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Ruperto G. Aguilar

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Mining in Mexico  
Oral History Project

Ruperto G. Aguilar  
By W. Noel McAnulty, Jr.

June 19, 1996

M: [Today's date is] June 19, 1996. I'm in Mexico City visiting with Ruperto G. Aguilar about his remembrances of his career in mining in Mexico. Ruperto, could you tell, just as an introduction, tell how you came to Texas College of Mines and what you remember about your school days?

A: Well, the reason I went to Texas College of Mines was the fact that I was not able to come into the Guanajuato School of Mines due to the fact that I missed a few requisites for the University there. Since I had finished my prep school, or what we call up there the high school, in the States I had several subjects that I had not studied here in Mexico or in the States.

M: So you grew up in Mexico?

A: I grew up in Mexico, in Juárez, yeah, and so due to that reason, to that fact, I went to El Paso. And besides, there was very little possibility of going elsewhere into a career of any kind, actually. And, actually, the only career that I thought was manly enough at that time at school was one in mining possibilities, like geology or metallurgy or mining. And that was all that I remember was, I think, they didn't have any other kind of engineering as I recall. I don't

recall quite exactly, but I think there were not any other engineering careers there. There was physics or mathematics, but not engineering that I can remember, so I had to go there.

M: And when did you start school at Texas College of Mines?

A: College of Mines? [19]42.

M: In 1942.

A: In [19]42. I studied at Lamar School in El Paso. That was grammar. I think I did grammar school in two or three years since I already had my grammar school here and part of my prep school here in Mexico. So when I went to the States, actually, I started in grammar school, but the only problem was language. As soon as I got language I started in second grade and within three years I was out of school, seventh grade, due to that fact. And I took all summer school throughout...two and a half, three years- I don't recall exactly how many years it was- and then I had my four regular years at Cathedral. And then I went to look for an engineering school. And, as I said, I tried to get into Guanajuato, but I lacked a lot of subjects so I went back to El Paso and I went to Texas College of Mines.

M: What was the college like during the war years? Were there...

A: There were very few students except soldiers, a lot of soldiers. I think at the time we were only six hundred students all together as I, more or less, remember. And, I remember, that we started engineering or some of this technical schooling. About a hundred and twenty and only four

of us came out. Most of them were taken over by the Army and they were sent to war. Some of them didn't return except one that was a 4-F, I remember. That was Jerry Muller. So only four of us: Jerry Muller, Arturo Porres, Luis Jáuregui, and myself who graduated in that year out of engineering. And very few other P-Doggies had finished school at that time at that moment in January, so they didn't make commencement exercises for the few that were graduating in- well, that had finished with their credits up to January. So the commencement exercises were deferred for us until May.

M: Of 1946?

A: Of [19]46. So, I think, Jáuregui took one or two subjects during the second semester of that period in 1946. I didn't take any. Actually, what I did during those three or four months was to try to get a job while I was waiting for the commencement. I thought that if I had a job before that time I wouldn't even be there for the exercises, but take the job as soon as possible. I had an offer to go to Bolivia...good salary, but then they had revolutions every other day. So when I started getting my passport there was a revolution. The whole thing was stopped, see?

Finally, I got a job with AS&R at Charcas. Of course, a year before that- that was in [19]46- a year before that in [19]45 I took a job in Fresnillo for the summer where I did some surveying. I did some work in the plant. I was there for about three months during vacation time. That was in

[19]45 when the war ended. I was there in Fresnillo when the war ended. So then, as I said, in [19]46 I took a job with AS&R. At that time I was there for a few months only and then went over to a job with a company, Compañía Mineras Refinadora Mexicana, in San Luis Potosí. I was there for, oh, a few years- I don't recall how many- in the unit in San Luis Potosí in Wadley and then in one of their units in Oaxaca. The same company- well, different company- but it was the same owner.

M: What do you remember about... . So, really, the first longer term job you had as a graduate engineer was with...was it Wadley?

A: No, the longest one was Frisco...the last one.

M: No, no, when you first started working at Wadley.

A: The longest one? That was Nukay.

M: No, but when you first went to Wadley to work would have been the late [19]40s. What do you remember about Wadley? What were conditions like there at Wadley at the time?

A: Well, they were pretty good as far as personal...

M: Did you live there in the colonia there at...

A: As long as I was with the company I lived out there in the camp. It was good. I didn't have any arguments about it. I think it was good living. I have very few gripes about where I've been.

M: What was access like, for example, at Wadley at that time?

A: The what?

M: Access. Physical access.

A: Well, it was fairly good. I'd go over on a train up to Wadley and then have a pickup or a jeep take me over to what we call the terminal, the tramway, and then walk up or ride on horseback for twenty minutes, half an hour, up to the mine.

M: What was the name of the mine you worked at in Oaxaca?

A: I don't recall. I don't recall.

M: What were conditions like in Oaxaca? That was probably...

A: They were a little tougher than in Wadley because we'd have to drive on a pretty bad road for about four hours off the highway to get there. And up there, no possibility at that time having an air strip or something, so that was a little tougher. I think that was just about the worse place I've been as far as communications.

M: Well, that was kind of in a rain forest, too, wasn't it?

A: Huh?

M: Was it in a jungle?

A: No, no. No, there's no jungle over there. It was rather cold up there, actually.

M: This is the high sierra of Oaxaca?

A: Yeah, it's actually where the two main chains of mountains, the east and west Sierra Madre, join south of Mexico City. And, of course, Oaxaca, practically all of it except, of course, the sea side, is all mountainous.

M: So then later, after you left Refinadora, where did you work?

A: That one in Oaxaca, I think, was Compañía Minera Oaxaca or something like that. It was under the same company. I think

later, or just at about the time I quit, it was bought off by National Lead at just about that time when I came over to Nukay.

M: So you went to work at Nukay after that?

A: Yeah, I was there for about six years. And then from there I went over to a little mine of my own associated with Sosaya and Villaseñor and another guy by the name of Aguilar, also, from up north. So I used to live in Chihuahua or Juárez...part of the time in Juárez, part of the time in Chihuahua. I started working there in- what year was it? I don't recall. But I started working with that little mine and I was there for about five years.

M: What was the name of the mine?

A: It was Amelia, La Amelia. It was owned by someone in El Paso. I don't recall his name- Gardner? No. Well, we used to pay a royalty when we got there. Very high grade ore...actually, what we started on was pure galena, practically pure galena ore body. Very little, but it gave us quite a good yield. It was about seventy-four, up to seventy-five percent lead. Pure galena is seventy-six, I think, or something like that.

So I mined there for about five years with Sosaya until the price of lead came down to nine cents, or eight cents. We started when it was twenty-three, twenty-four cents. And by the time it came down to eight cents we couldn't work it...not because of the high grade. The high grade had already finished. It was gone. We mined it out, but we were working

on low grade material. We put up a little flotation plant- not flotation- well, yes, flotation and mechanical concentration. But at eight cents or so it wasn't economical, so we shut it down. We shut it down.

And then from there I came over to Saltillo. Fomento Minero owned the Zincamex plant. I was in charge of construction of that plant in 1960, I believe, I believe it was. And I worked with it...construction...and started it up. And then I quit and went farming. (chuckles) And I farmed for about four years.

M: In the Saltillo area?

A: No, no. Over in the state of Michoacán. I did some farming for four years. We used to produce a hundred and some odd tons of strawberries per day. During two of those four years we had about twenty-five hundred acres of strawberries planted, so we had a pretty good production.

Then from there I came back to Mexico City for the first time- about thirty years ago- with Peñoles. And then I took over the construction of the second zinc plant in Mexico- at that time, new- the new plant in Mexico. Zincamex, which was previously [producing] sixty-five thousand tons of zinc per year. And this plant in Torreón for Peñoles was- is, actually- still working. That one in Saltillo, the Zincamex plant, has already been shut down for about six or eight years now since it was obsolete. The system we used there was obsolete even before we started construction, but the



government wanted it that way even though we told them that it was obsolete already, the system that was used, they insisted that it be constructed with it and so we did so.

And then, as I said, after those four years in farming I went to Peñoles. And I worked for Peñoles for something like six years, also...construction of the plant and looking into and helping them out in the operations' different mines, as manager of different mines. And then from there I went to Frisco and worked there for twelve years or so until they told me I wasn't any good anymore. I was seventy-one.

M: So when you worked for Frisco were you in Mexico City?

A: Most of the time, yeah. Well, of course, I had to go over to the mines. Well, maybe, fifty percent of the time I would be out at the mines, but very comfortably, very comfortably, because the last twelve years the company had planes, so it wasn't hard to get around. I'd go to Torreón, get one of the company planes. They had two or three planes...depending on where we had to go. And I worked with them, well, helping them out in the mines and then looking over the new projects...evaluation. And in the beginning with Frisco itself I worked with [Jorge] Ordóñez in the evaluation of Real de Angeles, one of the biggest silver open pit mines in the world, for silver alone. And I think, that mine, from all the data we got from diamond drills we projected ten years at ten thousand tons a day. And the ore was one percent zinc, one percent lead, approximately, and about eighty grams of silver.

But it was economical. That was the first time we had started doing some- what do you call- with the computers, the tests of...

M: Computer modeling?

A: Well, yes, but another thing...doing sensitivity, changing the grade, changing the prices. That was about the first time. That was about sixteen or eighteen years ago we did that.

M: Tell me a little bit about that evaluation at Real de Angeles. That must have been really interesting because of the fact that you were dealing with such relatively low grades for a mine that size. What was the thing? Was the economics based on a high silver price?

A: Actually, the silver was the one that- I don't recall. But, I think, we made that estimate on a six dollar [price] at that time. It was just about- what was it? It was sixteen years ago, 1980, so I think the price of silver at that time was quite over that six dollars. I think it was something like twelve, but it had been up to forty-eight or seventy-five, something like that, in the early [19]80s.

M: In the Hunt years, yeah.

A: Yeah, that's right. But we didn't figure on those prices. We figured it on five or six dollars or something like that. And, of course, we had a good help with the production of zinc and lead. There was a little bit of cadmiun, so that helped, too. Well, it's still going. It's still going because once the plant was in and the whole operation had been put to work

with all the equipment needed... . Then lower grade material must have been economical, so they're still working. They shut down for a while for maybe half a year or a year, but they seemed to be working at a higher rate...maybe twenty thousand tons a day or something like that.

M: Was that a particularly difficult decision to make to put that ore body in production because of the low grade or was the economics fairly good?

A: The economics were... . Actually, with those sensitivity tests on prices and grades it came out. It did come out.

M: Let's go back and talk a bit about some of the changes made that you've seen in just physical mining in the years. What were the mining conditions like, for example, when you were operating at La Amelia?

A: Oh, that was a very small mine. It was ours. We just had the necessary equipment to be able to bring out ore. That was all.

M: Which would have been...you were drilling with air? Handmucking?

A: Handmucking, right, handmucking. And we had a little hoist. We had a compressor, of course, and a little truck. We only had a fifty-ton capacity mill, so it was not hard to carry that over. We were a ways from the mine. At the mill we were about two kilometers away, but we preferred to put the plant over here because of water and facilities. We were in a little town south of El Paso, oh, about a hundred kilometers

south. A little over about a hundred and fifty kilometers south of El Paso in San Pedro Corralitos, [Chihuahua] just north of Casas Grandes. And at that time when we started Eagle Pilcher was working the- what was that- the Congreso Mine right there, so I was able to put a pipe down there and get water out of the mine. It's a very...a lot of water in that mine. So that was the reason we put it there and, besides, it was easy to get people over and back to the plant.

M: When you constructed the zinc plant at Saltillo what were the major sources of zinc supply for the plant there at Saltillo?

A: We had Frisco, for one, and Peñoles.

M: From their mines over in Chihuahua? Frisco was San Francisco?

A: Well, I don't recall, but those were the main suppliers: Peñoles from Zacatecas, which is rather close to Saltillo, and Frisco, which is just about as far. I think those were the main suppliers. Frisco had a very good zinc concentrate. The other one from the Zacatecas area of Peñoles at this mine- age gets to your memory- Avalos Mine. The Avalos Mine used to be fairly good. Frisco was just as good. We used to have good zinc.

M: Were you at all involved with the operation of the zinc plant once it was built in Saltillo?

A: Yes. Well, I was not involved in the operation of the whole plant. When the plant was finished in [19]64 it was inaugurated by [Mexican President Adolfo] López Mateos and Prince Albert of Belgium, since the know-how was supplied by

the Belgians. And the general contractor was a Belgium company, [?]. Prince Albert, not the king, actually, of Belgium. He came over to inaugurate the plant with President López Mateos in 1964. The operation was only one furnace at that time. Then we kept on starting on other furnaces and, I think, I left when we had about...all together there were about ten furnaces. And, I think, I left when we had about half of them working.

M: The zinc plant, then, that you were involved with construction for Peñoles in Torreon...

A: Later.

M: Later. Was that a completely different process?

A: Oh, yes. That was the one we had suggested for Saltillo originally. I was in Belgium for a year to be able to assimilate the operation of their plant. They had a plant there. But, even at that time, they were already figuring and planning to construct a plant of the one we suggested, an electrolytic plant, to abandon the technology which we brought, but that was the government's orders. I was an employee. Everyone in Fomento Minero knew it was already obsolete, that everything would go to electrolysis. Proof that it wouldn't work...it's shut down now.

M: What are the principle changes that you have seen in your career in mining in Mexico?

A: The principle change is that equipment has been introduced. Of course, the companies have had the economic possibilities.

They've used all new technology available and, of course, small miners, they do what they can.

M: Were you particularly involved with any of the companies during the Mexicanization period?

A: In 1960, [19]61, I don't recall where I was. Well, I was in Saltillo at that time. No, I didn't have anything to do with it. I didn't like it to begin with.

M: You did not?

A: No.

M: Why?

A: I don't know. I just didn't like it.

M: Did you get to where you liked it better as the years went on?

A: No, no.

M: What is your opinion about that whole Mexicanization period? Was it something that was good for mining in Mexico?

A: They didn't do bad. I think it would have been the same.

#### **End of Side One**

#### **Beginning of Side Two**

A: As a matter of fact, after Mexicanization of mining we started to be paid in pesos. That I didn't like. The companies get dollars. Why pay us in pesos if it was a habit to be paid in dollars? Of course, for about twenty years the peso was so

stable that the company started to say, "Okay, we're Mexican. We'll start paying you the equivalent in pesos." So for fifteen or twenty years it was alright. But then after... .

M: When the instability of the peso came that created a lot of problems for the employees.

A: Sometimes you had to dig into your savings to be able to keep on paying the schooling of the kids or keep up your standards.

M: What do you think the long-term effects will be of the new laws that provide for a hundred percent ownership by foreign companies buying properties in Mexico?

A: Look, this is a very personal opinion. The world is getting to be too small. I think that nationalities- this is personal, okay- are not worth a damn. I don't think there's any point in having this nationality or races. Politicians seem to think it is necessary. Well, I can't do anything to change that, but the world's too small now. You know, the Europeans are beginning to make a unit. I think the world will be a unit. We may not see it. I read a book several years ago about world government. It will have to come. The first world of nations, or whatever you call it, the League of Nations, failed, didn't work. We have the United Nations now. It's a little better, but it's not too good either. It'll eventually have to be good. And each country will just be just like a state. I feel that. Maybe you'll see that. I won't. Maybe your kids will see it or not, I don't know. It's difficult. It's a difficult problem, but mining will

still go on. (chuckles)

M: Overall, when you entered Texas College of Mines did you enter with the idea of being a mining engineer?

A: Yeah.

M: Have you been pleased with the profession that you've chosen?

A: No. Actually, I wanted some kind of engineering. I couldn't go elsewhere for anything else. The most I could have been offered was maybe one of these technical trainings. I think that there was a vocational school on El Paso Street where they would teach you carpentry or mechanics or something like that. I wanted a little more than that. The cost was the same. I heard one of those was four dollars a month and the Texas College of Mines was twenty five dollars a semester, so I chose that.

I had very good grades in high school. It was straight A's throughout my four years. And, of course, I didn't have any one to distract me at the Cathedral High School.

(chuckles) No girls, so I had very good grades. I was salutatorian. Another guy by the name of Armando Fuentes was valedictorian. He beat me by a quarter of a point. I had a ninety-four percent average during the four years and he had ninety-four and a point or something like that. It was fun. I liked it. I liked school very much. If I had been rich I would still be in school. Oh, yes, I liked studying. It was fun. It was fun.

And in college, of course, I had a lot of distractions.



And the best professors I remember with a lot of love are [Lloyd] "Speedy" Nelson Graham. I think, for me, they were the best. They were good professors and they were... . Well, I remember them...very, very nice people. And, of course, there was Dean [Eugene] Thomas and [Howard] Quinn, but a little less personal with students. Graham and Speedy, boy, they were really, really close to us...very close. I remember both of them. There were very few male students, so they couldn't give us a job because they couldn't give us a check to sweep the floors or clean the windows, so they'd give us cash. (chuckles) They'd give us cash and we'd sweep buildings or clean windows, or be- what do they call them- assistants in the laboratories...chemistry or engineering or metallurgy or whatnot. They'd give us cash...fifty cents an hour. It was good. Boy, they were really good. And, of course, Speedy had a fund there, which would lend us money. Sometimes we wouldn't pay until we got out of school. But he said, "When you get paid, you give us a little more." "Okay, we'll give you a little more." So I doubt that anybody failed like that.

M: You talk about Speedy Nelson. Did you as students...did the students call Dr. Nelson "Speedy"?

A: Of course.

M: Was that the name he went with?

A: Sure.

M: Is that right?

A: Sure.

M: Where did that name come from? Do you know?

A: I don't know.

M: But it wasn't Dr. Nelson or anything? It was Speedy.

A: No, no. It was Speedy. Graham was something else. He was Prof Graham. You had to be serious with him. Speedy, no. (chuckles) No, Speedy, no. No, not in my time anyway. He was a good professor. I didn't have much with Thomas or Quinn, but those two...we had a lot to do, a lot to talk about. They were good professors. When we had any problems--well, at least when I had any personal problems I'd go to them and sit down in their office talk about it and [was told]: "Well, it's up to you, but I think..." this or that. That was something. They were good professors, very nice.

M: Well, you've seen some interesting times there in the change of the mining business.

A: Oh, I think if I were to live again I'd go to mining again and, maybe, with a lot more I don't know what-- I'm forgetting my Spanish. I'm forgetting my English. I can speak French. So, I'd put much more of myself into it. I liked it very much. It's been a good profession, very good. I'm sorry that Texas College of Mines doesn't have that career anymore. I think it's got metallurgy yet, still, and geology. Too bad. Well, I'm a metallurgist myself. My major is metallurgy. That was my major subject, but I've spent most of my time, about half of it in mining and half of it in metallurgy, so it

complements itself very nicely.

M: You have something else you'd like to say?

A: No.

M: Well, I thank you very much for your time. I appreciate your comments.

A: Alright.

**End of Interview**