

Colorado River Bed Case

Transcribed by John Weisheit

Two separate testimonies have been transcribed for this issue of The Confluence. These oral histories, by Kenneth Sawyer and Harry T. Yokey, will help readers to understand pioneering river navigation in shallow water using engines, both steam- and gasoline-powered. Also the work assigned to the U.S. Reclamation Service for the proposed dam construction below the confluence of the Green and Colorado Rivers.

The Testimony of Kenneth Sawyer Salt Lake City in 1929, Volume 11

He resides at Yuma, Arizona; is forty-three years old, and his present occupation is that of city engineer for Yuma.

He has been engaged in surveying and engineering work ever since he has been grown. He was formerly connected with the United States Reclamation Service, and worked for them for a number of years.

In 1914 he was on the Green River, from Greenriver, Utah, down to the junction of the Green and the Grand [Colorado River] and up the Colorado to Moab. He was sent into this country by the Reclamation Service, with a party under the direction of Mr. John F. Richardson, to make a reconnaissance and survey for reservoir and dam sites, along that stretch of the river.

During the course of his work he investigated three different dam sites.

The first one surveyed, and where they also carried on some diamond drill borings at the site itself, was the junction of the Green and the Grand rivers.

The second was just below Flaming Gorge, on the Green River, in what is known as Horseshoe Canyon.

The third was on the Yampa River, a tributary of the Green River, at what is known as Juniper Canyon.

In connections with his operations at the dam site, at the junction of the Grand and the Green Rivers, it was necessary to have certain machinery and equipment. This material was shipped on the railroad to Greenriver, Utah, and consisted of a light, horizontal boiler and drill engine [Sullivan type H drill engine], necessary casings and drill tools, drill rods, and so forth.

He was not present at the Greenriver when this equipment was received, as he was down in the canyon on a survey at the time.

He got back from the survey down the river while the machinery was being loaded on the boats. This took place about twenty-five miles below Greenriver, near what is known as Wimmer's Ranch [also known as Wheeler Ranch and Ruby Ranch]. To carry the boiler and engine, casing and drill rods, Mr. Richardson had built two scows; approximately six by twenty-four feet. The two scows were operated about five feet apart, and were decked over, so they were practically one boat. The boiler and the engine were mounted on the two scows to give a little motor power.

He didn't see this machinery hauled down to Wimmer's Ranch. He states that the boat with the paddle wheel, is Mr. Wimmer's boat *The Marguerite*. He believes that the scows and *The Marguerite* both drew, loaded, about eight inches. In addition to the scows and *The Marguerite*, he had three small row boats, and two small motor boats; about fourteen or sixteen feet long. The whole expedition moved down together; the scows with the machinery, and *The Marguerite* leading the outfit.

BY THE SPECIAL MASTER: You ran two scows and a paddle wheel boat and three row boats and two motor boats?

A: Yes, sir.

Q: Who was the Admiral?

A: I was the Admiral, and Captain Yokey was the captain of the expedition, of this expedition—Mr. Wimmer was the admiral—I beg your pardon.

BY MR. BLACKMAR: Just describe the progress of the flotilla down the river.

A: The scows, being the most awkward of the bunch, we led those off, and our trip I think, took three or four days, somewhere in that neighborhood. We grounded many times on sandbars, the channels being a little difficult to pick out.

One instance, I remember, we were forced to pull scows off of sandbars with block and tackle that we had on board, but ordinarily by piling our freight and shoving and reversing the paddle wheel on the *Marguerite* we were able to get free and proceed.

We had more difficulty several times below; the wide shallow places in the river, the bars would usually choke the water off and shoot it over against the bank at a bend, and there were occasionally rock banks there from twenty to fifty feet high, and it took a little work to get around those and fend the outfit off from the rocks.

But we would gather all hands with all the poles and oars and things we would gather, and we would all place these things against the rocks and shove, and walk along the boat and got by these places.

I think there were two such places that I distinctly remember.

Exhibit No. 264 clearly represents one of the operations in getting off a sand bar; and was the boat *Betsy Ann*, which was a little barge, used on the survey. He believes it was the latter part of August, 1914.

He knows that all of the boats of the expedition grounded frequently.

Q: What method did they adopt to get off?

A: We had plenty of help, and we just dropped overboard in the shallow water and pushed the boat back into deeper water and proceeded.

When the expedition arrived at the mouth of the river they tied up and made camp on the right hand bank of the Green; approximately one-half to three-quarters of a mile above where he intended to drill; and the next day he moved the drill scows down to the position of the first hole, and anchored them. This was about five hundred feet below the confluence of the two rivers.

Q: What means did you adopt to anchor the drilling outfit there?

A: Mr. Richardson, while I was down on the survey trip, had had a local blacksmith in Greenriver make two iron anchors similar to the ship's anchors, and we used two of those for our front anchors.

We had this catamaran; we had an anchor consisting of an inch rope at each corner.

Q: What do you mean by a catamaran?

A: That is the drill barge, the two barges with the five-foot space between them, decked over with planking.

Q: As I understand, you passed two lines to the shore?

A: We had the location of the holes fairly well in mind, and these anchors, the two front anchors already to drop, and as we got the barge a few feet from where we wanted to stop, we shove these two iron anchors overboard and stopped the progress of the boat approximately within a few feet of where we wanted to start operations.

Then later on we anchored the lower anchors, consisting of rocks weighing four or five hundred pounds, tied with a bite of this cable rope.

The purpose of this drilling operation was to see if there was suitable foundation for a dam there at this point, but they were not able to locate bedrock, and their deepest hole was one hundred and twenty-five feet. These holes were down through sand and an occasional boulder.

Q: How long a period were you there?

A: We started drilling in the first part of September, and came out again in the first part of November.

Q: What was the occasion of the ceasing drilling down there?

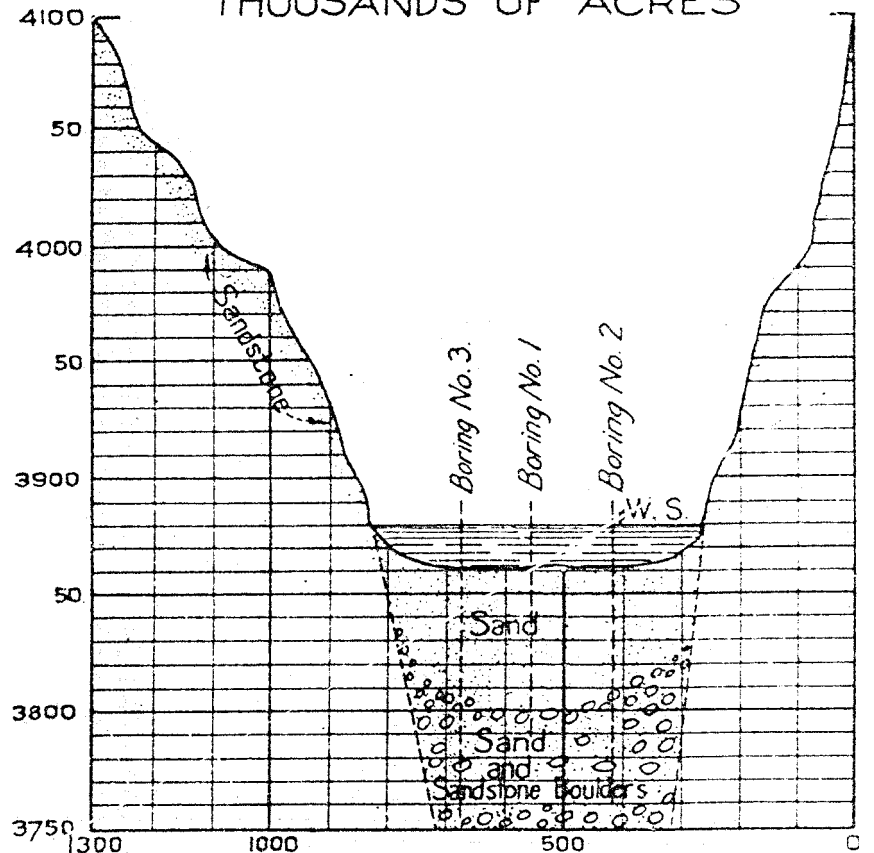
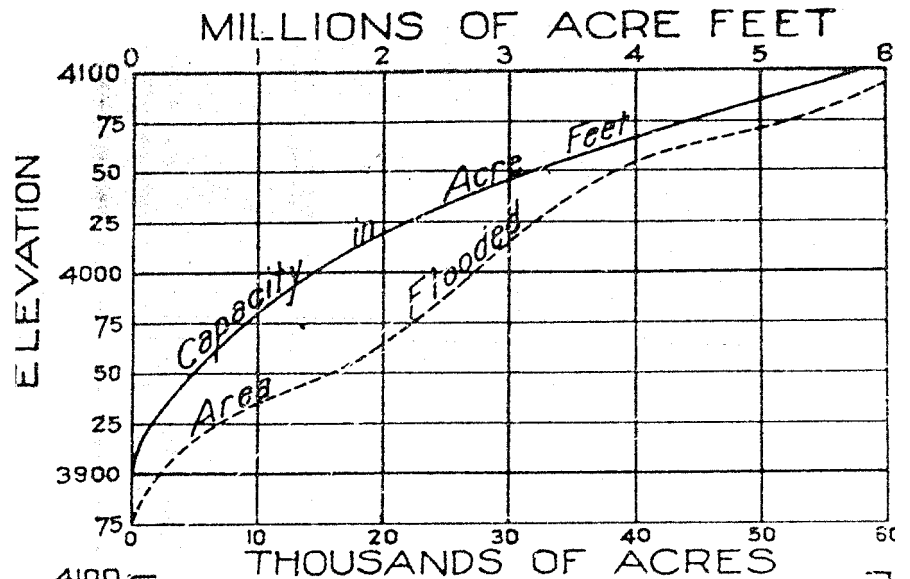
A: Why, one Sunday morning, while there were just a few of us in camp, we had about an eight foot rise, a sudden rise in the Grand, accompanied by immense quantities of driftwood; this driftwood came down so thick a chicken could nearly walk across the river dry shod.

We had difficulties in getting over to the barge, the drill barge, in a row boat, but by lots of action we got ahead of the driftwood a little and came in below it and got up to the barge.

This driftwood accumulated on the anchor ropes of the barge so rapidly we couldn't keep them clean, and it was about to sink the barge, so I got a shore line, an inch line ashore around a tree and cut the two front anchor lines with an axe, and as we swung around and hit the shore I had a second man with another line ready; it snapped the first shore line; the second one held long enough to swing us around to a projecting rock there which shunted the

driftwood down, otherwise I imagine the outfit would have been carried over the rapids, which were about a mile or a mile and a half below us [3 miles], the first rapids of Cataract Canyon.

I made arrangements for Mr. Hiser, the drill foreman, to line the outfit back up over the hole; we had lost about ninety feet of drill rods and casing that we wanted to re-



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cover if possible in order to resume operations, and I went up to Moab on the Grand River and wired the conditions to Mr. Richardson.

I got a wire back calling the outfit out; I think his wire said, "Take no more chances with life or limb," or something of that kind; so I brought the outfit out.

Acting on the telegram, which he received from Mr. Richardson, he took the outfit out.

As he recalls they started to take the outfit out about October 25.

After the flood subsided he went up the Grand River, in a motor boat.

He hired a Ford, and drove overland to Greenriver, where he bought an old paddle wheel that one was using.

He also got the gears and chains that he thought would be necessary to fix up the *Betsy Ann*, and Mr. Wimmer hauled this material down to the junction. They placed the small horizontal boiler and the engine on the *Betsy Ann*. The drill engine had a chuck that turns the drill rods, and they connected this to the paddle wheel and had a steam boat.

They loaded up with coal and left piles of it at intervals along the bank and stuck a pole at each pile with a flag on it, so they wouldn't run by it.

When they arrived at the junction he believes they had six hundred pounds of coal left. That was also loaded on the *Betsy Ann*, and the boat propelled itself up the stream.

They had taken the catamaran and lightened it in every way possible, *The Marguerite* pushed one of the scows, and the two motor boats pushed the other one. He loaded on what of the outfit he could, and cached the rest at the junction, and proceeded up stream.

BY THE SPECIAL MASTER: How did you get this stuff down with Mr. Wimmer from Greenriver to the junction that you brought down to fit up your *Betsy Ann*?

A: We brought it down in Mr. Wimmer's supply boat, *The Marguerite*.

Q: *The Marguerite* had gone down originally—

A: Yes, and then come back.

They made a trip every two weeks back and forth from Greenriver and it was on the last trip up. He went down the river on his first trip with Mr. Wimmer.

Q: Tell me the progress of this expedition up stream.

A: Why, on account of the steam boat of ours being a sort of home-made affair, untried, and the difficulties we had encountered along the river, we took things very slowly and cautiously. We had some difficulty in getting around a place, a

sharp bend where the river was throw against the cliffs, about two miles above the junction; the water was quite swift there; that was the only channel open, and we were hung up there for ten or fifteen minutes; we couldn't see whether we were moving or not; finally we would gain a foot or so; finally got the whole outfit past that point; and of course we had our daily round of grounding on sandbars; pick out the wrong channels amongst the sandbars and have to back up and push off and start again.

Q: Was Mr. Wimmer with you?

A: Yes.

Q: Was he in charge of the navigation?

A: I think he had the contract for the freighting of the outfit out of there.

It took the four of five days to come out with the outfit, to Wimmer's Ranch; which is located about twenty-five miles below Greenriver, Utah. They stopped there for the reason between that point and Greenriver, Utah, there are a series of gravel bars which are shallow, fast water, and wasn't possible to bring the outfit up over these bars.

The drill, and the other equipment was then unloaded at Wimmer's Ranch, and it was transported by wagon to Greenriver, Utah, and shipped by rail to Green River, Wyoming.

All the boats that went down the river came back up, with the exception of one row boat, which was lost at the junction. The row boats were fastened to the barge, and towed up; and were simply used for transportation back and forth across the river.

The two scows were pushed up the river, and the *Betsy Ann* came up under her own power.

Prior to the drilling operations he was in charge of the survey party, and this survey was started at Greenriver, Utah, and included the portion of the country above Greenriver for a few miles. As soon as the brought the survey down past Greenriver far enough, they had the *Betsy Ann*, two motor boats, and three row boats, and with this outfit he shoved on down to the junction.

This started in the middle of July, 1914; and was just prior to the drilling operations.

Exhibit No. 10 are the survey maps that were made at that time.

Above Greenriver he used oars and went on foot, and didn't use the river at all, and he didn't use the river for any of the surveys above Wimmer's Ranch, or just immediately below it.

After he started using the river it was necessary to get out of the boat frequently. Captain Yokey had charge of the operations of the motor boats, and the navigating. The motor boats were fourteen or sixteen feet long, and possibly for or five feet wide, and he doesn't believe they drew over seven of eight inches. [More discussion about getting stuck on sandbars.]

Between Greenriver, Utah, and the junction, he had made two trips with the survey party, one with the diamond-drilling outfit, and three or four trips while the drilling operation was going on. He believes he took two trips up the Grand River; and one with Mr. Eugene LaRue, on Mr. Wimmer's boat, up the Green River to the Wimmer's

John Richardson at the Junction Dam site, 1914



Ranch. [More discussion about getting stuck on sandbars.]

The Mr. Wimmer he mentioned in his testimony, is Mr. T. G. Wimmer, who is sitting in the courtroom. He has had no conference with Mr. Wimmer; and he doesn't know whether or not Captain Yokey was in Denver [courtroom].

Testimony of Harry T. Yokey Denver in 1929, Volume 15

Harry T. Yokey testified for complainant on direct examination as follows:

I have lived at Elgin, across the river from the town of Green River, since the fall of 1903. There are about a half dozen houses at Elgin. I have built and operated so many boats on the Green River that I have forgotten how many I have operated.

My first experience was in the fall of 1903 with a row boat, when I went down to the Cataracts, about one hundred and twenty-five miles below Green River bridge. This was a hunting trip in October in a boat about fifteen-feet long and a three and a half foot beam. With two men and our bedding and provisions for thirty days, the boat drew six or seven inches. We rowed and towed the boat back upstream. When we got tired of rowing we would tow. When we came to the riffles we would have to tow. For two or three years I made these hunting trips every fall.

I helped launch the *City of Moab*, installed the engines in that boat and was its chief engineer. We started down the river in July, having plenty of water, and the boat drawing three feet or more. It had two tunnels twelve-feet long and a twenty-eight inch wheel. We went down to the confluence of the Green and Colorado and then up to the Slide, a place where there has been a slide that has dammed two-thirds of the way across the river channel. The water was at flood stage and couldn't make it up through the Slide.

Then we turned around and started back for Green River and left the boat tied up at a point within ten miles of the town of Green River at Halverson's Ranch. We only had one hub left on the propeller on the port side and one blade on the stern, so it was time to quit.

On our upstream trip we hit a sand bar a few times but went on over them. We were gone on this trip approximately ten days from the time we started until we tied the boat up. We made side trips being bound for Moab and were unable to get through the Slide at that flood stage of water, whereas in ordinary low water the Slide did not amount to anything. At high water it takes a good craft to go up the Slide. We left the boat at Halverson's ranch for about three or four months.

The owner having concluded to take off the upper works, removed the tunnels, extended the boat ten feet longer so as to make it a sixty-one foot boat, and then put in the steam power. After these alterations were made the boat was named the *Cliff Dweller*, and I was again chief engineer.

When we made the trip in that boat at which time it was called the *City of Moab* it was equipped with two gasoline, four-cylinder engines, rated at twenty-five horsepower. After alteration two stern wheel engines rated at twenty-five

horsepower each were installed. Going down the Green River with the *Cliff Dweller* after these alterations had been made, we had a very good voyage and went on down to Valentine's Bottom, located about one hundred miles below the town of Greenriver. This trip was made in the latter part of July.

Returning back upstream we did better than we did going down with the *Cliff Dweller*, Once in a while we would run on a sand bar. We tried to keep away from sand bars. I didn't keep any count of the number of sandbars we hit coming upstream, and I do not think the men who kept our log kept track of them. We came clear back up to the town of Green River in the *Cliff Dweller*. The boat was a little long for going over the riffles; the bow would jerk around and the stern came up and lift the wheel out of the water; then we would drop back, take a line ashore, and one man would get her off in twenty or thirty feet so we could get in the water and go on.

The boat was equipped with a six-spike capstan. On the upstream trip we used the capstan at Fort Bottom, where we ran on to a sand bar without putting off until evening; had to take the anchor out in deep water and take a few turns around the capstan and pull ourselves off into deep water.

At one place going down, called Hell's Hole, stuck about two o'clock in the afternoon. We there threw the anchor overboard and next morning the boat was floating free. That was at a point thirty or forty miles below the Denver and Rio Grande bridge and about fifteen miles below the San Rafael. We used a common old fluke anchor weighing one hundred and fifty pounds.

When the boat was as the *City of Moab* it did not carry a capstan. When operating the *City of Moab* we only ran lines to shore on one occasion, which was on the down trip at a point two miles above Horseshoe Canyon. We carried no freight on those trips, but the owner of the boat had two guests.

Our trouble at the Slide on the *City of Moab* trip was because of the flood stage of water. At low water and at minimum stage of water it was no trouble to go through the Slide; but at high stage I don't think a craft can go through there. Fort Bottom was figured to be about eighty miles below the town of Greenriver and Wimmer's ranch is twenty-five miles below Green River. A place called Brigham's Aleck is where we got stuck on the bar and got off with the capstan and anchor. On the upstream trip we stopped at Wimmer's ranch, which used to be Wolverton's camp, and raised our engines because the paddle struck a little below the bottom of the boat and we wanted to raise them so they would be in the clear. I think it took us two days to raise the engines.

The owner, Mr. Lunsden, sold a half interest in the *Cliff Dweller* to Mr. Seigmuller and they sawed the boat in two and shipped it overland to Salt Lake where it was used as an excursion boat. It only made the one long trip on the Green River. We made two little side excursions.

Exhibit 473, identified by the witness as a log, was offered in evidence, whereupon the witness was examined concerning the log by counsel for defendant and testified as follows:

We had no typewriter on the boat and the typewriting on Exhibit 473 must have been done in Cincinnati. I didn't know anything about any log being kept until about five years after the trip. Of course we hit a few sand bars, but the man who sent me this log was a chef with a rather lively sense of humor who liked to josh a great deal. I didn't count the sandbars and I don't think he kept a very accurate count of them. I can't identify the handwriting on Exhibit 473, but the exhibit was sent to me by Mr. Wise.

That portion of the so-called log down to the word "Notes" received in evidence and is set forth at length on pages 3409-3410 of the record and indicates that the *Cliff Dweller* left the town of Green River at 9 A.M. on August 6, 1906, arrived at Valentine's Bottom on August 9; arrived at Riverside on the morning of August 12 and engaged in the work of raising the engines and overhauling the boat until August 15, when the journey upstream to Green River was resumed and the boat arrived at Green River at 3 P.M. on August 16.

Resuming his direct examination Mr. Yokey testified:

After my trip in the *Cliff Dweller* I built a boat called the *Black Eagle* that was about forty feet long, with a six foot beam, and a draft of seven or eight inches. It had a semi-tunnel, half in the boat and half outside, and was equipped with a water tube boiler and a twenty horsepower compound vertical marine engine. It burned coal but we mostly depended on driftwood for fuel. I built this boat one, two or three years after the *Cliff Dweller* was sold and taken to Salt Lake, and launched it in the spring of the year. A month or two later I made a trip with the *Black Eagle* down to a point within ten miles of Valentine's Bottom, where the water tube got full of mud and blew up. I think the boat is still down there. I came back upstream with Mr. Wolverton on the *Wilmont*. He and a man named Woodruff had been prospecting around below there. I had been figuring on rowing back upstream and had a light boat along but I on back on the *Wilmont* with Wolverton and Woodruff. When I left the *Black Eagle* there I took out the boiler and engine and put them on shore with the cable. A year later I went back there and found the cable stretched out, one end of it on a tree, and I suppose the boat was on the other end, although I didn't see it. I later built another launch and went down the river and got my boiler and engines that had been in the *Black Eagle* and brought them back up to the town of Green River.

I do not remember a boat called the *Betsy Ann* [see Sawyer's testimony in this issue].

After asking examining counsel whether the *Wilmont* is the boat that was sunk up near the Denver and Rio Grande bridge and upon receiving a negative answer, the witness continued his testimony: I think the *Wilmont* was right below Wolverton's house. I saw what I judged to be the boat sticking up there.

I didn't give any name to my next boat but made it lighter so that it would run easier. That boat is now down at Tickaboo Rapid near Cass Hite's place. I sold it to Messrs. Fletcher and Butler and they took it overland via Hanksville and lost it at Hite. That boat was about twenty-eight feet

long with a draft empty of about eight inches. It was powered with a double cylinder Northwestern engine of ten horsepower. After they launched the boat I went down to that section of the Colorado River and spent thirty days working on a gold bar. The boat was there when I left, tied up just below Tickaboo Rapids, which they couldn't make with the boat and it was tied up there. I never operated the boat down there.

I was engaged in the work of taking some machinery down the river for use on a government survey being employed by John F. Richardson of the Reclamation Service. I had a fourteen by four foot boat, with a six horsepower engine, and took Mr. Richardson down to the head of the Cataracts in that boat.

Mr. Richardson told me he had a party of twelve men coming in with ten tons of supplies to be taken down and wanted to know how I would get it there. I told him to make a barge and take it down, and I built a barge thirty-two feet long by eight foot wide in ten days. I didn't name that barge.

We put five hundred or a thousand pounds of supplies in it at the Green River bridge and Richardson's field man, Mr. Sawyer, went down and also a man named Joe Ross. Meanwhile I got another launch that I had used at Halverson's ranch ten miles below. I used two sweeps on the end of the barge and tied it up at Halverson's ranch, where supplies had been hauled in from Green River, and we loaded the barge at that point. I didn't load all of the supplies on the barge at Green River because I was a little leery about a place called the Auger, where the river takes a short turn. I am afraid I couldn't make without landing on the ledge. I had no difficulty in going down to Wimmer's ranch.

After we completed loading the barge at Halverson's ranch located ten miles below Green River, took it on to the mouth of the Green River. In connection with my launch which was equipped with a six horsepower engine. We lashed the barge to this launch. One of the launches would take care of the upper contour of the river and the other would take care of the lower level. The barge was finally sold at auction for or five dollars and is now down there on a sand bar. One of the launches belonged to me and the other to Mr. Anderson. My launch is not at the bottom of the river, I think, and I don't know what became of Anderson's launch, but it is not on the Green River now and there are no power boats except at Moab that I know of. I live within one hundred feet of the Green River.

Exhibit 474 is a picture of the *City of Moab* under construction at the Denver and Rio Grande pump house. Exhibit 475 is a picture of the *Undine*, which was brought into the country before I came there. Exhibit 476 is a picture of the *Cliff Dweller*, rebuilt from the *City of Moab*. That picture was taken within a day or two of the first date appearing in the log (August 6; 1906). (The three last mentioned exhibits were received in evidence.)

Harry T. Yokey testified on cross examination as follows:

After our one hundred mile trip down the river, we came back up to the town of Green River in the *Cliff Dweller*. Mr. Lumsdon told me and his foreman, Mr. Anderson, that we

could go ahead and operate the *Cliff Dweller* during the next season if we would stand all the expenses. Anderson and I started in good faith, but when Lumsdon made the sale of the boat we released him from his agreement.

Anderson and I merely had a verbal agreement with the owner of the boat, pursuant to which he gave us the privilege of fitting it up; we thought some changes should be made and we were going to be allowed to keep all we could make out of the boat during the coming season. When the owner received a cash offer for his boat we released him from the contract. The *Cliff Dweller* had a draft of sixteen or eighteen inches, and I am sure that when we started down the river with seven tons of coal on board and it had a draft of about twenty inches,

A boat with an eighteen inch draft would require two feet or more of water, and where the river splits up into two or more channels and at a real low stage of water, you wouldn't find that depth, although there is no time in the year except at really low water when there would not be such a channel in the Green River between the town of Green River down to the mouth of the stream.

I have lost count of the number of times I have been down to the mouth of the Green River. Some years I have made that trip three or four or five times; other years not more than once or twice. If a party came along I was always ready to take them down. Some years there are spots between the town of Green River and the mouth of the Green River where you couldn't find, at low water, a channel for a twenty to twenty-four foot boat a foot of water, on account of the river being up into two or more channels; if you had all the water in one channel, you would have sufficient water.

I don't know exactly how much water the *Wilmont* drew; it was a side-wheeler and would draw less water than a propeller boat. Mr. Wolverton did most of his running down the canyon with that boat. We met with our troubles up on these riffles. He would know more than I would as to whether there is any stage of water that boat could go up and down the Green River. I wouldn't care to express an opinion as to whether the *Wilmont* would experience trouble at any stage of water in going up and down that stretch of the Green River between the San Rafael and the mouth of the Green.

Three years ago I was unable to get my boat that didn't draw over a foot of water up the river at Little Valley. That is the only occasion in my experience when I could not get up and down the Green River with a boat having a draft of one foot, and therefore I "always came back to the home port." Up until then I had always been able to find a channel sufficient to permit a boat drawing a foot of water to travel through.

At Barrier Creek, Valentine's Bottom and Fort Bottom the river spreads out; and when I was taking the barge down for the Reclamation Service, I ran through the same channel; we covered the river four or five times a trip, taking the bars out at that point and cutting a channel. I came back there with the launches and only hit one bar. If we had not been traveling back and forth I probably would have gotten stuck. As a general thing, even at these shallow places such as I have just described, there is no diffi-

culty in finding a deeper channel, but sometimes it is pretty hard to find. If you keep turning you will finally get through. Even though you may be hung up for a little time by running on some bar, you are always able to reach your destination.

When I was carrying supplies for the Reclamation Service survey party, we didn't have occasion to go up and down the river with an interval of only a few days between trips; there ran a launch covering each end of the survey. During that time we did not have any occasion to leave the barge and come to Green River, although we took the launches to meet the barge at Wimmer's ranch and came to the town of Green River with both of the launches.

When the river rises if you go through and agitate the sand, it cuts a channel. When you come over that same route a day or two or three days later, it is my experience that the channel is enlarged and the current will go into one channel instead of spreading out into two or more. From my experience on the river I would say that the effect of making frequent trips along the river would not be noticeable through that stretch lying thirty miles below Green River bridge; but from there on down the river frequent trips would cause a channel to and be of benefit in navigating the river and would keep the channel open. During the first thirty miles where frequent travel would have no effect, you encounter gravel, and from there down you find sand. The shallow places that I spoke of below the mouth of the San Rafael are points at which there is sand but no gravel.

On the occasion when I left the *Black Eagle* downstream and came up with Mr. Wolverton on the *Wilmont*, we hit a sand bar a couple of times, but had no trouble and got off within a short time. During a year like this when there have been no boat run to stir up the sand below the mouth of the San Rafael and the mouth of the Green River, I wouldn't care to accept a contract to deliver freight and merchandise and passengers to points up and down the river along that stretch after the middle of July. I would wish to start in when the river was going down and then agitate the sand and cut out the channel after it has settled. At this time of the year I wouldn't take a contract. I took my contract with the government about July 1 and have never had any contract later in the year. I have gone down where boats had not run during the year and I have been stuck a good many times where the river divides into three or four channels and there had been no boat there but me to make a channel. It is desirable to go on the river at a minimum stage when the river is dropping.

I recall coming up to your office, but I don't recall telling you that the Green River always had a channel if you know where to find it. I did tell you that there was no difficulty in going up and down the Green River after you made a channel. If I go downstream when the river is falling and make a channel, in making a trip after that I have no hesitation about coming back; I know where I am all the time and come right on through. I have done it and can do it again.

If you hit a sand bar at this time of the year going at good speed it will feel as if you had struck a rock. You may find two or three hundred feet where the river is spread out, with maybe three or four channels. There are a few

places where you would strike hard. Right today, if I knew that a boat had not been down the Green River this year, and if somebody wanted me to take two thousand pounds of supplies down the Green River, I would tackle the job if there was compensation enough and I would reach my destination in the course of time; and after that trip if some one else should come along and wanted me to repeat it, I wouldn't have nearly as much hesitation about taking on that job. I would feel that after the first trip had been taken the later trip would be easier.

[Comment: There are times in low water when travel across sandbars is impossible for boats that draft as much water as described by Yokey. Modern inflatable pontoon boats with outboard motors draft little water in comparison and can float over such sections as described by Yokey. Jet boats are able to navigate over these low points when on full plane. In a severe and sustained drought, however, it is possible that all navigation could cease.]

H. T. Yokey testified on redirect examination as follows:

The channel cuts most when the water is falling. There is always a current where the most water is running and it will collect there and commence to cut. When the water is rising there will be crossing bars in different places on the inside of the bends; when the water falls it cuts and spreads out and deposits maybe a few hundred yards or a half mile further down. Then is when you should be running your boats to make a channel.

In the trips that I have made down the river I have general found the channel and the deepest water pretty near in the same location. You always find plenty of water on the outside of a bend. [Comment: This is absolutely not true and I am disappointed that Yokey even uses the word "always" in his vocabulary.] It is when you cross from one bend to the other that you have trouble in locating the channel. When you come into a bar you feel the pull of the rudders easing up and edge along and come to deep water; by the sense of touch you can wind on through and find the channel; otherwise, if you hold your rudder stiff you would run aground. I have no shallow draft boat at the present time; my boat draws, I should judge about twenty inches.

Harry T. Yokey testified on recross examination as follows:

The open season for hunting deer in this state is about October 10, and my hunting trips in 1903, 1904, and 1905 were always in October with a row boat. Row boats don't draw nearly as much water as a power boats. It is a great deal easier to find a channel coming upstream than going down, and because coming against the current you have plenty of time to pick out your course. Going downstream you have trouble because you come on to it suddenly.

H. T. Yokey, in response to questions propounded by the Special Master testified as follows:

The barge that we built to take down supplies to the government expedition carried a load estimated at ten tons down to the junction of the Green and Colorado Rivers; where it was cached for government party. That was after

they had made their survey for the proposed dam.

H. T. Yokey testified on further recross examination as follows:

I have a twenty-two foot cruiser made fourteen-gauge iron and wire. It has a beam of five feet. I think it will be launched in the Green River some of these days. It has an eighteen inch propeller and the skag below is over ten inches. It draws too much water and I am figuring on putting on a stern wheel. It is my intention to put this boat in the Green River and to operate it there, and I expect to go down to the junction and around up to Moab in that boat if I am not prevented by Mr. Hoover and Mr. McDonald from building the boat.

End of testimony.



Close-up of Charlie Spencer taken in the spring of 1909 during his attempt to mine gold from the Wingate sandstone along the San Juan River.