that what you are referring to?

19 A. Yes. And then Mr. Fuller's.

11:28:11 20 Q. Oh, Mr. Fuller's report.

21 And then, Dr. Schumm, just a couple
22 questions on Roosevelt Dam. Is the Upper Salt River
23 downstream of Roosevelt impacted by the dam?

24 A. Well, certainly if there were not dams
28:32 25 downstream, one would assume that if there was sediment in

1 the channel downstream that it would be mobilized. That
2 is the usual story when you put in a dam then release
3 clear water, you erode downstream and the channel deepens.

4 Q. And is the Upper Salt River impacted by the other
5 three SRP dams?

6 A. I would assume there's an impact, but I don't
7 know what it is.

8 Q. Did you say that the flow rates changed from the
9 predam to the flow condition?

10 A. They must have.

11 Q. And how would -- in what way would you say they
12 changed?

13 A. Well, usually you build a dam so you can regulate
14 the flow and take the cut off the peaks and maintain the
15 lower flows for longer periods for irrigation purposes.

16 Q. So in that regard, you would say that the flood
17 rates and the volumes have changed as well?

18 A. Probably, but I haven't looked at that.

19 Q. And have you done studies in your work on impact
20 of dams on rivers generally?

21 A. I have read reports about the effect of rivers on
22 -- dams on rivers and I can't recall that I ever did much
23 with that. It was always the matter of reading someone
24 else's report.

25 Q. Okay. And then just need a clarification on a

1 couple of other points.

2 Is it your opinion that the Upper Salt River
3 is braided upstream in the bedrock canyons?

4 A. Well, yes, in places, and other places where
11:30:50 5 you -- farther upstream probably is a different pattern,
6 pool-and-riffle-type pattern where accumulation is -- it
7 cobbles and then -- which is a high point and then there
8 is kind of a pool, low point below that.

9 Q. So a pool-and-riffle pattern is the same thing
11:31:11 10 as -- or is it a characteristic of a braided river, is
11 that what you're saying?

12 A. No, it's different. It's where you have very
13 high velocities and coarser sediment.

14 Q. So I guess just to understand -- so you're --

11:31:25 15 A. I don't know where that is in this system because
16 I haven't looked at the bed of the river everywhere.

17 Q. Okay. So is it your opinion that the Upper Salt,
18 then, even where the channel is confined, then, in the
19 bedrock canyons, is braided?

11:31:45 20 A. It could be.

21 Q. Okay. And then --

22 A. Because that's the pattern of the bed. And you
23 could have that pattern where you have a wide open valley
24 with a floodplain or more constricted channel.

32:01 25 Q. Okay. Then on Figure 1 in your report on page 2,

1 of these different channel patterns in Figure 1, did you
2 -- are you -- which of the channel patterns would you say
3 in Figure 1 does the Upper Salt River look like?

4 A. Certainly the lower reach and that junction of
5 Verde, number five.

6 Q. Number five for the lower part of the Upper Salt
7 River?

8 And on Figure 4 -- in the depiction of
9 number 4 in Figure 1, do you consider that to be braided?

10 I just mean in the chart. I'm sorry, Dr. Schumm, just in
11 your figure -- oh, are you referring to that to answer the
12 question? Okay. That's what I want.

13 A. I can't tell. I'm assuming from the bed you
14 would have a braided pattern, but you can't see it on the
15 photograph, and I couldn't see it when we flew over.

16 Q. Okay.

17 A. Certainly not meandering and certainly not -- we
18 can eliminate the other patterns in Figure 1 and that
19 leaves us just with the braided pattern.

20 Q. Okay. And Dr. Schumm, you said the Upper Salt
21 River has a high bed load and unstable pattern of
22 relatively variable channels. Did you make measurements
23 of bed load at all?

24 A. No.

25 Q. And would you say that the Salt River bed has

1 more cobbles or more sand?

2 A. It probably varies from -- certainly yesterday
3 when we were at the junction of the Verde and the Salt,
4 there are a lot of cobbles there, particularly in the
11:34:12 5 terraces adjacent to the river. But I didn't go out on
6 the bed so I'm not -- I can't tell you.

7 Q. Okay. So just limited to your observation
8 primarily yesterday when you were doing field study?

9 A. Yes.

11:34:26 10 Q. And what do you mean by -- when you said that --
11 "unstable pattern," what do you mean by that?

12 A. Well, if the braided pattern has multiple
13 channels and sand bars and gravel bars, during any flood,
14 the position of the gravel bar could shift and be eroded
11:34:48 15 away. The pattern of the bed changes its characteristics,
16 not in the sense of not being braided but the position of
17 the channels and the position of the bars and the
18 character of the bars could change.

19 Q. Now, that being said, where on the Upper Salt
11:35:05 20 does that pattern apply specifically?

21 A. Well, certainly Figure 2 shows it.

22 Q. Any other areas on the Upper Salt, other than
23 Figure 2, that you would say applies within those reaches?

24 A. Well, I think Figure 3, because of the control of
11:35:22 25 the reservoir you have what I would call a low-water

1 channel there, and you look and see sand bars in the
2 channel. And clearly at some point, probably during the
3 time of statehood, the river would have been much wider in
4 here, it would have been a natural condition, the typical
11:35:45 5 braided figure like Figure 2.

6 Q. And Dr. Schumm, in your basis on that, is that
7 just based on the 1934 aerials or are there other
8 photographs, maps, or information that you looked at to
9 reach your opinion as far as the unstable pattern?

11:36:05 10 A. Well, it's based upon my knowledge of rivers
11 throughout the world and how they behave.

12 Q. But as far as on this river, the Upper Salt
13 River, that information that you looked at is the 1934
14 aerial?

11:36:17 15 A. I just looked at the '34 aerials.

16 Q. Okay. And then, Dr. Schumm, can you tell me what
17 "relatively variable channel" means, that you have in your
18 report?

19 A. Relatively variable.

11:36:29 20 Q. Channel, that you use -- you say that in your
21 report.

22 A. Well, if you have a range of channels -- and if
23 you go back to Figure 1 -- channels 1 and 2 and 3, they
24 change -- characteristics change during floods, like the
36:58 25 meandering channels, they cut off the bend. But in

1 general, they are relatively more stable than the braided
2 channel, pattern 5.

3 Q. Okay. And Dr. Schumm, would you say that the
4 Upper Salt River channel is more variable than other
5 rivers?

6 A. Where it's confined by bedrock, the only changes
7 can occur in the bed. And depending again on the size of
8 the sediment in the bed, boulders way upstream, probably
9 very little change during times. As you come downstream
10 and you're into cobbles, large floods are going to move
11 these cobbles and rearrange the bed. And if you're down
12 far enough where you're just in sand, clearly it's very
13 dynamic and change at any discharge.

14 Q. Would you say it's more variable than the Verde?

15 A. Probably -- probably about the same.

16 Q. How about --

17 A. They're similar types of rivers. Now, the Verde
18 downstream near the junction -- again, there's -- it's not
19 confined in bedrock but it's confined between terraces. I
20 would say, in a general way, the Verde and the Salt are
21 similar-type rivers.

22 Q. How about the variability of the Upper Salt and
23 the Gila?

24 A. The Gila would be much more dynamic, and the
25 history on the Gila shows that, which is what I tried to

1 show by using that last figure, 10 and 11. Again, this
2 relates to the Gila, but I think all the rivers in the
3 Gila River system probably behaved in the same way during
4 this period of time.

11:39:14 5 Q. Well, how about the Upper Salt channel, is it
6 more variable than the Colorado?

7 A. Colorado River would be much more variable.

8 Q. Now --

9 A. Because the -- again, when we say "the Upper
11:39:34 10 Salt," I'm thinking of, say, the 60 miles upstream of
11 Roosevelt reservoir where you have all the rapids, and
12 that's certainly less active than the Colorado River on
13 the Gila.

14 Q. And do those rivers have variable channels? Are
11:39:53 15 they -- would you say uniform in time and location?

16 A. It depends on the discharge. Probably every
17 river is going to be modified by major discharge.

18 Q. Dr. Schumm, on your Table 2 on the median annual
19 discharge, now why did you include that data in your
11:40:40 20 report?

21 A. As I said earlier, the hydrologic data is just to
22 see what was happening around the time of the statehood.

23 Q. And how did you use that data in coming up with
24 your opinion?

40:52 25 A. Well, again, you look at this and you see it was

1 median annual discharge. You see that it's -- starting in
2 1905, there was a period of years with high median annual
3 discharge, and I just assumed -- okay. The reason I'm
4 including it here suggests to me that this would be a
5 period of pretty dramatic changes of these rivers as shown
6 in Figures 10 and 11, although that's for Gila rather than
7 the Salt.

11:41:13 8 Q. So are these considered the normal or average
9 flow rates for the river then?

11:41:29 10 A. It's the average for a given year.

11 Q. And are -- Would you consider this data, then, a
12 reliable estimate of average flow conditions?

13 A. They're averages for this period of time. And if
14 you wanted to average for the period 1889 to 1913, you
11:41:56 15 would calculate that average.

16 Q. Generally you found them reliable -- you relied
17 on them in forming your opinions?

18 A. Well, there are U.S. geological survey data or
19 resource division data like this for a long time.

11:42:13 20 Q. Are there other sources of hydrologic data
21 available for the Upper Salt River anywhere?

22 A. There must be gauging stations upstream, but I
23 have no -- or the fact that I don't -- Well, there are
24 two gauging stations on the Salt, one at Roosevelt and one
42:42 25 at McDowell. Apparently that's the only hydrologic data

1 collected.

2 Q. And Dr. Schumm, in your opinion, can braided
3 rivers become navigable?

4 A. Yes. If it's big enough, the Brahmaputra is
11:43:02 5 braided and a tremendous amount -- tremendous discharge,
6 and there's boats on the Brahmaputra and the Ganges and
7 the Nile.

8 Q. And can steep rivers be found navigable, in your
9 opinion?

11:43:18 10 A. I'm sorry?

11 Q. Can steep rivers be found navigable, in your
12 opinion?

13 A. Well, -- the only thing I know about that is I
14 tried to look up some work on that, but all I found was
11:43:32 15 Captain Mellon's statement and 4 feet per mile was the
16 break point for river transport.

17 Q. And Dr. Schumm, can hazardous rivers be found
18 navigable, in your opinion?

19 A. What kind?

11:43:48 20 Q. Hazardous.

21 A. I guess if they are defined as "hazardous," you
22 wouldn't want to navigate on them.

23 Q. And Dr. Schumm, can rivers with obstructions or
24 impediments be found navigable in your opinion?

44:08 25 A. Depends on the discharge. At low discharge they

1 are not navigable, but at a high discharge, could be
2 navigable.

3 MS. HACHTEL: I think that's it. Thank you,
4 Dr. Schumm. No more questions.

11:44:44 5 CHAIRMAN EISENHOWER: Thank you.

6 Thank you, Dr. Schumm.

7 DR. SCHUMM: You're welcome.

8 (An off-the-record discussion ensued.)

9 CHAIRMAN EISENHOWER: I think right now

11:45:27 10 we're going to take a little break and stretch our legs.

11 When we come back, we'll go to Dr. Littlefield. We're

12 going to be losing one of our members. He has to go see

13 his doctor so I'm not going to hold him up from that. So

14 we'll take about quarter 'til. How about a 10-minute

11:45:48 15 break and then we'll meet back here in 10 minutes. You

16 can stretch your legs and -- I don't know if there's a cup

17 of coffee around anywhere or not.

18 (A recess ensued.)

19 (Commissioner Henness is no longer present.)

12:10:33 20 CHAIRMAN EISENHOWER: I'll call the session

21 back to order again. Next order of business is to hear

22 from Dr. Douglas Littlefield.

23 Dr. Littlefield, are you prepared to speak?

24 MS. GOLDBERG: Before Dr. Littlefield

10:49 25 presents his testimony on his report, we wanted to submit

1 as evidence -- SRP wanted to submit as evidence an
2 additional map that's contained in Dr. Littlefield's
3 report on the Verde River. It's not in his report on the
4 Upper Salt River, and it's a map of reclamation
12:11:06 5 withdrawals and water power designations, and
6 Dr. Littlefield will be testifying about it.

7 CHAIRMAN EISENHOWER: Okay.

8 DR. LITTLEFIELD: Good afternoon,
9 Mr. Chairman, members of the commission, my name is Doug
12:11:48 10 Littlefield. There is an appendix to my report, there's a
11 copy of my -- I guess you would call it a CV or resume.
12 But I thought for the benefit of those who don't have it,
13 I would just briefly touch on some of the points that are
14 raised in that.

12:12:04 15 I have a Ph.D. in American history from the
16 University of California at Los Angeles. My specialty
17 there and since that time -- 1987 -- when I received a
18 degree has been the history of the American west, focusing
19 on environmental matters, particularly water rights and
12:12:22 20 rivers. I also have focused on land-use issues and stream
21 navigability throughout the west. I have been a
22 historical consultant on these matters for 21 years. I
23 started doing this work before I finished my Ph.D. and
24 then subsequently finished it as I was doing it.

12:45 25 I have, as you know, prepared a number of

1 reports for the commission on the navigability of the Salt
2 River, also on the Verde and Gila. I have also prepared
3 reports regarding navigability issues on the Salmon River
4 and five of its tributaries in Idaho, and also on the Kern
12:13:04 5 River in the central valley of California. As you also
6 know, I have testified in front of this commission before
7 and I've also testified in front of a committee of the
8 Arizona legislature regarding this topic.

9 I also provided expert witness in
12:13:24 10 navigability issues on the Kern River matter in
11 California, and that particular case was won largely on
12 the basis of the historical testimony that I provided.

13 In other professional experience, I have
14 testified and provided expert witness services in relation
12:13:42 15 to Kansas v. Colorado, U.S. Supreme Court original
16 jurisdiction action which involved the allocation of the
17 flows of the Arkansas River between Kansas and Colorado.
18 I have also been deposed and/or provided expert witness
19 services in three other U.S. Supreme Court cases: Kansas
12:14:02 20 versus Nebraska and Colorado involving the North Platte --
21 I'm sorry, involving the Republican River; Nebraska versus
22 Wyoming, which was the North Platte; and also Virginia
23 versus Maryland, which involved the Potomac River.

24 And my clients on these projects have
14:22 25 included the states of New Mexico, Kansas, Nebraska, and

1 Idaho as well as the Department of Justice, the Bureau of
2 Reclamation, private law firms, various land use and
3 farming organizations, water distributors, cities, and
4 others.

12:14:47 5 As you know, I prepared a report for the
6 commission about the navigability of the Upper Salt River
7 and Tonto Creek above Granite Reef dam and the commission
8 should have a copy of that report. And I do want to point
9 out here that my -- there are some both chronological and
12:15:03 10 also geographical limits to my report.

11 Chronologically speaking, the time frame of
12 my report deals with I guess what you would call Anglo
13 settlement beginning in the -- primarily the 19th century
14 and continuing up through the period shortly after
12:15:22 15 statehood but not too many years past statehood.

16 Geographically, my report covers the Salt
17 River above Granite Reef dam through the inundation lines
18 of Roosevelt reservoir, so it does not address some of the
19 areas that we heard a lot of testimony about this morning,
12:15:41 20 the reach of the Salt River above the lake. And likewise,
21 it does not address Tonto Creek above the lake.

22 I would also like to point out that this
23 particular report does not address the -- some of the
24 withdrawal areas that are shown in the exhibit which was
15:59 25 passed out here for the Verde River. Although, my Verde

1 report does cover those.

2 I'm not going to try and cover everything at
3 this hearing that I mentioned in my report, and that would
4 be both redundant and time-consuming, but I do want to
12:16:14 5 point out that as a basis for the research for this
6 report, I've looked at virtually thousands of historical
7 documents from a very, very wide array of historical
8 sources to obtain the largest number of descriptions of
9 the Salt River both prior to and around the time of
12:16:29 10 statehood. These documents include sources from the
11 National Archives in Washington, D.C., where I spent a
12 great deal of time doing research, as well as its new
13 branch in College Park, Maryland, which is a suburb of
14 Washington, D.C.

12:16:46 15 I've also done extensive research at the
16 National Archives branch in Denver, Colorado, which holds
17 regional records specific to this area. I have undertaken
18 research at the Arizona state archives at Arizona State
19 University in their special collections and also in the
12:17:03 20 historical foundation collections that are also at Arizona
21 State University and also in the Arizona Historical
22 Society. That's -- there are other sources as well, but
23 they are outside the state in the national archives and
24 historical societies that -- for example, the Water
17:20 25 Resources Center archives at the University of California,

1 Berkley, which is one of the most preeminent collections
2 of water-related materials in the west.

3 I have also used a large number of published
4 government documents and reports from prestatehood to
12:17:36 5 around the time of statehood, including the records of the
6 U.S. Geological Survey, the Bureau of Reclamation, the
7 Bureau of Land Management, also the Department of
8 Agriculture and its branch of Office of Experiment
9 Stations.

12:18:00 10 I also undertook a significant amount of
11 research in historical newspapers, including the Arizona
12 Gazette and the Arizona Republic. I have also done quite
13 a bit of historical research on historical photographs,
14 some of which are in my report, and I will be talking
12:18:13 15 about those later.

16 Finally, I looked at court cases and some
17 territorial legislation regarding navigability. As I'm
18 sure you know from the testimony in the Lower Salt River,
19 there's the Wormser case from 1892 that says explicitly in
12:18:30 20 the testimony of the plaintiffs that the Salt River was
21 not navigable, and Judge Kibbey did not dispute that in
22 his final decision. There's also the court case Hurley
23 versus Abbott, which resulted in the Kent decree in 1910.
24 And in that decision, Judge Kent also observed that the
18:51 25 Salt River was not navigable.

1 There is of course the -- at this point I
2 guess it's almost famous -- territorial declaration of
3 1865 of the territorial legislature that the only
4 navigable waterway in Arizona was the Colorado River.
12:19:06 5 That was done in a request to Congress for funds to
6 improve the Colorado River. And as part of their request,
7 they declared the Colorado was the only navigable stream
8 in what was then the territory of Arizona.

9 In terms of a really broad conclusion -- and
12:19:27 10 then I'll briefly discuss some of these documents more
11 specifically -- it's safe to say that there was no
12 contemporaneous observer that I found that thought that
13 the Salt River above Granite Reef dam or Tonto Creek
14 through the inundation lines of Roosevelt were navigable
12:19:45 15 either prior to or at the time of statehood. Nearly all
16 the observers found the boat streams to be highly erratic,
17 having huge floods, and other times no water at all. And
18 in the -- of course, in the lower river, there are
19 tremendous channel changes as well.

12:20:03 20 I just wanted to read one description of the
21 Salt River because it's sort of a generic one, but it was
22 intended to apply to a lot of streams in Arizona, and I
23 think it's a good representative sample of -- regarding
24 the Upper Salt and the Tonto River. This appears at page
20:28 25 77 in my report under the large heading "Records of the

1 U.S. Geological Survey" and subheading "Geological Survey
2 Annual Reports." This is a quote from Jon Wesley Powell,
3 who wrote the 1891 report of the -- annual report of the
4 geological survey.

12:20:46 5 And he wrote, "In this basin are found
6 rivers most difficult and dangerous to examine and
7 control, differing in character and habit from those of
8 the north as widely as in geographic position. In place
9 of the regularly recurring annual floods of the spring and
12:21:04 10 early summer still struggling marked from the discharge
11 diagrams of these other basins, these rivers" -- this is
12 in reference to many streams in the west -- "show
13 conditions almost in reverse," being that the season --
14 "being at that season at their very lowest stages, even
12:21:24 15 dry, and rising in sudden floods at the beginning and
16 during the winter. These floods are the most destructive
17 and violent character, the rate which the water rises and
18 increases in amount is astonishingly rapid, although the
19 line is not always very great.

12:21:43 20 "From this will be recognized that the onset
21 of such a flood is terrific. I mean, without warning it
22 catches up logs and boulders in the beds, undermines the
23 banks, tearing up trees, and cutting sand bars, is loaded
24 with massive sand, gravel and driftwood, most formidable
22:03 25 weapons for destruction."

1 This is sort of a general description of a
2 lot of streams in the west, but they -- I think they do
3 apply to the Upper Salt and the lower Tonto River. There
4 are many similar descriptions more specific to the Upper
5 Salt and Tonto River than you have in your reports.

6 At this point, I'd like to explain to the
7 commission some of the greater significance of two general
8 groups of documents that I looked at in relation to the
9 navigability of the Upper Salt and Tonto Creek. Those
10 would be the federal surveys. Those were taken by the
11 U.S. General Land Office in relation to the Upper Salt
12 River and Tonto Creek. And for that particular purpose, I
13 brought maps of the Upper Salt and Tonto Creek that show
14 survey and patent information. I'll also be talking in a
15 few minutes about the patents themselves, but for now, I
16 would like to show two maps that relate to this
17 testimony -- actually, three maps.

18 Is this the best location or do you prefer
19 the other --

20 CHAIRMAN EISENHOWER: That's fine.

21 DR. LITTLEFIELD: This is a map that
22 illustrates the areas that were surveyed along the Upper
23 Salt River below the inundation lines of Lake Roosevelt
24 and down through Granite Reef dam. What it indicates is
25 that -- what it indicates is that all of the surveys that

1 were done in what is the vicinity now of Lake Roosevelt
2 were done in 1881. They were all done by a surveyor by
3 the name of Theodore White, who also surveyed a number of
4 other places in Arizona.

12:24:03 5 As you can see here, all of this area
6 between -- if this is Roosevelt Dam -- and here is Tonto
7 Creek coming up toward the top of the map and the Salt
8 River going toward the left of the map, and as you can
9 see, from Roosevelt Dam down through a little area upriver

12:24:24 10 from the Verde River, that area was never surveyed by
11 fellow surveyors or alternatively was surveyed fairly
12 recently. The reason being for that -- well, it's

13 actually twofold: One is extremely rugged territory and
14 federal surveyors were out there -- one of the principal

12:24:44 15 reasons being to provide legal descriptions of land for
16 settlers, and if the territory was too rough for
17 settlement, then they didn't survey it. The other reason

18 why it wasn't surveyed had to do with withdrawals that
19 were done by the reclamation service shortly after the

12:25:04 20 enactment of the Reclamation Act of 1902. I'll put up
21 another map in relation to that which relates to the
22 handout that you have.

23 This particular map shows the -- this is the
24 Verde River. Going from the top of the map, there is the
25 Salt and Granite Reef heading toward Roosevelt. This

25:44

1 particular map shows the withdrawals that were done by the
2 Reclamation Service starting in about 1903 for the
3 purposes of the Salt River Project. And as you can see,
4 the area here from the Verde all the way up to Roosevelt
12:26:01 5 is all withdrawn for the reclamation purposes, and that's
6 another reason why federal surveys were never done of the
7 area. But what the withdrawal meant, in essence, in terms
8 of settlers, was that it was no longer open to settle --
9 settlement, and for that reason, there was -- was one of
12:26:19 10 the reasons why it wasn't surveyed, if settlers couldn't
11 get in there.

12 Just going back to this map briefly here,
13 you can also see that there are some survey areas that
14 were done around Granite Reef dam. 1868 of course is
12:26:54 15 fairly early, but that's when you start getting out into
16 the Salt River Valley and that's farmable land. And if
17 you sort of append this report on the one that I did on
18 the Lower Salt River, you'll see that a lot of the surveys
19 for the Lower Salt were the 1860s and 1870s and so forth.
12:27:15 20 When you start getting up above Granite Reef dam, you
21 start getting into the narrow canyon areas and the less
22 desirable land from the perspective of settlement. You
23 can see that other than 1911, surveys were done above the
24 Verde in 1949 and in 1930, but the remainder of it was
27:29 25 unsurveyed by the land office.

1 Regarding the surveys themselves, surveyors
2 were issued very explicit directions about what they were
3 supposed to do when they went out to do these surveys.
4 They had manuals, the first of which was issued in 1850,
5 primarily in response to settlement in the Oregon and
6 California area. That provided very, very detailed
7 instructions about how they were to go about their work,
8 what they were supposed to record, and how they were to
9 record it, and so forth. When they were measuring on
10 straight lines creating the townships and the ranges, they
11 were to jot down in their field books as they did those
12 measurements and anything that they encountered as they
13 put it on line, quote-unquote, and that included such
14 things as roads, irrigation ditches, certainly all
15 waterways, streams, rivers, dry washes, farmlands, pretty
16 much anything that they crossed. And they also were given
17 very specific directions about what to do when they
18 encountered waterways and this had to do with the issue of
19 navigability.

20 Beginning in the 1790s, the federal
21 government was quite concerned with navigability, so much
22 so that it enacted this statute regarding -- recognizing
23 navigability in waterways. And in an 1850 manual, the
24 surveyors were specifically told that if they encountered
25 a navigable body of water, they were to do what is known

1 as meandering. Meandering, as the name sounds, was
2 measuring -- I guess you could call it in formal sense
3 measuring the sinuosities of the curves of a waterway.
4 They were not given specific details about what
12:29:39 5 constituted navigability, and I think that's probably why
6 we're here today, but based on the -- partly based on
7 their instructions, in any event, they were to meander
8 navigable bodies of water by measuring degree bearing on
9 either side of the river and recording those in the their
12:29:57 10 field notes. So one can take it certainly as a measure of
11 navigability, the estimation of the surveyor as to whether
12 a body of water was navigable or not.

13 The surveyor did not draw plats or maps,
14 such as the ones that are in your report, actually in the
12:30:21 15 field when he did his surveys. The way it was done is the
16 surveyor went out and took his measurements and recorded
17 those in his field notes and then went back to a central
18 location and drew the plats based on the notes. So in
19 terms of the progress of the documents, the field notes
12:30:34 20 were on-site, the plats typically were not.

21 The manuals that instructed surveyors, the
22 first one -- I'm sorry, I said 1850 earlier, the first one
23 was 1851. Prior to that point, surveyors had specific
24 individualized instructions, but there were also
13:30:53 25 modifications of the manual that came out in 1855, 1864,

1 1881, 1890, 1894, and 1902. And as you can see from the
2 map that's up there now showing the surveys, the manual
3 that probably governed Theodore White's surveys was
4 probably the 1881 manual. And I say probably because it's
12:31:15 5 not clear from either his contract for the surveys or from
6 any other documentation about whether he actually received
7 this manual or not by the time he did the work. So he
8 either did the work under the terms of the 1881 or the
9 preceding one, which is the 1864 manual. But it's
12:31:35 10 important to know that it really doesn't make much
11 difference which one he used because both of them called
12 upon him as a surveyor to meander any navigable body of
13 water.

14 It's also important to note that in the
12:31:49 15 reach of the river that this report addresses, Theodore
16 White did no meanders anywhere in the areas that he
17 surveyed. All of his encounters with the Upper Salt River
18 were recorded in a manner that was consistent with that of
19 a non-navigable stream, at least as far as instructions to
12:32:08 20 surveyors were concerned.

21 He did have in his field notes, as he was
22 required to do, commentary about things that he ran into.
23 And in relation to both the Upper Salt and Tonto Creek and
24 this being the area, pre-Roosevelt days, he did comment in
12:32:24 25 several places that this was a relatively small channel

1 and also that there was typically shallow water. To be
2 objective about it, sometimes it had something to do with
3 the time of year the surveyors were there and also which
4 year, but those were his opinions at the time.

12:32:43 5 Also shedding quite a bit of light, in my
6 view, about the issue of navigability at the time of
7 statehood are federal land patents and the question of
8 private ownership of lands in the area, also land grants
9 by the State of Arizona that were done through the

12:33:03 10 Enabling Act and preceding legislation in 18- -- I think
11 it's 1881 and 1850. And in those particular cases where
12 lands were patented out to private individuals, the
13 process was essentially that the individuals located a
14 piece of land, using the legal description typically

12:33:21 15 provided by federal surveys -- although in many cases
16 there were settlers there, they were earlier -- they went
17 to a land office, they filed an application that they
18 wanted this land, and they were then required under the
19 law to make certain improvements over the course of the

12:33:37 20 next couple of years. Once that had been done, they went
21 back to the land office and they filled out witness
22 affidavits and an affidavit by the applicant as to what
23 they had done to meet the terms of the Homestead Law. And
24 those questions were very specific about what types of

33:54 25 crops did they farm, what improvements did they put in,

1 had they been away from the land for any period of time.
2 It varied to some degree on the year and the law under
3 which they were applying for the land, but they were quite
4 detailed. And for that reason, not only the land patents
12:34:09 5 themselves that showed the award of the acreage but also
6 the applicants' files that showed what they thought of the
7 land and what they thought they were getting and revealed
8 quite a bit about the nature of the land along a
9 particular watershed.

12:34:22 10 In that context, I have two maps that I'd
11 like to put up. These two maps showed homestead patents
12 that were actually perfected, meaning they were actually
13 awarded or deeds were granted to settlers, before
14 Roosevelt was flooded. The map, as you're facing them on
12:35:27 15 the left, is the Tonto Creek area. The light blue shows
16 the area that was subsequently flooded by Roosevelt. The
17 dark blue river that you see there is the river the way it
18 appeared in 1904 according to reclamation service studies
19 that were done for the purposes of condemning land that
12:35:52 20 later would be flooded by Roosevelt. The brown line is
21 Tonto Creek according to the original survey plats, but
22 according to the way the creek showed up by Theodore
23 Roosevelt's (sic) surveys in 1881. And the same can be
24 said for the Salt River under Roosevelt in the map on the
36:14 25 right.

1 To compare the two or to give you some point
2 of reference on them, homestead entry 367 and 223 appear
3 on both maps where they overlap down here in the lower
4 part of Tonto Creek and then on the far left of the Upper
12:36:37 5 Salt map, so you can get some sense of where they would
6 overlap.

7 Because the homesteading process involved a
8 number of people, what that essentially meant was that
9 there were a number of people who were making implicit, if
12:36:56 10 not explicit, statements about the streams through which
11 some of these patents went. I don't want these maps to be
12 deceptive in the sense that there were other patents up
13 there. But I specifically asked the Salt River
14 cartographics people that provided the maps for me only to
12:37:12 15 include patents through which any version of the Salt
16 River or Tonto Creek flowed. So there may have been other
17 patents that were off to either side that aren't on these
18 maps, but they weren't relevant to the question of
19 homesteading so they're not on there.

12:37:28 20 What I found on any of these patents is that
21 in every single instance where a patent was awarded, there
22 was no acreage that was withheld due to the presence of
23 the bed and the banks of the river. In other words, the
24 deed that was awarded to any of the patent parties
37:45 25 included the bed and the banks of the river, And again, I

1 used both versions of the river because there may have
2 been channel changes or there may be questions of accuracy
3 in terms of who was drawing the map at the time. So I
4 tried to put both -- get both of those put on. But again,
12:38:03 5 because of the fact that the applicant was making an
6 assumption about the river when he applied, he also
7 brought back two witnesses with him when he came back.
8 Also officials of the general land office were making
9 assumptions about the nature of the river and every single
12:38:17 10 instance there was no acreage in any of these patents
11 withheld due to the presence of the bed and the banks of
12 the river.

13 I do want to point out one other thing about
14 patents along this river. In the portion involving the
12:38:31 15 Upper Salt River, there's some desert land entry patents.
16 And this was a specific homestead law that was passed in
17 1887 in response to complaints by westerners that the
18 original homestead law didn't take into account the fact
19 that 168 acres, which was the limit of the homestead law,
12:38:52 20 really wasn't sufficient acreage in a desert environment
21 to be able to use profitably. The Desert Land Act granted
22 up to 640 acres, but one of the things that the Desert
23 Land Act had that was unique to its legislation was the
24 requirement that you had to prove that you actually
39:11 25 irrigated the land before you were awarded title; and you

1 also had to explain where you got the water. And the
2 legislation -- the 1887 legislation specifically said the
3 water had to be -- come from a non-navigable body of
4 water.

12:39:30 5 And as you can see on the Salt River, there
6 aren't any along here on the Tonto, but on the Salt River,
7 you can see there's a desert land entry right down near
8 the confluence and there are a couple of others along the
9 way. Again, there may have been other desert land entries

12:39:40 10 on either one of these maps that were not specifically
11 overlying the river, but I only included the ones that
12 specifically overlay the river both for the purpose of
13 desert land entry as well as for the fact that the acreage
14 included the bed of the river.

12:39:57 15 I did have one example of a homestead entry
16 that I wanted to point out because I thought it was sort
17 of an interesting one with regard to the question of
18 title. That would be homestead entry 567, which is in --
19 overlaps sections 14 and 23 in township 4 north range 12

12:40:26 20 east, which is under Lake Roosevelt now. I found that one
21 particularly interesting because -- first of all, because
22 it did lie with the river flowing through it, but also
23 this homestead was granted in 1893 before Roosevelt. And
24 when the reclamation service decided to create the

12:40:47 25 reservoir, they not only withdrew the lands that had not

1 been settled, precluding future settlement for those
2 parcels that were still in the public domain, that they
3 also went out and attempted to purchase lands that would
4 be flooded, and in the case of recalcitrant homeowners,
5 they also actively worked to condemn those lands.

6 Homestead entry 567 was one of those parcels
7 that had, apparently, a recalcitrant land owner and his
8 name was Quintin Tebs. And Mr. Tebs refused to sell, at
9 least not at a price that he thought was fair. And so

10 beginning in about 1904 when the reclamation service began
11 its studies of which lands they were going to have to
12 purchase, the reclamation service started condemnation
13 proceedings against Mr. Tebs. And there were some others
14 as well, but his is probably the best example. And over

15 the course of the next five years, Tebs fought it all the
16 way. He didn't feel he was getting a fair deal. But
17 there were also some questions about property taxes
18 involved and it was a fairly lengthy record until the
19 reclamation service ultimately was successful in

20 condemning the land for the reservoir. But the thing I
21 find instructive about it was that in all this lengthy
22 record, not once was the question of the fact that the
23 river flowed through the property ever an issue. It was
24 always just taken for granted that the river was there,
25 this would be -- the parcel was being condemned to contain

1 the river, and ultimately it would be flooded by the
2 reservoir.

3 In conclusion, regarding the homestead
4 patents, in not one instance did anyone ever raise the
12:42:42 5 question about the presence of the river as far as title
6 was concerned when homestead patents of any type were
7 granted.

8 I do have a couple other things here. I did
9 want to mention state land grants briefly, then I'll get
12:42:57 10 to some historical photos.

11 The State of Arizona was granted sections
12 16, 36, 2, and 32 plus a large number of other acres
13 throughout the state for various public purposes. And
14 obviously some of these sections, 16 and 36 and 2 and 32,
12:43:17 15 fell in the areas inundated later by Lake Roosevelt and
16 also lower on the Salt River down to the Granite Reef dam.
17 I think it's significant that the State of Arizona, when
18 it subsequently took over in-lieu selections, the State of
19 Arizona only took in-lieu selections for the acreage that
12:43:39 20 was actually specifically defined by the section that they
21 did not get due to the withdrawals or due to the flooding
22 of the lake. They never asked for, at least in the
23 historical period, any in-lieu selections due to acreage
24 that either of these streams covered.

13:58 25 Last thing I wanted to talk about are just

1 sort of miscellaneous historical documents. And we heard
2 testimony this morning about historians who make some
3 judgments about the accuracy of various documents. I
4 think that's certainly true of newspaper articles, which I
12:44:16 5 talk about in my report. But one thing that can be said
6 about newspaper articles, and particularly in small
7 western settlement areas, is that they were notorious
8 boosters of their communities, and they went out of their
9 way to explain any of the benefits that would be found by
12:44:35 10 coming to such a place to settle.

11 Note -- one thing that is quite noteworthy
12 for its absence in all of the things that Mark McGinnis
13 had in his table, for all of the instances of boats on the
14 river, and also about the testimony we had earlier this
12:44:52 15 morning, is there was never any newspaper article that
16 proclaimed the great advantages that could be found of
17 commercial navigation on the river. The articles that did
18 appear addressed sporadic attempts to navigate the river,
19 unusual ones or, as described earlier, ones that were
12:45:13 20 particularly noteworthy. But they also discussed, I
21 think, something that's particularly important, which is
22 how things did move by transportation to get up to the
23 Roosevelt area, and that's where I get to some of my
24 photographs.

15:35 25 These are historical photographs that I

1 obtained from the Bureau of Reclamation files at the
2 national archives branch in Denver. The handwriting that
3 you see at the bottom was handwriting that was done by
4 whoever took the photograph or subsequently annotated
12:46:21 5 them. And the captions -- the material that is in
6 quotation marks are the captions of the way they appear in
7 bureau's file. I wanted them to accurately reflect
8 whatever the party who had labeled them had said.

9 These are sort of a before and after set of
12:46:38 10 photos of the Apache Trail. And what it does for me is it
11 underscores the difficulty of getting materials to Lake
12 Roosevelt and why various parties who were concerned with
13 building at Roosevelt would have used the river for
14 transportation if it had been possible.

12:46:56 15 The photo you see here on the left is,
16 relatively speaking, near Lake Roosevelt -- you can see
17 the area that subsequently became the lake on the
18 right-hand side here. This is from about 1905, and you
19 see the cut here in the middle. You can also see the same
12:47:12 20 location approximately a year or two later, after the cut
21 had been finished and the Apache Trail had been built.
22 The photograph on the left, you can see a little of the
23 roadway that is being built here, and then again, you can
24 see on the photograph on the right a wagon on the road.
17:30 25 And it underscores to me that had water transportation

1 been useful, they certainly would have used it in carrying
2 goods up to Roosevelt.

3 Finally, the transport of goods on this road
4 went both ways. There was a cement factory at Roosevelt
12:47:47 5 that subsequently carried cement-making materials down to
6 Granite Reef, so they were transporting goods both ways.
7 But you can see they cut quite a bit out of the arch here
8 when they completed the road in this area and then
9 comparing it to the photo on the right.

12:48:34 10 This photo is also from the Bureau of
11 Reclamation files in Denver. It shows a typical wagon
12 train carrying goods up to Roosevelt. See what year is on
13 this one. This one doesn't have a date, but comparing it
14 to subsequent ones, it's around 1905 to 1910 or
12:48:52 15 thereabouts. And again, it really underscores that having
16 good water -- reliable water transportation been
17 available, this type of transportation wouldn't have been
18 necessary.

19 The Apache road was built, by the way --
12:49:06 20 originally the idea was to carry the goods by way of Globe
21 using railroad facilities, but the railroad wanted too
22 high a freight rate on it and as a result the Bureau built
23 the Apache Trail.

24 Again, this is another photo from the Bureau
19:45 25 of Reclamation files. This one is March 27, 1907. It

1 shows the Apache Trail and it shows how dangerous and
2 difficult it was to get goods up to Roosevelt, typical
3 wagon. When I first read this it said "needing a 12-horse
4 freighting outfit" -- and I didn't think that there were
12:50:08 5 12 horses there, but I counted them and I think there are.
6 Anyway that's the original caption.

7 COMMISSIONER ECHEVERRIA: I think they are
8 mules.

9 CHAIRMAN EISENHOWER: Well, the caption says
12:50:20 10 "horses."

11 COMMISSIONER HENNESS: They look like mules
12 to me.

13 CHAIRMAN EISENHOWER: Except for the ears.

14 DR. LITTLEFIELD: This is another photograph
12:50:36 15 from the Bureau of Reclamation. This one doesn't say
16 "horses" or "mules," but in any event, it's another view
17 of the Apache Trail. This one is from 1907.

18 COMMISSIONER BRASHEAR: You didn't come up
19 with, in your research, the cost of the Apache Trail. I'm
12:51:18 20 just curious and just wondering because there was lot of
21 labor.

22 DR. LITTLEFIELD: A lot was done by Apache
23 Indians too. I don't know. The cost was in the records,
24 but it was not the focus of my research.

12:51:27 25 COMMISSIONER BRASHEAR: Okay.

1 DR. LITTLEFIELD: These two photographs, I
2 think, are noteworthy for what you can tell about the
3 difficulty in building Roosevelt Dam and how much material
4 had to be moved that 60-some-odd miles from the Valley up
12:51:43 5 to Roosevelt.

6 This particular picture right here shows the
7 town of Roosevelt before the dam was built. Almost all of
8 which you see down here near the river was subsequently
9 flooded. This was taken in -- about 1910 or shortly
12:51:59 10 there- -- around that area, maybe a little earlier. And
11 if you look at one of the homestead patent maps that I
12 provided, one of those homestead patents is almost right
13 here along the river, but you can get a good sense of what
14 the river was like in relation to Dr. Schumm's testimony.
12:52:17 15 You can see a really shallow stream there. This one
16 doesn't provide a month and year, but -- I believe that
17 the original reclamation is still present up there along
18 the highway. And in fact, I know they have the old
19 historical vault up there that they used to keep their
12:52:36 20 records in. It was typical of the Bureau of Reclamation
21 to keep their construction records in a concrete vault
22 because they're concerned with fire outside of their
23 headquartered buildings. And today the headquarters
24 building up there now is a -- I believe it's a reclamation
12:52:53 25 service general store for employees. There are a number

1 of cabins up in the area. But anyway, all of this area is
2 subsequently inundated.

3 And I got this picture as well because from
4 all the tents that you see there, plus probably a lot of
12:53:08 5 other ones that you don't see, all of this is the kind of
6 material they had to haul up there for the living
7 quarters. This one was taken in 1906. And this doesn't
8 count the material for the actual construction of the dam,
9 this is just simply the living quarters for the people
12:53:27 10 that were up there. That was reason for the two of those.

11 And the last three or four pictures I want to show are
12 some views of the dam site itself and Granite Reef.

13 COMMISSIONER BRASHEAR: I notice in 1906
14 they had centerfolds.

12:54:04 15 DR. LITTLEFIELD: So to speak.

16 This photograph is a view of Roosevelt Dam
17 site before the dam was built. It's looking downstream.
18 You can see the cables running across the top for some of
19 the equipment that they were subsequently going to bring
12:54:18 20 in. But you can see what the channel of the river was
21 like before the dam was actually built. You can also see
22 why the reclamation service thought it was such a good
23 site for a dam. And you can also -- I just noticed this
24 now, but I believe that's the Apache Trail running along
12:54:40 25 there or some predecessor of it.

1 This particular picture is a photograph of
2 Roosevelt Dam around 1905 and 1906, the early excavation
3 and construction of it. This one's looking upstream at
4 about the same location as the last one. Again, you can
12:54:58 5 see the cables running across and in the background you
6 can see the valley where the lake subsequently would be.
7 You can also get a good sense of what the channel of the
8 river was like around 1905 to 1906. These photographs
9 plus some others, by the way, all appear in my report, if
12:55:18 10 you people want to look at them later on.

11 This is a picture of Roosevelt Dam under
12 construction in 1908. Pretty much also looking
13 downstream, pretty much from the same point as the last
14 photograph. And again, you can see what the river was
12:55:41 15 like. It's being influenced to some extent now by the
16 construction facilities. But again, you can see the
17 cables going across the top.

18 I want to point out that it was not only
19 Roosevelt that was going to impede boat traffic on the
12:56:25 20 river, but at the same time Roosevelt was being built, so
21 was Granite Reef dam. This is Granite Reef dam nearing
22 completion, actually, in 1908. But you can see the
23 characteristics of the water backing up behind the river
24 there.

12:57:02 25 And this is the conclusion. This is Teddy

1 Roosevelt showing up at the dedication of the dam in 1911.
2 He was actually ex-president Roosevelt at that point but
3 still referred to as Colonel Roosevelt. And one of the
4 things that I found significant was that there was a
12:57:19 5 tremendous amount of, understandably, of joy and happiness
6 and celebration in the Salt River Valley. But the
7 completion of the dam there was nary a word, though, about
8 complaint by navigational interests about how the river
9 had been blocked for bringing things up and down the
12:57:36 10 river. This is March 18th, 1911, ex-president Roosevelt
11 dedicating the dam.

12 And that's all that I have in my
13 presentation. I'd be glad to take whatever questions the
14 commission has or anyone else.

12:58:04 15 (Dr. Littlefield is answering questions.)

16 BY MR. BRASHEAR:

17 Q. On charts of the surveys, it looks like the
18 survey that -- there was no survey east of, kind of, the
19 east end of the Roosevelt Dam. Was that just an area
12:58:15 20 where you said the survey there was not going to be any
21 entry into it so there was no -- it wasn't done?

22 A. Let me pull that map back up for a moment. I
23 think I can answer your question.

24 As you can see, all these surveys were
58:57 25 done -- I think they were done consecutively by deputy

1 surveyor White. But if you notice -- this is township 4
2 north range 11 east, just sort of a little bit north of
3 Roosevelt Dam -- Surveyor White wrote in his field notes
4 there that the reason why he did not do more of this
12:59:16 5 township was that it was too rugged. I think -- felt the
6 need to explain because under his contract, he was
7 supposed to do the whole township. Surveyors were allowed
8 the make judgments of that nature, whether things were
9 possible of doing or not. But in any event, the only part
12:59:32 10 that they surveyed at the time was this little tiny corner
11 in the upper northeast corner of the township.

12 Q. So that area -- what I was talking about is -- I
13 think even here earlier when we had some discussion about
14 commercial recreational boating between the -- where the
12:59:51 15 Highway 60 bridge crosses the Salt River and comes into
16 the lake, is that would be that little wiggly area over
17 there to the right, correct?

18 A. Right here?

19 Q. Yeah.

13:00:03 20 A. That area is not part of my study area. It was
21 not within the inundation lines of Roosevelt.

22 Q. Okay.

23 A. So I didn't get the survey notes for that area.

24 Q. Okay. Let me ask one other question. Did you
13:00:18 25 mention that this -- the determination of navigability was

1 left to the judgment and experience, I suppose, of the
2 surveyor?

3 A. Correct.

4 Q. And again, I'm kind of concerned about this area
13:00:30 5 here. Is -- from your historical studies where these
6 people have had a sort of an -- from experience and
7 conventional wisdom at the time -- an idea of what was
8 navigable and what was not? Would they be thinking it was
9 something like the Erie Canal or would they be likely to
13:00:50 10 say, "Well, it's not navigable because there's nobody
11 around here to navigate on it"?

12 A. I have used these field surveyor's notes in lots
13 of different circumstances in relation to navigability,
14 not only here in Arizona but also in Idaho on the Salmon
13:01:04 15 and five of its tributaries, also in California on the
16 Kern. And we're talking about different statehood periods
17 in each one. Of course here it's 1912, but on the Salmon
18 Idaho, the statehood year was 1892, California was 1850.

19 I think surveyors were -- they were not
13:01:23 20 specifically told what constituted navigability. But I
21 think they were using common sense within the context of
22 watercraft that existed at the time they were doing their
23 work. And again, one has to qualify that to the extent
24 that surveys were done at different times of year and in
13:01:42 25 different years, and so circumstances along different

1 streams would have varied depending on the time of year or
2 the year involved.

3 And in fact, some areas along some streams
4 you'll find descriptions of a river by one surveyor that
13:02:00 5 show a fairly dry stream and then right across the line
6 another survey that was done maybe a few years later or
7 earlier would reflect a fairly wet stream, but that would
8 depend on the time of year and the year the surveyor was
9 there. But I think it was their -- basically their
13:02:18 10 assessment about whether commerce could have been carried
11 on the way they actually saw the river at the time they
12 were there.

13 Q. So then their notes -- some of the material
14 presented to us was evidence of its convincing, but not
13:02:37 15 necessarily the final word.

16 A. I think that would be a legal argument to be
17 made, but that would be my opinion, yes.

18 COMMISSIONER BRASHEAR: Okay. Thank you.

19 CHAIRMAN EISENHOWER: Any other questions?

13:02:55 20 Is there -- commission having no more
21 questions, is there anybody in the audience that would
22 like to question Dr. Littlefield?

23 Hearing none, thank you very much, Doctor.
24 Appreciate having you here again.

13:22 25 DR. LITTLEFIELD: Thank you.

1 CHAIRMAN EISENHOWER: I have one more
2 speaker who would like to speak. If that still holds
3 true, I'll call Mr. David Weedman. If you would come
4 forward and identify yourself and tell us a little bit
13:03:38 5 about yourself.

6 MR. WEEDMAN: Thank you Mr. Chairman,
7 Commissioners. My name is David Weedman, I'm a biologist
8 with the Arizona Game and Fish Department. All the talk
9 this morning about rafting on the Upper Salt River
13:03:51 10 prompted me to want to come in and address you and give
11 you some information on what the department has been doing
12 over the last 15 or 20 years -- almost 30 years -- related
13 to boating on the Salt River.

14 Beginning in about 1978, I believe, was the
13:04:08 15 first trip that our department took from what is the
16 Highway 60 bridge through Salt River Canyon down to
17 Highway 288, which is generally the portion that we were
18 talking about earlier for private and commercial rafting
19 trips. That trip was taken to survey for fish composition
13:04:29 20 within the river, and in subsequent years our department
21 has made numerous trips down the river using multitudes of
22 various types of watercraft from kayaks to inflatable
23 rafts to open canoes. We do it at various times of the
24 year and have done it at various times of the year under
13:04:47 25 different flows.

1 My personal experience has been since about
2 1993. I've done about 12 trips down the Salt River,
3 various portions of it, only a couple beginning at
4 Highway 60. Most of them, we've entered the river midway
13:05:02 5 down through the canyon and then gone from there
6 downstream. We've rafted and canoed that part of the
7 river in August at flows below a hundred cfs. We've done
8 it in February at flows about 2000 cfs. Our preferred
9 method for the purposes of doing fishery surveys is to go
13:05:21 10 during low flows when the river is more confined. There's
11 not as much area for the fish to be dispersed into. It
12 makes it easier for us to encounter the fish and do our
13 surveys.

14 Saying that, I really only come up here and
13:05:35 15 presented this information because in looking at
16 Mr. Fuller's report and others, it's -- I don't know why
17 our department didn't present information on some of this
18 and especially on the fisheries of the river. It seems
19 like it would have been relevant. So I'm here today on
13:05:54 20 spur of the moment without any written preparation to
21 offer myself up for questions if anybody has any related
22 to both historic fisheries of the river and our activities
23 and recent history on the river.

24 A little bit of background for myself real
13:06:12 25 quick. I was formerly a Navy fish biologist in our

1 department for about eight years. The last five years I
2 was a regional fishery biologist out of Mesa, and just
3 recently now named aquatic habitat specialist in our
4 department. So that being said --

13:06:27 5 CHAIRMAN EISENHOWER: So, okay. I'll start
6 off the questioning.

7 (Mr. Weedman is answering questions.)

8 BY CHAIRMAN EISENHOWER:

9 Q. So your prime purpose in these rafting trips was
13:06:35 10 because of the fish?

11 A. Yes. Both fish and wildlife management
12 activities. Not just the fish, we also have and have had
13 and do send people down for surveying other wildlife
14 species, not just fish.

13:06:52 15 Q. What other wildlife takes advantage of that area
16 from the 60 bridge to the lake?

17 A. I have personally observed mule deer, javelina;
18 haven't seen bears, but I know there are bears that come
19 down the river in talking to other biologists in my
13:07:09 20 agency. An abundance of small game are quite prevalent in
21 the river. Historically we know of otters in the Salt
22 River. I personally don't know offhand whether or not
23 beavers were active and present in Salt River Canyon;
24 lower parts of the Salt River, we do know there were
13:07:31 25 beavers, active and present. And again, I apologize for

1 not having some historical references for beaver
2 trapping -- you would think that game and fish department
3 would have that and would have made that available, seeing
4 as it's -- that was before Congress at the time with
13:07:47 5 trappers trapping beavers. But those are the types of
6 wildlife other than fish that --

7 Q. Historically, if you go back, have you done any
8 studies on the early Indian life of peoples that lived up
9 there -- were they fishing that stream, do you know? Is
13:08:04 10 there any evidence of that that you ever ran across?

11 A. No, I have not done any studies. My
12 understanding of the history of the Native Americans is
13 they are culturally related to the Apache Indians, and my
14 understanding is historically they were not consumers of
13:08:25 15 fish. You know, they didn't go down to the river and
16 catch fish like some of the northeastern -- I'm sorry,
17 some of the northwest Indians, Alaskan natives, did. They
18 were not that type. Hohokam Indians further down -- and
19 historically, I'm sure one of the other historians here
13:08:43 20 will correct me if I'm wrong -- they may have and likely
21 did use fish living in the river as a source of food.

22 Q. Historically, what were the original fish in that
23 river?

24 A. There's a wider range of native species that
13:09:03 25 would have been found in the river both prior to and at

1 the time of statehood. I'll run down a list of them just
2 for the record that I can draw from memory. Some of the
3 bigger fish that would have been of interest are razorback
4 sucker, Colorado pikeminnow, roundtail chub, Sonoran
13:09:17 5 sucker, desert sucker, flannelmouth sucker. Those would
6 have been the large-body fish that people would have been
7 interested in catching and consuming. There's a bunch of
8 smaller-bodied fish commonly called minnows; in Arizona,
9 we call them dace because they're spikedace, loach minnow,
13:09:34 10 topminnow, longfin dace, speckled dace, wounfin, and that
11 pretty well covers it.

12 Q. Were trout ever introduced into the river?

13 A. Not into the main stem Salt River in Salt River
14 Canyon, to my knowledge. I could be wrong. I could check
13:09:57 15 our records going back to the early '30s and '40s to find
16 out for sure. They were certainly introduced in upper
17 areas, higher mountain elevations.

18 Q. The White River?

19 A. Right. The Black River, White River, up to Tonto
13:10:11 20 Creek where we have a hatchery, some of those areas. But
21 not in lower part, it probably wouldn't have been
22 determined suitable habitat because of the warm summer
23 temperatures.

24 CHAIRMAN EISENHOWER: Commissioner Brashear?

10:23 25 BY COMMISSIONER BRASHEAR:

1 Q. Did you -- when you made these surveys, these
2 studies that you did, did you support the thing entirely
3 out of game and fish resources or did you contract with
4 people for transportation or other assistance on your --
13:10:38 5 when you did this thing?

6 A. The surveys I've been a part of have all been
7 department-funded and operated. We own our own equipment,
8 we own our own watercraft, and occasionally we partner
9 with other federal and state agencies and have various
13:10:54 10 people involved for variable reasons. But the equipment
11 and the manning the operation of these surveys were
12 entirely departmental. We did contract for a commercial
13 provider to take us down the river.

14 Q. Did you come on to any evidence of people
13:11:11 15 commercially operating an activity where they would take
16 people as guides and take them down and they would fish in
17 that segment of the river?

18 A. Salt River Canyon area, I'm not familiar with
19 fishing guides that do that. We had some discussions
13:11:28 20 earlier about the guided trips that go down the canyon,
21 either 1-day trips where they float down and hop in car
22 and drive home, or multiple-day trips.

23 I have come across people -- private rafting
24 trips in the river that do bring fishing poles along and
11:46 25 then fish, but it's not their primary purpose. The

1 primary reason for most visitors to the Salt River Canyon
2 is just the scenic/recreational boating aspect of it. And
3 that, of course, is just the recent history since about
4 '93 when I started. And I, of course, going down these
13:12:03 5 trips, always take a fishing pole and I'll just fish along
6 there.

7 Q. All in the interest of science?

8 A. Absolutely. We call it -- in the department call
9 it unit sampling. It's a sampling technique.

13:12:17 10 CHAIRMAN EISENHOWER: How do they taste?

11 COMMISSIONER BRASHEAR: Thank you very much.

12 BY COMMISSIONER ECHEVERRIA:

13 Q. You speak of native species and science; can you
14 give me a range?

13:12:25 15 A. I was quite interested to note in Mr. Fuller's
16 report on the Upper Salt River there's mention of them
17 catching either a white salmon -- and I forget the other
18 name of it -- it's a Colorado pikeminnow, it's
19 predominantly -- precisely -- probably what they were
13:12:40 20 talking about. They can range in size, young of year, to
21 50 to 60 pounds, 3 to 4 feet long. The largest we know
22 rangewide is about -- I believe it's about a hundred
23 pounds somewhere in Colorado -- in the Colorado River
24 basin. Salt River, I would not be surprised to know that
13:00 25 there were 40- or 50-pound Colorado pikeminnow commonly

1 caught. They have some significant size and they were
2 sought -- not sought after, but they were caught and used
3 for fish, lower down the Salt River and also in the San
4 Pedro and Gila Rivers historically as a food source.

13:13:26 5 CHAIRMAN EISENHOWER: Does anybody in
6 audience have any questions for Mr. Weedman?

7 Well, if not, thank you very much for your
8 input.

9 MR. WEEDMAN: I appreciate the opportunity
13:13:36 10 to give you some extra information.

11 CHAIRMAN EISENHOWER: I believe -- Laurie,
12 did you want to bring Jon back?

13 MS. HACHTEL: Is now an appropriate time?
14 That would be great.

13:13:51 15 (Mr. Fuller is answering questions.)

16 BY MS. HACHTEL:

17 Q. Just a couple points that I wanted to clarify.
18 Again, I'm Laurie Hachtel for the Arizona State Land
19 Department.

13:14:28 20 Mr. Fuller, just a few follow-up questions.
21 The navigability that you conducted for the Arizona State
22 Land Department, is that your first navigability study, is
23 it, that you have done?

24 A. No.

14:40 25 Q. What variation -- maybe that's the proper

1 question?

2 A. No, this not my first. I've been involved -- I
3 have had a hand in every navigability study that's been
4 brought before the commission, including the original
13:14:53 5 commission, and Mr. Brashear is the only member and
6 Curtis, who is not here today, was the chair, so by my
7 last count I think it's 19 detailed studies. And of
8 course, we were involved in the small and minor water
9 courses, which I guess is somewhere near 80,000 stream
13:15:06 10 segments and 39,000 different streams, counting all the
11 named ones.

12 I testified at hearings over, I guess, the
13 past 13 years now, so I've done a fair number of these.
14 With respect to the Salt River, I served my thesis work --
13:15:28 15 my master thesis work in 1984 at the University of
16 Arizona, and the Upper Salt River was one of my study
17 areas that was paid for -- actually by Salt River
18 Project -- doing projects up there, and followed up on the
19 state again in '93 and have done a number of different
13:15:45 20 studies, of course, over the course of the past 20-some
21 years working in Arizona.

22 I've done quite a number of studies on Upper
23 Salt River and over 300 streams in Arizona plus other
24 areas of the southwest, and I push the count higher. And
16:05 25 I think that I've boated and camped on most parts of the

1 Upper Salt River that we have been talking about today.

2 So no.

3 Q. I just want to clarify a few things on the
4 boating, things that you have included in the report.

13:16:27

5 Did you find successful accounts of boating
6 in and around the time of statehood on the Upper Salt
7 River both before and after construction of the dam?

8 A. Yes.

13:16:40

9 Q. And did those successful boating accounts ever
10 occur throughout the year?

11 A. As you pointed out earlier, they were not
12 during every month of the year of the historical accounts
13 that we do find, but they were spread throughout the
14 year -- similar to the last gentleman speaking, the
15 boating does occur different periods of the year.

13:16:53

16 Q. So they don't occur just during the floods?

17 A. That's correct.

18 Q. And did successful boating occur during periods
19 of annual low flow?

13:17:03

20 A. Yes. It did and still does.

21 Q. Is there anything else as far as the historical
22 boating accounts that needs to be clarified?

23 A. Yeah. There are a couple of things that I stated
24 earlier that I'd like to clarify.

17:23

25 When I count 15 accounts, I was including in

1 those as an account the picture that Dennis and I talked
2 about earlier -- or the pictures as separate accounts
3 since they were separate dates. So I counted those.

4 And I think I also said they were all
13:17:39 5 successful and that's actually not correct, as Mr.
6 McGinnis pointed out. The -- certainly the Hayden trip,
7 they viewed it as not a success, and they didn't achieve
8 their mission. So they were not successful -- all
9 successful but certainly the majority -- not all, but the
13:17:56 10 majority were definitely successful in terms of achieving
11 what they set out to do. They got from point A to point
12 B. They may have had difficulties, but that in itself is
13 not unusual at all.

14 But I would also like to point out the kind
13:18:10 15 of navigability that we are talking about here are not the
16 type of navigability that Dr. Littlefield was pointing
17 out, that no one is hauling ore and they're not hauling
18 cattle and they are not hauling salt from the salt mines.
19 The Salt River in its ordinary natural condition is not
13:18:27 20 suitable for that sort of navigation. It is suitable for
21 low draft navigation, much that we've heard -- similar to
22 what's been done in modern times so there's no -- we're
23 not trying to assert that or suggest that that's in the
24 record, but it is suitable for low-draft boating and
18:46 25 that's a consistent picture we see both in the isolated

1 accounts that we have in historical period as well as the
2 modern. You see a consistent picture throughout our
3 history from the first time we started recording things to
4 what we see today.

13:19:01

5 So I guess the only thing I want to clarify
6 is that, you know, given the difficulty of just simply
7 getting to the river in 1912, you can see that it's not
8 surprising that there are few accounts of people having
9 boated through here, so --

13:19:21

10 I guess I can clarify a number of other
11 things in terms of the question why people might not have
12 objected to the river being cut off and hauling materials
13 up to Roosevelt back and forth. We certainly didn't see
14 statements or historical documents that said, "This is why
15 we are not objecting." There's just really -- the record
16 is silent on that. One might suggest a couple of
17 possibilities. One, the river is very steep, as the quote
18 that Dr. Schumm uses in his report -- the riverboat
19 captain of the Colorado River says that while grading is
20 greater than 4 feet per mile, we simply can't compete with
21 rail. He didn't say it couldn't be navigated. He said,
22 "We can't compete." So I'm sure the situation -- given
23 the slopes and the grades on the Upper Salt, that's
24 probably the explanation.

13:19:53

20:08

25 Another possible explanation in the case of

1 Roosevelt and construction of the Apache Trail. I'm sure
2 it wasn't the plan to cut off the river, so if they were
3 going to haul the materials down the river and cut it off,
4 they basically are stopping their method of getting their
5 -- they would have needed some sort of an alternative.
6 I'm not suggesting the river was suitable for that, but
7 there are many explanations why they might not do that.

8 The time period doesn't -- the time period
9 -- one of the accounts talks about some gentlemen floating
10 from Roosevelt down to Tempe, I believe it was, and it
11 took four to five days -- the account where they ruined
12 the bottom of their boat -- and they took four to five
13 days. Well, mules were able to get there in two days. So
14 you have shorter time period, able to carry heavier loads,
15 so those are probably explanations for why that occurred.

16 Q. A couple of other points. Can you again clarify
17 what type of modern boating occurs on the Upper Salt
18 River?

19 A. Okay. Canoeing, kayaking, rafting, shallow
20 draft, and again, as I mentioned earlier, low draft boats
21 that are similar in nature to the type of boats that are
22 available around statehood. And the primary difference
23 between boats then and boats now is its durability.

24 Q. And in your opinion, why are records of modern
25 boating irrelevant for a navigability study?

1 A. The modern boating, what it shows is -- it
2 demonstrates a susceptibility. It shows that there are --
3 if we accept that the flow rates are essentially the same,
4 for instance in Reach 1 upstream of the lake, if those are
13:21:42 5 representative flow rates, and it's showing us that we do
6 have a susceptibility to that kind of boating. So it's a
7 susceptibility thing and it's not to suggest that there
8 was commercial recreation going on in 1912.

9 Q. I would like to turn your attention to the
13:22:01 10 channel patterns on the Upper Salt. Can you tell me what
11 the dominant channel pattern is in the Upper Salt River?

12 A. Yes, I can. I've read Dr. Schumm's report, and
13 of course -- hopefully you have read our report -- and I
14 have to differ with Dr. Schumm, with all due respect, that
13:22:18 15 the Upper Salt and the canyon reach is not a braided
16 stream. Certain flow rates -- it has some characteristics
17 where there are multiple -- they are a secondary channel,
18 and sometimes isolated reaches are going to actually be a
19 third channel, but it does not have the founding
13:22:32 20 characteristic of a braided stream, it's a pool-and-riffle
21 stream, and Dr. Schumm mentioned that earlier and he
22 mentions in his report. And I would suggest that the
23 boundary between, or any debate where there's pool and
24 riffle, ends in about the position of, I'd say, the Blue
22:49 25 Point parking area that's downstream Stewart Mountain Dam.

1 Downstream of that point the river pattern
2 is -- technically it's a -- a compound channel is what it
3 is. And what a compound channel is, is there is a
4 sinuous, slightly meandering, more stable, low flow
13:23:09 5 channel, so that's what the channel is when it runs low
6 water.

7 The high flow channel or the flood channel
8 has a braided characteristic. So when the river is in
9 flood, it may flow with multiple channels and it's moving
13:23:21 10 a lot of sediment, creating these bars and -- bars of
11 sediment and small islands similar to what Dr. Schumm was
12 talking about, but that's really a flood characteristic.

13 When the river recedes to its more ordinary
14 characteristics, it's a sinuous, generally single --
13:23:35 15 single -- single channel and that flows in the bottom of
16 the river bottom, and those characteristics that we're
17 reporting in our report when it comes to typical flow
18 depths.

19 MR. MCGINNIS: Just for the record, Mark
13:23:51 20 McGinnis on behalf of SRP. We extended the professional
21 courtesy to Ms. Hachtel to give her a couple of minutes to
22 talk to her expert, to have redirect on the questions we
23 had asked him; this will not be intended to be one last
24 shot for them to have a rebuttal. If you want to stay
24:02 25 here all day while our experts go back and forth, fine. I

1 don't expect a ruling on my objection, just for purposes
2 of the record, we don't appreciate being sandbagged after
3 we were courteous to let her have some time.

4 CHAIRMAN EISENHOWER: Thank you.

13:24:17 5 Okay. Finish up, Laurie.

6 MS. HACHTEL: And certainly it's not our
7 intention to do that. The ecology questions, the majority
8 of them we have had, plans on redirect prior to --

9 MR. MCGINNIS: You need to think about that,
10 because you can't plan redirect because redirect is
11 responsive to questions that people ask on cross. We're
12 not going to let you stand here and get the last chance
13 and just talk about things after our experts have gone
14 back to Colorado. It's not fair. This is a fair

13:24:38 15 commission. They've had fair rules. And that's not fair.

16 MS. HACHTEL: We're certainly not trying to
17 make the process unfair. We can limit our questions to
18 making that in address to your concerns.

19 MR. MCGINNIS: Please do.

13:24:51 20 CHAIRMAN EISENHOWER: How much more do you
21 have, Laurie?

22 MS. HACHTEL: Just a few more questions on
23 flow data.

24 BY MS. HACHTEL:

25:03 25 Q. And Mr. Fuller, can you -- as far as clarifying

1 for me the things in your report on flow data?

2 CHAIRMAN EISENHOWER: We don't have a
3 quorum.

4 We will take a little break while she goes
13:25:30 5 through this.

6 (A recess ensued.)

7 CHAIRMAN EISENHOWER: Laurie, if you would
8 finish up so we can get on.

9 BY MS. HACHTEL:

13:32:55 10 Q. Mr. Fuller, I had asked if you could describe the
11 flow conditions?

12 A. There's a couple things that I wanted to bring
13 out about the flow data, just to highlight that we
14 provided a wide variety of flow data. Our data was
13:33:08 15 collected from published sources, it was not stuff that we
16 made up. We divided those data into prestatehood, from
17 the year of statehood, 1912, and long-term modern data.
18 We, as I mentioned, got those data from the U.S.

19 Geological Survey, which is a depository, and the federal
13:33:21 20 agencies charged with collecting this data. And it's
21 common to rely on in our practice. Some of it came from
22 SRP as well. We documented the range of expected flows by
23 putting in minimums, maximums, averages, medians, flow
24 duration data. We talk about the differences between
13:33:54 25 those types of data and so we try to account for what has

1 been described as the erratic nature of the river. I
2 would suggest that it's not that erratic. Certainly it's
3 different than streams back east, but it's not unusual in
4 the west to have large floods and normal runoff periods.

13:34:08 5 And one particular point on that is if you look at the
6 flow duration data that are presented in the report, you
7 can see that 99 percent of the time, the river is not in
8 flood. So the normal condition is not flood. And yes,
9 there is -- there are big floods, there's no denying that
13:34:21 10 at all. But it's certainly not the normal condition of
11 the river and you know that if you've been in Arizona for
12 a while. You know that that's the case because you don't
13 see reports of floods every day. It's an unusual
14 occurrence.

13:34:33 15 And we also know that the river is
16 relatively predictable: There are variations from
17 day to day, from season to season, climate
18 cycle to climate cycle, but it is relatively predictable,
19 and we do predict runoff and it's not different at all.

13:34:44 20 And there's certainty in measurement that's not differing
21 at all from any other kind of scientific inquiry and it's
22 within bounded range. And the ranges in those data are in
23 the report that we put in front of you.

24 And the final thing I will point out is, the
35:02 25 river is not known to have dried up so there are time

1 periods when it's less than -- less than average, less
2 than median, and we have gone through periods of unusual
3 drought, but we have no records that the river itself
4 actually dried up and was a dry stream except for where
13:35:18 5 man changed the natural condition. Those are the points
6 that I wanted to clarify.

7 CHAIRMAN EISENHOWER: Okay, thank you, both.

8 We have one little carryover item. Several
9 months ago we were in Globe, and those of you who were

13:35:47 10 there remember -- and we were detailing the small amount
11 of watercourse study for Gila County and we carried it
12 over because there was some discussion among our

13 commission members about the confluence of Tonto Creek
14 with Roosevelt Lake. And if I could call on Mr. Fuller

13:36:08 15 one more time, if he would clarify that question that we
16 had in our mind about the confluence and how they took

17 Tonto Creek, whether it was to the con- -- the old

18 confluence before the dam or the new confluence for

19 Roosevelt Lake being there. So if you would clarify that

13:36:37 20 point for us, Mr. Fuller, I would really appreciate it,

21 and we can close our evidence on that particular topic.

22 MR. FULLER: Close the hearing on the --

23 CHAIRMAN EISENHOWER: On the small amount of
24 watercourse for Gila County.

36:52 25 MR. FULLER: We did prepare -- again, I'm

1 Jon Fuller, and I was the author of the report "Stream
2 Navigability Study for Tonto Creek Headwaters to Salt
3 River Confluence," prepared in January 2001 for the land
4 department, and it was published in the draft final -- the
13:37:13 5 final report "Small and Minor Watercourses for Gila
6 County," and I believe it's Appendix D. That's where that
7 report resides. There's also a Level 3 report in that
8 same discussion. So your question is, did that report
9 extend down to the pre-Roosevelt Dam confluence of the
13:37:35 10 Salt River?

11 CHAIRMAN EISENHOWER: Uh-huh.

12 MR. FULLER: And the answer is yes.

13 CHAIRMAN EISENHOWER: So that's your
14 criteria to the confluence with the Salt?

13:37:40 15 MR. FULLER: Yes.

16 CHAIRMAN EISENHOWER: Underlying the lake
17 right now?

18 MR. FULLER: I believe the report notes that
19 a portion of that is -- was underwater at the time of
13:37:48 20 statehood.

21 CHAIRMAN EISENHOWER: Right.

22 MR. FULLER: And the exact boundaries of
23 that, we did not say on February 12th -- or February 14th,
24 1912, where that boundary was, but we know that there's an
13:37:58 25 inundation limit and that was the lowest reach of the

1 study that we looked at.

2 CHAIRMAN EISENHOWER: Okay. That's what I
3 needed to know.

4 Does that satisfy the other commissioners?

13:38:18 5 COMMISSIONER BRASHEAR: If you get to follow
6 the confluence of the Salt River it seems to me like we
7 have kind of muddied the waters -- to use a good term --
8 as far as Roosevelt Lake is concerned.

9 CHAIRMAN EISENHOWER: We are going to deal
13:38:32 10 with Roosevelt.

11 COMMISSIONER BRASHEAR: We have already
12 determined Tonto Creek all the way down --

13 CHAIRMAN EISENHOWER: We're just closing
14 evidence. We are not determining anything.

13:38:40 15 COMMISSIONER BRASHEAR: Oh, okay. I thought
16 you said "determining."

17 CHAIRMAN EISENHOWER: We're just closing
18 evidence.

19 MR. MEHNERT: It's the completion of the
13:38:47 20 hearing because -- if you don't mind -- because Jon Fuller
21 could not be in Gila County when we did it there so we
22 continued it.

23 CHAIRMAN EISENHOWER: We didn't have the
24 expert witness that day.

13:38:54 25 MR. MEHNERT: That really was the whole

1 issue.

2 CHAIRMAN EISENHOWER: Okay.

3 MS. GOLDBERG: Commissioner, I'm Rebecca
4 Goldberg for SRP. To the extent that Dr. Littlefield
13:39:04 5 reported in his testimony and covered the issues related
6 to Tonto Creek, we would like to submit that evidence on
7 behalf of the small watercourse.

8 CHAIRMAN EISENHOWER: What we weren't clear
9 about is in the original report Mr. Fuller did, he was
13:39:18 10 unavailable in Globe to figure out what he was talking
11 about, whether it was confluence of the lake or confluence
12 of the river. So now we have that clarification.

13 MR. MEHNERT: Are we going to clarify
14 submitting the report we have from Dr. Littlefield as part
13:39:33 15 of the Gila County Small and Minor Watercourses as well?
16 Is that all we are doing?

17 MS. GOLDBERG: Yes.

18 MR. MEHNERT: Okay.

19 CHAIRMAN EISENHOWER: Okay. With that
13:39:41 20 explanation, then, I will then close the evidence part of
21 the hearings on the Small and Minor Watercourses for Gila
22 County. And I will close the evidence-taking on the Upper
23 Salt River, which starts the clock running on the
24 post-hearing memorandum.

10:02 25 COMMISSIONER BRASHEAR: What now?

1 CHAIRMAN EISENHOWER: We just closed those
2 two hearings, the evidence -- just evidence-taking on the
3 Upper Salt and the Small and Minor Watercourse for Gila
4 County. No more evidence will come in at this point.

13:40:19

5 Okay. Item 7, we were supposed to deal with
6 today but our attorney who writes our reports has been out
7 of town and he got another court case, and so we're going
8 to defer item 7, which is adoption of the commission
9 report on the Pima County Small and Minor Watercourses to
10 our November meeting.

13:40:42

11 Our item number 8 -- 8 through 13, we're
12 going to go making determinations of navigability or
13 non-navigability of those particular watercourses. So
14 we'll start -- and these are just for commission members
15 to motion and vote. So with that, we'll just take the
16 Little Colorado River. And do I hear a motion?

13:41:12

17 COMMISSIONER BRASHEAR: Well, Mr. Chairman,
18 I'll split the motion as a result of the extensive study
19 and collection of evidence on the Little Colorado River,
20 that there was certainly no evidence that it was navigable
21 and I therefore recommend the commission make a motion
22 that we find the little Colorado River non-navigable.

13:41:33

23 COMMISSIONER ECHEVERRIA: : Second.

24 CHAIRMAN EISENHOWER: The motion is
25 seconded. All those in favor say "aye."

11:48

1 COMMISSIONER BRASHEAR: Aye.

2 CHAIRMAN EISENHOWER: Aye.

3 COMMISSIONER ECHEVERRIA: Aye.

4 CHAIRMAN EISENHOWER: All right. Opposed?

13:41:51 5 Hearing none.

6 The next one is the Big Sandy River.

7 COMMISSIONER ECHEVERRIA: : Mr. Chairman, I

8 move that we find the Big Sandy River is non-navigable.

9 COMMISSIONER BRASHEAR: Second.

13:42:06 10 CHAIRMAN EISENHOWER: The motion is seconded

11 that the Big Sandy River is non-navigable. All those in

12 favor say "aye."

13 COMMISSIONER ECHEVERRIA: : Aye.

14 CHAIRMAN EISENHOWER: Aye.

13:42:13 15 COMMISSIONER BRASHEAR: Aye.

16 CHAIRMAN EISENHOWER: The Bill Williams

17 River?

18 COMMISSIONER BRASHEAR: Mr. Chairman, we

19 examined the Bill Williams River very carefully and

13:42:24 20 especially with the possibility that there was some

21 navigation connected with the Colorado and determined that

22 there was no navigation active nor was there

23 susceptibility of navigation on the Bill Williams, so I

24 make a motion that we find the Bill Williams River not

42:45 25 navigable.

1 COMMISSIONER ECHEVERRIA: Second.

2 CHAIRMAN EISENHOWER: The motion was
3 seconded that the Bill Williams River is not navigable.
4 All those in favor say "aye."

13:42:53 5 COMMISSIONER ECHEVERRIA: : Aye.

6 CHAIRMAN EISENHOWER: Aye.

7 COMMISSIONER BRASHEAR: Aye.

8 CHAIRMAN EISENHOWER: Opposed? Hearing
9 none, so be it.

13:42:58 10 The determination of navigability of Burro
11 Creek.

12 COMMISSIONER ECHEVERRIA: : Mr. Chairman, I
13 move that the commission find Burro Creek non-navigable.

14 COMMISSIONER BRASHEAR: Second.

13:43:08 15 CHAIRMAN EISENHOWER: Motion is seconded
16 that Burro Creek is non-navigable. All those in favor say
17 "aye."

18 COMMISSIONER ECHEVERRIA: : Aye.

19 CHAIRMAN EISENHOWER: Aye.

20 COMMISSIONER BRASHEAR: Aye.

21 CHAIRMAN EISENHOWER: So be it.

22 Determination of navigability of the Santa
23 Maria River.

43:24 24 COMMISSIONER BRASHEAR: Mr. Chairman, I make
25 a motion that we find the Santa Maria River not navigable.

1 COMMISSIONER ECHEVERRIA: : Second.

2 CHAIRMAN EISENHOWER: Motion is seconded.

3 Commission find the Santa Maria River non-navigable. All
4 those in favors say "aye."

13:43:36

5 COMMISSIONER ECHEVERRIA: : Aye.

6 CHAIRMAN EISENHOWER: Aye.

7 COMMISSIONER BRASHEAR: Aye.

8 CHAIRMAN EISENHOWER: Opposed? So be it.

9 Determination of the navigability the Virgin

13:43:43

10 River.

11 COMMISSIONER BRASHEAR: Mr. Chairman,

12 Nevada's acts notwithstanding finding the Verde River

13 navigable in their state, I think that the extensive

14 examination that we did of the portion that runs through

13:43:55

15 Arizona is that the evidence -- overwhelming evidence is

16 not navigable, and so therefore, I make a motion that we

17 find the Virgin River in Arizona non-navigable.

18 COMMISSIONER ECHEVERRIA: : Second.

19 CHAIRMAN EISENHOWER: Motion to second that

13:44:07

20 portion of the Virgin River running through Arizona is

21 non-navigable. All those in favor?

22 COMMISSIONER ECHEVERRIA: : Aye.

23 CHAIRMAN EISENHOWER: Aye.

24 COMMISSIONER BRASHEAR: Aye.

25 CHAIRMAN EISENHOWER: Opposed? Hearing

1 none, so be it.

2 Okay. Those determinations are now finished
3 and I'll call for -- our next item is public comment. Are
4 there any other comments anybody would like to make?

13:44:30 5 Laurie, please?

6 MS. HACHTEL: I'm not sure where this should
7 fall within the agenda, but I did want to ask for
8 additional time for the post-hearing memorandum on the
9 Upper Salt River and didn't get a chance when you said
13:44:44 10 that -- after the close of the evidence, and I don't know
11 if this is an appropriate area on the agenda to discuss
12 that or not.

13 CHAIRMAN EISENHOWER: You wish to extend for
14 how long?

13:44:54 15 MS. HACHTEL: If we could, on the opening,
16 extend it from -- I think it's 30 to 60 days and on the
17 response from 20 to 45 days, also that would get us
18 through the holidays.

19 CHAIRMAN EISENHOWER: Okay. I will -- since
13:45:07 20 our legal counsel is not here today, and he will -- I
21 guess he'll be back -- I don't know, but anyhow, when he
22 comes back, I will be in touch with him about changing the
23 rule about that, and as soon as I can get in touch with
24 him and my fellow commissioners, I will get back to you on
13:45:27 25 your request.

1 MS. HACHTEL: Okay.

2 COMMISSIONER BRASHEAR: Mark, did you

3 have --

4 MR. MCGINNIS: Your rule does say 30 days.

13:45:33

5 And I am a little concerned about the sunset date that you

6 have. I'm not quite sure if it's 2006. I think we need

7 to be very careful about extending dates. I know it will

8 take a little while for the court reporter so we might

9 want a little more than the 30 days. But I think these

13:45:49

10 three hearings we need to get done and briefed as soon as

11 possible. 30 days should be plenty of time for people to

12 draft briefs.

13 COMMISSIONER BRASHEAR: You see no need for

14 extension?

13:46:04

15 MR. MCGINNIS: No.

16 CHAIRMAN EISENHOWER: Since Mr. Jennings is

17 out of town, I'll check with him, check with my fellow

18 commissioners and we'll make a ruling on whether or not to

19 change our rules, then, for this.

13:46:16

20 MR. MEHNERT: What were the two days?

21 CHAIRMAN EISENHOWER: She wants to extend

22 the 30 days to 60 days and the 20 days to 40 days.

23 MR. MEHNERT: Okay. I gotcha.

24 CHAIRMAN EISENHOWER: And I'll talk with

46:25

25 Curtis when he gets back in town and get back to

1 everybody. We'll put it on the air for everybody to hear,
2 so anybody that needs to know will know.

3 MR. MEHNERT: We'll just send it out on --
4 to the people that receive the agendas.

13:46:40 5 CHAIRMAN EISENHOWER: Yeah, exactly.

6 Our future agenda items are pretty well
7 established for our meeting --

8 MR. MEHNERT: Can I go back to put on a
9 comment for just a minute?

13:46:53 10 CHAIRMAN EISENHOWER: Oh, yeah. Sure.

11 MR. MEHNERT: It might be under future
12 agenda items, but there's a post-hearing memorandum due
13 tomorrow for the Hassayampa and the Agua Fria. For those
14 of you going to mail them, it doesn't matter but I'll only
15 be in the office tomorrow morning. I just wanted to let
16 everybody know so if you're going to look for them
17 you'll -- sign on the door says to take them up to the
18 mining inspector's office. I wanted to let you know that.

13:47:08 19 Also, the agenda item that you continue
20 today you're going to continue to the next hearing, right?

21 CHAIRMAN EISENHOWER: Yes. The one on
22 the -- adopting the report on Pima County, yes. That will
23 be continued to our next meeting.

24 MR. MEHNERT: So we'll send out an amended
25 agenda, at least for that and maybe for other things as
13:47:34

1 well, for that meeting because agendas have already gone
2 out for that.

3 COMMISSIONER BRASHEAR: Okay. We will
4 continue the Upper Salt at our next meeting.

13:47:44 5 CHAIRMAN EISENHOWER: No. No. Continuation
6 of that -- now the clock starts ticking on it, the
7 post-hearing memorandums and response memorandums.

8 COMMISSIONER BRASHEAR: Well, there's one
9 about Roosevelt Lake. Is that a separate matter all apart
10 from the Salt?

11 CHAIRMAN EISENHOWER: Yes. We'll make that
12 determination separate of whether or not we have the
13 authority to adjudicate that.

14 MR. MEHNERT: I presume that will be on the
13:48:09 15 next --

16 CHAIRMAN EISENHOWER: We'll put that on the
17 next agenda, just the question of whether we have the
18 authority to adjudicate it.

19 MR. MEHNERT: Correct.

13:48:15 20 CHAIRMAN EISENHOWER: Do you understand
21 where we'll go from there?

22 MR. MEHNERT: Okay.

23 CHAIRMAN EISENHOWER: We'll also -- as I'm
24 sure you all know, we'll have the verdict in the Gila
18:21 25 River in November and take us to holdover items that we

1 mentioned today.

2 MR. MEHNERT: Do we know -- will two days be
3 enough for those two hearings? Does anybody have any
4 thoughts on that? Do you think so? Once we start moving,
13:48:35 5 it goes pretty fast.

6 CHAIRMAN EISENHOWER: Is there any -- I'd
7 really like to hear some comments on that particular
8 issue. We have just two days -- we have this room
9 reserved for two days in November to take care of the Gila
13:48:50 10 and the Verde Rivers. Does anybody think that that's not
11 enough time?

12 COMMISSIONER BRASHEAR: Can we get a room
13 that's a little bit more centrally located? I mean, there
14 are rooms over in downtown Phoenix.

13:49:03 15 MR. MEHNERT: We've already rented this room
16 in November.

17 COMMISSIONER BRASHEAR: Why did we pick it
18 to begin with?

19 CHAIRMAN EISENHOWER: Because access to the
13:49:10 20 freeways.

21 COMMISSIONER BRASHEAR: Oh, okay.

22 MR. MEHNERT: And because it's only
23 six miles from my house.

24 COMMISSIONER ECHEVERRIA: : Yeah, the real
49:17 25 reason comes out.

1 MR. MEHNERT: Well, it's down the street
2 from his office. His office is right down there, so
3 there.

4 CHAIRMAN EISENHOWER: Are there any other
13:49:26 5 comments? Feel free to say whatever you want to, is fine.

6 So we've covered the public comments and
7 future agenda so everybody knows what's going to be on
8 there. And, George, you're going to put out an amended
9 agenda which will go out next week?

13:49:46 10 MR. MEHNERT: Next week for sure.

11 CHAIRMAN EISENHOWER: So everybody will be
12 on that list as well.

13 You want to address that or do you want me
14 to address item number 16?

13:49:59 15 MR. MEHNERT: I can just quickly if you
16 would like. We have no budget. We have no money. There
17 is a continuation bill that's been drafted for continuing
18 the commission until June 30, 2008. As of now -- January,
19 of course, depending on how that's going I would --
13:50:22 20 certain thing I have to put in motion to sunset but
21 hopefully those will be held up.

22 The -- part of the key to 2008 is really the
23 whole time is virtually appeal time. And the
24 commission -- or these five commissioners just happen to
50:39 25 be -- their terms happen to expire June 30, 2008. That's

1 just the way it -- some past governor decided that would
2 be a smart thing to do and here we are, but that's as much
3 as I have. We probably will try to apply for a
4 supplemental budget for this year to pay our attorney.

13:50:55

5 We're pretty much done with newspaper advertising, which
6 was also very expensive, but that's about it. If anyone
7 wants to go get the law changed so we can accept gifts,
8 we'll be happy to do that.

9 CHAIRMAN EISENHOWER: So any help that you
10 can give us with the legislature on continuation and
11 budget matter, we'll take any gifts you can give us.

13:51:14

12 COMMISSIONER ECHEVERRIA: : Any individual
13 members who also --

14 MR. MEHNERT: We can't take gifts. We'd
15 have to have the law changed to be allowed to take gifts.
16 Unless your law says you may take gifts, you cannot take
17 gifts. Believe me, I checked.

13:51:27

18 CHAIRMAN EISENHOWER: Oh, you checked
19 already?

13:51:36

20 MR. MEHNERT: Attorney General's Office told
21 me that.

22 CHAIRMAN EISENHOWER: Are there any other
23 comments on our situation or what we have to do and what's
24 coming down the pike?

13:51:50

25 MR. MEHNERT: Everybody know the dates the

1 16th and 17th of November, correct? For the balance of
2 the year.

3 COMMISSIONER BRASHEAR: When do we subset?

4 MR. MEHNERT: Right now, June 30th next

13:52:01 5 year.

6 COMMISSIONER BRASHEAR: Okay.

7 CHAIRMAN EISENHOWER: I'd say we're trying
8 to get that extended.

9 If that's all, the business is over. I'll
10 entertain a motion.

13:52:14

11 COMMISSIONER BRASHEAR: I move that we
12 adjourn.

13 COMMISSIONER ECHEVERRIA: : Second.

13:52:25

14 CHAIRMAN EISENHOWER: I hear a motion and
15 seconded to adjourn. We are adjourned.

16 Thank all of you for coming and standing by
17 with us and everything else.

18 (The hearing was concluded at 1:52 p.m.)

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1 STATE OF ARIZONA)

2 COUNTY OF MARICOPA)

3 BE IT KNOWN the foregoing proceeding was
4 taken by me pursuant to stipulation of counsel; that I was
5 then and there a Certified Court Reporter of the State of
6 Arizona. That the questions propounded and the answers
7 given were taken down by me in shorthand and thereafter
8 transcribed into typewriting under my direction; that the
9 foregoing pages are a full, true, and accurate transcript
10 of said proceeding, all to the best of my skill and
11 ability.

12 I FURTHER CERTIFY that I am in no way
13 related to nor employed by any parties hereto nor am I in
14 any way interested in the outcome hereof.

15 DATED at Phoenix, Arizona, this _____ day of
16 _____, 2005.

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Gerard T. Coash, RMR
Certified Reporter #50503

1 STATE OF ARIZONA)

2 COUNTY OF MARICOPA)

3 BE IT KNOWN the foregoing deposition was
4 taken by me pursuant to stipulation of counsel; that I
5 was then and there a Certified Court Reporter of the
6 State of Arizona, and by virtue thereof authorized to
7 administer an oath; that the witness before testifying
8 was duly sworn by me to testify to the whole truth;
9 deposition review and signature was not requested; that
10 the questions propounded by counsel and the answers of
11 the witness thereto were taken down by me in shorthand
12 and thereafter transcribed into typewriting under my
13 direction; that the foregoing pages are a full, true,
14 and accurate transcript of all proceedings and
15 testimony had and adduced upon the taking of said
16 deposition, all to the best of my skill and ability.

17 I FURTHER CERTIFY that I am in no way
18 related to nor employed by any parties hereto nor am I
19 in any way interested in the outcome hereof.

20 DATED at Phoenix, Arizona, this 1st day
21 of November, 2005.

22
23 
24 Gerard T. Coash, RMR

25 Certified Court Reporter #50503