This is Maxwell Parshall at Hamilton, Montana, on July 26, 1986. I'm going to attempt to tape this message. I cannot see and cannot write so I've gone over this in my mind and I hope I can stay on schedule.

It was 1914 when I was seven years old that Bill McEnoy(sp) moved into the neighborhood on Aken(sp) Avenue. Mr. and Mrs. McEnoy had gone to college with my folks and he was a very jolly man, very friendly and helpful. And he asked that -- whether I would like to ride out into the country in a horse and buggy. So I did; and soon learned to open gates so that could drive through, and close them. This is the old-fashioned barb wire gates.

Then not too long after that I used the rod in surveying -- I had to walk it up when it was in the long position. So I can remember leveling from the end of the discharge pipe of the canal to the weir(sp) crest, also laying out laterals on the various farms. It was very interesting and very helpful.

So Bill was the superintendent of the Water Supply and Storage and Company; and I'll see if I can recall. It was Burt Stevens that lived near the river in LaPorte and he was the ditch rider on Division I, which is from the head of the ditch out to College Avenue where the ditch takes off for filling Long Pond Reservoir. From there is Section II or Division II and Harry Swinscoe (sp) an Englishman was the ditch rider on Division II and this extended, I can't remember just where, but Oliver Kerns (sp) was the ditch rider on Section III. And then there was a man stationed at Black Hollow Reservoir. I do not remember his name.

So Bill McEnoy was the superintendent of Water Supply until about 1920 when he became Water Commissioner of District III, which is essentially Larimer County. Now the Water Supply and Storage Company is quite extensive. They have the Grand River Ditch which feeds in eventually into Chambers Lake which at that time they owned and extended east of Black Hollow Reservois. I'm

unfamiliar with that area below Black Hollow Reservoir.

Now some of these surveying jobs I went with Bill McEnoy to survey for raising the dam at Chambers Lake and we surveyed a natural spillway there and increased the dam height from 35 to 40 feet and it was a matter of setting the slope stakes. Also very much later, my friend Cole Armstrong and I helped Bill McEnoy run contours around Black Hollow Reservoir for raising the dam there as I recall from 35 to 40 feet. The capacity of Chambers Lake, oh, can't remember for sure, three, four thousand acre feet and Black Hollow was four, five thousand acre feet. I'm not sure of these numbers.

Also I helped Bill survey the contours on Curtis (sp) Lake which is near the present cement mill. So Bill laid out some drain systems in the Wellington District and I rodded for that one. And Howard Evans and Bill McEnoy and I did surveying on the Poudre Valley or Poudre Valley Canal, it was the Greeley Poudre Irrigation District. We ran cross sections on the main canal from north Wellington where it crosses under Box Elder Creek for 4 or 5 miles downstream. This was in the winter of 1920-21, and at that time I was able to run the instrument. So I was the levelman and Bill McEnoy did the figuring it to center line and Howard set the slope stakes from there. So this is at least some of the surveying. I'll try to recall some more of them. We set out a little reservoir north of Curtis Lake for a man named Besaw(sp), also laid out a little reservoir around Indian Creek near Wellington for a Miss Mathers who lived across the alley on Oak Street from us.

There's so many experiences at surveying I may recall some more of them as we go on. Maybe the next thing is my involvement with current meter work, measurement of flow and canals and so forth and the first one I remember I helped take notes for R.G. Hemphill who was working on the bulletin irrigation in Northern Colorado. I think it was on Larimer County Number Two and I was

probably eight or nine years old at the time. One I very definitely remember is leaving early in the morning, oh, say six o'clock in the morning, maybe a little earlier than that and Mrs. McEnoy and Bill were going up to the Laramie-Poudre Tunnel and so we got there about noon, had some lunch and I went with Bill up the mountain to the portal of the tunnel and we measured the flow and then came back down to the car and took off for home and got home around 8:00 in the evening and that was quite a long trip. July 10, 1917.

And then my experiences were a lot with current meter measurements. I remember one winter I went with Bill every Saturday morning, we'd chop holes in the ice under ships bridge near the head of the Larimer County Canal and measured the velocity under the ice and get at the flow past the point. I measured the flow in the Larimer County Ditch a number of times and the tough one was measuring the flow in the flume that took the water from Long Pond Reservoir down to the Eaton Ditch or across the Eaton Ditch and into Lindemeyer Lake. I later designed and supervised the building of a pipeline from Long Pond Reservoir down to the Eaton Ditch where I designed an energy dissipater that seemed to work quite well. The project was not completed successfully; they should have had a pipe under the Eaton Ditch and discharged at grade down into Lindemeyer Lake. The erosion was of considerable extent and I was fearful that the Eaton Ditch would break.

I helped Dad with current meter measurements over the years at Bellview and we went down the Arkansas Valley and measured the flow and the partial flume less than a 40-foot one, the Fort Lyon Canal. And I was in charge later of the current meter calibration system at the University. I rebuilt the rating equipment and it was very successful.

About the time that I retired they quit calibrating current meters and I don't know what they do about it today.

Another point of interest -- I went with Dad down the Arkansas Valley one fall, I think it was in September. My prep school started in October and let out in April. So we were down there a week or more and made plane table maps of two 160-acre farms a day and this was a very very tough assignment. I had plane table maps so that the areas of the various crops could be obtained.

Use of the Parshall Flume -- I built the nine-inch flume from lumber and did as good work as I could and I did that by myself first job that I had when I started for the Experiment Station and for the Weather Station at Colorado State U. Now this was a nine inch flume and the flow was measured into it from a four-foot sippluddy weir (sp?) and carefully controlled. I did a lot of the observations of flow and the plotting on double log paper to arrive at the equation of flow for the nine-inch flume. Another use of the Parshall measuring flume -- I spend the whole month of August in 1928 with W.E. Coad(sp) and we travelled up and down the Arkansas Valley and over into the San Luis Valley and to Cortez, looking for irrigation wells and measuring the efficiencies of the pump. And this was quite a thing. We had, I think it was a six inch Parshall partial flume that we had on top of the car, and we'd have to take it off and dig it in to the ditch to measure the flow from these wells to get at the efficiency of the things.

I used to take my class out to the Parshall Measuring Flume there on the Eaton Ditch and also on the Larimer County Canal and measure the flow so that they could become acquainted with the use of the current meter. Rather tricky to measure the flow on the Parshall Flume because the depth and the velocity have to be measured at the same section and the current meter sticks out a ways and the depth measuring equipment doesn't so this requires some special treatment in taking care of this little problem. Our results in general were very good in this sort of thing.

200 block on West Mountain Avenue, the north side of the streetcar tracks. So I punched the stakes down to grade and Cheek was on the level. So I think I made $.75, something like that and then another time I did some more work for him.

The next one I remember is Ed Lauver(sp) and he lived a few doors from us in the Aken Avenue area. I think he lived on Wayne Street; and he'd walk past and I got well acquainted but I never did any work with him.

The next one, I'm not sure but I think it was Burgess Coy; and I had some very pleasant experiences with Burgess Coy who was the fastest instrument man that I ever saw. I remember we ran a pipeline survey from College Lake at the, I think it's called Overland Trail now, from there to the campus and I remember the first time he told me to hold the rod on the benchmark so I went over to the benchmark and held the rod and looked down at my feet and set the rod carefully, looked up and he was writing in his notebook and insisted okay and come on so it was that way all the way to town. Burgess Coy was also a tunnel engineer and he was in charge of building a tunnel in Hawaii and building the Greeley-Poudre Tunnel which comes from the Laramie River over to the Poudre River trans-mountain diversion.

I did some more rodding for Burgess Coy when he was, well, let's say, independent. Also visited him when he was charge of the Moffit Tunnel construction at the East Portal. That was in 1926 if I recall correctly.

Now let's see, the next city engineer, I think was Howard Evans; and I'd done an awful lot of surveying with Howard and Bill McEnoy and I. We also ran, believe it or not, the center line of the Eaton Ditch from the head of the ditch to the county line in one day, we ran traverse and this was taping and getting the angles with a transit. And never so dry in my life, we didn't have a drink all day long and it was in August. Then the car broke down on the way

home, too. It was Bill Evans, Howard's brother, that came out with the car and something happened to it and so we had an awful time getting home.

Now let's see, city engineers. After Burgess Coy, Howard Evans was the City Engineer; and I didn't do any professional work with him after experiences with Bill McEnoy.

My last surveying job with Bill McEnoy was on the Larimer County Ditch or canal north and west of LaPorte; and this was a job in November and I'd been ill all year and I had my rubber boots on, and there was snow on the ground but we managed to get the cross-sectioning done.

I'm sorry that I wander but might be interested in the presidents of the Water Supply and Storage Company. I think the first one was Gus Lichtman(sp) and he's the father of one of my very fine friends who went to prep school and college with me and he's still alive and we visit by telephone and letter. He lives in Taos, New Mexico. The next president, the one that I met, was Gus Cluver(sp) and Cluver Reservoir is named for Gus Cluver.

The office of Water Supply always sat outside while Bill McEnoy went inside but as I remember there was an I.W. Bennett, he may have been next president after Cluver. Anyway, he was one of the officials of the company and B.S. Tetman I think might have been the secretary or the treasurer or something like that. B.S. Tetman was an old man, rode a bicycle very slowly and wore a black derby hat. These are points of history interest more than use of water and so forth.

So -- perhaps the next is some of the water boys for the city of Fort Collins that I knew; and the first one was Ed Milner who was in charge of the filter plant up from the mouth of the Poudre Canyon. And I knew him from 1929; went deer hunting up there and left the car and got well acquainted with Ed and visited a time or two when I wasn't hunting. And the first hunt was up the north fork when they had to wade the river and there was no Seaman Reservoir.

Seaman Reservoir was built, the engineer was John Field who was a former state engineer of Colorado. He was a real old man. I met him, visited when he was about ninety years old, as I recall. Very interested speaker even though he was that old.

So the Seaman Reservoir was for the city of Greeley; and it discharged down the North Fork and was picked up at the mouth of the canyon and taken over to the filtration plant for the city of Greeley.

So let's see. The next one was Herb Alexander and I visited with Herb a number of times, and used to visit him and during the war he let us go in, my wife and I go in and hunt deer. So that was some experience. I think later his son, I met his son, I think he took over the operation of the filtration plant.

Let's see. And there was an Ed Helgenburg(sp) in charge of the supplies for the city of Fort Collins, that is pipe and things like that. And then I knew Roscoe Schultz very well; he was the operator of the sewage disposal plant and I was consultant and did the analysis of the sewage each week for about ten years. So I'm pretty well acquainted with the water and sewer boys in Fort Collins.

Now let's see what the next project might be. Well, I think I'll have to hesitate because I'm rather lost; and come back in a few minutes.

Some addenda -- I'm sorry I have to do this. But might be interested in the surveying with Bill McEnoy at Red Feather Lakes. This was maybe 1921, something like that and went up there a number of times and surveyed ditches between the lakes and also raised the dam that I surveyed for raising the dam at Dobdy(sp) Reservoir. Set the slope stakes and so forth. And them there was a meadow over as we left the Red Feather Lakes area and it was on Pine Creek and I think it was 1923 maybe that went up there with Bill McEnoy and we laid out the Parven(sp) Lake Dam and set the slope stakes for that. Quite

interesting now that it's a nice little pond there. As I recall we did not put any contour stakes around to compute the volume of the thing.

Another thing that may be of interest -- I learned the art of blasting from Bill McEnoy, went out with him every day in March one year when I was a small boy and he was blasting the material there north of LaPorte, it was shale material. So he had the holes drilled by somebody else and put a little bit of dynamite down to spring the place and then a couple of lard pails full of black powder and with it a quarter stick of dynamite and then pull the tamping rod out and light the fuse and watch it loosen the material and lay it over so that it could be removed. That experience was invaluable. Wonder we didn't get our heads blown off but we didn't.

Another addenda, if you please, went to the Greeley potato experiment station a number of times, one or two different summers with Bob Gardner and maybe Charlie Rohr(sp) and maybe Scottie Robertson were along at various times but we'd dig in a Parshall Measuring Flume and there was already one there and so the measure of the flow into this potato field and measure the water that ran off so that we could compute the use of water by the crop.

Well, again, let's see if I think of anything more a little later; if not, that'll be it.

Correction on the addenda. My work with the blasting was during spring vacation; don't get wrong that I was out of school a full month of March, but just during the spring vacation.