1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE DISTRICT OF ARIZONA
3 Case No. MC13-08002-PCT-DGC

4 VIDEOTAPED DEPOSITION OF WILLIAM L. CHENOWETH
5 VOLUME II
January 16, 2014

6
7 In the Matter of Petition of
8 EL PASO NATURAL GAS COMPANY, L.L.C., a Delaware
Limited Liability Corporation,
9 2 North Nevada Avenue
Colorado Springs, Colorado 80903
10
to Perpetuate Testimony of
11
WILLIAM L. CHENOWETH
12
13
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1 Pursuant to Notice and the Federal Rules
2 of Civil Procedure, the videotaped deposition of
3 WILLIAM L. CHENOWETH, VOLUME II, called by El Paso
4 Natural Gas Company, was taken on Thursday, January
5 16, 2014, commencing at 9:09 a.m., at 225 Main
6 Street, Grand Junction, Colorado, before Candice F.
7 Flowers, Certified Shorthand Reporter and Notary
8 Public within and for the State of Colorado.
9
10
11
12
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24 Ms. Rongone	--

25

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1 P R O C E E D I N G S
2 (Exhibits 102 through 121 were marked.)
3 - - -
4 VIDEOGRAPHER: Today is January the
5 16th, and this is the beginning of Tape No. 7 in the
6 deposition of William Chenoweth. The time is
7 approximately 9:09.
8 WILLIAM L. CHENOWETH,
9 being previously duly sworn in the above cause, was
10 examined and testified further as follows:
11 EXAMINATION CONTINUED
12 BY MR. VOORHEES:
13 Q Good morning, Mr. Chenoweth.
14 A Good morning.
15 Q Thanks for joining us again today. I have
16 placed in front of you our fourth volume of exhibits
17 and I would like to direct your attention to Exhibit
18 No. 102 in that binder.
19 Do you have that?
20 A Yes.
21 Q Okay. For the record, this is a letter --
22 or actually memorandum, dated August 17, 1953
23 entitled: Certification of Huskon, H-U-S-K-O-N, No.
24 5 and Huskon No. 6 Coconino County, Arizona.
25 Have you seen this document before?

1 A Huh?
2 Q Have you seen this document before?
3 A Yes, this is my -- the C-314 is my writing
4 up here, so this must have -- this must have been a
5 document I got for the Nez Tsosie trial.
6 Q Okay. And we discussed this yesterday,
7 but it might be useful just to get us back up to
8 date on this.
9 What is the certification process here
10 that's being discussed in this memo?
11 A Well, apparently Rare Metals applied for
12 certification for these two properties and they
13 filled out the forms, sent them to the Grand
14 Junction office, got in the -- got in the system.
15 And they sent an examining engineer out to examine
16 it, see if all the paperwork was in order. They had
17 to have a mining permit -- copy of the mining
18 permit, and he walked around the property and saw if
19 their claim corners were in order and all that.
20 And then they would write a report like
21 this. Gill Ritter was a mining engineer, and he'd
22 write a report recommending it to his boss. And
23 then they would pass this on to the attorneys and
24 they would check it out before it got certified. So
25 this is really a report of the investigation -- a

1 field investigation of a property to see if it was
2 worthy of certification, and he did recommend it
3 apparently.
4 Q Okay. And --
5 A And this was standard procedure. For
6 anything that was certified, they had this field
7 examination, the examining engineer would write a
8 report like this, and it would get in the channels
9 and eventually -- Rare Metals in this case would get
10 audited. They'd say your company has been
11 certified. This is how you apply for the money.
12 Q Okay. And you mentioned the author of the
13 report, Mr. Gill Ritter. Did you know Mr. Ritter?
14 A Yeah, very well.
15 Q All right. Let's turn our attention now
16 to Exhibit No. 103, which -- which is a document
17 dated October 1, 1953, and it's entitled:
18 Amenability Test Report.
19 I don't know whether you have seen this
20 document before.
21 A I have never seen this one.
22 Q Okay. But could you tell us what an
23 amenability test is.
24 A That's where they take a new discovery
25 like the Cameron area and they run all kinds of

1 tests on it to see if it's amenable to the existing
2 milling processes.
3 Q And this is a report of that amenability
4 test?
5 A This was done by the Bureau of Mines in
6 Salt Lake, because not all -- not all amenabilities
7 were done here in the Grand Junction area at the
8 pilot plant apparently, because I know I've seen --
9 I've heard of amenabilities being done by the Bureau
10 of Mines office in Tucson, I think, also. But it's
11 just that they went through and tested it with
12 different chemicals what they thought the -- whether
13 it was -- would it be amenable. What circuit it
14 would be -- kind of a circuit it would be amenable
15 to.
16 Q Okay. Okay. And could you tell us what
17 the Bureau of Mines is within the Department of
18 Interior and how that relates to --
19 A They had a contract -- the AEC contracted
20 out a lot of this -- a lot of assaying and things
21 like this to the Bureau of Mines. I know if a
22 prospector in southern Arizona found a sample,
23 rather than send it up here, he could take it into
24 Tucson, I think it was, and get it assayed free of
25 charge and the AEC would pay for it. They had

1 contracts out with the Bureau of Mines to spread out
2 this laboratory work all around the West.
3 Q So the Atomic Energy Commission employees
4 worked with Bureau of Mines employees?
5 A No, they were contractors.
6 Q Okay.
7 A So there was paperwork with them, and then
8 the AEC got copies of all this material also, but
9 I'm sure that -- because the AEC was paying the
10 Bureau of Mines so much per test to do this work.
11 Q Okay.
12 A I don't know the financial, but they were
13 contractors. And you can see in the old records
14 that the Bureau of Mines in Spokane assayed samples
15 from prospectors for the AEC and everything like
16 that, as well as Tucson and Salt Lake, apparently.
17 Q Okay. Well, let's turn our attention now
18 to Exhibit No. 104, and this document is entitled:
19 El Paso Natural Gas Company, Meeting of the Board of
20 Directors, held on May 25, 1954.
21 Mr. Chenoweth, I don't suppose you have
22 seen this document before.
23 A No, I have never seen this.
24 Q Okay. There's just one aspect of this
25 document that I want to refer you to, which is a

1 reference on Page 11 of the exhibit -- actually, 10
2 and 11, with regard to an individual named Mitchell
3 H. Kline, K-L-I-N-E.
4 Did you know Mr. Kline?
5 A No, I didn't.
6 Q Okay. Well --
7 A I think I met him one time in a meeting in
8 Salt Lake.
9 Q Oh, that's right.
10 A We talked about it yesterday, but no, I
11 didn't know him. The most -- the two El Paso
12 officials I had contact with was Mr. Rocci, the mill
13 superintendent, and then the mine superintendent
14 down at Cameron. I can't think of his name right
15 now, but he committed suicide, I know.
16 Q Okay.
17 A -- to the company.
18 Q We're going to -- we're going to come
19 across his name shortly. But I just wanted to --
20 A McFarlan. I think his name was McFarlan.
21 Q McFarlan?
22 A Something like that. Anyway, we...
23 Q We'll come across his name, I think.
24 A I'm sure you will.
25 Q So I did want you to direct your attention

1 to Mr. Kline here who is introduced as the -- if you
2 look at Page 10 of this exhibit, Mr. Kline was the
3 Chief of the Rare and Precious Metals Branch of the
4 Bureau of Mines. And I think you just testified
5 about the Bureau of Mines.
6 A Uh-huh. Yeah, I see -- I see that.
7 Q Okay.
8 A Now, I don't know anything about the
9 organization of the Bureau of Mines, but apparently
10 he had a background to take over for -- to run the
11 rare metals.
12 Q Okay. Well, let's now move to Exhibit No.
13 105, and it's a document that is a letter from
14 Mr. Sheldon P. Wimpfen, W-I-M-P-F-E-N.
15 Did you know Mr. Wimpfen?
16 A Yes, sir.
17 Q Okay. And what was his position?
18 A He was the manager of the Grand Junction
19 office of the AEC in the, oh, early '50s. I can't
20 remember. He was the manager for maybe eight to ten
21 years during the first uranium boom.
22 Q Okay.
23 A But he hired me. He's the one who said --
24 when they offered me a job and I came up here to
25 sign the papers, he welcomed me to the AEC, so...

1 Q That's great.
2 Well, now, Mr. Wimpfen is discussing, in
3 this letter in paragraph three, classified research
4 and development data. Could you read that paragraph
5 three of the letter and just -- I just want to ask
6 you what kind of classified research and development
7 data would the Atomic Energy Commission be dealing
8 with?
9 A Let's see. I'm reading it, but...
10 John Chapman, apparently he -- I remember.
11 He was a mining engineer that worked for the AEC and
12 then he left, apparently, and went to work for Rare
13 Metals. And they're asking for his reinstatement.
14 I know that in the early days, some of the
15 millworkers -- the millworkers at various mills on
16 the Colorado Plateau, like -- I think it was
17 Durango -- they had Q clearances also and mainly
18 because they were handling the end product, the
19 yellowcake. But this is something I saw in the
20 records, that there were Q clearances for VCA
21 millworkers at Durango, and I assume that's what
22 they're talking about. If they build a mill, there
23 would have to be Q clearances, maybe, for those
24 workers or something.
25 Q So a security clearance would be necessary

1 when you're building a mill --
2 A Not building it, but running it.
3 Q Running it. I see. Running the mill for
4 purposes of satisfying --
5 A That is something I really can't comment
6 on it because I have only seen one piece of paper
7 years ago where -- and we were all surprised that
8 millworkers had Q clearances. This particular mill
9 did at Durango, I think.
10 Q And what is a Q clearance? Is that
11 high-level security?
12 A It's a high clear --
13 THE DEPONENT: Do you know?
14 Q (By Mr. Voorhees) Okay. Well --
15 A I know when I worked for Walker-Lybarger,
16 I had the L clearance, but a Q clearance is a higher
17 level, and I think there's probably one above that.
18 Q Okay. And -- and I guess this also
19 prompts a question about people that were working
20 for the Atomic Energy Commission. Did you know any
21 of those individuals who had worked on the Manhattan
22 Project?
23 A Yes. There was Bob Nininger, our big
24 boss, our No. 2 boss in Washington, had worked --
25 well, he was a young lieutenant and he was on the

1 Manhattan Project. And then there was one -- there
2 were two ladies -- I can't remember --
3 Q Can we --
4 A Karen Schaefer and somebody else.
5 Q Can we spell that Ninin -- is that
6 Nininger, N-I-N-I-N-G-E-R?
7 A Yeah.
8 Q Okay. That's -- we referred to him
9 yesterday.
10 A Right. And there was a Mrs. Schaefer that
11 transferred -- there was a secretary here in Phil
12 Leahy's office and another lady -- I can't remember
13 her name -- they transferred over to the AEC in
14 1947. And then there was a tall man, tall
15 bookkeeper, that was 4F he said, and he transferred
16 over to AEC.
17 So I remember three people down there at
18 the compound that had worked for the Manhattan
19 District here in the Colorado Engineers Office, and
20 they all had little pins, these little pins with A's
21 on them, we built the atomic bomb. But I can't
22 remember their names, but I remember the three
23 people that transferred over. And there might have
24 been more, but I remember there were two secretaries
25 and one bookkeeper.

1 Q Okay.
2 A Somebody asked him how come you weren't in
3 the war and he said I was 4F.
4 Q Okay. Well, let's go to 106 now, and we
5 don't have to linger long on this. This is just a
6 biography of Mr. Mitchell H. Kline and -- discussing
7 his background. And the part that I wanted to focus
8 on, just briefly, was at the very end of this
9 article in the Salt Lake Tribune, dated Sunday,
10 November 14, 1954, is the reference to Mr. Kline's
11 being 14 years with the Bureau of Mines.
12 Do you see that?
13 A I'm looking -- educated...
14 Q Yeah. It's right -- the last paragraph of
15 the article.
16 A Uh-huh. Yeah, I see that.
17 Q Okay. Well, now, let's go to the next
18 exhibit, 107. This exhibit is not dated. It's
19 entitled: Evaluation of Rare Metals Corporation
20 Properties of the Cameron, Arizona Area.
21 And while it's not dated, on the last page
22 of the exhibit, I want to direct your attention to
23 Page 6. It is referencing information in the
24 appendix as of December 31st, 1955. Do you see
25 that?

1 A Page?
2 Q The last page --
3 A Page 6?
4 Q Yeah.
5 A Yeah, I see it.
6 Q Okay. So we're assuming that this is
7 contemporaneous with that date. And I want to ask
8 you a couple questions about this document.
9 A Oh, I see.
10 Q Have you seen this before?
11 A No.
12 Q Okay. Then just a couple questions with
13 regard to the individuals that are mentioned in this
14 document.
15 Do you see in the first paragraph a
16 reference to Mr. Kline?
17 A Back to first...
18 Q Yeah, first paragraph on Page 1.
19 A Okay. First paragraph. McKinney.
20 McKinney is the man that I knew at Cameron that
21 committed suicide.
22 Q Okay. That's what I was going to get to
23 next.
24 A Yeah, I couldn't remember the name, but
25 that's right. McKinney. He was the superintendent.

1 Q A. A. McKinney, M-C, capital K-I-N-N-E-Y.
2 And who is that next person, Mr. H. W.
3 Horst, H-O-R-S-T? Exploration --
4 A I remember that name, but I can't put a
5 job or anything with him. I think -- I know he
6 didn't live in Cameron like McKinney did. McKinney
7 had a trailer down in Cameron where he lived. Horst
8 must have come down from Salt Lake or something,
9 because I -- I would have to look in my old field
10 notes, if I have him in my notes, but that seems
11 kind of familiar.
12 Q Okay. Do you -- do you know whether this
13 document was written by the government?
14 A I doubt it, because this last page, Page
15 6, you know, what it is is they're figuring out on
16 the Circular 6 bonus how much money they have
17 collected and how much money remains to be
18 collected. Like they're saying, Huskon 1 is all
19 paid out, Huskon 3 is all paid out, but Huskon 2,
20 there's still 1,993 pounds at 3.50 a pound, and that
21 would be $6,000 -- that much dollars remains to be
22 collected on the bonus payments.
23 Q So --
24 A This is -- to me, this is a tabulation of
25 remaining pounds of uranium eligible for the bonus.

1 Q Very good. Okay. Let's go to Exhibit No.
2 108. This is a memo from Rare Metals Corporation of
3 America, dated December the 6th, 1954, and I take it
4 you have not seen this one before. I have just a
5 question or two about this. It also involves
6 security clearances. There's a reference to
7 Mr. Wimpfen in his letter of December the 3rd with
8 an agreement.
9 Could you read this for us. I'm just
10 interested in the information with -- regarding
11 security clearances in the second paragraph.
12 A I have never seen that before.
13 Q Now, apparently in the memorandum there's
14 a requirement for the company to sign the agreement
15 before it gets security clearance.
16 Do you see that?
17 A Yeah, it looks like that, yeah. That must
18 be the security clearance for millworkers that we
19 mentioned earlier that I'd heard about.
20 Q Okay. All right. Let's turn to 109.
21 This is a letter dated January 19, 1955, and the two
22 individuals at the top of the page, Mr. Virgil
23 Rittmann -- and that's R-I-T-T-M-A-N-N -- did you
24 know Mr. Rittmann? I apologize again. This is sort
25 of a memory test. I know you haven't seen this

1 document before.
2 A No.
3 Q But there's Mr. Virgil Rittmann at the top
4 of the page and Mr. R. J. Crowley.
5 A No, I've never heard of those names.
6 Q Okay. How about on the second page,
7 Mr. E. J. Carlson?
8 A No.
9 Q Okay. All right.
10 A We had his name come up yesterday and I
11 don't recall that either.
12 Q Okay. Let's go to Document 110, and this
13 is, for the record, a letter dated February 3, 1955,
14 and we won't spend much time on this because this is
15 probably another letter that you haven't seen
16 before.
17 A No.
18 Q Okay.
19 A No. Stearns-Roger was known in the
20 industry because they were one of the companies that
21 built many of uranium mills in the early '50s.
22 Q Okay.
23 A In fact, they built -- they built the mill
24 down here where the AEC compound is and they built
25 the Manhattan District mill for them. So they have

1 a long history of building uranium processing plant.
2 Q And apparently, according to the first
3 paragraph of this letter, the Rare Metals
4 Corporation is negotiating the construction of a
5 mill with the Atomic Energy Commission. And it
6 appears that Stearns-Roger Manufacturing Company --
7 and that's S-T-E-A-R-N-S -- is going to be the
8 construction contractor, and these are terms of the
9 construction contract that is going to be required
10 for purposes of the building of the mill.
11 And I want to direct your attention to
12 Page 2, this little subparagraph L, where it says in
13 discussing what's going to be built, quote, Other
14 units that may be required by the Atomic Energy
15 Commission or Rare Metals Corporation. Do you see
16 that there?
17 A I have no idea what that refers to.
18 Q Okay. Well, certainly there are
19 requirements of the Atomic Energy Commission with
20 regard to building mills. Would you agree with me
21 on that?
22 A Yes.
23 Q Okay. Okay. Let's go to Exhibit No. 111,
24 and this -- again, I will preface this question with
25 you probably haven't seen this document before. And

1 I just want to direct your attention to the first
2 paragraph.
3 It's a document entitled: Rare Metals
4 Corporation of America, March 4, 1955. And it
5 appears that this letter is directed to the
6 attention of Mr. Wimpfen.
7 A Uh-huh.
8 Q And it appears that it's from Mr. Kline,
9 and it sets forth the basic terms of the
10 construction of the 200 per day capacity uranium
11 mill at a 240-acre site at Tuba City.
12 Do you see that in the first paragraph?
13 Do you see that in the first paragraph, that it's
14 referring to the construction of the mill?
15 A Yeah. I think it's very interesting that
16 he's talking about water resources here on the first
17 page.
18 Q Okay. Well, that's interesting, and I
19 also want to point your attention to this
20 requirement that is addressed in paragraph two
21 with -- and I'm going to read this into the record.
22 Quote, You may be interested to know that as a
23 result of its extensive exploration program on the
24 Navajo Indian Reservation, Rare Metals has presently
25 available an adequate source of ore to supply 50

1 percent of the feed for a 200-ton mill for a
2 five-year period.
3 Was that a requirement that the -- that
4 the --
5 A Oh, yeah. You couldn't build a mill if
6 you couldn't justify where your mill feed was coming
7 from. And the AEC got two or three prop -- I have
8 heard about this. This is just hearsay, but that
9 various companies would submit a mill and they'd
10 say, Well, we'll find ore later. And the AEC says,
11 No way are we going to -- are we going to talk to
12 you people.
13 Q Okay. That's -- that's fine.
14 Now, let's go to Exhibit No. 112. And,
15 again, we're discussing the construction of the mill
16 in this -- in this piece of correspondence here.
17 And I just want to direct your attention, again, to
18 the introduction of this document dated May 10,
19 1955, and it appears to be from Mr. C. L. Perkins.
20 And it also appears that there's some negotiation
21 going on between four people from the AEC that are
22 identified as Mr. Sheldon Wimpfen, Ed Crabtree, P.
23 Martin, and K. Bursom, B-U-R-S-O-M.
24 Were all those individuals employed by the
25 Atomic Energy Commission?

1 A Yeah.
2 Q Okay. And it appears that right below
3 that representing Rare Metals were four individuals:
4 Mr. Perkins, Mr. Crowley, spelled C-R-O-W-L-E-Y,
5 Mr. Kline, and Mr. J. M. Evans.
6 Okay. No. 113. Now, on this document, it
7 appears to be a contract.
8 A Yeah.
9 Q Have you seen this before?
10 A No. But I recognize that number up there.
11 That's a contract issued by the Grand Junction
12 office, because the AT is atomic energy, 05 is
13 Colorado, 1 is the Grand Junction office. So it's
14 Grand Junction contract 293.
15 Q Dated July 15, 1955.
16 A And this is probably -- if you go to the
17 Albrethsen McGinley report, I'm sure that number is
18 referred to in that report.
19 Q All right.
20 MR. VOORHEES: Oh, yeah. Who just
21 joined us?
22 MS. RONGONE: Oh, hi. It's Marie
23 Rongone. I just didn't want to interrupt --
24 MR. VOORHEES: Oh, that's okay,
25 Marie. Welcome. Good morning.

1 MS. RONGONE: Welcome. Good morning.
2 Thank you.
3 MR. VOORHEES: Okay. We're on --
4 we're wrapping up our fourth binder here, Exhibit
5 No. 113.
6 Q (By Mr. Voorhees) There's a requirement on
7 Page 2 of the contract for weighing, sampling, and
8 assaying. And I just wanted to ask you again,
9 Mr. Chenoweth, I know we talked about this
10 yesterday, but the equipment for weighing, sampling,
11 and assaying, who owned that equipment?
12 A Who did it?
13 Q Who did the -- yeah, who actually did the
14 weighing, sampling, and assaying?
15 A Rare Metals employees.
16 Q Employees. And --
17 A The trucks would come in loaded with ore
18 and be weighed, and then they would dump the ore
19 where they were told to dump it, and then they'd go
20 back and weigh the empty truck. And that way they
21 established the wet tons of ore coming to the mill.
22 Q Okay.
23 A And then they'd do a chemical analysis and
24 get the dry tons. They'd remove the moisture. The
25 AEC didn't want to pay for the moisture in the ore.

1 Q Okay.
2 A And I see back here in the front that --
3 someplace there's something interesting, I thought,
4 about the ore-buying station. They were going to
5 build an ore-buying station and lease it to the AEC.
6 And the McGinley report talks about the ore-buying
7 station being operated by the AEC. Well, this would
8 be the same thing they're talking about here.
9 Q Okay.
10 A Rare Metals bought it, built it, and
11 leased it to them. That was in one of these
12 documents I was just looking at.
13 Q Okay. Well, now, if we -- if we -- if we
14 look over at Page 28 of this exhibit.
15 A Okay.
16 Q I just want to highlight this for your
17 attention where it says "Security."
18 A Oh, yeah.
19 Q Contractors do need to safeguard
20 restricted data and other classified information.
21 Once -- once a contractor had that
22 security clearance, I take it the contractor had a
23 duty to safeguard the restricted and other
24 classified information. Would you agree with me on
25 that?

1 A Yeah. That's probably the AEC didn't want
2 it being talked about how much uranium was being
3 produced every day and all that kind of stuff for
4 national security.
5 Q Okay. And this leads us right into the
6 next exhibit, No. 114, in which there's a letter
7 dated November 23rd, 1959, and this is -- is a
8 letter -- I don't know whether you have seen this
9 before or not.
10 A No.
11 Q But it refers in the first paragraph to
12 Rare Metals responding to a request for information
13 that it has received from the Atomic Energy
14 Commission. And it is providing an outline of the
15 organization of Rare Metals for the AEC. And we see
16 Mr. Perkins is the president. We've seen his name
17 before. Mr. Kline is the vice president.
18 And then there's a name there that you
19 mentioned just a little bit ago, Sidney Runke
20 R-U-N-K-E, and other individuals. Do you recognize
21 any of those names or any of those individuals?
22 A I knew -- I met -- I knew Mr. Runke, used
23 to contact him quite frequently.
24 Q Okay. All right. Then let's go to No.
25 116, please. And have you seen this letter before?

1 A No.
2 Q Okay.
3 A This come out of the Washington office.
4 Q All right. And I take it the subject of
5 the letter is wastes that are at the mill.
6 A Yeah, that's what it looks like, yeah,
7 where to put the tailings.
8 Q Okay. My colleague is going to go over
9 the tailings with you at the mill, I believe.
10 So let's go to 116. And, again, this is
11 another status report exhibit. Let's, for the
12 record, identify this as a document from the Arizona
13 State Department of Health entitled: Status Report,
14 Tailings Pile Situation, dated November 1965, and
15 it's prepared by Mr. Wilfred C. Gilbert.
16 Do you know him?
17 A No.
18 Q Okay. There's a reference here. It's
19 directed to the tailings pile situation where
20 there's an estimated 600,000 to 700,000 tons of
21 tailing at the -- I think they are referring to the
22 Tuba City mill.
23 Did you ever see that pile of tailings?
24 A Oh, yeah. You could drive by. It was
25 quite impressive.

1 Q Okay. No. 117 --
2 A Oh, yeah.
3 Q -- is another piece of correspondence
4 dated March 25th, 1968 from the United States
5 Department of Interior, Bureau of Mines, to Mr.
6 W. T. Hollis, H-O-L-L-I-S, who was the manager of
7 the mining division of El Paso Natural Gas.
8 Have you seen this letter before?
9 A No.
10 Q Okay.
11 A No.
12 Q And I'm wondering, it's signed by
13 Mr. Richard Havens. I don't know whether you knew
14 him or not.
15 A No.
16 Q Okay. Also referring to the tailings at
17 Tuba City.
18 A Uh-huh.
19 Q All right. No. 118. Again, it's another
20 letter, dated April 22nd, 1968 to Mr. Hollis.
21 Have you ever seen this letter before?
22 A No, I have never seen that before.
23 Q No. 119 is a correspondence from the State
24 of Arizona, dated July 19, 1968. I believe the
25 subject matter of this letter, again, is mill

1 tailings.
2 And I'm wondering: Have you seen this
3 letter before? It's from Mr. Wilfred C. Gilbert.
4 Does this letter -- do you recognize this --
5 A Never seen this before.
6 Q Okay. Now, the next document is No. 120.
7 It's, again, another letter, dated October 17, 1968,
8 with regard to the mill at Tuba City, Arizona. And,
9 again, it's to Mr. Hollis.
10 I take it you haven't seen this letter.
11 A No.
12 Q Okay. Now, finally, my last exhibit here
13 in this volume is Exhibit No. 121, and there is some
14 information and you see it. This is a very lengthy
15 exhibit, and I apologize at the outset for that.
16 But we took a look at this at the break, and this is
17 an environmental report entitled: Preliminary
18 Assessment, Section 9 Lease Abandoned Uranium Mine,
19 Coconino County, Arizona, November 12 -- I'm
20 sorry -- November 2012.
21 And I'm just going to direct your
22 attention to one document. I think we have it
23 tabbed there.
24 A You mean this yellow tab?
25 Q Yeah.

1 A Okay, sure.
2 Q Let's take a look at that just briefly,
3 because I'm going to turn this over to Mr. Neumann.
4 But what is that -- and could you read out the page
5 number.
6 A It's page -- it's facing Page 581, so I
7 guess it's 582. Yeah. There's no number here, but
8 it's 583 on the back.
9 Q Okay. Right.
10 A So it's 582.
11 Q Right. There you are. And what is that
12 document?
13 A This is -- this is a map prepared by
14 Arizona Geological Survey, Robert Scarborough, that
15 goes with his report, which I think you've got
16 copied -- anyway, with his big report we talked
17 about yesterday. And he took -- he took the AEC
18 open-file map of mine and Magleby and he had it
19 redrawn and he added all the known uranium
20 occurrences, not just the mines, but anyplace
21 uranium -- like some Navajo prospectors or anybody
22 else had reported and he plotted these on this map.
23 And he lists all these mines and occurrences
24 alphabetically down here, and this was accompanying
25 his open-file report on everything you need to know

1 about Arizona.
2 And then when they decided to work on my
3 narrative of the mining era, my open file report,
4 they decided to use -- they used this map as my
5 Plate 1. And so this says Plate 1. This is a map,
6 I'm sure, accompanies my report as well as
7 Scarborough's report.
8 Q Okay.
9 A Because he says down here the base map is
10 from the -- from Chenoweth and Magleby's map.
11 Q All right. Well, thank you.
12 A And the difference between it and the
13 original AEC open-file map is it has all these
14 occurrences, which I didn't like, but since it was
15 their report, I had to go along with it, because...
16 MR. VOORHEES: Okay. Let's take just
17 a quick break here.
18 VIDEOGRAPHER: The time is
19 approximately 9:47, and we are off the record.
20 (Off the record.)
21 (Exhibit 122 was marked.)
22 VIDEOGRAPHER: The time is
23 approximately -- excuse me -- it's 9:50, and we're
24 on the record.
25 Q (By Mr. Voorhees) So, Mr. Chenoweth, we

1 have just marked for identifications as Exhibit No.
2 122 the map of southwestern Colorado that you used
3 yesterday to depict the locations of the studies
4 that you conducted.
5 A Oh, yeah.
6 Q And so that is No. 122. I don't have any
7 additional questions with regard to that exhibit or
8 Volume No. 4.
9 MR. VOORHEES: And at this point, I
10 want to thank you for all your responses and turn it
11 over to my colleague, Mr. Neumann.
12 EXAMINATION
13 BY MR. NEUMANN:
14 Q Good morning, Mr. Chenoweth.
15 A Good morning, Chris.
16 Q I'd like to start by asking you if you
17 could share with me a definition of the word
18 "prospect." What does it mean to you?
19 A Prospect?
20 Q Yes, prospect.
21 A Prospect to me means it's a place where
22 somebody has gone out and maybe disturbed the earth
23 a little bit looking for minerals. It doesn't have
24 to be economic. It's just if they found an
25 occurrence of a mineral or...

1 Q And is that term --
2 A It's something that never turned into a
3 mine. I would say a prospect is something that they
4 found something there, but it wasn't economic enough
5 to remove and it didn't become a mine.
6 Q And that term, is it also sometimes used
7 as a verb, to prospect for ore?
8 A Yes.
9 Q And in the context of that use as a verb,
10 let me read you a definition that the State of
11 Colorado, for example, uses.
12 A Okay.
13 Q I just want to see if it's consistent with
14 your understanding.
15 Prospecting means the act of searching for
16 or investigating a mineral deposit. Prospecting
17 includes, but is not limited to, sinking shafts,
18 tunneling, drilling core and bore holes, and digging
19 pits or cuts and other works for the purpose of
20 extracting samples prior to the commencement of
21 development or extraction operations and the
22 building of roads, access ways, and other facilities
23 related to such work.
24 A Yeah. That's a good definition, because
25 you actually can sink a shaft to prospect. If

1 you're starting to remove material, it becomes a
2 mine, in my mind it would be, the way I think about
3 it.
4 Q Okay. And now I would like to go back to
5 an exhibit we looked at yesterday, which is the
6 O'Rear report, and that's Exhibit 77.
7 A Which one?
8 Q It is Exhibit 77.
9 A 77. Oh, okay. I see that.
10 Q And I would like to look at Page 15 of
11 that exhibit.
12 A Page 15. Oh.
13 Q Are you there?
14 A Yep.
15 Q Okay. So this is -- looks like Page 7 of
16 the O'Rear report.
17 A Yes, uh-huh.
18 Q Okay. And you see there that there's a
19 discussion of additional stimulants by AEC to
20 encourage mining. Does that look right?
21 A Yes.
22 Q Yes. And the first one discussed at the
23 bottom of the page is ore-buying stations.
24 A Uh-huh.
25 Q And on the third line they mention that

1 these are government-operated ore-buying stations.
2 Is that consistent with your understanding? Did the
3 government operate the ore-buying stations?
4 A Yeah. That would be -- that would be the
5 ore-buying stations that were operated by AEC
6 contractor personnel. AEC people never operated the
7 ore-buying stations. It was only contractors like
8 Walker-Lybarger and Lucius Pitkin and that group.
9 But these were the ore-buying -- these were the
10 places -- the government put in a place where the
11 miners could sell the ore where there was no other
12 available market. It was the private market to
13 stimulate getting the uranium out.
14 Q And do you know what kind of activities
15 these contractors performed at the ore-buying
16 stations?
17 A Oh, yeah. They had -- they had a scale.
18 They'd weigh the trucks in, dump the ore, and then
19 weigh the trucks empty so they'd get a wet tons --
20 number of wet tons. And then they'd usually have --
21 they had a little lab at an ore-buying station where
22 they'd do a moisture calculation to see how many dry
23 tons they had. And then some of the labs actually
24 made a preliminary radiometric -- oh, no. I'm
25 getting ahead.

1 They had a crusher. They'd run this ore
2 through a crusher and they'd take a sample, and then
3 they'd do the moisture calculation, I know. And
4 some of the bigger stations had their own
5 radiometric scanners and they'd get an idea of what
6 the uranium content was. But most of the time,
7 they'd take a sample and send it up to Grand
8 Junction here at the big lab to have it analyzed
9 here for uranium, vanadium, and calcium carbonate.
10 And eventually they'd make a -- then
11 they'd take the ore after it was crushed and they'd
12 stockpile it someplace and market all that with --
13 and when ore-buying stations closed, those
14 stockpiles were put up for competitive bid to see
15 which mill would buy them. And a lot of times -- I
16 know the ore-buying station in Globe, Arizona that
17 I'm real familiar with, when they shut that down,
18 they had these various stockpiles around based on
19 the different kinds of ore.
20 They had ore from California and Arizona
21 and even Nevada down there. And they put it up for
22 bid and people came down and looked at it. And
23 Kerr-McGee bid on a few stockpiles and Homestake on
24 one and Tuba City on another stockpile. So the AEC
25 did get some of their money back, because at the

1 ore-buying -- I missed -- the ore-buying stations,
2 the miners were paid directly by the AEC. There was
3 no mill involved.
4 And -- but the big ore-buying stations did
5 have their own lab, I understand. But they always
6 relied on the chem lab here in Grand Junction for
7 the final analysis of what that particular load did
8 and...
9 Q Are you familiar -- are you familiar with
10 the Tuba City ore-buying station?
11 A No. That was all -- by the time I got to
12 Flagstaff, Rare Metals had taken over all the
13 ore-buying facilities at that mill. Because it says
14 back -- that they would lease the ore-buying station
15 to the AEC, and then when it was completed, Rare
16 Metals would take over the operation. And that all
17 happened before I came to Arizona.
18 Q Okay. Let's turn to the next page, Page
19 16, of Exhibit 77. And do you see that the next
20 heading under the list of additional stimulants is
21 the government exploration program?
22 A Yes.
23 Q And we discussed that yesterday in
24 reference to several exhibits, right?
25 A Uh-huh.

1 Q There's mention in the first paragraph
2 that AEC was assisted by the Geological Survey of
3 the Department of Interior.
4 A Uh-huh.
5 Q So USGS?
6 A Yes. They had some kind of open-end
7 memorandum of understanding for the USGS to assist
8 in this effort in the beginning, and they reimbursed
9 the USGS for quite a bit of money for these projects
10 they were on.
11 Q And are you aware, does the USGS have a
12 set of reports or other documents relating to this
13 program?
14 A Yeah. They wrote lots of reports. Mainly
15 they were called TEIs, trace elements
16 investigations, and TEMs, trace elements memorandum.
17 And these were usually -- these were classified for
18 many years, and then they were all usually
19 declassified, and the library of the USGS in Denver
20 at the Federal Center has all of these, has a
21 complete set of TEIs and TEMs. There are quite a
22 few here in the Colorado Mesa University library
23 that we had down at the compound, down at the site
24 here, and a lot of that material was transferred to
25 what's now Colorado Mesa University.

1 Q And before I forget, this O'Rear report
2 itself, it goes by TM-187.
3 A That's a technical memorandum. That's an
4 AEC -- that's an AEC prefix.
5 Q And yesterday we saw another technical
6 memorandum, No. 11, that related to some
7 rim-stripping.
8 A Yeah, right.
9 Q And is there a set somewhere of all of the
10 technical memoranda?
11 A The best set I know of is at the Colorado
12 Mesa University, because they were -- these were
13 issued by this office. TMs were usually internal
14 memos, but they open-filed a lot of them because of
15 FOIA. And in 1984, the decision was made to
16 transfer the DOE library down at the facility here
17 to Mesa State College, and they finally got it all
18 cataloged up there on the third floor. And that
19 would probably be the best source of where the TMs
20 are, as well as the RMEs and RMOs.
21 Q Okay.
22 A Which were all AEC prefix -- prefix
23 reports.
24 Q And back to Page 16 where we were reading
25 about the exploration program, the first paragraph

1 mentions USGS assigned more than 100 geologists and
2 other experts to work with AEC in searching for
3 uranium deposits.
4 Do you have a sense, at its peak, how many
5 total AEC and USGS personnel worked on
6 exploration --
7 A No. I know that when the AEC -- well, in
8 1983, they made a survey of all the federal
9 employees that had ever worked for the office down
10 here, but that was engineers, secretaries,
11 metallurgy and all that, and I think there were
12 500-and-some people from 1947 to 1983 that passed
13 through the office as federal employees. But I
14 can't tell you how many actually worked on
15 exploration.
16 USGS, it was several hundred. They had a
17 whole building down there on the site which was USGS
18 people. And they were given areas to do the
19 drilling, so they had expertise in the drilling, and
20 AEC didn't have that at the beginning. And then
21 they had -- they did a geologic studies in different
22 areas.
23 Q When you say "the site," you mean
24 somewhere in Cameron at a camp or the Grand
25 Junction --

1 A Oh, a site would be like, say, well, we
2 want to -- we're going to drill this area around
3 Gateway, Colorado, and there would be a map and tell
4 you that's your project here. And then they would
5 give them a reconnaissance, and they did a lot of
6 work in Monument Valley and in the Carrizos but not
7 the Lukachukais or Cameron, to my knowledge. They
8 did come into Cameron later and did geologic
9 mapping, detailed mapping, of the area and studying
10 the stratigraphy and sampling the water wells, but
11 they did not do concentrated studies like they
12 did in -- like they did around southwestern
13 Colorado.
14 Q The next page, Page 17, there's a category
15 drilling.
16 A Uh-huh.
17 Q And the first sentence starts out: In
18 1948 to 1956, the AEC and the USGS drilled a total
19 of 5,575,000 feet of exploratory and development
20 holes.
21 And that's a fairly big number, it seems.
22 A Yeah. But this doesn't include just the
23 Four Corners states. This goes to South Dakota,
24 Wyoming -- where else did they drill?
25 Q So --

1 A Anyway, most the drilling, I would say,
2 was in the Four Corners states, and there was quite
3 a bit, though, in Wyoming and South Dakota.
4 Q Can you walk me through when -- were you
5 ever at a site where drilling occurred?
6 A I worked on a drilling project there in
7 the Northwest Carrizos for about two years.
8 Q And can you tell me -- I think you
9 mentioned there's a little bit of site preparation
10 that goes on before you actually drill.
11 A Yeah. Well, first of all, the geologists
12 have got to determine, you know, is this area
13 favorable. And that area I worked on, well, yes,
14 these rocks with uranium in them are dipping down
15 under the sand area, and we thought we could drill
16 out here and find continuation of some of these
17 orebodies.
18 So they let a contract -- put out here a
19 contract saying we are going to drill so many holes,
20 so many feet in this area and without giving much
21 of -- they gave a location and all that, but they
22 didn't give much geology. And the drilling
23 companies had to come out and look at the area and
24 bid on it. And once it was bid, the AEC would
25 prepare -- would state drill-hole locations based on

1 where they thought the better place to drill was,
2 based on the known trends.
3 And we put posts in the ground, and the
4 surveyor would survey these. And eventually they'd
5 send bulldozers out to level it out because that was
6 part of what the AEC did. All the drilling
7 companies had to go out there and do the drilling,
8 and they usually bid so much a foot. And it would
9 say what the drilling company had to do and what the
10 AEC had to do about handling the samples.
11 Usually the drilling company would lay the
12 sample -- if it was core drilling, they would put
13 the samples in core boxes and lay them out there for
14 the AEC to examine. If it was dry drilling, they
15 would lay the samples on the ground for the ACE to
16 examine. And then the AEC geologist would make --
17 they had a log and they'd make a geological log of
18 that hole based on what they saw in the samples.
19 And then they would send a gamma ray truck out and
20 that would drop a radiation detector down the hole
21 and it would be pulled up and it'd make a graph
22 showing any radiation detected in that drill hole so
23 you'd know where to go back and do any sampling.
24 Q And what would the AEC or the contractors
25 do with the cores after they were logged?

1 A The core was given over to the AEC.
2 They'd take it back to the geology office and study
3 it in detail, and if we had any -- found any -- and
4 scan it with a Geiger counter. If we found any
5 mineralization, we'd sample that, send it in to
6 Grand Junction to get an assay of it.
7 Q I think I have seen pictures with cores
8 just lying on the ground, though.
9 A Yeah. And then what happened was the
10 core -- and sometimes they'd say, Well, we want to
11 save some of this core for geologic investigation
12 and sometimes, No, we'll just dump it on the ground.
13 And -- and I know in one of our projects, we had
14 core -- these wooden core boxes of core, and they
15 said, No, we're not going to save it; we're going to
16 dump it in the ground. And we told our local Navajo
17 neighbors, You can have these core boxes if you dump
18 it, and they came up and dumped all the core for us
19 to get the wood out of the core boxes.
20 Q So sometimes the cores were dumped --
21 A Were saved for future study, but I'd say
22 90 percent of the time they weren't.
23 Q Okay. And can you explain to me how deep
24 were the ore deposits you were typically exploring?
25 A Well, some -- some of these in the Carrizo

1 Mountains I worked on, they were about 90 feet deep.
2 But in the Lukachukais, because the mountains -- the
3 mountains come up like this and you go back from the
4 rim, you have to go higher, some of those holes were
5 nearly 1,000 feet deep. So it depended on the
6 topography. We dug a few deep holes in the Lukis
7 just for geologic information.
8 Q And I understand that typically the
9 deposits would be in a lens --
10 A Yeah. Like our boss, he was giving a talk
11 one time and he says, Looking for uranium, it's not
12 bedded like coal, it's like a chocolate chip cookie.
13 The chocolate chips are the uranium deposits in the
14 sandstone bed, because it's very spotty. But you
15 can get elongated trends based on the river system,
16 because most of these deposits are in sandstone
17 deposited by ancient river systems, and they do
18 have -- you can figure out trends in these river
19 systems and know where to drill. And that's what we
20 were trying to do.
21 Q And one last question before we take a
22 break to change the tape.
23 I've read in some of the reports a
24 discussion of -- that the deposits would often have
25 a halo.

1 A A halo?
2 Q Yes. Can you explain that?
3 A Yeah. Some of these deposits got kind of
4 oxidized and some of the uranium minerals kind of
5 went out in a -- got -- like groundwater, got kind
6 of moved a little bit and had a low-grade material
7 around them. That would be the halo.
8 Q Why don't we --
9 A By oxidation.
10 MR. NEUMANN: Why don't we take a
11 break to change the tape.
12 VIDEOGRAPHER: The time is
13 approximately 10:09. This is the end of Tape No. 7
14 in the deposition of William Chenoweth. We're going
15 off the record to change tapes. Thank you.
16 (Recess taken.)
17 VIDEOGRAPHER: We're -- I'm sorry.
18 The time is approximately 10:15, and this is the
19 beginning of Tape No. 8 in the deposition of
20 Mr. William Chenoweth. We're on the record.
21 Q (By Mr. Neumann) Mr. Chenoweth, we were
22 just discussing the nature of ore deposits and that
23 they often appear in a lens and sometimes with a
24 halo.
25 And the next question I have is: You had

1 mentioned, I think in connection with describing the
2 halo, that sometimes lower concentrations were seen
3 as you went further away from the ore. And were
4 lower concentrations like that found in the
5 underlying or -- underlying layers or the layer
6 above? I mean, did it -- was there uranium in the
7 other layers near the deposit?
8 A Mainly -- mainly it would be in the same
9 layer, but depending on the way the groundwater
10 moved, it would be where the groundwater moved this
11 halo. It can be above, but most of it would be in
12 the same layer because these sandstone beds, you
13 know, go from anyplace from 5 feet to 10 feet thick
14 and in between -- mounted on the top and the bottom
15 by impervious clay beds, so the uranium tends to
16 move within that sandstone bed.
17 Q And in several of the reports we read
18 yesterday, there was discussion of drilling on a
19 200-foot grid initially, and then as deposits were
20 identified, arrowing the grid.
21 A Yeah, about 50 feet, yeah.
22 Q And so you mentioned before drilling,
23 bulldozers were used to make a flat area?
24 A Yeah.
25 Q So --

1 A That was -- in the drilling contracts, it
2 usually said the AEC will prepare the site. The
3 drilling company didn't have to, so...
4 Q So some of the reports yesterday had
5 several hundred holes drilled.
6 A Oh, yeah.
7 Q When those -- when that drilling occurred,
8 would there be drill pads created with a flat area?
9 A No. It would be -- it would be -- well,
10 in the Lukis, it was very rugged topography, and so
11 they'd really level out an area and also build an
12 access road so the drillers could get their rigs in
13 there. And then after the drilling, at that time
14 there was no evidence of any reclamation.
15 And I know in the Lukis, the local Navajos
16 were glad to see all these roads built because there
17 would be nothing to get wood -- haul -- they could
18 haul wood down. It made wood-hauling more
19 accessible to them, because they'd knock over trees
20 and things building these roads in a highly -- we'll
21 look at some pictures. The Lukis were really a
22 highly wooded area. They would knock down some
23 trees for these drill roads, and the locals could
24 get that for firewood. And they really liked our
25 drill roads up there because they made access to

1 firewood.
2 But in -- on Cove Mesa, it was just kind
3 of all sagebrush, and they'd knock all that down
4 because that's a level place for a drill, but -- and
5 not a big area. In some of those pictures I have,
6 you can just see they kind of knocked some weeds and
7 small brush down to build that are. But there was
8 no thought of reclamation in that, which there is
9 now. You can't go out and just drill like that now.
10 You've got to reclaim the sites.
11 Q Yesterday we looked at a report that you
12 prepared summarizing the access -- I think there
13 were five projects building access roads in Arizona.
14 Do you remember that report?
15 A Oh, yeah. That was -- that was really
16 improving old county roads and building -- and
17 improving the Navajo route from Shiprock over to
18 Kayenta and the Navajo route from Red Rock up to
19 Beclabito.
20 Q And those roads --
21 A B -- Beclabito I'm trying to spell.
22 B-E-C-L-A-B-I-T-O.
23 Q And those roads --
24 A Those were just kind of Indian -- I mean,
25 they were BIA roads, but they were not paved or

1 anything. Real rough.
2 Q And those roads are different than the --
3 A Drill roads.
4 Q -- drill roads.
5 A These would be highways and known trails.
6 We didn't go out and just build new highways through
7 that country. They did build little -- I know they
8 improved the road up on some of the mesas, down here
9 in Gateway, but they were existing roads there.
10 Q So in connection with each of the AEC
11 drilling programs we looked at yesterday --
12 A Yeah.
13 Q -- Cove Mesa and some of the others, AEC
14 would build drill roads to access the sites where
15 the drilling --
16 A Yeah, right, right. That was -- no place
17 did the drilling company ever have to do that,
18 because in these contracts it said exactly what the
19 drilling company was going to do and provide. And
20 they had to provide samples to the AEC. In some
21 contracts, in other ones, they said the AEC will
22 provide their samplers. It all varied from contract
23 to contract, as far as I know. Because I think I
24 worked on four different contracts, and each one was
25 a little different, what the drillers would provide.

1 Q Would AEC use bulldozers to build those
2 drill roads?
3 A Yeah, and the bulldozer was operated by
4 Walker-Lybarger -- by contractor personnel, mainly
5 Walker-Lybarger people.
6 Q Would the roads typically be made with
7 just one pass with the bucket?
8 A Yeah, just one big pass. They weren't
9 going to tear up the whole countryside, you know.
10 Q So the bucket on bulldozers might --
11 A Yeah, just pushed it aside so a drill rig
12 could back into the site or something.
13 Q It might have been 10 or 15 feet wide?
14 A Yeah. It was in those pictures. I got a
15 picture of the Rattlesnake 4 project where you can
16 kind of see where they pushed the sand aside to make
17 a place for the drill rig to sit.
18 Q And did you ever encounter -- well, let me
19 ask: Did AEC or its contractors ever walk the
20 surface with a Geiger counter at these areas?
21 A You mean before they were bulldozing?
22 Q Yeah.
23 A No, because the uranium was usually, you
24 know, at least 50 feet deep or something, not on the
25 surface. But they would -- on the rim, if it was on

1 a canyon rim, there was a lot of that rim walking
2 done. That's how they usually -- the new geologists
3 got that tough job to walk along the rim with a
4 Geiger counter and map things like that, and then
5 we'd drill behind the rims in places. But that's
6 the only thing we ever -- where they actually got
7 out and walked with radiation detection equipment on
8 the outcrops of the rock, was on canyon rims. And
9 that was usually to see if there was anything there
10 that the company people had missed.
11 MR. NEUMANN: Who just joined on the
12 phone? Do you want to -- can you ask?
13 THE REPORTER: Who just -- who just
14 joined on the phone?
15 MR. MILLER: It's Steve Miller.
16 Q (By Mr. Neumann) And you mentioned the
17 rim-stripping just now, and that work was also done
18 with bulldozers?
19 A Yeah, that was done with -- bulldozers
20 were operated by AEC contractors.
21 Q And where would the material, the
22 overburden, be pushed with the bulldozers?
23 A Just pushed a ways out of the way. If --
24 it was a little hill here in Cameron. In the
25 badlands out there, in the painted desert, you know,

1 they'd just push that away, aside, and try to get a
2 fresh face to sample -- so the geologist could
3 sample the uranium to see if -- how -- grade it was.
4 Q And did the bulldozers sometimes scrape a
5 little bit of the deposit as well?
6 A Oh, yeah. I know in Cameron it would be
7 all weathered and probably some clay from above that
8 slumped down over it, so it made it fresh, and so it
9 did push -- it did push some stuff off to clean it
10 off. There would be some radioactivity in the
11 debris being pushed away, yeah, you're right.
12 But one thing you've got to know, back in
13 the '50s, you know, it happened, nobody gave a hoot
14 about reclamation ever. Mining or exploration, you
15 know, you could go out here and dig a big bulldozer
16 pit and walk away and leave it, and nobody ever said
17 anything. There was no thing ever concerned about
18 reclamation in those days.
19 Q Okay. Let's turn now to Page 18 of
20 Exhibit 77, and there's a section entitled:
21 Geologic Investigations.
22 A Uh-huh.
23 Q The report mentions between 1948 and 1958,
24 AEC geologists and mining engineers made over 7,500
25 preliminary examinations of radioactive occurrences.

1 Can you describe these? Are these the --
2 were these materials summarized in one of our
3 reports yesterday?
4 A Well, what the document was yesterday was
5 a report on a series of these preliminary
6 reconnaissance in Coconino County. But like it
7 says, that was a special project that AEC had to
8 publish these things and they didn't have enough
9 money to continue it, so they only got Arizona and
10 Texas done. But these are -- all these PRRs were
11 microfilmed -- put on microfiche, and they were sold
12 by the Office of Technical Services, Department of
13 Commerce, and I don't know where they are today.
14 Q What -- what activities were included in
15 these geologic investigations?
16 A Oh. This would be going out -- you know,
17 we were told if any prospector comes in and says, I
18 found some uranium. Can you come out and help
19 evaluate it for me, we were to do that. So we would
20 go out with this prospector and make a road log how
21 to find it and how to make a little -- I know I used
22 to make a little sketch of what I saw and where I
23 sampled and then take the samples back and have the
24 AEC lab assay them and then send the prospector his
25 result, because this is part of the service that AEC

1 provided to get people looking for uranium. And
2 that would be the main geologic investigation for
3 PRRs.
4 Other ones would be taking some -- the
5 drill-hole data and looking where the sand -- where
6 the sand body contained the uranium, where -- if you
7 could trace it, you know. But out here there would
8 be no sand, over here might not be sand, and right
9 in the middle here would be a sandstone body that
10 had elongation, and that would be the place to
11 drill.
12 So we did geologic studies on a lot of the
13 early drilling. So we did subsurface geologic
14 studies like that, as well as surface studies. Like
15 when the Lukachukais were first found by these two
16 Navajos, they had lots of guys in there doing rim
17 walking, just walking along the rims mapping where
18 they found radioactivity, and that was used to do a
19 lot of the drilling projects.
20 Q So aside from the special project report
21 yesterday on occurrences in Coconino County, is
22 there one location I could find these 7,500
23 preliminary examinations or whatever documents are
24 related to those?
25 A I don't know anymore where you could find

1 these 7,500 reports. I know they were done all over
2 the West, and there was even some uranium in Texas
3 and in New Jersey and all that. There used to be a
4 sheet of paper showing where you could order these
5 county by county and -- from some clearing house for
6 technical information in the Department of Commerce
7 or something like that. And I don't think -- I
8 don't know how you could get it anymore.
9 The hard paper copies used to be -- the
10 USGS used to have a set of hard paper copies over in
11 the Federal Center, but I think they put them in a
12 warehouse. I don't know if I can find them anymore.
13 And the AEC here had a complete set of the Western
14 U.S. states, and I think they gave -- they were
15 going to give them to the Mesa College, but they
16 didn't want them, because they were in boxes. They
17 were in lots of these boxes, dozens of these boxes
18 full of them. And I think they were going to give
19 them to the museum here in town, but I don't know if
20 they took them or not. It's kind of a mystery to me
21 what happened to all the preliminary reconnaissance
22 reports here in, say, Colorado and Arizona.
23 Now, New Mex -- Arizona, I think, has a
24 complete set of theirs. They hung on to theirs
25 somehow. And I think New Mexico might. But maybe

1 even Colorado -- the State surveyor in Colorado
2 does, but...
3 Q Okay.
4 A It's kind of a mystery where these are
5 today.
6 Q The next section is on airborne surveys,
7 but we covered that yesterday.
8 So why don't we move on to -- at the
9 bottom of Page 19, there's a category called
10 Geophysical Research, and this seems to describe AEC
11 developing equipment or techniques or methods to
12 study --
13 A Yeah. They -- they -- even back on the
14 Manhattan Project, they were trying to develop down
15 hole -- where they could lower a radiation detector
16 down a hole and pull it up and make some kind of a
17 record of it. And the AEC inherited that and they
18 developed Jeep-mounted units around, and then they
19 also had test pits they developed.
20 They would -- a test pit is where they --
21 a big cylindrical thing of concrete with different
22 values of uranium in it so these people could drop
23 their logging -- these commercial outfits could put
24 their logging -- the radiation detector down the
25 hole and pull it up and make a graph and they knew

1 exactly how to read that graph because they knew
2 exactly what the material was in the concrete there.
3 And that was a big service we did to the
4 industry. These test pits were Texas, Wyoming, New
5 Mexico, Washington state, anyway. These were
6 calibration pits so the industry could calibrate
7 their own units. And the concrete they put in these
8 pits were put in in different layers with different
9 amounts of uranium in them.
10 And here in Grand Junction, they built
11 pads out at the airport with radioactive material in
12 them they could fly over and detect so that people
13 flying around in their own airplanes could fly over
14 them and get an idea of the calibration. I guess we
15 still have those out there, don't we? They're still
16 out there. Because I know a few years ago,
17 Canadians were coming down here to do this because
18 they didn't have anything like that in Canada.
19 Q Okay. On the next page, Page 20, there's
20 a section entitled: Access Roads. And I'm curious.
21 On Page 21, there's mention of a summary report
22 prepared in 1960 for all of the access roads
23 constructed.
24 A Where is that? Oh, yeah.
25 Q And have you ever seen that?

1 A No. I have looked for it, because I found
2 the Arizona -- Arizona -- I found the Arizona
3 section and New Mexico section, but I have never
4 seen the Colorado or Utah or the other states'
5 sections. This is -- it looks like one big report,
6 but yet, in going through the -- when we were
7 sending stuff from Grand Junction to the National
8 Archives, we did find some of these State reports
9 but not the whole big volume, and I don't know where
10 it is.
11 Q There's mention on the bottom of Page 20
12 of an agency called the Bureau of Public Roads.
13 A Yeah.
14 Q What agency was that part of? Was it --
15 A That's probably now the Department of
16 Transportation or something. It was a federal
17 agency, but -- and I know the roads on the Navajo
18 Reservation, we worked with the Bureau of Indian
19 Affairs' road department to build the road into
20 Monument Valley. It says 17 million. 14 was AEC
21 and 3 from federal aid or state funds. So it was
22 kind of a joint program in certain areas,
23 apparently. Where that data is today, I have no
24 idea.
25 Q Okay. Let's jump now to Page 34.

1 A 34. Okay.
2 Q Okay. And there's a section entitled:
3 Research and Process Development. And this appears
4 to discuss the role of the pilot plants at Grand
5 Junction; is that right? And if you see at the
6 bottom of Page 34 and the top of Page 35, there's a
7 discussion that the purpose of the program was
8 twofold: Amenability testing and develop and test
9 new processes.
10 A Right.
11 Q Were you familiar with that work at all?
12 A No. I know it went on down there, but it
13 was all chemistry. I didn't...
14 Q Okay. Let's turn to Page 36, and the next
15 category is: Sampling and Assaying. Yesterday when
16 we went through some of the reports on occurrences
17 and the drilling program, there was quite a bit of
18 mention of sampling.
19 Can you describe for me the instances when
20 AEC would take samples at a mine site.
21 A Oh, this -- this is really talking about
22 the uranium concentrate that came in here. Like
23 they had the sampling plant set down there, and all
24 of the mills that had the AEC -- all AEC -- all the
25 concentrate that was being bought by the AEC, the

1 yellowcake, had to come in here to be sampled to
2 make sure it met the government's specifications.
3 Because these ores varied all over the country, and
4 they couldn't have excess amounts of vanadium or
5 selenium or molybdenum or all kinds of other
6 contaminants. And so they had this elaborate
7 sampling plant.
8 In fact, I remember there was -- seeing
9 the pictures. The big mill up at Spokane was
10 shipping their uranium down here by railroad car,
11 and they had a site -- there was a siting into the
12 site down there when the government bought that
13 land.
14 And -- but a lot of it came in by trucks.
15 Like the mills in Grants, they trucked it all in
16 here in drums and it was -- and they had an
17 elaborate system of sampling -- taking a drum and
18 sampling it from this lot. They kept them somehow.
19 And if -- say if the molybdenum was too high in this
20 drum of yellowcake, the government wouldn't buy it
21 and they'd set it aside and send it back to the
22 mill.
23 And so it was really make sure that all
24 the yellowcake the government was buying met their
25 specs before it was shipped off to -- where did it

1 go -- to Weldon Spring or someplace like that. And
2 that was a big business here, and they had quite a
3 few employee -- contractor employees employed to the
4 sampling plant.
5 Q Let's shift gears just a little bit and
6 talk about field sampling.
7 A Uh-huh.
8 Q I had the sense yesterday there were a
9 couple different scenarios where AEC would sample.
10 One of them seemed to be if someone called and
11 wanted help evaluating an occurrence.
12 A Yeah.
13 Q Would AEC take a sample?
14 A Yeah, as long as they gave us a location.
15 They just couldn't say, Well, I found this out in
16 the desert here someplace. They would not sample
17 it. They said, Well, we need all -- and we'll keep
18 it confidential. And so they did a lot of sampling
19 for prospectors and that, and some of the stuff was
20 no good. But, anyway, that was a service they
21 provided to get uranium as part of the uranium boom.
22 Q It also seemed that in the certification
23 reports, there were instances where AEC would take
24 samples. Does that --
25 A Yeah, yeah. On the certification report,

1 you had to ship ore. You just couldn't say, Well,
2 I'm going to ship ore. You had to be actually
3 mining. And so, you know, report on the
4 certification reports that at a certain date, so
5 many tons was delivered to this buying station
6 someplace, and the company had to provide a receipt
7 or something to prove that.
8 Q And then we looked at several reports on
9 AEC drilling programs.
10 A Oh, yeah.
11 Q And AEC would take samples.
12 A Yeah, we'd take samples of -- anyplace
13 that a drill hole would encounter any kind of
14 radioactivity, wind it up. And in the field camps
15 we'd work 10 days when we used to work 11 days, and
16 then they said, No, you've got to pay us over --
17 some guy complained and said you've got to pay the
18 overtime for that one day. And so they said, No, we
19 aren't. We're only going to work 10 days.
20 So we worked 10 days in the field, and in
21 the middle of that 10-day period, most of the field
22 camps would have a supply truck come down and bring
23 supplies, and they'd -- we'd load them up with
24 samples that would come back to the lab. So all
25 that sampling was done here in the lab. We had a

1 real extensive lab and they were really proud of it
2 because it was really a good lab.
3 Q Can you think of any other reasons that
4 AEC would sample?
5 A No. It was really to determine how much
6 uranium was being found here and there.
7 Q Okay. Now let's -- let's look at some of
8 the photographs that we've just briefly touched on
9 yesterday. I think we can start with Exhibit 94.
10 A Index No. 4?
11 Q 94.
12 A 94. Oh, okay. I thought I saw that
13 yesterday.
14 Q I have a quick question on Page 1, which
15 is an old photograph --
16 A Yeah, aerial photo.
17 Q -- of the Grand Junction compound.
18 Which building -- did you say that one of
19 these buildings in the bottom left is the mill at
20 the time?
21 A The sample plant is -- you see all these
22 drums stacked here, and everything to the left of
23 that is the sample plant. It's a whole series of
24 buildings here.
25 Q And is there -- is the pilot mill, then,

1 further down?
2 A No, this is all it.
3 Q Okay.
4 A I'm confusing you. This is the -- this is
5 the pilot plant here. The sample plant is this big
6 building up here, Building 7, which is this building
7 right here, because this is where the railroad came
8 in right here. This is -- here, let me...
9 Q Why don't you just...
10 A There's two -- I'm getting you confused.
11 There's a sample plant that sampled yellowcake to
12 meet the government contracts, and it closed in
13 1971. But the pilot -- and so the pilot plant
14 closed -- this is the pilot plant down here. These
15 are drums with material they sampled. Up here is
16 Building 7. That's the sampling plant where the
17 railroad siding came in.
18 Q Do you want to take your highlighter there
19 and just mark a 1 by the --
20 A Put a mark on here for you?
21 Q Sure --
22 A Okay. This is -- and this with all these
23 drums here...
24 Q Can you hold it up so -- he's going to
25 take a little picture of it.

1 And so you have marked the pilot plant and
2 you've marked the sampling...
3 A Concentrate sampling plant to make sure
4 we're talking about concentrate and not --
5 Q Okay. You can put it back in and we'll
6 come back to that later.
7 And now can we start with Page 5, and
8 maybe you can tell me if you know what's shown in
9 this photograph.
10 A Okay. Page 5. This is a picture that one
11 of my coworkers took. Unfortunately, I did not take
12 many pictures on camera, which I regret. I guess
13 there wasn't any pretty red rocks, which I didn't...
14 This is one of the Huskon mines. I
15 believe this is Huskon 10 that shows a little drill
16 up here. And here's a worker with a dog and a
17 wheelbarrow, and this is typical of -- this is
18 probably the latter days. I think it was probably
19 in '59, maybe, of -- in '59, I think maybe Cameron
20 Mining Company was working the Huskon pits for you
21 guys. But, anyway, this is -- this shows the
22 typical topography at Cameron, the rolling hills of
23 clay and all that. Badlands -- painted desert
24 badlands we used to call it.
25 Q And would this mine have been one of the

1 mines that was rim-stripped?
2 A I -- I can't say yes or no because -- but
3 being it's one of the low-numbered Huskon mines, I
4 would assume it would be.
5 Q And when rim-stripping occurred, you
6 mentioned that --
7 A They'd probably gone in here with a
8 bulldozer and cleaned off the side of that little
9 hill to see what it was.
10 Q So when you would look at a site, you
11 might see, you know, one of these piles on the side
12 could be material like that?
13 A Oh, by the time they mined, there's
14 radioactive material spread all around the ground
15 here, you know.
16 Q Yeah.
17 A They...
18 Q But the rim-stripping would just push it
19 off to the side --
20 A Push it, yeah. It just cleared it off and
21 they'd put it down on the ground.
22 Q Okay. Let's go to Page 6, and can you
23 tell me what this picture shows.
24 A Yeah, this is -- this is a project I
25 worked on on Cove Mesa. This is a non-core wagon

1 drill. This is called a wagon drill. It's -- it's
2 on a truck instead of a wagon. But it's air-driven
3 percussion. This drill mast, it's got a drill rod
4 in it. It's up and down chewing at the rocks and
5 turning at the same time. And compressed air that's
6 on the back of this truck here is blowing the
7 cuttings up, and they are collecting in here in
8 these two plastic drums down here. And they're
9 spreading them out on the ground here -- you can't
10 really see -- for the geologist -- for me to look
11 at. And you can see there's bushes right here.
12 Bulldozers clean this path out here where the drills
13 sit on.
14 If you go back to this other picture, this
15 is on the Rattlesnake 4 project.
16 Q You're talking about Page 7?
17 A Yeah. You can see it's all kind of sandy
18 out here and sagebrush, and the bulldozers cleaned
19 out an area here for the drill to get in. And the
20 drillers' helpers are collecting samples and putting
21 them down here on the ground for me to look at.
22 Q Same type of drilling?
23 A No. It's a rotary drill. It's a kind of
24 drill used on seismic -- like what the oilfield
25 workers used on seismic work. It's rotary turning

1 around like this and air is blowing the dust up in
2 the hole.
3 Q And would a core come out of --
4 A No, there's no core here. This is all dry
5 rotary, which is dust. It's a dusty job.
6 Q And so material would come out the --
7 A Yeah, the material would come up the drill
8 rod and collect in these plastic containers here and
9 they'd dump them on the ground, like these two guys
10 are doing over here.
11 Q Okay. And they would just leave them on
12 the ground --
13 A Yeah, leave them on the ground. And they
14 were probably on the ground until they reclaimed
15 that site up there.
16 Q And when you would get to the ore deposit,
17 of course --
18 A Yeah.
19 Q -- some of the material coming up would
20 look different?
21 THE REPORTER: Wait. You guys are
22 talking over each other, and it's making my
23 impossible job even more impossible.
24 MR. NEUMANN: Okay.
25 THE REPORTER: So can we try to --

1 MR. NEUMANN: I'll slow down.
2 THE REPORTER: Well, it's just a
3 matter of talking over each other.
4 THE DEPONENT: Am I talking too fast?
5 THE REPORTER: Yes, you are.
6 THE DEPONENT: I'm sorry. But you're
7 recording this, though, aren't you? You're making a
8 tape of this?
9 THE REPORTER: Just try not to talk
10 over him, please.
11 THE DEPONENT: Okay.
12 MR. TAYLOR: Can we go off the record
13 for just a second, please?
14 VIDEOGRAPHER: The time is
15 approximately 10:46, and we are off the record.
16 (Off the record.)
17 VIDEOGRAPHER: The time is now 10:48
18 and we're on the record.
19 Q (By Mr. Neumann) Bill, can you just
20 clarify for us again which projects are shown in --
21 A This is the Rattlesnake No. 4 project, and
22 the Northwest Carrizo Mountains down-dip from the
23 Rattlesnake mines.
24 Q And that's Page 6?
25 A This Page 6, 94-6.

1 Q Okay.
2 A 94-7 is Cove Mesa No. 3, I believe it is,
3 and that's on Cove Mesa. And this is -- this was a
4 wagon -- it's like a jackhammer but it's vertical.
5 This is -- you can see these guys are even wearing
6 respirators. They are supposed to be anyway,
7 because it's very -- both of these projects are very
8 dusty compared to core drilling.
9 And now this shows better how -- here on
10 94-8, this device on the left of the photo is a
11 duclone, D-U-C-L-O-N-E. It's a specialized
12 dust-collecting machine, and the dust is being blown
13 up the drill hole, goes in here, and they catch it
14 in these plastic bag -- plastic containers down at
15 the bottom.
16 Q And then what would they do with --
17 A And then on this contract, I remember the
18 driller helper, this guy over to the right, he had
19 to go dump out on the ground -- every 5 feet as the
20 drill rod dropped, he would -- he would dump it out
21 on the ground for me to look at.
22 Q Okay. And which project is this on --
23 A This would be Cove Mesa 3.
24 Q Okay. And can we move to Page 9.
25 A 9. Now, this is a different kind of

1 drilling. This is -- this is a core rig. This is
2 on Rattlesnake 1 out here in the sand flats. And
3 you can see the bulldozer to the right of the photo.
4 You can see where the bulldozer is bulldozing a
5 little trail in here to get the drill rig and the
6 water truck in here. And these boxes are core boxes
7 where they're going to put the core in.
8 Q And this is where you mentioned a lot of
9 times the cores were not saved --
10 A Yeah, they'd put them in these core boxes
11 and then we'd haul them back to the geology office
12 and really study them in detail and scan them and
13 all that.
14 Q And sometimes you'd just dump them on the
15 site --
16 A Oh, yeah, we kept them for a while.
17 Q Okay.
18 A And then when the bosses said, Well, we
19 aren't going to save them all. Let the Navajos have
20 the wood.
21 Q Okay. Page 10.
22 A This is some more of that Rattlesnake 4
23 project. This just shows the drillers standing here
24 around all this dust, because it's a very dusty
25 project. And this is a typical setup on the same

1 project. Here is a -- here is the truck with the
2 drill rig behind it to the right. To the left is a
3 truck with an air-compressor on it because it's all
4 done by air. Here it looks like a bulldozer sitting
5 here on the right. And these gray vehicles are AEC
6 vehicles. This Jeep belongs to the drillers.
7 And, anyway, this is out in the sage
8 plain. In the background here on the left is Red
9 Mesa. The Red Mesa is a big landmark up in that
10 country. This is -- this is that -- this is this
11 real sandy area between Red Mesa and the Toh Atin
12 anticline, T-O-H, A-T-I-N.
13 Q And you were talking, for the record,
14 about Page 11?
15 A Pardon?
16 Q You were talking about the photo on Page
17 11?
18 A Yeah. That's, again, Rattlesnake 4.
19 Q And let's look at Page 12.
20 A Oh, that's my partner -- that's my
21 partner, Ron Nessler. We are measuring a section of
22 rock -- see how thick the salt wash is -- up the
23 side of, I think, Mesa 5 or something like that.
24 This is in the Lukachukais, and that's...
25 Q Okay.

1 A And 13 is a dinosaur bone over on Mesa 5
2 that one of the -- I never found this, but the guy
3 that took this picture, Ken Hatfield, he swore that
4 it was there on Mesa 5 and real radioactive. And he
5 said, We'll leave it there for posterity, but I
6 never saw it.
7 Q Okay. What about page --
8 A The age of these rocks is during the age
9 of the dinosaurs, so we did find a lot -- in the
10 Morrison Formation, there are a lot of dinosaur
11 bones all over the Colorado Plateau.
12 Q And what about Page 14?
13 A Well, that's a pretty sad photo, but this
14 is a photo that I took, I think, of the AEC
15 airplane. This is the Cove Day School, but you
16 can't see -- Cove Day School of the BIA right in the
17 center of the photo. And the road up Mesa 5 is this
18 road that goes up and winds through the center of
19 the photo up into the Lukachukais here.
20 What's interesting, Kerr-McGee is building
21 a field camp right down here in this area right
22 here. And they're just scraping up the ground, and
23 that would be where -- when Kerr-McGee really got
24 going in the Lukis, that was their headquarters and
25 the ore transfer station. Little trucks would bring

1 the ore down out of the mountains, dump it here, and
2 then 20-ton trucks would haul it into Shiprock. So
3 that is a -- that's the Cove ore transfer station,
4 which I'm sure it's on your list someplace.
5 But that's poor color on here, because
6 that is a -- but if you look -- if you can look,
7 behind the day school there's a row -- there's two
8 rows of AEC trailers for our drilling camp. That's
9 bad color really.
10 Q What about Page 15?
11 A 15. That's up on Mesa 5 looking over
12 toward Viewpoint, which is a high point there east
13 of Mesa 1. These are some -- that's the road on
14 Mesa 4 over here. Or maybe that's -- no. The road
15 came up Mesa 5. That must be Mesa 4 over here to
16 the -- where you see that road cut through the trees
17 there.
18 Q Yeah.
19 A And if it was a better photo, you could
20 look up here to the upper left and see Shiprock in
21 the background, but you can't do it.
22 Q What about Page 16?
23 A 16. This one? 16?
24 Q Yes.
25 A This is -- this is out of my PowerPoint

1 talking about mining. This is a typical decline
2 mine at Uravan. A decline means you don't go down
3 vertically with a shaft. You go in at an angle, as
4 you can see here. And your little ore car --
5 they're pulling up a little ore car and going to
6 dump it here. And they'll have a place at the end
7 here for the truck to go over to get the ore. And
8 this shows a ventilation fan right here by this
9 pickup, and they're blowing fresh air down to
10 ventilate the mine, get fresh air and get the radon
11 out.
12 Q Is Page 17 --
13 A But, however, Dr. Sakamano looked at this
14 and he said, That doesn't look like a very good
15 idea. As they're blowing fresh air out here and the
16 radon is coming right back up and they're sucking
17 the radon in again. Anyway, that's -- I never
18 thought of that.
19 But this is -- this is probably a Union
20 Carbide mine in Paradox Valley. And this is
21 pictures showing the status of some of these
22 declines around today. But now the BLM has gone out
23 and burned all these up, filled in, and reclaimed
24 that land site. But this is on Calamity Mesa in
25 Mesa County.

1 Q That's Page 17?
2 A Yeah. And this is the Woodrow head frame
3 over on the Laguna land -- Laguna Pueblo land north
4 of Laguna. Woodrow, W-O-O-D-R-O-W. And that was a
5 very good mine for Anaconda.
6 And this is -- these are all mixed up.
7 This shows -- this is stripping a large, open pit in
8 the Gas Hills, Wyoming by Lucky Mc uranium.
9 Q That's Page 19?
10 A Yeah. Lucky, then M-C.
11 Q Okay.
12 A That's -- besides the Jackpot -- Jackpot
13 is probably the largest open pit mine in the U.S.
14 uranium, and this is the second largest uranium
15 mine.
16 Q Well, let's...
17 A These are mostly Wyoming pictures there.
18 Q Okay. Can you flip forward and see if we
19 get back to the Cameron area in any of the later
20 photos.
21 A This -- I did give you an index of these
22 photos when you copied them.
23 Q Yeah, they --
24 A This is Maybell, Colorado. This is --
25 this is the Anderson mine in -- near Wickenburg,

1 Colorado -- I mean Arizona.
2 Q That's Pages 26 and 27?
3 A 26. 26 is Maybell, Colorado. Anyway...
4 Okay. This -- this is back on the reservation.
5 This is out in Monument Valley at, I think,
6 Industrial Uranium's Big Chief Mine.
7 This is a poor boy -- the truck's been
8 loaded with ore, and there is a guy out here with a
9 T-probe probing the ore in the truck to tell the
10 truck driver where to take it.
11 Q This is Page 30?
12 A Because the big mines had -- this is
13 all -- this is all mechanized, but this is a poor
14 boy here at 30.
15 And 31 is a big ore bin on the Hummer Mine
16 down at Uravan, and that's a 20-ton ore truck that's
17 being loaded with ore.
18 Q Can I ask you: The 20-ton ore truck, is
19 that typical of the types of trucks --
20 A Yeah. This is the 20-ton truck or big
21 ones. In the Lukachukais, Kerr-McGee used those
22 6-ton trucks for bringing -- to bring the ore down
23 to their transfer station. And then after they get
24 enough ore in there from one mine, they send a
25 big -- a big 20-ton truck in to load it.

1 And the same thing with Climax Uranium in
2 the Lukachukais, they would take the ore down in
3 20 -- in 6-ton trucks, take it out to Highway -- old
4 Highway 666 to their transfer station, dump it, and
5 when they got 20 tons, they'd take the 20-ton truck
6 down to Grand Junction to haul it up to their mill,
7 so...
8 Q What about --
9 A This is typical of the big trucks that
10 hauled uranium ore.
11 Q And would it be typical of the trucks used
12 at Cameron?
13 A No. They used 6-ton trucks. What I don't
14 remember is they -- ah, yeah, maybe -- that one
15 trucking contractor did have 20-ton trucks like this
16 to haul to the Tuba City Mill. I don't remember
17 them mills having 20-ton trucks. Blakemore used a
18 trucking company and I think he used 20-ton trucks.
19 Q Okay.
20 A Here's just a typical miner drilling a
21 hole in a mine. And here is another miner drilling
22 a hole and here he is smoking again, smoking.
23 Q Are any of these pictures from 32 to 37 in
24 the Cameron area?
25 A No. These are all at Uravan.

1 MS. RUDOLPH: Candice, should we...
2 THE REPORTER: My hands are going
3 numb.
4 MS. RUDOLPH: We need to take a
5 break.
6 VIDEOGRAPHER: The time is
7 approximately 11:00, and we're off the record.
8 (Recess taken.)
9 VIDEOGRAPHER: The time is
10 approximately 11:09, and we're on the record.
11 Q (By Mr. Neumann) Bill, can you take a look
12 at Exhibit 94, Page 39.
13 A Uh-huh. This is -- this is a pin. This
14 is an artist's sketch of a pin that were given to
15 all employees of here in -- I guess all over the
16 country who worked on the Manhattan Project. And
17 there were several Union Carbide people that used to
18 wear these around that worked for U.S. Vanadium
19 during the Manhattan Project and then came in and
20 worked in the uranium. But they're all passed away
21 by now, but that's an artist's -- it's a little pin
22 about the size of a quarter. And Joe Hopkins, a
23 metallurgist, he was really proud to wear that.
24 Q Okay. Can we turn to Exhibit 95.
25 A 95. Okay.

1 Q Can you tell me what this -- there are
2 photographs in this exhibit --
3 A Well, on the Nez Tsosie work, El Paso had
4 a guy -- the law firm there, O'Connor and company,
5 they got ahold of an El Paso plane that flew
6 pipelines. They'd fly the pipelines to check
7 things. And so we flew around Cameron one day, and
8 I took a bunch of pictures out of the plane and
9 these are the -- these numbers refer to -- these are
10 Kodacolor prints, and these are the photo numbers of
11 what I was taking pictures of.
12 Q Okay. So --
13 A And I still have a set of these, which I'm
14 surprised I still had, but it's a series of the
15 mines at Cameron, and I think I can remember which
16 mines are which, but I'm not sure.
17 Q Can I --
18 A Once I had the number here to kind of --
19 my handwritten notes, but...
20 Q Can you look at Page 4.
21 A Page 4. I don't have 4. I have 35-3 -- I
22 mean 95-3 and 95-5. I don't have 4.
23 Q It's on the back of 3. It's a white page.
24 A Oh.
25 Q Yeah. Do you see --

1 A 4 is blank.
2 Q In the bottom right it has a zero. I
3 think this might be the back of the photograph and
4 you wrote a zero on it.
5 A A zero, okay.
6 Q And so does that correspond with the Page
7 1 description?
8 A Zero is Ramco. That was a good picture,
9 Ramco being -- well, it must have been a poor
10 reproduction or something because I can't see
11 anything here.
12 Q No. But is -- is Page 3 Ramco 20?
13 A That's the Ramco pit being reclaimed
14 by Navajo AML, right. I can recognize that.
15 Q Okay.
16 A Because they've got bulldozers pushing
17 stuff into the pit and all that.
18 Q Do you know who was doing the reclamation?
19 A It was a contractor that the Navajo AML
20 had, and I don't know who it was.
21 Q So it was a project funded by SMCRA money,
22 S-M-C-R-A?
23 A Probably be the Office of Surface Mining
24 was funding that, wasn't it? This was the early
25 reclamation at Cameron that the Navajos did? I

1 think it was Office of Surface Mining money, I think
2 it was, or somebody -- somebody's money. But it was
3 managed by Navajo AML in Tuba City.
4 Q So in the photo on Page 3, where are the
5 pits? Is it where all the tracks are?
6 A They are pushing rock from up on the
7 surface, but down in the pit -- this real dark line
8 through the middle of the photo, that's the high
9 wall on the north side of the pit. As I remember,
10 this pit ran east-west, and they are pushing rock
11 from up on top, from the badlands back to fill in
12 the pit.
13 Q Was this a surface mine or did it have any
14 underground work?
15 A Two of the Ramcos had little adits going
16 off the pit walls, and I can't remember which -- I
17 made a map of where and I can't remember which -- I
18 don't think it was -- this is the big pit. It was
19 one of the smaller Ramco pits that had underground.
20 This is...
21 Q Can I ask another question on Page 3?
22 When you were out in the field, how could you -- how
23 could AEC or the mining companies tell where the --
24 you know, the claim was or the --
25 A Mining --

1 Q -- deposit was? Yeah.
2 A Well, they had them blocked off. They had
3 posts around here, but they didn't last long.
4 People would knock them down or borrow the fire --
5 borrow the firewood and all that.
6 But when these were certified, Rare Metals
7 had rock cairns or something marking the claims,
8 marking where the -- the corners of the mining
9 permit. They were all marked to begin with, but
10 they didn't last more than a week or two.
11 Q So it was a legal description?
12 A Yeah. A legal description for
13 certification, and then it kind of got lost to the
14 elements and to people borrowing wooden posts for
15 firewood.
16 Q Do you know what is shown in Page 5?
17 A I think that's another view of the Ramcos,
18 because it was a long, narrow pit and -- yeah, here
19 is a construction site over here in the far
20 background. And without having a number -- I
21 identified these at the time, but I can't remember
22 which it -- it looks like a Ramco pit with a long,
23 narrow -- and there had been water staining in this
24 pit after the rain because you see a little
25 vegetation in the very deepest part of the pit here.

1 And that was brought up in the Nez Tsosie claim.
2 Q Okay.
3 A And I'm sure 7 is also -- it was one of
4 the Ramco pits.
5 Q Okay. And what about 9?
6 A 9 is -- that's probably a distant view of
7 the big Ramco, east-west Ramco pit.
8 Q It looks like the note says Yazzie 312.
9 A Yeah, this is 312. You can always
10 recognize it because it was a big pit controlled by
11 Utah Southern Oil, but Cameron Mining Company did
12 the mining. And I forget who it was. They had a
13 brilliant idea. We'll drill a hole in the bottom of
14 the pit and look for uranium at a deeper level.
15 Well, they hit artesian water and they flooded the
16 pit, and it became the Cameron swimming pool.
17 Q And this is, again, Page 9?
18 A Yeah -- this is Page 11.
19 Q Oh, 11.
20 A 11. And also 13. And these, I think, are
21 the Alstalemo pits here in 15. They hadn't --
22 hadn't been reclaimed because you can see the
23 vegetation where water stood in the pits.
24 And 17 I really know. That is Max
25 Johnson, I think -- 17 maybe or 19. And it was used

1 as the Cameron dump. So everybody in Cameron would
2 bring their trash out here to this pit. And here is
3 another pit over here to the upper left that hadn't
4 been reclaimed yet. You can see the waste rock on
5 each side of the pit and the pit outline where the
6 vegetation is where water stood after it rained.
7 And this 19 is a reclaimed pit. This
8 was -- in the center picture here, it was where
9 there was an open pit. I think it was one of the
10 Huskons. And Navajo AML had pushed everything back
11 in there and leveled it all out, and all you could
12 see now was a change in the surface color of the
13 rocks. I can't remember that number.
14 And then we come back here to Yazzie 312
15 again, the Cameron swimming pool.
16 Q That's Page 21?
17 A This is 21. And this is an aerial view
18 looking -- this is looking at Huskon 1, which is
19 kind of in the center of the photo. And it's
20 looking to the northeast, and the water you see in
21 the center of the photo, that's Yazzie 312.
22 Q This is Page 23?
23 A This is Page 23. And this -- this is one,
24 I think -- I can't recall what that is, but anyway,
25 it's a bunch of Cameron...

1 25 is -- go back to my notes here, if I
2 can recognize it. So the pit with the trash in it
3 is Max Johnson 9, not 16. I can't recognize what 25
4 is, but it's obviously down here -- near the center
5 of the photo is a stripped area of the -- disturbed
6 area where there's a mine.
7 Now, I know this pit. 27, that's the main
8 road from Tuba City up to Tonalea and -- no. That's
9 the main road that goes to Marble Canyon. And right
10 along the highway here, between this wash that cuts
11 down here right to the left of that, that's the
12 reclaimed Jeep pit. That white area right here is
13 the Jeepster pit been reclaimed.
14 MR. NEUMANN: Bill, we need to take a
15 break for the video.
16 THE DEPONENT: Oh.
17 VIDEOGRAPHER: The time is
18 approximately 11:20. This is the end of Tape No. 8.
19 We are going off the record to change tapes.
20 (Recess taken.)
21 VIDEOGRAPHER: We are on the record.
22 This is the beginning of Tape No. 9 in the
23 deposition of William Chenoweth. The time is
24 approximately 11:25.
25 Q (By Mr. Neumann) Okay, Bill. I think

1 we're through in Exhibit 95 all of the photos that
2 had to do with the Cameron mine.
3 A Okay. Yeah.
4 Q So I'd like to move on. And could you
5 just remind me what Exhibit 96 is. It looks like a
6 PowerPoint-type presentation.
7 A This -- beginning with 96, this is a
8 PowerPoint presentation I was asked to develop, I
9 think, for the college or Mesa -- then they were
10 Mesa State to show the students about a little bit.
11 And I had given this many different times, this
12 particular PowerPoint. I might even have given it
13 down at the site one time. But, anyway, it's a
14 long, lengthy history of radioactive mining --
15 radioactive material mining here on the --
16 southwestern Colorado and...
17 Q There are a few photos I haven't seen
18 before. Can you look at Page 54.
19 A Which one?
20 Q 54.
21 A 96-54?
22 Q Yeah.
23 A A lot of these are just -- oh, yeah. 51,
24 53, 54.
25 Q What does that show?

1 A That is the Rajah -- that is the Rajah 30
2 head frame, R-A-J-A-H, head frame on Beaver Mesa,
3 just west of Gateway, Colorado. It was a Union
4 Carbide operation on public land of Rajah and like
5 claims. And the BLM had left it there as an
6 artifact of uranium mining.
7 Q Okay.
8 A With a sign there, Keep Away. But,
9 anyway, they -- and the same for 55. This is
10 another Union Carbide. This is Long Park 16, I
11 think it is. They have left this as an artifact of
12 uranium mining.
13 Q What about Page 59?
14 A 59. 59, that is the Packrat Mine up on
15 Beaver Mesa that been -- never been reclaimed. You
16 see you got two open adits here and a little house
17 over here, probably where the air-compressor was.
18 And it is -- that land, I think, has now been
19 acquired by Energy Fuels as part of their big
20 package of claims up on Beaver Mesa. But that just
21 shows typical cliffside mining where they went into
22 a cliff just straight in. They didn't go down or
23 anything like that. That's the Packrat Mine. It's
24 an old, big historic mine in the Gateway area,
25 Gateway, Colorado area.

1 Q Let's turn to Exhibit 97, and can you
2 remind me what this presentation was?
3 A Yeah. This -- there's a mining club here,
4 and most of it is old retired guys from Carbide and
5 Climax and AEC and everybody. And we used to get
6 together once a month. And one of the guys went to
7 China for a geologic meeting and he took his wife
8 and he made a -- came back and gave a good slide
9 presentation.
10 And they started bugging me, Well, you and
11 your wife spent some time down on the reservation in
12 the early '50s. How about giving us a presentation
13 at one of our social meetings. And my wife says,
14 Well, you're going to do it. I'm not going to. And
15 I said, Okay, I will put something together, but
16 you'll have to narrate your slides.
17 And, anyway, so this is a presentation
18 that we gave to the mining club and then we have
19 given it to somebody -- this has been given two
20 times to the public and I showed it a lot. A lot of
21 people have come to our house and seen this. The
22 kids -- our kids have looked at it and said, Wow.
23 And I think the radiation people, DOJ, have seen it.
24 But, anyway, it's a summary of --
25 Q Can you --

1 A -- part of my work and part of her work on
2 the reservation in the '50s. And this is -- this is
3 a rug from the Tsisoupous area we had. And here is
4 a map we looked at. No. 2 is a map we looked at
5 yesterday showing the mining areas on the
6 reservation.
7 Q Bill, can we jump to Page 35.
8 A Oh, sure. We don't want to go through all
9 the other stuff. 35. There's a lot of just -- 35.
10 Oh, you're going to skip the pretty pictures of the
11 Lukis. 35.
12 Q Well, do any of those pictures of the
13 Lukachukai show areas that were --
14 A And that was -- that's the Kerr-McGee Big
15 Mesa 2 Mine in the canyon there, and it's a real
16 scenic view, I think. And then these mining
17 pictures are some I got from my friend, Will Derr.
18 You said 35. Okay.
19 Oh, this is a series of camp -- the Cove
20 Mesa camp, and this was an AEC field camp where
21 trailers are all lined up here. We had a water tank
22 someplace on the hill and an electrical generator
23 someplace here, maybe out here to the right. So it
24 supplied -- we had water, waterlines to the trailers
25 and electricity to the trailers, and then we used

1 butane. They had tanks of butane in the trailers.
2 And this was one of the prettiest camps,
3 but the safety people didn't like. They said, Well,
4 if they ever have a fire, you'd get burned up
5 because of all those trees, so -- anyway, the gray
6 trailers are government-owned trailers, and this one
7 bluish one, that's a privately owned trailer.
8 Q What about Page 39?
9 A These next pictures are just pictures
10 of -- 39, that's -- 38 is me in 1953 in my trailer
11 there.
12 But 39 is the road up Cove Mesa. It goes
13 up this arroyo and then there's a series of
14 switchbacks, as shown on the next one, to get to the
15 top of Cove Mesa, because Cove Mesa is just a small
16 mesa, elongated, and flat on top. And it's got
17 uranium mines all around the edge of it, and the AEC
18 drilled in the middle and found a lot of uranium for
19 the VCA to mine.
20 Q Did AEC build this road?
21 A Yeah. That road was an old Indian trail,
22 Navajo trail, and the AEC did improve it with a
23 bulldozer to get the uranium out.
24 And this is -- the next picture is a loop
25 road where you had to come up on the right and make

1 a loop to go up on top because it's steep.
2 Q That's Page 40?
3 A And this was really treacherous in the --
4 I used to visit this mine once a month. And in the
5 wintertime, this road was -- you had to go up in the
6 morning when it was frozen and then get down in a
7 hurry because it was mud. And these are the
8 drillers we saw before drilling up on Cove Mesa.
9 Q 42 -- 43. Sorry.
10 A 43 is again this wagon trail on Cove Mesa
11 No. 3 project. And you see the bulldozer bulldozing
12 a road in here where my Jeep is, and these guys
13 are -- this is -- this is an air-compressor on the
14 back of the truck and they are drilling a hole right
15 here.
16 Q What about 45?
17 A This -- this is Bob Scarborough of the
18 Arizona Geological Survey. I took him up there and
19 he says -- he says, Take my picture so that my boss
20 will know I'm up here.
21 This is typical of one of these same mines
22 on Cove Mesa. They went in from the -- went in from
23 the rim -- this is the rim out here. They went in
24 from the rim and mined a little pot of ore, and we
25 called it a -- I think it's called -- somebody said,

1 well, it's not a dog hole. It's really bigger than
2 a dog hole, which is just a little kind of a
3 prospect. But, anyway, that was one of the VCA
4 mines on Cove Mesa.
5 Q Okay. What about Page 55?
6 A 46 is where we're moving camp over to
7 Rattlesnake. 45?
8 Q 55.
9 A 55. 55, that's again the Rattlesnake No.
10 4 project that I showed earlier. It's just a blowup
11 of that photo. Bulldozer here on the right, drill
12 rig truck with an air-compressor, a contractor's
13 Jeep with a fuel tank, and the two AEC vehicles.
14 Q What about 57?
15 A Okay. The guy sitting here on the right,
16 sitting on the -- out here with the respirator, he's
17 a sampler. He is -- and the big duclone is up above
18 him. He's taking dust samples out of the duclone
19 and he pours them out here on the ground. And his
20 helper is here, the second from the left, dumping
21 the samples. And this driller -- I don't know --
22 this is a drill helper. And that's me getting ready
23 to make notes on what I'm seeing in this dust down
24 here on the ground.
25 When we got through -- there's the layout.

1 We'd been staked over here by the drill hole. And
2 when we got through, we just walked away and left
3 all that on the ground out here, except we
4 sampled -- we scanned it with a Geiger counter or we
5 took a sample of that.
6 Q And this was an AEC contractor helping?
7 A Yeah. Let's see. I'm the federal -- I'm
8 the AEC employee, and I think all these other people
9 here are drill contractors.
10 Q Okay.
11 A That's taken in the fall of '54.
12 Q What about 58?
13 A Oh, yeah. This is -- this is -- this is
14 Mr. Barnes, and that's an AEC experimental logging
15 truck. Things have come a long way since then.
16 This is '54. This is an AEC -- he's lowering an AEC
17 probe down in the hole to detect radiation. And
18 it's going to be pulled up and an instrument in his
19 truck here is going to record any radiation that it
20 might have. This is sort of -- the AEC did a lot of
21 research on making these probe things, and this is
22 one of the early ones and they've come a long, long
23 way since then. But going back, they make a graph
24 on paper of what it finds as he pulls -- this wench
25 pulls it up.

1 Q Could that data be correlated to
2 concentration --
3 A Yeah, yeah. They take the log and then
4 take the geologic log and try to match it up, but
5 there's always a lag from the time those samples --
6 the drill cuts the samples until they blow up the
7 hole, so you have to make adjustments. But this is
8 really -- will tell you really a good idea of what
9 the drill has penetrated as far as radioactivity.
10 Q And you said you measured the dust on the
11 ground with a Geiger counter?
12 A Yeah.
13 Q Did you have a sense what the
14 concentration of uranium would have been in that?
15 A Oh, yeah. Our Geiger counter was kind of
16 calibrated on a very crude method, but we didn't
17 have it calibrated. And we knew if it went over so
18 far that it was getting close to ore grade. But
19 this was in '54. This is pretty primitive stuff
20 compared to the industry a few years later.
21 Q Okay.
22 A That's one thing the AEC did here to help
23 industry is they developed these probes and then
24 pits to be calibrated for the industry. See,
25 here's -- the drill hole is right here with a little

1 piece of plastic to collar it so it won't cave in on
2 him.
3 Q What about Page 59?
4 A Well, that is a Navajo sweat bath, a
5 tutshai, something like that.
6 Q Okay.
7 A We told the Navajos we would not destroy
8 any of their stuff out there, so they'd heat rocks,
9 get in here and take a sweat bath, and that was --
10 and that was -- so we -- and this is a type of area
11 that we drilled in Rattlesnake 4 so you see the
12 bulldozer kind of had to make tracks around. But
13 when we found out, we detoured it. We'd even move
14 the drill hole if it was close to one of these
15 sites. Those are the rocks they used to heat to get
16 hot.
17 Q Let's look at Page 71, which looks like it
18 gets into Monument Valley.
19 A Well, up here on 70 is a map that VCA gave
20 Bob Scarborough of the Monument 2 pit with the old
21 underground -- first it was underground mines.
22 Anyway, these -- this is -- this is -- shows the
23 underground mines that were all eventually destroyed
24 by the big open pit. And this is an aerial photo I
25 took looking to the south, southeast down the trend

1 of the Monument 2 pit. And it was -- it was the
2 largest single mine in Arizona during the AEC
3 program. It produced -- I forget how many
4 million -- over 5 million pounds of uranium. And
5 this is all waste rock laid out here in the middle,
6 and, anyway, it was a long, narrow pit as shown in
7 this map on 70.
8 Q Okay. Let's look at Page 82, which gets
9 into Cameron, and just let me know if you see any
10 new photos. I think we just went through these
11 photos.
12 A 82?
13 Q Yeah.
14 A These are -- these are the same pictures
15 we looked at before. This is a better reproduction
16 of -- taken on the ground of, I think, Huskon 10,
17 maybe, if I'm remembering right. In the background,
18 it looks like he has an air-compressor here and he
19 may be drilling some holes to blast or -- I really
20 don't know. It looks like they weren't really
21 getting a lot of ore moved -- rock moved that day.
22 But this is the Jack Daniels pit that's
23 full of water and it was the largest single mine.
24 It produced more uranium than any other mine in the
25 Cameron District. And at the center of the photo is

1 this gray area. That is Huskon No. 9 that has been
2 reclaimed and...
3 Q This is Page 83 you are looking at?
4 A 83 is Jack Daniels No. 1 pit. And laying
5 around on the surface here, this is a good example
6 of the contamination they had at Cameron. All this
7 gray stuff around here is waste rock or low-grade
8 material. Some of these are low-grade piles that
9 were removed from the overburden. This wasn't a
10 very deep mine. I think the deepest part of this
11 mine was only about 20 feet. It was really a
12 shallow...
13 And it was called Jack Daniels -- get off
14 the subject here. But some guys driving down the
15 old highway got an anomaly holding a radiation
16 detecter outside their Jeep, and they got out and
17 they looked around on the ground. And there were
18 some cuttings around a power pole, and by that power
19 pole was a discarded Jack Daniels bottle. And so
20 they kind of made a vow, Well, if this ever turns
21 into a mine, we are going to call it the Jack
22 Daniels mine. So they got a drilling permit and
23 drilled out here and found ore, and then they went
24 and got a mining permit from Denetso and Mary
25 Denetso. And they always said, Well, Jack Daniels

1 is a better name than Denetso No. 1.
2 And then after the highway was moved --
3 this is the old highway -- to the Navajo bridge,
4 Page Blakemore came in and found -- mined about 300
5 tons there. You can see a cut across the old -- the
6 old highway right-of-way in the picture here. And
7 here is his waste dump on the other side of the
8 highway, the old highway, before it got realigned.
9 Q Okay. I think we've seen the rest of
10 these photos, so I would be inclined to break now.
11 MR. NEUMANN: Let's go off the
12 record.
13 VIDEOGRAPHER: The time is
14 approximately 11:44, and we're off the record.
15 (Lunch recess.)
16 VIDEOGRAPHER: The time is
17 approximately 1:20, and we are back on the record.
18 Q (By Mr. Neumann) Bill, I would like to
19 have you take a look at Exhibit 65 now, and this is
20 a document we looked at yesterday. It's entitled:
21 Draft Report Regarding the Cameron Mining District
22 Activities and Practices.
23 A What exhibit?
24 Q I'm sorry. It's 65.
25 A 65. Okay.

1 Q Okay. And maybe we could start on Page 4,
2 and in that second full paragraph that starts on
3 June 26th, 1952 -- let's see. I'm sorry. Right
4 above that: During the summer of 1950, Hosteen Nez
5 found an exposure of uranium-bearing rock, and AEC
6 hired Charles Huskon to prospect the Cameron area.
7 If I remember right yesterday, you told us
8 that AEC had hired maybe several Navajo.
9 A I think in that report I wrote exactly
10 the -- but, anyway, about 12 men they hired, 12
11 Navajo men. And then they hired one Hualapai man to
12 prospect over there. Anyway, but...
13 Q What did they do for prospecting? Was it
14 just Geiger counter --
15 A They'd issue them -- well, first of all,
16 there were -- you see, he hired two young men who
17 were the son of traders in Northern New Mexico. I
18 think one was a Pueblo Contada and the other one was
19 a Tinian Trading Post -- anyway, these young guys.
20 And they could speak Navajo fluently and they would
21 go around and find people that wanted some work.
22 And they'd give them a Geiger counter and say -- and
23 show them a piece of uranium and how the Geiger
24 counter would click and says, you know, Go out and
25 look around the areas you knew and we'll be back in

1 two weeks to check with you.
2 Anyway, they set up appointments and all
3 that, and so they would check on them every two
4 weeks and bring them a paycheck. And I know there
5 were several -- I know three or four discoveries
6 were made, but Charlie Huskon was the most
7 successful. And apparently he went out there just
8 not too far from his house and found the Huskon 1
9 deposit.
10 Q And he -- do I remember right that he quit
11 and started working for Arrowhead?
12 A Yeah. I think Arrowhead -- I think George
13 Morehouse came -- heard about this or something.
14 Anyway, somehow they convinced Charlie to drop
15 working for Walker-Lybarger and come to work for
16 Arrowhead. And, anyway, Charlie -- somehow they
17 went out and they found -- I think maybe Arrowhead
18 flew him around and he was pointing out places that
19 looked good or something anyway.
20 Q Okay.
21 A He was -- he was the first one to really
22 acquire mining permits in the Cameron area.
23 Q Let's turn to the top of Page 5.
24 A Uh-huh.
25 Q And I want to focus on the second

1 sentence: After evaluating the 17 Huskon
2 properties, Rare Metals dropped their assignments of
3 Nos. 4, 5, 9, 13, 15, and 16. These assignments
4 were immediately picked up by Utco and by BC
5 Associates.
6 A Uh-huh.
7 Q And my question is: When it says "after
8 evaluating the 17 Huskon properties," what do you
9 think that meant?
10 A I think Rare Metals geologists went out
11 and looked at these. And for some reason,
12 apparently No. 5 -- I know No. 5 was just a bunch of
13 petrified logs out there. They saw that, but I
14 can't speak for them. Probably they said these did
15 not have the possibility to develop large tonnages
16 of ore, because 5 was just a pile of petrified logs
17 that were impregnated with uranium minerals. And 4,
18 I don't know what they saw at 4, because it became
19 the second largest mine in the Cameron District.
20 Q Is it likely they --
21 A By the time I saw 4, Utco was mining it
22 and it had a big open pit there, but I don't know
23 why Rare Metals decided to drop those properties.
24 Q Was it the practice to take -- to drill or
25 sample claims?

1 A I don't know what -- how -- really how
2 Rare Metals made that decision, but I know people in
3 the end said, Boy, that 4 became a good mine. I
4 don't know why they dropped it. That's what
5 Blakemore said, Mr. Blakemore told me, so...
6 Q Do you remember whether Rare Metals would
7 have shipped any ore from these mines, or because
8 they were dropped, that never happened?
9 A You'd have to read that table in the back
10 of my report. I can't remember. Let's see. What
11 does it say? I have got in here which were the --
12 which were the original -- I know shipments were
13 made off of No. 5, but I don't know if Rare Metals
14 made it or Arrowhead made it. I kind of think
15 Arrowhead might have made.
16 MS. RONGONE: Hi. This is Marie
17 Rongone joining.
18 MR. NEUMANN: Hi, Marie.
19 Q (By Mr. Neumann) So can we -- maybe you
20 can help me understand. Exhibit 57 is your 1993
21 report.
22 A Yeah.
23 Q And --
24 A What page?
25 Q If you look at Page 26.

1 A Of 65?
2 Q No, no. Of 57.
3 A Oh, I'm sorry. 57. Okay, 57. Okay.
4 Yeah, that's -- this...
5 Q I was looking at Page 26.
6 A I'm looking at Page 19.
7 Q 19. All right.
8 A And the Arrowhead -- Arrowhead -- in
9 195 -- in 1953, you know, made shipments from --
10 from, it looks like, eight properties, including
11 some of these that they dropped, like 5 and 4.
12 Q Where -- where -- what information did you
13 review to prepare this?
14 A These are from the AEC annual ore
15 production sheets that you guys all looked at and
16 you got copies of when you were at my house.
17 Q Okay.
18 A Look on -- a section of that report says
19 Arizona 1954 and you look under Coconino County and
20 you will see all this.
21 Q The information in those production
22 reports --
23 A Yeah.
24 Q -- did it come from forms that were filled
25 out or --

1 A Oh, no. Those were generated by computer
2 from all the different reports they got from
3 ore-buying stations to mills. They would -- the
4 ore-buying station and the operating mills were
5 required every month to send in what they called the
6 ore receipts. That was the ore they'd purchased,
7 and the AEC would get this and put it in their
8 computer and make those computer sheets.
9 Q I see. So in 1953, there must have been a
10 receipt from a buying station.
11 A Yeah. In '53 it looks like they shipped
12 from eight properties.
13 Q Okay.
14 A No. They shipped from nine properties.
15 Q Okay.
16 A But in 1952, they made the original
17 shipment from the Huskon 1 deposit. And these
18 shipments -- since there was no ore-buying station
19 nearby, they hauled the ore down to Flagstaff, put
20 it on the railroad, and shipped it over to the AEC
21 ore-buying station at Blue Water, New Mexico,
22 because that was the nearest ore-buying, the nearest
23 market. So the Santa Fe Railroad made some money
24 off of them.
25 Q All right. Now let's go back to Exhibit

1 65 and Page 5 where we were at the top.
2 A Uh-huh.
3 Q So Rare Metals dropped -- let's just -- as
4 an example, Rare Metals dropped Huskon No. 4, and
5 then Utco immediately picked it up?
6 A Uh-huh.
7 Q And that would have been distinguished or
8 differentiated in the ore-buying station?
9 A No. Yeah, it would show on the ore -- on
10 the ore production sheets -- this is probably
11 information from Window Rock that the mining permit
12 on No. 4 was canceled by Rare Metals and immediately
13 Utco got -- had gone to Charlie and got a new
14 assignment. And then in the records from the
15 ore-buying station, the ore that Utco shipped --
16 that's U-T-C-O, Utah Colorado -- it would show in
17 the ore production sheet that they had a new
18 operator -- or a new controller that year.
19 Q Okay. So you think it's likely that Rare
20 Metals did, in fact, ship ore from, in this case,
21 Huskon No. 4. It just might not have been that
22 much?
23 A Not much, no. We don't have the sheets
24 here, but -- but I'm sure they made a shipment of
25 some kind.

1 Q Okay.
2 A If it shows up in this table here, which
3 it does in '54, I'm sure it did because this has
4 been -- this has been -- I checked this and the
5 Arizona Geological Society editor checked this
6 against things to make it all correct, so...
7 But in 1954, it looks like, oh, yeah,
8 there was 11,000 tons shipped from the Cameron
9 District. And I would say the bulk of that ore
10 probably came off the Arrowhead properties, looking
11 at this table on Page 19 of my report.
12 Q Okay. And let's -- I'm back on Exhibit
13 65, Page 5, and now the third paragraph that starts
14 out: After making small, low-grade shipments from
15 Charles Huskon Nos. 8 and 14 and their Section 9
16 lease south of the reservation, the assignments and
17 lease were canceled.
18 A I think that's information I got from
19 Mr. Babbitt about Section 9. And apparently some --
20 maybe Window Rock told me that the assignments on 8
21 and 14 had been canceled. I'm just guessing -- I'm
22 just guessing at that, but I don't know where else
23 they would have gotten that information, because...
24 Q So on Section 9, Mr. Babbitt might have
25 told you that there was a small shipment made?

1 A No. I think I went in to see him -- in
2 one of my field notes that I've got copies
3 someplace -- went in to see him about what had
4 happened, what Mr. Rankin was going to be do --
5 because he was tied up in all kinds of legal stuff,
6 all the business was done under Mrs. Rankin and not
7 Mason Rankin. And the lease was, I think, signed to
8 her -- over to her by the Babbitt -- by C O Bar
9 Livestock, so...
10 And it was already confusing and I know I
11 went in and got an appointment and saw one of the
12 Babbitts, and he was -- told me about -- the lease
13 had been acquired by Mrs. C.L. Rankin or somebody.
14 I never knew what her name was, never met her,
15 because Mason Rankin did all the work. It was just
16 legally in her name.
17 Q Okay. And so now on your 1993 report,
18 which is Exhibit 57 at Page 25.
19 A 25?
20 Q Yeah. And at the top, No. 43 is Charles
21 Huskon No. 14. I'm sorry.
22 A What exhibit number?
23 Q Exhibit 57.
24 A 57-23?
25 Q Page 25.

1 A Page 25. Okay, yeah.
2 Q Okay. At the top of that page, the third
3 mine down is Charles Huskon No. 14.
4 A Uh-huh.
5 Q And it says 46.54 tons of ore.
6 A Shipped by Rare Metals in 1956.
7 Q Okay. So we had just read in your report,
8 After making a small, low-grade shipment on Charles
9 Huskon 14, the lease was canceled. And you said it
10 remained inactive after Rare Metals canceled it. So
11 this tells me that the small shipment was 46 tons?
12 A 46 and over .11 percent uranium, which is
13 low.
14 Q Yeah. Okay. With that much ore, how do
15 you think they -- I thought I remembered reading
16 somewhere some of the ore was high-graded where you
17 sort by hand or do something to get some high-grade
18 ore. Was that common on --
19 A The AEC price schedule in Circular 5
20 revised, you know, everything below .20 didn't -- I
21 don't think you got initial -- the prices were
22 better when you got -- as the grade got higher. I
23 know when the mill was operating, the mill liked to
24 keep all shipments at least at .2 percent uranium.
25 But this early stuff that went through -- oh, '56,

1 it probably would have gone to the ore-buying
2 station at Tuba City anyway. It was better for the
3 operators to keep -- to try to keep close to .2
4 percent rather than get it way down at .11 of a
5 percent.
6 And so there was eyeballing and looking at
7 the ore that was being mined, and those miners were
8 trying to keep the -- keep the higher grade material
9 up. I wouldn't call .2 high grade, but it was
10 better than the lower grade material, because that
11 was about the average if I remember what the -- what
12 the Cameron mines averaged out shipping in the end.
13 Q And Charles Huskon No. 14, if it was 46
14 tons, that was several trucks of ore?
15 A Yeah. That would be -- probably that
16 would be at least three 20-ton trucks. If that's
17 dry tons, it could be three big trucks. I don't
18 know when they stopped shipping to Flagstaff, but
19 this could have gone right up to the ore-buying
20 station, whenever it opened. I can't remember when
21 it opened.
22 Q How do you think they extracted that much
23 ore at --
24 A Oh, they probably dug it out with a
25 front-end loader. And I have been to 14. It's just

1 a small, little pit, you know, maybe 5 feet deep, if
2 I remember. And, anyway, they probably just found a
3 radioactive occurrence on the surface and dug it out
4 with a front-end loader and put it in a truck and
5 hauled it off.
6 Q And Section 9 of your report said that the
7 shipment you just described maybe Mr. Babbitt told
8 you about was about 17 or 18 tons -- about 17 tons
9 at Section 9. Do you remember Section 9? Was it a
10 small --
11 A I was never there when Rare Metals made
12 the shipment, but when Rankin took it over, he
13 showed me up to the north end of Section 9 where
14 Rare Metals had dug around a little bit.
15 Q Okay.
16 A That was in -- that was in -- that's in
17 that same -- that was in '57 that Rare Metals made
18 that little shipment. I don't have it separated out
19 here, unfortunately. I have -- in fifty -- in this
20 table it says Rare Metals shipped in '57, Mrs.
21 Rankin shipped in '58 and '59, and there's only one
22 big total of 361 tons. So this table, he didn't
23 show that small Rare Metals shipment.
24 Q Back on Exhibit 65 at Page 7.
25 A 65?

1 Q 65, Page 7.
2 A Uh-huh.
3 Q The fourth paragraph down starts: Ore
4 near the surface --
5 A Yeah.
6 Q -- was removed by hand using picks and
7 shovels and wheelbarrows.
8 A Uh-huh.
9 Q Do you think either Charles Huskon 14 or
10 Section 9 might have been --
11 A Yeah.
12 Q -- mined this way?
13 A Yeah, I'm sure. Thinking back, that
14 probably 14 was mined that way and maybe even 9. I
15 don't know, because it was kind of messed up later,
16 but Rankin probably looked around. Yeah, I'd say
17 that picture we have of Huskon 10, I think it is,
18 that looks like a wheelbarrow operation in that
19 picture we showed earlier today. These weren't big,
20 massive operations.
21 Q Okay. On Page 6 of Exhibit 65, that first
22 paragraph at the top has a sentence: With the
23 exception of the Ramcos --
24 A Which page?
25 Q Page 6.

1 A Okay. Page 6. Okay.
2 Q With the exception of the Ramcos, Charles
3 Huskon No. 26 and the Section 9 lease, Rare Metals
4 holdings in the Cameron District were restricted to
5 the original Huskon 1, 2, 3, 6, 7, 8, 10, 11, 12,
6 14, and 17 properties.
7 So this is the list after the ones that
8 were canceled that we just talked about?
9 A Uh-huh.
10 Q Is that right?
11 A Yeah, I would say that's -- yeah. What
12 year was this? Yeah. That would be after they
13 dropped -- Rare Metals dropped those other permits.
14 Q Okay. Can we look at Page 8 now.
15 A 8?
16 Q 8, yes.
17 A Uh-huh.
18 Q The third paragraph down.
19 A Uh-huh.
20 Q Since the Navajo Indian Reservation is
21 considered to be Federal Trust lands, mining was
22 carried on in compliance with the federal mining
23 laws in effect at the time of mining. Mine
24 inspections were carried out by U.S. Bureau of Mines
25 personnel based in Denver, Colorado. These

1 inspectors made frequent visits to the operation
2 mines.
3 I'm not sure I remember discussing this
4 yet, but can you describe for me the role of the
5 U.S. Bureau of Mines at the Cameron mines.
6 A They were -- they were charged with mine
7 safety at the time, and I have seen other documents
8 around here -- I have seen some of the reports and
9 at the top they'd say Mine Permit No. so-and-so and
10 so-and-so. That's the result of these visits they
11 made. And they really enforced mainly safety
12 regulations. You know, you've got to have your
13 men -- periodically train your miners in the safety
14 instructions, and there's all kinds of things in the
15 federal mining laws they had to comply with.
16 And the tribe was more -- the tribe had
17 their own mining inspectors. They hired semiretired
18 mining engineers to do this for them. And they were
19 more interested in safety, you know, store your
20 dynamite properly, store your fuse, train your
21 miners in how to use this stuff because it is
22 dangerous. And they had -- they were out there --
23 they were out there very periodically. I think the
24 feds came down maybe every two months or so. I
25 don't know. You didn't -- I know in the Lukachukais

1 you didn't see them very regularly. I never saw a
2 federal man at Cameron, but I saw tribal guys at
3 Cameron.
4 Q Do you think they may have visited Cameron
5 and you just didn't see them? Did you just say
6 Bureau of Mines never visited Cameron?
7 A I never saw any Bureau of Mines people at
8 Cameron, but I saw tribal mine inspectors at
9 Cameron. They were more interested where dynamite
10 was being used and that, you know, training the guys
11 about using fuses and primers and all that.
12 Q If Bureau of Mines would have visited --
13 A Yeah, I forget the agency. Bureau of
14 Mines was the agency, but there was a part of them
15 that was due to safety. I don't know. It wasn't
16 NIOSH yet and I don't think it was Mesa or MSHA or
17 whoever it was. But it was part of the Bureau of
18 Mines that was in charge of safety.
19 Q If they made written reports or other
20 documents --
21 A Yeah, there's some in some of these books
22 we saw yesterday. Derzay, Mr. Derzay was one of the
23 men or something.
24 Q Where might I find their documents, do you
25 know?

1 A When the Bureau of Mines got abolished
2 several years ago, I would imagine somebody put all
3 those documents in the National Archives, but I'm
4 just guessing. They shouldn't throw them away
5 because -- but who knows.
6 Q Okay.
7 A If they were stored at Window Rock, who
8 knows?
9 Q Over to Page 9.
10 A 9?
11 Q In the first full paragraph --
12 A Uh-huh.
13 Q -- there's a sentence: In the 1950s and
14 1960s, there were no provisions to reclaim open pit
15 mines, including the waste rock and low-grade ore
16 left on the surface.
17 Is that consistent with what you remember?
18 A Yes.
19 Q And let's talk for a minute about waste
20 rock and low-grade ore. What do you recall about
21 how the miners would know when to stop mining? Was
22 it when it got -- go ahead.
23 A With Geiger counters. They all had Geiger
24 counters that the company kept sort of calibrated.
25 And they would be checking -- I don't think they

1 checked every shovel load but maybe every
2 wheelbarrow load and where it'd go. And if it
3 was -- wouldn't meet -- if it wouldn't measure so
4 much on a Geiger counter, they'd dump it over the
5 hill here someplace.
6 And in that picture we looked at earlier
7 of the Jack Daniels Mine, that just shows where a
8 lot of this overburden and waste rock was just piled
9 around the mine there. That was a good example of
10 what happened to all the mines. The waste rock
11 was -- which contained some uranium, I'm sure -- was
12 just -- dumped it out of the mine, out of the way,
13 so it wouldn't get in the way of the mining in the
14 pit.
15 Q The mills would only accept ore that was
16 at .2 or better?
17 A Well, they would accept -- they didn't
18 like to take lower grade material, but I don't think
19 they ever refused anything. Even if somebody hauled
20 in some ore that was below .1 percent, which was
21 below the AEC price schedule, they might take it but
22 not pay the miners and eventually blend it into
23 their mills to get a little bit of uranium so they
24 wouldn't have to throw it all out.
25 Mills were always -- mill people were

1 always wanting to blend their ores to a certain
2 percentage because that was the most efficient
3 recovery in the mill circuit. And so I know people
4 would send -- somebody I remember sending low-grade
5 ore that they didn't get paid for, and whoever at
6 the mill says, Well, you can either haul it away or
7 leave it here. And they left it there and
8 eventually it probably got put through the circuit,
9 but they would blend it with some high-grade ore.
10 And when they were getting ore from the
11 Orphan Mine in Grand Canyon, I know that was high
12 grade, you know, point half a percent or so. That
13 way they could put it into some of -- they cut the
14 low-grade ore in with that. The mill people were
15 really good at doing this. They had the expertise
16 to know the grades of these stockpiles and say,
17 Well, we'll take this ore or this ore and put it --
18 fix it up and send it through, because the ore has
19 already been paid for and stored in certain areas
20 depending on the grade of uranium.
21 Q And could the miners tell fairly clearly
22 where the grade dropped off? I mean, was it
23 dramatic?
24 A My experience was it would be hard to see.
25 If it was real dark, it would be a higher grade than

1 if it was real light, because the uranium minerals
2 were more dark and -- and there were some yellow
3 minerals mixed in there too. But some of these
4 miners got real good with their eyesight, you know,
5 eyeballing the ore, they could tell pretty good,
6 then they could check it with the Geiger counter.
7 Cameron Mining Company had these -- were always
8 training these guys to what to look for, I know.
9 Q AEC was training them?
10 A Yeah, to try to keep the ore from getting
11 too diluted.
12 Q How accurate was the Geiger counter?
13 Could it tell if you were below the .2 --
14 A Well, if you had a big pile of rock, you'd
15 get more radiation than if you had a little pile of
16 rock. So there is this mass effect, they called it,
17 and so you always tried to measure in the same
18 amount of volume that you were calibrated to. The
19 company, I'm sure, had some kind of a calibration
20 pit someplace for Geiger counters so you would know
21 they were working right. So I think they probably
22 would just say, well, keep their Geiger counters
23 calibrated and then they'd have a good -- a rough
24 idea of what's being dug out of the pits.
25 Q Did they ever measure the face of a pit

1 with a Geiger counter or just the piles coming out?
2 A Oh, no, they -- if they have a clean face
3 in the mine, before they start shoveling out, they
4 check that. And then I don't think they would check
5 it again. Maybe they would check it again to see if
6 it didn't get too diluted. But using Geiger
7 counters in these days, that was really primitive
8 but that's all they had.
9 Q At some point would they get to the point
10 where the face of the rock was at a very low
11 percentage of uranium?
12 A Yeah, then they would stop. If it was
13 real low and then they had overburden above it,
14 they'd probably get it diluted maybe 50 percent so
15 they would stop. Because you already had dilution
16 when you -- when you've got a face in the mine maybe
17 10 feet high or 3 feet high and you've got 2 feet of
18 uranium in here and you are going to have to move
19 that overburden and all that, you could be diluting
20 it. So they had to be very careful not to dilute
21 their ore too much.
22 Q When they stopped, was there still uranium
23 in the face of the rock?
24 A Probably a little bit, yeah. Yeah, like
25 in the big Ramco pits, there was ore in the pit and

1 then that's where Cameron Mining Company went
2 underground to mine some of that. And other people
3 went underground briefly to mine ore that was left
4 in the side of the pits, because they couldn't --
5 the pit might be 20 feet high and they couldn't mine
6 it because they had that overburden to take, so
7 they'd scoop it out of the side of the pit until
8 they said they couldn't, until it got diluted so
9 bad.
10 Q Could you --
11 A But underground mining, you got to be --
12 you've got to have roof supports and all that, so
13 there wasn't really much of that done.
14 Q Was there some uranium in all of the host
15 rock in this area?
16 A Oh, yeah. In the pits you mean?
17 Q Well, and then if you went beyond the pit,
18 what would you see?
19 A There would be maybe halos around the
20 high-grade ore, I mean the better ore. But there
21 would be areas out there that would be completely
22 barren, I know, where they drilled. There would be
23 a pod of uranium here and another pod over here and
24 so forth, and there would be actually barren rock in
25 between or so low that it couldn't be mined. And

1 there is -- there was uranium in the groundwater
2 there, and so even some of these windmill waters had
3 uranium in them.
4 I think a lot of this information might
5 have been taken from that report referred to
6 yesterday by -- I can't remember -- John Chapman
7 maybe, who gave the talk at the mining convention in
8 Denver because that's a real good summary. And he
9 was actually mining, so he wrote a report about it.
10 It's something we looked at yesterday. He talks
11 about how they used Geiger counters to control the
12 grades.
13 Q Okay. Let's go to Page 11 of Exhibit 65.
14 In this section, it looks like you briefly
15 describe the leased land that Rare Metals mined.
16 A Right. Yeah, this is not in my Arizona
17 Bureau of Mines -- Arizona Geological Survey. This
18 is only in this report where I went through and had
19 a certain write-up on each of the Rare Metals mines
20 for the Nez Tsosie case. And this is where you'll
21 find an individual write-up on each of the Rare
22 Metals mines, no other place that I know of.
23 Q Well, that's one question I have is: It
24 doesn't look like you wrote a summary on all of the
25 Rare Metals mines.

1 A There must have been. I can't remember
2 why I picked these out. Maybe because that's -- I
3 mean that's what Mr. Woods wanted me to do. I don't
4 know.
5 Q The lawsuit might have only included some
6 of them?
7 A Yeah. I mean, obviously we go from 1 to 2
8 to 3, and then we skipped 4, of course, and 5, and
9 then start with 6 again. So and then it does
10 include up to 14 and then went to the Ramco. So it
11 must have been the big -- the larger mines or
12 something. I can't remember why I did this, to tell
13 the truth.
14 Q Okay. If you look on Page 12 at the top,
15 this is the paragraph on Charles Huskon No. 1.
16 A Oh, 12.
17 Q So the first full paragraph describes when
18 mining was complete at Huskon 1, the pit was 600
19 feet long, 200 feet wide, with a high wall of 15
20 feet.
21 Does that sound right for the size?
22 A Yeah, that's something I wrote from my old
23 field notes and things.
24 Q That was my next question. Where would
25 you have gotten this information about the size of

1 the pit?
2 A Personal observation out there and my old
3 field notes. Maybe not only my field notes, but
4 field notes in the Flagstaff office, because some of
5 this might have been done with my coworkers that
6 measured pits, wrote up descriptions of the pits and
7 things. Or it might be from the certification
8 reports, you know, because the certification
9 reports -- the final visits had descriptions of the
10 workings when they were -- after they were
11 abandoned, you know. And I remember doing that.
12 They'd say, Well, this mine is so big by so big and
13 so deep, and that's what it looked like after it was
14 abandoned, so maybe that's where this -- that was in
15 the certification report, so...
16 Q Can we look on Page 15.
17 A 15?
18 Q Yes. At the top in the paragraph that
19 continues on Charles Huskon No. 14, you mention:
20 When the author located the mine in 1958, it could
21 hardly be identified, as the small pit was nearly
22 filled with blow sand.
23 A Blow sand.
24 Q What is blow sand?
25 A That's sand the wind is blowing in. It's

1 not -- it's really not in the form of sand dunes;
2 it's just sand that's blown all over the surface.
3 Q Some of the pit filled back --
4 A Yeah. The wind had blown sand from dust
5 storms and all that into the pit, and -- oh, yeah.
6 Q Now let's look at Page 21. In the last
7 paragraph: When the leases were terminated, the
8 area of the mines were returned to the Navajo Nation
9 with the approval of a representative of the
10 Secretary of the Interior.
11 What did the representative approve?
12 A That -- as I remember, to cancel a lease,
13 they had to have a joint meeting between someone in
14 the mining department in Window Rock -- and the BIA
15 was represented by a USGS man out of Roswell, New
16 Mexico, and that was the Secretary of the Interior's
17 representative. And because the USGS in Roswell was
18 the BIA representative and they would always come
19 out to make inspections to the mines also and they
20 had to fill out a form: The amount of mining here
21 is commensurate with the amount of royalty being
22 paid. They were the royalty checkers for the BIA.
23 And I remember seeing more of those -- those
24 Roswell, New Mexico people.
25 There were the USGS Conservation Division,

1 and they were always out looking at the mines about
2 every six months or so. And I saw one of their
3 forms they had. It was, like I say, the amount of
4 mining that's taking place in the last six months
5 has come out commensurate with the number of tons
6 that royalty was calculated on, or something like
7 that.
8 And so this is a statement out of, I
9 think, the mining -- the mining permits or the
10 leases of our Secretary of Interior, but it was
11 really a BLM representative from New Mexico, and
12 that was...
13 Q Was there any discussion at this time
14 about reclamation-type issues?
15 A Well, I have heard -- I've heard it said.
16 This is all hearsay. That they would all get
17 together, the chapter person and the mining
18 department and the USGS and anybody else -- and the
19 company. The had a company man with him. And they
20 would say -- and maybe the USGS or somebody would
21 recommend, Well, you ought to put a barbed-wire
22 fence around this pit to keep the sheep from falling
23 in, and that would be it. Nothing about pushing
24 waste back in the pit or anything. It was just
25 protecting it from sheep. And I...

1 Q Well, finish your thought, and then --
2 A That was -- that was -- I saw a report
3 someplace in the AEC files of one of these mine
4 closures reports, and that was it, just more worried
5 to protect the livestock than anybody else.
6 MR. NEUMANN: Okay. We need to take
7 a break to change the tape.
8 VIDEOGRAPHER: The time is
9 approximately 2:00. This is the end of Tape No. 9
10 in the deposition of William Chenoweth. We're going
11 off the record to change tapes.
12 (Recess taken.)
13 VIDEOGRAPHER: We are on the record.
14 This is the beginning of Tape No. 10 in the
15 deposition of William Chenoweth. The time is
16 approximately 2:07.
17 Q (By Mr. Neumann) Bill, what I would like
18 to do now is have you take a highlighter and mark on
19 the map behind you the mining claims we just went
20 through.
21 A Could you sit over here and could you read
22 off the mine name and then the number and I can mark
23 it here.
24 Q I will.
25 A That would be the best way to do this

1 because I only have one hearing aid today and I
2 can't hear very good in this ear.
3 Q Okay.
4 A But you can say -- give a mine name and a
5 number and I can -- I can kind of outline the mining
6 permit with this green highlighter.
7 Q And first remind us what this map is.
8 A This is a map that has a very strange
9 background. This is a map -- it's a bad copy
10 because I -- somehow something got cut out of the
11 middle and things got marked up down here.
12 But the original map was given to the
13 Flagstaff office of the AEC when it was established
14 in 1957. I think it was given to us a few years
15 later by Mr. Page Blakemore of the Cameron Mining
16 Company. And he said this will give you an
17 introduction of the Cameron District mining permits
18 and mining names and certification reports, and we
19 said, Boy, this is great stuff.
20 And I don't know who drew it. I don't
21 think Rare Metals had anything to do with it. I
22 don't think Cameron Mining Company had the resources
23 to do it. Whoever drew this up -- and the tribe
24 didn't, because I showed it to them over at Window
25 Rock and they said, Oh, that's a great map. I

1 wonder where they got the data.
2 And, anyway, it's an index to all the
3 Cameron mines and mining permits. A lot of these
4 names up here don't have mines on them. They have
5 little cross-picks for the ones with mines on them.
6 But it was -- and it's got a geologic base to it.
7 And it's a mystery map because nobody seems -- in
8 this day and age, nobody seems to know who
9 originated it.
10 Q Okay. The first mine is Charles Huskon
11 No. 5, which is No. 1.
12 A That's...
13 Q And in your '93 report, I see that only
14 320 tons came out of this mine.
15 A Yeah, I have been there -- oh, I have been
16 to all of them, but it was just a pile of petrified
17 wood impregnated with uranium.
18 Q And this one, you also had a note. It was
19 dropped by...
20 A Arrowhead, wasn't it?
21 Q Dropped by Arrowhead and picked up by
22 Utco.
23 A Yeah.
24 Q The next mine is Charles Huskon No. 6.
25 That's mine No. 8.

1 A Yeah. 8.
2 Q This mine shows 746 tons. Does that sound
3 right?
4 A Yeah.
5 Q Was it a small mine?
6 A Let's see. Where was it? Yeah. I don't
7 recall that particularly, but probably no doubt it
8 was because only 700...
9 Q Okay. The next mine is Charles Huskon No.
10 12, which is Mine No. 20.
11 A Yeah. Yeah, that was a shallow, open pit
12 right by the highway.
13 Q Bill, can you turn around when you're
14 talking and --
15 A Oh, I'm sorry. This is number what now?
16 Q The one you just marked --
17 A Number 12.
18 Q Shows 1,779 tons.
19 A I remember that very distinctly. I made a
20 map. It's a shallow, open pit. Must have been
21 found on the surface by walking over it, it's so
22 shallow.
23 Q I have another question. Each of the
24 mines you have traced is a different shape. Can you
25 tell me a little bit about how they would draw their

1 claims when they staked them.
2 A Now, some of these -- these are all mining
3 permits, not Navajo claims. And it just depends on,
4 I guess, how many acres. They tried to keep the
5 acres as small as they could, because -- but Rare
6 Metals was not limited to the number of acres like
7 some companies were, because they had a mill. If
8 you had a mill, you could have unlimited acres
9 acquired on the reservation. If you didn't have a
10 mill, you could only have 960 total. But since Rare
11 Metals had a mill, they could have as many acres as
12 they needed. And it's probably somebody said, Well,
13 based on our looking at the area, that rectangle
14 there, that's only the acres we need. It just
15 depends. Some of these guys, they would get regular
16 squares here.
17 Q The next mine is Charles Huskon No. 1.
18 That's Mine No. 29.
19 A Yeah, it's a very small area.
20 Q And that was a bigger mine, almost 23 --
21 A That was -- that was on the side of a hill
22 there, and it was a big rim-stripped area.
23 Q 23,000 tons.
24 The next mine is Evans Huskon No. 2.
25 A Charlie told me that he gave it to his

1 son. It was his mining permit, but he got it all
2 transferred to his son. That's No. 2, which is,
3 what, 37?
4 Q 39.
5 A Oh, 39. Okay.
6 Q That was a fairly big mine as well.
7 A Yeah, uh-huh.
8 Q Almost 12,000 tons.
9 The next mine is Charles Huskon No. 14.
10 That's Mine No. 49.
11 A That's a little rinky-dinky pit.
12 Q It shows --
13 A A small pit.
14 Q In your '93 report, it says 46 tons, and
15 it lists Rare Metals, 46 tons. Okay.
16 The next mine is Charles Huskon No. 3, and
17 that's Mine No. 60.
18 A Mine 60?
19 Q 60.
20 A Yeah, okay. It went off over here
21 somehow, but it was -- it was -- this map shows
22 there's a series of three big pits, and that's a
23 contention I have with some of the Navajos. They
24 said, You don't have enough mines in Cameron. We
25 don't really have mines. We have properties.

1 That's counted as one property, one mining permit,
2 and yet you've got three pits on it. So that's why
3 our numbers never matched with some of the people at
4 Window Rock.
5 Q That was a fairly big mine, it looks like.
6 A Oh, yeah.
7 Q 27,000.
8 A It was a big mining permit with three big
9 pits on it.
10 Q The next mine is Charles Huskon No. 7, and
11 that's No. 71.
12 A I believe -- I believe -- 71, I think, is
13 over here in this cutoff area. I'm checking, but it
14 seems like -- okay. Okay. What's the next one?
15 I'm going to put 71 question mark.
16 Q The next mine is Charles Huskon No. 10,
17 and that's No. 76.
18 A See, it was -- it was a long, narrow
19 mining permit there with three -- with two big open
20 pits on it.
21 Q The next mine is Charles Huskon No. 8, and
22 that is --
23 A 79.
24 Q 78.
25 A Oh, yeah. Here it is.

1 Q That was a small mine?
2 A Yeah.
3 Q The next mine is Charles Huskon No. 26.
4 That's No. 83.
5 A Yeah, it's right here. Uh-huh.
6 Q The next mine is Charles Huskon No. 11.
7 It's 84.
8 A It's right here.
9 Q And then the three Ramco mines: Ramco 20,
10 21, and 22. They are 93, 94, and 95.
11 A Okay.
12 Q Can you move just a little and let him
13 see.
14 A Their mining permit for their big
15 rectangular mining pit is going northeast,
16 northwest, southeast, but that ore trend was going
17 east-west in here.
18 Q Okay.
19 A You can see there was many open pits on
20 all the Ramcos.
21 Q Only a few left. The next one is Charles
22 Huskon 17, and that's No. 105.
23 A 105. Okay. 105. Oh, here we are.
24 Q Charles Huskon No. 9 is 119.
25 A Oh, that's down here. Here. I'll get out

1 of the way, but I don't know if you can get it, it's
2 so low.
3 Q Okay. Only three left.
4 Charles Huskon No. 4 is 138.
5 A Yeah, that's the big one down here.
6 Q Okay. Ramco 24 is 147.
7 A 147.
8 Q And the last is Section 9, which is 165.
9 A Section 9. I'll just do the east half of
10 the section.
11 Q Okay. That's it.
12 A That was a good way to do this.
13 Q All right. You can sit down again.
14 That's very helpful.
15 THE DEPONENT: I don't think you can
16 get this at the bottom, can you?
17 VIDEOGRAPHER: I did. Thank you.
18 THE DEPONENT: Oh, you did. Well,
19 I'll get out of the way.
20 VIDEOGRAPHER: No. I'm already set.
21 Q (By Mr. Neumann) Now, on Exhibit 65, which
22 is your report --
23 A Uh-huh.
24 Q -- and Page 24, the end of that first
25 paragraph, you say: Only the Charles Huskon Nos. 6,

1 12, and 14 are within the Shinarump Member.
2 A Uh-huh.
3 Q And yesterday we discussed that.
4 A The Shinarump is the geologic unit below
5 the petrified forest member, and it's a harder
6 sandstone than the soft sands in the petrified
7 forest member, both of the Chinle Formation,
8 C-H-I-N-L-E -- L-I -- L-E. C-H-I --
9 Q Yes.
10 A Is it E or I at the end?
11 MR. TAYLOR: E.
12 THE DEPONENT: E. Okay. Chinle.
13 Q (By Mr. Neumann) So these were the ones
14 that were likely not rim-stripped.
15 A Yeah. They're the -- typically the mines
16 in the Shinarump are not as large or productive or
17 higher grade than those in the petrified forest, is
18 what -- what mining finally turned out. Because I
19 know -- I know the Huskon 11 is in the Shinarump and
20 so is Section 9. But I guess they weren't described
21 in this report for some reason.
22 Q And do you think Section 9 would have been
23 rim-stripped?
24 A Pardon?
25 Q Do you think that AEC rim-stripped Section

9?

A No, I don't think so.

Q Okay.

A It wasn't Huskon -- it wasn't Charlie -- I think -- because in early days and what Hinckley said, I think AEC only rim-stripped Charlie's properties. I mean, that's an assumption.

Q In your 1993 report, you mention there were 45,000 linear feet of rim-stripping?

A Yeah.

Q How did they count that number?

A Probably linear feet. Like if they stripped an area from here to here, they would count that number of feet. It would be linear feet, not square feet or anything. That's the way it was counted up at Sanostee that I'm familiar with. When the AEC stripped that, they said there were so many 2,000 square feet. Well, that was linear along the cliff face, and I assume that's what Hinckley did. I don't know.

Q To get the area, then, you would have to look at the width of the --

A Yeah, the linear feet.

Q -- and then multiply it by the width of the bulldozer blade?

1 A Probably, or maybe you had some caving in.
2 Probably you went along the cliff with a bulldozer.
3 Yeah, that would be the distance, and then the
4 height or all that would be dependent on the caving
5 of the rock, I guess. It's hard to say.
6 Q Would there have been field notes or some
7 kind of form that reflect the linear feet?
8 A I don't know. I think -- all I have ever
9 seen is a geologic report. So many linear feet were
10 done in such an area, but -- and Hinckley says 15 --
11 I think he says 15 different areas were stripped.
12 So he must have added up the footage on each one to
13 get a total number. I don't know. It's too bad
14 that he didn't keep better records.
15 Q Another way to do it, maybe, would be to
16 look at the surface area of the orebody, I guess.
17 A I don't really know how you could
18 calculate or how you could determine where this
19 footage was distributed on the different properties.
20 Q But the goal of the stripping was to
21 expose the entire surface area?
22 A Yeah.
23 Q You mentioned yesterday that the AEC
24 geologists would call in the team to do
25 rim-stripping when they thought it was appropriate?

1 A Yeah. What I would -- I never got
2 involved in that, but I was very close to the
3 rim-stripping in the Sanostee area, S-A-N-O-S-T-E-E.
4 And the geologist looked here and here was
5 mineralization along this cliff, and some of it was
6 covered by overburden that had fallen down, sloughed
7 down, you know, like landslide material. And he
8 made a recommendation to Grand Junction, and I guess
9 somebody said, Okay, we've got a drilling camp there
10 with a bulldozer. Let's just go do that. And then
11 they went in and stripped it. But -- so somebody
12 had to approve it, and I don't know who did. I
13 never got involved in any of that.
14 Q Do you know who would have approved it
15 for --
16 A Probably the head of the Exploration
17 Division or Mining Division. It was here in Grand
18 Junction, I'm sure. It wasn't done by the project
19 engineer, because there were bucks involved, dollars
20 involved, so somebody had to approve it.
21 Q You mentioned Sanostee, and that was our
22 Exhibit 43. You had written a report.
23 A Yeah, and there was rim-stripping done
24 there.
25 Q Yes. And do you remember which geologist

1 would have recommended it to --
2 A No. It might have been -- it might have
3 been John Blagbrough, because he was the project
4 geologist for many years.
5 Q What about at Cameron, can you think of
6 who might have recommended the rim-stripping?
7 A No. That was -- by the time I got to
8 Cameron, they were mining pretty well.
9 Q Let's talk about the types of inspections
10 that would have happened at mine sites. Can you
11 tell me which agencies or divisions or types of
12 government people had a reason to inspect the
13 Cameron mines?
14 A Well, there were the feds, the Bureau of
15 Mines people that we've talked about that came out
16 of Denver. And then the tribal mining department, I
17 think, had three or four young mining engineers that
18 were mine inspectors, and they were out there
19 regularly. They traveled all around the
20 reservation. One of them quit the tribe and went to
21 work for the AEC. I don't know why, but -- his
22 name -- I knew him pretty well. And he enjoyed
23 working for the tribe because he got to get out all
24 over, travel all around and not too much paperwork,
25 but he decided to work for the AEC instead.

1 And then the State had mine inspectors
2 based in Phoenix, and they weren't too welcome on
3 the reservation because the Navajo said, We have our
4 own and we have the feds. We're not -- you don't
5 need to come out and inspect us. So there are very
6 few State mine inspector reports on the reservation
7 mines.
8 And the State mine inspector in Arizona,
9 like Colorado and New Mexico, has to put out an
10 annual report showing the mines he visited, the
11 number of people involved and all that. And I have
12 looked at all these during the RECA period and they
13 are missing years in there where they never got --
14 never got on the reservation. Even to the big
15 Kerr-McGee mines, there are no State inspections or
16 blanks in their annual report. So that is a true
17 statement, I guess, that the tribe didn't want them
18 on the land.
19 Q What about -- you mentioned sometimes the
20 AEC would visit. If someone called for an
21 evaluation, there was a visit?
22 A Oh, yeah. But that was more -- that was
23 more in prospecting, not mining. If a prospector
24 had something in the early days, the AEC was
25 encouraged to send somebody out to make an

1 evaluation to help him know what he had, because a
2 lot of these prospectors never had seen uranium
3 before.
4 Q And I think you mentioned AEC visited as
5 part of the certification programs.
6 A Oh, yeah. That was -- that -- I'm sorry.
7 If a property was certified and producing, they were
8 visited frequently, maybe every other month or so --
9 or maybe every month, I think. I forget what the
10 regulations were. But if they were producing,
11 somebody had to go out and say, you know, is the
12 amount of uranium being claimed for bonuses
13 commensurate with the bonus payments made or
14 something like that, which was on these forms we've
15 looked at, you know, no fraudulent involved.
16 Yeah, that's right. The AEC inspected
17 certified properties until they were paid out and
18 claimed their complete $35,000.
19 Q And how often do you think the Bureau of
20 Mines, the first one you mentioned, how often would
21 they have visited?
22 A Like I said, I never heard or saw of any
23 Bureau of Mines people in Cameron. I saw the tribal
24 people. But I think -- I think Kerr-McGee said
25 maybe they came every two months to the Lukachukais.

1 I don't know. I can't remember exactly, but they
2 weren't there all the time. They came out of Denver
3 and wrote the reports like we have seen here in the
4 files.
5 Q You mentioned also that Frank McGinley --
6 A That was the milling people, and that was
7 in the Processing Division. I know they visited the
8 mills with an AEC contract on a monthly basis. And
9 after -- after the exploration was -- projects were
10 completed in 1956 and we got into the so-called
11 production capability stuff, we were supposed to
12 visit each operating company once a month. But that
13 was in visiting the mines.
14 I would go and talk to Kerr-McGee at
15 Shiprock or Rare Metals at Tuba City. But then all
16 the little Ma and Pa uranium mines, you had to go
17 look those guys up, like Thomas Clani, C-H-L-I --
18 C-L-I-N-A-I, Clani, and Paul Shorty and those guys.
19 I'd contact them, if I could find them, to see what
20 they were doing. They weren't really doing much,
21 maybe 14 tons a month in a mine or something. But
22 we had to make a report about what the industry was
23 doing.
24 This was mainly after the -- after the
25 November 24th announcement and things slowed down

1 considerably on exploration. We were supposed to
2 keep up with that to see if the industry was
3 so-called viable.
4 Q Do I remember right there was an AEC camp
5 at Cameron as well? Was there trailers and a camp?
6 A Yeah, I think -- I think in the early
7 days, Hinckley might have had a trailer -- had a
8 trailer there. And then after him, a guy named
9 Irving Gray had a trailer there probably in the
10 Cameron trailer park. And that was their field
11 office.
12 And then by 1957, they were cutting down
13 on field camps and putting people in towns, and
14 that's why I got sent to Flagstaff. And those
15 guys -- I think they got mad and quit or something.
16 Hinckley went back to school and got a master's
17 thesis at the University of Utah on his work at
18 Cameron, which you probably have a copy of and I
19 have never seen. But Irv Gray, he quit and went to
20 work for a uranium company, I think. But, anyway,
21 they were -- they were the first early geologists in
22 the Cameron area before I got there.
23 Q So would a lot of AEC employees show up to
24 work at the Cameron mines or how did that work?
25 They had a camp right nearby.

1 A Well, there was only one guy. When Irv
2 Gray was there, he was there, and he was out
3 studying the mines and making reports on --
4 reporting the drilling and all that, so there was
5 only one person there. And then when they set the
6 office up, there were three of us, so -- but we had
7 the whole state of Arizona so we were spread pretty
8 thin. But we didn't bother the miners or anything
9 like that.
10 Q When there was a drilling program, were
11 these people there more often at the site?
12 A You mean AEC drilling?
13 Q Yes.
14 A We didn't all stop when this production
15 capability stopped. But when we were drilling, it
16 wasn't really -- well, let's say on Cove Mesa where
17 we were drilling, VCA was mining in the rims and
18 things. But they were doing their thing mining and
19 we were doing our thing drilling behind the mines.
20 Q But someone from AEC would be there during
21 each day of the drilling program?
22 A Yeah, if there was somebody on the drill
23 rig, all the -- every time they -- if a drill was
24 working, there was an AEC guy there because they
25 were parked at the bottom of the hole and there

1 would be a -- and the logging truck was there also,
2 so there was always somebody around the drill
3 because -- to log the cuttings and all that. But we
4 didn't bother the miners. Maybe -- even the small
5 miners got bothered once a month. Or you couldn't
6 find them. Like Paul Shorty, he had a mine, but you
7 could never find him. You talk to his miners, Well,
8 we might get a few tons this week.
9 Q Is that all the AEC geologists would do,
10 is watch the drilling or would there be other
11 interaction at the sites?
12 A Oh, yeah. We -- well, on the drilling
13 projects, people were assigned to drilling projects.
14 And during the drilling projects, which ended in
15 '56, there really wasn't -- the Mining Division
16 people were out there making certified visits on
17 certified properties and all that. And then when
18 the drilling stopped, things kind of changed, and
19 field offices were established all around. And the
20 geology staff took over much of the mine visits
21 there, at least that's what happened in Cameron.
22 Q And how did AEC share the results of its
23 drilling with the mine operator?
24 A Well, we really never -- in the
25 Lukachukais, it's hard to drill without getting on

1 Kerr-McGee leases. And I think -- I can't tell you
2 how that was done, because I left the area. On the
3 Cove Mesa, we did share that drilling with the
4 leaseholder, VCA, and then we also sent stuff to
5 Grand Junction and they were supposed to send it
6 down to Window Rock. That was our agreement with
7 the mining department that we would share -- after a
8 drilling project was completed, they were to send
9 Window Rock a drill-hole map and geologic logs of
10 all the drill holes. I don't know if that took
11 place. It was supposed to have taken place, and I
12 know Window Rock got some of our drilling, but who
13 knows.
14 Q So at Cove Mesa, you mentioned VCA was
15 mining at the time you were drilling?
16 A Uh-huh. They were mining along the rim.
17 See, Cove Mesa was a government lease. It had
18 been -- it had been leased from the Navajos by a
19 civilian company that was doing geologic work for
20 the Manhattan District, so when the Manhattan
21 District became AEC, AEC acquired the Cove Mesa
22 lease. That's the only thing on the reservation the
23 government ever controlled as a lease.
24 And so AEC actually leased it and
25 basically owned it for a while, and so we drilled it

1 to develop reserves on our lease, and VCA was
2 awarded the contract to mine that. So it was sort
3 of a different situation there that it was a
4 government lease and AEC was drilling ore out of
5 that for VCA to mine. It was a very different
6 situation.
7 VIDEOGRAPHER: The time is
8 approximately 2:37, and we're off the record.
9 (Off the record.)
10 VIDEOGRAPHER: The time is
11 approximately 2:38, and we're on the record.
12 Q (By Mr. Neumann) Bill, do I remember right
13 that at one point, the office you were in had
14 responsibility for the area that included the San
15 Mateo mine?
16 A No. I was -- when I got transferred to
17 Grants in 1961, I think it was, I still had -- I
18 alone had responsibility for all of Arizona again,
19 and there was still mining going on in the Lukis and
20 the Carrizos and Cameron, and I think that was it.
21 And I used to have to make a monthly trip over
22 Arizona to check on what was going on. And I had
23 very little involvement in Ambrosia Lake, but
24 because I was there, I helped out on a few projects
25 and learned the area.

1 Q And did you know your counterpart who had
2 that responsibility for San Mateo?
3 A No, huh-uh. I don't know.
4 Q We just talked about a lot of different
5 kinds of inspections that occurred in the Cameron
6 area.
7 A Uh-huh.
8 Q Do you think similar inspections occurred
9 in the Grants District and in San Mateo?
10 A Well, I know -- you look at the New Mexico
11 Mine Inspector reports -- because the early days at
12 Ambrosia Lake, the sandstone was full of water and
13 very soft and was always caving and they were having
14 mine accidents. And so the federal inspectors were
15 really after them to do a lot of timbering and
16 things like this, and it did cut down on the mine
17 accidents.
18 But yet, the feds -- you read those annual
19 reports from the New Mexico Bureau of Mines, they
20 were out there at Ambrosia Lake quite a bit. But I
21 can't tell you anything about San Mateo, except I
22 have been by it a few times afterwards.
23 Q Can you think of another instance where
24 AEC performed drilling and there was an operator
25 mining at the same time?

1 A Not nearby. I think the nearest I can
2 remember nearby would be on Cove Mesa with the
3 government lease. Now, the drilling we did on King
4 Tutt Mesa -- is that where -- there were those few
5 mines. King Tutt Mesa is this big mesa here. There
6 were some uranium mines on the rim and we were
7 drilling back here. And we found that one of the
8 ore trends from this mine here went through the
9 mesa, and there were a couple big mines developed on
10 that ore trend that we found. But we weren't really
11 drilling up behind the mine; we were drilling, oh,
12 several hundred -- maybe even 200 yards, 200 feet,
13 behind it or something.
14 Q Yesterday we talked --
15 A And that was -- that was really part of
16 the program, to find new -- more ore as fast as we
17 could. But as the program slowed down, we didn't do
18 that. We drilled more in wildcatting type of
19 drilling to find new areas.
20 Q Why did you want to find the ore as fast
21 as you could?
22 A That was the AEC program. In the
23 beginning of the program, the thing was get uranium
24 found and milled and into yellowcake for the Cold
25 War as fast as you could. That was the whole urge.

1 Q Yesterday we talked about a drilling
2 program at East Carrizo, and the report, which is
3 Exhibit 17, mentioned that VCA and Climax were
4 nearby. And do you recall the interaction between
5 the AEC drilling and VCA, for instance?
6 A No, no. I should say VCA didn't like to
7 spend money drilling, so we did drill closer to
8 their mines than other people's mines. But it
9 wasn't -- because in the beginning, we drilled
10 within 50 feet of some of these old mines, hoping we
11 would find the extension for them, because, as I
12 say, VCA said, Well, you guys can drill, we don't
13 want to, and so we did.
14 Q Were you hoping that if you found ore,
15 they would come and mine?
16 A Oh, yeah. And they did. This was over in
17 the Rattlesnake area in the Northwest Carrizos. We
18 found them quite a bit of ore drilling on their
19 leases -- not a lot, but we found quite -- we got
20 them to have the ability to open up some old mines
21 because we found ore behind their mine.
22 That's described in my Bollin and my and
23 Maise's report on the Rattlesnake drilling project,
24 how we drilled behind the mines and found some ore.
25 Q How was the decision made to drill there?

1 Did the operator ask for that help or did AEC --
2 A Oh, they sort of wanted -- VCA kind of
3 asked for drilling. The other people were just
4 happy we did. Somebody -- I don't think we ever
5 refused to drill behind a mine. But this was in the
6 very beginning. Then as the industry got bigger and
7 drilling techniques got better and there were
8 drilling companies available to drill for people,
9 the AEC stuff got phased out every year. And as I
10 remember, the last drilling we did was in the
11 Lukachukais, and somebody said, That could be
12 because Senator Kerr was on the committee back in --
13 that was a joke we had.
14 Q I recall seeing in some of the reports
15 that one way to predict where to look for uranium
16 was to assess the metal content of the soil or the
17 layer.
18 A Oh, that was tried -- that was something
19 that USGS tried, and it did work for a shallow
20 deposit. They could sample -- well, certain plants
21 absorb selenium and other things. And if you can
22 find a group of selenium-bearing plants, selenium
23 was associated with uranium, and that was a good
24 indicator. That was geobotanical prospecting on
25 shallow deposits down at Grants that worked pretty

1 well.
2 Q What kind of levels of metals like
3 selenium --
4 A I don't know. But these -- this locoweed,
5 astragalus -- I can't spell it. That's the generic
6 name for locoweed. It was a selenium absorber, and
7 if you could see big clumps of astragalus, you're
8 pretty sure there's some uranium underneath it
9 because uranium and selenium were -- selenium was
10 associated with many uranium ores.
11 Q Another metal I saw was molybdenum.
12 A Oh, yeah. That was -- some of the Cameron
13 ores did have molybdenum in them, and that created
14 problems at the mill. The Huskon 11, I remember
15 they said the mill hated it because it was full of
16 selenium and that would screw up their recovery
17 circuit. And in a report on the -- I think Columbia
18 University did on the Cameron area, mineralogy in
19 the Cameron area, they noted that was a very unusual
20 accumulation of molybdenum in that uranium ore
21 there, on Huskon 11.
22 Q At the Cameron mines, then, if those
23 metals were found, I gather, during the
24 rim-stripping, you would be pushing overburden that
25 had those metals in it?

1 A Oh, sure. They would get out in the soil
2 and rain would wash it away. I'm sure that
3 rim-stripping stuff that was pushed off laid there
4 and weathered and who knows what happened to the
5 metals in there.
6 Q I want to ask a question about the Union
7 Mine Development --
8 A Okay.
9 Q -- Corporation. And yesterday we looked
10 at a report that you co-authored on drilling and
11 geologic studies in the Northwest Carrizo area. The
12 easiest way, I think, to ask the question is: In
13 the reference section, there are two reports that
14 appear to recount studies done by Union Mine
15 Development Corporation.
16 Are you familiar with the work there?
17 A Oh, yes.
18 Q Can you describe first for me: What was
19 the Union Mines Development Corporation?
20 A Well, Union Mines was a civilian
21 contractor, the Manhattan Engineer District -- the
22 Army went to Union Carbide, who was already out here
23 buying -- processing mill tailings and getting
24 uranium out of the mill tailings and all that. And
25 the Army went to Union Carbide and said, You're

1 already involved in uranium procurement for us. We
2 need to have some geologists do a uranium resource
3 assessment program, and they -- anyway, they coaxed
4 Union Carbide into doing this.
5 So Union -- Union Mines was formed in New
6 York City, and they went out to universities
7 recruiting young geologists to work for them. And
8 the idea was they'd give them a draft deferment.
9 They wouldn't have to get drafted in World War II if
10 they did this geologic work for the Army Corps of
11 Engineers. And they recruited people all over the
12 country, and they formed -- they had a field office
13 here in Grand Junction in the First National Bank
14 building. And I know this because all the Union
15 Mines geologists joined the AEC afterwards.
16 And, also, the Army wrote a big report
17 about what Union Mines did. And they went out and
18 studied the whole areas where uranium had been
19 reported in the literature. And down on the
20 reservation, they studied the Carrizo Mountains in
21 quite detail. And they went out and mapped --
22 walked the rim, had very primitive Geiger counters,
23 and they mapped the rim and reported where on the
24 rims they found radioactive material, and they got
25 into the mines and they mapped the mines. And they

1 made these great big, nice maps showing what they
2 found and where they recommended drilling could find
3 uranium resources. And we used these maps in the
4 AEC on some of our first drilling projects in the
5 Carrizo Mountains.
6 And they took -- they took samples and
7 they combined all this and they issued a report at
8 the end of how much uranium they thought a good
9 exploration program would develop in the Carrizo
10 Mountains, and I forget what the number was. And
11 then they said an additional so many tons could be
12 found based on geologic projections.
13 And, anyway, they laid the fieldwork --
14 they laid the foundation -- first of all, the Army
15 said, No, we are not going to do any drilling. I
16 guess they -- we just wanted you to get the basic
17 information. And that all was turned over to the
18 AEC, and that was the foundation -- Union Mine's
19 work was the -- in the Four Corners area was the
20 foundation of the AEC Exploration Division.
21 Those first drilling projects we did in
22 Western Colorado and Northeastern Arizona were all
23 based on Union Mine's geologic studies, so they
24 really laid the foundation for the AEC exploration.
25 And they wrote fantastic reports, drew fantastic

1 maps, and...
2 Q Do you know, are those reports available
3 somewhere?
4 A Yes, I do, because there was a screwup in
5 the government. They had them in the library down
6 here, the site, and they didn't know what to do with
7 them. And some administrator says, Oh, let's give
8 them to the Mesa State library. And Mesa State
9 said, We'll take them. Then one of the
10 administrators says, Hey, you broke the law. These
11 are federal records. The National Archives get
12 first crack at them. Well, they had a big hassle
13 and they ended up -- the museum still has them. And
14 they have these big flat map clamps of all the Union
15 Mines maps and file folders of all these Union Mines
16 reports. It's a fantastic bunch of work that Union
17 Mines did.
18 Q This is at a museum?
19 A The Museum of Western Colorado. They're
20 in the Lloyd Files Research Library, because I have
21 used them quite a bit.
22 Q I believe there were also notes about the
23 Union Mines effort at -- let's see -- were they at
24 Cove and East Mesa as well?
25 A No, they -- what?

1 Q Were they at Cove and East Mesa as well?
2 A They were on Cove Mesa and East Mesa, but
3 they never got in the Lukachukais because they got
4 snowed out.
5 Q Do you recall anywhere else they were?
6 Were they at Cameron?
7 A No. The only -- oh, yes. Because U.S.
8 Vanadium, who was training these guys, they were
9 only interested in the salt wash member of the
10 Morrison, and that's where the uranium at Uravan's
11 found. And they weren't interested -- and these
12 were the Jurassic age rocks. They weren't
13 interested in any other formation but the Morrison.
14 And so Cameron's in Triassic age rocks, older rocks.
15 They ignored all Monument Valley,
16 anything -- White Canyon, anything where -- anything
17 where uranium had been reported in the Chinle
18 Formation, they ignored that for some reason, mainly
19 because the guys that trained the Union Mines guys
20 weren't familiar with these areas. And so they only
21 evaluated the Morrison Formation.
22 And besides that, they looked in the
23 literature -- Union Mines looked in the literature
24 and they saw where uranium had been reported in some
25 of the copper mines in Southern Arizona and copper

1 mining in New Mexico, and they went out and looked
2 at these areas. But this was all done looking for
3 vanadium, because they didn't want to use the word
4 "uranium" and get everybody wondering what was going
5 on. And a guy named John Harshbarger did an
6 excellent job in the Carrizo Mountains summarizing
7 all this.
8 Is he your reference there? Probably so.
9 Q Yes. Harshbarger.
10 A Yeah, he -- I think -- he estimated from
11 all the sampling and all the geologic notes how much
12 uranium he thought could be produced in the Carrizo
13 Mountains, and he came, I think, pretty close in the
14 end, which was surprising.
15 Q Okay.
16 THE DEPONENT: That's H-A -- H-A-R --
17 Harsh, H-A-R-S-H-B-A-R-G-E-R, Harshbarger.
18 Q (By Mr. Neumann) I'd like to ask a few
19 questions now about the Grand Junction pilot mill.
20 You shared with us a copy of Mr. Merritt's text, and
21 it had a summary of all the mills.
22 A All the mills.
23 Q And he explained -- I'm looking at Exhibit
24 39, Page 14. I can just read you -- it's short.
25 But that one of the most important contributions of

1 the pilot plant program was in training of technical
2 personnel.
3 A Uh-huh.
4 Q And I think we saw a few other documents
5 say something similar, that the -- some of the
6 employees from the mining -- or the milling company
7 would come to Grand Junction to learn how the mill
8 operated?
9 A I guess, but also some of these guys left
10 the contractor to go work for private industry. I
11 don't know -- I don't know -- I don't really know
12 anything about a training program. I knew they had
13 a turnover of employees going into the industry.
14 That's maybe what he means. I really can't tell
15 you.
16 Q So you're saying the AEC had a contractor
17 to operate the mill in Grand Junction.
18 A Yeah, it was done by Gallagher and then
19 National Led.
20 Q And employees of National Led or Gallagher
21 might have left to join mining companies.
22 A Yeah. Like there was a guy here -- a man
23 here in town named Bob Beverly, a metallurgist, he
24 came out here to work for National Led, and in a few
25 years he went to work for Union Carbide as a

1 metallurgist. That's typical of what, I think, they
2 mean there, but I'm not sure.
3 Q Yesterday, we talked about Frank
4 McGinley's report on Grand Junction, and in it there
5 was a chart showing all of the different ore that
6 came through the pilot plant.
7 A Uh-huh.
8 Q The one I'm looking at -- I don't think
9 you need to look, but just for everyone else, is
10 Exhibit 48, Page 14. For instance, it suggests
11 Arrowhead ore from Cameron --
12 A Yeah.
13 Q -- came to the Grand Junction mill in
14 March of 1955. It looks like about 320 tons.
15 A Yeah.
16 Q Did you have an understanding of whether
17 these ore shipments were used to fine-tune or train
18 people on the specific mills?
19 A Yeah. That was the whole purpose of the
20 pilot plant, was this is a brand-new discovery, of
21 course. So they did all these tests and ran it
22 through and probably told Rare Metals, well, we
23 think this type of circuit with these chemicals
24 would be the best circuit to use to get your maximum
25 recovery. And then they ran it through the pilot

1 plant and made yellowcake down there, and I don't
2 know how they paid for that or what happened to that
3 deal. But that was common practice.
4 And then they wrote a separate report. I
5 have seen this report, I think, someplace in --
6 maybe down at the compound. They had -- they're
7 called WIN reports, W-I-N, prefix, No. 1 through 300
8 or something. And most of them are at the Mesa --
9 Colorado Mesa University library now. But they
10 would recommend to the company what the best process
11 was to recover the uranium at a new mill or
12 something.
13 Q In looking at the pictures and diagrams of
14 the Grand Junction compound and the pilot mill, it
15 looked fairly authentic in the sense that it had a
16 tailings pile and ponds.
17 A Oh, yeah. They had a tailings pile down
18 there, and one year, when the Gunnison River was
19 flooding, they used the tailings pile to build a
20 dike, which caused contamination in later years.
21 The Gunnison River was coming in, so they said,
22 Well, this is the best material, so they scooped up
23 the tailings and built the dike along the Gunnison
24 River to keep the facility from flooding.
25 Q Do you know whether one part of the

1 training at the pilot mill would be to teach people
2 how -- how to use a tailings pile or those ponds?
3 A They had two circuits down there, if I
4 remember -- well, I don't know. But it seems like
5 they had both an alkaline circuit using alkaline
6 leach, and they had an acid circuit, because that
7 was the two basic things they had then. And they
8 had both circuits down there, and they put the
9 tailings out -- in that one photo -- that one
10 artist's drawing, they did put the tailings out in
11 the tailings pond down there. But that's all been
12 cleaned up. That part of the site down there has
13 been turned over to the River View Technology -- is
14 that -- Corporation.
15 Q Were you familiar at all with the -- at
16 the mills, for instance, the Tuba City Mill, when
17 they decommissioned and stabilized --
18 A Huh-uh.
19 Q -- you didn't know any of those --
20 A No. I was long gone. I've read a Bureau
21 of Mines report about the tailings that were blowing
22 off the site there someplace. That's the only thing
23 I've ever read about that.
24 Q I was going to ask if you knew whether
25 Grand Junction experimented at all with tailings

1 stabilization.
2 A Not to my knowledge.
3 Q I can't remember if we discussed this, but
4 I saw in a report -- let's see -- Exhibit 47, which
5 is entitled: A Summary History of the Activities of
6 the Grand Junction Office.
7 A Oh, that was that report the three of us
8 wrote for a great big reunion we had for all the
9 former federal employees.
10 Q And there was mention in exhibit -- or
11 Appendix A at Page 9 that the Monticello plant was
12 the only AEC-owned ore-processing operation and
13 served the useful purposes of stimulating uranium
14 ore production in the area, providing processing and
15 cost data for the AEC to use in contract
16 negotiation --
17 A Uh-huh.
18 Q -- and providing personnel and facilities
19 for testing ore-processing modifications, health and
20 safety practices, and environmental measures.
21 Are you --
22 A Frank McGinley wrote that, and I know they
23 did do some work down there, if I remember right,
24 that they did some work on tailings stabilization
25 projects for many years. It's all gone now. The

1 tailings have been picked up and moved into a
2 regular disposal cell, but because the mill was
3 right there in town, they were experimenting -- I
4 read or heard about things that cut down
5 wind-blowing contamination, things like that. But
6 that was Frank McGinley's part. I don't know.
7 Q And one of the reasons for that
8 experimenting would have been to share with other --
9 A Oh, yeah.
10 Q -- mill operators?
11 A Uh-huh.
12 Q You mentioned, I think, you were in Salt
13 Lake City for a meeting on some Tuba City related
14 issues, maybe having to do with the mill. Do you
15 remember telling us that?
16 A No.
17 Q Where you might have met Mr. Kline and
18 others.
19 A No. The reason I used to -- well, after
20 that one man died, McKinney died down at Cameron, I
21 used to go up to the mill site once a month to talk
22 to Mr. Runke about what was going on, just general
23 information about where he was getting new ore from
24 for the mill, how much drilling they were doing and
25 all that. That's about my only -- is going to his

1 office at the mill. It wasn't every month. Maybe
2 it was every other month or something, because...
3 Q Do you know how AEC might have used the
4 processing and cost data from Monticello?
5 A They might have said, Well, we figure it's
6 going to cost so much to process this much ore, and
7 this would be when they would be renegotiating
8 milling contracts trying to get a better deal for
9 their buck. Maybe they were using -- using some of
10 the cost data, saying, Well, we figure it's going to
11 be -- cost this much to do this process and you are
12 charging us twice as much or something.
13 Because every time they would renegotiate
14 a contract, it was all done on -- like we talked
15 about, to give -- to give the AEC a good price and
16 also give that industry a reasonable profit, you
17 know. So they were always negotiating milling
18 contracts to do this, not all the time, but a
19 milling contract would come up for expiration,
20 they'd renegotiate it, and then the AEC would want
21 to get a better price and still have the company
22 make a fair profit. We talked about that yesterday,
23 I think.
24 Q And Mr. McGinley was one of the
25 metallurgists who visited --

1 A He was the chief metallurgist for the AEC.
2 He had a staff of maybe eight working for him that
3 would visit all the mills every month.
4 Q And would he use information like this on
5 cost or process to sort of manage what was going
6 on --
7 A That would be when they -- when they
8 renegotiate the contracts.
9 Q Were they just observing in their monthly
10 visits?
11 A Oh, they'd walk around and, actually, I've
12 never -- I've briefly seen one of the reports, and
13 they actually would make safety recommendations. We
14 noticed this; this ought to be corrected. Because,
15 actually, the mills -- as he writes -- were
16 contractors to the AEC. You always see that -- when
17 he writes about another contractor did this and this
18 and this, he's talking about the milling company.
19 Q You mentioned -- yesterday, we discussed
20 briefly the San Mateo Mine and the role Mr. Ingles,
21 I-N-G-L-E-S, Gay played there, that there was an
22 industry liaison program?
23 A Pardon?
24 Q You said there was an industry liaison
25 program?

1 A Yeah. That was -- that was when -- we all
2 were doing that. Tried to keep Grand Junction
3 informed of what was going on out in the industry,
4 all around. And he did the ones for Grants. He'd
5 visit -- he'd visit each major company at Ambrosia,
6 which weren't that many, what was going on. And I
7 know he -- and then eventually he wrote this all
8 down on his calendar and this became that report we
9 talked about yesterday. So I know he visited San
10 Mateo quite frequently -- not quite frequently,
11 maybe every two months or so, just to find out what
12 was going on and when they had problems. Didn't the
13 shaft cave in on them one -- yeah.
14 Q Yeah. Was his role mainly to observe or
15 did he have another role in communicating with --
16 A No. Observe and report.
17 MR. NEUMANN: Why don't we take a
18 break to change the tape.
19 VIDEOGRAPHER: The time is
20 approximately 3:06. This is the end of Tape No. 10
21 in the deposition of William Chenoweth. We are
22 going off the record to change tapes.
23 (Recess taken.)
24 (Exhibits 123 through 127 were marked.)
25 VIDEOGRAPHER: We're on the record.

1 This is Tape No. 11 in the deposition of Mr. William
2 Chenoweth. The time is approximately 3:18.
3 EXAMINATION
4 BY MS. KANE:
5 Q Hi, Mr. Chenoweth. I just have a few
6 questions for you.
7 I'm going to hand you a couple of exhibits
8 and I would like you to just go ahead and take a
9 look through. I'm going to hand you first Exhibit
10 123.
11 Have you had a chance to look through
12 that?
13 A Can you speak up a little bit --
14 Q Sure.
15 A -- so I can hear you better.
16 Q Have you had a chance to look through that
17 book before or a copy of that book before?
18 A Not this particular book, but I'm familiar
19 with all these five items listed here.
20 Q Okay. And are those the five items that
21 are listed there in that notebook? If you want to
22 take a minute to flip through it.
23 A No. I'm familiar with -- yeah, without a
24 library number here, I had to think a little bit
25 about this No. 3. But I am -- yes, I am familiar

1 with all these. We talked about No. 4 yesterday, I
2 know.
3 Q And the other reports that are in there,
4 are those reports that you did?
5 A I'm a co-author on No. 1 and No. 3.
6 Q Okay. And what about the others in there?
7 A I'm the single author on those.
8 Q Okay. So you recognize those. Those are
9 ones that you wrote?
10 A Yes, that I wrote.
11 Q Can you tell me a little bit about why you
12 wrote them?
13 A Well, let's see. No. 1 is a memoir -- not
14 a memoir. I guess you could call it a memoir of the
15 New Mexico Bureau of Mines and Mineral Resources.
16 And it has an article in there on the -- that I
17 wrote with, I think, Harlen Holen on sort of the
18 mining -- I better look it up. See what I'm...
19 Yeah. This is an article a co-geologist
20 and myself wrote about the history of Ambrosia Lake
21 since 1963 when -- there was a previous history that
22 we wrote. So this is a historical summary of the
23 Grants area from 1963 through 1983 -- 1979, I'm
24 sorry. Yeah, '79.
25 Q Did you write that report -- what caused

1 you to write the report?
2 A The editor of the -- this memoir -- it was
3 called memoir -- I'll give you the name of it.
4 Well, here, it's Memoir 38, New Mexico Bureau of
5 Mines and Mineral Resources. It's called Geology
6 and Mineral Technology of the Grants Uranium Region.
7 The editor, Mr. Rautman, R-A-U-T-M-A-N, came to the
8 AEC and said, Can you write us up a history. And
9 Harlen and I said, Sure, we can. So my co-author is
10 Harlen Holen, H-A-R-L-E-N, H-O-L-E-N, Holen.
11 Q And how about the next report in there?
12 A The next one is a report that I did for
13 the New Mexico Bureau of Mines, mainly because the
14 Sanostee area is one of the few areas on the
15 reservation, Navajo Reservation, that produced after
16 the AEC program. And I was able to get some -- New
17 Mexico had some state information. I was able to
18 get some information from DOE to fill in the gaps of
19 what happened after the AEC program.
20 Q Okay. How about the next report?
21 A Tab 3 is -- oh, this is -- this is the
22 compilation that Virginia McLemore, M-C, capital
23 L-E-M-O-R-E, and I compiled in 1991. She had gone
24 around -- she was with the New Mexico Bureau of
25 Mines, a uranium commodity person. She had gone

1 around to the companies getting mining maps and
2 things of the companies that were going out of
3 business. They were very cooperative. And I had
4 gotten some data from people I knew.
5 And, anyway, we put this together. It's a
6 map showing the mine locations from Gallup clear
7 over to Laguna and where the head frames are and
8 where a company gave us data on where they'd mined
9 out areas. So it was a compilation of what we knew
10 about where the mines were and where no orebodies
11 had been mined as of 1991.
12 Q And how about the next one, the Geology
13 and Leasing and Production History of King Tutt --
14 A Well, that is the result of VCA, Vanadium
15 Corporation of America, giving -- letting me go down
16 to their office in Naturita and trace an outline of
17 their mines on that particular Navajo lease. So I
18 did that, and Ginger McLemore says, Well, write up a
19 text to go with it because the AEC found some of the
20 ore for VCA on that lease.
21 Q And how about the last one there,
22 Geology --
23 A That's -- that's another thing, because in
24 our compilation of data on uranium in New Mexico, we
25 were having problems with a Navajo named Hosteen,

1 H-O-S-T-E-E-N, Setah, S-E-T-A-H, Vegay, V-E-G-A-Y,
2 where his mining permits were and where he
3 produced -- he had a little mining company where he
4 produced ore, because he had two Canyon View mines
5 and he had two Red Rock mines. Anyway, it was all
6 screwed up in the AEC records.
7 So Ginger says to me, Well, why don't you
8 go to your records and maybe get -- look into your
9 old Window Rock records and see what you can figure
10 out. So I did this and we figured out, in talking
11 to VCA, we got -- we think we got it straightened
12 out where Mr. Vegay's mines were -- where his mining
13 company operated. That's really to straighten out
14 the records.
15 Q And, Bill, was that done for New Mexico
16 Bureau --
17 A New Mexico Bureau of Mines.
18 Q Now, were all of these done for New Mexico
19 Bureau of Mines?
20 A Yes, they were.
21 Q Okay.
22 A Yes, they were.
23 Q All right. You can put that one aside.
24 I'm going to hand you Exhibit 124. It
25 says Arizona on the front cover. Can you just take

1 a quick look. There's more in there than there was
2 in the New Mexico binder, so...
3 A Okay.
4 Q I'm not necessarily going to ask you to go
5 through all of them, but if you could take a look.
6 Were those -- were all of these done for the Arizona
7 Geologic Society for their project that they asked
8 you to work on?
9 A I think -- I think the first one, Tab 1,
10 had to deal with -- these were -- Nos. 1 and 2 were
11 an outgrowth of an AEC open-file map showing mine
12 locations but no production records to go with the
13 mine locations. And No. 1 was done for the New
14 Mexico Bureau of Mines because it's basically the
15 mines in the Eastern Carrizo Mountains; whereas No.
16 2 here is the mines clear over in Apache County,
17 so...
18 Q So just to clarify for the record, when we
19 say Tab 1, we are referring to US_CHEN_00001769 to
20 1797, and then Tab 2 is US_CHEN_1798 to 1836. Okay.
21 Bill, looking at the rest of -- the
22 rest --
23 A All of the rest of these were done for --
24 let me see. I've got to look up Tab 6. Wait. I'm
25 going to have to go through these.

1 Q Okay. That's all right --
2 A No. 2 is on the Manhattan Project in
3 Arizona -- excuse me. No. 3 is a -- No. 3 is a
4 report on the Manhattan Project in Arizona. No. 4
5 is a report on the deposits in the Lukachukai
6 Mountains. No. 5 is a report on the Morale Mine,
7 M-O-R-A-L-E, mine.
8 Q Bill, let me stop you there.
9 A And these were all -- all -- those three
10 were all done for the New Mexico Bureau of Mines --
11 I mean -- excuse me -- Arizona Geological Survey.
12 Q And why were they done for the Arizona
13 Geological Survey?
14 A The Lukachukai report was done as a result
15 of an open-file map that AEC put out earlier. It
16 gave more detail than the map did about the uranium
17 mining production. The Manhattan Project, they --
18 there were -- people in Arizona had heard about
19 what -- the Union Mines projects in Arizona, and
20 they wanted more data on it for their records. In
21 fact, I think they had some Union Mines maps.
22 Now, 6...
23 Q No. 6 is Vanadium Mining in Carrizo
24 Mountains, US_CHEN_1943 to 1978.
25 A Let's see. Here's the Lukachukai and

1 here's the Morale Mine. Uranium. Oh, I see. I'm
2 counting the wrong way.
3 Vanadium -- No. 6 is Vanadium Mining in
4 the Carrizo Mountains. That was done for the New
5 Mexico Bureau of Mines, because they knew that as a
6 result of the lawsuit, I had some data on vanadium
7 production in the 1940s and which the Navajo Nation
8 wanted the uranium paid for that was recovered out
9 of that ore. So, anyway, that was New Mexico Bureau
10 of Mines.
11 Q Okay.
12 A Number...
13 Q How about No. 7 --
14 A No. 6, that was done for the Arizona
15 Bureau of Mines, mainly because the AEC drilled that
16 property and they didn't have any -- it was small,
17 unknown AEC drilling projects and they wanted data
18 on it for their records.
19 Q And which one was --
20 A That would be No. 7.
21 Q Okay. The Geology and Production History
22 of Bluestone --
23 A Bluestone, yeah.
24 No. 8 is the uranium-vanadium deposits in
25 Monument Valley, San Juan County, Utah. That was

1 done under contract. I got a -- I bid on a contract
2 to do research for the Arizona -- for the Utah
3 Geological Survey, and this is a result of part of
4 that contract.
5 And No. 9 is Harvey Blackwater 1, 3, and 4
6 mines. There was confusion in the literature where
7 1, 3, and 4 were. And Arizona says, Well, go to the
8 certification reports so we get this straightened
9 out for our records, because Scarborough was even
10 having trouble in his report trying to figure out
11 where these mines were.
12 Q So this was done for Arizona as well?
13 A Arizona Geological Survey.
14 Now, where are the rest of these? Oh, is
15 there another page?
16 Q Yep, there's another page. The next tab,
17 so Tab No. 10.
18 A No. 10 is the Firelight No. 6 Mine. That
19 was done for the Arizona Geological Survey because
20 it has an alias with a Navajo name and they wanted
21 to get that in their records, where it was.
22 No. 11 is the Cameron deposit we have been
23 talking about all day and yesterday. That was done
24 as a result of an AEC map that they wanted text to
25 go with.

1 Q And that's the August 1993 report, right?
2 A Huh?
3 Q That's the August 1993 report, right?
4 A Yeah.
5 Q Okay.
6 A And -- let's see. I've got to see what
7 12 -- 12 is the Oak Springs Mines -- Mines. And I
8 don't know who that was done for. That was done for
9 the Arizona Geological Survey, because they had a
10 map -- VCA got them a map of these mines and they
11 wanted a text to go with it. The Arizona Geological
12 Survey, mainly Bob Scarborough, went to VCA and he
13 got copies of all their maps on the Navajo
14 Reservation in Arizona. And then he left the Survey
15 and then I -- they asked me if I could write a text
16 to go with the maps.
17 And the Tab No. 13 is the Monument No. 2
18 site. That is a report that Arizona requested
19 because they knew -- they had a picture of the old
20 upgrader and they had some stuff from Frank McGinley
21 about the upgrader. They said, Put it all together
22 in a report for us. And it was -- so that was
23 something I did as a freebie for them, just to
24 get -- just to get the record straight.
25 And the last report is a draft report.

1 There should be "draft" up here. It's a summary
2 that I had put together of the mining in Monument
3 Valley in the Navajo and Apache Counties, Arizona.
4 And it's mostly production statistics and mining
5 contractors and all that, and the Arizona Geological
6 Survey decided they didn't want it. So I said how
7 about the Arizona Department of Mines and Mineral
8 Resources, and they were going to take it but then
9 they got disbanded because of lack of funds.
10 So this report is kind of in limbo. It's
11 never been released to the public. But I had it in
12 my library when Chris was looking for things. I
13 said take it because someday it's going to get
14 released to the public, I hope. Because it's a very
15 good summary, I think, of what happened in those two
16 counties, because no place else has the production
17 and history of the Monument Valley District in
18 Arizona been documented.
19 Q Since it's a draft, let me, just for the
20 record, put the Bates number on. So it's
21 US_CHEN_00002142 to 2162. Thanks, Bill.
22 A It's called Summary of Uranium-Vanadium
23 Ore Production, 1947 to 1969, Monument Valley
24 District, Apache and Navajo Counties, Arizona.
25 Q Okay. Bill, I have just got two more, and

1 they are actually just Book 1 and Book 2 of the AEC
2 production records, Exhibits 125 and 126.
3 A Okay. Now, these are -- these are sheets
4 out of big computer sheets, great big computer
5 sheets like this, done by an ancient computer from
6 sometime where they compile -- oh, no. Excuse me.
7 Excuse me.
8 I'm reading the title. These are pages of
9 the so-called Shoebox Report. The Shoebox Report is
10 a term we used for some AEC ore production records
11 that were long lost and found in a shoebox in the
12 archives. And it's a summary, like it says here, of
13 AEC ore production from 1948 to 1970. It's sorted
14 by -- total by mine within county, within state.
15 And this is -- this is really the most complete --
16 if you want to go see how much a certain mine
17 produced, you go right here. You don't have to look
18 it up year by year in the early records I thought we
19 had here.
20 Q So, Bill, how did AEC keep those records
21 to make the Shoebox Report?
22 A Well, they had to -- the annual ore
23 production records, which that's what I thought we
24 were going to look at, these are in great big books
25 like this. That was the standard we had for many

1 years. Then they had people and money, and they
2 took and computerized all that stuff out of those
3 big sheets, and that's how this report existed.
4 And I never knew about this until, oh,
5 several -- a few years ago, because when I was doing
6 stuff for the RECA program, I was having to go year
7 by year and add things up and it was really
8 time-consuming. This has all got it done in here.
9 If I had known about this, it would have saved the
10 government a lot of money.
11 But, anyway, this is a computer tabulation
12 of the annual reports that were in the big books for
13 many years, and the tabulation was done about 1980,
14 maybe. It was done very late in the game, and
15 nobody seemed to know about it until a few years ago
16 when they found this shoebox full of stuff. That
17 was the common name we called it.
18 Q Bill, when you say the information that
19 was in the big sheets --
20 A Huh?
21 Q When you say the information that was in
22 the big sheets, what kind of information was that?
23 A It was the same thing, except it was -- a
24 mine was listed individually for that year. They
25 were year-by-year sheets.

1 Q Okay. I'm going to show you, just for
2 completeness, I think this is the second part of
3 this book.
4 A Yeah. Apparently there were two -- there
5 are two -- two books, and they break down at --
6 let's see. Also, this has got the codes in the
7 front.
8 Q What do the codes -- what do the codes
9 tell us?
10 A For each entry here, there are all kinds
11 of codes. There's a property code, a company
12 code -- an operator -- I mean a controller code, and
13 then codes for the location and also a code for the
14 state and the county. We can go over that if you
15 want to, but...
16 Q Yes. Let me show you this. Just hang on
17 to that one.
18 A Okay. Hang on to this one.
19 Q This is Exhibit 126, and it says AEC
20 Production Book 2 on the cover.
21 A This is Book 2. It goes from Long Ridge
22 Mine through the 30-30 Mine.
23 Q Okay.
24 A It's just a continuation of this, of
25 Book -- Book 1.

1 Q Okay.
2 A It's the same thing. There are -- for
3 each property, there's a number up here, and I
4 know -- like Kerr-McGee was given a certain number,
5 so if they wanted to know what Kerr-McGee produced,
6 they could run that number through their computer
7 and print it all out. If you wanted to see all the
8 production from Monument No. 2, it had a code number
9 and you could run that and -- or you could sort it
10 by state and county. Or there's this location code
11 here. You could sort it all by Ambrosia Lake or all
12 by Monument Valley. Anyway, it was coded mainly for
13 that purpose, but I don't know if that was ever
14 used.
15 Q So then let's do this. Can you look at
16 Book No. 1. You can put Book 2 down on the floor or
17 wherever it's convenient.
18 A No. 1.
19 Q Let's go to 1, and can we go to Page 2300.
20 Okay. So four zeros in the front, 2300.
21 A 23 -- oh, that's way back in the back,
22 23...
23 Q 2300.
24 A 230 you mean --
25 Q 00002300.

1 A I only have 230. 230.
2 Q Okay.
3 A Oh, I see. You're looking at the bottom.
4 Q Sorry.
5 VIDEOGRAPHER: The time is 3:40, and
6 we're off the record.
7 (Off the record.)
8 VIDEOGRAPHER: The time is
9 approximately 3:42, and we're on the record.
10 A I have been given Book No. 1 of this
11 series, and we're looking at Page 2300. And Kate
12 has said take A & B 2 as an example. That's the
13 name of the mine.
14 Q (By Ms. Kane) That's the third line up
15 from the bottom, right? And so A & B 2, right,
16 that's --
17 A That's the fourth entry.
18 Q Okay.
19 A And underneath it says 1954. That means
20 in that year, when you look across, the mine shipped
21 121 tons -- .90 tons containing 679.70 pounds of
22 uranium with an average grade of .28. And at the
23 same time, it says that 121.9 tons were assayed for
24 vanadium, and the vanadium content was 318.74 tons,
25 which averaged -- pounds, excuse me -- 318.74 pounds

1 of vanadium oxide, which averaged .13.
2 Q And, Bill, do you see that number there
3 that's on the same line that says 000900?
4 A Yeah.
5 Q What is that?
6 A Well, the first number over here, 0090,
7 that's a number assigned to A & B Mining Company.
8 Every mine that A & B Mining Company mined in every
9 year is coded with that name -- number. Then the
10 next number over here is 001120. That is the number
11 given to the mine number A & B No. 2. Then the next
12 number, 080210, that's the location code, and I have
13 to go back to the front, but my guess is 08 is
14 Colorado Plateau, 20 is Low Colorado District, and
15 10 is the Cameron locality.
16 Q How about that last number, 02?
17 A And then the last number, 02, refers to
18 Arizona, 003 refers to Coconino County. So
19 everything is coded here. As I remember, they were
20 going to do this so they could say, How much uranium
21 was produced in Coconino County, and they could
22 refer to that number. But I never heard of this
23 program working.
24 Q Okay. And so every -- every mining
25 company would have had this --

1 A Every mining company had its code number.
2 Q Okay.
3 A And every mine had its code.
4 Q Okay.
5 A And then they added these other codes for
6 sorting purposes, and I don't remember...
7 Q All right.
8 A But this so-called shoebox, it's the
9 easiest way to get -- say you want the production
10 from -- well, here it is -- A & B No. 3. They
11 produced in three different years -- two different
12 years, and there's the yearly total, the combined
13 total for those two years.
14 Q And all of this was based on records that
15 AEC kept in the regular course of business?
16 A Yes. And at one time, I thought those
17 big, long computer sheets had been put in the
18 National Archives. I was told that. Well, when the
19 EPA started searching for those records, they
20 couldn't find them. And we had a meeting at the
21 compound, and those sheets never got sent to the
22 Archives and the Shoebox stuff has never been sent
23 to the Archives, and it still hasn't.
24 I talked to Jeff the other day, and he
25 says, not yet. So this is really -- even though

1 they let me use this on my report because everybody
2 said, Oh, it's in the National Archives -- it wasn't
3 there. So in my report, I reference ore production
4 records, National Archives. That's an error. I
5 should put unpublished AEC records, but I did this
6 with good thought that it was in the National
7 Archives. Because some people said you shouldn't do
8 that. Well...
9 Q And, Bill, when you say the mining
10 companies, would those be considered -- I have seen
11 the term "controller" before.
12 A Oh, yeah. Up at the top here in the
13 beginning of the book where the company is listed --
14 how many -- anyway, I think it says this at the top
15 of the book.
16 Q And you're in Book 1?
17 A Yeah. It does...
18 I know that in the annual reports, there's
19 not even -- anyway, on the annual reports, above the
20 mining company name, it says controller. And I
21 always thought that meant the person that was
22 operating the mine. Then when I got involved in the
23 RECA program, Radiation Exposure Compensation Act,
24 and they were getting claims in from so-and-so and
25 he said, Well, I worked at this mine for so-and-so,

1 and you looked in the AEC records and that company
2 wasn't operating that mine from the AEC records.
3 And we got further involved in this, and
4 then I went back and talked to, I think, Jeff Tack,
5 the records manager at DOE, T-A-C-K, and he says,
6 Well, it says controller on these sheets. That
7 means -- that means the guy that got paid for the
8 ore, I've been told, and I said, That makes sense.
9 And then I talked to other people and they
10 said, Yeah, the names in these AEC records are
11 called controller. That means the person that
12 received the money from -- that got paid for the
13 ore, and not the one that actually operated the
14 mine. Because many companies, such as Union
15 Carbide, they had 60 mines out here on the Colorado
16 Plateau, and you look in the mine inspector reports,
17 only six of those were operated by company personal
18 and the rest were by contractors.
19 So for the RECA program, I had to go
20 through the mine inspector reports and get
21 contractors for a lot of these mines, which was kind
22 of a big job. But in all of my reports, I called
23 these shippers and that's really not -- most of
24 those on the reservation were -- were the actual
25 operators. But some of the Kerr-McGee mines in the

1 Lukis had contractors. And VCA used Navajo
2 contractors on a lot of their mines, because they
3 didn't have to pay as much royalty if they employed
4 Navajos than if they did company people. Anyway,
5 there was something about that.
6 So in these records that we're talking
7 about today, whenever you see the name, that is the
8 person that got paid, not -- that does not infer the
9 person that actually mined the ore and shipped it.
10 Q But the people that owned the mine and
11 shipped it would have been working for those
12 controllers.
13 A Oh, yeah. Like a lot of these people, a
14 lot of these small mines, the person that got paid
15 was actually the company operating the mines. But
16 in some of the big companies, especially at -- in
17 Southwestern Colorado, like I say, any one year,
18 probably 90 percent of the mine -- of Union
19 Carbide's mines were operated by contractors.
20 And so in some of these records we looked
21 at earlier, I went through, talked to Cameron --
22 particularly Cameron Mining Company operate -- you
23 know, it said Utah Southern Oil, Yazzie 313. Utah
24 Southern Oil never mined that mine. Cameron Mining
25 Company mined it for them.

1 And this all came to light a few years
2 ago. I felt real embarrassed about it. I've been
3 always calling the people in these records the
4 operator, and they're not.
5 MS. KANE: Can we go off the record
6 for one second?
7 VIDEOGRAPHER: Certainly.
8 MS. KANE: Thank you.
9 VIDEOGRAPHER: Hold on one second.
10 The time is approximately 4:50, and we are off the
11 record.
12 (Off the record.)
13 VIDEOGRAPHER: The time is now --
14 before it was 3:50 and it's now 3:51. We're on the
15 record.
16 Q (By Ms. Kane) Bill, if you can look at
17 Exhibit 94-41.
18 A Okay.
19 Q Okay. It's right there. And just what is
20 this?
21 A This is a visual that I made for a talk I
22 gave at Mesa College, Mesa State College then, to
23 the geology students about Ambrosia Lake, one of the
24 largest uranium districts in the United States. And
25 this is -- this is one of the visuals I made for a

1 PowerPoint. And it's really a brief chronology of
2 Ambrosia Lake, the giant Ambrosia Lake mining
3 district. And it's compiled from things I have
4 written, things that the New Mexico Bureau of Mines
5 have written, the state -- New Mexico Environmental
6 Division. We have gotten all kinds of things we got
7 from all over to do this.
8 And there's three pages of this. This
9 is -- this goes from when Paddy Martinez, P-A-D-D-Y,
10 Martinez found uranium on Haystack Butte on the
11 railroad land and how that developed in a uranium
12 boom at Grants, and mills were built by three
13 companies. And then it continues over here with
14 other things, how the district expanded to the east.
15 And, anyway, the Mt. Taylor, big deep mines of Gulf
16 Minerals.
17 Anyway, it's sort of a chronology, like I
18 said, of what happened at Ambrosia Lake as the
19 district grew and then when it started to shut down
20 because of the economics and all that. And
21 groundwater recovery. And it goes up until 2007,
22 which it says Uranium Resources Incorporated planned
23 to acquire the Rio Algom site, which we found fell
24 through later.
25 Q And that's Page 43 that you are looking

1 at?
2 A Huh?
3 Q And that's Page 43 that you are looking
4 at?
5 A Yeah. This chronology is on three pages
6 which is three different slides in a PowerPoint
7 presentation.
8 Q Okay. And you feel pretty comfortable
9 that that's an accurate summary?
10 A Oh, yeah. And this is off the subject,
11 but right now, currently, Virginia McLemore and I
12 are writing a summary of uranium mining in New
13 Mexico. And I'm writing all about the Carrizos and
14 Sanostee and things I knew about before she was
15 practically born, and she's writing what's happening
16 up -- now with the mergers and Strathmore being
17 involved and all that. And this is going to be
18 published in a New Mexico Geological Society book
19 next year, so that's what I'm doing now.
20 And she's looked this over and says this
21 is a good -- I think I end -- I end my thing up here
22 with Bokum drilling, and she's updating this and she
23 says this is -- she has no problems with this,
24 because BHP -- BHP Billiton now has the old
25 Kerr-McGee site down there.

1 Q Okay. All right.
2 MS. KANE: Thank you, Bill. That's
3 all the questions I have. Let's go off the record
4 again.
5 VIDEOGRAPHER: The time is
6 approximately 3:54, and we're off the record.
7 (Recess taken.)
8 (Exhibit 127 was marked, and Navajo Nation
9 Exhibits 1 and 2 were marked.)
10 VIDEOGRAPHER: The time is
11 approximately 4:07, and we're on the record.
12 EXAMINATION
13 BY MR. TAYLOR:
14 Q Good afternoon, Bill. How are you?
15 A Good. Holding up.
16 Q Good. My name, as you know, is David
17 Taylor. I'm going to be asking you some questions
18 on behalf of the Navajo Nation. I'm an attorney
19 with the Navajo Nation Department of Justice.
20 A The Department of Justice.
21 Q The Navajo Nation Department of Justice.
22 A Oh, I thought --
23 Q You don't want to get that confused.
24 A Okay.
25 Q The Navajo Nation Department of Justice,

1 yes, sir. And on behalf of the Navajo Nation
2 Department of Justice, I just want to very quickly
3 thank you again for being here, and I want to thank
4 you for this wonderful repository of records that
5 you have kept, too, that are extremely valuable and
6 important to the Navajo Nation.
7 Bill, I have handed you two documents
8 that -- oh, before I do that, I want to make
9 reference, at Chris' request, that we have
10 labeled -- the map that we have just been referring
11 to back here that's behind you, we have labeled that
12 as Exhibit 127.
13 Now, I have handed you two documents and
14 you have them there in front of you, and I believe
15 that everyone in the room, hopefully, has a copy of
16 these. And you will see that one is marked as -- I
17 have marked one as Navajo Nation Exhibit 1, and that
18 is the list. And I will represent to you that this
19 is a document that was provided to me very recently
20 by the -- by the U.S. Environmental Protection
21 Agency, Region 9. And this document was prepared by
22 Region 9 in conjunction with the Navajo
23 Environmental Protection Agency for purposes of
24 describing what we have determined to be the 43 high
25 priority cleanup sites on the Navajo Nation for the

1 next five-year plan that's coming. So that's what
2 this is.
3 A Okay.
4 Q Now, the second document, I will represent
5 to you, which is labeled Navajo Nation Exhibit No.
6 2, is a map that was also prepared by the U.S. EPA,
7 and it gives the locations, as you can see, for
8 those 43 high priority sites. So what I want you to
9 do --
10 A These are the ones marked in red on the
11 map?
12 Q That is correct.
13 A What are the ones marked in gray?
14 Q Those are lower -- do you see they have
15 got it here listed. Those are AUM claims, it looks
16 like, according to the legend of the document, but
17 we're going to focus today on the red dots, okay?
18 A Okay.
19 Q And what I want you to do is feel free to
20 look back and forth between these documents as I ask
21 you questions about the ones on Exhibit 1 and the
22 ones on Exhibit 2.
23 Let's just start down -- and my questions
24 on these documents are really going to be focused on
25 some of the things you have already testified about.

1 I'm going to focus on your visits to these sites,
2 I'm going to focus on roads that may have been
3 constructed by AEC around these sites, and I'm going
4 to focus upon ore-buying stations that may have
5 served these sites.
6 A Okay.
7 Q And so let's just start out with -- the
8 first one on here is Occurrence B. Tell me, have
9 you ever visited Occurrence B?
10 A Yes, I have. It's a site near the little
11 village of Del Muerto, D-E-L, capital M-U-E-R-T-O,
12 near Chinle, Arizona. It's an occurrence in the
13 Shinarump right near Canyon de Chelly National
14 Monument. And it is -- I have described it in my
15 report on Zhealy Tso's occurrences in Apache County.
16 He was a Navajo judge that staked some claims.
17 Q How about many times -- do you recall how
18 many times you were out at Occurrence B? How many
19 times --
20 A Probably once.
21 Q Probably once. Were you there by
22 yourself?
23 A Yeah.
24 Q Okay. So there's -- you never saw a
25 Navajo official on Occurrence B?

1 A No.
2 Q Or another federal official.
3 Is there -- was Occurrence B served by any
4 ore-buying station --
5 A No. It never produced any ore.
6 Q Oh.
7 A It was just a radioactive anomaly near
8 some hogans.
9 Q To your knowledge, there was no mining on
10 Occurrence B?
11 A It was not reported.
12 Q Okay.
13 A That's in my document, because Zhealy Tso
14 said somebody stole ore off his claims and we could
15 never find a record of it.
16 Q All right.
17 A But I did find a stockpile of low-grade
18 ore that he didn't know about, but anyway...
19 Q So you don't know anything about where the
20 stockpile of ore came from?
21 A Yeah, it came out of a rim-stripped area
22 on -- the de Chelly. He had several claims around
23 there or several mines. He had three mining
24 permits, as I remember, and Occurrence B was the
25 lowest radioactivity of any of these.

1 Q Okay. So --
2 A -- investigation.
3 Q So the stockpile came from rim-stripping
4 which was AEC activity, correct?
5 A No, no. It was -- it was -- Arizona Giant
6 Uranium Company did this.
7 Q Okay.
8 A You should see that report because he kept
9 pestering the AEC, Who stole my ore? And we could
10 never -- said, There wasn't any ore ever stolen. I
11 wrote that report for the Arizona Geological Survey
12 as -- mainly because he was even pestering them for
13 records.
14 Q Where is that report?
15 A I have a cop -- I should have a copy in my
16 file. I don't think Craig has a copy. Anyway, it's
17 in the -- I should have a copy in my library, but
18 you didn't copy it, so I don't know. But it is --
19 it is an open-filed report by Arizona Geological
20 Survey.
21 Q All right. And you have a copy and the
22 State of Arizona has a copy --
23 A Yeah, they have one -- they have one down
24 in Tucson.
25 Q Okay. Do you remember anything about else

1 about -- other than what you've testified to --
2 A No. It was a comedy of errors because
3 here's a Navajo judge accusing the government of
4 stealing his ore.
5 Q Do you remember the name of the Navajo
6 judge?
7 A Huh?
8 Q The name of the Navajo judge.
9 A It's Zhealy Tso, Z-H-E-A-L-Y, T-S-O.
10 Q To your knowledge, is he still alive?
11 A I don't know. That's a common name.
12 Q Right. Anything else -- we're off to a
13 slow start. That's not your fault.
14 A That's the top of your list there,
15 unless -- unless Occurrence B is -- unless
16 Occurrence B is including Zhealy Tso's messed up --
17 the area messed up over in A. This was the
18 lowest -- if I remember right, this was the lowest
19 radioactivity on his so-called mining permits there.
20 Q Do you recall anything else about the
21 Occurrence B site?
22 A No. I'd have to read the report. I wrote
23 this way back in 19 -- let's see. He claimed the
24 ore was mined in about 1954, something, and I went
25 out there in probably '59 and looked at it and then

1 wrote the report probably in -- sometime, sometime
2 later. After people in Arizona says, Give us some
3 dope on that Zhealy Tso business.
4 Q Very good. Let's move on to the next
5 site. Mariano --
6 A Do you want me to -- it's only a short
7 report. Do you want me to send you a copy?
8 Q I would greatly --
9 A Give me your card and I'll do that for
10 you.
11 Q Thank you very much.
12 Let's go on to Mariano Lake. Now, are you
13 familiar with the Mariano Lake site?
14 A Yes.
15 Q Have you been on than site?
16 A No, I've driven by it.
17 Q Okay. So are you familiar with any
18 ore-buying stations that would have been served on
19 that site?
20 A I don't -- I don't know where it shipped
21 its ore; probably either to Homestake or Kerr-McGee.
22 It produced late in the game. It shipped its ore to
23 the Ambrosia Lake area and I couldn't tell you which
24 mill.
25 Q Are you familiar with --

1 (Interruption in proceedings.)
2 Q (By Mr. Taylor) Are you familiar with any
3 roads that have been -- would have been --
4 A No.
5 Q -- built in that area? All right.
6 Anything else that you can recall about --
7 for purposes of this testimony about the Mariano
8 Lake site?
9 A No.
10 Q I'm going to skip the Northeast Church
11 Rock site and the Quivira sites for this -- for the
12 moment here and perhaps go back to them.
13 Let's go to Eunice Becenti. You've
14 testified that you are familiar with the Eunice
15 Becenti site?
16 A Yeah. It's recorded in that report I was
17 showing Kate this morning. It's on the Gallup
18 Hogback north of the Diamond Tomb mine near
19 Rehoboth. It's an open pit on the Gallup Hogback
20 there, and the ore was in the Dakota sandstone,
21 which is an unusual occurrence.
22 Q You visited that site?
23 A Oh, yeah.
24 Q How many times --
25 A Once.

1 Q Were you there by yourself?
2 A Yeah.
3 Q Are you familiar -- did that site -- was
4 that site, to your knowledge, served by an
5 ore-buying station?
6 A It could have shipped up to the Kerr-McGee
7 mill in Shiprock because a lot of those mines in the
8 Gallup area, somehow they always went up 666 to
9 Shiprock rather than go to the Grants area.
10 Q To your knowledge, were there any roads
11 built around that site that you know?
12 A There was probably a little access road
13 off the main road there, but I don't remember that.
14 Q All right.
15 A But the company -- the Hyde -- I think
16 Mr. Hyde and Mr. Tucker mined that after looking at
17 that document I have. They probably built the road.
18 AEC didn't build any roads over there.
19 Q Okay. Let's just -- let me generally ask
20 you: Are there general areas where AEC built roads
21 and some areas where they --
22 A No. The roads were mainly access roads
23 into areas. Like they built the road -- they
24 improved the county road from Blue Water up into the
25 Haystack Butte area because that was their early

1 discoveries around Grants, and the mill was at Blue
2 Water. And they improved the road from Shiprock
3 over to Dennehotso -- no, to Mexican Water, and up
4 over Comb Ridge into the Cane Valley.
5 And let's see, what else did they -- and
6 they improved the road from Laguna Pueblo up to the
7 newly discovered Jackpile Mine. And these were
8 really access roads to get ore out. They didn't
9 really build any roads around mines in Arizona or
10 New Mexico. Now, in Colorado, they improved old
11 stock trails and thing all over that went up to
12 mining districts, but not to individuals mines that
13 I know about, but...
14 Q Generally speaking, once the roads were
15 built, did they also maintain the roads?
16 A I think -- like I'm talking about the
17 Shiprock-Mexican Water-Comb Ridge road, I think
18 there was maintenance done on that afterwards, maybe
19 by the BIA. I'm not sure. But you would have to
20 look at that report I wrote on Arizona roads where I
21 got good data out of the files and I can't remember
22 the details, but it seems like some of that
23 construction was also shared with the BIA. I'm not
24 sure. Bureau of Indian Affairs.
25 Q And that leads me to a tangent that I was

1 going to ask you, which is: You identified where
2 the Arizona section of that report is. Have you
3 seen the New Mexico section?
4 A No.
5 Q Do you -- so you don't know where that
6 could be found?
7 A It wasn't in the archives or in the AEC
8 data they're getting ready to send to the National
9 Archives. There was only Arizona and I think part
10 of Colorado, but there weren't any complete reports.
11 But I -- there was a map down there showing
12 generally where AEC improved roads, and that's how I
13 knew the road from Laguna Pueblo up to the Jackpile
14 Mine was improved and the road from Blue Water into
15 the Haystack Butte area was improved, because it's
16 on this map.
17 Q Do you know who improved those roads?
18 A The AEC did.
19 Q All right.
20 A That's part of the AEC access -- according
21 to this map.
22 Q And when you say "improved," do you mean
23 paved them?
24 A I don't know what -- I don't know the
25 detail. I know the ones in Arizona were not paved.

1 They were just bladed and knocked the rocks out of
2 the road.
3 Q That reminds me of another thing that you
4 testified about, and I think you testified that
5 there was roadwork between Kayenta and Monument
6 Valley, I think. Do you remember talking about
7 that? Where was that?
8 A Shiprock.
9 Q Shiprock.
10 A Shiprock to Mexican Water and then over
11 Comb Ridge into Cane Valley, and then I think they
12 improved the road from Cane Valley up through
13 Mexican -- up to the Mexican Hat bridge or Mexican
14 Hat. I think that was done in -- but that was in
15 Utah, see, so I don't have data on that. But I read
16 someplace or heard someplace they improved the road
17 up to -- up to the Mexican Hat bridge.
18 Q And would those have been dirt roads?
19 A Yeah, that was all dirt roads.
20 Q All right.
21 A Now it's all basically paved except into
22 Cane Valley.
23 Q All right. Thank you.
24 Now, let's get back to the list, to the
25 Mac No. 1 Mine. Are you familiar with that mine?

1 A Yeah. I was down there a couple times
2 just with some visitors just to look around.
3 Q And that is in the Eastern Agency,
4 correct?
5 A Yeah. And also down to -- no, no, I'm
6 wrong. I have been by the Mac. I was down at the
7 Blackjack No. 2, which is an older mine than the
8 Mac. Mac is more of a younger mine down there. I
9 was never down at the Mac, but I have been by it.
10 Q Okay. Mac and Blackjack 2 are pretty
11 close to each other.
12 A Yeah, right. The Mac orebody was found as
13 a trend off the Blackjack 2 Mine by Homestake or
14 somebody.
15 Q So are you familiar with any roads that
16 were built in that area?
17 A I know there -- there's a road that goes
18 across from Smith Lake over to Pinedale, and the
19 road down -- Lance Corporation might have built a
20 road off that up to the Blackjack 2. You know these
21 roads.
22 Q But I don't know who built them. That's
23 why --
24 A AEC did. I imagine Blackjack -- Lance
25 Corporation that has the Blackjack did that.

1 Q Were there ore-buying stations in this
2 area?
3 A No. That ore was all shipped -- it was
4 all -- I know that for a fact because the Lance
5 Corporation had a deal with Homestake, and that ore
6 went to the Homestake mill out of the Blackjack
7 Mine.
8 Q Have you -- you visited Blackjack, then.
9 Now, you know there's two Blackjack --
10 A Yeah, I've been down to both of them.
11 Q You've been to both of them.
12 A The Blackjack 1 is the big mine.
13 Blackjack 2 is the smaller mine.
14 Q And how many times did you visit Blackjack
15 2?
16 A I've been there probably at Blackjack 1
17 three times and maybe 2 only once.
18 Q Were you by yourself or --
19 A No. I was with a group of guys. They
20 wanted to see -- Lance Corporation was giving us a
21 visit to show us what they were doing or something.
22 Q Who was Lance Corporation?
23 A They were the original owners of that.
24 They owned it. Bokum, if you know where...
25 Q And who was the group of people that you

1 were with out there?
2 A First time I went down to Blackjack No. 1
3 was a bunch of visitors. I don't know -- foreign
4 visitors. Maybe Canadians or -- we always had
5 Canadian visitors and Australian visitors and French
6 visitors, and we had to tour them around.
7 Q All right. But you were not with any
8 Navajo officials?
9 A Oh, no.
10 Q And as I go down this list, if I forget,
11 I'm going to trust your memory to tell me if you
12 were ever with Navajo people on any of these sites.
13 A No. Let's see. The only mine that I see
14 here that I was infrequently with Navajos was the
15 Black Rock Point No. 3 Mine. That was Thomas Clani,
16 C-L-A-I -- C-L-A-N-I. That was his mine on a mining
17 permit, and he always -- and it was right near the
18 AEC camp. So he would always want to come over and
19 show us what he was doing in his mine. I've been to
20 the Black Rock 3 mine maybe a dozen times in a
21 couple years.
22 Q Okay. So --
23 A All the mines above that I have been to,
24 but only with -- Standing Rock, is that a mine or is
25 that that radioactive area out there?

1 Q Oh, I see Standing Rock. I have been not
2 been to Standing Rock.
3 A I think that's that thorium occurrence on
4 that little mesa over there that's radioactive,
5 pretty radioactive from the thorium in it.
6 Q Okay. But just for the record here, you
7 can't recall meeting with any Navajo --
8 A No.
9 Q -- officials on any --
10 A All --
11 Q -- of these mines.
12 A I've been out with Perry Charlie, my
13 friend Perry, but that's up in the Carrizo Mountain
14 area.
15 Q Right.
16 A But -- and I don't see -- let's see.
17 Haystack -- Ruby Mines are after I left Grants area.
18 Haystack 1 is the original discovery at Grants on
19 the railroad land. I've been there many times but
20 with no Navajos because that's railroad land, but
21 they use Navajo miners, I know.
22 Then looking down here at the -- at the
23 two allotments: Desidero and Vandever,
24 V-A-N-D-E-V-E-R, and Desidero is D-E-S-I-D-E-R-O,
25 those are Navajo allotments in the Haystack Butte

1 area. I've never been with Navajos. I looked down
2 that list. The only thing I can see that I have
3 been with and know anything about, Navajo being --
4 was with Thomas Clani there at Black Rock Point
5 Mine, only because the AEC camp was only a half a
6 mile away.
7 Q Okay. There was an AEC camp close --
8 A The AEC Rattlesnake drilling camp was
9 right very close to his Black -- about half a mile
10 away from his Black Rock Point No. 3 Mine. But
11 like -- I have been to all these other mines. The
12 two allotted -- Standing Rock must be that thorium
13 anomaly there. Black sand -- it's black sand full
14 of thorium and not uranium.
15 Q I just want to try to close the loop on my
16 questions about --
17 A Okay.
18 Q -- Navajo officials.
19 And Thomas Clani, to your knowledge, was
20 not a Navajo government --
21 A Oh, yeah.
22 Q -- official. He was a Navajo government
23 official?
24 A No, no. He was -- he was a well-educated
25 Navajo that was chapter president one time and spoke

1 pretty good English and was wanting the AEC to do
2 more drilling on his property.
3 Q I understand, but to your knowledge,
4 looking at this list, you never saw a Navajo
5 official --
6 A Not Navajo --
7 Q -- kind --
8 A Now, Perry Charlie -- no, he was working
9 for AML.
10 Q Right.
11 A I was out with him at -- let's see -- Plot
12 3 down here and King Tutt Point. I have been here
13 with him -- out with him. And Oak -- I might have
14 been there with the Oak 24 and 25 with him. But he
15 was -- he was just an abandoned land...
16 Q Anyone beside -- and so Perry Charlie was
17 not with the Navajo Mining Division.
18 A No, he was with the abandoned mine land
19 people.
20 Q And so he was inspecting for reclamation
21 purposes, correct?
22 A He was -- he was showing myself and Peter
23 Eichstadt around.
24 Q Peter Eichstadt?
25 A I can't spell his name.

1 Q Peter, E-I-C-H-S-T-A-D-T, is that who
2 you're talking about?
3 A Yeah.
4 Q Who wrote the book "If You Poison Us."
5 A Yeah, that's the author.
6 Q Right. So Perry was showing Peter and you
7 around.
8 A Around the Oak Springs/King Tutt Mesa
9 area.
10 Q All right. Any other Navajo officials
11 that you think you were with at any time on any of
12 these sites?
13 A One time over at Oak Springs I got stopped
14 by a Navajo policeman, and I show him my permit and
15 that permit that the New Mexico Bureau of Mines had
16 was for paleontology research. And he looked at it
17 and said, Okay, because we did not have -- at that
18 time, we didn't have a legal permit to look at
19 uranium, but we could collect fossils.
20 Q Who granted the legal permits to look at
21 uranium, as far as --
22 A Somebody there in Window Rock sent it over
23 to Socorro, and I was at Socorro -- Socorro, New
24 Mexico -- and Virginia McLemore and I, we were -- we
25 were going around making notes on abandoned mines

1 when the Navajo policeman stopped us. This was in
2 the mid-'80s.
3 Q Okay.
4 MR. TAYLOR: Why don't we take a
5 quick break to change the tape now. We're going to
6 change the tape.
7 VIDEOGRAPHER: The time is
8 approximately 3:31, and this is the end of Tape No.
9 11 in the deposition of -- boy, I can't tell time
10 today. 4:31. Excuse me. This is the end of Tape
11 No. 11, and we're going off the record to change
12 tapes.
13 (Off the record.)
14 VIDEOGRAPHER: We're on the record.
15 The time is approximately 4:34, and this is the
16 beginning of Tape No. 12 in the deposition of
17 Mr. William Chenoweth, and we're on the record.
18 Q (By Mr. Taylor) All right. Thank you,
19 Bill. We're back on the record, and I want to move
20 on to the list, Exhibit 1, Ruby No. 3 Mine.
21 A I've never even been to -- that developed
22 after I long left the Grants area. When I did get
23 back to Grants, that's over at Smith Lake, so I
24 never got to that area. I don't even -- got ever
25 close to that.

1 Q Let's move on to Haystack No. 1, then.
2 Have you ever been to the Haystack No. 1 --
3 A Many times, because that was the original
4 discovery that set off the uranium boom at Grants.
5 When Paddy Martinez found yellow rock out there and
6 took them into town, and the businessmen got the
7 newspaper involved and that started the boom.
8 Q When you say "many times," approximately
9 how many times have you been to that site?
10 A Oh, when I was in -- this was probably
11 when I was a student there at Grants. I mean I -- I
12 probably have been out there three times, maybe.
13 Q All right. How many times in your
14 capacity as working with the Atomic Energy
15 Commission have you been out there?
16 A That would be that.
17 Q That three --
18 A Because I was a Walker-Lybarger contractor
19 employee, because he discovered that, I think, in
20 '51, and I was working for them in '52 and '53. So,
21 anyway, everybody had to go out and see the original
22 discovery.
23 Q What do you recall about those visits?
24 A It's a series of open pits, small open
25 pits, on the rim and they were mined by Santa Fe and

1 their contractors.
2 Q And do you recall who was with you or
3 accompanied you on --
4 A Oh, some of the AEC -- probably some of
5 the AEC geologists and there might even have been --
6 I can't remember. There were Navajo miners there, I
7 know.
8 Q Navajo miners, federal employees. Any
9 representatives of the Navajo --
10 A No. That was allotted land. You couldn't
11 get Window Rock people over there.
12 Q All right. Do you remember any -- any ore
13 stations, buying stations?
14 A They sent their ore to the Anaconda Mill.
15 Q And that is located?
16 A Blue Water, New Mexico, down the AEC
17 improved road.
18 Q The AEC improved --
19 A They improved it from Blue Water up into
20 the Haystack Butte area.
21 THE REPORTER: I'm missing your
22 questions. I'm missing the end of them, I'm missing
23 the middle of them. There's just going to be half
24 of them on the record.
25 MR. TAYLOR: I will do my best to

1 slow down.
2 Q (By Mr. Taylor) So backing up, Bill, the
3 question was: Did AEC construct the road --
4 A They improved the county road.
5 Q -- to the Anaconda Mill?
6 A From Blue Water, yeah. From the highway,
7 Highway 66, down at Blue Water, which was just a
8 stone's throw from the mill, up through into the
9 Haystack Butte/Poison Canyon area.
10 Q Do you recall anything else about Haystack
11 No. 1?
12 A No. They mined for many years. They
13 didn't mine a lot of ore for a month, but they mined
14 it for many years.
15 Q Let's move to -- and I'll do these two
16 together, because I think they're close: Section 25
17 and Section 23.
18 A Well, I think that 25 refers to Santa Fe's
19 25 over by Poison Canyon, and Section 23 refers to a
20 railroad section over by Haystack Butte. I think
21 they are maybe six miles apart.
22 Q Would you look at the Exhibit 2, please.
23 A Uh-huh.
24 Q And down in the right-hand corner, do you
25 see Section 23?

1 A Oh, yeah. I see section -- oh, that 23.
2 Okay. There's so many -- you're right. 23 is a
3 railroad section and 25 is a railroad section over
4 by Poison Canyon. You're right.
5 Q And that would be around Casamero Lake?
6 A No. It's between Haystack -- it's east of
7 Haystack Butte near the Poison Canyon area.
8 Q Have you visited both of those sites?
9 A Oh, yeah. Section 25 had -- besides open
10 pits, it had an underground mine decline on it, and
11 23 was just a series of little open pits.
12 Q Approximately how many times have you been
13 there?
14 A Twice, maybe.
15 Q Do you recall anything about those visits?
16 A No, just they were limestone -- they were
17 pits and mines in the limestone, and I know, looking
18 at the production records, 25 produced many years
19 and had many contractors in there working on the
20 railroad land. My neighbor, Tom Fife, mined there
21 for a long time.
22 Q Were you ever there with federal -- other
23 federal officials?
24 A No, just some of the AEC people.
25 Q Some AEC people?

1 A Yeah.
2 Q Okay. Were you ever there visiting with
3 any Navajo officials?
4 A No.
5 Q All right. Were there any roads built in
6 that area that you know of?
7 A They probably shipped their ore down to
8 Anaconda because it was -- it was limestone ore,
9 high carbonate, so they had to use the alkaline
10 leach circuit. And then later, Homestake had an
11 alkaline leach circuit, so the later production
12 could have gone to Homestake.
13 Q And that's the Anaconda mill --
14 A At Blue Water.
15 Q -- at Blue Water that had the AEC-built
16 access --
17 A Yeah, they improved the road from Blue
18 Water up into this area.
19 Q Okay. And then it's so close to a mill, I
20 assume there was no ore-buying station there.
21 A No, no. The ore-buying stations that were
22 put in at Milan, New Mexico on the railroad --
23 that's M-I-L-A-N -- was only built after the big
24 discoveries at Ambrosia Lake were found and before
25 the big -- before the big mills were built. I can't

1 tell you the date.
2 Q So what mines would have been serviced,
3 because Milan is right there by Grants, right?
4 A Yeah.
5 Q What mines in the area would have been
6 serviced by that?
7 A The early mines. The Dysart, D-Y-S-A-R-T,
8 Mine and probably Kerr-McGee, Section 22, and also I
9 remember that they got ore from southern New Mexico
10 down in Sierra County, they got ore from Santa Fe
11 County, and they even got ore from Oklahoma. They
12 found a hot spot over in Oklahoma and they trucked
13 the ore all the way down to Milan to the ore-buying
14 station, and that was a big deal, I know.
15 Q Okay. Let's move on to the Standing Rock
16 Mine. Are you familiar with --
17 A I think that is that little mesa out by
18 Standing Rock Trading Post that has that
19 radioactivity cause by thorium on it, and I looked
20 at that one time, if that's what it is.
21 Q Well, take a look at the map, Exhibit 2,
22 if you would, please, and --
23 A Oh, it's way north. Let's see, where is
24 that? Well, that can't be. I don't know anything
25 about it. It's too far north because the one I'm

1 thinking of is near Mariano Lake.
2 Q Okay. So you have never visited, to your
3 knowledge, the Standing Rock that's shown.
4 A No. I would have to look at the Navajo
5 atlas to see where it is because I'm not familiar
6 with that.
7 Q Okay. Let's move on to Section 26. Have
8 you -- are you familiar with Section 26?
9 A 26 and 24 should be real close together.
10 Yeah, they are.
11 Q You --
12 A They're Navajo allotments near Haystack
13 Butte that were mined by open pits.
14 Q And have you visited both of those?
15 A Yeah. You can't -- when you go to
16 Haystack Butte, you have got mines in practically
17 every section around there, and so you can't miss
18 them.
19 Q When you visited those, were you by
20 yourself?
21 A Probably with somebody else.
22 Q And who would that have been?
23 A Oh, AEC geologists, because these early
24 mines were booming there in the early '50s when I
25 was living in Grants.

1 Q Did you ever see any Navajo --
2 A No.
3 Q -- official out there? Okay.
4 Let's move on to Rock Door No. 1. Do you
5 know where that is?
6 A Yes, that's in Monument Valley behind
7 Gordon's Trading Post.
8 Q Pretty close to Skyline.
9 A Yeah, I have never been there, but I have
10 seen it from the air, because it's hard to get to
11 they tell me.
12 Q Do you -- but you are familiar --
13 A Oh, yeah.
14 Q To your knowledge, was -- were there roads
15 built in that area by AEC?
16 A What I remember about Skyline -- I mean
17 the Rock Door Mine is they had a cable. It went
18 from the mine down to the valley floor, and the ore
19 was put into canvas bags and went down that way,
20 because it was so -- there was really no -- and the
21 miners, I guess, climbed up the hill to it. It only
22 produced a small amount of ore because it was so
23 remote into that mesa.
24 Q About how far is it from Skyline Mine?
25 A Quarter mile.

1 Q Would it have been served by any
2 ore-buying station?
3 A No. It probably shipped its ore to...
4 Q Mexican Hat?
5 A Mexican Hat, it was mined in the early
6 days. I would say it shipped its ore maybe up to
7 Monticello, because that would be -- in the early
8 days, that was the only ore-buying station in that
9 part of the country. You would have to look at the
10 dates of the shipment to get a better idea, because
11 Mexican Hat wasn't built, I don't think, when
12 Skyline was built -- I mean when Rock Door was.
13 Q The next mine on the list is Charles
14 Keith. Are you familiar with that one?
15 A I have flown over that in a plane, when we
16 had an airplane flying around taking pictures. I
17 have flown over Charles Keith. It's on the west end
18 of Oljeto Mesa, O-L-J-E-T-O, and I have never been
19 there. It's a small mine there, but a big mine up
20 over the cliff.
21 Q And Oljeto Mesa, you are talking about in
22 Utah, right?
23 A Yeah, yeah. Charles Keith is in Utah, as
24 is Rock Door.
25 Q Okay. That seems like a pretty remote

1 area.
2 A Yeah.
3 Q Were there any roads that were access
4 roads built out there, to your knowledge?
5 A Huh-uh.
6 Q Was there an ore-buying station in that
7 particular area, to your knowledge?
8 A No. I think Charles Keith probably went
9 to Monticello because it was mined in the '50s,
10 maybe. I would have to look at my report on Utah
11 and see, but it didn't produce a lot of ore, but it
12 was -- I don't even know how they got the ore down
13 off of Oljeto Mesa because it's way up there, a
14 cliff above the trading post.
15 Q Now, did you say you've just flown over
16 that. You've never visited it.
17 A No, I've never been -- I flew over it --
18 when I was in that Navajo lawsuit, I flew over there
19 with a couple of DOJ lawyers back in 1980.
20 Q Do you have any other recollection about
21 that mine?
22 A It's hard to get to.
23 Q The next mine on the list is Harvey
24 Blackwater No. 3.
25 A Yeah. I have been there by myself, I

1 think. That's north of Monument Valley on Comb
2 Ridge, by myself. I think the company that mined
3 there probably built the road down to the main road
4 in Cane Valley or someplace.
5 Q And just to be clear, every one of these
6 that you visited where you were by yourself or with
7 somebody, I assume --
8 A I think I have been to all of them
9 eventually.
10 Q Okay. But --
11 A The only one I don't know is Standing
12 Rock, and those NAs are anomalies someplace. I
13 don't know where they are, but I have been to all
14 the rest of them, and the Oak -- the Oak 24 and 25 I
15 don't know.
16 Q You were there in your capacity working
17 for AEC, correct?
18 A When I was at Harvey Blackwater?
19 Q The one we were just talking -- yes,
20 Harvey Blackwater.
21 A No. I think I was -- who was I there
22 with? Maybe I was with somebody -- I was probably
23 with AEC then.
24 Q Okay. Anything else you can tell me about
25 Harvey Blackwater?

1 A No, it's a small mine.
2 Q Skyline Mine we're going to skip over,
3 unless you want to tell me something about Skyline
4 Mine.
5 A I have been there -- I have been there
6 with some DOJ lawyers on a scary ride out to the end
7 of the mesa. This is that lawsuit in 1980. I was
8 there with two -- two DOJ lawyers and then a
9 consultant out of Golden, Colorado they hired. And
10 it was a scary road out on that mesa there where I
11 didn't even want to ride in that Jeep.
12 Q I have been on it. It's scary.
13 Let's go to Mitten No. 3.
14 A I was there at the same time. It's just
15 down a little farther west on Oljeto Mesa.
16 Q Okay. And you have been there how many
17 times?
18 A Once.
19 Q By yourself?
20 A No. With these DOJ lawyers, because that
21 was one of the properties involved in a lawsuit
22 because it mined -- no, Skyline mined
23 uranium-vanadium ore back in the early days, and we
24 were up there driving around and we went by the old
25 Mitten 3 Mine up there.

1 Q Were you there with any Navajo officials?
2 A No.
3 Q The next mine on the list is Firelight No.
4 6. Are you familiar with that mine?
5 A Yes. I have been by that site, but it was
6 a decline. It went down in, and it's all been
7 reclaimed. When I went by it in the -- oh, it was
8 being re -- about 1980, I think it was, by myself.
9 Q Where is Firelight Mine?
10 A It's in Monument Valley real close to the
11 highway. It's north of Kayenta and south of Mexican
12 Hat, but it's south of the road where you turn off
13 that highway -- I can't remember the number -- to go
14 to Oljeto. It's south of there maybe three miles
15 and to the west maybe a half a mile.
16 Q Were any roads built by AEC --
17 A No.
18 Q -- in that area?
19 A I think Climax Uranium built the road in,
20 the access road in there, and that ore, I'm pretty
21 sure, went to Mexican Hat because it was a late
22 mine.
23 Q So no ore-buying stations --
24 A No.
25 Q -- that you know of in that area?

1 And you visit -- you visited there once?
2 A No. Went by it once and it was being
3 reclaimed.
4 Q Okay.
5 A I went in there to see it because of that
6 report I was writing for Utah.
7 Q Anything else you can tell me about
8 Firelight?
9 A Huh-uh. But Climax Uranium was one of the
10 joint ventures on that, and they gave -- somehow
11 they gave me a -- somehow I got a copy of the mine
12 map to write this report for Arizona, so I have got
13 a report on the Firelight in one of my Arizona
14 reports.
15 Q Who else were the joint venturers there?
16 A They were a joint -- Climax was in a joint
17 venture with Bayshore Mining Company of San
18 Francisco, I think, something like that. But they
19 hired a contractor out of Grand Junction called E.E.
20 Lewis to mine it.
21 Q And you never saw any Navajo officials out
22 there?
23 A No.
24 Q All right. The next mine on the list is
25 Alongo Mines. Do you know where that is?

1 A That's in the East Carrizos southeast of
2 King Tutt Mesa. I was there once with Oren Anderson
3 of New Mexico Bureau of Mines, and we were trying to
4 survey where it was exactly because it wasn't on any
5 map. So I was there once and that would have been
6 about 1985 or something.
7 Q Did you visit it by yourself?
8 A Yeah. No, I was with Oren Ander -- Oren
9 Anderson of the New Mexico Bureau of Mines.
10 Q So a New Mexico state official?
11 A Yeah. It's -- it's in New Mexico, just
12 over the state line that's south of King Tutt Mesa.
13 Q And was that the only time you visited
14 there?
15 A Huh?
16 Q Was that the only time --
17 A Only time. Kind of hard to get to.
18 Q Okay. And so there were no Navajo
19 officials involved in that.
20 Any roads built in that area that you know
21 of?
22 A Yeah, there was a trail went into it, but
23 I don't -- I don't know who built it.
24 Q Okay.
25 A Came up from Red Wash and went around,

1 but...
2 Q Let -- let me do kind of a catch-all
3 question, taking kind of a break from going right
4 down the list.
5 Was there rim -- did rim-stripping -- what
6 you have testified to earlier, did that occur in the
7 Eastern Agency at all?
8 A In what?
9 Q In the Eastern Agency, to your knowledge.
10 A No, not -- AEC didn't do any over there,
11 and I don't remember any of the mines that were
12 really rim-stripped. They mostly -- they
13 gopher-holed into it. Alongo had two little adits
14 and they went in and mined a little cloud of ore.
15 That's all. It's in the report -- one of the
16 reports we saw yesterday or something.
17 Q All right. So the rim-stripping mostly
18 that you remember was in the Western Agency?
19 A Well, the AEC rim-stripping -- as I
20 remember on the reservation, there was rim-stripping
21 at Cameron, there was rim-stripping at Black
22 Mountain, you know, up in the Tsasie school area.
23 We rim-stripped about 15 anomalies up there.
24 Q I'm sorry. Where is the Tsasie school
25 area?

1 A You're coming out -- before -- you're
2 coming out of Chinle, you're going toward Piñon, and
3 then you turn off and go up -- Black Mountain
4 Trading Post.
5 Q North of Piñon?
6 A No. It's this side of Piñon.
7 Q Oh.
8 A Anyway, there was quite a bit of uranium
9 mined there. And when it was found -- an AEC
10 prospector, Harry James, found that, and they
11 started looking around and they found all kinds of
12 surface anomalies, so they sent the bulldozer in
13 there to scrape them off. And I saw it after it was
14 scraped off. And there was that, and then there was
15 rim-stripping over on the Tom Wilson property near
16 Rough Rock, and then there was rim-stripping at
17 Sanostee. And that's the only AEC rim-stripping I
18 know of on the res, done by AEC.
19 Q All right. Anything else that you can
20 remember -- and how many times, again, did you visit
21 Alongo Mines?
22 A One time.
23 Q One time. And anything else you can tell
24 me --
25 A No.

1 Q -- about that visit? Observations?
2 A Huh-uh.
3 Q Tsosie 1, are you familiar with that?
4 A That's in the Saytah Wash, S-A-Y-T-A-H,
5 Wash area of the Northwest Carrizo Mountains. It's
6 a little mine on the rim of Saytah Canyon. And I
7 forget when we did -- an AEC engineer and I were in
8 that area, and we made a map of it because -- I
9 forget. And it's in one of my documents that I
10 wrote for Arizona again. But I think -- as I
11 remember, it was -- it had a drill hole and they
12 went in 100 feet and mined a little bit of ore and
13 didn't make any money or something, but...
14 Q Bill, I'm familiar with a Saytah that is
15 spelled T-S-E-T --
16 A Oh, that's -- that's the USGS spelling on
17 the map. I'm doing the phonetic word that the VCA
18 uses.
19 Q Okay. All right. So they are the same
20 place?
21 A Yeah.
22 Q Okay.
23 A It's that big range that comes down out of
24 the Carrizos by Black Rock Point and flows north
25 into the San Juan River.

1 Q And it's a place where AML has a
2 reclamation project? Are you familiar with that?
3 A No. But I know there's lots of mines.
4 The Saytah Wash and the canyons have got lots of
5 little mines dotted all over them, mostly operated
6 by VCA. And I know they are working on that.
7 Q Okay. And how many times were you at
8 Tsosie 1?
9 A One.
10 Q By yourself?
11 A No. An engineer named Ray Holmquist was
12 with me. H-O-L-M-Q-U-I-S-T.
13 Q And who is Mr. Holmquist?
14 A Huh?
15 Q Who is Mr. Holmquist?
16 A He was an AEC engineer. We were out there
17 recording some of these old mine sites before they
18 got filled in.
19 THE REPORTER: My hands are --
20 they're not going to work anymore.
21 MR. TAYLOR: Okay. We can take a
22 break. We can take a break or call it a day.
23 THE REPORTER: I have to call it a
24 day.
25 MR. TAYLOR: Okay.

1 VIDEOGRAPHER: The time is
2 approximately 4:56, and this is the end of Tape No.
3 12 in the deposition of Mr. William Chenoweth. We
4 are going off the record.
5 (Proceedings adjourned at 4:56 p.m.)
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1 I, WILLIAM L. CHENOWETH, do hereby certify
2 that I have read the foregoing transcript and that
3 the same and accompanying amendment sheets, if any,
4 constitute a true and complete record of my
5 testimony.
6
7
8 _____
Signature of Deponent
9
( ) No amendments
10 ( ) Amendments attached
11
12 Acknowledged before me this _____ day of
13 _____, 2014.
14 Notary Public: _____
15 My commission expires _____
16 Seal:
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25 CFF

1 STATE OF COLORADO)
2)ss. REPORTER'S CERTIFICATE
3 COUNTY OF MESA)
4 I, Candice F. Flowers, do hereby certify that I
5 am a Certified Shorthand Reporter and Notary Public
6 within the State of Colorado; that previous to the
7 commencement of the examination, the deponent was
8 duly sworn to testify to the truth.
9 I further certify that this deposition was
10 taken in shorthand by me at the time and place
11 herein set forth, that it was thereafter reduced to
12 typewritten form, and that the foregoing constitutes
13 a true and correct transcript.
14 I further certify that I am not related to,
15 employed by, nor counsel for any of the parties or
16 attorneys herein, nor otherwise interested in the
17 result of the within action.
18 In witness whereof, I have affixed my signature
19 this 30th day of January, 2014.
20 My commission expires February 14, 2016.
21
22
23 _____
Candice F. Flowers, CSR
24 216 - 16th Street, Suite 600
Denver, Colorado 80202
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