

1 IN THE UNITED STATES DISTRICT COURT
 2 FOR THE DISTRICT OF NEW MEXICO
 3
 4 UNITED STATES OF AMERICA,
 5 and
 6 STATE OF NEW MEXICO ex rel. No. 01-cv00072-MV/WPL
 STATE ENGINEER, Plaintiffs,
 7 vs. ZUNI RIVER BASIN
 ADJUDICATION
 8 A & R PRODUCTIONS, et al., Subfile No. ZRB-2-0038
 9 Defendants.
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 11
 12
 13 ORAL DEPOSITION OF CRAIG FREDRICKSON
 July 6, 2016
 9:00 a.m.
 1011 Indian School Road, Northwest
 Room 282
 Albuquerque, New Mexico
 16
 17
 18 PURSUANT TO THE NEW MEXICO RULES OF
 CIVIL PROCEDURE this deposition was:
 19
 20 TAKEN BY: MR. ANDREW "GUSS" GUARINO, ESQUIRE
 ATTORNEY FOR THE PLAINTIFFS
 21
 22
 23 REPORTED BY: DIANNA M. ALVAREZ, NM CCR #141
 Court Reporters de Santa Fe
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 Santa Fe, New Mexico 87504
 25

1 **A P P E A R A N C E S**
 2 For the Plaintiff United States of America:
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 Indian Resources Section
 4 Environment and Natural Resource Division
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 5 Denver, Colorado 80202
 6 For the Plaintiff State Engineer:
 7 MR. EDWARD BAGLEY
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 Post Office Box 25102
 9 Santa Fe, New Mexico 87504-5102
 10 For the Defendant:
 11 MR. CRAIG FREDRICKSON
 Pro Se
 12 2742 Veranda Road, Northwest
 Albuquerque, New Mexico 87107
 13
 14 Also Present:
 15 Mr. Mirko Kruse
 Mrs. Regina Fredrickson
 16 Scott Turnbull, telephonically
 17
 18
 19 **I N D E X**
 20 EXAMINATION OF CRAIG FREDRICKSON
 21 By Mr. Guarino 4
 22 CERTIFICATE OF COMPLETION OF DEPOSITION 155
 23 SIGNATURE/CORRECTION PAGE 156
 24
 25

1 EXHIBITS INITIAL REFERENCE
 2 PAGE
 3 A Zuni River Basin Hydrographic Survey,
 Sub-Area 10, Subfile Number: ZRB-2-0038,
 Sheet 1 of 1, NRCE 36
 4 B Document, Expert Witness Report of Craig L.
 Fredrickson Pursuant to Federal Rule of Civil
 Procedure 26(a)(2), June 27, 2016 45
 5 C Topographic Map, Rincon Hondo 76
 6 D Document, Expert Witness Report of Craig L.
 Fredrickson Pursuant to Federal Rule of Civil
 Procedure 26(a)(2)(B), April 12, 2016 103
 7 E Document, Water Intake Rates of Cattle,
 C. F. Winchester and M. J. Morris, U. S.
 Department of Agriculture, Pages 722-740 110
 8 F Black and White Photograph 133
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1 **CRAIG FREDRICKSON**
 2 after having been duly sworn upon oath, was questioned
 3 and testified as follows:
 4 **EXAMINATION**
 5 **BY MR. GUARINO:**
 6 Q. Mr. Fredrickson, let's go over the basics to
 7 make sure we understand for the record. Have you ever
 8 had your deposition taken before?
 9 A. Yes.
 10 Q. When was that?
 11 A. Approximately 1995.
 12 Q. And what was that in regards to?
 13 A. A business case.
 14 Q. Involving your business?
 15 A. Yes.
 16 Q. Were you deposed as a witness or an expert
 17 witness, were you hired for that case or was that your
 18 own case?
 19 A. That was my own case.
 20 Q. Okay. Well, it's been a little time since
 21 you've had your deposition taken. So that we're clear
 22 on how we operate in this deposition, as you know from
 23 sitting in on Mr. Cox's deposition, it's a question and
 24 answer format. I ask the questions and you answer the
 25 questions to the best of your ability.

1 your opinions here today?
 2 A. I did.
 3 Q. You didn't have experience with Python in your
 4 professional career before 2000?
 5 A. It didn't exist.
 6 Q. Within Python you input all the factors or
 7 variables that you want to solve in your analysis; is
 8 that right?
 9 A. Yes and no. You provide your datasets you
 10 provide your equations, you provide your definitions,
 11 and then you use the programming language of Python to
 12 draw from those tuples, is what they're called, of -- of
 13 data, creating even more data to allow you to do a
 14 complex -- solve a complex problem in a -- an efficient
 15 way.
 16 Q. In formulating your opinion and specifically
 17 formulating your opinion as it's associated with cattle
 18 consumption, herd consumption, herd water consumption,
 19 you applied Python for the first time and for the single
 20 purpose?
 21 A. Yes.
 22 Q. How many variables do you input into this
 23 framework Python? I'm not sure what else to call it.
 24 You describe it as similar to an Excel spreadsheet
 25 operation, I'm familiar with that, so you input

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1 information into this Python programming and it solves
 2 for variable factors and equations that you've also
 3 input in it?
 4 A. Correct. And -- and it's -- and it's in the
 5 Attachment 5, the entire coded calculation.
 6 Q. Okay.
 7 A. And you'll see there Section 1.2 Raw Data. So
 8 I've given it at "Days - tuple of all days from January
 9 1 to December 31, starting from zero." Temperature,
 10 I've given different dictionaries of -- of -- of
 11 animals, time groups, ambient temperature data, how many
 12 months -- how many days are in each month, how many
 13 cattle are there as a function of -- of -- of day, the
 14 definitions from Winchester and Morris, the various time
 15 groups I considered in order to do my analysis.
 16 Q. This Attachment 5, is this a reflection of all
 17 the data that you inputted --
 18 A. Correct.
 19 Q. -- into the programming --
 20 A. Correct.
 21 Q. -- that goes on for 26 pages?
 22 A. On that order, yes, uh-huh.
 23 Q. Did you have anybody review your analysis,
 24 your Python analysis?
 25 A. Yes.

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1 Q. Who?
 2 A. My son.
 3 Q. Your son?
 4 A. Yes.
 5 Q. What qualifications does he have to review
 6 your work?
 7 A. He's an engineer, he's used Python
 8 extensively, and --
 9 Q. Did he tell you about Python?
 10 A. He did.
 11 Q. He was the one that told you that this might
 12 be a useful tool for what you're trying to do?
 13 A. He did.
 14 Q. Okay. On page 47 you have Figure 15, it's a
 15 graph. You titled it "Herd Free Water Intake Rate."
 16 This image, does this visually capture your water
 17 consumption analysis sort of in a nutshell?
 18 A. It does.
 19 Q. In my conversations with other engineers they
 20 often turn to a graph of some kind at some point where
 21 it's displayed graphically, and when asking questions
 22 about their work they often refer to the graph and say,
 23 "It's all in the graph." Are you familiar with that
 24 phenomenon, it seems to be the shortcut for a lot of
 25 engineers that I know of?

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1 A. I've heard that.
 2 Q. And that's what I'm kind of referring to.
 3 Does this graph sort of summarize your analysis for herd
 4 consumption as it relates to the subfile action?
 5 A. Yes.
 6 Q. Okay. In any of the publications that you
 7 reviewed and relied upon, have you seen anything that's
 8 like this before or this is something that you developed
 9 for the specific purpose of providing your opinion in
 10 this case?
 11 A. I developed this for -- as a graphical
 12 presentation of my analytical results for my analysis.
 13 Q. Okay. On page 51 of your report you discuss
 14 uncertainty. Do you see that there?
 15 A. I do.
 16 Q. "Consumptive Uncertainty," can you tell me
 17 what uncertainty as applied in this context is? Did you
 18 calculate an uncertainty rate or anything like that or
 19 --
 20 A. No.
 21 Q. -- were you just talking about factors that
 22 make your results more or less certain or uncertain?
 23 A. The latter.
 24 Q. So it's not a specific rate or error rate?
 25 A. No, it's not a statistical error rate.

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