

**CERTIFIED  
TRANSCRIPT**

NATIONAL FEDERAL MILK MARKETING ORDER  
PRICING FORMULA HEARING

DOCKET NO.: 23-J-0067; AMS-DA-23-0031

Before the Honorable Jill Clifton, Judge

---o0o---

Carmel, Indiana

October 5, 2023

---o0o---

Reported by:

MYRA A. PISH, RPR, C.S.R.  
Certificate No. 11613

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

A P P E A R A N C E S:  
FOR THE USDA ORDER FORMULATION AND ENFORCEMENT DIVISION,  
USDA-AMS DAIRY PROGRAM:

Erin Taylor  
Todd Wilson  
Brian Hill  
Michelle McMurtray

FOR THE AMERICAN FARM BUREAU FEDERATION:

Roger Cryan

FOR THE MILK INNOVATION GROUP:

Ashley Vulin (Remotely)  
Charles "Chip" English  
Grace Bulger

FOR THE NATIONAL MILK PRODUCERS FEDERATION:

Nicole Hancock  
Brad Prowant

FOR SELECT MILK PRODUCERS, INC.:

Ryan Miltner

FOR INTERNATIONAL DAIRY FOODS ASSOCIATION:

Steve Rosenbaum

---o0o---

(Please note: Appearances for all parties are subject to  
change daily, and may not be reported or listed on  
subsequent days' transcripts.)

---o0o---



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

M A S T E R I N D E X

SESSIONS

THURSDAY, OCTOBER 5, 2023

PAGE

MORNING SESSION

7062

AFTERNOON SESSION

7182

---o0o---



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

M A S T E R I N D E X

WITNESSES IN CHRONOLOGICAL ORDER

WITNESSES: PAGE

Stephen Koontz:

Direct Examination by Ms. Hancock	7064
Cross-Examination by Mr. Rosenbaum	7093
Cross-Examination by Mr. Miltner	7112
Cross-Examination by Mr. English	7119
Cross-Examination by Ms. Taylor	7125

Dean Sommer:

Direct Examination by Mr. Rosenbaum	7134
Cross-Examination by Mr. Miltner	7151
Cross-Examination by Mr. English	7191
Cross-Examination by Mr. Miltner	7194
Cross Examination by Dr. Cryan	7196
Cross-Examination by Ms. Taylor	7197

Stephen Zalar:

Direct Examination by Ms. Hancock	7212
Cross-Examination by Mr. English	7228
Cross-Examination by Ms. Taylor	7232
Redirect Examination by Ms. Hancock	7238

Jeffrey Sims:

Direct Examination by Ms. Hancock	7241
Cross-Examination by Mr. English	7280

---o0o---



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

M A S T E R I N D E X

INDEX OF EXHIBITS

IN CHRONOLOGICAL ORDER:

NO.	DESCRIPTION	I.D.	EVD.
304	Testimony of Stephen Koontz	7068	7130
305	Document, Quick Stats	7106	7133
306	Testimony of Dean Sommer		7208
307	Testimony of Dean Sommer		7208
308	Article by Dr. Lucey	7174	7211
309	Testimony of Stephen Zalar	7211	7239
310	NMPF-37	7241	
311	NMPF-37A	7241	
312	NMPF-37B	7241	
313	NMPF-37C	7241	
314	NMPF-37D	7242	
315	NMPF-37E	7242	
316	NMPF-37F	7242	
317	NMPF-37G	7242	
318	NMPF-37H	7242	
319	NMPF-37I	7242	

---o0o---



1 THURSDAY, OCTOBER 5, 2023 - - MORNING SESSION

2 THE COURT: Let's go back on record.

3 We're back on record at 8:00 a.m. on October 5,  
4 2023. It's Thursday. I'm Jill Clifton. I have one  
5 preliminary matter before we resume.

6 Most of you know that the reason I'm here is that  
7 on September 22, 2023, Chief Judge Channing Strother  
8 tested positive for COVID. On September 29, 2023, he  
9 tested negative for COVID and has ever since. He still  
10 had difficulty having the energy that he's used to having  
11 and was sleeping a lot, but still doing his job from --  
12 from home, isolating. And now he's fully back.

13 Many of you have been concerned about him. His  
14 residuals at this point are congestion and a cough, and  
15 from talking to other people who are similarly situated,  
16 apparently that is common. And it goes away, but it takes  
17 time.

18 He has all through my involvement in this  
19 proceeding been mindful of how you all are doing. He was  
20 so hopeful that no one else that he had been closely  
21 situated with also had COVID.

22 And I have assured him that I'm aware of nobody  
23 else having it. I know all of you are beat up from the  
24 long hours and from the difficulties, but -- but I'm very  
25 pleased that everyone is healthy enough to continue.

26 He asked me for continuity to take also the  
27 November segment, which is the week following the  
28 Thanksgiving weekend. We're beginning at 1:00 p.m. on



1 that Monday and going that full week. And I am delighted.  
2 I'm the one having the fun, and so I'm appreciative.

3 I thought it might be useful for those of you who  
4 may not know what the function of the presiding  
5 Administrative Law Judge is in a rulemaking hearing such  
6 as this. It is a limited function. It is to gather in  
7 the evidence and certify for the record what that is. We  
8 call it a certification of the transcript, but it's  
9 actually the transcript and the exhibits.

10 So after the hearing, both judges who have been  
11 witnesses, that is Chief Judge Strother and myself, both  
12 of us will sign off on those documents. We each observed  
13 different portions, so we will both be signing off on  
14 those documents.

15 In the meantime, we're behaving separately in that  
16 Chief Judge Strother indicated he's working on a ruling on  
17 a matter that came up while he was presiding. He will  
18 still do that. He will finish that. And I will do the  
19 rulings that come before me.

20 So I just wanted to clarify we're both assigned  
21 the case. He is senior. We'll both sign off on the  
22 documents at the end.

23 All right. Now, are there any other preliminary  
24 matters before we assume taking testimony?

25 I see none.

26 Would you state and spell your name, please.

27 THE WITNESS: My name is Stephen Koontz,  
28 S-T-E-P-H-E-N, K-O-O-N-T-Z.



1 THE COURT: Now, your voice is robust which is  
2 good, except it wasn't quite loud enough, and it all has  
3 to do with positioning.

4 I don't know, can you move closer toward me and  
5 still see your laptop and your document?

6 THE WITNESS: Yes.

7 THE COURT: I think that will help. Very good.  
8 Have you previously testified in this proceeding?

9 THE WITNESS: No, I have not.

10 THE COURT: I'd like to swear you in. Would you  
11 raise your right hand, please.

12 STEPHEN KOONTZ,

13 Being first duly sworn, was examined and  
14 testified as follows:

15 THE WITNESS: Yes.

16 THE COURT: And that was a "yes"?

17 THE WITNESS: Yes.

18 THE COURT: See, again, you know, you have to be  
19 fairly close to that microphone unfortunately. It's  
20 awkward when you have things in front of you.

21 Counsel.

22 MS. HANCOCK: Thank you, Your Honor.

23 DIRECT EXAMINATION

24 BY MS. HANCOCK:

25 Q. Good morning, Dr. Koontz. Thank you for being  
26 here today.

27 Would you mind providing your business address for  
28 the record?





1           A.     I'm located at Colorado State University. My  
2 office is 266 Nutrien Agricultural Sciences Building, Fort  
3 Collins, Colorado, 80523.

4           Q.     I want to first start off by getting to know a  
5 little bit more about your background.

6                     Can you start by telling us about your educational  
7 background?

8           A.     I have a BS and MS degree from Virginia Tech in  
9 agricultural economics, and I have a Ph.D. in agricultural  
10 economics from the University of Illinois.

11          Q.     And following your Ph.D., what have you spent your  
12 time doing in your professional career?

13          A.     I have been academic faculty the entire time. I  
14 worked at Oklahoma State University in the Department of  
15 Agricultural Economics for six years. Moved from there to  
16 the Department of Agricultural Economics at Michigan State  
17 University, and had an opportunity to go to Colorado State  
18 University. My department there is the Department of  
19 Agricultural and Resource Economics.

20          Q.     Okay. The proceeding is being pushed out by Zoom,  
21 as well as having a court reporter here, so we're trying  
22 really hard to make sure the audience online can hear, but  
23 most importantly, that our court reporter can capture  
24 everything that you are saying so we have a good record.

25          A.     Absolutely. If I'm not doing it right, please let  
26 me know. It's not intentional.

27          Q.     Yeah, yeah. And it's something that we've been --  
28 it's been a common theme for us.



1           So throughout your professional career in  
2 academics, you have also had some other opportunities to  
3 use your experience in agricultural economics to testify  
4 in front of Congress.

5           Can you tell us about that?

6           A.    I have testified twice.  I work -- my primary  
7 research area has been in market organization and  
8 performance, and it's largely on the cattle and beef  
9 markets.  I have worked with major cattle feeding  
10 organizations and also the packing industry, beef packing  
11 industry.

12          Q.    And what kind of information or topics do you --  
13 do you present when you are testifying in front of  
14 Congress?

15          A.    The topics of lately have been price discovery,  
16 and in that entire area, price reporting, price discovery.  
17 And long-term, it's more along the lines of market power,  
18 industry structure, and market participant conduct over  
19 time.

20          Q.    Okay.  All related to the feed industry -- or  
21 cattle feed industry?

22          A.    Cattle and I have -- by working with the cattle  
23 industry, I have also had to be solid in my understanding  
24 of what goes on in commodity markets, primarily feed  
25 markets, forage markets, things like that.

26          Q.    Okay.

27                MS. HANCOCK:  Your Honor, at this time we would  
28 move to recognize Dr. Koontz as a commercial agricultural



1 economist with cattle and beef markets and cattle feed.

2 THE COURT: Tell me again. Commercial  
3 agricultural?

4 MS. HANCOCK: Economist, cattle and beef markets  
5 and cattle feed.

6 THE COURT: Does anyone wish to voir dire the  
7 witness with regard to his qualifications before I accept  
8 him as an expert witness?

9 There is no one. I do.

10 Now, next, does anyone object to my accepting  
11 Dr. Stephen Koontz as an expert as indicated?

12 There are no objections. I do accept Dr. Stephen  
13 Koontz as an expert in commercial agri- -- as an expert  
14 as -- in the field of commercial agricultural economics,  
15 and cattle and cattle feed? Do I have it right?

16 THE WITNESS: Cattle markets and production.

17 THE COURT: Cattle markets and production,  
18 including feed. All right. Good. Thank you.

19 We are very happy to have you here. Welcome.

20 THE WITNESS: Thank you.

21 THE COURT: Ms. Hancock?

22 MS. HANCOCK: He wasn't sure if you were being  
23 serious.

24 BY MS. HANCOCK:

25 Q. Dr. Koontz, would you mind providing us with your  
26 testimony in Exhibit 304? And as you read your testimony,  
27 just be mindful of both the volume of your voice and then  
28 the speed that -- make sure that it's slow enough that our



1 court reporter can capture it.

2 A. Yes. Absolutely.

3 MS. HANCOCK: Your Honor, I don't know if I marked  
4 this. I'm sorry. Thank you.

5 This is Exhibit NMPF-55, and I believe the next  
6 exhibit number is 304.

7 (Exhibit Number 304 was marked for  
8 identification.)

9 THE COURT: I have my copy now. And, yes, this is  
10 Exhibit 304.

11 Dr. Koontz, you may proceed.

12 THE WITNESS: Thank you. The purpose of this  
13 testimony is to comment on the proposed changes to the  
14 producer milk price surface and the potential impacts on  
15 milk production in the dairy industry in Colorado.

16 I'm a professor in the Department of Agricultural  
17 and Resource Economics at Colorado State University. Been  
18 on faculty there since 1989, prior to that at Oklahoma  
19 State and Michigan State.

20 THE COURT: May I interrupt?

21 THE WITNESS: Yes, please.

22 THE COURT: Your statement says 1998. You said  
23 1989.

24 THE WITNESS: I'm sorry. '89 at Oklahoma State,  
25 and 1998 at Colorado State.

26 THE COURT: Ah, thank you.

27 THE WITNESS: My apologies.

28 THE COURT: No worries.



1 THE WITNESS: I'm -- I was pleased to hear you  
2 describe what I do for a living. I'm not sure I could  
3 tell that to my parents, so I'll -- I'll have to write  
4 down some of these shortcuts. They are helpful.

5 I consider myself a livestock and commodity market  
6 economist. I have a three-way split. I hold an  
7 extension, teaching, and research position, and over the  
8 years I have worked on issues relevant to commercial  
9 agriculture in Colorado.

10 I have conducted economic education with producers  
11 regarding market outlook, risk management, and also policy  
12 questions. I've worked with the cattle industry and the  
13 USDA Agricultural Marketing Service, the Market News  
14 Division, on issues related to fed cattle pricing and  
15 price reporting.

16 I was engaged during the transition from voluntary  
17 price reporting to the implementation of livestock  
18 mandatory reporting, and have worked with the National  
19 Cattleman's Beef Association in the industry effort  
20 recently to improve cash market participation in fed  
21 cattle trade.

22 I have testified to Congress regarding market  
23 structure and conduct in cattle and beef industries, and  
24 working in extension and teaching in Colorado has required  
25 me to also develop a solid understanding of grain and  
26 forage markets upon which livestock industries rely.

27 Agricultural in Colorado contributes approximately  
28 \$10 billion annually to the state economic output.



1 Approximately 60% of that wealth creation is related to  
2 livestock industries, cattle, cattle feeding, dairy,  
3 poultry, and pork, and specialty livestock. The remaining  
4 40% is from crop-related industries, specifically hay,  
5 corn, corn silage, wheat, barley, a variety of fruits and  
6 vegetables, and specialty crops.

7 Of the \$6 billion associated with livestock, the  
8 dairy production at the farm level contributes about  
9 \$800 million annually. And these are all roughly  
10 value-added contributions. It's not double counting  
11 pieces associated with the different industries.

12 Dairy production in Colorado is an important  
13 contributor and has grown considerably in the last  
14 20 years. As the national dairy industry has migrated  
15 West and transitioned into milk production for dairy  
16 product manufacturing, Colorado has participated, as have  
17 many high plains and western states. There is new  
18 production, considerable new production, milk production  
19 for manufacturing products that comes out of Idaho, New  
20 Mexico, Western Texas, Kansas, and Colorado.

21 Prior to 2000, the population of milk cows in the  
22 state was less than 85,000 animals, and by January 2023  
23 population was over 200,000 animals. The annual growth is  
24 regularly between 3 and 10,000 animals, and the only  
25 decrease in the dairy cow herd population was in 2010.  
26 Prior to 2000, annual milk production in the state was  
27 less than 2 billion pounds, and by 2022 the annual  
28 production was almost 5.5 billion pounds.



1 Dairy is the growth industry in Colorado  
2 agriculture and has been since the year 2000. And that's  
3 in terms of the contribution to the Colorado economy.  
4 Dairy -- Colorado dairy is also a rather innovative  
5 industry. Annual production per cow was below 21,000  
6 pounds in 1999; peaked at modestly above 26,000 pounds per  
7 animal in 2020. Production per cow is -- was the second  
8 largest in the country behind Michigan in 2022.

9 The proposed changes in milk pricing that are  
10 being considered by the USDA AMS have the potential to  
11 make substantial impacts, specifically on milk production  
12 and the dairy industry in Colorado if milk prices are  
13 lowered, what I would consider substantially, a dollar to  
14 \$2 per hundredweight. This testimony is offered to  
15 communicate details on the feed costs in Colorado versus  
16 portions of the U.S. further east, and also to discuss the  
17 economic environment in Colorado as it currently stands  
18 and likely future conditions, and then talk about --  
19 outline some potential impacts on Colorado of the proposed  
20 policy changes.

21 The National Milk Producers Federation asked me to  
22 comment on the impact on the dairy -- Colorado dairy  
23 farmers if the policy changes, resulted in milk  
24 manufacturing Make Allowance increasing about \$0.50 per  
25 hundredweight, and Colorado producer price surface that  
26 followed the Wisconsin models output with no adjustments.  
27 Ed Gallagher at DFA, at Dairy Farmers of America, asked me  
28 to consider the impact of approximately a \$0.50 decrease



1 in the blend price or producer price differential, the  
2 values on Colorado dairy farmers, if the Wisconsin model  
3 was followed with no adjustments.

4 His testimony, Ed's testimony, will cover the  
5 estimated decline. According to Mr. Gallagher, the  
6 combined impact would result in milk price in Colorado as  
7 paid to producers decreasing by about a dollar per  
8 hundredweight.

9 This change in the milk price surface has the  
10 potential to be substantially negative on Colorado dairy  
11 industry. I would also like to note that he's informed me  
12 that there are other potential policy changes that could  
13 Make Allowances (sic) substantially more, and with this  
14 change alone, the decrease in milk prices paid to Colorado  
15 producers would be about \$1.45 per hundredweight.

16 I'm not testifying about the various  
17 Make Allowance policy options, but it is clear to me that  
18 any policy change that results in a decrease in Colorado  
19 milk prices of a dollar or more would be rather harmful to  
20 the Colorado dairy industry.

21 Colorado achieved what I consider to be a  
22 competitive advantage in dairy production due to increases  
23 in productivity relative to the cost of production and, in  
24 particular, variable cost of production associated with  
25 feed costs.

26 Colorado's a relatively high feed cost  
27 environment, and I'm planning to illustrate that  
28 magnitude. The USDA Farm Service Agency has a dairy





1 margin management product, and the valuation of that is  
2 based on national corn prices, or costs, national alfalfa  
3 hay prices, and soybean meal prices for meal in Illinois.  
4 Decatur, Illinois, is the U.S. hub of soybean meal  
5 production, and prices across the nation are pretty  
6 closely tied to prices from transactions at that  
7 production point.

8           This margin calculation is the Dairy Margin  
9 Coverage Program, the DMC. Dairy animal feed is  
10 essentially composed of: A roughage component, hay, and  
11 usually high quality hay such as alfalfa; an energy  
12 component, made up usually of corn or some type of related  
13 product; and a high protein component such as soybean meal  
14 or another high protein meal.

15           Dairy animal rations can have a multitude of  
16 components. There may be hundreds of potential inputs  
17 that are considered when you are blending a ration, but  
18 the multitude of elements of any given ration are priced  
19 rather similar to these three main ingredients, that being  
20 alfalfa hay, corn, and soybean meal.

21           So if I can, I would like to pull up Figure 1.  
22 Thank you.

23           So what I'm doing in Figure 1 is demonstrating --  
24 I'm calculating the -- that USDA FSA margin, and I'm using  
25 prices received by farmers from Colorado and South Dakota.  
26 USDA NASS monthly prices received are used for corn and  
27 alfalfa hay for each state. And I'm sticking with the  
28 soybean meal price that's used by FSA in the insurance



1 product, the USDA AMS price for meal in Decatur, Illinois.

2 As far as I know there's no public price data  
3 that's routinely reported for soybean meal in different  
4 states, but the delivery costs to Colorado from Decatur or  
5 from some crush facility in the Upper Midwest, for  
6 example, would be greater to Colorado than to South  
7 Dakota. So that's something that this particular graph is  
8 holding constant. It's just -- it's using the soybean  
9 meal price, but it is not changing that across regions.

10 This variable cost margin converts corn, hay, and  
11 meal prices to a variable cost associated with milk  
12 production. In essence, this margin measures feed costs  
13 in terms of a milk price and is in dollars per  
14 hundredweight of milk.

15 The variable cost margin for Colorado across the  
16 '07 to 2022 period was \$10.20 a hundredweight, and for  
17 South Dakota the average for the same period was \$8.90 per  
18 hundredweight and, again, measured per hundredweight of  
19 milk. The minimum and maximum for Colorado was \$6.68 and  
20 \$15.64 per hundredweight. Minimum and maximum for South  
21 Dakota is 5.66 -- \$5.66 and \$15.02 per hundredweight.

22 For perspective, the average minimum and maximum  
23 using the U.S. national prices and the Decatur soybean  
24 meal price results in a dairy margin of \$9.83, \$6.61, and  
25 \$15.29 per hundredweight.

26 THE COURT: Dr. Koontz, would you read those  
27 prices again, please?

28 THE WITNESS: Certainly. Where would you like me



1 to go back to?

2 THE COURT: Start with \$9.83.

3 THE WITNESS: Oh. So using, for perspective,  
4 backing up and looking at the national U.S. prices, the  
5 resulting dairy margin is \$9.83 for an average, the  
6 minimum is \$6.21, and the maximum is \$15.29 per  
7 hundredweight.

8 THE COURT: Thank you.

9 THE WITNESS: These latter values, the national  
10 values, are values that would be associated with producers  
11 across the country if they used the current USDA FSA  
12 product.

13 South Dakota is used for comparison because it is  
14 a close dairy producing region, close to Colorado,  
15 reasonably close to Colorado, where the proposed changes  
16 to milk pricing are not what is to be experienced in  
17 Colorado. Albeit, more recently, South Dakota is also  
18 experiencing growing milk production to satisfy the milk  
19 product market. South Dakota is also potentially part of  
20 the national region which supplies feedstuffs into  
21 Colorado and other high plains livestock producing  
22 regions.

23 Other regions out -- other regions in the Upper  
24 Midwest would have comparable statistics and conclusions  
25 and with their comparisons with Colorado.

26 And last, I was asked by Ed Gallagher of DFA to  
27 focus my facts -- focus what I'm considering comparing  
28 Colorado to, to focus simply on South Dakota. That would



1 be a reasonable comparison and a good reference for  
2 comparison.

3 What we see in this first figure, Figure 1, in the  
4 exhibit, what we see is that Colorado milk production, the  
5 variable cost associated with feed were about a dollar to  
6 \$2 a hundredweight than those using prices from South  
7 Dakota. Margins in the Central Midwestern states will be  
8 lower again yet.

9 Further, the trend in feed costs is progressing  
10 higher. Colorado is a corn-deficit state. Livestock  
11 demand within the state is generally higher than corn  
12 production within the state. Prices are higher when  
13 compared to neighboring states, and corn is trans-shipped  
14 from regions outside of Colorado into Colorado.

15 There's also a similar situation with respect to  
16 forage, specifically alfalfa hay prices. The availability  
17 of irrigation water and a semi-arid climate in Colorado  
18 allows production of exceptionally high quality feed  
19 alfalfa hay relative to regions further east. This hay is  
20 in much demand in Colorado and is also regularly shipped  
21 to Nebraska, Kansas, Texas, and New Mexico.

22 Dairy production in Colorado has grown since 2000,  
23 and this is because animal productivity, the milk -- the  
24 value of milk produced per cow is generally higher than  
25 the cost of production, which are primarily feed costs.  
26 And the feed costs are -- are reasonably low -- relatively  
27 low compared to that value of that achieved milk cow  
28 output. But this advantage has been pressured



1 substantially since 2006.

2 In 2006 and 2007, that's a time period where the  
3 feed grain market transitioned from being solely an animal  
4 feed market into a market which also satisfied demand for  
5 biofuels, and that biofuel is primarily that of ethanol  
6 for gasoline used in gasoline blending.

7 THE COURT: Now, I want to make sure I heard what  
8 you said. So the last part of that sentence, when you  
9 start with -- with "transitioned from," if you would.

10 THE WITNESS: So the feed grain market  
11 transitioned from being solely an animal feed market into  
12 a market which also satisfies demand for biofuels,  
13 primarily that being ethanol for gasoline blending.

14 THE COURT: Thank you.

15 THE WITNESS: So in Figure 1 what I'm doing is I'm  
16 using the FSA formula for the dairy margin, and instead of  
17 using national prices, I'm using the USDA NASS prices for  
18 Colorado and for South Dakota, and the Decatur, Illinois,  
19 soybean meal price. And the higher corn and hay prices in  
20 Colorado demonstrate a higher variable cost feeding  
21 margin. We also see the substantial jump in that margin  
22 post-2006 when corn prices jumped higher -- moved to a  
23 higher level due to that high demand now for corn to  
24 produce ethanol.

25 THE COURT: Now, you are talking now about  
26 Figure 2?

27 THE WITNESS: No, Figure 1. This is --

28 THE COURT: Still Figure 1.



1 THE WITNESS: -- putting Figure 1 in a bit of  
2 context.

3 THE COURT: Very good. Thank you.

4 THE WITNESS: So Figure 2 illustrates the  
5 difference between the two variable cost dairy margin  
6 series from Figure 1. This is just the difference between  
7 Colorado and South Dakota from the first figure. And we  
8 see that difference is about 1 to \$2 per hundredweight of  
9 milk over time. The difference is increasing or  
10 periodically stair-steps higher. The average from '07 to  
11 '22 is a difference of \$1.34 per hundredweight. And,  
12 again, the units of this calculation are a hundredweight  
13 of milk.

14 I believe this difference is also conservative.  
15 It uses only different corn and alfalfa hay prices for the  
16 two regions, and that if you incorporated a different  
17 protein feed cost, the difference would likely increase as  
18 well.

19 So digging into some more of the details.

20 My apologies, that spreadsheet has more tabs than  
21 I can manage. I know the figures in the PDF file of the  
22 exhibit though.

23 So Figure 3. Figure 3 illustrates the alfalfa hay  
24 prices and the different prices between Colorado and South  
25 Dakota.

26 THE COURT: Could we go off record just a moment?

27 (An off-the-record discussion took place.)

28 THE COURT: Let's go back on record.



1 All right. We're back on record. It's 8:31.

2 All right. I was having trouble finding my PDF  
3 copy of these exhibits, and now I see them. They are  
4 just -- they begin on page 8 of the exhibit that we have,  
5 and page 9, and now we have gone to page -- right now  
6 we're on page 11.

7 All right. Thank you.

8 THE WITNESS: Certainly.

9 THE COURT: You may resume.

10 THE WITNESS: Thank you.

11 Figure 4 illustrates corn prices for the two  
12 states. And what I believe the two figures shows, neither  
13 of these price series is flat over time. The prices are  
14 volatile and for the most part increase. And importantly,  
15 there's a persistent higher cost in Colorado when compared  
16 to, for example, South Dakota. Colorado is generally an  
17 animal feed deficit state. Colorado is competitive in  
18 cattle feeding and milk production largely because of the  
19 higher productivity associated with animal performance in  
20 the relatively dry and semi-arid climate in Colorado.

21 The average from 2007 to 2022 is a difference of  
22 \$70.50 per ton for alfalfa hay, and the average difference  
23 for 2007 to 2022 is a difference of \$0.35 per bushel for  
24 corn. Also, observed in Figure 3 is the -- is the -- what  
25 I spoke of, the increase in the biofuel demand, the  
26 resulting change in feed market transition.

27 Prior to 2006, the demand for corn was primarily  
28 livestock feed demand, and demand for corn to be used to



1 produce ethanol for gasoline blending that emerged in 2007  
2 grew considerably. And that growth rate slowed down in  
3 2010 and has continued to grow modestly. Biofuel demand,  
4 that biofuel demand changed to the corn market from a --  
5 what I perceive as a long-run average national corn price  
6 between 3 and 3.50. It increased that to a long-run  
7 average price between 4.50 and 5.50.

8 The USDA FSA dairy margin calculations convert  
9 feed costs to a measure of variable costs associated with  
10 feed. The resulting unit of measurement, again, is  
11 dollars per hundredweight of milk produced. That gross  
12 margin calculation, that variable cost margin calculation,  
13 can be subtracted from a milk price to reveal a  
14 contribution to fixed costs.

15 Similarly, those variable costs and an estimate of  
16 fixed costs can be combined and the result subtracted from  
17 the milk price to measure industry profitability. That  
18 profitability or, in fact, the gross margin may not  
19 represent any one or even a handful of specific dairy  
20 producers, but this measure is a very reasonable summary  
21 of economic conditions in the dairy industry, and it's  
22 useful for comparing economic conditions through time and  
23 across states.

24 My communication with dairy industry members and  
25 also my reading of extension work, extension publications,  
26 regarding fixed costs for dairies is that these costs are  
27 reasonably between \$6 a hundredweight and \$8 a  
28 hundredweight of milk. The average variable costs for





1 production in Colorado in -- the average variable cost for  
2 Colorado are \$8 -- or not -- excuse me -- \$10.29 for that  
3 2007 to '22 time period. And that is as defined by that  
4 dairy margin component.

5 A similar calculation for the whole U.S. would be  
6 \$9.83 per hundredweight. It's also commonly communicated  
7 that dairy fixed costs are somewhere between 60 -- or 40  
8 and 60% of variable costs. Of course, variable costs do  
9 not change with production volumes like variable costs do,  
10 and both by definition.

11 Further, producers regularly --

12 THE COURT: I'm sorry, just read again that  
13 sentence in the parentheses, please.

14 THE WITNESS: Sure. Within the parentheses: Of  
15 course variable costs do not change with production  
16 costs --

17 THE COURT: Let's do that again. I think -- I  
18 think you mean to start with fixed costs do not change.

19 THE WITNESS: Yes. Yes, ma'am.

20 THE COURT: Go ahead and read that again, please.

21 THE WITNESS: My apologies. I'm notorious for  
22 reading what I think is there and not what's actually  
23 there.

24 THE COURT: So do we all.

25 THE WITNESS: Of course, fixed costs do not change  
26 with production volumes like variable costs do, and both  
27 by definition.

28 Further, producers regularly and aggressively



1 pursue methods to improve efficiency and thereby reduce  
2 fixed costs.

3 So back to the 40 and 60% of variable costs, there  
4 being -- there's also some trade-offs between variable and  
5 fixed costs. High variable costs and high fixed costs we  
6 don't observe. In combination, it's simply not  
7 economically sustainable.

8 Further, it's likely -- but I don't consider it  
9 directly here -- fixed costs are things that over time are  
10 most impacted by inflation. Inflation will elevate fixed  
11 costs, but variable costs I believe are -- are tracked  
12 very well by feed costs, feed prices.

13 So Figure 5 is why people give economists a hard  
14 time, because it doesn't look like anything, but Figure 5  
15 presents this measure of industry profitability. The main  
16 thing I see when I look at that is a lot of variability.  
17 It's highly variable and around zero.

18 So Figure 5 presents a measure of industry  
19 profitability where I'm taking the variable cost  
20 associated with that feed margin and adding to it three  
21 example fixed cost amounts: \$6 per hundredweight, \$7 per  
22 hundredweight, and \$8 per hundredweight. So that combined  
23 fixed and variable costs are then subtracted from a  
24 national Class III milk price.

25 In Colorado, when I think of milk prices, it's  
26 Class III. That's largely where our products are going.  
27 And USDA NASS doesn't have a continuous price series on an  
28 alternative grade of milk for specific states, so this is



1 the -- this is the U.S. price for Class III milk, and  
2 that's -- that's what I think of when I think of what  
3 Colorado producers are selling into.

4 We see that milk production profitability, so  
5 dairy profitability, is highly variable and over time  
6 rather modest. The profitability in this industry is not  
7 substantial. The month-to-month variability and  
8 profitability is both large and centers only modestly  
9 above zero.

10 Milk production in my mind is an acceptable model  
11 or representation of a competitive industry. Monthly  
12 profits vary around zero and have persistent periods of  
13 good profits. To the topside of zero would be good profit  
14 periods. And then also, substantial periods of strong  
15 losses.

16 The month-to-month profitability of the three  
17 different fixed costs is simply different by that assumed  
18 \$1 per hundredweight difference in fixed costs across  
19 the -- that triple. And, again, inflation's not  
20 considered here. The profit barometer I believe is -- is  
21 conservative without that, without considering inflation.

22 Because the month-to-month profitability doesn't  
23 communicate well, it doesn't communicate that we're  
24 looking to understand industry economic health and  
25 well-being. And so I'll change what's -- what's looked at  
26 a little bit.

27 So an alternative measure that communicates a  
28 little better is to accumulate that month-to-month



1 profitability. That's -- that's just a -- a simple  
2 summing of the month-to-month profit on the prior figure.  
3 This process measures the accumulation of income or wealth  
4 from marketing 100 weight of milk in each example month in  
5 this time period.

6 This measure -- therefore, you can -- you can  
7 think of this -- this is selling 100 weight of milk, and  
8 if you would like to scale it up to different states or  
9 different regions, that is -- that's doable in that  
10 context.

11 Thus, the measure can be scaled up to think about  
12 impacts on an industry in a state, and of course that's  
13 provided the dairy margin formula is reasonably accurate  
14 and as is the assumed fixed cost amounts.

15 So Figure 6 presents the cumulative profitability  
16 for the three assumed fixed costs. And, again, it's  
17 taking the milk price and subtracting from that the  
18 variable cost and the fixed costs and then accumulating  
19 the three example -- the profitability from the three  
20 different fixed cost examples.

21 Dairy profitability within Colorado was -- was  
22 strongest in -- so focusing on the green line in the  
23 middle, dairy profitability in Colorado was the strongest  
24 in 2004, 2006, and 2007. Profitability eroded, likewise,  
25 in 2009 to '13, and the profitability has been stable from  
26 2015 to '22, with some growth recovery in 2014.

27 So in Figure 6, the cumulative wealth with a \$7  
28 per hundredweight fixed cost is pretty modest, and for



1 thinking about it, it's for all purposes flat.

2 You need to use caution when you are looking at  
3 cumulative profits or wealth. The starting point is very  
4 important. But this is also, I believe, what is  
5 experienced by producers. When producers enter into the  
6 industry or when they achieve a substantial size, their  
7 operating size -- ultimate operating size, that matters a  
8 lot.

9 Cumulative profitability also illustrates the  
10 importance of continuous improved productivity, that  
11 ability for animals to produce more milk per animal over  
12 time. Improved productivity with a gradual -- will  
13 gradually reduce fixed costs faced by dairies.

14 And it is this improved productivity that results  
15 in profitability, but the profitability in the end is not  
16 substantial nor does it persist. You have to have  
17 improved efficiency, that is -- improved efficiency is and  
18 must be pursued continuously.

19 The \$8 per hundredweight fix cost, the red line,  
20 reveals issues for high cost producers. High cost  
21 producers are simply not economically successful. This \$1  
22 increase in fixed costs from 7 to \$8 per hundredweight  
23 also, I believe, will represent the potential impact of  
24 the proposed milk price pricing policy change.

25 Feed costs are relatively high in Colorado, and  
26 improved productivity can offset some of this  
27 disadvantage, but a \$1 per hundredweight reduction in the  
28 manufacturing milk price would have a substantially



1 negative impact on dairy production in Colorado.

2 Figure 6 reveals that -- reveals the market  
3 barometer moving substantially lower in this cost or price  
4 environment. So if you -- again, if you reduce the milk  
5 price by \$1 per hundredweight, there's a substantial  
6 decline in the cumulative profitability.

7 Again, this implies that Figure 6 reveals the  
8 market barometer moving substantially lower in this cost  
9 or price environment. This implies that the revenue from  
10 milk is not covering variable feed costs and fixed  
11 business costs, the fixed costs. Reducing milk price by a  
12 dollar would have a substantial negative impact, that's  
13 the conclusion I'm drawing from this information.

14 Similarly, a low fixed cost amount of \$6 per  
15 hundredweight can result in a business or regional  
16 industry accumulating substantial wealth. The swings in  
17 the cumulative profitability are similar, but the  
18 underlying cost difference is what determines the industry  
19 success.

20 The same statement can be made about the price.  
21 That's -- that's important for me. Both the \$1 increase  
22 or the \$1 decrease in cost from a base of \$7 per  
23 hundredweight reveal very different economic outcomes.  
24 The same result would occur with a \$1 change in the price  
25 of milk that's sold.

26 So in summary, if the proposed policy changes are  
27 adopted, then dairy production in Colorado would most  
28 likely decline, and I believe the industry would have to



1 transition to a composition of rather few and very large  
2 extremely efficient operations. Dairy production in total  
3 would decrease and the remaining businesses would have to  
4 have the absolute lowest fixed costs and the highest  
5 productivity. These requirements are typically only met  
6 by the few largest businesses in my experience.

7 So that's focusing on the cost side, the prices of  
8 corn, hay relative to milk. The next part is to back out  
9 a little bit and talk some more about Colorado.

10 I believe it's important to recognize that the  
11 economic climate associated with Colorado is simply not  
12 overwhelmingly advantageous for agriculture, and I believe  
13 that especially in the long run. So in the remaining  
14 testimony, the intention is to, again, transition to a  
15 more general discussion or recognition of the environment  
16 that agriculture faces in the West. A portion of this  
17 environment is economic related.

18 Feed that is produced in Colorado relies on  
19 irrigation, and surface water irrigation specifically. In  
20 contrast, to, for example, states like Nebraska, Texas,  
21 and Kansas, ground water pumping from aquifers in Colorado  
22 is very limited. We use surface water instead.

23 Surface water is replenished annually from  
24 snowfall and snowpack. Total supplies depend upon  
25 snowfall the prior winter. Spring and summer snow melts  
26 result in the entire availability of surface water for  
27 irrigation. This water developed Colorado agriculture,  
28 but the population growth in the West and especially the



1 front range of Colorado is creating very strong demands on  
2 available water supplies.

3 What agriculture can pay for surface water is much  
4 less than what urban and suburban use can pay for water.  
5 Agriculture is at a competitive disadvantage for long-run  
6 securing of water resources. In the end, water supplies  
7 will be reduced for agricultural use.

8 The result is that feed production in the state  
9 will likely never see reduced water costs. And it is  
10 irrigated crop agriculture through its production of corn  
11 silage and high quality forage that is essential for  
12 livestock -- that is essential for livestock feeding and,  
13 in particular, milk production.

14 There's also a general uncertainty about the  
15 long-run availability of surface water. Climate change is  
16 thought to most likely result in less winter snowfall and  
17 less reliable snowfall. Agriculture developed water in  
18 Colorado, but agriculture is likely to be the residual  
19 claimant on the water that's available.

20 The value of water -- the value of water to  
21 irrigated agriculture in Colorado can be seen in the  
22 data -- it can be seen in data available through the USDA.  
23 The National Ag Statistic Service collects and reports  
24 valuation of land, and they break it out when available  
25 into irrigated land, non-irrigated, pasture, and all  
26 combined farmland. And you can find this for Colorado.

27 The most recent year for the survey, 2023,  
28 irrigated land is valued in Colorado at \$6,000 per acre,





1 pasture is valued at \$880 per acre, and non-irrigated land  
2 at \$1700 per acre.

3 THE COURT: The figure on our page 6 is different  
4 on the pasture. So read again, if you will, that sentence  
5 that begins "for the most recent year 2023."

6 THE WITNESS: Yes.

7 Irrigated land is valued at \$6,000 per acre,  
8 pasture is valued at \$980 per acre, non-irrigated land is  
9 valued at \$1,700 per acre, and all farm land -- this  
10 doesn't include building valuations -- is valued at \$2,610  
11 per acre.

12 Most of the farmland in Colorado is non-irrigated  
13 or is dry land. Irrigated lands are much sought after and  
14 are very highly valued. These valuations -- these  
15 specific valuations are not transactions. This is not  
16 what land trades for, but rather this is a survey of  
17 reported valuations by producers.

18 The Colorado valuations contrast with farmland  
19 values in Wisconsin, which report no separate irrigated  
20 and non-irrigated. Land values for crop -- values for  
21 crop land are \$6,710 per acre, and pasture is \$3,150 per  
22 acre.

23 NASS reports the following for, for example, South  
24 Dakota -- the irrigated land values are not reported to  
25 avoid revealing specific individuals. Pasture is valued  
26 at \$1,340 an acre, non-irrigated crop land at \$4,520 per  
27 acre, all farmland is valued at \$4,550 per acre.

28 We see Colorado have low overall valuations, high



1 valuations for irrigated land and, therefore, a large  
2 difference between the two. It is irrigation water that  
3 drives how high valuations, and it is irrigated land in  
4 Colorado that produces high quality and high volume feeds,  
5 and it's also where most dairies operate.

6 The water availability issue is rather similar to  
7 land availability issues and also other important inputs  
8 such as labor. The most productive land in Colorado is in  
9 the South Platte River Basin. Productivity is due to the  
10 proximity to the river and availability of surface  
11 irrigation water. This is the region between Fort  
12 Collins, Denver, and Greeley, and it extends eastward out  
13 to Sterling and Fort Morgan.

14 These are areas with the most productive  
15 farmlands, the most dairies, many cattle feed lots, and  
16 also the greatest urban pressures. These are the areas  
17 with the most population pressures and most availability  
18 of job offerings. Manual labor, construction, farm labor,  
19 harvest labor are the hardest to fulfill in this area as  
20 compared to areas -- other areas in Colorado and compared  
21 to regions in neighboring states.

22 Farming and livestock production communities in  
23 the Northeast Colorado face serious pressures with respect  
24 to land availability, water availability, and labor  
25 availability. Dairy production and animal feeding in the  
26 states that persist in this region will have to have  
27 productivity and productivity growth greater than these  
28 pressures. These are difficult headwinds for agriculture.



1 And more than that, these will be persistent pressures I  
2 believe for the foreseeable future.

3 Commercial agriculture in Colorado that's been  
4 successful is animal agriculture. Animals are productive  
5 in the -- in the semi-arid and high and dry climate. Also  
6 successful is irrigated crop agriculture. High quality  
7 feed crops are produced, high quality and volume forages  
8 are produced, but the environment is simply not just in  
9 agriculture's favor. Agriculture developed because of the  
10 limited alternatives and lack of human pressures, and  
11 successful agriculture is that which is more efficient and  
12 efficient relative to these environmental constraints.

13 In the long run, pressures on water demand,  
14 pressures on the demand for land, which is also productive  
15 farmland, and the relative opportunities for labor and  
16 employment are simply not in favor of agriculture.  
17 Improvements in productivity are needed in all animal  
18 agriculture in Colorado simply to maintain that important  
19 contribution to the economy and specifically to the rural  
20 economy. It's difficult for me to see how the Colorado  
21 dairy and milk production industry could simply adapt or  
22 make other adjustments to absorb the proposed policy  
23 change.

24 MS. HANCOCK: Thank you very much, Dr. Koontz.

25 Your Honor, at this time we would make Dr. Koontz  
26 available for cross-examination.

27 THE COURT: Let me ask Dr. Koontz. There are two  
28 spellings that if he wants me to change, we'll change on



1 the record copy.

2 THE WITNESS: Okay.

3 THE COURT: The first one is on page 1, it's the  
4 last line of the first paragraph.

5 THE WITNESS: Yes, ma'am.

6 THE COURT: And you read "solid understanding."

7 THE WITNESS: Yes.

8 THE COURT: And I would like for us to actually  
9 make that change on the record copy.

10 THE WITNESS: Thank you.

11 THE COURT: Do you see where I am? I'm on page 1,  
12 the last line of the first paragraph, first word says  
13 "sold," but he read "solid," and that's what it should be,  
14 "solid understanding." So we'll make the word "sold" to  
15 be "solid" on the record copy.

16 And then the last one was Platte. And that is  
17 very near the end here. We're on page 6, second line up  
18 from the bottom. We're talking about the South Platte  
19 River Basin. And it ends in "T." There are two Ts. Do  
20 you agree?

21 THE WITNESS: Yes.

22 THE COURT: So that instead of reading "Plate"  
23 will read "Platt," P-L-A-T-T, "Platt River Basin" (sic).  
24 So --

25 MS. TAYLOR: Your Honor, if we -- I think have one  
26 more correction. If we turn to page 8, which is his first  
27 chart.

28 THE WITNESS: Yes.



1 MS. TAYLOR: The top of that chart in the paper  
2 copy says "RMA," but what you showed, and I think is  
3 correct, should say "FSA" at the very top.

4 THE WITNESS: Yes, that is correct. Thank you.

5 THE COURT: Oh, thank you. So do you see that  
6 one? On page 8? So you have made all three changes?

7 Thank you. Very good.

8 All right. This is really interesting.

9 THE WITNESS: Thank you.

10 THE COURT: Thank you very much. Dense and very  
11 informative.

12 Who would like to begin cross-examination?

13 CROSS-EXAMINATION

14 BY MR. ROSENBAUM:

15 Q. Good morning. I'm Steve Rosenbaum for the  
16 International Dairy Foods Association.

17 Dr. Koontz, I went on your website and looked at  
18 your curriculum vitae. I did not see any articles,  
19 publications, etcetera, that relate to Federal Milk  
20 Marketing Orders.

21 Have you ever written anything relating to Federal  
22 Milk Marketing Orders?

23 A. No, I have not.

24 Q. I also looked through the publications, the  
25 titles, for the word "milk." I didn't see any publication  
26 that used the word "milk" in it.

27 Have you ever published something that the title  
28 of which had the word "milk" in it?



1 A. I have a couple of working pieces that have  
2 working papers that I believe are not in the --

3 Q. They are not, sorry?

4 A. Not in what you found in the curriculum vitae.

5 Q. And what's the topic?

6 A. I'm interested in -- I had a -- I had a student  
7 that had an interest in dairy, and specifically cheese  
8 markets, and so she worked for me on some forecasting  
9 models for cheese prices.

10 Q. What's the other one?

11 A. The other one is looking at -- I -- I teach  
12 futures and options, and I was looking at how Class III  
13 milk futures prices behave over their trading horizon.

14 Q. Okay. Anything else?

15 A. No.

16 Q. Now, I also looked for the word "dairy" in your  
17 list of publications, and I found one from July 2003  
18 called the "Economics of the Red Meat and Dairy Industries  
19 (Veterinary Clinics of North America: Food Animal  
20 Practice)."

21 That is something you did, right? Is that right?

22 A. Yes. I was editor. That was a special issue of  
23 that journal. I was editor of that.

24 Q. And is the -- is that journal geared toward  
25 veterinarians?

26 A. Food animal veterinarians. So it's folks that  
27 often have an industry -- interest in industry and what's  
28 going on in industry.



1 Q. Okay. So this was an article that was designed  
2 with respect to veterinarians that would have an interest  
3 in the industry; is that fair to say?

4 A. Not necessarily just veterinarians. Veterinarians  
5 have an impact a lot on animal industries. So there are  
6 quite a few people that are not vets that read those types  
7 of works.

8 Q. Is there any other article -- that's -- let me  
9 start that question again.

10 I only identified that article. Is there any  
11 other article you've written that had the word "dairy" in  
12 its title?

13 A. Not that I'm aware of, no.

14 Q. Okay. So you geared your presentation, arguably  
15 your entire presentation, toward the notion of a \$1 per  
16 hundredweight price decrease and what its impact would be,  
17 correct?

18 A. Yes.

19 Q. And so I want to explore that number, the dollar.  
20 You attribute \$0.50 of that to a change in the  
21 Make Allowance, correct?

22 A. Correct.

23 Q. Now, your -- I mean -- okay. Are you -- your  
24 article -- strike that.

25 Your testimony is geared toward Colorado, correct?

26 A. Yes.

27 Q. Now, are you aware of the fact that there's only  
28 one Make Allowance for the entire country? That's how the



1 system works? For each -- I mean, it is different for the  
2 commodity. I mean, cheese has its Make Allowance, and  
3 nonfat dry milk has its Make Allowance, etcetera.

4 But there's only one Make Allowance. Do you know  
5 that?

6 A. I -- I understand the ideas behind Make Allowance,  
7 but I do not know the details.

8 Q. Okay. But I mean you are not here advocating that  
9 Colorado should get a special Make Allowance?

10 A. No. I specifically said that my testimony is not  
11 related to the Make Allowance.

12 Q. Okay. And indeed, you don't know whether USDA has  
13 historically taken the position that the Make Allowance  
14 relates to the cost of transforming milk into a finished  
15 product and is not itself determined at all by what the  
16 costs of production are at the farm level. Do you know  
17 that?

18 A. I -- I don't understand your question, sir.

19 Q. Yeah. Do you know whether the costs of producing  
20 milk is part of the calculation that USDA makes in  
21 determining what an appropriate Make Allowance should be?

22 A. I am -- no, I don't know.

23 Q. Okay. Now, the other 50 -- so just to orient  
24 ourselves again. You are talking about the impact of a \$1  
25 per hundredweight price decrease, and you -- \$0.50 of that  
26 you say is the Make Allowance increase, which we have just  
27 gone through talking about.

28 The other you say is \$0.50 due to the Wisconsin





1 model if there is no adjustment. I think that's the  
2 term -- that's the description you use on page 2?

3 A. Yes.

4 Q. Okay. So I assume you're referring to the model  
5 that the University of Wisconsin has undertaken for  
6 purposes of providing information that might be used in  
7 setting the Class I differential. Is that your  
8 understanding?

9 A. What I -- what I understood and what I was working  
10 with was in the end, there would likely be a \$1 per  
11 hundredweight reduction in prices paid to Colorado  
12 dairies, and that was my starting place.

13 Q. Okay. So let me show you the document that was  
14 marked yesterday as Hearing Exhibit 301. It's that  
15 massive spreadsheet. And I have turned it for you to the  
16 page 4 -- I hope I gave you page 4 -- where -- that's  
17 where the information is for the state of Colorado  
18 starting on line 217.

19 And I will represent to you that the testimony  
20 is -- and this was from the person who created this, or at  
21 least created most of the columns -- that the Column L  
22 represents the output of the Wisconsin model if you  
23 average the results for the months of May and the month of  
24 October. So that, if you will, the result of that model,  
25 say for the first county listed, which is Adams County, is  
26 \$2.50.

27 Do you see where I am?

28 A. Sir, I don't know what this is, and I'm not



1 prepared to testify about it.

2 Q. Well -- all right. So I think others may be  
3 looking at it themselves. I mean, I don't see -- what I  
4 see is that for most -- strike that. Let me start again.

5 There is then in Column M a comparison of the  
6 current Class I differential in each county in Colorado  
7 versus the output, if you will, of the Wisconsin model,  
8 and in virtually every county the Wisconsin model is  
9 producing a higher number than the current differential.

10 So with that as background, do you have an  
11 explanation for how that other \$0.50 comes about?

12 A. Sir --

13 MS. HANCOCK: Your Honor -- hold on one second.

14 THE COURT: Ms. Hancock?

15 MS. HANCOCK: Your Honor, this is well outside of  
16 this witness's scope of testimony or any of the things  
17 that he talked about. He has no knowledge about this  
18 document. I think it's perfectly fine to ask him what he  
19 knows about based on what his testimony is, but we're  
20 going to be here forever if we don't stay on topic.

21 THE COURT: I -- Ms. Hancock, come back, please.

22 I did not understand where the two \$0.50 per  
23 hundredweight came from that he was asked to testify  
24 about.

25 MS. HANCOCK: If that was the question, Your  
26 Honor --

27 THE COURT: That's maybe not Mr. Rosenbaum's  
28 question. But -- but I would like him to explain more.



1 Was he just told, argue what would happen if this changed  
2 by \$0.50 a hundredweight and this changed by \$0.50  
3 hundredweight, and that's what he did? I do not know.

4 But if -- but if he doesn't know where it came  
5 from, I think it -- he might enjoy being shown what this  
6 model showed about part of that information. I don't  
7 know.

8 So I'm not ruling on your objection, I'm just  
9 saying there is -- we need more, I believe, to know why he  
10 is thinking that might happen, and I welcome  
11 Mr. Rosenbaum's starting somewhere. So --

12 MS. HANCOCK: And, Your Honor, if I could just  
13 briefly. I think, in his testimony, he has described that  
14 he was given some information that said, assume this  
15 increase happens, please tell us the impact in your  
16 market. And it was an impact based on Make Allowances,  
17 not on this differential sheet.

18 THE COURT: Well, he had two different sources --

19 MS. HANCOCK: He had --

20 THE COURT: -- one \$0.50 per hundredweight from  
21 the Make Allowance, but the other \$0.50 per hundredweight  
22 was from --

23 MS. HANCOCK: I think all of that is fair ground  
24 if they wanted to explore that line of questioning with  
25 the witness to establish how he got the base number. I  
26 don't know if he knows anything more than assume it to be  
27 true.

28 THE COURT: Ah.



1 MS. HANCOCK: But I'm just -- my point is, he  
2 doesn't know this document. He doesn't know the basis and  
3 the background for how these numbers were derived. I  
4 don't even know if he knows all of the other factors that  
5 go into the additional considerations. I'm just trying to  
6 keep us on topic so that we can make some progress in the  
7 hearing.

8 THE COURT: I appreciate that. We all appreciate  
9 that.

10 Mr. Rosenbaum, you may proceed in any way you  
11 wish.

12 BY MR. ROSENBAUM:

13 Q. So assume with me that this exhibit which you  
14 apparently are declining to look at --

15 A. Sir, I don't know what it is. I don't know the  
16 details. I have not -- not seen it before. I'm not  
17 willing to testify about it.

18 Q. I mean --

19 A. Where the -- where the Make Allowance came from  
20 and the -- and the change in the -- from the Wisconsin  
21 model is in my testimony, page 2, second full paragraph.

22 Q. Okay. The --

23 A. The \$0.50 -- the \$1 per hundredweight that I'm  
24 working with is with communications with Ed Gallagher of  
25 DFA. That is where this issue was brought to my  
26 attention. And my understanding is there's an  
27 approximately \$1 impact on what would be paid to Colorado  
28 dairy producers, potentially \$1 to \$2 per hundredweight of



1 milk. And that's where I was working with. I don't know  
2 where those details come from. I am limiting my  
3 discussion to what I think the impact will be on Colorado  
4 dairies.

5 Q. Do you know whether hearing -- you -- just to be  
6 clear, this line of questioning was entirely generated by  
7 your reference to the, what would happen if the Wisconsin  
8 models output was followed with no adjustments. That's  
9 why I'm asking these questions.

10 Do you know whether Exhibit 301 is in fact the  
11 output of the Wisconsin model in substantial part?

12 A. I -- I don't know what it is, sir.

13 Q. Okay. And if -- if I am accurate, and others can  
14 look at it themselves, that this document shows for the  
15 Colorado counties that the output of the Wisconsin model  
16 is higher than the current Make Allowances for the vast  
17 majority of counties, do you have any explanation as to  
18 how that reconciles?

19 A. I -- I'm curious about the Wisconsin model, but I  
20 don't know any of the details.

21 Q. Okay. Okay. So sort of sticking to that same  
22 theme. You have a statement that -- on page 3, that the  
23 proposed price changes in South Dakota will not be similar  
24 to the changes in Colorado. You say that's on page 3.  
25 You say, and I quote, "South Dakota is used for  
26 comparison" -- this is your testimony, Exhibit 304 --  
27 "South Dakota is used for comparison because it is a close  
28 dairy producing region where the proposed changes to milk



1 pricing are not what will be experienced in Colorado."

2 Do you see that?

3 A. Yes.

4 Q. And I assume that when you talk about the proposed  
5 change in milk pricing, you are referring to changes in  
6 the Make Allowances and the changes in Class I  
7 differentials.

8 Is that what you are referencing?

9 A. I was communicating with Ed Gallagher, like the  
10 last sentence in that paragraph says. And there's a lot  
11 of things you can compare Colorado to, and the focus  
12 comparison was to use South Dakota.

13 Q. I'm not really focused right now on whether South  
14 Dakota is a good comparison for certain purposes. I'm  
15 trying to focus just specifically on this statement that  
16 the proposed changes in milk pricing are not what will be  
17 experienced in Colorado. That's -- that's -- on its face  
18 says that the proposed changes to milk pricing in South  
19 Dakota are not what will be experienced in Colorado,  
20 presumably from the proposed changes there. Right? Is  
21 that -- is that what that sentence is comparing,  
22 specifically?

23 A. I'm -- I don't understand -- I'm sorry, I don't  
24 understand your question.

25 Q. Okay. So, well, I'll just read the sentence,  
26 quote: "South Dakota is used for comparison because it is  
27 a close dairy producing region where the proposed changes  
28 to milk pricing are not what will be experienced in



1 Colorado," end quote.

2 So my questions focus on the part of that sentence  
3 that has the words, quote, "where the proposed changes to  
4 milk pricing are not what will be experienced in  
5 Colorado," end quote.

6 And my simple question is: In what sense are the  
7 proposed changes to milk pricing in South Dakota different  
8 than the proposed changes in Colorado?

9 A. I -- I talked with Ed Gallagher about this, and  
10 that was my understanding of what was going to happen.  
11 But I don't know the details of the Wisconsin model or the  
12 changes in Make Allowance.

13 The context of that paragraph is to explain why  
14 South Dakota was picked. It is a milk producing region.  
15 It's also a neighboring state that is involved in the  
16 region where feed is moved around. Where our feed grains  
17 come in, our forages go out, it is a neighboring region  
18 that is relevant for a comparison.

19 And what we see when we move further east is that  
20 Colorado is a high cost region. It doesn't matter how you  
21 slice it. You can look at other states. But if you move  
22 further east from Colorado, you have generally lower  
23 forage prices and lower feed grain prices --

24 Q. But, sir --

25 A. -- and that results in a higher margin in  
26 Colorado. That's where I was going with this discussion.

27 Q. Sir, I don't want to belabor the point, but the  
28 inference of that sentence is that to the extent that



1 South Dakota is a -- if you will, a competitor of  
2 Colorado, that is going to be exacerbated because the  
3 proposed change to milk pricing in South Dakota are not  
4 what will be experienced in Colorado.

5 Do you have any basis to conclude that's the case?

6 A. Like the last sentence in the paragraph says,  
7 it's -- comes from my discussions with Ed Gallagher of  
8 DFA.

9 Q. All right. Now, you -- on page 3 later on you  
10 talk about dairy production in Colorado has grown because  
11 animal productivity was higher than the cost of  
12 production, etcetera.

13 Have you -- I don't -- you do a lot of comparisons  
14 between South Dakota and Colorado. I don't see something  
15 anywhere where you explicitly say, at least, you know,  
16 what the relative productivity is between those two  
17 states, that is to say, you know, how many pounds of milk  
18 are produced by -- per cow in Colorado versus South  
19 Dakota.

20 Does that appear anywhere in your statement?

21 A. I don't believe so.

22 Q. Okay. Now, USDA publishes what they call an  
23 annual review for each state, and it can be found -- which  
24 can be found at [www.nass.usda.gov](http://www.nass.usda.gov). And this -- the most  
25 recent year, of course, for 2022, reports that in South  
26 Dakota milk production in pounds per head was  
27 23,117 pounds. In Colorado, it was 25,922 pounds. Which  
28 would suggest that Colorado farmers are able to produce





1 roughly 10% more milk per cow than -- in Colorado than  
2 South Dakota.

3 Does that comport with your general understanding  
4 of those facts?

5 A. My understanding of the dairy industry in Colorado  
6 is that it is an innovative industry, in that their milk  
7 production per cow has improved aggressively over the  
8 years, and that's the limit of my understanding. I don't  
9 work a lot with the dairy industry. I work primarily with  
10 the dairy industry in discussing what's going on in feed  
11 and forage markets.

12 So I follow the dairy industry modestly. The  
13 statistics that I have got -- all the statistics in my  
14 testimony are from USDA NASS Quick Stats, the online  
15 database that is the underlying data for the NASS reports,  
16 and from FSA with respect to the dairy margin formula, and  
17 AMS for the soybean meal prices. That's where that data  
18 come from.

19 Q. And I take it you did not in preparing your  
20 statement do a comparison of productivity in Colorado  
21 versus South Dakota in terms of pounds produced per cow;  
22 is that right?

23 A. No.

24 Q. Now, you do talk at some length about production  
25 in -- milk production in Colorado, so I would like to have  
26 a document marked as an exhibit on that topic.

27 THE COURT: So shall we just give this the next  
28 number? We can. This document you're distributing now we



1 will call Exhibit 305.

2 And what is the designation of it before it became  
3 305?

4 MR. ROSENBAUM: Your Honor, the answer is it  
5 doesn't have one at this point.

6 THE COURT: Does it have a title?

7 MR. ROSENBAUM: Your Honor, the -- it -- if I gave  
8 it a title, it would be called Colorado Milk Production.

9 THE COURT: That's good, just so I have some  
10 handle.

11 MR. ROSENBAUM: Does the government have enough --  
12 I have some extra -- I'm not sure I gave you enough  
13 copies.

14 (Exhibit Number 305 was marked for  
15 identification.)

16 BY MR. ROSENBAUM:

17 Q. So you referenced a minute ago Quick Stats,  
18 correct --

19 A. Yes.

20 Q. -- as one of the sources of your information?

21 So what I have provided you -- I haven't provided  
22 it to you yet.

23 I have now handed the witness a copy of what's  
24 been marked as Hearing Exhibit 305. You might just write  
25 305 on that so when I reference 305, you will know what  
26 I'm talking about.

27 So I, too, went to Quick Stats, and that's where  
28 the numbers on the top come from. This is simply a cut



1 and paste. And the -- the URL is listed. Obviously you  
2 are familiar with Quick Stats.

3 A. Sure.

4 Q. You can look up many, many different things and  
5 get that.

6 And then the bottom is a year-to-year change.  
7 This is a created document by us, also from NASS  
8 information, but we created this. It doesn't -- we used  
9 the data to create the bar chart. It doesn't -- it's  
10 not --

11 A. I understand.

12 Q. -- it is not --

13 A. It doesn't come out of Quick Stats.

14 Q. You wouldn't find this on Quick Stats itself, but  
15 the underlying information is from NASS.

16 So what -- so -- it's -- starting with the  
17 numbers at the top, I mean, the -- if you look at the  
18 start date of 2012 in Colorado, and this is milk  
19 production total pounds, it was about 3.2 billion pounds  
20 in that year, correct?

21 A. Yes.

22 Q. And then as of the most recent reported year,  
23 2022, it's grown all the way to 5.3 billion pounds,  
24 correct?

25 A. Yes.

26 Q. I mean, this -- I mean, Colorado has been a --  
27 start that question again.

28 I mean, milk production has been a growth industry



1 for Colorado, correct?

2 A. It is the -- the growth industry in Colorado  
3 agriculture, yes.

4 Q. I mean, you make -- you know, in your statement,  
5 your testimony, Hearing Exhibit 304, you make the  
6 statement that -- on page 3, that Colorado's advantage in  
7 terms of feed costs relative to milk output has been  
8 pressured since 2006, correct?

9 A. The cost side, the margin side is much tighter  
10 post the impact of ethanol on feed grain markets.

11 Q. Obviously, dairy farmers have to make the  
12 decision, does it make sense to increase production, do I  
13 bring in more cows, etcetera, etcetera.

14 It's fair to say that the numbers shown on here in  
15 Exhibit 305, and including the bar charts in the bottom,  
16 would convey the message that with a couple years'  
17 exception, the most recent of which is 13 years ago, that  
18 Colorado farmers have chosen to engage in the investments  
19 and other efforts to increase their milk production at a  
20 pretty healthy rate; isn't that right?

21 A. The -- the milk production has grown, yes.

22 Q. And I assume that farmers have chosen to put their  
23 dollars into investments to make that happen; is that  
24 fair?

25 A. Recently, no. I'm not aware of dairies -- in my  
26 discussions with folks in the industry, I'm not aware here  
27 in -- recently, especially in 2023, of dairies expanding.  
28 And what I'm aware of, right now, is very severe



1 profitability pressures.

2 Q. Well --

3 A. Now, does milk production go up? Quite possibly.  
4 Is there severe profitability issues or pressures in the  
5 industry? Those are two different things. Those can be  
6 two different things.

7 Q. I mean, as an example, the war in Ukraine has  
8 caused stress to the feed market, right?

9 A. Yes. As well as drought. Probably drought more  
10 important. Except for wheat. Wheat has been impacted a  
11 lot by the war in Ukraine, as has the natural gas market.

12 Q. And am I correct that Colorado has been a  
13 favorable location for milk production in the sense that  
14 there have been a number of major dairy production  
15 facilities built there over the last few years?

16 A. Over the last 15, 20, yes, for sure. That's the  
17 thing -- when I moved to Colorado State University, I'm a  
18 livestock economist, and that largely for me means cattle,  
19 cattle and beef. And when I looked at the livestock  
20 industry, the commodity industry in Colorado, what you saw  
21 with respect to cattle feeding was a decline in the number  
22 of cattle fed in the region. That was -- that had the  
23 potential to have a serious impact on the state economy  
24 and the rural economy because it's such a such big value  
25 added industry. What has come in and replaced cattle  
26 feeding has been dairy production. We have had growth in  
27 dairy in regions where cattle feeding has been reduced.

28 Q. Okay. So I think, for example, Leprino Foods has



1 major mozzarella plants in Fort Morgan and Greeley; is  
2 that correct?

3 A. Greeley especially, yes.

4 THE COURT: I'm sorry, Greeley what?

5 THE WITNESS: In Greeley especially, yes. It's a  
6 very large facility in Greeley.

7 BY MR. ROSENBAUM:

8 Q. Okay. And there's -- Dairy Farmers of America has  
9 a -- it's a butter plant in Colorado, too? Am I right  
10 about that?

11 A. I do not know.

12 Q. Okay. And then you have got fluid milk processing  
13 facilities in Denver; is that right?

14 A. I -- I -- I'm not familiar with the processing  
15 industry, other than you can't not know about Leprino in  
16 Greeley. If you drive on that side of town, you have got  
17 to drive around that facility. It's enormous.

18 Q. Okay. And we have talked about -- a bit about  
19 Make Allowances. We have talked a little bit about the  
20 University of Wisconsin Class I differential model.

21 Do you know whether farmer costs of production  
22 play any role in that model?

23 A. I -- I'm -- I understand some of the concepts  
24 behind the model. I have read a little bit about the  
25 model. It's very big and complicated. I'm unfamiliar  
26 with a majority of the details of that model.

27 Q. Including the one I just mentioned? Is that one  
28 you are not familiar within?



1           A.    I -- I have not looked at the details of those  
2 models.

3           Q.    That's a little bit broad.  I'm trying to be very  
4 specific.

5                    Do you know whether that model addresses as an  
6 input farmer cost of production?

7           A.    I'm not trying to be difficult.  I don't know  
8 about the model.

9                    MR. ROSENBAUM:  Okay.  That's all I have.  Thank  
10 you.

11                   THE COURT:  Thank you, Mr. Rosenbaum.

12                   I think -- this is perfect because it's 9:30.  I  
13 would like you to be back here at -- oh, now it is 9:31 --  
14 be back at 9:41.

15                   We go off record at 9:31 for a ten-minute break.

16                               (Whereupon, a break was taken.)

17                   THE COURT:  Let's go back on record.

18                   We're back on record at 9:43.

19                   Mr. Rosenbaum.

20                   MR. ROSENBAUM:  Your Honor, Steve Rosenbaum,  
21 International Dairy Foods Association.

22                   During my cross-examination I made reference to  
23 figures in two official USDA publications, and so I would  
24 like to ask that official notice be taken of them.  One of  
25 them is called the USDA/NASS 2022 State Agriculture  
26 Overview for South Dakota, and the other is the USDA/NASS  
27 2022 State Agriculture Overview for Colorado.  Those --  
28 they are both available on the USDA/NASS website.



1 THE COURT: Is there any objection to my taking  
2 official notice of those two online resources?

3 There is none. I do take official notice of the  
4 USDA/NASS 2022 State Agricultural Overview for South  
5 Dakota, and the same for Colorado.

6 MR. ROSENBAUM: Thank you, Your Honor.

7 THE COURT: You're welcome.

8 Who next would like to cross-examine Dr. Koontz?

9 CROSS-EXAMINATION

10 BY MR. MILTNER:

11 Q. Good morning, Dr. Koontz.

12 A. Good morning.

13 Q. My name is Ryan Miltner. I represent Select Milk  
14 Producers, a dairy co-op with farms in New Mexico and  
15 Texas, as well as the Midwest.

16 You note in your testimony that Colorado is a  
17 relatively high-cost feed cost environment.

18 I was wondering if you have done any similar  
19 analysis for other states in the western part of the  
20 country?

21 A. No, I have not. Not formal. I'm aware of what  
22 happens in feed grain markets and forage markets,  
23 primarily east of Colorado. I'm not aware of what goes  
24 on, for example, in Utah or New Mexico.

25 Q. Now, you also note in your testimony that a good  
26 deal of alfalfa is grown in Colorado and that it is  
27 exported to New Mexico.

28 A. Correct.





1 Q. Have you done any research or are you aware of any  
2 the relative cost of that hay once it's delivered to New  
3 Mexico versus what a Colorado farmer might pay?

4 A. I do not know. What I'm aware of in my experience  
5 specifically with that is I do work with some other  
6 extension economists, and we deliver programs to ag  
7 lenders around the state of Colorado. One of our programs  
8 is, in fact, next week in the San Luis Valley of Colorado,  
9 and there is quite a bit of alfalfa, high-quality -- very  
10 high-quality alfalfa hay that's grown there and shipped to  
11 New Mexico. So I have talked with lenders and producers  
12 in that region, and I know they ship a considerable of hay  
13 to New Mexico.

14 Q. Would it be logical to conclude that a New Mexico  
15 farmer, say in the Clovis Portalis area, would have a  
16 higher cost of alfalfa feed than a producer from Colorado,  
17 assuming that alfalfa is grown in Colorado?

18 A. Yeah. They have to pay freight, that's for sure.

19 Q. Now, in addition to alfalfa hay, the Dairy Margin  
20 Coverage Program that you cite includes factors for both  
21 corn and soybean meal?

22 A. Yes.

23 Q. I think what I have seen is that the corn costs in  
24 Colorado are a dollar to 1.50 a bushel higher than a  
25 national average.

26 Does that sound reasonable to you in your  
27 experience?

28 A. Yes.



1 Q. And would you expect that other states in the West  
2 would see similar corn prices?

3 A. If you are -- yes, if you are railing it in  
4 from -- if you are railing corn in from Nebraska, Kansas,  
5 if you are railing it to the high plains or the southern  
6 plains, yes, you have got to pay that freight.

7 Q. And you talk specifically about soybean meal.  
8 Now, you -- you take that or you compare it to the South  
9 Dakota cost. Would you expect that the price relationship  
10 for other states in the West, particularly New Mexico,  
11 Kansas, that area, would see a similar price relationship  
12 for soybean meal?

13 A. Yes. What I have actually seen for data on that  
14 would be, for example, I have seen some records, some  
15 dairy records of freighting protein meal to California,  
16 and that is -- that's -- you have got to pay freight to  
17 get it out of the Midwest.

18 Q. And so when you look at the three feed price  
19 components in that Dairy Margin Coverage Program, the  
20 alfalfa, the soybean meal, and the corn, overall, do you  
21 have an opinion as to what that overall feed cost would be  
22 for Colorado and other states in the West compared to a  
23 national average?

24 A. Yeah. The further you get from Iowa and the Upper  
25 Midwest, those costs all increase.

26 Q. I wonder if in preparing your statement or  
27 otherwise you had the opportunity to quantify the Colorado  
28 feed cost component of the margin versus the national



1 average that's used by USDA?

2 A. I'm sorry. That question again?

3 Q. Sure. And I'll break it down because that was  
4 probably not the most articulate question I have asked.

5 The Dairy Margin Coverage Program calculates a  
6 national feed cost, and they use that to determine the  
7 margin calculation. If you were just considering the feed  
8 costs for say Colorado or a similar state in the West like  
9 New Mexico, you said -- I think your answer was that  
10 the western costs would be higher than the national  
11 average, correct?

12 A. Yes.

13 Q. When you prepared your statement, did you have an  
14 opportunity to look at what the actual number would be for  
15 Colorado compared to the number that USDA calculates in  
16 determining their margin?

17 A. Yes. I looked at the Colorado, and then I also  
18 looked at the -- what does that margin say when you use  
19 the national average price, which is not just Upper  
20 Midwest, it is the whole country. I did look at those  
21 differences. I didn't compare the differences, but I  
22 think I have -- that's the part of my testimony where I  
23 say for perspective I believe.

24 Q. Is that on page 4 toward the middle?

25 A. Yeah. That's where I'm --

26 Q. Okay.

27 A. I believe so.

28 Q. All right. So I think I'm looking at the av- --



1 you write, "The average variable costs of production for  
2 Colorado are 10.29" --

3 A. Yes.

4 Q. -- "per hundredweight"?

5 A. Yes. Yes. For that time period.

6 Q. For that period.

7 A. And then the national is 9.83. Yes.

8 Q. Okay. So for that, were you referring to an  
9 average variable cost of production that's just the feed  
10 cost component for those farms; is that right?

11 A. That's -- that's calculating the margin with  
12 Colorado, state, average prices received, monthly, but  
13 just corn and alfalfa hay because I can't get a comparable  
14 number for a protein meal. I'm using the Decatur protein  
15 meal price across the board because I can't get that by  
16 state. But I can get -- I can -- I can secure from Quick  
17 Stats the alfalfa hay price for Colorado, the alfalfa hay  
18 price for South Dakota, for the nation and -- but I  
19 haven't done any of the other western states. I have just  
20 done -- we -- I picked -- we picked -- in discussions with  
21 Ed, I picked looking at Colorado, and then we needed some  
22 reasonable reference to compare it to, and what we picked  
23 was South Dakota. But I also did the math for the  
24 national number.

25 Q. And the math that you did, was that the formula  
26 that's used in the Dairy Margin Coverage feed price  
27 component?

28 A. Yes.



1 Q. Okay. Now, on the other side of that margin  
2 calculation is an all-milk price, which is also a national  
3 average.

4 Did you look at all at Colorado's reported  
5 all-milk price in preparing your testimony?

6 A. No, I did not look at the all-milk price received.  
7 I used the national Class III. In -- in my thinking and  
8 following milk markets, that's -- that's what I have  
9 focused on is that Class III price.

10 Q. In preparing your testimony, did you look at what  
11 the calculated Dairy Margin Coverage margin was for the  
12 months in 2023?

13 A. I did not.

14 Q. Okay. If the national reported margin using the  
15 national averages for June of this year was \$3.65, that  
16 was the margin of milk income less feed costs on a  
17 national average, what do you think that would mean to the  
18 average dairy farm in Colorado?

19 A. Say that again? The -- what margin, \$3 and how  
20 much?

21 Q. If you took the all-milk price --

22 A. Yes.

23 Q. -- and reduced the feed price calculation as  
24 reported by USDA, it said there was \$3.65 left over in  
25 June.

26 A. So that would be for covering fixed costs.

27 Q. Before covering everything except feed --

28 A. Okay.



1 Q. -- what do you think that means to an average  
2 Colorado farm?

3 A. They are losing quite a bit of money.

4 Q. And if the prices received for any state, whether  
5 it's Colorado or New Mexico, were lower than the national  
6 average and their feed costs were higher than the national  
7 average, what do you think that would do to the farms'  
8 economics?

9 A. The farms -- the dairies that persist will be very  
10 efficient and the -- their potential to expand will be --  
11 it has to be in the context of maintaining that  
12 efficiency.

13 Q. When you say those "that persist," I think was the  
14 words that you used --

15 A. Yeah.

16 Q. -- would be very efficient, to me that implies  
17 that there will be some farms that do not persist?

18 A. Correct.

19 Q. Now, I understand from your previous  
20 cross-examination from Mr. Rosenbaum that a lot of the  
21 Federal Order assumptions were provided to you by  
22 Mr. Gallagher?

23 A. Yes.

24 Q. Other than reporting what you believe the effects  
25 of those types of impacts would be on Colorado dairies,  
26 are you offering any opinion as to whether USDA should or  
27 should not adopt any specific proposals in this hearing?

28 A. No.



1 Q. Okay.

2 MR. MILTNER: That's all I have. Thank you very  
3 much.

4 MR. ENGLISH: Good morning, Your Honor.

5 CROSS-EXAMINATION

6 BY MR. ENGLISH:

7 Q. Good morning, sir.

8 My name is Chip English for the Milk Innovation  
9 Group.

10 So -- so, Dr. Koontz, you have talked about a  
11 number of changes in Colorado over the last 20 years.

12 What has happened with organic dairy in Colorado  
13 since Federal Order reform in the late 1990s?

14 A. My understanding, the consumer demand for organic  
15 products has expanded considerably over time. You see it  
16 much more prevalent now in the grocery stores, for  
17 example, but I haven't done any analysis looking at the  
18 exact quantities or in anything along those lines. I do  
19 know it is a bigger industry than it used to be. There's  
20 quite a few organic dairies that -- that impact the forage  
21 market looking for organic feed sources.

22 Q. So didn't Horizon Organic Dairy get started in  
23 Colorado in the late 1990s?

24 A. I believe so.

25 Q. And what about organic dairy production, has it  
26 not grown significantly in Weld County over the last 20  
27 years?

28 A. I -- I believe so. I -- you see the dairies, but



1 I don't know the production number.

2 Q. But you would -- you know there's a large organic  
3 fluid processing operation in Platteville, Colorado,  
4 called Aurora Organic Dairy?

5 A. Yes, I'm aware of Aurora Dairy.

6 Q. In any of your analysis do you consider any  
7 production cost variance with respect for organic dairy in  
8 Colorado?

9 A. I don't have -- I would like to do that, but I  
10 don't have access to that information.

11 Q. So turning away from organic and to your  
12 testimony, are you saying that if -- instead of  
13 Mr. Gallagher's assumptions that he provided to you, that  
14 National Milk Producers Federation proposal is adopted and  
15 that is, therefore, the price does not drop, that that  
16 will resolve or provide reprieve for dairy farmers in  
17 Colorado from all of the challenges you raised?

18 A. No. It remains a high-cost feed environment. The  
19 impact of ethanol and feed grain markets is not going  
20 away -- going anywhere. The forage market in Colorado is  
21 very strong. So the dairy industry is in this -- has this  
22 process where they have to adopt efficiency gaining  
23 technology over time just to keep up with those -- those  
24 limitations.

25 Q. And not just the feed, but you mentioned water  
26 challenges and other challenges, all those headwinds --

27 A. And any --

28 Q. -- you discussed?





1 A. I'm sorry for speaking --

2 Q. No. And I'm usually the one who talks over, so --  
3 but --

4 A. But also the inflation, the -- all the other  
5 things that are behind the -- labor supply and inflation  
6 and all the off-farm things that are needed to support a  
7 dairy.

8 Q. That those headwinds will all pose significant  
9 challenges regardless, correct?

10 A. They are not going anywhere.

11 Q. So I understand -- and probably good for your  
12 sanity -- that as an economics professor you are not an  
13 expert in the Federal Milk Marketing Order system.

14 But -- but nonetheless, do you understand that the  
15 system for regulated prices has minimum prices, correct?

16 A. Can you offer me some more detail on that?

17 Q. So do you understand that if -- well, let me back  
18 up.

19 Do you understand that what we're talking about  
20 here to the extent we're talking about raising  
21 Make Allowances or changing a Class I price differential,  
22 is that those prices, to the extent they are regulated by  
23 USDA, are minimum prices?

24 A. Yes. I understand that a little bit. But the  
25 main thing that I focused my work on is what I understand  
26 is \$1.00 per hundredweight -- anywhere between \$1.00 --  
27 \$0.50, \$1.00, or \$2 per hundredweight impact on the milk  
28 price would be pretty substantial on the dairy industry in



1 Colorado, and that's -- that's really my starting place  
2 is -- is working with that and not the mechanics of how  
3 the milk market actually operates.

4 Q. I understand that. But if Federal Orders don't  
5 set the price or a maximum price, but instead set a  
6 minimum price, as a professor in economics, isn't the  
7 market price going to still be the market price?

8 A. The devil is in the details on all of those  
9 things, especially milk market. I am -- I really don't  
10 want to venture out that direction. That's not something  
11 I'm comfortable with.

12 Q. And that's fine. I mean, part of what -- what  
13 we're trying to do is understand what you are comfortable  
14 with and not, and I'm just trying to understand the  
15 parameters. Because we are in a Federal Milk Marketing  
16 Orders hearing, right?

17 A. Yes.

18 Q. You understand that?

19 A. Yeah.

20 Q. Do you understand that in addition to being  
21 minimum prices under Federal Orders, that not all milk is  
22 actually subject to the Federal Milk Marketing Orders?

23 A. I'm not trying to be difficult here. I'm not --

24 Q. I'm not trying to --

25 A. I don't understand -- I don't understand the  
26 details that you are -- you're wanting me to talk about.  
27 I'm not comfortable with that.

28 What I'm comfortable with is I have a strong



1 understanding -- I've worked with the dairy industry  
2 enough to know what -- what margins look like, what --  
3 what the pressures in the industry look like, but I -- I  
4 don't understand how the -- the marketing order and how  
5 prices are set, minimums, maximums, those types of things.  
6 I'm not comfortable with that.

7 I do understand that individual dairies I deal  
8 with, the base price is that Class III, but then there --  
9 the mailbox price usually has something in excess of that,  
10 and that depends on what's going on in the fluid market.

11 Q. And to be clear, sir, I understand that, and I  
12 appreciate what you are saying. I'm just trying to  
13 gather, for this record, because we're in this  
14 interesting -- and to my knowledge, maybe except for  
15 Federal Energy Regulatory Commission -- unique proceeding  
16 where the Secretary of Agriculture, with the great  
17 assistance of the people here in the front row, and in the  
18 next rows, and frankly, online, you know, need to have in  
19 the record.

20 And so I'm just -- I'm just trying to clarify --  
21 and I understand. I think, you know, again, going back to  
22 my comment a little earlier, you know, you'll probably  
23 sleep better for not knowing about Federal Milk Marketing  
24 Orders, but I -- as a professor, is it fair to assume that  
25 there will be no secondary reactions to a change in the  
26 milk price, whether up or down?

27 A. Certainly not. I mean, if -- changes in price  
28 will result in changes in production, changes in behavior,



1 expansions, contractions. I mean, there are -- nothing  
2 ever happens in isolation.

3 Q. And so similarly, if there's a secondary reaction  
4 that lower milk prices, if they happen, result in lower  
5 production, then commodity prices will increase, correct?

6 A. Depending on the scope of the underlying changes.  
7 What I'm concerned about is changes that result in lower  
8 milk prices in Colorado, impacting the Colorado dairy  
9 industry. It's an important contributor to the Colorado  
10 agricultural economy and the rural economies in the state.  
11 And the secondary effects are always minor compared to  
12 primary effects. They certainly occur, and they are  
13 offsetting to a degree, but in my experience, much less  
14 so.

15 Q. And nonetheless -- I understand from the  
16 discussion with Mr. Rosenbaum, so I'm not going to try to  
17 go back there -- but basically, you have relied on  
18 assumptions provided to you by Mr. Gallagher as to the  
19 idea that milk prices would go down, correct?

20 A. Yes. Yes. That is -- that is the -- where I'm  
21 starting my work is with that idea. I don't know enough  
22 about milk markets to have my own estimate or opinion on  
23 what's going on there. This was brought to my attention  
24 and -- from the context of a change in milk price. And I  
25 do know that that -- that that magnitude is -- has  
26 potentially a substantial impact on the industry and my  
27 state.

28 MR. ENGLISH: Thank you very much, sir, for your



1 time.

2 THE COURT: Before I turn to the Agricultural  
3 Marketing Service for their questions, does anyone else  
4 wish to cross-examine?

5 No one. Agricultural Marketing Service may begin.

6 CROSS-EXAMINATION

7 BY MS. TAYLOR:

8 Q. Good morning.

9 A. Good morning.

10 Q. Thank you for coming to testify and participate in  
11 this wonderful proceeding.

12 A. You don't have to come up to the podium; is  
13 that --

14 Q. No, we don't. We have to be here every day, and  
15 that's a privilege that remains.

16 A. My apologies, but I noticed, so --

17 Q. When you arrange how this works logistically, you  
18 can put the mic in front of yourself.

19 A. You can get what you want.

20 Q. That's one of the perks.

21 I really don't have many questions. Just a couple  
22 things to clarify. As Mr. English said, part of our job  
23 is just to make sure we get the facts and the  
24 clarifications we need on the record, so sometimes  
25 questions might seem kind of elementary, but it's just to  
26 make sure that that fact gets explained.

27 A. Sure.

28 Q. So as you went through looking at costs in



1 Colorado, I just want to make sure I'm clear that the  
2 variable -- what you used for variable cost was just feed?

3 A. Correct. It's -- it's that Dairy Margin Coverage  
4 Program that is -- that's well available.

5 Q. Right.

6 A. Anybody can track down that formula and make use  
7 of it. And -- and what I have done is go back through  
8 time. It's an idea of converting feed inputs into milk,  
9 and if you buy the feed, what's it cost you to do that.

10 Q. Right.

11 And you talked about the fixed costs. And you got  
12 those numbers. You talked with various dairy industry  
13 members. And so I just wondered if you could elaborate on  
14 who you talked to and how you kind of pulled those numbers  
15 together to make sure they are relevant.

16 A. I have talked to producers over the years, and I  
17 talked to the organizations they deal with a lot. So  
18 talking to brokers, talking to bankers, crop insurance  
19 folks. I'm curious about my state. I'm curious about  
20 understanding industries. And one of the things I do when  
21 I talk to producers is I say, "It's not like I'm going to  
22 go say this in a USDA testimony."

23 So, right, that was funny. Come on, now.

24 Q. I laughed.

25 A. So I would like to not give names but --

26 Q. Right --

27 A. -- and it's over the years --

28 Q. -- and I'm not asking for names.



1           A.     -- but I have talked to dairies in northeast  
2 Colorado, and the ones that come to meetings, the ones  
3 that will visit with you, the ones that are on industry  
4 commodity group committees, things like that. Just  
5 talking to them about how their industry works, where are  
6 they buying, where are they sourcing things. Everybody on  
7 the dairy side wants to talk about labor, labor, labor,  
8 labor, and I really like to get them off of labor because  
9 I -- there's nothing I can do about that, and I don't  
10 understand that market very much.

11                     And lots of times when you ask them about costs  
12 other than feed inputs, they don't know, but they can give  
13 you a rough -- you know, if you give them a rough  
14 estimate, they will say -- you can get around to -- you  
15 know, there are time periods where it may be a \$4 per  
16 hundredweight fixed cost, but that's very, very skinny and  
17 over longer periods of time, it's -- it's higher than  
18 that.

19                     So what I have worked with for numbers is what I  
20 have heard from producers and also what I have read in  
21 extension publications. So I -- I don't understand enough  
22 about dairy and milk markets, so I read what I can from  
23 Wisconsin, Michigan, Minnesota, about -- about cost of  
24 production in that area.

25           Q.     And what kind of costs would fit into the fixed  
26 cost category?

27           A.     It's everything that's not feed, the whole nine  
28 yards. It's equipment. It's facilities. Opportunity



1 costs on land. You have to -- you know, if you have an  
2 operation that has a dairy and then also a cropping  
3 operation, lots of times those costs get commingled, and  
4 when you talk to producers, they mix things up. But if  
5 you are talking to a dairy that has somebody running the  
6 dairy side, somebody running the crop side, then they  
7 really understand.

8 And unlike in the Upper Midwest where lots of  
9 cropping operations may subsidize an animal operation, if  
10 you separate those enterprises, and they do that a lot in  
11 Colorado, then they can tell you what does it cost to grow  
12 corn, and then they opportunity-cost the corn correctly  
13 from the cropping enterprise.

14 So you've got to be careful with the -- for  
15 example, the tractors and the equipment, is that a  
16 cropping enterprise investment or is that really used by  
17 the dairy?

18 So those are -- are where some of the things  
19 are -- get very tricky. But the equipment, the fixed  
20 costs, the facilities, the milking parlor, all those  
21 things, if you can -- if you can tie them to the dairy,  
22 that's -- those are costs that have to be covered, as well  
23 as labor, and then the management associated with running  
24 that operation.

25 Q. Okay.

26 A. And more and more things like genetic improvement,  
27 and the person in that dairy that's interested in that and  
28 researching it and trying to figure it out. And the thing





1 that has cropped up lately is the beef-on-dairy and in the  
2 dairy industry, producing cross-calves that are a  
3 significant portion of beef animal, that's become a very  
4 big revenue source for -- for that industry.

5 Q. I was wondering with your kind of vast experience  
6 with livestock in dairy in Colorado, if you could talk --  
7 especially, I should mention, in the South Platte River  
8 Basin, which is where a lot of the dairies in Colorado  
9 exist, are you able to talk a little bit about  
10 transportation pressures and changes in that area?

11 Because we have had talk in the hearing about  
12 changes in transportation costs, generally, and one of  
13 those -- that's one of the factors, if you will allow me  
14 to explain, that is thought of to go into the Class I  
15 differentials. And I know you can't speak to the  
16 differential section of that, but can you just talk a  
17 little bit if you have heard or observed changes in those  
18 cost factors in that area?

19 A. In northeast Colorado, there's definitely more  
20 urban pressures. There's more crowding. There's delays  
21 in any sort of shipping. And then it's -- it's become --  
22 it's not just as simple as looking at what is -- what is  
23 diesel price, what are those prices. There is -- that  
24 industry was pretty skinny for a long period of time, and  
25 I believe there were some assets that left the freight  
26 industry, and now there has to be prices high enough to  
27 attract assets back into that freight service industry.

28 And I have noticed that not just from a dairy



1 side -- the main thing I'm interested in from a Colorado  
2 perspective is the shipping of grain, moving wheat, corn,  
3 and forages around, what does that really cost? And  
4 it's -- it's hard to find secondary information that well  
5 documents that.

6 I do know that when you talk to people, they will  
7 tell you it's a lot bigger than just diesel cost, for  
8 example.

9 MS. TAYLOR: Okay. Thank you. That's it from  
10 AMS.

11 THE COURT: Ms. Hancock?

12 MS. HANCOCK: Thank you, Your Honor. I have no  
13 further questions. At this time we would move to admit  
14 Exhibit 304.

15 THE COURT: Is there any objection to the  
16 admission into evidence of Exhibit 304?

17 There is none. Exhibit 304 is admitted into  
18 evidence.

19 (Exhibit Number 304 was received into  
20 evidence.)

21 THE COURT: Mr. Rosenbaum?

22 MR. ROSENBAUM: Your Honor?

23 THE COURT: Do you -- do you want your Exhibit 305  
24 to be ruled upon?

25 MR. ROSENBAUM: Yes, Your Honor, thank you for  
26 reminding me. I would ask that that exhibit be entered  
27 into evidence.

28 THE COURT: Now, I haven't seen it yet, but I



1 assume we have got an Exhibit 305 over there? That if I  
2 admit them into evidence, you have them?

3 Well, I don't need to have it. I just want to  
4 make sure you have it.

5 USDA REPRESENTATIVE: I have it. I am going to  
6 give one to you.

7 THE COURT: Okay. Thank you.

8 Is there any objection to the admission into  
9 evidence of Exhibit 305?

10 MR. HILL: I'm going to object, Your Honor.

11 THE COURT: Mr. Hill?

12 MR. HILL: I'm going to object because, in part,  
13 305, at the top -- and you haven't seen the document, so  
14 this is a little bit problematic -- but it's information  
15 that comes directly from the AMS website. So that's  
16 perfectly fine and admissible.

17 The bar graph underneath it, though, is a creation  
18 of Dr. Rosenbaum's. There's -- there's no witness here to  
19 verify this or to ask questions about whether this graph  
20 is correct. And so I think it's inadmissible, and as such  
21 I'm going to object to the entirety of the document.

22 THE COURT: Now, you referred to him as  
23 Dr. Rosenbaum.

24 MR. HILL: A doctor, you know --

25 THE COURT: Do you have a doctorate, sir? Did you  
26 acquire it while here?

27 MR. ROSENBAUM: This is as close as I have ever  
28 gotten.



1 THE COURT: Further objections?

2 MS. HANCOCK: Your Honor, we would join in the  
3 objection -- this is Nicole Hancock on behalf of National  
4 Milk -- for the same reasons that Mr. Hill articulated.

5 Additionally, Your Honor, you have already taken  
6 judicial notice of the website, so I think to the extent  
7 there's beneficial value for the information that was  
8 covered in the testimony, you have already covered that by  
9 taking judicial notice of the website which contains the  
10 data that we can actually verify as self-authenticating.

11 THE COURT: Mr. Rosenbaum?

12 MR. ROSENBAUM: Well, Your Honor, the websites  
13 that I asked you to take judicial notice of are not where  
14 the information comes from. I mean, they are both from  
15 the NASS quick facts data source, but it's not located in  
16 the exact same place if you go on the website.

17 Your Honor, I'd be happy just to have the -- the  
18 figures at the top are a cut-and-paste from the NASS  
19 website. There's nothing created. So I -- the bar chart  
20 at the bottom I don't think is essential to the point I  
21 was making, and I'm happy, if you will, to cross out the  
22 bottom part and just leave the top part and have it come  
23 in in that manner.

24 THE COURT: I like that, because I like the -- the  
25 URL, that he's got the NASS location, which I think many  
26 of the listeners to this program will appreciate. I  
27 wasn't real sure how to spell Quick Stats, but it's like  
28 you would think. But it is all one word. I did not



1 realize that was part of NASS. This proves all that. So  
2 it's a very -- to me, a very valuable document.

3 I'm not going to cross out the chart. I'm going  
4 to admit it with the caution that beware of the chart,  
5 verify it for yourself, it's the product of a quick  
6 creation while on the fly in this hearing. There might  
7 have been an error. People can find out for themselves.  
8 They can prove it to themselves. I think it is useful as  
9 an illustration, if it turns out it is accurate.

10 So I do admit into evidence, over objection,  
11 Exhibit 305, and I merely caution people to verify the  
12 graph for themselves.

13 MR. ROSENBAUM: Thank you, Your Honor.

14 THE COURT: You're welcome.

15 (Exhibit Number 305 was received into  
16 evidence.)

17 THE COURT: All right. Now, I believe you may  
18 step down, Dr. Koontz. Thank you so much. You brought a  
19 perspective that is different from what we have had, and I  
20 think it's very valuable. And I encourage you to follow  
21 milk, it's very interesting.

22 Let's go off record for just a moment while the  
23 next witness comes forward.

24 (An off-the-record discussion took place.)

25 THE COURT: We're back on record at 10:22.

26 First I would like the witness in the witness  
27 chair to state and spell his name.

28 THE WITNESS: Dean Sommer, D-E-A-N, S-O-M-M-E-R.



1 THE COURT: Have you previously testified in this  
2 proceeding?

3 THE WITNESS: I have not.

4 THE COURT: I'd like to swear you in.

5 DEAN SOMMER,

6 Being first duly sworn, was examined and  
7 testified as follows:

8 DIRECT EXAMINATION

9 BY MR. ROSENBAUM:

10 Q. Good morning, Mr. Sommer.

11 A. Good morning.

12 Q. You have before you Hearing Exhibit 306 and  
13 Hearing Exhibit 307.

14 Do these constitute your written testimony today?

15 A. They do.

16 Q. Okay. Before I have you read your testimony, the  
17 first sentence of Exhibit 306 says that you are a cheese  
18 and food technologist and a member of the senior team at  
19 the Center for Dairy Research in Madison, Wisconsin.

20 So I just would like you to tell us a little bit  
21 about the Center for Dairy Research that's not otherwise  
22 described in your testimony. So please tell us what that  
23 Center does.

24 A. So the Center of Dairy Research is one of six  
25 university-based dairy centers in the United States. What  
26 we do is promote the interest of the U.S. dairy industry,  
27 promoting the interest of U.S. dairy farmers, as well as  
28 U.S. dairy processors through research, in looking at



1 various dairy-related problems and opportunities, through  
2 training. We offer short courses for people that work at  
3 dairy processor companies to learn more about making  
4 cheese and other types of dairy products. And we also  
5 have a number of graduate students that were trained to be  
6 future dairy leaders in the United States and around the  
7 world.

8 Q. Okay. And this is associated -- your particular  
9 center is associated with what university?

10 A. We are associated on the campus of the University  
11 of Wisconsin, Madison.

12 Q. Okay. Could you please read us your testimony?  
13 Let's do Hearing Exhibit 306 and then 307.

14 A. Yes.

15 My name is Dean Sommer. My current position is a  
16 cheese and food technologist and a member of the senior  
17 team at the Center for Dairy Research (CDR) in Madison,  
18 Wisconsin. I have been at the CDR for 20 years.

19 In my capacity at CDR I work with cheese  
20 manufacturers, large and small, across Wisconsin and  
21 across the United States. Prior to that I worked at Alto  
22 Dairy for 18 years, starting as the director of technical  
23 services, progressing to Vice President of technical  
24 services, and lastly as Vice President of operations.

25 When I started at Alto, it was a cheddar  
26 manufacturer and the largest and newest cheese factory in  
27 the United States. Alto Dairy was a cooperative with  
28 ultimately two large cheese plants in Waupun, Wisconsin,



1 one cheddar and one mozzarella, as well as a large aged  
2 cheddar plant in Black Creek, Wisconsin. At the time I  
3 left Alto we manufactured over 200 million pounds of  
4 cheese per year, about half of that cheddar. I have an MS  
5 degree in UW Madison in food science.

6 Fat losses in cheddar cheese manufacture.

7 Today I will be testifying on fat losses in the  
8 cheddar cheese manufacturing process. I will not be  
9 addressing farm-to-plant losses, but will be discussing  
10 fat losses after the arrival of milk at manufacturing  
11 plants.

12 History of fat loss estimation in cheddar cheese  
13 manufacturing.

14 Around a century ago Van Slyke and Price estimated  
15 that if cheddar cheese was manufactured and handled to  
16 near perfection, fat recovery would be around 93%. This  
17 work was done with the open cheese vats of the day.

18 Dr. David Barbano of Cornell University did a  
19 study published in 1984 that tested fat recoveries with  
20 the advent of newer and more advanced cheese making vats  
21 and equipment, including some cheese factories with new  
22 enclosed Double O vertical vats and some with open vats to  
23 see if that 93% fat recovery still held true.

24 Surprisingly, Dr. Barbano found in four good-sized  
25 cheddar cheese factories in New York State that the fat  
26 recoveries were much lower than expected, coming in at  
27 87.2, 86.3, 85.2, and 82.8%.

28 Newer vat designs capture more fat in the curd at





1 the vat.

2 Today, almost 40 years later, with further  
3 improvements in cheese vat designs, commonly called  
4 horizontal cheese vats, fat retention potential in cheese  
5 vats has improved. In my work at CDR with companies with  
6 open vats, I have seen fat losses in whey after cutting in  
7 open vats around 9 to 10%.

8 In my experience at Alto with Double O vats, I saw  
9 fat losses of around 7% after cutting. In my experience  
10 at Alto with horizontal cheese vats, I saw fat losses of  
11 around 6% after cutting. I have heard anecdotal reports  
12 of the most modern vats -- of fat losses of less than 5%  
13 after cutting.

14 Please note these figures only represent fat  
15 losses in the cheese vat after cutting and are not  
16 considering other points of fat loss in the cheddar cheese  
17 making system which I will address.

18 Double O vats and even open vats are still in  
19 widespread use in the cheddar industry -- cheddar cheese  
20 industry. Sorry.

21 It should be noted that while many large modern  
22 plants have installed the newest and most efficient  
23 horizontal vats, Double O vats, and even open vats have  
24 not gone away in the cheddar industry. A number of  
25 prominent large cheddar manufacturers continue to use  
26 Double O vats, and inevitably, when a manufacturer  
27 converts from Double O vats to horizontal vats, the  
28 Double O vats don't disappear, they merely get refurbished



1 and then installed in typically a smaller, older cheese  
2 factory. And many small artisan cheddar cheese  
3 manufacturers continue to use open vats.

4 The take-home message here is cheddar makers in  
5 the U.S. continue to use an assortment of cheese vat  
6 styles, while the newest, most modern plants have largely  
7 gone to the most efficient horizontal vats, some large  
8 factories, and many medium and small factories, continue  
9 to use Double O or open cheese vats.

10 Fat losses in the vat at cutting only tell part of  
11 the story of fat losses in cheddar cheese manufacturing.

12 One concept that must be considered on the topic  
13 of fat retention is where fat losses occur during cheddar  
14 cheese manufacturing. Most people focus solely on fat  
15 losses in whey called sweet whey after cutting the  
16 coagulum, and often refer to this as the only source of  
17 fat loss during cheddar cheese manufacturing. Taking this  
18 approach will significantly underestimate total fat losses  
19 in cheddar manufacturing.

20 While cutting the coagulum is an important point  
21 of fat loss, it is far from the only point. Other  
22 significant points of fat loss are milk shrinkage from the  
23 raw milk silos to the vat (milk residue left in silos and  
24 lines; milk filter rotation and flushing; milk clarifier  
25 desludging; pasteurizer startup and shut downs.  
26 Collectively, this could amount to up to 1% of total milk  
27 volume, thus up to 1% of total fat loss).

28 Fat losses in whey in the vats -- in the vat fails



1 to account for further fat losses downstream in the  
2 cheddar making process in the form of salty whey.

3 Another significant loss of fat occurs during the  
4 salting process of cheddar cheese curds, resulting in  
5 salty whey. This step occurs relatively late in the  
6 cheese making process. Some of this salty whey occurs  
7 immediately on the curd table, or salting belt, after dry  
8 salt is applied. More salty whey is generated in 40-pound  
9 block forming towers, or in the pressing and initial cold  
10 storage of 640-pound blocks of cheese.

11 This salty whey can comprise up to 5% of the total  
12 whey volume generated, with sweet whey (before salt  
13 addition) comprising 95% of the total whey volume. Salty  
14 way is significantly higher in fat content than sweet  
15 whey. In a study by Blaschek, Wendorff, and Rankin at the  
16 University of Wisconsin, where they surveyed sweet and  
17 salty whey from eight commercial cheddar cheese plants,  
18 they found an average fat content of salty whey of 0.6%,  
19 approximately three times higher than sweet whey.

20 Taking into account the volumes of sweet and salty  
21 whey as well as the typical fat contents of sweet and  
22 salty whey, the calculation reveals that salty whey  
23 accounts for approximately an additional 10% of the total  
24 fat loss in all generated whey. This occurs late in the  
25 cheese making process and is not accounted for in tests  
26 for fat losses in whey sampled at the vat.

27 Cheese fines collected from the whey and not  
28 returned to the body of cheese represents a significant



1 source of fat loss.

2 A further significant loss of fat in cheddar  
3 cheese manufacture is loss of cheese fines. In today's  
4 quality and food safety conscious world, adding back  
5 cheese fines recovered from the whey back to the bulk of  
6 the cheese curd is largely not done anymore due to  
7 concerns with coliform and other bacterial contamination  
8 risks and associated cheese quality concerns.

9 In a recent conversation with a large U.S. aged  
10 cheddar manufacturer, it was related to me that they lose  
11 approximately 0.25 to 0.3% of their curd production to  
12 cheese fines which do not go back into finished cheese.  
13 This was at a factory using a matting conveyor which  
14 minimizes cheese fines. Factories making stirred curd  
15 cheddar on curd tables generate significantly more fines  
16 due to the design of the whey drainage screens and  
17 agitators on curd tables.

18 Based on my experiences at Alto, and in a recent  
19 personal conversation with a large Wisconsin stirred curd  
20 cheddar manufacturer, I would estimate that fines losses  
21 in these systems are 0.5 to 0.6% of total cheese volume,  
22 which is approximately -- approximately double that of  
23 cheddar factories with matting belts. Remembering that  
24 this curd contains up to 34% fat, this is a significant  
25 amount of fat loss.

26 Other points of fat loss in a cheddar cheese make:  
27 There are additional points of fat loss during cheddar  
28 cheese manufacture. I visit dozens of cheese plants every



1 year as part of my duties at CDR. Inevitably, I observe  
2 when walking through a plant some cheese curds on the  
3 floor. These losses are, to some extent, not preventible  
4 given the design of today's automated equipment. These  
5 curds are disposed of as inedible and represent further  
6 losses of fat.

7 Plants producing 640-pound blocks of cheddar  
8 inevitably have salt whey drippings directly from the 640s  
9 when they are stacked in the coolers. This is because  
10 these giant blocks are not vacuum sealed and gravity  
11 forces some of the free whey in the blocks to leak out and  
12 puddle on the cooler floor.

13 Occasionally vats of cheese have to be disposed of  
14 due to contamination with foreign materials due to some  
15 unexpected equipment breakage. This also represents a  
16 loss of fat.

17 Finally, a historical benchmarking standard for  
18 cheese quality has been that the very best run cheddar  
19 plants can achieve a 99% at grading --

20 And, Your Honor, there's an omission here I would  
21 like to add. There's -- something didn't get copied  
22 correctly.

23 It should read achieve 99% USDA Grade A standard  
24 at grading. Grade A is the -- is a top grade for cheddar  
25 cheese, meaning it's first quality.

26 So I'd prefer that that would read: That the very  
27 best run cheddar plants can achieve 99% USDA Grade A  
28 standard at grading.



1 THE COURT: Thank you. We'll go off record and  
2 make that change.

3 Off the record at 10:36 a.m.

4 (An off-the-record discussion took place.)

5 THE COURT: We're back on record. It is 10:37.

6 We have made that change on the record copy.  
7 We're on page 5, and just after the "99%," we have  
8 inserted, "USDA Grade A standard," the sentence continues,  
9 "at grading."

10 So start again, if you will, and just read that  
11 sentence as we now have it prepared.

12 THE WITNESS: Finally, a historical benchmarking  
13 standard for cheese quality has been that the very best  
14 run cheddar plants can achieve 99% USDA Grade A standard  
15 at grading, with 1% of their cheese being graded as B  
16 grade or under grade and needing to be sold at discount  
17 prices.

18 In my current experiences few cheddar plants meet  
19 these standards today and many fall far below that number.  
20 A large national reputable cheese conversion and marketing  
21 company that manages downgraded cheese for cheese  
22 manufacturers recently related to me they estimate around  
23 5% of current cheddar manufactured in the U.S. gets  
24 downgraded and discounted.

25 The latest cheese vat design does not guarantee  
26 optimal fat retention in the cheese.

27 Lastly, it should not be dismissed that the cheese  
28 maker skill continue to play an important role in



1 determining fat retention in cheese, regardless of  
2 equipment design. Cheese maker practices such as general  
3 make procedures, vat operation step programming, choice of  
4 coagulant, method of using the coagulant, coagulant  
5 firmness at cutting, cut curd size, gentleness of handling  
6 the curd, proper development of curd body and texture,  
7 transfer of the curd to tables or belts, and -- and more  
8 will affect how much fat is retained in the finished  
9 cheese.

10 The take-home message here is that cheese making  
11 is still a cheese maker-driven system. I have seen many  
12 instances where a cheese factory had good equipment, but  
13 in the hands of inexperienced cheese makers, large fat  
14 losses still occurred.

15 The addition of whey cream to milk for cheddar  
16 cheese manufacturing will inevitably result in higher fat  
17 losses during cheese manufacture.

18 Milk fat globules are damaged when they go through  
19 the cheese making process. Thus, milk fat globules that  
20 escape into whey and subsequently are recovered in whey  
21 cream are damaged and are typically smaller in size than  
22 milk fat globules in the original milk.

23 When whey cream is added to milk for cheese  
24 making, these smaller damaged fat globules more easily  
25 leak out of the curd matrix and into the whey, thus,  
26 increasing losses of fat in whey during cheese making.

27 This problem worsens the more consecutive days  
28 that whey cream is added back to milk for cheese making,



1 as these small fat globules recycle over and over.  
2 Typically cheese factories need to break the cycle by  
3 periodically shipping out whey cream to remove the damaged  
4 fat globules from the system. Cheese factories that  
5 utilize whey cream for cheese making will not achieve  
6 optimum fat recoveries.

7 Conclusions: Most fat -- most plants that I visit  
8 only consider the fat loss when cutting their coagulum  
9 when they talk about fat retention in their factories.  
10 Taking this approach will significantly overestimate fat  
11 recovery numbers in these operations. My belief is that  
12 fat losses other than the fat loss at cutting the coagulum  
13 represent from 25 to 50% of the total fat loss during the  
14 entire cheese making process.

15 My best estimate of fat recoveries in cheddar  
16 cheese manufacture, taking into account personal  
17 experience, as well as recent communications with some  
18 well-managed cheddar cheese factories, would be in the  
19 range of 91 to 93% in well-run factories with modern  
20 horizontal vats, 90 to 92% in well-run factories with  
21 vertical Double O style vats, and 88 to 91% fat recovery  
22 in factories with traditional open vats.

23 My esteemed colleague and distinguished scientist,  
24 Dr. Mark Johnson, recently wrote me on the topic that  
25 actual yield and fat recovery is normally significantly  
26 less than predicted yield and fat recovery. And I quote  
27 Dr. Johnson: "So fat recovery in a yield equation will  
28 always be an overestimation of reality...why they are





1 called a predictive yield equation."

2 Then at the bottom of this page I noted two  
3 references in this -- in this testimony. One was by  
4 Dr. David Barbano about the cheddar cheese yields in four  
5 factories in New York. That's the Journal of Dairy  
6 Science reference found on the bottom of page 7. And then  
7 I also referenced in my testimony the differences between  
8 salty whey and sweet whey composition, and that reference  
9 by K.J. Blaschek, et al., is that Journal of Dairy Science  
10 article noted there.

11 THE COURT: You have just witnessed the master  
12 class in how to testify. I appreciate very much your  
13 presentation.

14 THE WITNESS: Thank you, Your Honor.

15 MR. ROSENBAUM: If you could proceed to your  
16 second testimony.

17 THE WITNESS: Yes, sir.

18 So my second testimony is use of whey cream in  
19 cheddar cheese manufacture.

20 Background: Whey cream is the name given to the  
21 fat that is lost from the curd during cheese making and is  
22 subsequently recovered from the whey by running the whey  
23 through a mechanical whey cream separator. In contrast,  
24 sweet cream is the fat recovered from separating milk.

25 Typically both sweet cream and whey cream contain  
26 around 40% fat and 60% skim, with some variation. It is  
27 important to note that the skim portion of sweet cream is  
28 skim milk, which contains caseins and whey proteins, while



1 the skim portion of whey cream is whey, which contains no  
2 caseins.

3 History of whey cream handling and use:

4 Historically, whey cream generated in cheddar  
5 cheese operations was manufactured into butter. Going  
6 back many decades, some cheddar cheese manufacturers had  
7 their own small butter operations to churn whey cream into  
8 butter right at the cheese factory, as did Alto Dairy back  
9 in those years. This practice was largely abandoned in  
10 favor of shipping the whey cream to large butter companies  
11 that focused solely on butter manufacturing.

12 I learned well during my Alto tenure that proceeds  
13 from the sale of whey cream was an important revenue  
14 source for cheddar cheese manufacturers, in our case,  
15 adding up to millions of dollars a year.

16 Within the last two decades in Wisconsin there has  
17 been severe consolidation within the butter industry,  
18 resulting in much less competition for whey cream  
19 supplies. As a result, premiums, also called multipliers,  
20 for whey cream fat has dropped precipitously. Formerly,  
21 multipliers in the range of 1.20 were common for whey  
22 cream fat.

23 But today in Wisconsin, the multipliers for whey  
24 cream fat, according to my cheese plant sources, are flat,  
25 at approximately 1.0, and sometimes even below, which  
26 compares to typical multipliers for sweet cream of between  
27 1.20 and 1.25.

28 This decline results in a significant revenue loss



1 for cheese factories. Because of this loss in revenue,  
2 factories are more inclined to attempt to put the whey  
3 cream back into milk for cheese making in an attempt to  
4 reach higher revenues for the whey cream fat by boosting  
5 cheese yield from the fat from added whey cream.

6 Problems associated with utilizing whey cream in  
7 cheese production:

8 The practice of adding whey cream to cheese milk  
9 is fraught with potential problems. Whey cream is a  
10 potent source of bacteriophage, viruses that destroy  
11 bacterial cheese cultures with the resultant loss of  
12 acid-producing capacity. If this happens, the result is  
13 slow or dead vats, where the desired acid production is  
14 significantly curtailed, resulting in off-grade or  
15 undergrade cheese that must be sold at a heavy discount.

16 If whey cream is to be reused in the cheese making  
17 process, the bacteriophage needs to be inactivated by  
18 heating the whey cream to 185 Farenheit and holding it at  
19 or above this temperature for approximately 30 minutes.  
20 This practice solves one problem but can create others,  
21 such as flavor defects.

22 The fat in whey cream is physically damaged due to  
23 the processes employed during cheese making. The  
24 protective membranes around the fat globules are eroded  
25 away leaving the fat vulnerable to Lipase enzymes and  
26 development of undesirable rancidity. The fat globules  
27 are also shattered and reduced in size. Because of this,  
28 they are less likely to be retained in the cheese during



1 the cheese making process and subsequently leak right back  
2 into the whey again, setting up a vicious cycle.

3 To break this cycle, cheese factories that take  
4 the risk to reuse whey cream in cheese manufacturing need  
5 to break that -- break the cycle by periodically, at least  
6 once a week, not recycling the whey cream into cheese  
7 making, but rather shipping it out to butter manufacturers  
8 to rid the cheese system of an overabundance of small,  
9 damaged fat globules. The recycling of whey cream into  
10 cheese manufacture will also reduce the fat retention  
11 efficiencies of a cheddar cheese operation, making optimum  
12 fat recoveries at coagulum cutting, such as 93 to 94%,  
13 unachievable.

14 Reusing whey cream in cheddar cheese manufacture  
15 runs the risk of cheese off-flavor development. As  
16 previously mentioned, degradation of the damaged fat due  
17 to rancidity can occur. Similarly, damaged fat globules  
18 are more prone to oxidative damage. Because of the severe  
19 heating of the whey cream, cooked flavor notes can occur.  
20 And given the myriad of steps and processes that occur in  
21 the handling of milk fat from cheese making through whey  
22 handling and whey cream generation and storage,  
23 undesirable microbial contamination can occur, which can  
24 lead to off-flavored development when used in cheese  
25 manufacture.

26 Due to all of these factors, aged cheese -- aged  
27 cheddar cheese manufacturers do not reutilize whey cream  
28 in cheese manufacture, due to the significant risks of



1 off-flavored development as their cheddar cheese age.

2 In my 18 years at Alto Dairy, we never utilized  
3 any whey cream for cheese manufacture, in mild or aged  
4 cheddar, due to the risks involved. So even manufacturers  
5 of barrel and mild cheddar risk whey taint and other  
6 flavor defects in their cheese when utilizing whey cream  
7 and cheese production, which is myself and my colleagues  
8 at the CDR don't advise this practice.

9 THE COURT: Would you just read that last clause  
10 again? You left out the word "why."

11 THE WITNESS: Okay.

12 So even manufacturers of barrel and mild cheddar  
13 risk whey taint and other flavor defects in their cheese  
14 while utilizing whey cream in cheese production, which is  
15 why myself and my colleagues at the CDR don't advise this  
16 practice.

17 In summary, for economic reasons, some cheddar  
18 manufacturers are tempted to re-utilize whey cream in  
19 cheddar cheese production. However, there are tremendous  
20 risks involved from bacteriophage destruction of starter  
21 cultures resulting in off-grade cheese to development of  
22 off flavors in the cheese, and the reuse of the damaged  
23 fat in whey cream for cheese production sets up a vicious  
24 cycle of damaged fat simply recycling through the system  
25 and leading cheese factories to greatly overestimate the  
26 value they are getting from reuse of whey cream. While  
27 some cheddar manufacturers are willing to employ  
28 reutilizing whey cream in cheddar cheese production and



1 take these risks, others, especially aged cheddar makers  
2 and makers of the highest quality cheddar cheese, are not.

3 BY MR. ROSENBAUM:

4 Q. Thank you very much for your testimony. Just a  
5 couple of follow-up questions.

6 Can -- first of all, can whey cream be used to  
7 produce Grade AA butter?

8 A. It cannot. No, it cannot.

9 Q. And what would be the typical use of whey cream  
10 butter?

11 A. Typical use for whey cream butter is -- is for  
12 foodservice applications. They will make -- there's  
13 Grade A butter, which is typically made with a blend of  
14 sweet and whey cream, and Grade B butter, which is made  
15 with just totally whey cream. But typically those uses  
16 primarily go to foodservice applications, so there's no  
17 retail packaging showing the USDA Grade A symbol on them.

18 Q. Thank you.

19 MR. ROSENBAUM: The witness is available for  
20 cross-examination.

21 THE COURT: Let's make one change on the last page  
22 of Exhibit 307, top line. You read, "resulting in off  
23 grade cheese."

24 THE WITNESS: Yeah, it should be "in."

25 THE COURT: So let's change the record copy.

26 THE WITNESS: Correct. It should be "in."

27 THE COURT: This is Exhibit 307, very last page,  
28 top line. Changing the word "if" to "in."



1 THE WITNESS: Correct. Thank you, Your Honor.

2 That's correct.

3 THE COURT: And I ended up with one extra copy of  
4 IDFA Exhibit 51, which became Exhibit 307, and I'll allow  
5 that to be used wherever.

6 Who would like to begin cross-examination of  
7 Mr. Sommer?

8 MR. MILTNER: Your Honor, I would note it's ten  
9 minutes to 11:00. I don't know how long I'm going to  
10 take, but if -- if the court reporter would like a break  
11 now, I'm happy to do that, or I can begin.

12 THE COURT: We like that, and we appreciate your  
13 cognizance of our condition.

14 Let's go off record -- well, first of all, when to  
15 come back. So ten minutes would be about 11:05. Come  
16 back at 11:05.

17 We go off record at 10:54.

18 (An off-the-record discussion took place.)

19 THE COURT: Let's go back on record.

20 We're back on record at 11:05.

21 Mr. Miltner.

22 MR. MILTNER: Thank you, Your Honor.

23 CROSS-EXAMINATION

24 BY MR. MILTNER:

25 Q. Mr. Sommer, my name is Ryan Miltner. I represent  
26 Select Milk Producers.

27 And I wanted to start by asking a little bit about  
28 your background and the Cheese -- I'm sorry -- the Center



1 for Dairy Research.

2 What type of services do you personally provide  
3 through the Center for Dairy Research?

4 A. I personally, there's a lot of cheese plants and  
5 work with their --

6 THE COURT: Stop just a minute. Would you pull  
7 that microphone just a little closer to you?

8 THE WITNESS: Sure.

9 THE COURT: Thank you.

10 THE WITNESS: I personally visit and work with a  
11 lot of cheese plants, troubleshooting issues, problems  
12 that they are having. I work with a lot of customers of  
13 cheese plants, people that buy their -- these cheese  
14 plants' cheeses, could be pizza chains and others like  
15 that, trying to get the cheese to work as good as it could  
16 possibly work.

17 I work with farmstead cheese makers just starting  
18 up, where they're dairy farmers and they're cheese makers,  
19 to give them guidance and how to go about that process.

20 I work with -- or do a lot of teaching and  
21 training to people from all over the country and all over  
22 the world on cheese making principles and practices,  
23 cheese sensory practices.

24 What else? I mean, that's kind of like the core  
25 of it, I would say.

26 Q. So on the Center's website under cheese, it says  
27 that you provide troubleshooting, product development,  
28 education and more. It sounds like that pretty well





1 encompasses what you described.

2 A. That's what I do, yeah. That's what I do.

3 So we're -- let me say another thing. So what  
4 we're -- our -- you know, my goal, and I talk about this  
5 in many of the short courses, is -- is to enlarge the pie  
6 for dairy farmers. So our goal is to make -- ultimately  
7 make dairy farmers more profitable, which also includes  
8 making dairy manufacturers more profitable, by trying to  
9 take milk, the base ingredient, and getting the highest  
10 value use out of every milk component that we possibly  
11 can.

12 I mean, if you really encapsulate what our goal  
13 is, that's our goal, to try and improve the lot of dairy  
14 farmers and dairy processors by maximizing dairy product  
15 quality, but also finding new, more valuable uses for  
16 every component that's in raw milk.

17 Q. So that would be helping manufacturers increase  
18 the value of the products they sell, correct?

19 A. Correct.

20 Q. And so -- so by increasing the returns to  
21 manufacturers, your hope is that that will increase  
22 returns to dairy farmers?

23 A. That's correct. And certainly, you know, with --  
24 as you well know, in the case of manufacturers, many of  
25 them that we deal with are dairy cooperatives, so the  
26 farmers are the manufacturers, in essence. They own -- I  
27 worked for Alto Dairy. That was a cooperative. All the  
28 profits went back -- ultimately went back to the



1 producers, so...

2 Q. Now, you did mention your time at Alto Dairy. And  
3 on the first page of your first statement, which is  
4 Exhibit 306, you stated that when you started at Alto, it  
5 was a cheddar manufacturer, and the largest and newest  
6 cheese factory in the U.S.

7 A. Correct.

8 Q. Okay. So I have taken your fact that you have  
9 been at the Center for Dairy Research for 20 years and --

10 A. Correct.

11 Q. -- that you were at Alto for 18, I'm guessing you  
12 started at Alto Dairy right around 1985?

13 A. September 1st, 1985.

14 Q. Okay. Your next sentence says that "Alto Dairy  
15 was a cooperative with ultimately two large cheese  
16 plants," as well as a large aged cheddar plant.

17 It says Alto was a cooperative with those plants.  
18 I mean, Alto is still a cooperative to my understanding,  
19 correct?

20 A. Alto Dairy no longer exists.

21 Q. Oh, it does not. Okay. That I was not aware of.  
22 Okay. When did they cease operations?

23 A. They didn't cease operations. They sold to  
24 Saputo. That was approx- -- that was after I left. That  
25 was approximately, I'm -- I could be off by a year or two.  
26 Approximately 2007 or '8, 2007 or '8, they sold to -- they  
27 sold to Saputo and ceased -- ceased as an operating  
28 cooperative. But the facilities are still operating.



1 Q. Okay. Perhaps that's where my confusion comes  
2 from because I remember folks referring to Alto plants in  
3 the recent years. But they may be referring to the plants  
4 now owned by Saputo then, correct?

5 A. Correct.

6 Q. On the Center's website they have a short video  
7 about an APT horizontal vat.

8 Are you familiar with that vat's operations?

9 A. Quite -- I am, yes.

10 Q. And one of the -- one of the points in that video  
11 they -- it talks about how that type of vat can help  
12 increase cheese yields?

13 A. Correct.

14 Q. And I wondered if -- if you have any -- if you  
15 have any data on how that vat compares to perhaps the  
16 Double O vats you reference in your testimony?

17 A. I don't have any data on that vat. That video  
18 that you -- that you looked at is of our brand new  
19 facility, and it's not 100% operational yet. And we're in  
20 the very beginning stages of utilizing and learning about  
21 those APT horizontal vats, so we have not progressed to  
22 the point of doing in-depth studies yet with those vats on  
23 fat retention. We're still working through programming  
24 and optimizing its operation.

25 Q. Now, that -- the vat that you have, the APT vat at  
26 the Center, am I correct --

27 A. We have two.

28 Q. Okay, two.



1           And they each take 5,000 pounds of milk?

2           A.    1500.  I'm sorry, 2500.  2500.

3           Q.    So 5,000 --

4           A.    Total.

5           Q.    -- between the two of them?

6           A.    5,000 total.  2500 each.

7           Q.    And that's the type of vat that on a larger scale  
8 would be installed at a new cheese plant?

9           A.    Correct.

10          Q.    Now, further on on your statement, Exhibit 306,  
11 you start talking about Van Slyke and Price's research.

12          A.    Uh-huh.

13          Q.    And you make a statement that they estimated if  
14 cheddar cheese was manufactured and handled to near  
15 perfection, fat recovery would be around 93%?

16          A.    Correct.

17          Q.    I wondered where you got the phrase "handled to  
18 near perfection."

19          A.    That's my phrase.  But what they were saying was,  
20 if you are -- if you did everything -- basically what they  
21 said is, if you make cheddar cheese and do everything  
22 perfectly, you would achieve 93% fat recovery.

23          Q.    Okay.  And then you reference Dr. Barbano's study.

24          A.    Correct.

25          Q.    And you note that that was from 1984.

26          A.    Correct.

27          Q.    And you -- you make some additional observations  
28 about his research.



1 I assume you have reviewed that study, correct?

2 A. I have read the scientific paper which is  
3 referenced in here, yes.

4 Q. Okay. Did Dr. Barbano offer any comments about  
5 why the fat recoveries he observed in those cheddar  
6 factories were lower than 93%?

7 A. He did. He did.

8 Q. Do you recall what those were?

9 A. To the best of my recollection, he talked about  
10 the milk coming in, the casein-to-fat ratios weren't  
11 optimal. Certainly in -- in those studies, I -- it's my  
12 recollection, two of the plants had Double O vats; one had  
13 started with open vats, and during the study converted to  
14 Double O vats; and the fourth one was open vats. So they  
15 saw improvements with the Double O vats, as I recall,  
16 compared to the open vats.

17 But, again, to the best of my recollection, he  
18 just -- he noted that just some of the curd handling  
19 practices and cheese making practices weren't optimal,  
20 getting back to the human element again, of how the curd  
21 is made and handled that resulted in further losses of  
22 fat.

23 Q. And you speak to some of those issues, I think --

24 A. I do.

25 Q. -- later in your statement --

26 A. I do.

27 Q. -- that --

28 A. I do.



1 THE COURT: Now, if this is going to be a master  
2 class in how to provide testimony, you have to wait until  
3 Mr. Miltner's voice has died away.

4 THE WITNESS: Okay.

5 BY MR. MILTNER:

6 Q. We have had to do this artificial pause thing for  
7 like eight weeks now, it takes a little getting used to.

8 But you note that there are human factors involved  
9 that have a significant impact on fat retention, correct?

10 A. Correct.

11 Q. And you also noted that Dr. Barbano referenced the  
12 casein-to-fat ratio, which outside of a certain range can  
13 also have significant impacts on fat retention and yields,  
14 correct?

15 A. Correct.

16 Q. So continuing on with your statement, and I'm  
17 looking at page 2 now, in the first full paragraph, toward  
18 the middle of the page, you state: "In my work at CDR  
19 with companies with open vats, I have seen fat losses in  
20 whey after cutting in open vats around 9 to 10%."

21 My question is, is that 9 to 10% an average? Is  
22 it the upper end of the fat losses you have observed? Or  
23 what does that 9 to 10% represent?

24 A. I would say an average.

25 Q. And then so you have observed both lower and  
26 higher retentions in open vats, then?

27 A. Yes.

28 Q. And you -- your next sentence describes your



1 experience at Alto with Double O vats, and that those fat  
2 losses were around 7%.

3 Am I correct that those -- all of those  
4 experiences would have been in that 1985 to 2003  
5 timeframe?

6 A. Yes. At Alto.

7 Q. At Alto, correct.

8 Okay. Your next sentence: "I have heard  
9 anecdotal reports of the most modern vats of fat losses of  
10 less than 5% after cutting."

11 Have you personally observed any -- any fat losses  
12 from the most modern vats?

13 A. You are talking about horizontal vats?

14 Q. Well, you use the words "most modern vats." I  
15 would interpret that as horizontal, but I'm more  
16 interested in what --

17 A. Yes.

18 Q. -- you are referring to?

19 A. The answer is yes.

20 Q. So, yes, you have personally observed those vats?

21 A. Yes.

22 Q. And did you observe fat losses of less than 5%  
23 after cutting?

24 A. No.

25 Q. For those observations were you called into the  
26 plant to help look at those vats and those fat losses?

27 A. No.

28 Q. Further on in your statement on the same page you



1 have a heading which reads, "Double O vats and even open  
2 vats are still in widespread use in the cheddar cheese  
3 industry."

4 I wondered if you could give us some context  
5 around what you mean by "widespread use."

6 A. So I talked to a very prominent -- recently talked  
7 to a very prominent large cheddar cheese manufacturer on  
8 the West Coast, and they still are using Double O vats in  
9 two of their plants there. In Wisconsin, I could tick off  
10 the name of between half a dozen and a dozen plants making  
11 cheddar cheese that still use Double O vats, so...

12 Q. Now, the prominent manufacturer on the West Coast,  
13 would you care to share who that is?

14 A. Boy. I don't know if I -- I feel uncomfortable  
15 divulging their name for the same reason before, but...

16 Q. Well, Hilmar cheese built their plants in the  
17 '80s, and at that point a Double O would have been state  
18 of the industry, correct?

19 A. Correct.

20 Q. And that plant is in California, correct?

21 A. Correct.

22 Q. And that is a -- would you categorize that as a  
23 large cheddar manufacturer?

24 A. Yes.

25 Q. Now, Hilmar has since constructed one plant in  
26 Texas, and another is under construction.

27 Are you aware of that?

28 A. I am.





1 Q. If you were advising them, would you advise them  
2 to install Double O vats in those plants?

3 A. I would not.

4 Q. Would part of the reason for that be that  
5 butterfat retention is higher in different style vats?

6 A. Yes.

7 Q. Now, you also state that when plants do upgrade  
8 their vats, the -- they are not necessarily lacking in a  
9 useful life, and those double O's may be repurposed,  
10 correct?

11 A. Correct.

12 Q. The plants that you see those Double O vats being  
13 repurposed in, do they tend to be more of a specialty  
14 cheese manufacturer?

15 A. I would say -- I would not agree with "tend to  
16 be." They sometimes are and sometimes are not.

17 Q. Would you consider them to be small to  
18 medium-sized plants?

19 A. I would. Yes.

20 Q. And then you state that, "Many small artisan  
21 cheddar cheese manufacturers continue to use open vats."

22 Would that description, "small artisan cheddar  
23 cheese manufacturer," would that be -- would you consider  
24 that a specialty manufacturer?

25 A. Yes.

26 Q. Okay. And then on page 3 you start describing  
27 other points of fat loss, and the first is cutting the  
28 coagulum. And at the end of that section your sentence



1 is, "Collectively this could amount to up to 1% of total  
2 milk volume, thus up to 1% of total fat loss."

3 And I'm unclear as to whether your comment there  
4 is referring to the cutting or the silos or both?

5 A. That comment is taking milk once it is already in  
6 the silo, up to when it's entering the cheese vat.

7 Q. So prior to cutting?

8 A. Prior to cutting.

9 Q. Okay. Now, you state that it could amount to up  
10 to 1% of total milk volume.

11 Do you have a range of what a plant would  
12 experience?

13 A. I -- I could give you -- my best guesstimate of  
14 that range would be between 0.3 and 1.0%.

15 Q. 1%, as you stated, is the upper end of what plants  
16 might realize?

17 A. Correct.

18 Q. Okay. Your next topic is about fat losses in  
19 whey, and you talk about salty whey. Taking into account  
20 those types of losses, I'm trying to figure out what is  
21 the actual percentage of fat that's lost in that process.  
22 You have a couple of different numbers.

23 What do you think the total fat loss for that  
24 element is?

25 A. Total as in total fat loss in cheddar cheese  
26 manufacture --

27 Q. No.

28 A. -- is that what you are asking.



1 Q. No, I'm sorry. I was imprecise once again.

2 Further fat losses downstream in the cheddar  
3 making process in the form of salty whey, how much do you  
4 think that accounts for?

5 A. I think -- well, as I said in here, I think it  
6 accounts for 10% of all fat loss -- approximately 10% of  
7 all fat that's lost in whey. But that wouldn't include  
8 fat lost as milk shrinkage, which you just questioned me  
9 about. It would not include fat losses in curd and fines  
10 and things like that.

11 Of the fat lost in whey, I -- I would guesstimate  
12 that 90% is in that, in the whey -- sweet whey after  
13 cutting, and 10% of the total fat lost in whey is in the  
14 salty whey.

15 Q. Would you agree that cheese makers using modern  
16 vats can achieve less than 0.2% fat loss in their whey?

17 A. Total whey?

18 Q. Yes.

19 A. You mean all whey?

20 Q. Yes.

21 A. No. In cheddar?

22 Q. Yes.

23 A. No.

24 Q. What do you think that number would be?

25 A. I think it would be 0.25 minimum, if you include  
26 salty whey in there.

27 Q. Okay. So that if it is 0.25, then .0025 would be  
28 salty whey, one-tenth of the total amount?



1 A. I don't think your math is correct.

2 Q. Okay. Your next section talks about cheese fines.  
3 You state: "In a recent conversation with a large U.S.  
4 aged cheddar manufacturer it was related to me that they  
5 lose approximately 0.25 to 0.3% of their curd production  
6 to cheese fines, which do not go back into the finished  
7 cheese."

8 I'll ask again. You can decide whether to answer.  
9 Care to show who that was that you spoke to?

10 THE COURT: Hardly anybody does name names.

11 THE WITNESS: Yeah.

12 MR. MILTNER: Judge, you are not supposed to help.

13 THE COURT: You are not required to.

14 THE WITNESS: Yeah, I'd prefer not to because I  
15 just don't want to -- you know, they talk to me on  
16 confidential terms, so I would hate to...

17 BY MR. MILTNER:

18 Q. That's perfectly fine. I understand.

19 Is there -- aged cheddar tends to be, in my  
20 observation -- and I'm not -- not a cheese maker, let  
21 alone a master or anything like that -- crumblier than a  
22 fresher cheddar; is that accurate?

23 A. Yes.

24 Q. So would an aged cheddar manufacturer expect to  
25 have a higher incidence of fines than a fresh cheddar  
26 manufacturer?

27 A. No.

28 Q. No?



1           Now, you are aware that aged cheddar is not  
2 surveyed by USDA for purposes of Make Allowances, correct?

3           A.    Yes.

4           Q.    Further in that section you stated: "Factories  
5 making stirred curd cheddar on curd tables generate  
6 significantly more fines due to the design of the whey  
7 drainage screens and agitators on curd tables."

8           For those of us that don't regularly engage in  
9 cheddar manufacturing, can you help us understand what a  
10 stirred curd cheddar is?

11          A.    Stirred curd cheddar -- stirred curd cheddar is  
12 when they don't let the curd fuse together in a solid  
13 mass, like they would on a belt system, which is what most  
14 aged cheddar makes, so they -- it typically goes to curd  
15 tables, sometimes a curd belt. But it's continuously  
16 stirred so it looks like little pieces of gravel in terms  
17 of the shape. And that's stirred curd.

18          Q.    Is stirred curd cheddar more common in a smaller  
19 cheese operation?

20          A.    No.

21          Q.    Is it more common when you are making cheddar that  
22 is not commodity cheddar?

23          A.    No.

24          Q.    So a large scale commodity manufacturer, like a  
25 Glanbia or like a Hilmar, would they be using a stirred  
26 cheddar process?

27          A.    Generally speaking, yes.

28          Q.    Okay. Now, the next element in your -- or part of



1 your statement I wanted to ask about are curd tables.

2 Can you help us understand what curd tables are?

3 A. Curd tables is -- is typically part of the stirred  
4 curd process. You have your vat. You make your curd in  
5 the vat, and then the curd and the whey is pumped to a  
6 table, which has a drain screen in the bottom to  
7 ultimately drain the whey away, so -- and there's stirring  
8 agitators on it. So that's -- that's what those are.

9 Q. Is a curd table always used in a stirred curd  
10 cheddar process?

11 A. No, because -- historically, yes, but in today's  
12 world, there are stirred curd belts as well.

13 Q. And so your statement is limited to stirred curd  
14 manufacturing utilizing a curd table?

15 A. Yes.

16 Q. And you also note that if they are using a belt,  
17 their losses through fines are half of those for those  
18 plants using a curd table; is that correct?

19 A. A belt for -- not quite.

20 Q. Okay.

21 A. A belt for matting. A belt for matting would have  
22 the least fines. A stirred curd table would have the most  
23 fines. A belt for stirred curd would be somewhere in  
24 between.

25 Q. Okay. So again, there's a range based on the --

26 A. Correct.

27 Q. -- plant design?

28 A. Correct.



1 Q. And if you were advising someone to construct a  
2 new plant to make commodity cheddar, what would your  
3 recommendations be on -- on those pieces of equipment?

4 A. For commodity cheddar what would I advise?

5 Q. Yes, sir.

6 A. I would advise tables.

7 Q. Why is that?

8 A. Because they are the most versatile and most  
9 controllable and easiest to control moisture. And  
10 moisture is -- is super important for yield. So those  
11 operations that have tables have the most versatility and  
12 the most control over cheese moisture and can most easily  
13 hit their moisture targets. And stirred curd tables give  
14 you by far the best salt distribution, so you can get the  
15 most precise and uniform salt content of your cheese with  
16 a table, versus the belt systems which are a real struggle  
17 to get uniform salt distribution in the curd.

18 Q. So if I think about your answers and what you have  
19 written in here, it's -- the range of losses to fines is  
20 somewhere between 0.25% and 0.6%, and it's a -- it's a  
21 range depending on the plants' equipment and operations;  
22 would that be accurate?

23 A. Yes. Yes.

24 Q. Okay. Now, moving on to page 5. You put an  
25 anecdotal statement, I guess, an observation that there's  
26 always some curds on the floor. I'm curious if that's  
27 ever been something that's been measured or quantified,  
28 how much is lost to stuff on the floor?



1 A. Yes. I would say really well-run plants regularly  
2 measure that.

3 Q. Do you have information on what those measurements  
4 would be?

5 A. Off the top of my head, I don't, no.

6 Q. Okay. Now, further on that paragraph, really  
7 right in the middle of page 5, "Occasionally" -- you  
8 state, "Occasionally, vats of cheese have to be disposed  
9 of due to contamination with foreign materials due to some  
10 unexpected equipment breakage."

11 A. Uh-huh.

12 Q. I would ask, I guess more of a philosophical  
13 question since you are trying to help dairy farmers make  
14 money, is it fair to the dairy farmer to have the yield  
15 factor adjusted because of matters completely out of their  
16 control?

17 A. That's not my area of expertise. That's -- that's  
18 for USDA to decide. I -- I'm -- I don't know the answer  
19 to that question.

20 Q. And at the end of that section you talk about a  
21 large national reputable cheese conversion and marketing  
22 company, and their estimate that 5% of current cheddar  
23 manufactured in the U.S. gets downgraded and discounted.

24 So explain to me, if you are willing to, the name,  
25 but if not, what is a cheese conversion and marketing  
26 company?

27 A. Well, I don't want to divulge the name, but a  
28 cheese conversion and marketing company would be -- I'll





1 give you some examples of names. So that would be people  
2 like Sargento Cheese, or Great Lakes Cheese, or Marathon  
3 Cheese, or Master's Gallery Cheese, or Pacific Cheese.  
4 They are cheese companies that don't manufacture cheese,  
5 but they buy and sell cheese, both bulk, and they convert  
6 it to shreds and slices and things like that.

7 Q. Would that operation be referred to in the  
8 industry sometimes as a cut-and-wrap operation?

9 A. Yeah, although some of them are more than  
10 cut-and-wrap. But, yes we often talk about them as  
11 cut-and-wrap operations.

12 Q. Now, do you have any data about the actual price  
13 impact of the amount of cheddar that gets downgraded and  
14 discounted?

15 A. I do not.

16 Q. I imagine that a discount might be something very  
17 slight or it could be something more significant; would  
18 that be correct?

19 A. That's correct.

20 Q. Okay. The next section of your statement is  
21 headed "the latest cheese vat design does not guarantee  
22 optimal fat retention in the cheese."

23 And you then continue that: "It should not be  
24 dismissed that the cheese maker's skills continue to play  
25 an important role in determining fat retention in cheese."

26 And so ultimately at any plant within the  
27 constraints of their equipment it ultimately is the  
28 quality of the plants' people and operations that



1 determines vat recoveries, correct?

2 A. Could you say that again? I'm --

3 Q. Sure. It was a long question.

4 Each plant has certain limitations based upon its  
5 equipment and setup about the maximum retention it might  
6 achieve, correct?

7 A. Correct.

8 Q. But whether they hit that maximum is a function of  
9 the people, the training, the operations at the plant,  
10 correct?

11 A. Correct.

12 Q. And not to belabor the things that you enumerated,  
13 but I think it is important to touch on them, the general  
14 make procedures will impact butterfat retention, correct?

15 A. Correct.

16 Q. How so -- when you say "general make procedures,"  
17 what does that include?

18 A. How much time do you have?

19 Q. I mean apparently we have got a lot.

20 A. Okay. So -- so you -- let's say you are putting  
21 the milk in the vat. So how you add the rennet, how long  
22 you stir in the rennet, which is the coagulant, how firm  
23 the cutness is, which -- how firm the coagulum is when you  
24 cut will affect it. The cut speeds of the knives going  
25 around, the agitation, the rate of acid development, which  
26 affects the firmness of the curd. The type of pumps you  
27 have to pump the curd to your belt or to your tables,  
28 because if they are too aggressive, the curd will shatter



1 and will leak fat and -- and protein and stuff. So  
2 there's -- there's a lot of things in there that cheese  
3 makers have control over that have to be right to maximize  
4 fat retention in cheese yield.

5 Q. Earlier in this hearing Dr. Nana Farkye  
6 testified -- do you know Dr. Farkye at all?

7 A. I do.

8 Q. I think he testified to some of those things, and  
9 he talked about the gentleness of the cut to prevent some  
10 of the -- he compared it to a healing of a wound almost.

11 Is that what you are referring to when you talk  
12 about leakage in the coagulum?

13 A. That's part of it, yes. I would express it a  
14 little differently, but I know what he's talking about.  
15 So, yes.

16 Q. On page 7 you end up with some estimates. And you  
17 say that -- I think -- I want to make sure I'm correct as  
18 how I'm reading this: "Fat recoveries of 91 to 93% with  
19 horizontal vats," correct?

20 A. Correct.

21 Q. And then 90 to 92% with vertical Double O vats,  
22 correct?

23 A. Correct.

24 THE COURT: You know, you are not -- you are  
25 missing his phrase, "well-run factories." I -- I think  
26 you have to -- if you are going to ask him, I think you  
27 have to use his words.

28 MR. MILTNER: Your Honor, I respect your



1 intervention a lot, and I'm going to get to that, and I  
2 phrased my questions particularly for a reason. And I  
3 have asked him to agree to -- to my statement, and he did.

4 THE COURT: And not what he gave you in his  
5 statement. You want him to agree with your statement  
6 rather than his own?

7 MR. MILTNER: There's a reason I phrased it the  
8 way I did, yes.

9 THE COURT: Well, I just don't think that's right.

10 MR. MILTNER: Very good.

11 BY MR. MILTNER:

12 Q. Your next statement says that 88 to 91% fat  
13 recovery in factories with traditional open vats, no  
14 qualification about how well it's run; is that correct?

15 A. That's what I stated, yes.

16 Q. Now, coming back to the point Her Honor mentioned.

17 On page 6 you state: "I have seen many instances  
18 where a cheese factory had good equipment, but in the  
19 hands of inexperienced cheese makers, large fat losses  
20 still occur."

21 A. Correct.

22 Q. And so the ranges you state for butterfat recovery  
23 in your conclusion, is the bottom end of that range, does  
24 that include operations in the hands of inexperienced  
25 cheese makers?

26 A. No.

27 Q. Overall, Mr. Sommer, what do you think is the  
28 average butterfat retention or butterfat recovery for



1 cheddar cheese?

2 A. 91%.

3 Q. Now, we have met before; do you recall?

4 A. I don't.

5 Q. Okay. You testified at a hearing in 2007 on this  
6 very issue.

7 Do you recall that?

8 A. I know I was here, yeah. I --

9 Q. I think we were --

10 A. I don't know where we were.

11 Q. Okay. I had the opportunity to ask you questions  
12 then as well.

13 And in your written statement you stated that you  
14 believed 90% was an appropriate --

15 A. Back then?

16 Q. Yes.

17 A. Okay.

18 Q. Is that -- so is it your experience and testimony  
19 that in the intervening 16 years, or whatnot, the average  
20 butterfat recovery has increased by 1%?

21 A. Yes.

22 Q. Now, in that same hearing, we had a back-and-forth  
23 about cheese fines, and you said the during your time at  
24 Alto, 20 years ago, that the cheese waste on the floor --  
25 I'm sorry. I misstated my question.

26 We were looking at cheese losses on the floor,  
27 which I don't think necessarily includes fines, but those  
28 losses at Alto at that time were about two-tenths of a



1 percent.

2 Do you think that is still the a good number?

3 A. For the industry?

4 Q. Yes, sir.

5 A. It's probably pretty close.

6 MR. MILTNER: Your Honor, I have a document I  
7 would like to mark as our next exhibit, if I could,  
8 please.

9 THE COURT: So the next exhibit number is 308.  
10 And we'll go off record. You have documents to  
11 distribute?

12 MR. MILTNER: I do.

13 THE COURT: All right. Let's go off record for  
14 just a moment at 11:47.

15 (An off-the-record discussion took place.)

16 THE COURT: Let's go back on record.

17 MR. MILTNER: Thank you, Your Honor.

18 THE COURT: We're back on record at 11:48. I have  
19 in front of me Exhibit 308, and you have distributed  
20 copies.

21 MR. MILTNER: I have, Your Honor.

22 (Exhibit Number 308 was marked for  
23 identification.)

24 BY MR. MILTNER:

25 Q. And Exhibit 308 is an article from Dairy Foods, at  
26 the bottom is the URL, and also the time stamp from when I  
27 found it at 12:25 in the morning last night.

28 Mr. Sommer, do you know John Lucey?



1 A. Yes.

2 Q. And he is the director of the Center for Dairy  
3 Research?

4 A. Yes.

5 Q. Have you seen this article before, sir, by chance,  
6 published in 2017?

7 A. I've seen drafts of it. I don't remember if I saw  
8 the finished product.

9 Q. Okay. When you were looking at the drafts, was  
10 that because you were asked to provide input on it?

11 A. I believe I was. Yes.

12 Q. I'd like to ask you to flip to the second page  
13 there, where it talks about cheese yield prediction. And  
14 this was an article from 2017, January of 2017, so I  
15 imagine you probably saw it in 2016, somewhere in there.  
16 So it's six or seven years old.

17 And is it Mr. Lucey or Dr. Lucey?

18 A. Dr. Lucey.

19 Q. And Dr. Lucey writes, in the middle of the page,  
20 "Additionally, typical fat recoveries for cheddar average  
21 around 92%."

22 I think you just testified that you thought the  
23 number was 91.

24 A. Uh-huh.

25 Q. Do you and Dr. Lucey disagree on that point then?

26 A. Yes.

27 Q. Do you recall when you reviewed this article  
28 whether you looked at that particular number?



1 A. I don't.

2 Q. Okay. Further down on that page, Dr. Lucey states  
3 that "by utilizing a modern enclosed vat design with  
4 horizontal agitation, cheesemakers can achieve less than  
5 0.2% fat in the whey."

6 I think you testified earlier that you think the  
7 number is -- the floor number on that is 0.25%.

8 A. That was with salty whey.

9 Q. That was with salty whey.

10 A. Yeah. He's not talking about that here. He's  
11 talking about sweet whey. That's two different things.

12 Q. Explain how those two things are different,  
13 please.

14 A. He's talking about whey after cutting in the vat.  
15 What you asked me before was all whey. So the salty whey  
16 comes much later. So what you asked me -- or what I  
17 assumed you asked me is if you combine the salty whey with  
18 the sweet whey, what would the fat content be, because the  
19 salty whey has a lot higher fat content. As like, you  
20 know, minimum, in my opinion, .6 probably higher than  
21 that, percent fat. You asked me of all the whey  
22 generated, what's the base, including salty whey.

23 He's not talking about that. He's just talking  
24 about sweet whey.

25 Q. Okay.

26 A. And also, by the way, he's talking about -- a lot  
27 of what he's talking about there is mozzarella whey which  
28 is reduced fat, because mozzarella is the number one





1 cheese by volume in the U.S. Cheddar is made with whole  
2 milk, and that's going to have a higher whey fat than  
3 mozzarella.

4 Q. Where in this do you see a reference to mozzarella  
5 cheese?

6 A. I don't, but he's just talking in general. He's  
7 not -- I don't see a reference to mozzarella, but he's not  
8 talking just strictly cheddar.

9 Q. I mean, in fact, in the whole article, the only  
10 reference to any style of cheese I see is cheddar.

11 Do you see anything different?

12 A. No.

13 Q. Okay.

14 A. But when he talks about 0.2, he's not -- he's not  
15 specifically talking cheddar. He's not specifically  
16 stating cheddar.

17 Q. And -- and I'm not an expert, so from a lay  
18 perspective or even somebody who has a moderate level of  
19 industry knowledge, how would you determine that from what  
20 you see on this page?

21 A. Well, you don't know what cheese varieties he's  
22 talking about. You couldn't.

23 Q. We couldn't, but you know?

24 A. From experience, I know, yes.

25 Q. Okay. So you noted early on in your  
26 cross-examination that the goal of the Center is to make  
27 dairy farmers more profitable.

28 In fact, your Center is funded by both the



1 Wisconsin Checkoff and DMI, correct?

2 A. Correct.

3 Q. And you are here appearing today on behalf of the  
4 Center, correct?

5 A. Correct.

6 Q. And you understand that based on at least the  
7 analysis from Select Milk Producers' economist, that  
8 increasing the factor for butterfat retention would  
9 increase producer income over a ten-year period. That's  
10 the expectation.

11 Do you understand that?

12 A. Could you repeat that again, please?

13 Q. Sure. Well, let me just ask. Would you expect  
14 that if the butterfat retention factor in the Class III  
15 formula were increased, that that would increase the  
16 Class III price?

17 A. Yes.

18 Q. And sometimes when butter and cheese get way out  
19 of alignment, that may not be the case, though, but --

20 A. Yes.

21 Q. -- in general, it would increase producer income,  
22 correct?

23 A. Yes.

24 Q. And to be clear, the Checkoff funding received by  
25 the Center, that's not -- that's all dairy farmer Checkoff  
26 money, correct?

27 A. Correct.

28 Q. Is the purpose of your testimony today to



1 influence the Department to not adopt an increase in  
2 butterfat retention?

3 A. No.

4 Q. Okay. What is the purpose of your testimony then,  
5 today?

6 A. My purpose is to give them the facts as best I  
7 know them to make the best decision possible for the  
8 health of the dairy industry.

9 Q. Did -- have you come here on your own volition  
10 today? I mean, did you just decide to come to the hearing  
11 and offer testimony on your own?

12 A. Oh, no. I was asked to come.

13 Q. Who asked you to come?

14 A. Some -- some representatives of IDFA.

15 Q. And you understand IDFA is opposing an increase in  
16 the butterfat recoveries?

17 A. Yes.

18 Q. Did they say, "We would like to you come and offer  
19 this testimony because we think that will help us in our  
20 efforts to keep the butterfat recovery level below 93%"?

21 A. No.

22 Q. What did they ask for you to do, sir?

23 A. To come and give the facts as best I understand  
24 them.

25 Q. Thank you.

26 MR. MILTNER: That's all I have.

27 THE WITNESS: Okay.

28 THE COURT: Don't leave.



1           You may leave. Thank you, Mr. Miltner.

2           MR. MILTNER: You know what? I was quick on that  
3 because I finished one statement. But he has two, doesn't  
4 he?

5           THE COURT: Yes.

6           MR. MILTNER: It's noon. I'm happy to keep going  
7 on the second statement or we can do it after lunch.

8           THE COURT: What I'd like to do -- you stay right  
9 there for just a minute.

10           I would like to ask Agricultural Marketing Service  
11 what witnesses we need to finish today, whether we want to  
12 break for lunch now, but -- so that people would know  
13 during their lunch break what they might need to prepare  
14 for.

15           MS. TAYLOR: Thank you, Your Honor.

16           So on my list that we all agreed to yesterday, I  
17 think Dr. Sommer is the only one --

18           THE WITNESS: I'm not a doctor.

19           MS. TAYLOR: Mr. Sommer. There's been a lot of  
20 doctors in front of us.

21           -- Mr. Sommer is the only one left on the list  
22 that must finish today.

23           I have on my list, next would be Jeff Sims and  
24 then Eric Erba. And if there's four minutes somewhere in  
25 the day, Sally Keefe. I have not forgotten about her.

26           THE COURT: Now, at some point I wrote down  
27 Jeffrey Sims.

28           MS. TAYLOR: Yes, that's Jeff Sims. So he would



1 be next, but I'm not sure if he has to finish today or  
2 not. Maybe.

3 THE COURT: Ms. Hancock?

4 MS. HANCOCK: And after we did our microphone  
5 talk, I then threw in Mr. Zalar in front of Mr. Erba. We  
6 don't believe -- and Mr. English prompted this as well --  
7 but we don't believe that Mr. Sims is realistically going  
8 to finish today, or maybe even this week. And so we  
9 thought it might be more prudent to get Mr. Zalar on first  
10 before Mr. -- before Mr. Sims and Dr. Erba, so that he has  
11 a chance of getting out of here this week.

12 THE COURT: Is that spelled Z --

13 MS. HANCOCK: Z-A-L-A-R.

14 THE COURT: That sounds good. So -- and it really  
15 is time to break. So when we come back, is everyone in  
16 agreement that we will continue with this witness until  
17 he's finished before we take the next one? Yes?

18 Thank you, Mr. Miltner.

19 MR. MILTNER: Thank you.

20 THE COURT: All right. Please be back and ready  
21 to go at 1:00 p.m.

22 We go off record at 11:59 p.m. -- I mean a.m.,  
23 11:59 a.m.

24 (Whereupon, a luncheon break was taken.)

25 ---o0o---

26

27

28



1 THURSDAY, OCTOBER 5, 2023 - - AFTERNOON SESSION

2 THE COURT: We're back on record at 1:00 p.m.

3 Do you recall where you were, Mr. Miltner?

4 MR. MILTNER: I know right where I was. I was  
5 between statement 30- -- or Exhibit 306 and 307.

6 THE COURT: Very good. You may proceed.

7 BY MR. MILTNER:

8 Q. Mr. Sommer, did you have a chance to read the  
9 testimony that Dr. Farkye presented in this hearing before  
10 today?

11 A. I briefly reviewed it.

12 Q. Do you recall his comments on the use of whey  
13 cream in the cheese vat?

14 A. I do not.

15 Q. I believe he raised several of the same comments  
16 that you do about some of the negative effects of using  
17 whey cream and recycling that in the vat, but since you  
18 don't recall, I won't ask specific questions on that.

19 Now, when you begin discussing the problems  
20 associated with utilizing whey cream, you talk about  
21 breaking the cycle by not recycling whey cream into the  
22 vat.

23 Can you explain a little bit more about what you  
24 mean by that and how a cheese manufacturer would break a  
25 cycle?

26 A. Sure. So as I explained, once you start using  
27 whey cream, because there's damaged fat in that -- more  
28 fat -- some of that damaged fat is more easily leak --



1 more easily leaks out and it gets lost back -- right back  
2 in the whey again, and then you separate it all in the  
3 separator, and your whey cream, and we incorporate the  
4 whey cream in the milk for cheese making, and it just  
5 separates out again.

6 And the -- as day after day after day after day  
7 goes on of doing that, that amount of damaged fat builds  
8 up to ever higher levels, and your fat retention goes  
9 down, and your risk of off flavors and everything else  
10 negative goes up.

11 So perhaps every -- at least every week, I think  
12 that's what I said in here, rather than reincorporate the  
13 whey cream into the milk to make cheese, you just simply  
14 ship it off to a butter maker, and then the following day  
15 then they start the practice all over again.

16 Q. And so for a cheese plant that you are describing  
17 there that would break that cycle once a week, how long  
18 would it take them to go through one cheese making cycle?

19 In other words, if I'm going to start with a clean  
20 vat, and now I have processed, I've made cheese, and I'm  
21 going to put whey cream back in the vat, how long from the  
22 time that I start with a vat to now I'm ready to do the  
23 second vat?

24 A. I don't know what you are asking. I'm sorry.

25 Q. Okay. So let's start with the process. I -- I  
26 start with -- with raw milk, and I'm going to make cheddar  
27 cheese.

28 A. Okay.



1 Q. And at the end of that process I have cheese  
2 that's now off to be, you know, processed further or aged  
3 or whatever is going to happen with it. And I have whey  
4 cream, right?

5 A. At the end of the day, you'll have whey cream.

6 Q. Okay. You say at the end of the day. Is that  
7 literally at the end of the day? My question is how  
8 long --

9 A. Yes.

10 Q. Okay. Great.

11 A. Literally at the end of the day. Because you save  
12 that -- you save all that whey up, and you run it through  
13 a separator, and it takes you the whole day to work  
14 through it, and then at the end of the day you have a  
15 batch of whey cream.

16 Q. That's -- that's really what I was getting at.  
17 Because I thought, as an attorney, that it takes about a  
18 day to run, you know, a -- to run cheese and -- but I  
19 wasn't sure, so that's -- that's helpful.

20 A. Well, every plant is different, their schedules.  
21 I mean, some plants run one shift, some plants run two,  
22 and some run 24/7. So --

23 Q. Okay.

24 A. -- it varies.

25 Q. Well, let's assume that we have a plant that does  
26 once a day. So at the end of the day, it runs one -- what  
27 do you call it? One -- one batch of cheese a day?

28 You are shaking your head?





1 A. One vat -- are you saying one vat of cheese a day?

2 Q. Sure. Yes.

3 A. Every vat is a batch.

4 Q. Okay.

5 A. It's a batch system.

6 Q. Then let's assume we're going to run one vat of  
7 cheese.

8 A. Okay.

9 Q. And at the end of the day, I have whey cream.

10 A. Okay.

11 Q. And tomorrow morning I'm going to do it again.

12 And I have put the whey cream now back into my vat. Okay?

13 So this is day two.

14 A. Okay.

15 Q. Do you expect that there would be noticeable  
16 degradation of the cheese on day two compared to day one?

17 A. Possibly.

18 Q. Would you expect that the cheese at the end of day  
19 two would nevertheless be marketable?

20 A. Yes.

21 Q. Okay. Thank you.

22 Would you expect that the cheese at the end of the  
23 day three would be marketable?

24 A. You'd have to define what you say is marketable.  
25 Marketable as USDA Grade A, or USDA Grade B, or  
26 undergrade?

27 Q. As a 40-pound cheddar block meeting the  
28 specifications of the NDPSR.



1 A. Of the what? I'm sorry?

2 Q. The National Dairy Product Sales Report. Is it a  
3 reportable 40-pound block?

4 A. I'm sorry, I'm not familiar with that report. I  
5 don't know what their standards are to what they include  
6 or don't include in that report.

7 Q. Okay. Then let's say Grade A.

8 A. Questionable.

9 Q. Okay. At the end of the day two?

10 A. I thought I said day three.

11 Q. I did. And now I'm saying, at the end of day two  
12 would that make Grade A?

13 A. You are asking a hypothetical question, and that's  
14 impossible to say depending on the individual cheese plant  
15 and their practices. Maybe, maybe not. It's -- you -- no  
16 one could possibly say yes, for sure, or no, for sure.

17 Q. So let's think about this same hypothetical plant,  
18 and let's assume that they have a 90% butterfat retention  
19 without using any whey cream.

20 Now, I understand from a previous report from the  
21 Center that they would expect 80% of the fat in the whey  
22 cream to be retained on the first pass.

23 Does that sound reasonable to you?

24 A. Sounds reasonable.

25 Q. So if I added that whey cream back and I ran that  
26 again, I'm going to have a butterfat retention for -- I'm  
27 going to capture 80% of that butterfat in the whey cream I  
28 added in, correct?



1 A. If that number is accurate, yes.

2 Q. And I'm going to capture 90% of the butterfat in  
3 the new milk in the vat, correct?

4 A. Correct.

5 Q. And that's at day two. So from -- from the  
6 butterfat that went in the vat on day one, I have got 90%  
7 of what went through, and then I have got 80% of what was  
8 in the whey cream, correct?

9 A. Correct.

10 Q. That ends up in cheese, correct?

11 A. Correct.

12 Q. Okay. And at the end of the day two, if I want  
13 to, if I'm concerned about bacteriophage or other  
14 breakdown, I could break the cycle then, couldn't I?

15 A. You could. You could also have a whole mess of  
16 bad cheese from the first day if bacteriophage got in it.

17 Q. If that happened --

18 A. Could --

19 Q. -- you could?

20 A. The second day, I mean. The first day that you  
21 add it back you could.

22 Q. Right. And a lot of that outcome on day two would  
23 be part of the human factor that you described in your  
24 first statement, right, how well trained folks are and how  
25 clean they keep the plant and other factors?

26 A. Certainly that's a factor, yes.

27 Q. On page 3 of Exhibit 307 you state, in the middle  
28 of the page, "Due to all of these factors, aged cheddar



1 cheese manufacturers do not reutilize whey cream in cheese  
2 manufacture due to the significant risks of off-flavored  
3 development as their cheddar cheeses age."

4 Again, aged cheese is not part of the fat -- the  
5 cheese that's surveyed by USDA for -- for sales prices, is  
6 it?

7 A. I don't know the answer to that.

8 Q. Okay. Do you know if --

9 A. Let me -- let me back up. I mean, aged cheese at  
10 day one is young cheese. Aged cheese is only aged cheese  
11 after you have aged it. So I don't know what USDA's  
12 survey -- how they do that but --

13 Q. Okay.

14 A. You know what I'm saying?

15 Q. Yeah. Yeah.

16 A. If I make an aged cheese at my Black Creek plant  
17 where I used to work, on day one, it's not aged cheese,  
18 it's mild cheddar.

19 Q. Right. Okay. I understand that.

20 Further in that same paragraph you stated, "So  
21 even manufacturers of barrel and mild cheddar risk whey  
22 taint and other flavor defects in their cheese when  
23 utilizing whey cream in cheese production, which is why  
24 myself and my colleagues at the CDR don't advise this  
25 practice."

26 In your experience are there some barrel and mild  
27 cheddar manufacturers that nevertheless use whey cream in  
28 their processes?



1 A. Yes.

2 Q. Okay. Is it more common in the manufacturing of  
3 what we would call commodity cheddar cheese, rather than  
4 specialty cheeses or as you note aged cheeses?

5 A. Yes.

6 Q. And in your conclusion, on page 4, I think you  
7 pretty well summarize that: "Some cheddar manufacturers  
8 are willing to employ reutilizing whey cream in cheddar  
9 cheese production."

10 Correct?

11 A. Correct.

12 Q. Do you have any estimate as to the prevalence of  
13 that practice for larger manufacturers of commodity  
14 cheddar?

15 A. Could you ask me -- I heard the gist of it, but  
16 the first part of that question before.

17 Q. Yeah. So for a large scale commodity cheddar  
18 manufacturer, is this practice common?

19 A. The answer is -- I guess the answer is I don't  
20 really know for sure. I don't know how common it is. I  
21 know it happens. I don't know if it's common, because  
22 people are pretty proprietary about those type of  
23 practices, and they often don't tell us.

24 Q. I asked you a similar question in 2007, and here's  
25 what you said. I asked: "Do you have any idea as to  
26 whether it's a very common practice?"

27 Your answer was: "I really don't because that's  
28 kind of one of those proprietary things that you don't --



1 especially since it is not a necessarily advisable  
2 practice, people don't like to openly talk about that, so  
3 I don't know."

4 Is that the same today?

5 A. Still the same.

6 Q. Okay. So with respect to whey cream, I think both  
7 you and Dr. Farkye agree that there are some problems that  
8 can arise from the practice, correct?

9 A. Correct.

10 Q. And -- but nevertheless, manufacturers -- some  
11 commodity cheddar manufacturers utilize it, correct?

12 A. Correct.

13 Q. And -- but we don't know to what extent, correct?

14 A. I don't know, correct.

15 Q. You don't know. Very good.

16 But that if they do, they would expect to capture  
17 on the first pass 80% of the butterfat in the whey cream  
18 if they chose to employ that process?

19 A. I don't have personal data to back that up, but it  
20 seems like a reasonable number to me.

21 MR. MILTNER: At this point, I don't think I have  
22 any further questions. Thank you very much, Mr. Sommer.

23 THE WITNESS: You're very welcome.

24 THE COURT: I can't remember whether we made the  
25 correction on page 4 of Exhibit 307. I think we did  
26 before lunch.

27 MS. TAYLOR: We did.

28 THE COURT: We did. Okay. Good.



1 All right. Next cross-examiner, please.

2 CROSS-EXAMINATION

3 BY MR. ENGLISH:

4 Q. Good afternoon. Chip English for the Milk  
5 Innovation Group.

6 Hello, sir.

7 A. Hello.

8 Q. So in his examination, Mr. Miltner suggested, at  
9 least what I heard, that your testimony will harm dairy  
10 farmers.

11 Do you have a response?

12 A. Yeah, I do. That's certainly -- certainly not my  
13 intent, and from a larger philosophical standpoint, my aim  
14 is to help dairy farmers. And here's why I say that.

15 Because we are largely funded by dairy farmers,  
16 I'm very, very cognizant of their welfare, and I came from  
17 a dairy farm, so -- and from a cooperative, so I  
18 understand to some extent, you know, their struggles.

19 But I have been in this industry for 38 years,  
20 both on the cheese plant side, 18, and now 20 at the  
21 Center for Dairy Research. One of the things, one really  
22 big lessons I have learned is, for this industry to  
23 thrive, farmers have to be profitable and healthy,  
24 economically healthy, and dairy plants do, too.

25 The worth of a dairy plant without a milk supply  
26 is not much. The value of milk on the farm without a  
27 processor to process it is not much. The more dairy plant  
28 competition we have, the higher prices dairy farmers are



1 going to get for their milk.

2 So my hope is to only give the USDA folks accurate  
3 information to plug into their various formula for  
4 Class III prices and Make Allowances and such to make an  
5 overall healthy dairy industry for the entire United  
6 States, both processors and farmers equally.

7 And I know darn well that if the dairy plants  
8 can't be profitable and go out of business, long-term  
9 that's bad for dairy farmers.

10 Secondly, I will say, particularly from the from  
11 the Center for Dairy Research standpoint and my  
12 standpoint, I am -- we're more about adding total value to  
13 the milk supply, so dairy farmers are economically more  
14 helpful. Finding new and more higher value uses for  
15 cheese, developing new cheese varieties and recipes to  
16 bring higher values in the marketplace, to assist  
17 processors and buyers of cheese, to make products that are  
18 highly desired by the consumers so that they can get  
19 maximum value for that, all in the effort to make both  
20 dairy farmers and dairy processors profitable.

21 Ultimately, USDA's job is -- to me, is a bit like  
22 the Biblical Solomon tale of dividing the baby up. Right?  
23 I don't want to get personally involved with that, and  
24 I -- that's a tough job for them, and I understand that.

25 My job at the Center for this hearing's purposes  
26 is to give USDA what I consider the most accurate  
27 information I can so that they can so-called divide the  
28 baby up as well as they possibly can, knowing that's an





1 impossible task.

2 Q. Thank you.

3 Mr. Miltner also asked you a series of questions  
4 going back to -- and I'm not sure whether it was the 2006  
5 or 2007 version of the hearing where he and you had a  
6 conversation like this, and you testified about a  
7 90% butterfat recovery.

8 Do you remember that?

9 A. Yes, I do, sir.

10 Q. And then in the article that is Exhibit 308 that  
11 Dr. Lucey is the author of, he references that recovery of  
12 92%.

13 A. Correct.

14 Q. Why do you say 91%?

15 A. My belief is when Dr. Lucey authored that article,  
16 he was for the most part only considering the new larger  
17 plants. And that 92% is in the same range that I gave for  
18 those plants. I don't believe for a second that he was  
19 considering older, smaller plants, open vats, even some of  
20 the older Double O vats, and some of those situations.

21 So I agree with that number if you are saying, you  
22 know, some of the more modern plants, and certainly the  
23 larger plants and newer plants out West, and I think  
24 that's what he was thinking of when he -- when he stated  
25 that number. I don't believe he was looking at, you know,  
26 smaller and older plants and older vats and things like  
27 that.

28 Q. So, for instance, consistent with that, the last



1 phrase -- there was a comma, and the last phrase in that  
2 paragraph --

3 A. Yeah, he says -- he says, "but different  
4 recoveries can occur industrially due to the actual  
5 processing conditions used for cheesemaking," which is  
6 what I'm saying as well.

7 Q. And then -- and then finally, Mr. Miltner said, as  
8 far as he could tell -- and maybe he was looking at one  
9 page and not another -- that this was limited to cheddar  
10 cheese, at least that's what I understood.

11 But can you look at page 3, the line up from the  
12 first paragraph. And do you see a reference to a cheese  
13 other than cheddar cheese?

14 A. Yeah. Dr. Lucey is talking about feta cheese. He  
15 says "like feta" on the seventh line, third -- second word  
16 from the end, "like feta."

17 Q. So that -- that corresponds with your view that  
18 that the article may or may not have been about just  
19 cheddar cheese. In fact, it clearly included feta cheese,  
20 and in your view, probably mozzarella as well, correct?

21 A. Correct.

22 MR. ENGLISH: Thank you very much. I have no  
23 further questions.

24 CROSS-EXAMINATION

25 BY MR. MILTNER:

26 Q. First of all, I do stand corrected. I did not see  
27 feta there. I looked quickly, and a couple of times, but  
28 I did not see it. I apologize for my error there.



1           Mr. Sommer, in -- along the lines of Mr. English's  
2 question about 92% recoveries and your response, I'll ask  
3 a simpler question about what leads you to believe that  
4 Mr. -- Dr. Lucey was only considering current vats?  
5 Because I don't see that information in there and --

6           A. No, it's not -- I'm sorry.

7           Q. No, go ahead. I was pretty well done.

8           A. Sorry.

9           No, I don't see that either. But just knowing  
10 what he sees and how he -- you know, how he thinks, he --  
11 he's pretty much -- that's what his exposure is, to -- to  
12 a lot of the newer plants with -- with newer vats and  
13 newer equipment.

14           My exposure is to the breadth of the industry. I  
15 worked from the smallest of the small farmstead cheese  
16 makers to some of the largest cheese plants, so I see a  
17 wider range of plants than he typically would deal with.  
18 He typically doesn't deal nearly as much as I would, for  
19 example, in some of the small and medium-sized plants.

20           Q. And so would it be that those small and  
21 medium-sized plants tend to have lower butterfat  
22 recoveries?

23           A. Yes.

24           Q. Is that because they tend to be the ones that are  
25 still using Double O vats?

26           A. Yes. And open vats.

27           MR. MILTNER: Thank you.

28           THE COURT: Dr. Cryan.



## 1 CROSS-EXAMINATION

2 BY DR. CRYAN:

3 Q. Hello, Dr. Sommer.

4 A. It's not doctor. It's just Mr.

5 Q. Oh, I apologize. I apologize.

6 I am Roger Cryan with the American Farm Bureau  
7 Federation. It's good to see you. I have seen your work  
8 over the years, and I understand you are a good and  
9 well-respected scientist.

10 The numbers you have presented are essentially  
11 well-informed estimates about yields and so forth, based  
12 on relatively limited observations over a relatively long  
13 time. They are not comprehensive data across the  
14 industry; is that correct?

15 A. I believe that's accurate, yes.

16 Q. So do you think it would be wise before  
17 implementing -- you know, applying yields to regulations,  
18 to obtain a wider and more complete set of data for  
19 processors regarding costs and yields?

20 A. That would be ideal, yes.

21 DR. CRYAN: Very good. Thank you very much.

22 I'm done. Thank you.

23 THE COURT: Does anyone else have questions before  
24 I turn to the Agricultural Marketing Service for their  
25 questions?

26 I see no one. The Agricultural Marketing Service  
27 may proceed.

28 ///



## 1 CROSS-EXAMINATION

2 BY MS. TAYLOR:

3 Q. Good afternoon.

4 A. Good afternoon.

5 Q. Thanks for joining us today to testify.

6 A. You're welcome.

7 Q. Let's see. A few questions.

8 In your -- I'm going to start with Exhibit 306. I  
9 wrote at the top, I think you answered this to someone  
10 else's question, but I want to make sure I wrote it down  
11 right. But overall you think butterfat recovery in  
12 cheese, in cheddar cheese, currently is around 91%.

13 Did I write that down correctly?

14 A. That's what I -- yeah, that's what I believe. If  
15 you took the whole industry and put it in a hopper and  
16 shook it up and figured out what it was, I -- that would  
17 be my best guesstimate, 91%.

18 Q. Got you.

19 And --

20 A. Can I say one other thing to that, that didn't  
21 come out before?

22 Q. Uh-huh.

23 A. It kind of did, but -- so the good news is, for  
24 fat retention, a lot of the newer, bigger plants,  
25 especially out West, have newer equipment with much better  
26 fat retention potential.

27 The downside of that, though, is many of those  
28 newer plants, and I -- I don't want to mention names,



1 have, in general, quite limited experience of their  
2 employees, so their practices aren't up to speed of what  
3 they ultimately hopefully will be. So they -- even though  
4 that they have really great brand new equipment, they  
5 don't achieve the fat retention and the cheese quality  
6 that would be ideal.

7 So that -- that -- that's -- I have seen that in  
8 the context of that's a drag on the fat retention story,  
9 meaning a lowering effect on the fat retention story.

10 We have just had some experiences at the -- I have  
11 had some experiences at the CDR just seeing some of those  
12 operations and some of the struggles that they go through.  
13 But -- they will get better, but right now there's a bit  
14 of a drag on that system.

15 Q. On that point, what seems to be -- what's the  
16 learning curve like time-wise?

17 A. Time-wise?

18 Q. Uh-huh.

19 A. Couple years.

20 Q. Okay. You talked about the Van Slyke formula, and  
21 that has a 93% fat recovery assumption in it.

22 Do you know if that assumption factored in only  
23 the loss from cutting the curds or it's all of the losses  
24 that you talked about --

25 A. All --

26 Q. -- in your exhibit?

27 A. All of the losses. Doing a total mass balance of  
28 fat coming in, the milk, raw milk into a factory, and fat



1 leaving the factory in the cheese.

2 Q. Okay.

3 A. So all of it.

4 Q. I want to turn to the page 3 and 4 where you talk  
5 about salty whey and sweet whey, and you mention salty  
6 whey is significantly higher in fat than sweet whey.

7 Can you explain why that is?

8 A. I believe the reason is that when you add salt, it  
9 kind of reopens the pores of the cheese structure. I  
10 mean, if you looked at a piece of cheese under a super  
11 powerful microscope, it would look like a sponge, and the  
12 fat is -- is just trapped in the -- if you think of a  
13 sponge, the holes in a sponge -- the trap is -- the fat is  
14 simply just trapped in there, as is the moisture. So when  
15 you add salt, it affects the proteins, and I think they  
16 open up, and then they leak out fat because it kind of  
17 opens up the structure.

18 Q. Okay. And you talked about how the sweet whey can  
19 go back in the cheese making process if they choose to do  
20 that.

21 Am I right about that?

22 A. I don't think so.

23 Q. You talked about whey -- oh, whey cream going back  
24 in the cheese making process. Excuse me there.

25 A. Yeah. Whey cream can, yes.

26 Q. What happens to the salty whey?

27 A. Typically, they -- a typical cheddar plant will  
28 segregate the salty whey, run that through a whey cream



1 separator, separate from the sweet cream -- I'm sorry --  
2 separate from the unsalty whey separator, and now they  
3 will have whey cream with salt in it. But usually they  
4 just combine that whey cream with the whey cream they get  
5 from the sweet whey.

6 So generally the whey creams, both streams, the --  
7 from the sweet whey and from the salty whey, although they  
8 are generated separately, they are ultimately typically  
9 combined.

10 Q. And go back into the cheese if the cheese maker  
11 chooses?

12 A. Correct.

13 Q. Okay. You mentioned the sentence in here says --  
14 talked about both sweet and salty whey. And I think you  
15 said of all the whey losses, 90% is sweet whey and 10% is  
16 salty whey.

17 Am I correct there?

18 A. Correct. And that -- that -- that came from that  
19 last reference that I had there that -- that was done some  
20 years ago at the University of Wisconsin on survey of  
21 salty and sweet whey composition from various cheese  
22 plants in Wisconsin. That's where I -- that's where those  
23 data came from.

24 Q. And would -- do you know or would that article  
25 have what is the typical fat percentage of sweet and salty  
26 whey?

27 A. That, I know exactly what the article said. The  
28 article said 0.2% fat in the sweet whey and 0.6% fat in





1 the salty whey.

2 Having said that, my personal belief is I think  
3 they were underestimating both but...

4 Q. Okay.

5 A. But that's what that -- you asked me what the  
6 article said. That's what it says --

7 Q. Okay.

8 A. -- 0.2 and 0.6.

9 Q. Okay. And the last sentence here says, "This  
10 occurs late" -- you are talking about the salty whey --  
11 "in the cheese making process and is not accounted for in  
12 the test for fat losses in whey sampled at the vat."

13 I was just wondering if you could explain there  
14 what you are talking about with the tests.

15 A. Yeah. So what -- what -- what a typical cheese  
16 plant would do is -- so you are making -- just envision  
17 for a minute, if you have been in a cheese plant, you are  
18 making cheese, and you have your milk in the vat, and you  
19 add your coagulant and starter and all that stuff, and you  
20 cut it, cook it, and now you have curd and whey. So  
21 normally it's at that point where a cheese factory would  
22 take a sample of the sweet whey and analyze it for fat  
23 loss. Okay?

24 But then as part of that overall process, now you  
25 have got your curds and whey, now you're going to send it  
26 to either a belt or a -- or a table, curd table, or a  
27 matting belt, and drain off most of that sweet whey. And  
28 then ultimately then after you have pretty much dried



1 curd, you are going to salt the curd. So that's pretty  
2 late in the process, just before putting it into a  
3 40-pound block tower or something. And it's at that point  
4 when you salt the whey that the salty whey comes out.

5 So when you are sampling for fat loss in the vat  
6 after cutting and cooking the curd, you are not catching  
7 any of that fat that's lost later in the process after you  
8 salt the curd. That's what I was trying to point out,  
9 probably not as eloquently as I should have.

10 Q. And that's just typical of how cheese operators  
11 work?

12 A. That's right. That's how they all operate, yeah.

13 Q. Okay.

14 A. And the other thing -- let me say this, too.  
15 Whatever you are sampling, whether you're sampling sweet  
16 whey or salty whey, it's a moving target. We have an  
17 article in our -- in our quarterly publication on that,  
18 but as whey coming out of the cheese, the whey composition  
19 changes.

20 Let me back up. So you cut the curd in the vat,  
21 right? The fat that's lost is lost very fairly quickly.  
22 But then as the curd continues to go through the system,  
23 you still lose more whey liquid, mostly water whey, but  
24 less of the fat. So if you take the -- what I'm trying to  
25 tell you is, I -- let's say I'm making cheese, and I cut  
26 the curd, I cook the curd, and now I have my curds and  
27 whey. If I take a sample then, I'm going to get a fat  
28 content here.



1           If I wait, pump it to a table and let more whey  
2 come out but less fat is coming out and analyze for fat as  
3 a percentage, my fat's going to go down.

4           So I think it would be easy for you in the room to  
5 think, you know, it's accurate -- it's easy and accurate  
6 to get a -- a fat test on your whey, but it's not -- it's  
7 not quite that simple, unfortunately.

8           Q.    Okay. Thank you for that detail.

9           You talk about, on page 5, fat loss through fines.  
10 And you have a specific example for 640s. I'm curious if  
11 there's a difference between 640s and 40s and 500s.

12          A.    There is. So 40 is a hermetically-sealed block.  
13 So once you seal it, vacuum seal it, nothing can escape.

14          A 640 is -- is not a vacuum-sealed block. It's  
15 got a plastic liner, but it's -- it's got seams that are  
16 not sealed. So even after you put a 640 in a cooler, it  
17 will continue to drip whey, and you will lose more fat,  
18 and whey, and a little bit of protein, and water and  
19 lactose.

20          Is that what -- I'm sorry, is that what you were  
21 asking?

22          Q.    It was.

23          And 500s?

24          A.    500-pound barrels? I have never made 500-pound  
25 barrels. I have seen it done. But I'm pretty sure that  
26 those go in a sealed -- I'm almost positive -- they go in  
27 a bag and nothing can escape. So in that sense, a barrel  
28 would be more similar to a 40-pound block. A 640 is a



1 different animal.

2 Q. Okay. When you are talking about adding whey  
3 cream back into the cheese making process, from what I  
4 gather from your testimony, you deal with plants all over  
5 the United States, not just in the Wisconsin area?

6 A. Correct.

7 Q. So I was wondering if the prevalence of doing that  
8 is in any particular area of the country or you don't see  
9 that at all?

10 A. I do see that. My -- my understanding, and what I  
11 have seen, is it's more prevalent -- adding whey cream  
12 back into the milk to make -- to try and incorporate it  
13 back in the cheese tends to be more prevalent in the  
14 western part of the country than in the Upper Midwest.

15 And historically the reason was there was more  
16 outlets for whey cream in the Upper Midwest, meaning more  
17 butter makers that would pay a reasonable price value for  
18 the whey cream in the Upper Midwest compared to out West.  
19 So my understanding is there was a lot of cheese plants in  
20 the western part of the country that really didn't have  
21 very good economic outlets for the whey cream, so they are  
22 like, well, we got to do something, right? So we're going  
23 to have -- we're just going to have to take the risks and  
24 put it back in the cheese. And I totally understand that.  
25 I don't particularly like it, but I totally understand  
26 where they are coming from.

27 So, yeah, it's a long answer of saying, are there  
28 regional differences? I have seen regional differences,



1 more prevalent out West, less prevalent in the Upper  
2 Midwest.

3 Q. Okay.

4 A. The other part of that is, too, I would say, the  
5 Upper Midwest, I believe, has a higher proportion of aged  
6 cheddar plants, whereas the West -- let's exclude maybe  
7 Tillamook for now -- but the West, the Southwest, more of  
8 that tends to be mild and commodity cheddar and barrel  
9 cheddar. And the risks there are not nearly as great of  
10 adding whey cream back as they are if you are going to do  
11 it to aged cheddar. So I think that's part of that  
12 factor, too.

13 Q. Okay. Are any of the other -- I know we talked  
14 about the difference between 40s, 640s, 500s when it comes  
15 to cheese fines. But are there any other differences that  
16 you would see in the fat loss recovery between the  
17 different sizes of commodity cheddar that is made?

18 A. Ask me that first part again, because I'm not sure  
19 I agreed with how you stated it. But go ahead.

20 Q. We talked about when it came to losing cheese  
21 fines --

22 A. Okay.

23 Q. -- and you explained how 640s have this issue, but  
24 you don't find that in 40s and 500s because of the way  
25 they are packaged.

26 A. No, that's not correct. If I said that -- I hope  
27 I didn't say that. I didn't mean to say --

28 Q. That's how I -- well, that's good -- we'll clarify



1 this.

2 A. Yes.

3 Q. I think I was asking, because you have an example  
4 of 640s -- let me turn to the page. On page 5, you are  
5 talking about losses in -- maybe I'm incorrect. This is  
6 on whey, not on cheese fines.

7 A. Correct. That's whey. Whey is -- you are right.

8 Q. I apologize. So --

9 A. Cheese fines is more about -- I'm sorry. Cheese  
10 fines is more about the belts system -- the matting belt  
11 system versus the stirred belt system versus the open  
12 table system.

13 Q. Okay. So we have differences in the whey lost,  
14 and the different sizes of commodity cheddar that's made.

15 Are there any other differences in the sizes that  
16 cheddars are made that would impact that recovery?

17 A. None that come to mind.

18 Q. Okay. And my last question, at the end of your  
19 statement you talk about kind of different ranges of fat  
20 recovery based on how well the factories run and also  
21 based on the type of cheese making equipment they have.

22 And, you know, I remember back to the '06 and '07  
23 hearings when we had this discussion all those many years  
24 ago. We kind of used the same terms, modern, newer  
25 plants. Well, it's 15 years later.

26 So my question is, when we think about cheese  
27 making equipment, what is the average lifespan out there,  
28 if I want to exclude, say, some of the smaller plants that



1 might get that refurbished vats, maybe they are -- and  
2 they produce more of a specialty cheese.

3 But when I'm just thinking about the commodity  
4 cheddar, which is what Federal Orders focus on, how old is  
5 that -- you know, the lifespan of that equipment, so that  
6 when we think about modern versus old, we kind of know the  
7 years we're talking about?

8 A. That's a good question. That's an interesting  
9 question. I can give you my opinion on that.

10 Q. Uh-huh.

11 A. I'd say I'm thinking more of things like vats and  
12 stuff like that, vats and tables. I would say somewhere  
13 in the neighborhood of 25 years. And sometimes they go  
14 longer.

15 And it depends, too, because, you know, like when  
16 I was -- when we were at Alto, we're running those vats  
17 and tables 24/7/365, right? And some of those smaller  
18 plants are only running one or two shifts, so that makes a  
19 big difference.

20 But if you are talking about a large -- I think  
21 you were talking about the big, large, 24-hour-a-day  
22 plants, I would say in that neighborhood of 25 years. And  
23 sometimes they refurbish them, and they can get more. But  
24 in my book, a good rule of thumb would be 25 years.

25 Q. So when you talk about these modern horizontal  
26 vats in a well-run factory achieving 90 to 92%, that is  
27 with technology that is somewhere less than 25 years old?

28 A. Yes. Having said that, even -- we -- you know, it



1 would be not totally accurate to lump all horizontal vats  
2 in as just horizontal vats, because even the horizontal  
3 vats have gone through a series of technical upgrades and  
4 improvements over the years. Like the Tetra Pak has come  
5 out with their Yieldmaster which is supposed to get the  
6 very best yield, and that's like a third generation  
7 horizontal vat, if you know what I'm saying. So even  
8 within the horizontal vats, there are differences in their  
9 fat retention abilities.

10 MS. TAYLOR: That's it for AMS. Thank you for  
11 your time today.

12 THE WITNESS: You're very welcome.

13 THE COURT: Mr. Rosenbaum?

14 MR. ROSENBAUM: Your Honor, I would move Hearing  
15 Exhibits 306 and 307 into evidence.

16 THE COURT: Is there any objection to the  
17 admission into evidence of Exhibit 306?

18 There is none. Exhibit 306 is admitted into  
19 evidence.

20 (Exhibit Number 306 was received into  
21 evidence.)

22 THE COURT: Is there any objection to the  
23 admission into evidence of Exhibit 307? 307?

24 There is none. Exhibit 307 is admitted into  
25 evidence.

26 (Exhibit Number 307 was received into  
27 evidence.)

28 THE COURT: Mr. Miltner?





1 MR. MILTNER: Your Honor, I would move the  
2 admission of Exhibit 308.

3 THE COURT: Is there any objection to the  
4 admission into evidence of Exhibit 308?

5 MR. HILL: I have an objection, Your Honor.

6 THE COURT: I knew you would, Mr. Hill.

7 MR. HILL: So I guess I do have a couple of  
8 questions maybe for Mr. Sommer before I object, if I'm  
9 going to object.

10 I think you stated that you knew about this  
11 article that is identified as 308? You were aware of it?

12 THE WITNESS: I was.

13 MR. HILL: And I want to say that you might have  
14 hinted that you were asked to contribute to this article;  
15 is that true?

16 THE WITNESS: I -- my recollection is I was asked  
17 to review it and make any comments or suggestions for  
18 improvements. Not to -- not to add to it, not to write  
19 it, but to see if I saw anything that was way off kilter,  
20 so to speak.

21 MR. HILL: All right.

22 I won't object then, Your Honor.

23 THE COURT: Are there any other objections to the  
24 admission into evidence of Exhibit 308?

25 There are none.

26 Now, I wondered what I was going to do when you  
27 objected, because we don't have John Lucey, Dr. Lucey,  
28 here to cross-examine.



1 MR. HILL: Right. There are some questions, Your  
2 Honor, that I have, obviously. And it seems like from  
3 what we have heard, he disputes a lot of this information,  
4 and it does seem to me that he's -- it's being used for  
5 the truth of what's asserted in it, and he's not here.  
6 But I am not exactly sure his contribution to this and how  
7 much he saw. So I -- I'm not sure how far I want to go  
8 with that objection -- with objecting.

9 THE COURT: Well, I know it's a fairly recent  
10 article, but 2017, he could have a different opinion now.

11 MR. HILL: I understand.

12 THE COURT: I don't love it for the truth of the  
13 matter asserted, but I will admit it, because I think it  
14 was very useful, the juxtaposition about what it says and  
15 what this witness says, because to me, these differences  
16 are so tiny, the percentages. You know, the difference  
17 between, let's say 91% and 92%, or the like, and yet, I  
18 understand that it makes a big difference.

19 MR. MILTNER: It does, Your Honor.

20 And I would add for our record, that Dr. Lucey is  
21 the director of the Center for Dairy Research, the entity  
22 on whose behalf Mr. Sommer is testifying today. And so  
23 I -- with all of the, I guess I would hope that this is  
24 admitted for the weight to which the Secretary chooses to  
25 accord it with no other restrictions.

26 THE COURT: Excellently said.

27 MR. MILTNER: Thank you.

28 THE COURT: Exhibit 308 is admitted into evidence.



1 (Exhibit Number 308 was received into  
2 evidence.)

3 THE COURT: All right. Thank you so much. I  
4 enjoyed your testimony so much.

5 THE WITNESS: You're very welcome, Your Honor.

6 THE COURT: That would be a good hobby, but I'm --  
7 not for me.

8 Ms. Hancock.

9 MS. HANCOCK: I was moving on, Your Honor.

10 THE COURT: Okay. Thank you so much. You may  
11 step down.

12 And, Ms. Hancock.

13 MS. HANCOCK: Your Honor, our next witness would  
14 be Stephen Zalar.

15 THE COURT: Is there a document to distribute?

16 MS. HANCOCK: Yes. Exhibit NMPF-49.

17 THE COURT: All right. And that will be marked  
18 Exhibit 309.

19 (Exhibit Number 309 was marked for  
20 identification.)

21 THE COURT: And we'll go off record while the  
22 documents are circulated.

23 Off record at 1:49.

24 (An off-the-record discussion took place.)

25 THE COURT: Let's go back on record.

26 We're back on record at 1:50.

27 I'd like the witness to identify himself by  
28 stating and spelling his name.



1 THE WITNESS: My name is Stephen F. Zalar. That's  
2 S-T-E-P-H-E-N, middle initial is F, my last name is  
3 Z-A-L-A-R.

4 THE COURT: Do you ever tell people "sounds like  
5 'dollar' "?

6 THE WITNESS: Your Honor, it's funny that you say  
7 that. I always tell people take the D off a dollar and  
8 put a Z on it. But I have been called a lot of other  
9 things.

10 THE COURT: Have you testified in this proceeding?

11 THE WITNESS: I have not yet, Your Honor.

12 THE COURT: I'd like to swear you in.

13 STEPHEN F. ZALAR,

14 Being first duly sworn, was examined and

15 testified as follows:

16 DIRECT EXAMINATION

17 BY MS. HANCOCK:

18 Q. Good afternoon, Mr. Zalar.

19 Would you provide your business address for the  
20 record, please?

21 A. Yeah. I work at 1035 Medina Road, Suite 300,  
22 Medina, Ohio, 44256.

23 Q. And did you prepare Exhibit NMPF-49, which has  
24 been marked as Exhibit 309 for this hearing?

25 A. I did.

26 Q. Okay. Would you proceed with your testimony, just  
27 being mindful of reading at a moderated pace for our court  
28 reporter?



1           A.     I will.

2                     My name is Stephen F. Zalar, and I'm currently  
3 employed by and represent Dairy Farmers of America. I  
4 hold an associate degree in dairy science, a bachelor of  
5 science degree in food science, and master of science  
6 degree in agricultural economics, all from The Ohio State  
7 University. My graduate thesis work involved the study  
8 and publication of economic and institutional factors  
9 relevant to defining Mideast Federal Order marketing  
10 areas, which would become an instrumental reference for  
11 Federal Milk Order reform as directed by the 1996 Farm  
12 Bill.

13                    My work experience within the dairy industry  
14 encompasses work from the ground to the grocery store, so  
15 to speak. I have spent my entire career working within  
16 the dairy industry in various capacities with employers,  
17 such as the Kroger companies, dairy manufacturing,  
18 logistics and optimization consulting work for the dairy  
19 producers of New Mexico, Dannon Yogurt, and Borden,  
20 Incorporated. I also spent several years as a herdsman on  
21 dairy farm operations.

22                    I currently serve as a senior logistics analyst  
23 and fleet manager for Dairy Farmers of America (DFA). I  
24 have worked 20 years in milk logistics at DFA. I thank  
25 you for this opportunity to testify today.

26                    I have been asked to discuss milk hauling costs in  
27 the Mideast area and how they have changed over the last  
28 two decades. For anyone involved in the dairy industry,



1 it is no secret that milk hauling costs have increased  
2 significantly, especially since the implementation of  
3 Federal Order reform in 2000. For example, taken from the  
4 Mideast area from 2006 to 2023, overall costs for a  
5 three-mile -- I'm sorry -- 300-mile roundtrip load of milk  
6 on an Ohio based 6,200-gallon tractor-trailer increased  
7 70%. And I will show you that on Table 1 here.

8 Can we see that?

9 Yes. There we go. Very good.

10 And with respect to large eight-axle  
11 Michigan-based 12,000-gallon tractor-trailers, moving milk  
12 on a 300-mile roundtrip run, costs have risen 69%.

13 And I'll refer that there to Table 2. Do we have  
14 Table 2 up?

15 We do. Okay. Very good.

16 Okay. Some may ask what costs have increased over  
17 the 17 years, i.e., have some costs increased faster than  
18 others? Also, what reasons might there be that hauling  
19 costs have not increased uniformly, or what has caused  
20 costs to change differently?

21 Two basic considerations are miles travelled and  
22 the demographics of producer farm milk routes. Milk shed  
23 production volumes can greatly impact miles travelled  
24 during the process of collecting milk on the milk truck,  
25 commonly called milk assembly. Milk haulers will  
26 structure routes with the intent of obtaining a full load  
27 of milk.

28 It is simple economics driving their decision,



1 i.e., more volume helps to spread fixed costs while not  
2 impacting variable costs as much. Miles travelled to  
3 assemble a fixed volume of milk is summarized best with a  
4 calculated statistic called the miles-per-hundredweight  
5 ratio.

6 Milk sheds with low milk volumes that are thin,  
7 i.e., that require more stops and more miles travelled to  
8 assemble a full load, would have a higher  
9 miles-per-hundredweight ratio. Milk haulers operating  
10 these routes will typically charge a per-load flat rate  
11 instead of a per-hundredweight rate to cover added costs  
12 of milk assembly. Milk haulers operating these routes  
13 within DFA Mideast will also typically charge a sizeable  
14 stop charge per producer, which is exactly what it sounds  
15 like, i.e., a charge levied upon the farm for each time  
16 the truck stops to pick up milk. The stop charge has  
17 ranged anywhere from 50 to \$200. This would be used  
18 instead of a per-hundredweight rate to cover added costs  
19 of milk assembly.

20 In contrast, milk sheds that are high volume or  
21 that are flush, requiring fewer stops to assemble a full  
22 load, will have lower miles-per-hundredweight ratio.  
23 Haulers operating these routes can maximize or optimize  
24 full load efficiencies via reduced miles and time. In  
25 general, large farms that require haulers to make just one  
26 stop to fill a truck can create efficiencies in milk  
27 hauling costs savings for the producers.

28 Milk haulers realize when operating in a thin or



1 declining milk volume milk shed that an eventual demise of  
2 their milk hauling enterprise is possible or even likely.

3 Increasing producer farm hauling rates may help to  
4 cover growing operating costs caused by lower milk volume  
5 loads and greater distances traveled. Unfortunately,  
6 higher hauling rates contribute to uncertain farm profit  
7 margins on farms, which may accelerate the farm exit from  
8 the dairy industry.

9 Here are some actual operational examples of  
10 haulers who are currently faced with operating in a thin  
11 and declining milk shed.

12 Okay. So example number 1, the bullet point  
13 there, a Kentucky-based hauler in the spring of 2023 was  
14 required to travel almost 200 miles to assemble just  
15 33,000 pounds of milk from six farm stops. This did not  
16 include miles to final delivery plant.

17 A Western Pennsylvania based hauler in the summer  
18 of 2022 was required to travel over 200 miles to assemble  
19 just 27,000 pounds of milk from ten farm stops. This did  
20 not include miles to final delivery point.

21 Third example, a Southeastern Ohio-based hauler in  
22 the summer of 2022 was required to travel over 180 miles  
23 to assemble just 32,000 pounds of milk from five farms  
24 stops. This did not include miles to the final plant  
25 delivery.

26 And some sub-bullet points in this last example.  
27 The milk hauler wanted to retire from hauling and no  
28 longer had a desire to haul milk. To continue hauling





1 milk, the hauler being in a strong negotiating position,  
2 charged each farm 200 per stop to pick up the milk  
3 regardless of the amount of milk picked up. Within the  
4 first few months of the rate increase, two of the farms  
5 were forced to exit the dairy business.

6 Milk hauling enterprises are dynamic in terms of  
7 stability and alignment with farm numbers and  
8 concentrations. The Mideast area has seen decreases in  
9 hauler numbers consistent with decreases in dairy farm  
10 numbers. For example, in July of 2006, DFA contracted  
11 with 194 milk haulers, but today there are just 88  
12 contract milk haulers being used. And during that same  
13 period, DFA's milk production in the Mideast area went up  
14 from 565 million pounds per month to 601 million pounds  
15 per month, even as dairy farm numbers fell -- fell by over  
16 70%.

17 The conundrum should be clear, fewer farms are  
18 producing more milk, and there are fewer milk haulers  
19 available to haul the milk to customers. A corollary to  
20 this is that with fewer haulers in the Mideast area, dairy  
21 producers have fewer options for finding a milk hauler.

22 Like any business enterprise, milk haulers are  
23 faced with variable cost inputs. Regionality of input  
24 costs such as labor and fuel are perhaps the most obvious  
25 examples of regionality variable costs encountered within  
26 the transportation sector. With respect to labor, wages  
27 tend to be higher in the more populous metropolitan areas  
28 located near the eastern and western coast of the U.S.



1           There are, however, exceptions to this general  
2 rule. According to the U.S. Department of Labor  
3 Statistics, Lincoln, Nebraska was the top paying  
4 metropolitan area for heavy tractor-trailer truck drivers,  
5 paying an average of \$35.10 per hour (refer to Table 3).

6           So I'm going to put up Table 3, and I hope you can  
7 all see that.

8           Uh-huh. Very good.

9           Okay. So the heavily dairy region spanning from  
10 LaCrosse, Wisconsin and Ayahuasca, Wisconsin, on into  
11 Minnesota, ranked fourth, paying an average wage rate of  
12 \$30.72 per hour.

13           Rural regions where milk haulers operate are often  
14 located somewhat near large metropolitan areas. This  
15 means there is competition for milk haulers from employers  
16 in other industries, such as manufacturing, construction,  
17 and other types of transportation occupations.

18           In May of 2022, Department of Labor Statistics  
19 reported a nationwide average of \$21.81 per hour for  
20 production workers, \$25.52 per hour for heavy  
21 tractor-trailer drivers, and \$28.32 per hour for  
22 construction workers, which is referred to in Table 4,  
23 which I believe I just put up on the screen if everyone  
24 can see that.

25           I believe so. Okay.

26           Over the 17-year period covered in Tables 1 and 2,  
27 regardless of the variability, the cost of labor for milk  
28 hauling is one of the largest percentage increases in



1 comparison to any other cost input a milk hauler has  
2 faced. Indirectly, cost of labor also impacts the cost to  
3 maintain and to repair milk hauling equipment, which tends  
4 to influence increases to maintenance input costs.

5 Again, referring to Table 1 and 2, I'll just kind  
6 of glaze over those real quick again. You can see how  
7 that maintenance cost has kind of risen as well in those  
8 areas because we know that a big part of maintenance  
9 repair involves labor. I'm sure if you have ever had  
10 brake work done on your car, you know what that's all  
11 about.

12 So in addition to actual labor wages paid by  
13 region and by occupation, milk haulers, like other  
14 commercial-for-hire transporters, must abide by the hours  
15 of service -- use the acronym HOS -- administered by the  
16 Federal Motor Carrier Safety Administration, also known by  
17 the acronym of FMCSA.

18 The standard HOS rules require a maximum of  
19 11 hours of work for a commercial truck driver, which  
20 includes milk haulers. In thin milk shed regions where  
21 haulers have higher miles per hundredweight ratios, the  
22 HOS becomes a challenge to meet, hence a relief driver may  
23 be required to complete the milk run.

24 As expected, the use of an extra driver during  
25 milk assembly and milk delivery adds to a hauler's labor  
26 costs. Because of the adoption of electronic driver logs,  
27 milk hauling operational costs have increased as hauler  
28 companies have had to recruit, train, and retain drivers



1 willing to understand and to accept the use of these types  
2 of technologies. Furthermore, in addition to the wage  
3 difference shown in Tables 3 and 4, milk hauling companies  
4 increasingly compete with other non-agricultural  
5 transporters who offer drivers more appealing work, which  
6 could be called no-touch freight or behind-the-wheel-only  
7 work.

8 Hauling milk from farm to plant involves working  
9 on weekends, holidays, and off hours. Milk haulers are  
10 also expected to work in all weather conditions and to  
11 tolerate substandard infrastructure on farms or at  
12 receiving plants.

13 Diesel fuel, another primary variable input cost  
14 in milk transportation, is variable through impacts of  
15 seasonality, social economic influences, political  
16 climate, and weather-related events. Since 2010, haulers  
17 must also consider the added cost associated with Diesel  
18 Exhaust Fluid, known as D-E-E -- D-E-F, you will hear  
19 people say "DEF" -- fuel additive compliance to satisfy  
20 the Environmental Protection Agency, also known as the  
21 EPA, exhaust emission standards. Furthermore, according  
22 to the U.S. Department of Energy Information  
23 Administration, also known as EIA, on-highway diesel fuel  
24 prices have wide regionality differences.

25 And I'm going to show you Table 5 shows us some of  
26 the regionality there of fuel prices. And so the  
27 Petroleum Administration for Defense Districts, also known  
28 as PADD, P-A-D-D, defines eight regions for reporting



1 purposes. I'm going to show you that PADD map here  
2 momentarily.

3 Okay. Is that up? Yes, we see that.

4 Okay. However, neighboring states often reflect  
5 noticeable differences in fuel prices due to differences  
6 in state excise taxes along with other state taxes levied  
7 on a gallon of fuel. And we're going to refer to Chart 1.

8 Okay. Very good. We see Chart 1 there.

9 Given the various state taxes applied to the final  
10 cost of a gallon of diesel fuel, states bordering each  
11 other can have vastly different prices. For example,  
12 California is at the top in terms of both overall fuel  
13 price and the proportion of state taxes and fees paid.  
14 Okay. Meanwhile, the neighboring state of Oregon ranks  
15 15th. And a similar scenario can be observed with some  
16 neighboring states in the Mideast, for example,  
17 Pennsylvania and New York.

18 Cost of tires is another variable cost input that  
19 has experienced huge increases in cost for milk haulers.  
20 Based on in-house DFA Mideast hauler reporting, trailer  
21 tire prices increased from \$300 per tire in 2006 to \$475  
22 per tire in 2023. Furthermore, many of the milk haulers  
23 reported discontinuation of the use of cheaper recap tires  
24 for virgin, or factory, tires due to longer life  
25 expectancy and improved safety. Tire prices can vary in  
26 price and quality, along with the type of usage, e.g.,  
27 weight load, local versus highway travel. An example of a  
28 higher price tire would be a large super-single tire,



1 which can cost around \$900 each.

2 The cost of procuring equipment, such as a truck  
3 and a tanker, varies among milk haulers. However, much of  
4 the variation is primarily a result of the type of  
5 equipment being sought in terms of new versus used, size  
6 of tanker, the unit configuration, added components,  
7 and/or features and accessories. The 2010 EPA exhaust  
8 emissions standards have also influenced hauler purchases  
9 of new equipment versus used equipment, hence, driving up  
10 the cost to operate a milk hauling company.

11 It should be noted that equipment availability has  
12 been compromised over the past three to four years because  
13 of supply chain disruptions brought on by the COVID-19  
14 pandemic. For example, as fleet manager for DFA, I  
15 requested and received a quote from a vendor to purchase a  
16 new 2023 cab and chassis tractor unit in April of '22.  
17 The vendor bid initially came back at \$193,322, but was  
18 revised twice within the 30-day bid acceptance window to  
19 arrive at a final bid quote of \$201,811, an increase of  
20 almost \$8,500.

21 The vendor stated reasons for change involved  
22 manufacturer to dealer notices related to the escalating  
23 material costs and labor shortages. In addition to  
24 multiple quote adjustments, the actual elapsed time from  
25 placing the order to delivery took seven months to  
26 complete due to factory production scheduling backlog. I  
27 was informed during the COVID-19 pandemic that if I were  
28 to order a tanker trailer, it would have been 12 to 18



1 months until delivery.

2 It's also important to note that another reason  
3 for the recent escalation in equipment replacement costs  
4 involve the milk hauler trend of purchasing larger volume  
5 tankers and tractors with more horsepower. In the  
6 Mideast, we have recently seen Ohio milk haulers replace  
7 6,200-gallon tankers with 8,000-gallon tankers to assemble  
8 greater volumes of milk.

9 Although such larger volume loads require special,  
10 and costly, load permitting, haulers feel compelled to  
11 move this direction due to lack of labor resources and  
12 rising equipment costs associated with running numerous  
13 small volume tanker trucks. The ever growing usage of  
14 larger size tankers and trucks capable of pulling larger  
15 loads has played a role in the rising cost of license and  
16 tax inputs.

17 And let me real quickly reference you back to  
18 Table 1. You look at license and tax. And Table 2 is  
19 more critical because of the eight-axle heavier trucks  
20 needing extra permitting, so -- okay.

21 Because of the larger loads, tires have had to  
22 change to bear the added weight, and with specialty or  
23 larger weight load tires comes higher costs, as mentioned  
24 earlier. You will also note in Table 2 where the costs  
25 for license and tax have risen -- and I already referenced  
26 that to you -- 191% from 2006 to 2023. This is due in  
27 part to increased weight limit scrutiny and new  
28 legislation by individual states that allow larger load



1 sizes with the requirement of special permits. As such,  
2 more of the these large eight-axle trailers capable of  
3 hauling 108,000 pounds of milk loads are leaving Michigan.  
4 Historically, eight-axle trailers were confined to  
5 Michigan because neighboring states like Indiana and Ohio  
6 prohibited operation of such a large load size.

7 Other variable cost inputs include interest rates  
8 on loans, insurance premiums and costs associated with  
9 management and overhead. With respect to interest rates,  
10 borrowed money for capital expenses bears an interest cost  
11 which can be highly variable among milk hauler  
12 enterprises, depending on the type of loan or line of  
13 credit being sought. This -- this is because so much  
14 emphasis is placed on an individual or business  
15 enterprise's credit score.

16 Based on in-house DFA hauler proprietary survey  
17 data, interests on equipment loans paid by milk haulers  
18 have ranged from zero to 12%.

19 Insurance premiums vary largely because of  
20 differences in milk hauler demographics. The most  
21 critical factor involves a milk hauler's history of  
22 accidents and related claims along with safety violations.  
23 Other considerations would be type and age of the  
24 equipment in garage and terminal facilities. These types  
25 of activities by a hauler are compiled in the Federal  
26 Motor Carrier Safety Administration's Compliance Safety  
27 Accountability, also known as their CSA score. Other  
28 factors that affect a hauler's insurance premium include





1 coverage amounts and scope of coverage.

2 In recent years, many of the smaller sole  
3 proprietary milk hauler enterprises operating in the  
4 Mideast area have conceded that they could not afford the  
5 cost of large insurance liability umbrellas. Most  
6 companies require 2 million of liability coverage, but  
7 there's a growing trend towards 5 million in liability  
8 coverage. Numerous industries are following the trend of  
9 higher liability coverage due to high profile trucking  
10 accidents.

11 And finally, a variation in insurance premiums  
12 paid between milk haulers involves whether their business  
13 resides in a state that has no-fault vehicle insurance.  
14 In short, no-fault insurance escalates insurance premiums  
15 considerably over those states that do not have this  
16 requirement.

17 Michigan is a no-fault vehicle insurance state,  
18 but it is also one of the top ten milk producing states in  
19 the U.S.

20 Perhaps the most variable of cost inputs among  
21 milk haulers involves management and overhead expenses.  
22 Factors include operational standards or acceptance  
23 thresholds, but decided on by the operators themselves.  
24 This would include physical facilities such as a dedicated  
25 terminal or simply a place to park equipment.

26 Other variability factors that influence costs  
27 involve indirect costs such as administrative and service  
28 functions. Milk haulers conducting their own in-house



1 accounting, human resources management, safety and  
2 equipment servicing will face a separate set of costs than  
3 a hauler opting to hire out those professional services.

4 Milk haulers also face opportunity costs with  
5 respect to operating milk hauling enterprise, and these  
6 opportunities costs to remain in the milk hauling business  
7 appear to be increasing. Other sectors of transportation  
8 industry offer work environments more conducive to driver  
9 employee recruitment and retention, as well as to owners  
10 and family members of milk hauling enterprise. Finally,  
11 these would be an improved work-life balance, better  
12 wages, or healthcare retirement. Some haulers have had to  
13 rely on part-time drivers who are often sourced within the  
14 hauler's family or may even be recruited from the labor  
15 pool at a nearby farm.

16 The likelihood of startup milk hauling businesses  
17 is low. It is a capital-intensive business with multiple  
18 challenges to manage. Milk hauling business owners are  
19 aging, and many of the milk hauling businesses are family  
20 businesses, often many generations old. However, there  
21 does not appear to be much desire for the next generation  
22 to take over the milk, family milk hauling business. This  
23 may be because of the required expenses and continued time  
24 commitment, added or sole responsibility for management,  
25 capital investments with risk, added stress and overall  
26 uncertainty in operating in invariably what becomes a 24/7  
27 work environment. Again, the opportunity costs or return  
28 on investment with other businesses are being considered.



1           In closing, much of what has been covered in this  
2 testimony explains why some milk marketing cooperatives  
3 have already transitioned into hauling milk themselves.  
4 However, in many cases this transition was done somewhat  
5 reluctantly. For the most part, cooperatives have entered  
6 the milk hauling business to assure that the cooperative  
7 owner member's milk would be hauled and marketed. In  
8 several instances, the cooperative entering the hauling  
9 business was initiated due to an urgent need with little  
10 advanced warning of a disruption to the milk hauling  
11 logistics in a territory. This would be the result when a  
12 milk hauler walks away or ceases to haul milk any longer.

13           Hence, in many areas of the U.S., milk hauling has  
14 become an increasingly fragile business enterprise with  
15 continued dynamics and uncertainty for the future. In the  
16 past, milk hauling was taken for granted without any  
17 concern for its future viability, but it has grown to an  
18 area of great concern within the milk marketing channel as  
19 the dynamic dairy industry continues to change and evolve.

20           MS. HANCOCK: Your Honor -- thank you, Mr. Zalar,  
21 for that.

22           We would make him available for cross-examination,  
23 although it might be time for a break.

24           THE COURT: That was dynamically read. Thank you.

25           THE WITNESS: Thank you, Your Honor.

26           THE COURT: And you have got so much information  
27 in here, so we will need a little bit of a break. So  
28 let's take ten minutes. Please be back and ready to go at



1 2:30.

2 We go off record at 2:19.

3 (Whereupon, a break was taken.)

4 THE COURT: Let's go back on record.

5 We're back on record at 2:32.

6 Cross-examination.

7 MR. ENGLISH: Chip English for the Milk Innovation  
8 Group.

9 Thank you, Mr. Wilson, I'll take any introduction  
10 I can get.

11 CROSS-EXAMINATION

12 BY MR. ENGLISH:

13 Q. So good afternoon, Mr. Zalar.

14 A. Good afternoon.

15 Q. My name is Chip English, and I represent the Milk  
16 Innovation Group, which is a group of ten proprietary milk  
17 processors, some of whom operate in the Mideast.

18 So I want to start by asking, were you here  
19 yesterday for the testimony of Dr. Nicholson?

20 A. I was not. I did catch a little online. I had to  
21 go back to the office and get some administrative work  
22 done.

23 Q. I can't imagine.

24 Okay. So you're part of the testimony in support  
25 of what's called National Milk Producers Federation  
26 Proposal 19, correct?

27 A. Okay. Yes.

28 Q. Well, you say "okay." I am wondering, do you know



1 what Proposal 19 is for National Milk Producers  
2 Federation?

3 A. Not specifically. My role here was to present on  
4 the cost of trucking logistics and fleet. So that's --  
5 that's my world. That's what I know.

6 Q. Okay. So do you know whether there is already  
7 testimony in the record from a model that has hauling  
8 costs in it?

9 A. Not real familiar with it. I have not been  
10 involved in anything like that. As I say, my role here  
11 was to present on cost of fleet and logistics.

12 Q. Okay. So are you here to advocate for United  
13 States Department of Agriculture to raise the Class I  
14 differential to take into account the cost of hauling?

15 A. I would say I'm not. I was here to present this  
16 information to the court.

17 Q. All right. When you prepared this testimony, did  
18 you discuss with anybody at either DFA or National Milk  
19 your use of data for 2023 as opposed to 2021?

20 A. No. I chose the datasets myself. Like I say in  
21 my testimony, I have been doing this for, it's hard to  
22 believe, 20 years now.

23 Q. So you wouldn't know whether National Milk  
24 Producers Federation has taken the position that it's --  
25 it was going to use 2021 data, would you?

26 A. I had no knowledge or interaction for anyone  
27 saying anything to that I had to use 2021 data. Again, I  
28 used 2023 and some historic data. It was my choice.



1 Q. Do you know how your information is going to be  
2 used in the record?

3 A. I really don't, other than how I presented it.  
4 And how the Final Decision makers will use it, I have no  
5 idea. I wouldn't want to speculate.

6 Q. And so I'm really not going to try to belabor the  
7 point. I'm just trying to understand here, so --

8 A. I'm sorry, sir, you spoke real fast.

9 Q. I apologize. I got called out by the witness as  
10 opposed to the court reporter.

11 THE COURT: An astute observation.

12 THE WITNESS: Thank you, Your Honor.

13 BY MR. ENGLISH:

14 Q. Thank you for the correction, sir.

15 So I take it you do not know what the United  
16 States Dairy Simulator Program is, do you?

17 A. No, I don't.

18 Q. And you wouldn't know whether that system, that --  
19 that simulator, takes into consideration hauling costs,  
20 correct?

21 A. I wouldn't know that other than what you have just  
22 told me.

23 Q. Okay. Were you involved in 2022 in providing data  
24 to the University of Wisconsin with respect to 2021  
25 hauling costs?

26 A. No, sir.

27 Q. Is it true that Dairy Farmers of America charges  
28 customers in the Mideast for fuel surcharges?



1 A. Slow down again a little bit. Say that again.

2 Q. Okay. So you're involved with the logistics  
3 program for DFA, correct?

4 A. Yes, I'm in the logistics department. Yes, that's  
5 correct.

6 Q. And do you know whether Dairy Farmers of America  
7 charges fluid milk processors a fuel surcharge in the  
8 Mideast order for hauling?

9 A. Okay. Now I better understand your question.

10 I am not on the marketing side of that equation,  
11 so I don't know how and if and when they charge any type  
12 of fuel surcharge to the customer.

13 Q. Does anybody ever ask you for information as to  
14 that information so they can make those charges to  
15 customers?

16 A. You said "that information." What information?

17 Q. The information about hauling costs?

18 A. About hauling costs?

19 Q. Yes.

20 A. No. No, not really. You know, I have a direct  
21 supervisor. If that information is shared and  
22 distributed, I'm unaware of it.

23 Q. So turning to Table 5 and then a comment on the  
24 bottom of page 6.

25 If you can turn to page 6.

26 A. Okay.

27 Q. And so are the eight regions for the Petroleum  
28 Administration for Defense Districts, Map 1, the same



1 districts as are on Table 5 for the U.S. Department Energy  
2 Administration?

3 A. Okay. Yes. Other than the map, Table 5 splits  
4 out California, I noticed that when we put it together.  
5 Yeah, so -- but they are related, and the premise there  
6 was to show the differences over a period of time of  
7 how -- how the regionality of fuel is among the PADD  
8 regions. So it was a very nice dataset that was provided  
9 to us by the U.S. Department of Energy.

10 Q. Okay. So I understand about California being  
11 separated out. But, for instance, the Midwest, would it  
12 be your understanding that PADD 2, under Map 1, Midwest,  
13 would correspond to the same region under Table 5 for the  
14 Midwest?

15 A. That's the way I understand it from the  
16 government.

17 Q. Let me check with one person.

18 MR. ENGLISH: I have no further questions, and I  
19 thank you for your time.

20 THE WITNESS: Thank you, sir.

21 THE COURT: Are there other questions for  
22 Mr. Zalar before I turn to the Agricultural Marketing  
23 Service for their questions?

24 There are none. I would invite the Agricultural  
25 Marketing Service to ask.

26 CROSS-EXAMINATION

27 BY MS. TAYLOR:

28 Q. Good afternoon.





1 A. Good afternoon.

2 Q. Thank you for taking the time today to testify.

3 A. Thank you for having me. It's an honor.

4 Q. I'm glad you still feel that way.

5 Just a couple of questions. On the tables that  
6 you have on page 2, Table 1 and Table 2, the next page 3  
7 kind of is the footnote for where all that information  
8 came from.

9 A. Yes.

10 Q. And in a number of places you talk about a survey  
11 that was done. I'm wondering if you can just talk a  
12 little bit about that survey, who --

13 A. So, yes.

14 Q. -- all the -- kind of the details to explain how  
15 that was conducted.

16 A. Yes. We -- we constantly survey our contract  
17 haulers when they, you know, call in and they are asking  
18 about certain things. And we have a great relationship  
19 with our contract haulers. The survey information that  
20 they provide us in terms of cost inputs is strictly  
21 proprietary, confidential, and a lot of times haulers will  
22 say, hey, I'd love to share my information with you to run  
23 through your costing model that, you know, I use in  
24 logistics. But you are not going to share that with my  
25 competing neighbor, are you?

26 And absolutely not. That's -- we have a client  
27 relationship with that person.

28 And so it's -- it's a great synergistic



1 relationship. But I can't share it with you, I'm sorry.

2 Q. Oh, no. And I'm certainly not asking for  
3 proprietary information. What I'm more looking at it, is  
4 this information you get on a constant basis, do you do it  
5 via just -- you know, we have our own programs within --  
6 where we are in AMS, where people call up other people and  
7 they kind of get proprietary information as well, and then  
8 they summarize it and publish that information.

9 Is that how it's done or did you actually send out  
10 a survey to your haulers?

11 A. No. It's kind of done on a constant basis. You  
12 know, haulers will call in, and I guess it's an honor,  
13 they'll lean on us and say, I can't figure out, you know,  
14 some of my cash flow or what have you. And I don't mean  
15 I'm an accountant, let me make that clear. And so I'll  
16 say, well, let me take a look at some of your cost inputs.

17 And, you know, with -- with my 20 years of  
18 experience, although I learn something new every day,  
19 sometimes I can help them and pick up on some things as a  
20 consultant at no charge. But really, at the end of the  
21 day, it's going to help benefit us because I work for our  
22 owner members in our co-op, so I want to make sure that  
23 the hauler is, you know, operationally healthy. I don't  
24 get involved in the operation, let me make that clear, but  
25 I'm certainly willing to -- to maybe provide some  
26 guidance.

27 Q. Okay.

28 A. Does that help you out?



1 Q. It does.

2 And so the costs that you have listed on here, I  
3 guess I take away from that, this isn't a survey that you  
4 did just for the purposes of putting together this  
5 information?

6 A. Absolutely not.

7 Q. Okay. And then -- so then my second guess would  
8 be, the cost represented in 2006 is not the same universe  
9 of haulers that is represented in 2023, it's just --

10 A. It's --

11 Q. -- whatever haulers you all use during those two  
12 years?

13 A. Exactly. And, again, I've been here 20 years.  
14 You know, it's funny, when I put this together, I didn't  
15 realize how old I was getting.

16 Q. I feel similar.

17 On the bottom of page 3 into 4 you list a couple  
18 of examples, kind of like feedback I think you got from  
19 your haulers.

20 And I take it these are just conversations that  
21 you have had with those haulers that you are in contact  
22 with? That's how you know this information?

23 A. The examples of the thin market?

24 Q. Yes.

25 A. No. And this kind of leads, dovetails into your  
26 last question. We have member milk that we need to  
27 market. It's our responsibility to market their milk.  
28 And when we get into thin milk shed regions, the co-op



1 member owner, they own us, that's the reason I'm here is  
2 because of the producers who I speak -- you know, I have  
3 to answer to. You know, they are saying, help me out.

4           Years ago, 20, 30 years ago, it was a very dairy  
5 neighborhood, and it's not anymore. And so we try to get  
6 involved for the producer to make sure that there's  
7 orderly marketing of their milk.

8           The worst case scenario is it goes down the drain,  
9 and that's an absolute waste.

10          Q. And so for these examples, though, I'm just  
11 curious kind of where they came from. And I'm just trying  
12 to get these things clear for the record about where some  
13 of your information came from.

14          A. Well, I couldn't give you any names of haulers.

15          Q. I'm not asking for that. What I'm -- just  
16 generally, in conversations you've had with haulers or  
17 conversations you've had with your farmers and they relay  
18 that information?

19          A. Part of it is really the analytical work that I  
20 did that someone in membership would come to me or my  
21 supervisor and say, hey, take a look at this.

22          Q. Okay. Thank you.

23          A. Uh-huh.

24          Q. Later on you talk about in July 20- -- excuse  
25 me -- July 2006, DFA contracted with 194 milk haulers, but  
26 today there's just 88.

27                 Is that DFA wide?

28          A. I'm sorry, what page were you on?



1 Q. I'm on 4.

2 A. Page 4? Thank you.

3 Q. The first full paragraph.

4 A. No, that's Mideast.

5 Q. And I think my final question is, then, in the  
6 Mideast, you all still just use contract haulers.

7 Does DFA own any of its own trucks to do that?

8 A. In the Mideast, it's all contract haulers at this  
9 time. We don't but...

10 MS. TAYLOR: That's it from AMS. Thank you so  
11 much.

12 THE WITNESS: Okay. Yeah. Nothing about work  
13 life or -- or what it is?

14 MS. TAYLOR: I don't know what work/life balance  
15 is anymore.

16 THE WITNESS: Let me share an example of  
17 work/life. This is -- this is something I received --  
18 yeah, it was pre-COVID. I remember I got a phone call  
19 from a contract hauler, not that I talk to them on a daily  
20 basis. And I can't remember what he asked me, and I said,  
21 hey -- and I won't mention any names here -- I said, how  
22 are you doing?

23 He goes, well, not real good. I trained a really  
24 nice kid -- and he said "kid," we're getting older, so  
25 we -- the term kid sticks out -- had him for about 30  
26 days, and man, I couldn't be happier. And we ran into a  
27 problem that the hours were too long, and he would go  
28 home, and his wife, she was not really happy about it.



1           And he -- he -- the hauler told me -- he kept  
2           telling me about it, and he said, I tried to work around  
3           that. And as it turned out, he quit. And I'll tell you,  
4           here's how he quit.

5           So I guess he went to a dairy, and he got held  
6           up -- not that I blame the dairy -- and he didn't get home  
7           that night until late. But the problem here was, that was  
8           the night that his little daughter had a dance recital,  
9           and apparently his wife said, you don't dare miss that.

10           And so I guess, according what the hauler told me,  
11           the next day he walked in and says, I quit. It's -- you  
12           know, my family is important to me, sorry.

13           And that's -- you know, that's a fact of life with  
14           I hope everybody. You know, faith and family is an  
15           important thing.

16           MS. TAYLOR: And I think your statement talks  
17           about the long hours and the difficulty of trying to find  
18           new people to fill those hauler spots.

19           THE WITNESS: Absolutely.

20           MS. TAYLOR: Thank you very much.

21           THE WITNESS: Thank you.

22                                   REDIRECT EXAMINATION

23           BY MS. HANCOCK:

24           Q. Thank you very much, Mr. Zalar.

25                   I just want to make one thing clear. You have on  
26           the front -- on the first page you talked about the  
27           information that you have shared with respect to even the  
28           Mideast area.



1           But you have experience and knowledge about DFA's  
2 experiences with hauling costs throughout the country; is  
3 that fair?

4           A.    Yeah, I talked to some of my other colleagues, you  
5 know, around the country within the DFA land, and so their  
6 experiences are very similar to what I presented here  
7 today. It's a repeating theme. Yeah. Unfortunately.

8           Q.    Thank you so much.

9           MS. HANCOCK: Your Honor, at this time we would  
10 move for admission of Exhibit 309.

11           THE COURT: Is there any objection?

12           There is none. Exhibit 309, which is also known  
13 as Exhibit NMPF-49, is admitted into evidence.

14           (Exhibit Number 309 was received into  
15 evidence.)

16           MS. HANCOCK: Thank you so much for your time,  
17 Mr. Zalar.

18           THE WITNESS: Thank you.

19           Thank you, Your Honor.

20           THE COURT: Thank you so much.

21           MS. HANCOCK: Your Honor, we have Jeff Sims as our  
22 next witness. He has a number of exhibits. I'm wondering  
23 if we can just go off the record, mark those, and then  
24 we'll just make it really streamlined when we go back on.

25           THE COURT: Yes. Now, let me ask you, we know  
26 he'll be a long witness, true?

27           MS. HANCOCK: He's going to be a long one. That's  
28 what they tell me.



1 THE COURT: So is there anyone else that should go  
2 on before he begins?

3 MS. HANCOCK: If we don't start, I will never get  
4 him off the stand.

5 THE COURT: All right. Let's take ten minutes. I  
6 know we just had ten, but let's take ten. So please be  
7 back and ready to go at 3:01.

8 We go off record at 2:51.

9 (Whereupon, a break was taken.)

10 THE COURT: Let's go back on record.

11 We're back on record at 3:02.

12 Ms. Hancock, I see a large stack of documents.

13 MS. HANCOCK: Yes, Your Honor.

14 THE COURT: So can we begin with -- well, I should  
15 begin with having the witness identify himself and so  
16 forth.

17 Would you state and spell your name, please?

18 THE WITNESS: Jeffrey Sims, J-E-F-F-R-E-Y,  
19 S-I-M-S.

20 THE COURT: One M only?

21 THE WITNESS: One M only.

22 THE COURT: Have you previously testified in this  
23 proceeding?

24 THE WITNESS: I have not.

25 THE COURT: I would like to swear you in.

26 JEFFREY SIMS,

27 Being first duly sworn, was examined and  
28 testified as follows:





## 1 DIRECT EXAMINATION

2 BY MS. HANCOCK:

3 Q. Good afternoon, Mr. Sims.

4 Would you provide your business address for the  
5 record, please?6 A. Yes. Lone Star Milk Producers, Incorporated,  
7 813 8th Street, Suite 300, Wichita Falls, Texas, 76301.8 MS. HANCOCK: And, Your Honor, we have exhibits  
9 that we'll mark from 310, starting with Exhibit NMPF-37,  
10 all the way through 319 at NMPF-37I. And so I can walk  
11 through those.12 THE COURT: Would you again, just one at a time,  
13 read into the record both their numbers as we're marking  
14 them both.

15 MS. HANCOCK: Yes.

16 So NMPF-37 is going to be Exhibit 310.

17 (Exhibit Number 310 was marked for  
18 identification.)

19 MS. HANCOCK: NMPF-37A will be 311.

20 (Exhibit Number 311 was marked for  
21 identification.)

22 MS. HANCOCK: NMPF-37B will be Exhibit 312.

23 (Exhibit Number 312 was marked for  
24 identification.)

25 MS. HANCOCK: NMPF-37C is going to be Exhibit 313.

26 (Exhibit Number 313 was marked for  
27 identification.)

28 MS. HANCOCK: NMPF-37D, like David, will be



1 Exhibit 314.

2 (Exhibit Number 314 was marked for  
3 identification.)

4 MS. HANCOCK: NMPF-37E will be Exhibit 315.

5 (Exhibit Number 315 was marked for  
6 identification.)

7 MS. HANCOCK: NMPF-37F will be Exhibit 316.

8 (Exhibit Number 316 was marked for  
9 identification.)

10 MS. HANCOCK: NMPF-37G will be Exhibit 317.

11 (Exhibit Number 317 was marked for  
12 identification.)

13 MS. HANCOCK: NMPF-37H will be Exhibit 318, and  
14 that is where we will primarily spend our time with  
15 Mr. Sims this afternoon.

16 (Exhibit Number 318 was marked for  
17 identification.)

18 MS. HANCOCK: And NMPF-37I is going to be  
19 Exhibit 319.

20 (Exhibit Number 319 was marked for  
21 identification.)

22 THE COURT: Mr. Sims, you are our fourth witness  
23 today, and we have left you only a couple of hours today.  
24 I presume you will be back tomorrow?

25 THE WITNESS: I think that's everybody's  
26 presumption.

27 THE COURT: Very fine.

28 THE WITNESS: Your Honor, we seem to have a



1 technical problem.

2 THE COURT: Let's go off record for just a minute  
3 at 3:06 p.m.

4 (An off-the-record discussion took place.)

5 THE COURT: Let's go back on record.

6 We're back on record at 3:07 p.m.

7 Ms. Hancock.

8 MS. HANCOCK: Thank you, Your Honor.

9 BY MS. HANCOCK:

10 Q. Mr. Sims, would you proceed with providing us with  
11 your testimony.

12 You are going to walk through the PowerPoint  
13 presentation, in part, that's in Exhibit 318; is that  
14 right?

15 A. That's correct.

16 MS. HANCOCK: And just for your Honor's  
17 information and the rest of the audience, Mr. Sims has two  
18 segments in National Milk's proposal. The first one is  
19 going to be kind of the general overview of the process.  
20 The second part, he'll be back up later on for his  
21 regional testimony. So all of that is included in this --  
22 in these exhibits, but you will see that a portion of his  
23 PowerPoint we will save for a later time.

24 BY MS. HANCOCK:

25 Q. And with that, Mr. Sims, would you proceed?

26 A. Yes.

27 THE COURT: So, again, just so everybody has the  
28 right exhibit, this one is NMPF-37H, Exhibit 318.



1           You may proceed.

2           THE WITNESS: Yeah. Do you want me to introduce  
3 myself?

4 BY MS. HANCOCK:

5           Q. Sure.

6           A. Okay. Or my history?

7           Q. Yeah.

8           A. Okay. My name is Jeffrey Sims, Jeff Sims. I  
9 currently am corporate secretary and chief market analysis  
10 officer with Lone Star Milk Producers, Incorporated,  
11 headquartered in Wichita Falls, Texas, as you heard a  
12 moment ago. I am a member of the three-person senior  
13 management team at Lone Star Milk Producers, along with  
14 the general manager and the Chief Financial Officer.

15           My responsibilities at Lone Star include, I manage  
16 our -- all our Federal Order pricing and pooling, all  
17 Federal Order issues. I manage our economics and price  
18 forecasting, member communications. I maintain our --  
19 what we refer to as our milk budget, which is our forecast  
20 of supplies and demands out into the future, whether we  
21 are going to need milk, whether we have got milk to sell,  
22 etcetera.

23           I am -- I analyze all our potential milk sales for  
24 whether or not they are a good deal or not. I'm a member  
25 of the National Milk Producers Board of Directors, its  
26 economic policy committee, and the Federal Order task  
27 force.

28           My history, I grew up on a farm in West Central



1 Alabama, beef cattle and hay, principally. I went to  
2 Auburn University, where I received a Bachelor's and  
3 Master's degrees in agricultural economics, with my  
4 Master's thesis work in dairy production economics and  
5 dairy marketing.

6 Just out of graduate school, I joined the Market  
7 Administrator's office, the Federal Milk Order office in  
8 Atlanta, Georgia, as an agricultural economist.

9 About five years later I was promoted to the  
10 position that's now known in the MA system as an Associate  
11 Market Administrator. About two-and-a-half years after  
12 that, I was promoted and transferred to the Louisville,  
13 Kentucky Market Administrator's office in the position of  
14 Assistant Market Administrator, where I had functions  
15 as -- in every area of Federal Order administration.

16 In 1996 I left the Market Administrator's office  
17 and began working with -- as a consultant with marketing  
18 agencies in common, mostly over-order pricing agencies,  
19 but then there was a stint with a full broad pricing and  
20 pooling agency in the Southeast. I have also worked with  
21 marketing agencies in common in other areas, but my --  
22 most of my history has been in the Southeast and  
23 Southwest.

24 In 2017, I went to work full-time for Lone Star  
25 Milk Producers in the position that I'm in today.

26 MS. HANCOCK: And, Your Honor, with that, we would  
27 ask to have Mr. Sims qualified as an expert agricultural  
28 economics as well as Federal Milk Marketing Order market



1 administration.

2 THE COURT: Does anyone wish to voir dire the  
3 witness with regard to his qualifications before I  
4 determine whether there's any objection to his being  
5 accepted as an expert witness?

6 No one does.

7 Does anyone object to my accepting Mr. Sims as an  
8 expert as designated by his counsel? Not his counsel, by  
9 counsel.

10 There is no objection.

11 I do accept you, Mr. Sims, as an expert in  
12 agricultural economics and as an expert in Federal Milk  
13 Marketing Orders marketing --

14 MS. HANCOCK: Administration.

15 THE COURT: -- administration.

16 MS. HANCOCK: Thank you.

17 THE COURT: Thank you.

18 THE WITNESS: Good afternoon. This testimony is  
19 presented in -- on behalf of National Milk Producers  
20 Federation in support and explanation of Proposal  
21 Number 19, which is the update of Federal Order Class I  
22 differentials.

23 As we start, I think it wouldn't be a bad idea for  
24 us to pause and kind of think about what Class I  
25 differentials are and what they do and why we have them,  
26 what purpose do they serve.

27 First -- and this is my list. I don't think you  
28 are going to find it in any book or any Federal Order



1 publication, but it is my list:

2 Number one, they compensate dairy farmers for the  
3 additional cost of producing Grade A milk versus Grade B  
4 milk;

5 They encourage milk to be delivered to Class I  
6 plants, the principal objective of the Agricultural  
7 Marketing Agreement Act;

8 They compensate dairy farmers for the substantial  
9 cost for holding reserves of milk for the Class I  
10 marketplace;

11 They establish a price gradient to encourage milk  
12 to flow from reserve supply areas to areas of milk need;

13 They provide financial incentives to pool milk for  
14 manufacturing uses when it's needed for Class I use;

15 They compensate dairy farmers for the considerable  
16 cost of balancing the large variation in daily, weekly,  
17 monthly, and seasonal Class I demand;

18 They align the class prices with the price demand  
19 elasticities of the dairy products between the various  
20 classes;

21 And they provide sufficient price alignment  
22 between the classes to minimize class price inversions.

23 Why are we here? The need to update Class I  
24 differentials. Class I differentials in most of the  
25 contiguous 48 states were last updated in Federal Order  
26 reform installed in January of 2000. Differentials were  
27 modestly updated in the -- what we commonly refer to as  
28 the Southeastern orders, Order Numbers 5, 6, and 7, in



1 2008, but have remained unchanged since then.

2 Data used to establish the 2000 Order Reform  
3 differentials was around from -- data from around 1998, so  
4 that data is now 25 years old, basically hauling data  
5 25 years old. In the intermediate -- in the intervening  
6 quarter of a century, milk hauling rates have increased  
7 two-and-a-half fold, fuel prices have increased three- to  
8 fourfold, hauling equipment costs, trucks and trailers,  
9 have at least doubled.

10 The increases in the cost of hauling milk have  
11 significantly reduced the effectiveness of Class I  
12 differentials and threatened the supply of milk to  
13 Class I, one of the major principles of Federal Orders.

14 Just a quick graph here. This is the Cass  
15 Linehaul Index. Cass Systems is a proprietary company  
16 that does freight -- freight billing and invoicing. They  
17 see a lot of invoices for hauling. They are a kind of --  
18 I think that the best common analogy or -- is the -- is --  
19 what is it? Automated -- ADP, Automated Data Processing,  
20 who occasionally you will see in the news who reports  
21 employment. They handle a lot of -- of employee payrolls,  
22 and they have a good handle on what employment is doing,  
23 up or down. Cass is a lot the same way.

24 What we can see here is a history from 20- -- from  
25 2005 of basically almost unfettered increases in base haul  
26 rates. These are base haul rates, not including fuel  
27 surcharges.

28 We all have experienced the increases in fuel





1 costs. This is a history of the U.S. average diesel fuel  
2 price as announced by the Energy Information Act -- or  
3 excuse me -- Energy Information Agency.

4 THE COURT: Every now and then, just to acquaint  
5 people who may be tuning in online and just joined us --

6 THE WITNESS: Yes.

7 THE COURT: -- every now and then tell us your  
8 exhibit number and what page you are on.

9 THE WITNESS: Certainly. This is Exhibit  
10 Number 318, and it is labeled Exhibit NMPF-37H.

11 And so let's talk a little bit about balancing  
12 milk supplies to Class I. This is not an easy endeavor,  
13 and one thing that -- one of the things that Class I  
14 differentials provides systems for.

15 There is a -- a need to balance supplies to  
16 Class I processing. And these costs are real. These  
17 balancing activities are very real, and they exhibit  
18 substantial cost.

19 There's Class I seasonality. It remains an issue  
20 in supplying Class I markets, and remains an issue in  
21 balancing individual Class I plants. Daily, weekly, and  
22 monthly variations in Class I demand creates additional  
23 balancing requirements.

24 I'm going to pause and slow down just a little to  
25 describe this graph and what it's trying to say.

26 I have selected the California Order for -- for  
27 display at this point in the presentation, largely because  
28 the fairly short time that the Order 51 has been in place,



1 so that we can kind of see the -- what we're trying to  
2 describe here. Later on in the -- at the end of the  
3 PowerPoint, the other ten orders are displayed and with a  
4 substantially longer timeframe.

5 So the blue line, whose graph or whose scale is on  
6 the left, is the daily average delivery -- or the daily  
7 average Class I producer milk by month for the period of  
8 when the Order 51 started, November of 2019 or 2018,  
9 basically through the end of calendar year 2022.

10 Each month I just took the pounds of producer milk  
11 on the Order 51 pool, divided it by the number of days in  
12 the month, and that became the daily average Class I  
13 producer milk.

14 And then for each calendar year I compared that  
15 and found which one of those 12 months in each calendar  
16 year represented the high month of Class I daily average  
17 producer milk.

18 Then I compared each other month to that high  
19 month, and so -- and then displayed the difference between  
20 the high month and every other month. So there's one  
21 month that has zero difference between the high month and  
22 the high month because the high month minus the high month  
23 is zero. Each other month within a 12-month period  
24 represents an amount of reserve that had to be held that  
25 year each month against the high month's Class I use.

26 So the bars at the bottom, if you will notice, are  
27 mirror images, if you will, of the line graph on the top,  
28 where you have dips in the yellow -- excuse me -- the blue



1 line, you will have peaks in the bars. And so the bars  
2 represent the amount of reserve each month that had to be  
3 held for that year's peak Class I use.

4 In the California order, it looks like it's  
5 somewhat common for somewhere around October or November  
6 to be the high month. In many of the other orders it is  
7 often October, sometimes January.

8 But I will point something out, too. On the  
9 right-hand side, the scale for the bars is on the  
10 right-hand side, and it is twice the scale of the bars of  
11 the blue line. And so just like the picture on the front  
12 of a box of cereal, this is -- the bars are enlarged to  
13 show texture.

14 The need for reserve milk supplies. Reserve milk  
15 supplies are necessary to make sure we have sufficient  
16 quantity of pure and wholesome milk and ensure a  
17 sufficient quantity of milk to be available for Class I.

18 The surges in demand of Class I come almost -- you  
19 know, the milk that serves those surges has to come from  
20 somewhere. We sometimes believe that the kind of milk  
21 appears at processing plants by magic or magnetism, but in  
22 truth, they must be pooled to those plants by dollars.

23 Parking milk in manufacturing while awaiting  
24 Class I demand is costly. Reserve processing capacity has  
25 to be maintained for those -- to hold those supplies of  
26 milk, those reserve supplies, until somebody needs them.

27 And those peak needs of reserve or the peak months  
28 of reserve mirror those months when Class I sales tank.



1 It's very common in -- in certainly the world I live in,  
2 and many other worlds, I believe, June and July are very  
3 bad months for Class I sales. When schools are out,  
4 Class I sales go down, and that creates a need to balance  
5 those supplies for when that school milk demand comes  
6 back, usually sometime around late August, early  
7 September.

8           There is -- you know, some people think that, you  
9 know, there's really no need anymore to balance Class I  
10 plants, that they all have lots and lots of silo space,  
11 you can put milk in there on Friday, and it will be, you  
12 know -- and when the plants are down on Saturday and  
13 Sunday, and everything's good.

14           That's not true. Most of the plants we deal with,  
15 their silo capacity may be a day's processing capacity or  
16 maybe just a little more. Even if you could -- even if  
17 they did have substantial silo capacity to hold two or  
18 three days, the health regulations won't let you do that.

19           Here's another problem, and it's a developing and  
20 has been developing and continuing to develop problem.  
21 Class I plants tend to be located near the people,  
22 population centers in cities. Increasingly, dairy farmers  
23 and milk -- and dairy farms are located distant from those  
24 cities. Cows and people really don't mix very well.  
25 Not -- there's not a lot of people who live in a  
26 subdivision who want a dairy farm in their backyard. And  
27 so the farms have moved farther from the cities, and the  
28 distance between those farms and the Class I plants that



1 still exist in the cities is getting longer. This is --  
2 this is a trend that's occurring pretty much everywhere.

3 They -- dairy farmers are beginning to question,  
4 why are we doing this? Why are we hauling milk from our  
5 farms all this way to serve these Class I plants in cities  
6 when the money's not there? The difference in price  
7 doesn't pay to get us there. They are just questioning  
8 whether that's a sustainable system. Daily surges in the  
9 ebbs in Class I demand are unpredictable, and they can  
10 occur at the last minute.

11 We have had in many circumstances where you send a  
12 truck toward a -- a Class I plant or toward a city where  
13 the Class I plants are. That Class I plant calls and  
14 says, hey, don't bring that load. Well, it's already on  
15 the road. So you contact the driver, and you tell him to  
16 turn around and go back. Well, he gets back up the road  
17 an hour and a half, and the call comes back and says,  
18 oops, we didn't really need to cut that load, turn around  
19 and come back.

20 So if you think about it, that truck has gone over  
21 a part of that road three times. Now, I'm not blaming the  
22 plant, sometimes this isn't their fault. Plants, Class I  
23 plants, deal with retailers or wholesalers sometimes who  
24 don't communicate with the plant effectively. They will  
25 get orders that they weren't expecting.

26 And we got to remember that Class I sales are, you  
27 know, a retail item. Class I is retail, and you are --  
28 the demand for Class I on any one day is driven by



1 consumer behavior. This back and forth just isn't always  
2 in the -- in the control of the Class I plant, but this  
3 back and forth costs money.

4 Federal Orders are tasked with what I think is a  
5 straightforward, but not easy to effectuate, objective.  
6 That's to make sure -- they are to insure -- the use of  
7 the word insure with an "I" -- a sufficient quantity of  
8 pure and wholesome milk and be in the public interest.  
9 But we tend to shorten that and say, an adequate supply of  
10 milk for Class I demand.

11 Orders fulfill this mission, or at least try to,  
12 in a straightforward and logical way. The only way that  
13 the Secretary of Agriculture can know there's enough milk  
14 is if there's too much. Just like when you go on a road  
15 trip in your car, you are going to make sure you got  
16 enough gas, and you are going to make sure you got more  
17 than enough gas. That's how the Secretary ensures that  
18 there's enough milk, you have to know that there's too  
19 much, which means there's always a reserve against what we  
20 think the Class I might be.

21 In supplying Class I, the last hundred pounds is  
22 just as important as the first hundred pounds. If  
23 somebody goes short, then the market is short.

24 We need to incentivize the deliveries of Class I  
25 milk. Sometimes people seem to think that the seasonal  
26 demands in Class I just aren't there or that there's --  
27 you know, those are no longer a problem. But the seasonal  
28 surges in Class I demand that's -- sometimes there isn't



1 enough milk to go around.

2 I think you will find that some of the following  
3 witnesses will probably testify that they have to ration  
4 milk, particularly when schools start back up in August  
5 and September. And plant operators need milk when they  
6 need it, not the next day, not the next week. Just ask a  
7 plant manager, a load that arrives a day late is just as  
8 good as not coming as far as they are concerned.

9 Class I differentials recognize the many  
10 challenges of supplying Class I by incentivizing the  
11 delivery of milk to Class I, and they do it with money.  
12 We can preach all we like about how we ought to supply  
13 Class I, but you have to provide the proper incentives to  
14 bring that milk to Class I, and the way we do that is with  
15 Class I differentials.

16 Dairy farmers, as I mentioned, are simply tired of  
17 hauling milk hundreds of miles for inferior returns  
18 because we are all -- you know, I got to admit, I'm  
19 getting long in the tooth, and I have been told my whole  
20 career that Class I comes first. You serve your Class I  
21 customers first, Class I comes first, serve the Class I  
22 customer first, whatever you got to do, serve your Class I  
23 customer.

24 I'm here to tell you that there's a generation of  
25 dairy farmers that don't accept that. They are asking  
26 hard economic questions about why are we moving milk  
27 hundreds of miles and taking a return for that that is  
28 less than we could get at a local market. And you know



1 what? I'm having a hard time answering that question  
2 anymore. I really am.

3 And it's -- this is an imperative. We've got to  
4 straighten this out or the threat to Class I is going to  
5 be real.

6 I'm going to go off the slides here and interject  
7 something. We often talk about or use the phrase  
8 "threaten the supply to Class I." And -- and maybe we  
9 don't pause often enough and think about what that really  
10 is.

11 In the practical sense, there are two threats  
12 to -- to supply to Class I. The first is, if the economic  
13 environment isn't conducive to milk production, the farms  
14 are going to go away. The first threat to Class I is  
15 actually a threat to all classes, that the farms aren't  
16 going to be there. We have got to have -- you know, the  
17 one thing that you got to have to have dairy is a dairy  
18 farm. They don't have another way to do it. So there's  
19 the first and -- and, of course, saddest threat to  
20 Class I, or supplying milk to Class I.

21 The other threat to Class I is the economic  
22 incentives aren't there and we take the milk someplace  
23 else. If the returns are better at a cheese plant, we  
24 don't bring it to Class I, there's the second threat. I  
25 I'm going to even go further off script.

26 The decision to deliver milk to Plant A is almost  
27 always the decision not to deliver it to Plant B. We  
28 daily make decisions about where our milk needs to go.





1 Sometimes you -- it's -- the decisions are made somewhat  
2 for you because you have contractual relationships, but  
3 long-term, if Plant A doesn't pay its way, you are going  
4 to opt to go to Plant B. That's just the way it is.

5 And we have a generation of dairy farmers who are  
6 saying, why are we going hundreds of miles to Class I  
7 plants when we probably could do better keeping our milk  
8 at home? This is an imperative.

9 Now, I want to pause a minute and talk about  
10 something that we hear semi-regularly. This is a topic  
11 which ebbs and flows in the milk business, and I think  
12 it's on the rise. But we need to talk a little bit about  
13 why over-order prices are not a substitute or an adequate  
14 replacement for Federal Milk Order prices. And I have  
15 lived over-order prices in the vast majority of my career,  
16 and I speak from experience on every one of these.

17 There are people around who champion the idea that  
18 over-order prices are a desirable and workable alternative  
19 to adequate basic levels of Federal Order prices. In  
20 add- -- and I -- and it's not just Class I. I said  
21 Class I here, but the truth is, all order prices. And I  
22 have only one word in response: Bunk.

23 In my career, I witnessed kind of two camps of  
24 people that will espouse this philosophy. The first are  
25 people who just don't understand the milk business. They  
26 don't understand how order prices work, why we have them  
27 or -- excuse me -- over-order prices, their function,  
28 their benefits, and mostly their limitations. These are



1 people who don't understand how over-order prices are not  
2 an effective substitute.

3 Then there are a group of people who espouse  
4 replacing Federal Order price regulation, or substantially  
5 reducing price regulation, and substituting that with  
6 over-order prices, and those are a camp of people who know  
7 all too well the limitations of over-order prices.

8 We'll come back to that in a little bit because --  
9 but I want to go through a few reasons why over-order  
10 prices -- they have their place, they are an important  
11 part of the price structure, but they are not a substitute  
12 for adequate Federal milk order prices.

13 The first, and this is the -- and actually, you  
14 could almost stop with this one. I have a colleague in  
15 the milk business who always kids me, I like to use the  
16 word "ephemeral" when I refer to over-order prices, and we  
17 can be a little less highfalutin with our term. We're  
18 just going to say, they're here today, gone tomorrow.

19 Over-order prices do not have the durability of  
20 federally-regulated prices. They can be swept away with  
21 little or no notice, and once gone, believe me, they are  
22 difficult to re-establish. I don't know what the word for  
23 next to impossible is, but it gets close. It is hard work  
24 to re-establish over-order prices once they are gone, and  
25 they can be gone at the drop of a hat.

26 Sometime -- you know, and the reasons they crumble  
27 are any number of reasons. And they have actually nothing  
28 to do with the supply and demand for milk in a particular



1 area. They can be destroyed from supply/demand imbalances  
2 in a long way away. Over-order prices are highly  
3 susceptible to what's happening in other markets. They  
4 respond to what happens in other markets. There can be a  
5 problem in another market, and that wave of problem sweeps  
6 over big chunks of geography.

7 As I mentioned, over-order prices are not easily  
8 moved, with the exception that they are very easily moved  
9 down. They quickly, I have said, market participants can  
10 get rid of over-order prices or reduce them substantially  
11 with about three phone calls. You can change them across  
12 a broad area with the threat of cheaper milk.

13 They are hard to move. There's contracts between  
14 the seller -- we have heard issues at this hearing about  
15 the contracts that exist between Class I processors and  
16 their customers, and the fluid milk customers, and those  
17 contracts usually have some sort of fixed differential.  
18 One witness I believe referred to them as tolling fees,  
19 and that's an apt description. You take the Federal Order  
20 price, and you add -- and you convert it to a gallon price  
21 or half gallon price, and you add a fixed differential,  
22 and that's what the customer pays. The price moves up and  
23 down with the Federal Order prices.

24 And that fixed differential, that tolling fee if  
25 you want to call it that, is usually fixed for the life of  
26 the contract. And it's hard to -- to get a customer --  
27 and obviously when you are -- as a Class I processor, when  
28 you are trying to figure out your bid for business, one of



1 the elements in that fixed tolling fee, if you will, is a  
2 level of over-order price. If the plant's paying a  
3 premium, some people call them, they are going to figure  
4 that in to what they have to -- how they have to price out  
5 that gallon or half gallon of milk.

6 And -- and you want to -- you have to be receptive  
7 to your customer's issues, and you don't want to raise the  
8 price on them in mid-contract, because they cannot pass on  
9 that over -- increased over-order price. They recognize  
10 changes in Federal Order prices, but they don't have any  
11 real mechanism in their contracts, with their retail or  
12 wholesale buyers, to adjust for those contracts in the  
13 middle of the contract.

14 And when you are involved in over-order prices,  
15 you find out soon that some processors are always in the  
16 middle of their contract. They don't all run, you know,  
17 January to December. They -- they are all over the place,  
18 so somebody is always in the middle of their contract. So  
19 that makes it difficult to move them up because of the  
20 relationship between Class I processors and the packaged  
21 milk retail customers.

22 And here's another biggie. And this is one that  
23 if we hear it once a week, we hear it more than that:  
24 Over-order prices simply do not carry the confidence from  
25 processors that Federal Order prices do. This is the  
26 deal.

27 The buyers of bulk milk in their package fluid  
28 milk customers, they simply rely on the certainty of the



1 pricing under Federal Orders. As we mentioned, those  
2 contracts move up and down with the Federal Order prices,  
3 and we have heard over and over and over as sellers of raw  
4 milk to Class I processors, that if it's on that Federal  
5 Order price announcement, we can pass it on to our  
6 packaged milk customers. These fluid milk product  
7 contracts recognize movement in the Federal Order prices,  
8 but they don't recognize movement in over-order prices.

9           Honestly, buyers of milk, processors of milk,  
10 simply don't have the confidence in over-order prices that  
11 they -- that they have in Federal Order prices.

12           One of the things about orders is, you know your  
13 competitor plant down the road, that other -- that next  
14 fluid milk processor is paying the Federal Order price at  
15 least. The orders require payment. They audit. You  
16 know, those Class I processors know that the people down  
17 the road who are poddling milk or manufacturing the same  
18 product are subject to those minimum prices, and they  
19 trust them.

20           That's not always true when it comes to over-order  
21 prices. They sometimes simply don't have the faith in  
22 over-order prices that they do in Federal Order prices.  
23 There is always somebody out there who wonders whether  
24 their competitor is getting a better deal.

25           We provide audits, we do all this work, and at the  
26 end the day, wondering whether your competitor is getting  
27 the same price as you is a whole lot different than  
28 knowing your competitor is getting a the same price as



1 you. When it comes to the Federal Order prices, they  
2 know. When it comes to over-order prices, sometimes they  
3 wonder.

4 Over-order prices tend to be quite flat over large  
5 pieces of geography. The industry basically adopts the  
6 Federal Order Class I price surface as the Class I -- as  
7 the price surface. It's very difficult for over-order  
8 prices to institute a slope which adds to or subtracts  
9 from the Federal Order Class I price structure or the  
10 Class I price slope.

11 It's hard enough to convince a customer that, you  
12 know, they need to pay an over-order price. It's really  
13 hard to convince them they need to pay a higher price than  
14 the plant up the hill from them. Think about it, if they  
15 don't trust them to start with, they are certainly not  
16 going to trust them when you tell them that their price is  
17 going to be different than somebody else's.

18 Over-order prices are not useful, particularly, to  
19 change the slope or change the price relationship  
20 geographically between plants.

21 And today, the size of these fluid product plants,  
22 these Class I processing plants, they are -- they are  
23 fewer and bigger, and that means each plant has a bigger  
24 footprint. That means each plant interacts in competition  
25 with more plants. The bigger the circle, the more circles  
26 you touch.

27 And the growth of national and regional,  
28 multi-regional retailers has only made that worse because



1 if you have grocery stores and -- all across the country,  
2 or you have, you know, you know what the over-order prices  
3 are all over the country. And so it's very easy for them  
4 to say, well, they are charging X over here; why are you  
5 charging me Y? They want stable prices, and they want  
6 over-order prices that are similar over large pieces of  
7 geography.

8 So back to our question earlier, and the two camps  
9 of folks who champion over-order prices as replacements  
10 for Federal Order prices. First, again, the people that  
11 don't understand. They don't get it. They don't  
12 understand those limitations. They don't understand those  
13 problems with over-order prices. They don't -- they don't  
14 understand where over-order prices fit in the system. I'm  
15 going to chalk that up to inexperience, or maybe, you  
16 know, as economists we always tend to believe that supply  
17 and demand will work things out. It doesn't.

18 The reason we have Federal Orders, the reason we  
19 have Federal Milk Marketing Orders, the reason they exist  
20 is that we have seen over and over that milk markets don't  
21 transmit milk values equitably when price regulation is  
22 absent. It's just that simple. They don't do -- they --  
23 milk markets don't function that well.

24 The other camp, those are who understand the  
25 limitations of over-order prices all too well. These are  
26 parties who are counting on the eventual failure or demise  
27 of over-order prices. As more pricing emphasis is put on  
28 unregulated prices versus regulated prices, the more these



1 parties benefit when the unregulated prices crumble. So  
2 you have people who are saying, parties who say, hey, we  
3 need to let the market work better. We need to lower the  
4 over-order prices and leave more headroom for the market  
5 prices to work over net. And they will even say, the  
6 over-order prices will compensate. Well, maybe they will,  
7 maybe they won't. But I think, I believe, they are  
8 actually counting on them failing.

9 I'm going to put this in a term I think we all can  
10 understand. This is the foxes asking the Secretary of  
11 Agriculture to put them in charge of the hen house. I'm  
12 going to say it again. These are foxes asking the  
13 Secretary of Agriculture to put them in charge of the hen  
14 house.

15 The role of Class I differentials in the  
16 occurrence of price inversions are limiting, minimizing  
17 the occurrence of Class I -- of price -- Class I price  
18 inversions.

19 Now, before I go any further, my definition of a  
20 price inversion, is one of -- when one of the Class II,  
21 III, our IV prices exceed the Class I price at a location.  
22 I know another witness defined it as when the blend price  
23 exceeds the Class I price. And that's fine. But my  
24 definition is when either Class II or III or IV, or maybe  
25 more than one of them, at any location, or some location,  
26 exceeds the Class I price.

27 THE COURT: Because that's such a key issue, I  
28 want you to identify the exhibit number and the page





1 number on which you have written that.

2 THE WITNESS: Yes. Just a second, Your Honor.

3 My exhibit -- or the National Milk exhibit -- and  
4 I got to be honest, I don't -- I was otherwise worried  
5 about tech issues. So what's -- what's NMPF-37A? 311.  
6 The data for these slides comes from NMPF -- or marked  
7 311, in NMPF-37A.

8 So --

9 THE COURT: All right. But I was just looking  
10 just in the one we're in --

11 THE WITNESS: Yep.

12 THE COURT: -- Exhibit 318 --

13 THE WITNESS: Yes.

14 THE COURT: -- is also NMPF-37H. And on page 24  
15 you say it very clearly.

16 THE WITNESS: Oh, yes. I guess I skipped -- I got  
17 ahead of myself.

18 Again, this is my definition of Class I price  
19 inversion and why inversions are a problem. And I  
20 probably am being repetitive. I think we have heard this  
21 before at this hearing, but they tend to cause unequal  
22 returns to producers serving the same marketing areas.  
23 When you have this -- the price inversions, that increase  
24 the -- it creates the incentive to depool. Producers  
25 don't get paid or don't necessarily get paid the same for  
26 serving the same markets.

27 There's non-uniform prices to handlers. Some  
28 handlers get to depool and actually do, indeed, get a



1 benefit from that. Not every handler does. I readily  
2 admit, pool distributing plants don't get to take  
3 advantage of this. It creates distrust in the marketing  
4 and pricing system, and that's just about as bad as it  
5 gets.

6 And then of course, it puts class prices out of  
7 line with their relative price demand elasticities.

8 So the incidences of Class I price inversions. I  
9 did something that I guess, you know, probably needed  
10 done. I counted. I went back and figured out how often  
11 they occur, which class price they occur on, and their  
12 frequency. And it actually is very startling and very  
13 telling.

14 I ran all the way back to 2000, whatever the  
15 class -- the Federal Order mover was, whether it's the new  
16 form of -- the recent form of computation of the mover or  
17 the old higher-of. I didn't try to make any value  
18 judgment as to which one to use. I just used the one that  
19 the Federal Orders announced.

20 And I ran three scenarios, and you will see --  
21 again, this is from 37A, whatever, again, that was. I  
22 have since forgotten what my counsel told me that number  
23 was.

24 THE COURT: That's Exhibit 311.

25 THE WITNESS: Oh, there you go. 311. Great.  
26 It's a 20-some-odd page long series of numbers. And it's  
27 a spreadsheet that basically counts. Okay? Counts the  
28 number of inversions.



1           And so -- and I did it by class, how many -- and  
2           under three, in essence, Class I differential scenarios.

3           The first is with the minimum differential at  
4           \$1.60. That's where we are today. And then running it at  
5           the minimum differential that National Milk Producers is  
6           proposing in our Proposal 19, which is \$2.20 per  
7           hundredweight. And then I also ran it at zero.

8           And let's pause here a second and talk about what  
9           a zero differential means.

10          If you are sitting -- if there's a place in this  
11          country where there is an effective zero differential, the  
12          Class I mover is the Class I price. If you don't have  
13          anything to add to the mover, the mover becomes the  
14          Class I price.

15          So I compared those three items, those three  
16          scenarios, those three environments, and said, okay, what  
17          happens to Class I price inversions? If you look over  
18          those 282 months from January 2000 through June of 2023, a  
19          Class II price inversion at the \$1.60 zone occurs about 5%  
20          of the time. At the \$2.20 proposed minimum differential  
21          zone, they occur about 2% of the time. In any zone that  
22          has a zero differential, again, where the mover is the  
23          Class I price, with regard to the Class II price, they  
24          occur a little more than half the time.

25          For Class III -- and part of this is the obviously  
26          the fixed differential on Class II of \$0.70 above the  
27          Class IV skim. So that's why you have something more in  
28          terms of frequency on Class II.



1           For Class III, same question. How many times did  
2 it occur at the \$1.60, at the \$2.20, and at a hypothetical  
3 zero, and a hypothetical \$2.20 I guess we should say.  
4 About 6% of the time there's a Class III inversion at the  
5 current \$1.60 differential, minimum differential zone;  
6 about 3% of the time at -- to the proposed \$2.20 zone; and  
7 a little over a third of the time at a zero zone, if you  
8 have a zone with a zero differential. It's a little less  
9 than Class IV, which makes sense, because over time,  
10 Class IV tends to be a little behind Class III, so the  
11 incidence of inversions are a little less. About 3% of  
12 the time in the one current \$1.60; 2% of the time in a  
13 \$2.20; 29% of the time in a zero differential zone.

14           Now, let's just look a second at another set of  
15 statistics, and these, again, are all from that same --  
16 did you say 311? Great. 311.

17           Exhibit 311. Let's just look at the zero. If we  
18 have a slice of the country that has a zero differential,  
19 a zero Class I differential, again, the Class I price is  
20 the mover each month. 35% of the time there would have  
21 been a class price inversion, in other words, one of the  
22 three II, III, or IV class prices would have exceeded the  
23 Class I price. 35% of the time one of them would have  
24 exceeded. 24% of the time, two of the classes -- class  
25 prices would have been higher than the Class I price; 12%  
26 of the time, all three Class II, Class III, and Class IV  
27 would be higher than the Class I price at a zero  
28 differential; and 28% of the months there would be no



1 class price inversion.

2 So if you look at that, in total, 72% of the time  
3 at a zero differential there would be some form of class  
4 price inversion, so one or more of the Class II, III, or  
5 IV prices would have exceeded the Class I price at a  
6 zero -- zero differential zone. I think that's  
7 significant.

8 THE COURT: So for someone who is reading the  
9 transcript, you are now on page 27 of Exhibit 318.

10 THE WITNESS: Yes, ma'am. And you -- you asked me  
11 to do that, and you know what I haven't done? What you  
12 just reminded me I was supposed to do.

13 THE COURT: I'm hesitant to stop you. You are  
14 like a rolling snowball.

15 THE WITNESS: No, ma'am. I'm from Alabama,  
16 snowball analogies don't work on me.

17 THE COURT: I need you to stop. We need to let  
18 our court reporter stretch. This has been very intense.

19 THE WITNESS: Yes, ma'am.

20 THE COURT: Let's take ten minutes. Please be  
21 back and ready to go at 3- -- no, 4:0- -- let's come back  
22 at 4:05 p.m.

23 We go off record at 3:53.

24 (Whereupon, a break was taken.)

25 THE COURT: Let's go back on record.

26 We're back on record at 4:07.

27 THE WITNESS: In the interest of time I'm going to  
28 skip the next four slides and move on to page 33 of 64.



1           This next series of slides, quite frankly, ought  
2 to scare the socks off most of us, because it scares the  
3 socks off of me.

4           I call this the most insidious form of a negative  
5 producer price differential. Dairy farmers haul their  
6 milk hundreds of miles to Class I plants, and they net  
7 less than the Class III price or the Class IV price.

8           These are based on Exhibit NMPF-37D, which is what  
9 number? Anybody got a clue? 314.

10          This is a straightforward analysis. I simply look  
11 at the cost of hauling from a hypothetical farm in  
12 Hereford, Texas, which is considered the -- kind of the  
13 epicenter, the center of milk production in the Texas  
14 Panhandle, to a hypothetical Class III or Class IV located  
15 in Amarillo, about 45, 48 miles from Hereford. So we have  
16 a hypothetical farm, hypothetical plant in Amarillo. And  
17 then the order that farm can move to a Class I pool  
18 distributing plant either in Dallas or Houston.

19          Let's see what the economics are that face that  
20 plant -- or that dairy farmer. This is June 2023, the  
21 first one. The blend -- or the Class III price at -- oh,  
22 by the way, when they sell their milk to the Class III or  
23 Class IV price in Amarillo, that's all they get. They are  
24 not part of the pool. They don't -- they don't want to --  
25 you know, they are not qualified. They don't get a pool  
26 draw. They take the Class III price or the Class IV  
27 price. We are walking away from the pool.

28          So that farm is about 48 miles from Hereford to



1 Amarillo. Over, in June, that would have been about a  
2 \$0.41 haul. So at a 14.91 Class III price, that farmer  
3 nets \$14.50 for the sale to the Class III plant -- or at  
4 the hypothetical Class III plant in Amarillo.

5 If that farm ships its milk to Dallas, it's a  
6 little over 400 miles, in June, that would have been a  
7 little over \$4 hundredweight haul. They get the  
8 statistical uniform price in Dallas. It was 17.25 in  
9 June. And so they walk away with 13.04. They give up,  
10 they lose \$1.46 per hundredweight versus the Class III  
11 price. Not the blend price, the Class III price at  
12 Amarillo.

13 If they go all the way to Houston, it's 635 miles.  
14 That's well over a \$6 per hundredweight haul rate. They  
15 get 17.85, which is just \$0.60 more than the Dallas price,  
16 and their statistical uniform price, they net \$11.28.  
17 That's \$3.22 less than the Class III price. That's why I  
18 call this an insidious form of negative producer price  
19 differential.

20 Now, June of 2023 was a very high Class IV price  
21 month relative to Class III. You go through the same  
22 series of computations, only you just compare to the  
23 Class IV price at Amarillo.

24 On Class IV, hauling their milk to Dallas, they  
25 net \$4.81 less than the Class IV price, the net delivered  
26 Class IV price at Amarillo, or they lose 6.47. They give  
27 up \$6.57 a hundredweight by hauling milk to a Class I  
28 plant 635 miles away.



1           Now, agreed, noted, June was a bit of an anomaly  
2 price month.

3           So let's look at what those prices look like from  
4 June -- excuse me -- January of 2018 through June 2023,  
5 the simple average of the Class III, Class IV, statistical  
6 uniform prices at Dallas and Houston.

7           THE COURT: Let me just interrupt just a minute  
8 for page 35.

9           THE WITNESS: Yes, Your Honor. This is 36. I'm  
10 on 36 of 64 now.

11          THE COURT: Go back to 35 for just a second.

12          THE WITNESS: Yes, ma'am.

13          THE COURT: So the trip to Amarillo pays the  
14 Class IV price.

15          THE WITNESS: Yes.

16          THE COURT: So the net is on a Class IV return  
17 rather than Class III?

18          THE WITNESS: Correct. And -- and -- and page 35,  
19 this is selling their milk at the Class IV price. Page 34  
20 would have been selling it at the Class III price.

21          THE COURT: So just read me, before you get to  
22 that \$17.85, which is the net, should it say producer net  
23 Class IV return?

24          THE WITNESS: Your Honor, you are absolutely  
25 right. It should.

26          THE COURT: Okay.

27          THE WITNESS: On -- on 35, it absolutely should  
28 say "Class IV" next to that 17.85. Yes, ma'am, you are





1 absolutely right.

2 THE COURT: All right. I'm going to make that  
3 correction on my copy. I would like the record copy to  
4 show that. We're in Exhibit 318. We have turned to  
5 page 35. It's a small thing.

6 THE WITNESS: But an important small thing.

7 THE COURT: We're merely changing the Roman  
8 numeral "III" to the Roman numeral "IV."

9 THE WITNESS: And I wouldn't be a bit surprised if  
10 we see that error again in a couple of pages.

11 THE COURT: Okay.

12 THE WITNESS: Okay.

13 So on to 36. Again, these are the average prices,  
14 average Class III price in -- for the period of  
15 January 2018 through June of 2023.

16 You'll notice the hauling costs are a little bit  
17 less. The mileages haven't changed, but the hauling costs  
18 are a little less. Hauling costs in 2023 were higher than  
19 they were over the average of this, however many years  
20 that is, four and a half to five and a half.

21 In this case, the hauling cost from Hereford to  
22 Amarillo is \$0.39 a hundredweight, the average Class III  
23 price for that period of time was 17.73, so the producer's  
24 net Class III delivered to a plant in Amarillo, revenue is  
25 17.34.

26 If he hauls his milk to -- or her milk -- to  
27 Dallas, again, that haul rate is a little bit less. I  
28 used the average haul rates across those periods. The



1 statistical uniform price average during that period was  
2 18.03 at Dallas, for a net return of 14.71, \$2.63 less  
3 than the Class III price delivered to Amarillo.

4 Same story for Houston. Again, the haul rate was  
5 a little lighter than it was previous -- or for this  
6 period versus June only. Net return 13.45, they yield  
7 \$3.89 less than the Class III price hauling their milk to  
8 Class I in Houston.

9 And, Your Honor, we will go ahead and acknowledge  
10 that on that same line, that this one should read net  
11 Class "IV" return at Amarillo. Same story.

12 Well, the title's wrong, too. Okay. Let's -- and  
13 the title it should read Class IV, and in the producer net  
14 Class IV return at Amarillo -- I did get the SUP right, I  
15 think. So --

16 THE COURT: Okay.

17 THE WITNESS: Co-ops worry about blends.

18 THE COURT: So only -- okay. We're -- we're on  
19 page 37 --

20 THE WITNESS: Yes, ma'am.

21 THE COURT: -- of Exhibit 318, and we merely need  
22 to change Roman numeral "III" to Roman numeral "IV" in two  
23 places.

24 THE WITNESS: Yes, ma'am.

25 THE COURT: Okay. And, Mr. Hill, you will make  
26 sure that's done?

27 Thank you. You may resume.

28 THE WITNESS: Same story. This is Class IV. The



1 net return after hauling for Class IV, Class IV, at  
2 Amarillo, 16.68, 14.71 at Dallas. When you haul the milk  
3 down there, you take \$1.97 less from the Class IV price,  
4 and you receive less than the Class IV price net in your  
5 check. It's \$3.23 less than the Class IV price if you go  
6 all the way to Houston.

7 If you want a picture of a threat to Class I, this  
8 is it. So when we talk about threats to supply -- the  
9 supply of Class I, here it is.

10 Kind of a quick message. The issue of updating  
11 Federal Order Class I differentials is economically, as a  
12 matter of economics, no different than updating Federal  
13 Order Make Allowances. The results of continued  
14 insufficient Class I differentials will have the same  
15 impact on dairy farmers' deliveries to milk to Class I as  
16 continued insufficient Make Allowances will have on hard  
17 product manufacturing plants. This is an economic fact.  
18 This is what's going to happen. Again, if you want a  
19 picture of a threat to Class I supply, here it is.

20 Economically Make Allowances -- Make Allowances  
21 are -- reflect the cost of conversion of a raw product --  
22 and a raw product of -- to -- its raw -- the cost of  
23 conversion, product utility conversion. Class I  
24 differentials are another kind of utility, time and place  
25 utility. They compensate dairy farmers for getting a raw  
26 milk -- getting a raw product in the wrong place to a raw  
27 product in the right place.

28 Updating Make Allowances and updating Class I



1 differentials are two sides of the same coin. Updating  
2 either one, but not both, will reek havoc on dairy product  
3 markets and threatens the adequate supply of milk.

4 Now, just a quick -- we have heard some parts of  
5 this already, but we're going to -- we're going to  
6 introduce a topic that you will here more about later.  
7 This is our Class I differential project, or the process  
8 we followed, the National Project.

9 We have heard this phrase, Class I differentials,  
10 or developing them, is part art, part science. We heard  
11 from Dr. Nicholson yesterday on the science part. The,  
12 you know, taking measurements, routing milk, how much does  
13 it cost to move it, what's it worth when it gets there.

14 And as you heard from him, then, then there's  
15 another step after that, and that's the art. The boots on  
16 the ground knowledge, the market, you know, this is why  
17 this milk moves this way, this is why this milk can't move  
18 that way, applying that information and developing a  
19 standard traditional Class I price surface.

20 In National Milk we had a -- we had a -- we coined  
21 a name for these groups. We broke into four regional  
22 groups. We called them colored pencil crews. It's a bit  
23 of nostalgia. When I drew all the maps I have drawn in my  
24 career, a piece of paper with blank counties, and grab a  
25 stack of colored pencils and start drawing. So nostalgia,  
26 we called them the colored pencil crews, although I  
27 probably was the only one that used a colored pencil.

28 So our four regional committees. We -- we --



1 nobody knows how to -- how milk moves everywhere in the  
2 country. So we divided up the work in order that we could  
3 utilize the brainpower and knowledge of the folks whose  
4 boots are on the ground in the various parts of the  
5 country.

6 And, Your Honor, we're on 44 of 64.

7 And so we had four regions. The Northeast,  
8 Mideast, Middle Atlantic group, kind of Orders 1 and 33,  
9 plus each one of these had some unregulated. Some of  
10 these kind of broke up in a little bit different way.  
11 This -- but this is how we started. They kind of morphed  
12 in and out a little.

13 Upper Midwest, Central Order, roughly Orders 30  
14 and 32. The Southeast/Southwest committee, which I  
15 chaired, that's Orders 5, 6, 7, and 126. Each one of  
16 these had a chair, and several people -- many people -- I  
17 think several doesn't cover it. It's many people worked  
18 on these -- this project. The West, Orders 5 -- 51, 124,  
19 and 131.

20 And then each area had some unregulated territory  
21 to work on also.

22 The way the structure worked, we got the USDSS  
23 model. That was the skeleton. And then we started  
24 hanging the meat on the bones based on our knowledge of  
25 anatomy.

26 And so that created the Class I price surface we  
27 recommend in Proposal 19. It went through many  
28 iterations. There was a lot -- again, I was probably the



1 only one that used a colored pencil and the eraser, but it  
2 went through a lot of those. It was a great lot of  
3 discussion over the -- I'm going to say this. There  
4 weren't a lot of big differences between the -- the  
5 regions where we had to kind of align the prices.

6 And the reason we avoided some of that in the  
7 process, price alignment between the regions, early on, I  
8 believe sometime between the second and third run of the  
9 model, we had a physical meeting, about a dozen of us, and  
10 sat down and -- and worked through an initial  
11 recommendation of prices at what we called anchor cities.

12 If you will note, most of these cities kind of --  
13 and we're on 43 of 64 --

14 THE COURT: Actually, we should point out, in case  
15 people get confused, you have got all the page numbers.

16 THE WITNESS: Yes, ma'am.

17 THE COURT: We just left page 41 and page 44, who  
18 are front and back.

19 THE WITNESS: Oh, my word.

20 THE COURT: And now we have --

21 THE WITNESS: It should --

22 THE COURT: -- 42 and 43.

23 THE WITNESS: We've got a -- I have got a  
24 typographical error there somewhere. I know what I did.

25 THE COURT: It doesn't matter. We got it all.

26 THE WITNESS: Yes, I think I may have moved a  
27 slide at some point after I numbered them.

28 And you are asking me to count past 40, we --



1 we -- I can -- I know my age, and it's beyond 40.

2 THE COURT: I accepted you as an expert witness.

3 THE WITNESS: Yes, ma'am. There we go.

4 So anyway, we basically had a structure, we called  
5 them anchor cities, that kind of fell across the borders  
6 or along the borders of these five regions. That gave  
7 each region something of a -- of a jump-off spot to -- to  
8 develop their prices without -- without all four regions  
9 just kind of starting out on their own.

10 So we came to some agreement about some  
11 tentative -- what I would call tentative prices. They --  
12 some of them stuck through the whole thing, but some of  
13 them moved a little bit. But these anchor cities were  
14 important to kind of define where the -- where the lines  
15 were and how the regions matched up.

16 And that -- I'm going to stop right there with  
17 4:29 left to go. See, I told you I could make it.

18 Stop the clock.

19 MS. HANCOCK: Thank you, Mr. Sims. Appreciate  
20 your effort in putting all this together and taking us  
21 through it.

22 Your Honor, at this time we'd make him available  
23 for cross-examination.

24 MR. ENGLISH: Your Honor, my name is Chip English.  
25 I'm representing the Milk Innovation Group. And I am  
26 reminded that the Milk Innovation Group includes nine  
27 proprietary operators and one cooperative.

28 ///



## 1 CROSS-EXAMINATION

2 BY MR. ENGLISH:

3 Q. Good afternoon, Mr. Sims.

4 A. Good afternoon, Mr. English.

5 Q. So I think at first I need to clarify something,  
6 because I thought I heard your counsel at the beginning of  
7 your testimony say that you were covering some materials  
8 and that you would come back to talk about other  
9 materials.

10 A. Yes, sir.

11 Q. And so I wanted to make sure I understood, as I  
12 started this discussion, that I understood what it was you  
13 did cover or intended to cover and what -- this is about  
14 NMPF-37 -- what in NMPF-37 is left to be covered?15 A. We will pick up at a later date with Part 3, which  
16 begins on page 24 of 51. So this -- we're basically going  
17 to stop before we get to the Southeast/Southwest regional  
18 price recommendation.

19 Q. And --

20 A. That will be handled by me a little bit later.

21 Q. Okay. So it might not come as a surprise that  
22 when I prepared for your examination, I prepared for the  
23 entire thing at once. So I may have to figure out my way.24 But so that means you have basically covered  
25 Parts 1 and 2 through page 24?

26 A. Yes, sir. Or a little bit on 24.

27 Q. Okay. So I will, thus -- just a second. I didn't  
28 bring everything up.



1 I will leave it to your counsel and USDA to talk  
2 about how that happens with four minutes and 29 seconds,  
3 but I am not concerned about that today.

4 What exhibits -- I think -- can we just go through  
5 the exhibits and make sure that I understand -- I think  
6 you perhaps covered a number of them, but I'm not sure if  
7 you have all of them.

8 So obviously we talked about 310. I know you  
9 talked about --

10 A. I'm at a disadvantage. We were having an AV issue  
11 when these were numbered. So if somebody could help me  
12 with those again, that would be helpful. Or I use the  
13 plural "we." It was I.

14 Q. Do you have the NMPF -- because I can refer to  
15 them by the NMPF documents.

16 THE COURT: So we know now -- we know we went into  
17 Exhibit 311.

18 THE WITNESS: Yes.

19 MR. ENGLISH: Okay.

20 THE COURT: And we know we went into another one  
21 momentarily.

22 MR. ENGLISH: Well, do you have the NMPF documents  
23 in front of you?

24 THE WITNESS: So the answer is no.

25 THE COURT: We talked about -- when we were on  
26 page 34 of Exhibit 318, you said the basis for this is in  
27 Exhibit 314.

28 THE WITNESS: Yeah. It -- would it help -- yeah.



1 Can we turn that screen back on? Great.

2 Why don't we just go through these right quick.

3 You can look at -- for most of these I think -- I tried to  
4 put the source -- my source exhibit. Obviously doesn't  
5 have the number 300 whatever.

6 So this one is --

7 MR. ENGLISH: Well, your counsel has handed them  
8 to you, so maybe --

9 THE WITNESS: Okay. Cool. We can do that.

10 MR. ENGLISH: Okay. So --

11 THE WITNESS: She got them out of order, but  
12 that's okay. Okay.

13 BY MR. ENGLISH:

14 Q. All right. So I don't think you actually  
15 discussed Exhibit 312, which is NMPF-37B, but it looks to  
16 have been included in the PowerPoint, and you skipped  
17 through it; is that correct?

18 A. Let me get there, please. 312?

19 Q. 312, which is 37B.

20 A. Yes. We -- we did -- we'll discuss that one at  
21 another time if you like. But it is in the PowerPoint and  
22 in the Appendix at the end, I believe.

23 Q. All right. And then 313. Have you discussed 313?

24 A. We did not discuss 313. It's discussed in the --

25 Q. Part 3?

26 A. No, I believe it's discussed in Part 1 of 310.

27 Q. Okay.

28 A. Mr. English, 312 is cited in --



1 Q. We have already covered 312.

2 A. Oh, okay. I'm sorry.

3 Q. And you have already said 313 was covered.

4 A. Yeah, it's cited in 310.

5 Q. Okay. What about 314?

6 A. It is cited in --

7 Q. I know they are all cited in 310.

8 A. Yes.

9 Q. Okay. But the question is, are they in Parts 1 or  
10 2, or Part 3? That's what I'm really getting at.

11 A. I believe they -- let me just look at these right  
12 quick. I believe everything through 316 is actually cited  
13 in Part 1.

14 Q. Okay. So it's 316 that's not in --

15 A. 317, I believe, is cited in Part 3 of the 310.

16 Q. All right. So thank you. All right.

17 So you were here yesterday, correct?

18 A. I was.

19 Q. When Dr. Vitaliano testified that Dr. Nicholson  
20 and Dr. Stephenson did three iterations --

21 A. Yes.

22 Q. -- of the model. You heard that testimony,  
23 correct?

24 A. I did.

25 Q. And then Dr. Nicholson was very clear that after  
26 they did their runs, National Milk Producer Federation's  
27 adjustments were done independently by National Milk  
28 without his oversight or input, correct?



1 A. Correct.

2 Q. And you didn't ever share those with them,  
3 correct?

4 A. With?

5 Q. The adjustments, with Dr. Nicholson or  
6 Dr. Stephenson, correct?

7 A. Not that I recall.

8 Q. And so given the fact that the iterations are --

9 A. Let me correct that. We may have. But I --

10 Q. Did you hear Dr. Nicholson testify yesterday that  
11 he hadn't seen them before?

12 A. Well, then if he hadn't seen them, then we must  
13 not have.

14 Q. So given that you had already had access to the  
15 model and already three iterations, how come additional  
16 adjustments were necessary?

17 A. There's -- you know, as Dr. Nicholson testified,  
18 very clearly I thought, there are certain -- a model is,  
19 by definition, just like the little ones you put together  
20 when you are -- you know, when you are -- a battleship or  
21 a car, it's a simplification of reality. It has to be.  
22 You cannot model in everything that occurs in milk  
23 markets. They use big data and that -- there are certain  
24 things that the model doesn't know.

25 Let me give you an example. There's a pool  
26 distributing plant located in Southern Indiana. Right  
27 around that plant is a nice little pocket of milk. And if  
28 the -- you know, the model probably recognizes that that



1 milk exists, but -- and probably knowing how those models  
2 work, it probably would like to take that milk and move it  
3 south and pull milk from the heavier supply areas down  
4 into Holland. It's Holland, Indiana, kind of in the  
5 southwest corner of Indiana.

6 Well, what the model doesn't know is that those  
7 are small farms, they are members of a particular  
8 religious sect, and that milk just isn't practical to  
9 move. It supplies that plant nicely, but it just isn't  
10 available to move anywhere else. You -- it is -- they are  
11 very small, extremely expensive to pick up on a single  
12 route, to make a tanker load. The model doesn't  
13 understand that.

14 That's the kind of information that the people  
15 that worked on this understand and know and that the model  
16 would never know.

17 Q. So I don't want to go down that track today,  
18 because if I do, we won't get any progress. But we'll get  
19 back to Holland, Indiana another time.

20 Were you here -- but -- but on page 3 of  
21 Exhibit 310, you acknowledge that the original model runs  
22 included the same \$1.60 base Class I differential that we  
23 have in place today, correct?

24 A. Yes.

25 Q. And were you here yesterday when Mr. Miltner asked  
26 questions of Dr. Nicholson about Ada County, Idaho, or is  
27 it Ada County, Ada County, Idaho?

28 A. I was.



1 Q. Okay. And that \$1.60 was the result for the  
2 October run and \$1.70 for the May run, correct?

3 A. Yes.

4 Q. In other words, the model results indicated there  
5 was no reason to have any price associated with those  
6 areas to attract milk for fluid use, correct?

7 A. I don't know that that's what the model means or  
8 not.

9 Q. Did he not say that if you create another hundred  
10 pounds of milk, if you put another hundred pounds of milk,  
11 no one would want it at that location?

12 A. Yeah. But I don't believe that's a proper  
13 interpretation to say that the milk there has no value.

14 Q. I'm not saying it has no value, but it doesn't  
15 have any additional value for the purpose of Class I,  
16 correct?

17 A. Again, I'm not sure I would agree with that. But  
18 the model did generate -- would have generated zero cents  
19 absent the 1.60?

20 Q. Yes.

21 A. One of the months, the model number, the initial  
22 run would have been zero, and then the other month would  
23 have been 10.

24 Q. Correct.

25 A. Absent the 1.70.

26 Q. So the marginal value of another hundred pounds of  
27 milk at that location would be zero in October and \$0.10  
28 in May, correct?



1 A. I believe that may be the interpretation.

2 Q. In other words, the model results indicated that  
3 there was no reason to have a higher price associated with  
4 those areas to attract milk for fluid use, correct?

5 A. Oh, I don't believe that at all, that there's  
6 still a cost associated with delivering to Class I that  
7 must be recognized in the Class I price. Plus, there are  
8 other objectives of the Class I price which necessitates  
9 its inclusion. To say that the Class I milk there is  
10 worth nothing more than Class III I think is an improper  
11 application of the reality of the milk business. We have  
12 to have additional money on the Class I price to make it  
13 worth anybody's while. Otherwise, you never -- you would  
14 always opt to go to the easy places. Class III and  
15 Class IV are generally easier to serve than Class I, so  
16 without some additional money you are not going to do it.

17 Q. But nonetheless, the point of the model is to  
18 generate the marginal -- evidence of the marginal value  
19 for milk at a location, and that, along with I think a  
20 county in Montana, was the lowest value, correct?

21 A. I don't recall the county in Montana, I do  
22 remember Ada County being the low county, Ada County,  
23 Idaho.

24 Q. So what I'm struggling with --

25 A. I think -- I'm sorry.

26 Q. Go ahead.

27 A. I think it's both. I don't recall there being one  
28 in Montana, but if there is, there is.



1 Q. Okay.

2 A. But today there's 150 counties with \$1.60. And  
3 this -- this model returned either one or two counties  
4 with those low numbers. I think that is telling in  
5 itself.

6 Q. So what I'm struggling with a little bit is that  
7 you know, yesterday Dr. Vitaliano said that National Milk  
8 Producers Federation added \$0.60 across --

9 THE COURT: I'm sorry, you have got to be close to  
10 the mic. I know it is impossible to handle that big  
11 exhibit and be close to the mic, but you need to.

12 MR. ENGLISH: Thank you. Which one do you want to  
13 choose, the spreadsheet or the mic?

14 THE COURT: Thank you. That will help.

15 MR. ENGLISH: All right.

16 BY MR. ENGLISH:

17 Q. I -- and if I need to show you the spreadsheets to  
18 do this, I will, but if you will accept my representation  
19 for the moment. I was not thinking in the 25 minutes I  
20 had tonight to do that, but if we need to, I'm perfectly  
21 happy to show you. But --

22 A. Well, let's try and see what happens.

23 Q. Okay. This is Exhibit 301.

24 So you agree the base price today is \$1.60,  
25 correct?

26 A. First off, I prefer a designation other than base  
27 price.

28 Q. Okay.





1           A.     The minimum -- the point where the minimum Class I  
2 price over -- today, over I believe it's 150 counties or  
3 thereabouts, is \$1.60, yes.

4           Q.     And that minimum price, National Milk proposes to  
5 raise across the board to \$2.20, correct?

6           A.     Yes.

7           Q.     Okay. Which is \$0.60 higher than 1.60, correct?

8           A.     2.20 minus 1.60 is 60.

9           Q.     So if I represent to you that the Ada County value  
10 proposed by National Milk is actually \$2.55, which is  
11 \$0.95 more than \$1.60, can you explain how that happened?

12          A.     I cannot. Those Class I differentials were --  
13 were developed by the Western Regional Group. I have no  
14 specific knowledge -- I have no in-specific knowledge  
15 about how milk moves, how it's delivered, what the demands  
16 are in that corner of the world. Those questions are  
17 going to need to be answered by the folks that developed  
18 those differentials. And, again, this was a -- this was a  
19 project that was divvied up amongst the regions.

20          Q.     Was the adjustment from \$1.60 for the minimum  
21 price to \$2.20 made uniformly before National Milk  
22 Producers Federation made these county specific  
23 adjustments?

24          A.     Would you ask that question again? I think I  
25 missed something.

26          Q.     All right. Was the -- you made a decision to  
27 increase the minimum from \$1.60 to 2.20, correct?

28          A.     The minimum is 2.20.



1 Q. Okay. Was that minimum at 2.20 adjusted uniformly  
2 in your work before National Milk Producers Federation  
3 made the county specific adjustments?

4 A. Not necessarily. I believe I can speak -- I can  
5 speak for the Southeast/Southwest regional committee. The  
6 model run that we used as our skeleton was based on the  
7 \$1.60.

8 Q. Why was it not based upon 2.20?

9 A. The 2.20 was determined by that regional  
10 committee, but that was necessary -- I believe you will  
11 hear this answer -- that that was necessary for certain  
12 price alignment.

13 Q. But I thought you just said that it was raised  
14 from \$1.60 to 2.20. I'm hearing you now say it wasn't  
15 necessarily raised to 2.20, it was left to --

16 A. No, no, no, no. No. 2.20 is the minimum number,  
17 I agree. So all what I'm saying is that that 2.20 came  
18 about by price alignment work and the colored pencil work  
19 in that area. It just happens to work very well for  
20 several other things. It -- but the 2.20 was the result  
21 of that work. The rest -- for say the Southeast/  
22 Southwest, we were working off a model that started at a  
23 buck 60.

24 Q. I'm sorry, that makes no sense to me. I mean,  
25 you -- I think you just -- at least in my mind you said  
26 just the opposite.

27 Did you start at 2.20 in the Southeast or did you  
28 work off \$1.60 in the Southeast?



1 A. We worked -- the Southeast and Southwest, we  
2 worked off \$1.60.

3 Q. So that means it wasn't done uniformly, correct?

4 A. Well, there's -- I -- obviously it's not uniform  
5 because we have different Class I differential  
6 recommendations.

7 Q. But whether you call it a base or a minimum,  
8 shouldn't the minimum be the same?

9 A. Same as what?

10 Q. Okay. You have testified on -- that National  
11 Milk, and Dr. Vitaliano said, that you added \$0.60 across  
12 the board to raise the minimum price from \$1.60 to 2.20.

13 A. I think Mr. -- that the -- the "across the board,"  
14 I would not -- that's not a phrase I would have used.

15 Q. Is it true today, in the current system  
16 established by Federal Order reform, that there is a  
17 minimum of \$1.60 that was then added on to the price  
18 surface?

19 A. I believe that may be true.

20 Q. Okay. Is it true that that is not the case in  
21 National Milk Producers' results?

22 A. Some of the regions used the \$1.60. The \$0.60  
23 that went from \$1.60 to 2.20 was added as a result of the  
24 regional work.

25 Q. So on page 6 of Exhibit 310, the bottom -- I  
26 realize you didn't read this today -- but the last  
27 paragraph: "National Milk Producer Federation's Proposal  
28 Number 19 proposes Class I differentials starting at \$2.20



1 per hundredweight with differential increases radiating  
2 from there."

3 Is that your testimony that that's what happened?

4 A. I probably would state it a little bit  
5 differently. The -- the -- that does suggest something  
6 that may not necessarily be exactly the way the chronology  
7 worked.

8 But, in essence, if you -- you could make a case  
9 that they radiate out of there. Certainly every place out  
10 of there is greater than 2.20, so they radiate with  
11 increases from there. So if you just simply say instead  
12 of starting at a minimum of 2.20, then it's a factual  
13 statement.

14 Q. But I think you are saying that in the Southeast  
15 and Southwest you started at a minimum of \$1.60; is that  
16 correct?

17 A. Obviously not. We don't come anywhere near \$1.60  
18 in the Southeast/Southwest.

19 Q. No. I said you started with.

20 A. The model run we used had a \$1.60 at the low spot.

21 Q. I'm sorry.

22 A. That's a very big difference than started at.

23 Q. Okay. Did you, to the model run, add \$0.60 to get  
24 to 2.20 before you did any of your other modifications in  
25 the Southeast?

26 A. No.

27 Q. Did -- so yesterday in testimony, Dr. Vitaliano  
28 said --



1 A. Who? Excuse me?

2 Q. Dr. Vitaliano.

3 A. Okay.

4 Q. -- said in Exhibit 299, since 2000, those costs  
5 have risen far more than the limited increase in the base,  
6 which is where I got it, base Class I differential, from  
7 \$1.60 to \$2.20 as embedded in the NMPF proposal.

8 Is his statement incorrect?

9 A. Would you please read that to me? And I -- I  
10 wonder the context.

11 Q. The Class I differential base price now represents  
12 a modest nod to production costs at the producer level.  
13 Since 2000, those costs have risen far more than the  
14 limited increase in the base Class I differential from  
15 \$1.60 per hundredweight to \$2.20 per hundredweight, as  
16 embedded in the NMPF proposal.

17 A. I think "embedded" is a perfectly legitimate word.  
18 It's included in our proposal.

19 Q. If \$1.60 is, as I think you agree, the minimum or,  
20 as testimony yesterday said, a base was \$1.60, to which we  
21 then add the price surface, does the proposal today by  
22 National Milk start at 2.20 and add a price surface?

23 A. Since every spot is 2.20 or greater, then the  
24 answer is obviously yes. If 2.20 is the minimum, then  
25 every place outside of that is more than that.

26 Q. But you said that for the Southeast and the  
27 Southwest, you used the model run, which was \$1.60.

28 Did you then add \$0.60 to that before you did any



1 of the red pencilling?

2 A. No.

3 Q. How is that a uniform national price surface?  
4 Isn't that what it is today? The base is a uniform price.  
5 But you are telling me now that's not what you did.

6 A. Whoa, whoa, whoa. I didn't say that at all. I  
7 did not say that at all. Our proposal, the lowest -- the  
8 least per hundredweight differential is 2.20. Every place  
9 increases out of that. Therefore, we have a price surface  
10 which starts at 2.20 and emanates from there.

11 Q. But it emanates at different rates in different  
12 parts of the country regardless of Class I milk  
13 availability doesn't it, sir?

14 A. Please restate that.

15 Q. You are playing semantics, sir. You are talking  
16 about -- since the minimum is 2.20, you are claiming that  
17 therefore you must have somehow started there.

18 But the reality is, you have just said that for  
19 the Southeast and Southwest you started at \$1.60, and you  
20 didn't really add -- you said you didn't add \$0.60, right?

21 A. I said that the model run that we keyed off of had  
22 \$1.60 as the minimum number.

23 Q. So to the extent somebody somewhere in some part  
24 of the country may have adopted a higher base rate or  
25 minimum, in your words, from \$1.60 to 2.20, since you have  
26 testified about that, although not extensively today, can  
27 we go into all of what went into the increase from \$1.60  
28 to 2.20?



1 A. Yes.

2 Q. Okay. Thank you.

3 A. I mean, let me say it this way. The -- we are of  
4 the opinion that the -- well, we under- -- okay. Let me  
5 start this way.

6 We understand how the \$1.60 was derived in the  
7 order reform decision. You have to search hard between  
8 the proposed rule and the final rule to get the elements  
9 of the \$1.60. And we started an analysis of how do we  
10 mirror, for lack of a better term, the recipe which --  
11 which drove the \$1.60. So we began researching how  
12 much -- what's the Grade A/Grade B cost differential, for  
13 example. You will hear about that with great specificity  
14 with from another witness.

15 We also said, okay, what is the cost of balancing?  
16 And to be honest, that one's a hard number to come up with  
17 because every plant's different. Every region is  
18 different. Balancing a plant in Lafayette, Louisiana is  
19 probably a lot different than balancing one somewhere  
20 else.

21 So -- and then I think the third one is -- the  
22 third element is necessary to attract a supply or  
23 something like -- I think one of the decisions says maybe  
24 even uses the "give up." Well, we -- that's not a  
25 particularly easy number to come to either.

26 So basically we started looking and said, how is  
27 it that Class I differentials work, and what is it that  
28 they are supposed to do, and what is the objective?



1           And I think we get to a pretty easy answer,  
2 actually, that the way you incentivize milk to move to  
3 Class I is -- and it's not easy, but easy to explain -- if  
4 you want to move milk to Class I or if the order program  
5 wants to incentivize milk to move to Class I, the best way  
6 to do that is make sure the Class I price is the highest  
7 of all the classes.

8           And so the research we did on the Grade A/Grade B  
9 suggests a -- something around the \$2 cost for conversion  
10 from Grade A to -- or Grade B to Grade A. And our tests  
11 on price inversions support a 2.20. You just -- at \$2.20  
12 you get rid of almost all price inversions, other than the  
13 very worst anomaly months. So the 2.20 minimum  
14 differential provides a -- over a big chunk of the months,  
15 the vast majority of them, a preponderance of the months,  
16 the -- a Class I price in all places, which most months,  
17 many months, the vast majority of months, will exceed the  
18 other class prices. If you want to attract milk to  
19 Class I, make it the highest price.

20           I think we're confusing on the \$1.60 the recipe  
21 with the cake. We get hung up on 40 plus 60 plus 60 equal  
22 \$1.60. And the real question we need to be asking is not  
23 necessarily whether how much flour, how much butter, and  
24 how much sugar you have, it's does the \$1.60 work in its  
25 composite nature. Rather than trying to find a recipe, we  
26 go straight to the cake.

27           All right? Okay. But --

28           Q. Okay. Okay. I think let's -- at some point,





1 let's get to the specific questions.

2 A. The specific statement you asked, how we got to  
3 the 2.20, and I'm trying to explain that.

4 Q. And -- and -- but in your testimony, on  
5 Exhibit 310, you included the Grade A, and you included  
6 the price inversions --

7 THE COURT: The price what?

8 MR. ENGLISH: Price inversions issue. This is on  
9 page 5 of Exhibit 310.

10 BY MR. ENGLISH:

11 Q. So since you are now talking about the cake versus  
12 the recipe, I did not see anywhere in 310, and for that  
13 matter in any other -- the other 15 or 16 testimonies that  
14 we have coming, evidence other than general conversation  
15 that you actually added today, which I'm not complaining  
16 about, but I see that in 318, about balancing, as you  
17 yourself said, the cost of balancing.

18 Is National Milk intending to present a cost of  
19 balancing number for USDA, or are you thinking the cake is  
20 enough?

21 A. We believe that the 2.20 stands on its own, that  
22 it meets the objective of a Class I differential. The  
23 objective -- the -- again, if you want to incentivize milk  
24 to go to Class I, the best way to do that is make it the  
25 highest price class. And it's preventing -- I guess it's  
26 simple math, but if it's the highest price class, you have  
27 prevented a Class I price inversion.

28 So whether you look at it as -- as preventing or



1 limiting class price inversions or establishing a price  
2 necessary -- that creates the highest price, you get to  
3 the same answer. So I think we want to look at the  
4 objective.

5 The objective is to get milk to Class I. The way  
6 to do that is make sure the Class I price is the superior  
7 price, the vast, vast majority of the time, and the 2.20  
8 does that.

9 THE COURT: I hate to interrupt, but I must stop  
10 you. Will you be available for the remainder of  
11 cross-examination on what you have testified to today,  
12 tomorrow morning?

13 THE WITNESS: Yes, ma'am.

14 THE COURT: Okay. Let's do that.

15 Let's talk about what else is tomorrow. Now,  
16 tomorrow we have a little bit of a modified time table.  
17 We start at 8:00, and then -- is tomorrow the day we go to  
18 lunch early?

19 MS. TAYLOR: No, we're modifying that plan, too,  
20 Your Honor.

21 THE COURT: Oh, okay. Well, let's talk about the  
22 plan.

23 MS. TAYLOR: Yes. We will start at 8:00 a.m.  
24 tomorrow. I do expect one dairy farmer to be present to  
25 testify. If they are here at 8:00, I would maybe suggest  
26 we get them on at 8:00 first, so we can be sure that they  
27 get their time.

28 And then Mr. Sims can come back on to cross -- be



1 cross-examined.

2 If we finish Mr. Sims -- I said "if" -- we will --  
3 next on my list I think is Mr. Erba; is that correct?

4 THE WITNESS: I think Mr. Erba -- Dr. Erba is --

5 MS. TAYLOR: Dr. Erba.

6 THE WITNESS: -- is next on the list. I don't --  
7 I don't -- we have obviously had some shuffling of the --  
8 but I believe that's the plan at the moment. How's that?

9 MS. TAYLOR: That will be the plan.

10 And I don't think we have the plan beyond that,  
11 because we will break for lunch at noon.

12 We will then start at 1:00 with our virtual dairy  
13 farmer testimony. We have six farmers signed up to  
14 testify. I would ask that if -- if any of the counsels  
15 here have statements for their producers that are  
16 submitted and you are bringing copies, we can get those  
17 during the lunch hour so we can get that sorted out and  
18 make our 1:00 time a little more efficient. I will read  
19 the names in a second when I pull those up.

20 The other thing I wanted to request for tomorrow  
21 is that we kind of set our agenda for Monday maybe before  
22 we break for lunch, so that's kind of -- I would like to  
23 do that a little bit in advance tomorrow. I just wanted  
24 to give everybody a heads-up about that.

25 THE COURT: And then does our day end at  
26 3:00 p.m.?

27 MS. TAYLOR: Yes, ma'am. Our day ends at  
28 3:00 p.m.



1 THE COURT: And the names of the dairy farmers  
2 appearing remotely?

3 MS. TAYLOR: I have the list. I'm not sure this  
4 will be the order that they go in, but the list is: Dave  
5 Daniels from Wisconsin; Lauren Perkins from West Virginia;  
6 Johnny Painter from Pennsylvania; Marty Hallock from  
7 Wisconsin; George te Velde, I'm sure I pronounced that  
8 wrong, my apologies, from California; and Mark McAfee,  
9 also from California.

10 THE COURT: Excellent. It will be a good day.  
11 All right.

12 Is there anything else before we conclude for  
13 today?

14 I see no one suggesting that -- so we go off  
15 record at 5:01 p.m. See you tomorrow morning at 8:00.

16 (Whereupon, the proceedings concluded.)

17 ---o0o---

18

19

20

21

22

23

24

25

26

27

28



1 STATE OF CALIFORNIA )  
 ) SS  
 2 COUNTY OF FRESNO )

3

4 I, MYRA A. PISH, Certified Shorthand Reporter, do  
 5 hereby certify that the foregoing pages comprise a full,  
 6 true and correct transcript of my shorthand notes, and a  
 7 full, true and correct statement of the proceedings held  
 8 at the time and place heretofore stated.

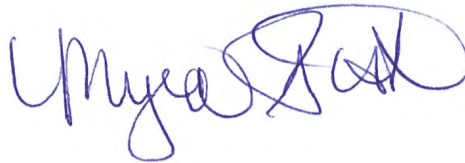
9

10 DATED: December 3, 2023

11 FRESNO, CALIFORNIA

12

13



14

15

16 MYRA A. PISH, RPR CSR  
 17 Certificate No. 11613

18

19

20

21

22

23

24

25

26

27

28



<u>\$</u>	<b>\$2,610</b> 7089:10	<b>\$880</b> 7089:1	7200:15
<b>\$0.10</b> 7286:27	<b>\$2.20</b> 7267:6,20 7268:2,3,6, 13 7289:5,21 7291:28 7293:7,15 7296:11	<b>\$9.83</b> 7074:24 7075:2,5 7081:6	<b>10,000</b> 7070:24
<b>\$0.35</b> 7079:23	<b>\$2.50</b> 7097:26	<b>\$900</b> 7222:1	<b>10.29</b> 7116:2
<b>\$0.39</b> 7273:22	<b>\$2.55</b> 7289:10	<b>\$980</b> 7089:8	<b>100</b> 7084:4,7
<b>\$0.41</b> 7271:2	<b>\$2.63</b> 7274:2	-	<b>100%</b> 7155:19
<b>\$0.50</b> 7071:24,28 7095:20 7096:25,28 7098:11,22 7099:2,20,21 7100:23 7121:27	<b>\$200</b> 7215:17	---	<b>1035</b> 7212:21
<b>\$0.60</b> 7271:15 7288:8 7289:7 7291:11,22 7292:23 7293:28 7294:20	<b>\$201,811</b> 7222:19	<b>0</b>	<b>108,000</b> 7224:3
<b>\$0.70</b> 7267:26	<b>\$21.81</b> 7218:19	<b>0.2</b> 7177:14 7201:8	<b>10:22</b> 7133:25
<b>\$0.95</b> 7289:11	<b>\$25.52</b> 7218:20	<b>0.2%</b> 7163:16 7176:5 7200:28	<b>10:36</b> 7142:3
<b>\$1</b> 7083:18 7085:21,27 7086:5,21,22,24 7095:15 7096:24 7097:10 7100:23, 27,28	<b>\$3</b> 7117:19	<b>0.25</b> 7140:11 7163:25,27 7164:5	<b>10:37</b> 7142:5
<b>\$1,340</b> 7089:26	<b>\$3,150</b> 7089:21	<b>0.25%</b> 7167:20 7176:7	<b>10:54</b> 7151:17
<b>\$1,700</b> 7089:9	<b>\$3.22</b> 7271:17	<b>0.3</b> 7162:14	<b>11</b> 7079:6 7219:19
<b>\$1.00</b> 7121:26,27	<b>\$3.23</b> 7275:5	<b>0.3%</b> 7140:11 7164:5	<b>11:00</b> 7151:9
<b>\$1.34</b> 7078:11	<b>\$3.65</b> 7117:15,24	<b>0.5</b> 7140:21	<b>11:05</b> 7151:15,16,20
<b>\$1.45</b> 7072:15	<b>\$3.89</b> 7274:7	<b>0.6</b> 7201:8	<b>11:47</b> 7174:14
<b>\$1.46</b> 7271:10	<b>\$30.72</b> 7218:12	<b>0.6%</b> 7139:18 7140:21 7167:20 7200:28	<b>11:48</b> 7174:18
<b>\$1.60</b> 7267:4,19 7268:2,5,12 7285:22 7286:1 7288:2,24 7289:3,11,20,27 7290:7,14, 28 7291:2,12,17,22,23 7292:15,17,20 7293:7,15,19, 20,27 7294:19,22,25,27 7295:6,9,11 7296:20,22,24	<b>\$300</b> 7221:21	<b>0025</b> 7163:27	<b>11:59</b> 7181:22,23
<b>\$1.70</b> 7286:2	<b>\$35.10</b> 7218:5	<b>06</b> 7206:22	<b>12</b> 7222:28 7250:15
<b>\$1.97</b> 7275:3	<b>\$4</b> 7127:15 7271:7	<b>07</b> 7074:16 7078:10 7206:22	<b>12%</b> 7224:18 7268:25
<b>\$10</b> 7069:28	<b>\$4,520</b> 7089:26	1	<b>12,000-gallon</b> 7214:11
<b>\$10.20</b> 7074:16	<b>\$4,550</b> 7089:27	<b>1</b> 7073:21,23 7076:3 7077:15,27,28 7078:1,6,8 7092:3,11 7214:7 7216:12 7218:26 7219:5 7221:7,8 7223:18 7231:28 7232:12 7233:6 7277:8 7280:25 7282:26 7283:9,13	<b>12-month</b> 7250:23
<b>\$10.29</b> 7081:2	<b>\$4.81</b> 7271:25	<b>1.0</b> 7146:25	<b>124</b> 7277:18
<b>\$11.28</b> 7271:16	<b>\$475</b> 7221:21	<b>1.0%</b> 7162:14	<b>126</b> 7277:15
<b>\$14.50</b> 7271:3	<b>\$5.66</b> 7074:21	<b>1.20</b> 7146:21,27	<b>12:25</b> 7174:27
<b>\$15.02</b> 7074:21	<b>\$6</b> 7070:7 7080:27 7082:21 7086:14 7271:14	<b>1.25</b> 7146:27	<b>13</b> 7084:25 7108:17
<b>\$15.29</b> 7074:25 7075:6	<b>\$6,000</b> 7088:28 7089:7	<b>1.50</b> 7113:24	<b>13.04</b> 7271:9
<b>\$15.64</b> 7074:20	<b>\$6,710</b> 7089:21	<b>1.60</b> 7286:19 7289:7,8	<b>13.45</b> 7274:6
<b>\$17.85</b> 7272:22	<b>\$6.21</b> 7075:6	<b>1.70</b> 7286:25	<b>131</b> 7277:19
<b>\$1700</b> 7089:2	<b>\$6.57</b> 7271:27	<b>10</b> 7286:23	<b>14.71</b> 7274:2 7275:2
<b>\$193,322</b> 7222:17	<b>\$6.61</b> 7074:24	<b>10%</b> 7105:1 7137:7 7139:23 7158:20,21,23 7163:6,13	<b>14.91</b> 7271:2
<b>\$2</b> 7071:14 7076:6 7078:8 7100:28 7121:27 7296:9	<b>\$6.68</b> 7074:19		<b>15</b> 7109:16 7206:25 7297:13
	<b>\$7</b> 7082:21 7084:27 7086:22		<b>150</b> 7288:2 7289:2
	<b>\$70.50</b> 7079:22		<b>1500</b> 7156:2
	<b>\$8</b> 7080:27 7081:2 7082:22 7085:19,22		<b>15th</b> 7221:15
	<b>\$8,500</b> 7222:20		<b>16</b> 7173:19 7297:13
	<b>\$8.90</b> 7074:17		<b>16.68</b> 7275:2
	<b>\$800</b> 7070:9		<b>17</b> 7214:17
			<b>17-year</b> 7218:26
			<b>17.25</b> 7271:8
			<b>17.34</b> 7273:25
			<b>17.73</b> 7273:23



17.85 7271:15 7272:28	7293:4,13	25 7144:13 7207:13,22,24,27 7248:4,5 7288:19	307 7134:13 7135:13 7150:22,27 7151:4 7182:5 7187:27 7190:25 7208:15, 23,24,26
18 7135:22 7149:2 7154:11 7191:20 7222:28	2003 7094:17 7159:4	25,922 7104:27	308 7174:9,19,22,25 7193:10 7209:2,4,11,24 7210:28 7211:1
18.03 7274:2	2004 7084:24	2500 7156:2,6	309 7211:18,19 7212:24 7239:10,12,14
180 7216:22	2005 7248:25	26,000 7071:6	310 7241:9,16,17 7281:8 7282:26 7283:4,7,15 7285:21 7291:25 7297:5,9, 12
185 7147:18	2006 7077:1,2 7079:27 7084:24 7108:8 7193:4 7214:4 7217:10 7221:21 7223:26 7235:8 7236:25	266 7065:2	311 7241:19,20 7265:5,7 7266:24,25 7268:16,17 7281:17
19 7228:26 7229:1 7246:21 7267:6 7277:27 7291:28	2007 7077:2 7079:21,23 7080:1 7081:3 7084:24 7154:26 7173:5 7189:24 7193:5	27 7269:9	312 7241:22,23 7282:15,18, 19,28 7283:1
191% 7223:26	2008 7248:1	27,000 7216:19	313 7241:25,26 7282:23,24 7283:3
194 7217:11 7236:25	2009 7084:25	28% 7268:28	314 7242:1,2 7270:9 7281:27 7283:5
1984 7136:19 7156:25	2010 7070:25 7080:3 7220:16 7222:7	282 7267:18	315 7242:4,5
1985 7154:12,13 7159:4	2011 7107:18	29 7062:8 7281:2	316 7242:7,8 7283:12,14
1989 7068:18,23	2012 7107:18	29% 7268:13	317 7242:10,11 7283:15
1990s 7119:13,23	2013 7107:18	299 7293:4	318 7242:13,16 7243:13,28 7249:10 7265:12 7269:9 7273:4 7274:21 7281:26 7297:16
1996 7213:11 7245:16	2014 7084:26	2:19 7228:2	319 7241:10 7242:19,20
1998 7068:22,25 7248:3	2015 7084:26	2:30 7228:1	32 7277:14
1999 7071:6	2016 7175:15	2:32 7228:5	32,000 7216:23
1:00 7062:28 7181:21 7182:2 7299:12,18	2017 7175:6,14 7210:10 7245:24	2:51 7240:8	33 7269:28 7277:8
1:49 7211:23	2018 7250:8 7272:4 7273:15	<hr/> <b>3</b> <hr/>	33,000 7216:15
1:50 7211:26	2019 7250:8	3 7070:24 7078:23 7079:24 7080:6 7101:22,24 7104:9 7108:6 7161:26 7187:27 7194:11 7199:4 7218:5,6 7220:3 7233:6 7235:17 7280:15 7282:25 7283:10,15 7285:20	34 7272:19 7281:26
1st 7154:13	2020 7071:7	3% 7268:6,11	34% 7140:24
<hr/> <b>2</b> <hr/>	2021 7229:19,25,27 7230:24	3- 7269:21	35 7272:8,11,18,27 7273:5
2 7070:27 7077:26 7078:4 7097:2 7100:21 7158:17 7214:13,14 7218:26 7219:5 7223:18,24 7225:6 7232:12 7233:6 7280:25 7283:10	2022 7070:27 7071:8 7074:16 7079:21,23 7104:25 7107:23 7111:25,27 7112:4 7216:18,22 7218:18 7230:23 7250:9	3.2 7107:19	35% 7268:20,23
2% 7267:21 7268:12	2023 7062:1,4,7,8 7070:22 7088:27 7089:5 7108:27 7117:12 7182:1 7214:4 7216:13 7221:22 7222:16 7223:26 7229:19,28 7235:9 7267:18 7270:20 7271:20 7272:4 7273:15,18	3.50 7080:6	36 7272:9,10 7273:13
2.20 7289:8,27,28 7290:1,8, 9,14,15,16,17,20,27 7291:12,23 7292:10,12,24 7293:22,23,24 7294:8,10,16, 25,28 7296:11,13 7297:3,21 7298:7	21,000 7071:5	30 7147:19 7236:4 7237:25 7277:13	37 7274:19
20 7070:14 7109:16 7119:11, 26 7135:18 7154:9 7173:24 7191:20 7213:24 7229:22 7234:17 7235:13 7236:4	217 7097:18	30- 7182:5	37A 7266:21
20- 7236:24 7248:24	22 7062:7 7078:11 7081:3 7084:26 7222:16	30-day 7222:18	37B 7282:19
20-some-odd 7266:26	23,117 7104:27	300 7212:21 7241:7 7282:5	38 7191:19
200 7136:3 7216:14,18 7217:2	24 7265:14 7280:16,25,26	300-mile 7214:5,12	3:00 7299:26,28
200,000 7070:23	24% 7268:24	301 7097:14 7101:10 7288:23	3:01 7240:7
2000 7070:21,26 7071:2 7076:22 7214:3 7247:26 7248:2 7266:14 7267:18	24-hour-a-day 7207:21	304 7067:26 7068:6,7,10 7101:26 7108:5 7130:14,16, 17,19	3:02 7240:11
	24/7 7184:22 7226:26	305 7106:1,3,14,24,25 7108:15 7130:23 7131:1,9, 13 7133:11,15	3:06 7243:3
	24/7/365 7207:17	306 7134:12,17 7135:13 7154:4 7156:10 7182:5 7197:8 7208:15,17,18,20	



3:07 7243:6	500-pound 7203:24	813 7241:7	AA 7150:7
3:53 7269:23	500s 7203:11,23 7205:14,24	82.8% 7136:27	abandoned 7146:9
4	51 7151:4 7249:28 7250:8,11 7277:18 7280:16	85,000 7070:22	abide 7219:14
4 7079:11 7097:16 7115:24 7189:6 7190:25 7199:4 7218:22 7220:3 7235:17 7237:1,2	565 7217:14	85.2 7136:27	abilities 7208:9
4.50 7080:7	5:01 7300:15	86.3 7136:27	ability 7085:11
40 7081:7 7082:3 7137:2 7203:12 7278:28 7279:1 7296:21	6	87.2 7136:27	absent 7263:22 7286:19,25
40% 7070:4 7145:26	6 7084:15,27 7086:2,7 7089:3 7092:17 7172:17 7176:20 7231:24,25 7247:28 7277:15 7291:25	88 7144:21 7172:12 7217:11 7236:26	absolute 7087:4 7236:9
40-pound 7139:8 7185:27 7186:3 7202:3 7203:28	6% 7137:11 7268:4	89 7068:24	absolutely 7065:25 7068:2 7233:26 7235:6 7238:19 7272:24,27 7273:1
400 7271:6	6,200-gallon 7214:6 7223:7	8:00 7062:3 7298:17,23,25, 26 7300:15	absorb 7091:22
40s 7203:11 7205:14,24	6.47 7271:26	8:31 7079:1	academic 7065:13
41 7278:17	60 7081:7 7289:8 7290:23 7296:21	8th 7241:7	academics 7066:2
42 7278:22	60% 7070:1 7081:8 7082:3 7145:26	9	accelerate 7216:7
43 7278:13,22	601 7217:14	9 7079:5 7137:7 7158:20,21, 23	accept 7067:7,12 7220:1 7246:11 7255:25 7288:18
44 7277:6 7278:17	635 7271:13,28	9.83 7116:7	acceptable 7083:10
44256 7212:22	64 7269:28 7272:10 7277:6 7278:13	90 7144:20 7171:21 7207:26	acceptance 7222:18 7225:22
45 7270:15	640 7203:14,16,28	90% 7163:12 7173:14 7186:18 7187:2,6 7193:7 7200:15	accepted 7246:5 7279:2
48 7247:25 7270:15,28	640-pound 7139:10 7141:7	91 7144:19 7171:18 7175:23	accepting 7067:10 7246:7
4:0- 7269:21	640s 7141:8 7203:10,11 7205:14,23 7206:4	91% 7144:21 7172:12 7173:2 7193:14 7197:12,17 7210:17	access 7120:10 7284:14
4:05 7269:22	69% 7214:12	92% 7144:20 7171:21 7175:21 7193:12,17 7195:2 7207:26 7210:17	accessories 7222:7
4:07 7269:26	7	93 7148:12	accidents 7224:22 7225:10
4:29 7279:17	7 7085:22 7145:6 7171:16 7247:28 7277:15	93% 7136:16,23 7144:19 7156:15,22 7157:6 7171:18 7179:20 7198:21	accord 7210:25
5	7% 7137:9 7159:2	94% 7148:12	account 7139:1,20 7144:16 7162:19 7229:14
5 7062:1,3 7082:13,14,18 7142:7 7167:24 7168:7 7182:1 7203:9 7206:4 7220:25 7225:7 7231:23 7232:1,3,13 7247:28 7277:15,18 7297:9	70% 7214:7 7217:16	95% 7139:13	Accountability 7224:27
5% 7137:12 7139:11 7142:23 7159:10,22 7168:22 7267:19	72% 7269:2	99% 7141:19,23,27 7142:7, 14	accountant 7234:15
5,000 7156:1,3,6	76301 7241:7	9:30 7111:12	accounted 7139:25 7201:11
5.3 7107:23	8	9:31 7111:13,15	accounting 7226:1
5.5 7070:28	8 7079:4 7092:26 7093:6 7154:26	9:41 7111:14	accounts 7139:23 7163:4,6
5.50 7080:7	8,000-gallon 7223:7	9:43 7111:18	accumulate 7083:28
5.66 7074:21	80% 7186:21,27 7187:7 7190:17	A	accumulating 7084:18 7086:16
50 7096:23 7215:17	80523 7065:3	a.m. 7062:3 7142:3 7181:22, 23 7298:23	accumulation 7084:3
50% 7144:13	80s 7160:17	A/grade 7295:12 7296:8	accurate 7084:13 7101:13 7133:9 7164:22 7167:22 7187:1 7192:2,26 7196:15 7203:5 7208:1
			achieve 7085:6 7141:19,23, 27 7142:14 7144:5 7156:22 7163:16 7170:6 7176:4 7198:5
			achieved 7072:21 7076:27





<b>achieving</b> 7207:26	<b>adjust</b> 7260:12	<b>affects</b> 7170:26 7199:15	<b>Alabama</b> 7245:1 7269:15
<b>acid</b> 7147:13 7170:25	<b>adjusted</b> 7168:15 7290:1	<b>afford</b> 7225:4	<b>Albeit</b> 7075:17
<b>acid-producing</b> 7147:12	<b>adjustment</b> 7097:1 7289:20	<b>afternoon</b> 7182:1 7191:4 7197:3,4 7212:18 7228:13, 14 7232:28 7233:1 7241:3 7242:15 7246:18 7280:3,4	<b>alfalfa</b> 7073:2,11,20,27 7076:16,19 7078:15,23 7079:22 7112:26 7113:9,10, 16,17,19 7114:20 7116:13, 17
<b>acknowledge</b> 7274:9 7285:21	<b>adjustments</b> 7071:26 7072:3 7091:22 7101:8 7222:24 7283:27 7284:5,16 7289:23 7290:3	<b>ag</b> 7088:23 7113:6	<b>align</b> 7247:18 7278:5
<b>acquaint</b> 7249:4	<b>administered</b> 7219:15	<b>age</b> 7149:1 7188:3 7224:23 7279:1	<b>alignment</b> 7178:19 7217:7 7247:21 7278:7 7290:12,18
<b>acquire</b> 7131:26	<b>administration</b> 7219:16 7220:23,27 7231:28 7232:2 7245:15 7246:1,14,15	<b>aged</b> 7136:1 7140:9 7148:26 7149:3 7150:1 7154:16 7164:4,19,24 7165:1,14 7184:2 7187:28 7188:4,9,10, 11,16,17 7189:4 7205:5,11	<b>all-milk</b> 7117:2,5,6,21
<b>acre</b> 7088:28 7089:1,2,7,8,9, 11,21,22,26,27	<b>Administration's</b> 7224:26	<b>agencies</b> 7245:18,21	<b>Allowance</b> 7071:24 7072:17 7095:21,28 7096:2,3,4,6,9, 11,13,21,26 7099:21 7100:19 7103:12
<b>acronym</b> 7219:15,17	<b>administrative</b> 7063:5 7225:27 7228:21	<b>agency</b> 7072:28 7220:20 7245:20 7249:3	<b>Allowances</b> 7072:13 7099:16 7101:16 7102:6 7110:19 7121:21 7165:2 7192:4 7275:13,16,20,28
<b>Act</b> 7247:7 7249:2	<b>Administrator</b> 7245:11,14	<b>agenda</b> 7299:21	<b>alternative</b> 7082:28 7083:27 7257:18
<b>activities</b> 7224:25 7249:17	<b>Administrator's</b> 7245:7,13, 16	<b>aggressive</b> 7170:28	<b>alternatives</b> 7091:10
<b>actual</b> 7115:14 7144:25 7162:21 7169:12 7194:4 7216:9 7219:12 7222:24	<b>admissible</b> 7131:16	<b>aggressively</b> 7081:28 7105:7	<b>Alto</b> 7135:21,25,27 7136:3 7137:8,10 7140:18 7146:8, 12 7149:2 7153:27 7154:2,4, 11,12,14,17,18,20 7155:2 7159:1,6,7 7173:24,28 7207:16
<b>Ada</b> 7285:26,27 7287:22 7289:9	<b>admission</b> 7130:16 7131:8 7208:17,23 7209:2,4,24 7239:10	<b>aging</b> 7226:19	<b>Amarillo</b> 7270:15,16,23 7271:1,4,12,23,26 7272:13 7273:22,24 7274:3,11,14 7275:2
<b>Adams</b> 7097:25	<b>admit</b> 7130:13 7131:2 7133:4,10 7210:13 7255:18 7266:2	<b>agitation</b> 7170:25 7176:4	<b>America</b> 7071:27 7094:19 7110:8 7213:3,23 7230:27 7231:6
<b>adapt</b> 7091:21	<b>admitted</b> 7130:17 7208:18, 24 7210:24,28 7239:13	<b>agitators</b> 7140:17 7165:7 7166:8	<b>American</b> 7196:6
<b>add</b> 7141:21 7170:21 7187:21 7199:8,15 7201:19 7209:18 7210:20 7259:20,21 7267:13 7292:23 7293:21, 22,28 7294:20	<b>adopt</b> 7118:27 7120:22 7179:1	<b>agree</b> 7092:20 7161:15 7163:15 7172:3,5 7190:7 7193:21 7286:17 7288:24 7290:17 7293:19	<b>amount</b> 7086:14 7138:26 7140:25 7162:1,9 7163:28 7169:13 7183:7 7217:3 7250:24 7251:2
<b>add-</b> 7257:20	<b>adopted</b> 7086:27 7120:14 7294:24	<b>agreed</b> 7180:16 7205:19 7272:1	<b>amounts</b> 7082:21 7084:14 7225:1
<b>added</b> 7109:25 7143:23,28 7147:5 7186:25,28 7215:11, 18 7220:17 7222:6 7223:22 7226:24,25 7288:8 7291:11, 17,23 7297:15	<b>adoption</b> 7219:26	<b>agreement</b> 7181:16 7247:7 7279:10	<b>AMS</b> 7071:10 7074:1 7105:17 7130:10 7131:15 7208:10 7234:6 7237:10
<b>adding</b> 7082:20 7140:4 7146:15 7147:8 7192:12 7204:2,11 7205:10	<b>adopts</b> 7262:5	<b>agri-</b> 7067:13	<b>analogy</b> 7269:16
<b>addition</b> 7113:19 7122:20 7139:13 7143:15 7219:12 7220:2 7222:23	<b>ADP</b> 7248:19	<b>agricultural</b> 7065:2,9,15,16, 19 7066:3,28 7067:3,14 7068:16 7069:13,27 7088:7 7112:4 7124:10 7125:2,5 7180:10 7196:24,26 7213:6 7232:22,24 7245:3,8,27 7246:12 7247:6	<b>analogy</b> 7248:18
<b>additional</b> 7100:5 7139:23 7140:27 7156:27 7247:3 7249:22 7284:15 7286:15 7287:12,16	<b>advance</b> 7299:23	<b>agriculture</b> 7069:9 7071:2 7087:12,16,27 7088:3,5,10, 17,18,21 7090:28 7091:3,4, 6,9,11,16,18 7108:3 7111:25,27 7123:16 7229:13 7254:13 7264:11,13	<b>analysis</b> 7112:19 7119:17 7120:6 7178:7 7244:9 7270:10 7295:9
<b>Additionally</b> 7132:5 7175:20	<b>advanced</b> 7136:20 7227:10	<b>ahead</b> 7081:20 7195:7 7205:19 7265:17 7274:9 7287:26	<b>analyst</b> 7213:22
<b>additive</b> 7220:19	<b>advantage</b> 7072:22 7076:28 7108:6 7266:3	<b>aim</b> 7191:13	<b>analytical</b> 7236:19
<b>address</b> 7064:27 7137:17 7212:19 7241:4	<b>advantageous</b> 7087:12		
<b>addresses</b> 7111:5	<b>advent</b> 7136:20		
<b>addressing</b> 7136:9	<b>advisable</b> 7190:1		
<b>adds</b> 7219:25 7262:8	<b>advise</b> 7149:8,15 7161:1 7167:4,6 7188:24		
<b>adequate</b> 7254:9 7257:13,19 7258:12 7276:3	<b>advising</b> 7161:1 7167:1		
	<b>advocate</b> 7229:12		
	<b>advocating</b> 7096:8		
	<b>affect</b> 7143:8 7170:24 7224:28		



<b>analyze</b> 7201:22 7203:2 7244:23	7146:25 7147:19 7154:25,26 7163:6 7164:5	<b>Association</b> 7069:19 7093:16 7111:21	7272:5 7273:13,14,19,22,28 7274:1
<b>anatomy</b> 7277:25	<b>April</b> 7222:16	<b>assortment</b> 7138:5	<b>averages</b> 7117:15
<b>anchor</b> 7278:11 7279:5,13	<b>apt</b> 7155:7,21,25 7259:19	<b>assume</b> 7063:24 7097:4 7099:14,26 7100:13 7102:4 7108:22 7123:24 7131:1 7157:1 7184:25 7185:6 7186:18	<b>avoid</b> 7089:25
<b>and/or</b> 7222:7	<b>aquifers</b> 7087:21	<b>assumed</b> 7083:17 7084:14, 16 7176:17	<b>avoided</b> 7278:6
<b>anecdotal</b> 7137:11 7159:9 7167:25	<b>area</b> 7066:7,16 7090:19 7113:15 7114:11 7127:24 7129:10,18 7168:17 7204:5, 8 7213:27 7214:4 7217:8,13, 20 7218:4 7225:4 7227:18 7238:28 7245:15 7259:1,12 7277:20 7290:19	<b>assuming</b> 7113:17	<b>awaiting</b> 7251:23
<b>animal</b> 7071:7 7073:9,15 7076:23 7077:3,11 7079:17, 19 7085:11 7090:25 7091:4, 17 7094:19,26 7095:5 7104:11 7128:9 7129:3 7204:1	<b>areas</b> 7090:14,16,20 7213:10 7217:27 7218:14 7219:8 7227:13 7245:21 7247:12 7265:22 7285:3 7286:6 7287:4	<b>assumption</b> 7198:21,22	<b>aware</b> 7062:22 7095:13,27 7108:25,26,28 7112:21,23 7113:1,4 7120:5 7154:21 7160:27 7165:1 7209:11
<b>animals</b> 7070:22,23,24 7085:11 7091:4	<b>arguably</b> 7095:14	<b>assumptions</b> 7118:21 7120:13 7124:18	<b>awkward</b> 7064:20
<b>announced</b> 7249:2 7266:19	<b>argue</b> 7099:1	<b>assure</b> 7227:6	<b>Ayahuasca</b> 7218:10
<b>announcement</b> 7261:5	<b>arise</b> 7190:8	<b>assured</b> 7062:22	<b>B</b>
<b>annual</b> 7070:23,26,27 7071:5 7104:23	<b>arrange</b> 7125:17	<b>astute</b> 7230:11	<b>baby</b> 7192:22,28
<b>annually</b> 7069:28 7070:9 7087:23	<b>arrival</b> 7136:10	<b>Atlanta</b> 7245:8	<b>bachelor</b> 7213:4
<b>anomaly</b> 7272:1 7296:13	<b>arrive</b> 7222:19	<b>Atlantic</b> 7277:8	<b>Bachelor's</b> 7245:2
<b>answering</b> 7256:1	<b>arrives</b> 7255:7	<b>attempt</b> 7147:2,3	<b>back</b> 7062:2,3,12 7075:1 7078:28 7079:1 7082:3 7087:8 7098:21 7111:13,14, 17,18 7121:17 7123:21 7124:17 7126:7 7129:27 7133:25 7140:4,5,12 7142:5 7143:28 7146:6,8 7147:3 7148:1 7151:15,16,19,20 7153:28 7157:20 7164:6 7172:16 7173:15 7174:16,18 7181:15,20 7182:2 7183:1, 21 7185:12 7186:25 7187:21 7188:9 7190:19 7193:4 7199:19,23 7200:10 7202:20 7204:3,12,13,24 7205:10 7206:22 7211:25,26 7222:17 7223:17 7227:28 7228:4,5, 21 7239:24 7240:7,10,11 7242:24 7243:5,6,20 7252:6 7253:16,17,19 7254:1,3 7255:4 7258:8 7263:8 7266:10,14 7269:21,25,26 7272:11 7278:18 7280:8 7282:1 7285:19 7298:28
<b>answers</b> 7167:18	<b>art</b> 7276:10,15	<b>attention</b> 7100:26 7124:23	<b>back-and-forth</b> 7173:22
<b>anybody's</b> 7287:13	<b>article</b> 7095:1,8,10,11,24 7145:10 7174:25 7175:5,14, 27 7177:9 7193:10,15 7194:18 7200:24,27,28 7201:6 7202:17 7209:11,14 7210:10	<b>attorney</b> 7184:17	<b>background</b> 7065:5,7 7098:10 7100:3 7145:20 7151:28
<b>anymore</b> 7140:6 7236:5 7237:15 7252:9 7256:2	<b>articles</b> 7093:18	<b>attract</b> 7129:27 7286:6 7287:4 7295:22 7296:18	<b>backlog</b> 7075:4
<b>apologies</b> 7068:27 7078:20 7081:21 7125:16 7300:8	<b>articulate</b> 7115:4	<b>attribute</b> 7095:20	<b>backlog</b> 7222:26
<b>apologize</b> 7194:28 7196:5 7206:8 7230:9	<b>articulated</b> 7132:4	<b>Auburn</b> 7245:2	<b>backyard</b> 7252:26
<b>apparently</b> 7062:16 7100:14 7170:19 7238:9	<b>artificial</b> 7158:6	<b>audience</b> 7065:22 7243:17	<b>bacterial</b> 7140:7 7147:11
<b>appealing</b> 7220:5	<b>artisan</b> 7138:2 7161:20,22	<b>audit</b> 7261:15	<b>bacteriophage</b> 7147:10,17 7149:20 7187:13,16
<b>appearing</b> 7178:3 7300:2	<b>assemble</b> 7215:3,8,21 7216:14,18,23 7223:7	<b>audits</b> 7261:25	<b>bad</b> 7187:16 7192:9 7246:23 7252:3 7266:4
<b>appears</b> 7251:21	<b>assembly</b> 7214:25 7215:12, 19 7219:25	<b>August</b> 7252:6 7255:4	
<b>Appendix</b> 7282:22	<b>asserted</b> 7210:5,13	<b>Aurora</b> 7120:4,5	
<b>application</b> 7287:11	<b>assets</b> 7129:25,27	<b>author</b> 7193:11	
<b>applications</b> 7150:12,16	<b>assigned</b> 7063:20	<b>authored</b> 7193:15	
<b>applied</b> 7139:8 7221:9	<b>assist</b> 7192:16	<b>automated</b> 7141:4 7248:19	
<b>applying</b> 7196:17 7276:18	<b>assistance</b> 7123:17	<b>AV</b> 7281:10	
<b>appreciative</b> 7063:2	<b>Assistant</b> 7245:14	<b>av-</b> 7115:28	
<b>approach</b> 7138:18 7144:10	<b>associate</b> 7213:4 7245:10	<b>availability</b> 7076:16 7087:26 7088:15 7090:6,7,10,17,24, 25 7222:11 7294:13	
<b>approx-</b> 7154:24		<b>average</b> 7074:17,22 7075:5 7078:10 7079:21,22 7080:5, 7,28 7081:1 7097:23 7113:25 7114:23 7115:1,11, 19 7116:1,9,12 7117:3,17,18 7118:1,6,7 7139:18 7158:21, 24 7172:28 7173:19 7175:20 7206:27 7218:5,11,19 7249:1 7250:6,7,12,16	
<b>approximately</b> 7069:27 7070:1 7071:28 7100:27 7139:19,23 7140:11,22			



<b>bag</b> 7203:27	7125:5 7151:6,11 7182:19 7240:14,15	<b>bit</b> 7065:5 7078:1 7083:26 7087:9 7110:18,19,24 7111:3 7113:9 7118:3 7121:24 7129:9,17 7131:14 7134:20 7151:27 7182:23 7192:21 7198:13 7203:18 7227:27 7231:1 7233:12 7249:11 7257:12 7258:8 7272:1 7273:9,16,27 7276:22 7277:10 7279:13 7280:20,26 7288:6 7292:4 7298:16 7299:23	<b>brand</b> 7155:18 7198:4
<b>balance</b> 7198:27 7226:11 7237:14 7249:15 7252:4,9	<b>beginning</b> 7062:28 7155:20 7253:3 7280:6	<b>Black</b> 7136:2 7188:16	<b>breadth</b> 7195:14
<b>balancing</b> 7247:16 7249:11, 17,21,23 7295:15,18,19 7297:16,17,19	<b>begins</b> 7089:5 7240:2 7280:16	<b>blame</b> 7238:6	<b>break</b> 7088:24 7111:15,16 7115:3 7144:2 7148:3,5 7151:10 7180:12,13 7181:15,24 7182:24 7183:17 7187:14 7227:23,27 7228:3 7240:9 7269:24 7299:11,22
<b>bankers</b> 7126:18	<b>behalf</b> 7132:3 7178:3 7210:22 7246:19	<b>blaming</b> 7253:21	<b>breakage</b> 7141:15 7168:10
<b>bar</b> 7107:9 7108:15 7131:17 7132:19	<b>behave</b> 7094:13	<b>blank</b> 7276:24	<b>breakdown</b> 7187:14
<b>Barbano</b> 7136:18,24 7145:4 7157:4 7158:11	<b>behaving</b> 7063:15	<b>Blaschek</b> 7139:15 7145:9	<b>breaking</b> 7182:21
<b>Barbano's</b> 7156:23	<b>behavior</b> 7123:28 7254:1	<b>blend</b> 7072:1 7150:13 7264:22 7270:21 7271:11	<b>briefly</b> 7099:13 7182:11
<b>barley</b> 7070:5	<b>behind-the-wheel-only</b> 7220:6	<b>blending</b> 7073:17 7077:6,13 7080:1	<b>bring</b> 7108:13 7192:16 7253:14 7255:14 7256:24 7280:28
<b>barometer</b> 7083:20 7086:3,8	<b>belabor</b> 7103:27 7170:12 7230:6	<b>block</b> 7139:9 7185:27 7186:3 7202:3 7203:12,14, 28	<b>bringing</b> 7299:16
<b>barrel</b> 7149:5,12 7188:21,26 7203:27 7205:8	<b>belief</b> 7144:11 7193:15 7201:2	<b>blocks</b> 7139:10 7141:7,10, 11	<b>broad</b> 7111:3 7245:19 7259:12
<b>barrels</b> 7203:24,25	<b>believed</b> 7173:14	<b>blue</b> 7250:5,28 7251:11	<b>broke</b> 7276:21 7277:10
<b>bars</b> 7250:26 7251:1,9,10,12	<b>belt</b> 7139:7 7165:13,15 7166:16,19,21,23 7167:16 7170:27 7201:26,27 7206:10,11	<b>board</b> 7116:15 7244:25 7289:5 7291:12,13	<b>brokers</b> 7126:18
<b>base</b> 7086:22 7099:25 7123:8 7153:9 7176:22 7248:25,26 7285:22 7288:24,26 7291:7 7293:5,6, 11,14,20 7294:4,24	<b>belts</b> 7140:23 7143:7 7166:12 7206:10	<b>body</b> 7139:28 7143:6	<b>brought</b> 7100:25 7124:23 7133:18 7222:13
<b>based</b> 7073:2 7098:19 7099:16 7140:18 7166:25 7170:4 7178:6 7196:11 7206:20,21 7214:6 7216:17 7221:20 7224:16 7270:8 7277:24 7290:6,8	<b>benchmarking</b> 7141:17 7142:12	<b>book</b> 7207:24 7246:28	<b>BS</b> 7065:8
<b>basic</b> 7214:21 7257:19	<b>beneficial</b> 7132:7	<b>boosting</b> 7147:4	<b>buck</b> 7290:23
<b>basically</b> 7124:17 7156:20 7248:4,25 7250:9 7262:5 7266:27 7279:4 7280:16,24 7295:26	<b>benefit</b> 7234:21 7264:1 7266:1	<b>boots</b> 7276:15 7277:4	<b>budget</b> 7244:19
<b>Basin</b> 7090:9 7092:19,23 7129:8	<b>benefits</b> 7257:28	<b>Borden</b> 7213:19	<b>building</b> 7065:2 7089:10
<b>basis</b> 7100:2 7104:5 7234:4, 11 7237:20 7281:26	<b>beware</b> 7133:4	<b>bordering</b> 7221:10	<b>builds</b> 7183:7
<b>batch</b> 7184:15,27 7185:3,5	<b>Biblical</b> 7192:22	<b>borders</b> 7279:5,6	<b>built</b> 7109:15 7160:16
<b>battleship</b> 7284:20	<b>bid</b> 7222:17,18,19 7259:28	<b>borrowed</b> 7224:10	<b>bulk</b> 7140:5 7169:5 7260:27
<b>bear</b> 7223:22	<b>big</b> 7109:24 7110:25 7129:4 7191:22 7207:19,21 7210:18 7219:8 7259:6 7278:4 7284:23 7288:10 7292:22 7296:14	<b>bottom</b> 7092:18 7107:6 7108:15 7132:20,22 7145:2, 6 7166:6 7172:23 7174:26 7231:24 7235:17 7250:26 7291:25	<b>bullet</b> 7216:12
<b>bears</b> 7224:10	<b>bigger</b> 7119:19 7130:7 7197:24 7262:23,25	<b>box</b> 7251:12	<b>Bunk</b> 7257:22
<b>beat</b> 7062:23	<b>biggie</b> 7260:22	<b>Boy</b> 7160:14	<b>Bureau</b> 7196:6
<b>beef</b> 7066:8,10 7067:1,4 7069:19,23 7109:19 7129:3 7245:1	<b>Bill</b> 7213:12	<b>brainpower</b> 7277:3	<b>bushel</b> 7079:23 7113:24
<b>beef-on-dairy</b> 7129:1	<b>billing</b> 7248:16	<b>brake</b> 7219:10	<b>business</b> 7064:27 7086:11, 15 7192:8 7212:19 7217:5, 22 7224:14 7225:12 7226:6, 17,18,22 7227:6,9,14 7241:4 7257:11,25 7258:15 7259:28 7287:11
<b>began</b> 7245:17 7295:11	<b>billion</b> 7069:28 7070:7,27,28 7107:19,23		<b>businesses</b> 7087:3,6 7226:16,19,20,28
<b>begin</b> 7079:4 7093:12	<b>biofuel</b> 7077:5 7079:25 7080:3,4		<b>butter</b> 7110:9 7146:5,7,8,10, 11,17 7148:7 7150:7,10,11, 13,14 7178:18 7183:14 7204:17 7296:23
	<b>biofuels</b> 7077:5,12		<b>butterfat</b> 7161:5 7170:14 7172:22,28 7173:20 7178:8, 14 7179:2,16,20 7186:18,26, 27 7187:2,6 7190:17 7193:7



7195:21 7197:11	<b>career</b> 7065:12 7066:1 7213:15 7255:20 7257:15,23 7276:24	<b>cereal</b> 7251:12	7142:14,18,23 7143:15 7144:15,18 7145:4,19 7146:4,6,14 7148:11,14,27 7149:1,4,5,12,17,19,27,28 7150:1,2 7154:5,16 7156:14, 21 7157:5 7160:2,7,11,23 7161:21,22 7162:25 7163:2, 21 7164:4,19,22,24,25 7165:1,5,9,10,11,14,18,21, 22,26 7166:10 7167:2,4 7168:22 7169:13 7173:1 7175:20 7177:1,8,10,15,16 7183:26 7185:27 7187:28 7188:3,18,21,27 7189:3,7,8, 14,17 7190:11 7194:9,13,19 7197:12 7199:27 7205:6,8,9, 11,17 7206:14 7207:4
<b>buy</b> 7126:9 7152:13 7169:5	<b>careful</b> 7128:14	<b>certainty</b> 7260:28	<b>cheddars</b> 7206:16
<b>buyers</b> 7192:17 7260:12,27 7261:9	<b>Carrier</b> 7219:16 7224:26	<b>certification</b> 7063:8	<b>cheese</b> 7094:7,9 7096:2 7134:17 7135:4,16,19,26,28 7136:4,6,8,12,15,17,20,21, 25 7137:3,4,10,15,16,19 7138:1,2,5,9,11,14,17 7139:4,6,10,17,25,27,28 7140:3,5,6,8,12,14,21,26,28 7141:2,13,18,25 7142:13,15, 20,21,25,26,27 7143:1,2,9, 10,11,12,13,16,17,19,23,26, 28 7144:2,4,5,14,16,18 7145:4,19,21 7146:5,6,8,14, 24 7147:1,3,5,7,8,11,15,16, 23,28 7148:1,3,4,6,8,10,11, 14,15,21,24,26,27,28 7149:1,3,6,7,13,14,19,21,22, 23,25,28 7150:2,23 7151:28 7152:4,11,13,15,17,18,22, 23,26 7154:6,15 7155:12 7156:8,14,21 7157:19 7160:2,7,11,16 7161:14,21, 23 7162:6,25 7163:15 7164:2,6,7,20 7165:19 7167:12,15 7168:8,21,25,28 7169:2,3,4,5,21,22,24,25 7171:2,4 7172:18,19,25 7173:1,23,24,26 7175:13 7177:1,5,10,21 7178:18 7182:13,24 7183:4,13,16,18, 20,27 7184:1,18,27 7185:1, 7,16,18,22 7186:14 7187:10, 16 7188:1,4,5,9,10,16,17,22, 23 7189:3,9 7191:20 7192:15,17 7194:10,12,13, 14,19 7195:15,16 7197:12 7198:5 7199:1,9,10,19,24 7200:10,21 7201:11,15,17, 18,21 7202:10,18,25 7204:3, 13,19,24 7205:15,20 7206:6, 9,21,26 7207:2 7256:23
<b>buying</b> 7127:6	<b>carry</b> 7260:24	<b>certify</b> 7063:7	<b>cheesemakers</b> 7176:4
<hr/> <b>C</b> <hr/>	<b>case</b> 7063:21 7104:5 7146:14 7153:24 7178:19 7236:8 7273:21 7278:14 7291:20 7292:8	<b>chain</b> 7222:13	<b>cheesemaking</b> 7194:5
<b>cab</b> 7222:16	<b>casein-to-fat</b> 7157:10 7158:12	<b>chains</b> 7152:14	<b>cheeses</b> 7152:14 7188:3 7189:4
<b>cake</b> 7296:21,26 7297:11,19	<b>caseins</b> 7145:28 7146:2	<b>chair</b> 7133:27 7277:16	
<b>calculated</b> 7117:11 7215:4	<b>cases</b> 7227:4	<b>chaired</b> 7277:15	
<b>calculates</b> 7115:5,15	<b>cash</b> 7069:20 7234:14	<b>chalk</b> 7263:15	
<b>calculating</b> 7073:24 7116:11	<b>Cass</b> 7248:14,15,23	<b>challenge</b> 7219:22	
<b>calculation</b> 7073:8 7078:12 7080:12 7081:5 7096:20 7115:7 7117:2,23 7139:22	<b>catch</b> 7228:20	<b>challenges</b> 7120:17,26 7121:9 7226:18 7255:10	
<b>calculations</b> 7080:8	<b>catching</b> 7202:6	<b>champion</b> 7257:17 7263:9	
<b>calendar</b> 7250:9,14,15	<b>categorize</b> 7160:22	<b>chance</b> 7175:5 7181:11 7182:8	
<b>California</b> 7114:15 7160:20 7221:12 7232:4,10 7249:26 7251:4 7300:8,9	<b>category</b> 7127:26	<b>change</b> 7072:9,14,18 7079:26 7081:9,15,18,25 7083:25 7085:24 7086:24 7088:15 7091:23,28 7092:9 7095:20 7100:20 7102:5 7104:3 7107:6 7123:25 7124:24 7142:2,6 7150:21, 25 7214:20 7222:21 7223:22 7227:19 7259:11 7262:19 7274:22	
<b>call</b> 7063:8 7104:22 7106:1 7184:27 7189:3 7233:17 7234:6,12 7237:18 7253:17 7259:25 7260:3 7270:4 7271:18 7279:11 7291:7	<b>cattle</b> 7066:8,9,21,22 7067:1,4,5,15,16,17 7069:12,14,21,23 7070:2 7079:18 7090:15 7109:18, 19,21,22,25,27 7245:1	<b>changed</b> 7080:4 7099:1,2 7213:27 7273:17	
<b>called</b> 7094:18 7106:8 7111:25 7120:4 7137:3 7138:15 7145:1 7146:19 7159:25 7212:8 7214:25 7215:4 7220:6 7228:25 7230:9 7276:22,26 7278:11 7279:4	<b>Cattleman's</b> 7069:19	<b>changing</b> 7074:9 7121:21 7150:28 7273:7	
<b>calls</b> 7253:13 7259:11	<b>caused</b> 7109:8 7214:19 7216:4	<b>channel</b> 7227:18	
<b>camp</b> 7258:6 7263:24	<b>caution</b> 7085:2 7133:4,11	<b>Channing</b> 7062:7	
<b>campers</b> 7257:23 7263:8	<b>CDR</b> 7135:17,18,19 7137:5 7141:1 7149:8,15 7158:18 7188:24 7198:11	<b>charge</b> 7215:10,13,14,15,16 7231:11 7234:20 7264:11,13	
<b>campus</b> 7135:10	<b>cease</b> 7154:22,23	<b>charged</b> 7217:2	
<b>capable</b> 7223:14 7224:2	<b>ceased</b> 7154:27	<b>charges</b> 7230:27 7231:7,14	
<b>capacities</b> 7213:16	<b>ceases</b> 7227:12	<b>charging</b> 7263:4,5	
<b>capacity</b> 7135:19 7147:12 7251:24 7252:15,17	<b>center</b> 7134:19,21,23,24 7135:9,17 7151:28 7152:3 7154:9 7155:26 7175:2 7177:26,28 7178:4,25 7186:21 7191:21 7192:11,25 7210:21 7270:13	<b>chart</b> 7092:27 7093:1 7107:9 7132:19 7133:3,4 7221:7,8	
<b>capital</b> 7224:10 7226:25	<b>Center's</b> 7152:26 7155:6	<b>charts</b> 7108:15	
<b>capital-intensive</b> 7226:17	<b>centers</b> 7083:8 7134:25 7252:22	<b>chassis</b> 7222:16	
<b>capture</b> 7065:23 7068:1 7136:28 7186:27 7187:2 7190:16	<b>Central</b> 7076:7 7244:28 7277:13	<b>cheaper</b> 7221:23 7259:12	
<b>car</b> 7219:10 7254:15 7284:21	<b>cents</b> 7286:18	<b>check</b> 7232:17 7275:5	
<b>care</b> 7160:13 7164:9	<b>century</b> 7136:14 7248:6	<b>Checkoff</b> 7178:1,24,25	
		<b>cheddar</b> 7135:25 7136:1,2,4, 6,8,12,15,25 7137:16,19,24, 25 7138:2,4,11,13,17,19 7139:2,4,17 7140:2,10,15, 20,23,26,27 7141:7,18,24,27	



<b>chief</b> 7062:7 7063:11,16 7244:9,14	7268:1,4,9,10,19,21,22,23, 24,25,26,27 7269:1,3,4,5 7270:6,7,14,17,21,22,23,26 7271:2,3,4,10,11,17,20,21, 23,24,25,26,27 7272:5,14, 16,17,19,20,23,28 7273:14, 22,24 7274:3,7,8,11,13,14, 28 7275:1,3,4,5,7,9,11,14, 15,19,23,28 7276:7,9,19 7277:26 7285:22 7286:15 7287:6,7,8,9,10,12,14,15 7289:1,12 7291:5,28 7293:6, 11,14 7294:12 7295:27 7296:3,4,5,6,16,18,19 7297:22,24,25,26,27 7298:1, 5,6	<b>coined</b> 7276:20	<b>comment</b> 7068:13 7071:22 7123:22 7162:3,5 7231:23
<b>Chip</b> 7119:8 7191:4 7228:7, 15 7279:24	<b>classes</b> 7247:20,22 7256:15 7268:24 7296:7	<b>cold</b> 7139:9	<b>comments</b> 7157:4 7182:12, 15 7209:17
<b>choice</b> 7143:3 7229:28	<b>clause</b> 7149:9	<b>coliform</b> 7140:7	<b>commercial</b> 7066:28 7067:2, 13,14 7069:8 7091:3 7139:17 7219:19
<b>choose</b> 7199:19 7288:13	<b>clean</b> 7183:19 7187:25	<b>colleague</b> 7144:23 7258:14	<b>commercial-for-hire</b> 7219:14
<b>chooses</b> 7200:11 7210:24	<b>clear</b> 7072:17 7101:6 7123:11 7126:1 7178:24 7217:17 7234:15,24 7236:12 7238:25 7283:25	<b>colleagues</b> 7149:7,15 7188:24 7239:4	<b>commingled</b> 7128:3
<b>chose</b> 7190:18 7229:20	<b>client</b> 7233:26	<b>collected</b> 7139:27	<b>Commission</b> 7123:15
<b>chosen</b> 7108:18,22	<b>Clifton</b> 7062:4	<b>collecting</b> 7214:24	<b>commitment</b> 7226:24
<b>chronology</b> 7292:6	<b>climate</b> 7076:17 7079:20 7087:11 7088:15 7091:5 7220:16	<b>Collectively</b> 7138:26 7162:1	<b>committee</b> 7244:26 7277:14 7290:5,10
<b>chunk</b> 7296:14	<b>Clinics</b> 7094:19	<b>collects</b> 7088:23	<b>committees</b> 7127:4 7276:28
<b>chunks</b> 7259:6	<b>clock</b> 7279:18	<b>Collins</b> 7065:3 7090:12	<b>commodity</b> 7066:24 7069:5 7096:2 7109:20 7124:5 7127:4 7165:22,24 7167:2,4 7189:3,13,17 7190:11 7205:8,17 7206:14 7207:3
<b>churn</b> 7146:7	<b>close</b> 7064:19 7075:14,15 7101:27 7102:27 7131:27 7174:5 7258:23 7288:9,11	<b>Colorado</b> 7065:1,3,17 7068:15,17,25 7069:9,24,27 7070:12,16,20 7071:1,3,4, 12,15,17,19,22,25 7072:2,6, 10,14,18,20,21 7073:25 7074:4,6,15,19 7075:14,15, 17,21,25,28 7076:4,10,14, 17,20,22 7077:18,20 7078:7, 24 7079:15,16,17,20 7081:1, 2 7082:25 7083:3 7084:21, 23 7085:25 7086:1,27 7087:9,11,18,21,27 7088:1, 18,21,26,28 7089:12,18,28 7090:4,8,20,23 7091:3,18,20 7095:25 7096:9 7097:11,17 7098:6 7100:27 7101:3,15, 24 7102:1,11,17,19 7103:1, 5,8,20,22,26 7104:2,4,10,14, 18,27,28 7105:1,5,20,25 7106:8 7107:18,26 7108:1,2, 18 7109:12,17,20 7110:9 7111:27 7112:5,16,23,26 7113:3,7,8,16,17,24 7114:22,27 7115:8,15,17 7116:2,12,17,21 7117:18 7118:2,5,25 7119:11,12,23 7120:3,8,17,20 7122:1 7124:8,9 7126:1 7127:2 7128:11 7129:6,8,19 7130:1	<b>common</b> 7062:16 7065:28 7146:21 7165:18,21 7189:2, 18,20,21,26 7245:18,21 7248:18 7251:5 7252:1
<b>circle</b> 7262:25	<b>closing</b> 7227:1	<b>Colorado's</b> 7072:26 7108:6 7117:4	<b>commonly</b> 7081:6 7137:3 7214:25 7247:27
<b>circles</b> 7262:25	<b>Clovis</b> 7113:15	<b>colored</b> 7276:22,25,26,27 7278:1 7290:18	<b>communicate</b> 7071:15 7083:23 7253:24
<b>circulated</b> 7211:22	<b>clue</b> 7270:9	<b>Colored</b> 7276:22,25,26,27 7278:1 7290:18	<b>communicated</b> 7081:6
<b>circumstances</b> 7253:11	<b>co-op</b> 7112:14 7234:22 7235:28	<b>Column</b> 7097:21 7098:5	<b>communicates</b> 7083:27
<b>cite</b> 7113:20	<b>Co-ops</b> 7274:17	<b>columns</b> 7097:21	<b>communicating</b> 7102:9
<b>cited</b> 7282:28 7283:4,6,7,12, 15	<b>coagulant</b> 7143:4 7170:22 7201:19	<b>combination</b> 7082:6	<b>communication</b> 7080:24
<b>cities</b> 7252:22,24,27 7253:1, 5 7278:11,12 7279:5,13	<b>coagulum</b> 7138:16,20 7144:8,12 7148:12 7161:28 7170:23 7171:12	<b>combine</b> 7176:17 7200:4	<b>communications</b> 7100:24 7144:17 7244:18
<b>city</b> 7253:12	<b>coast</b> 7160:8,12 7217:28	<b>combined</b> 7072:6 7080:16 7082:22 7088:26 7200:9	<b>communities</b> 7090:22
<b>claimant</b> 7088:19	<b>cognizance</b> 7151:13	<b>comfortable</b> 7122:11,13,27, 28 7123:6	<b>companies</b> 7135:3 7137:5 7146:10 7158:19 7169:4 7213:17 7219:28 7220:3 7225:6
<b>claiming</b> 7294:16	<b>cognizant</b> 7191:16	<b>comma</b> 7194:1	<b>company</b> 7142:21 7168:22, 26,28 7222:10 7248:15
<b>claims</b> 7224:22	<b>coin</b> 7276:1		<b>comparable</b> 7075:24 7116:13
<b>clarifications</b> 7125:24			<b>compare</b> 7102:11 7114:8 7115:21 7116:22 7271:22
<b>clarifier</b> 7138:24			<b>compared</b> 7076:13,27 7079:15 7090:20 7114:22 7115:15 7124:11 7157:16 7171:10 7185:16 7204:18 7250:14,18 7267:15
<b>clarify</b> 7063:20 7123:20 7125:22 7205:28 7280:5			
<b>class</b> 7082:24,26 7083:1 7094:12 7097:7 7098:6 7102:6 7110:20 7117:7,9 7121:21 7123:8 7129:14 7145:12 7158:2 7178:14,16 7192:4 7229:13 7246:21,24 7247:5,9,14,17,18,22,23,24 7248:11,13 7249:12,13,16, 19,20,21,22 7250:7,12,16,25 7251:3,17,18,24,28 7252:3, 4,9,21,28 7253:5,9,12,13,22, 26,27,28 7254:2,10,20,21, 24,26,28 7255:9,10,11,13, 14,15,20,21,22 7256:4,8,12, 14,20,21,24 7257:6,20,21 7259:15,27 7260:20 7261:4, 16 7262:6,9,10,22 7264:15, 17,20,21,23,24,26 7265:18 7266:6,8,11,15 7267:1,2,12, 14,17,19,23,25,26,27,28			



<b>compares</b> 7146:26 7155:15	<b>concept</b> 7138:12	<b>consolidation</b> 7146:17	7145:23 7215:20
<b>comparing</b> 7075:27 7080:22 7102:21	<b>concepts</b> 7110:23	<b>constant</b> 7074:8 7234:4,11	<b>contribute</b> 7209:14 7216:6
<b>comparison</b> 7075:13 7076:1,2 7098:5 7101:26,27 7102:12,14,26 7103:18 7105:20 7219:1	<b>concern</b> 7227:17,18	<b>constantly</b> 7233:16	<b>contributes</b> 7069:27 7070:8
<b>comparisons</b> 7075:25 7104:13	<b>concerned</b> 7062:13 7124:7 7187:13 7255:8 7281:3	<b>constitute</b> 7134:14	<b>contribution</b> 7071:3 7080:14 7091:19 7210:6
<b>compelled</b> 7223:10	<b>concerns</b> 7140:7,8	<b>constraints</b> 7091:12 7169:27	<b>contributions</b> 7070:10
<b>compensate</b> 7247:2,8,15 7264:6 7275:25	<b>conclude</b> 7104:5 7113:14 7300:12	<b>construct</b> 7167:1	<b>contributor</b> 7070:13 7124:9
<b>compete</b> 7220:4	<b>concluded</b> 7300:16	<b>constructed</b> 7160:25	<b>control</b> 7167:9,12 7168:16 7171:3 7254:2
<b>competing</b> 7233:25	<b>conclusion</b> 7086:13 7172:23 7189:6	<b>construction</b> 7090:18 7160:26 7218:16,22	<b>controllable</b> 7167:9
<b>competition</b> 7146:18 7191:28 7218:15 7262:24	<b>conclusions</b> 7075:24 7144:7	<b>consultant</b> 7234:20 7245:17	<b>conundrum</b> 7217:17
<b>competitive</b> 7072:22 7079:17 7083:11 7088:5	<b>condition</b> 7151:13	<b>consulting</b> 7213:18	<b>conversation</b> 7140:9,19 7164:3 7193:6 7297:14
<b>competitor</b> 7104:1 7261:13, 24,26,28	<b>conditions</b> 7071:18 7080:21,22 7194:5 7220:10	<b>consumer</b> 7119:14 7254:1	<b>conversations</b> 7235:20 7236:16,17
<b>compiled</b> 7224:25	<b>conductive</b> 7226:8 7256:13	<b>consumers</b> 7192:18	<b>conversion</b> 7142:20 7168:21,25,28 7275:21,23 7296:9
<b>complaining</b> 7297:15	<b>conduct</b> 7066:18 7069:23	<b>contact</b> 7235:21 7253:15	<b>convert</b> 7080:8 7169:5 7259:20
<b>complete</b> 7196:18 7219:23 7222:26	<b>conducted</b> 7069:10 7233:15	<b>contamination</b> 7140:7 7141:14 7148:23 7168:9	<b>converted</b> 7157:13
<b>completely</b> 7168:15	<b>conducting</b> 7225:28	<b>content</b> 7139:14,18 7167:15 7176:18,19 7202:28	<b>converting</b> 7126:8
<b>compliance</b> 7220:19 7224:26	<b>confidence</b> 7260:24 7261:10	<b>contents</b> 7139:21	<b>converts</b> 7074:10 7137:27
<b>complicated</b> 7110:25	<b>confidential</b> 7164:16 7233:21	<b>context</b> 7078:2 7084:10 7103:13 7118:11 7124:24 7160:4 7198:8 7293:10	<b>convey</b> 7108:16
<b>component</b> 7073:10,12,13 7081:4 7114:28 7116:10,27 7153:10,16	<b>configuration</b> 7222:6	<b>contiguous</b> 7247:25	<b>conveyor</b> 7140:13
<b>components</b> 7073:16 7114:19 7222:6	<b>confined</b> 7224:4	<b>continue</b> 7062:25 7137:25 7138:3,5,8 7142:28 7161:21 7169:23,24 7181:16 7203:17 7216:28	<b>convince</b> 7262:11,13
<b>comport</b> 7105:3	<b>confused</b> 7278:15	<b>continued</b> 7080:3 7226:23 7227:15 7275:13,16	<b>cook</b> 7201:20 7202:26
<b>composed</b> 7073:10	<b>confusing</b> 7296:20	<b>continues</b> 7142:8 7202:22 7227:19	<b>cooked</b> 7148:19
<b>composite</b> 7296:25	<b>confusion</b> 7155:1	<b>continuing</b> 7158:16 7252:20	<b>cooking</b> 7202:6
<b>composition</b> 7087:1 7145:8 7200:21 7202:18	<b>congestion</b> 7062:14	<b>continuity</b> 7062:26	<b>Cool</b> 7282:9
<b>comprehensive</b> 7196:13	<b>Congress</b> 7066:4,14 7069:22	<b>continuous</b> 7082:27 7085:10	<b>cooler</b> 7141:12 7203:16
<b>comprise</b> 7139:11	<b>conscious</b> 7140:4	<b>continuously</b> 7085:18 7165:15	<b>coolers</b> 7141:9
<b>comprising</b> 7139:13	<b>consecutive</b> 7143:27	<b>contract</b> 7217:12 7233:16, 19 7237:6,8,19 7259:26 7260:13,16,18	<b>cooperative</b> 7135:27 7153:27 7154:15,17,18,28 7191:17 7227:6,8 7279:27
<b>compromised</b> 7222:12	<b>conservative</b> 7078:14 7083:21	<b>contracted</b> 7217:10 7236:25	<b>cooperatives</b> 7153:25 7227:2,5
<b>computation</b> 7266:16	<b>considerable</b> 7070:18 7113:12 7247:15	<b>contractions</b> 7124:1	<b>copied</b> 7141:21
<b>computations</b> 7271:22	<b>considerably</b> 7070:13 7080:2 7119:15 7225:15	<b>contracts</b> 7259:13,15,17 7260:11,12 7261:2,7	<b>copies</b> 7106:13 7174:20 7299:16
<b>conceded</b> 7225:4	<b>consideration</b> 7230:19	<b>contractual</b> 7257:2	<b>copy</b> 7068:9 7079:3 7092:1, 9,15 7093:2 7106:23 7142:6 7150:25 7151:3 7273:3
<b>concentrations</b> 7217:8	<b>considerations</b> 7100:5 7214:21 7224:23	<b>contrast</b> 7087:20 7089:18	<b>core</b> 7152:24
	<b>considered</b> 7071:10 7073:17 7083:20 7138:12 7226:28 7270:12		<b>corn</b> 7070:5 7073:2,12,20,26 7074:10 7076:11,13
	<b>consistent</b> 7193:28 7217:9		



7077:19,22,23 7078:15 7079:11,24,27,28 7080:4,5 7087:8 7088:10 7113:21,23 7114:2,4,20 7116:13 7128:12 7130:2 <b>corn-deficit</b> 7076:10 <b>Cornell</b> 7136:18 <b>corner</b> 7285:5 7289:16 <b>corollary</b> 7217:19 <b>corporate</b> 7244:9 <b>correct</b> 7093:3,4 7095:17, 21,22,25 7106:18 7107:20, 24 7108:1,8 7109:12 7110:2 7112:28 7115:11 7118:18 7121:9,15 7124:5,19 7126:3 7131:20 7150:26 7151:1,2 7153:18,19,23 7154:7,10,19 7155:4,5,13,26 7156:9,16, 24,26 7157:1 7158:9,10,14, 15 7159:3,7 7160:18,19,20, 21 7161:10,11 7162:17 7164:1 7165:2 7166:18,26, 28 7169:18,19 7170:1,6,7, 10,11,14,15 7171:17,19,20, 22,23 7172:14,21 7178:1,2, 4,5,22,26,27 7186:28 7187:3,4,8,9,10,11 7189:10, 11 7190:8,9,11,12,13,14 7193:13 7194:20,21 7196:14 7200:12,17,18 7204:6 7205:26 7206:7 7228:26 7230:20 7231:3,5 7243:15 7272:18 7282:17 7283:17, 23,28 7284:1,3,6,9 7285:23 7286:2,6,16,24,28 7287:4,20 7288:25 7289:5,7,27 7291:3 7292:16 7299:3 <b>corrected</b> 7194:26 <b>correction</b> 7092:26 7190:25 7230:14 7273:3 <b>correctly</b> 7128:12 7141:22 7197:13 <b>correspond</b> 7232:13 <b>corresponds</b> 7194:17 <b>cost</b> 7072:23,24,26 7074:10, 11,15 7076:5,25 7077:20 7078:5,17 7079:15 7080:12 7081:1 7082:19,21 7084:14, 18,20,28 7085:19,20 7086:3, 8,14,18,22 7087:7 7096:14 7103:20 7104:11 7108:9 7111:6 7112:17 7113:2,16 7114:9,21,28 7115:6 7116:9, 10 7120:7 7126:2,9 7127:16, 23,26 7128:11 7129:18 7130:3,7 7217:23 7218:27 7219:1,2,7 7220:13,17 7221:10,18,19 7222:1,2,10	7223:15 7224:7,10 7225:5, 20 7229:4,11,14 7233:20 7234:16 7235:8 7247:3,9,16 7248:10 7249:18 7270:11 7273:21 7275:21,22 7276:13 7287:6 7295:12,15 7296:9 7297:17,18 <b>costing</b> 7233:23 <b>costly</b> 7223:10 7251:24 <b>costs</b> 7071:15 7072:25 7073:2 7074:4,12 7076:9,25, 26 7080:9,14,15,16,26,28 7081:7,8,9,15,16,18,25,26 7082:2,3,5,9,11,12,23 7083:17,18 7084:16,18 7085:13,22,25 7086:10,11 7087:4 7088:9 7096:16,19 7108:7 7110:21 7113:23 7114:25 7115:8,10 7116:1 7117:16,26 7118:6 7125:28 7126:11 7127:11,25 7128:1, 3,20,22 7129:12 7196:19 7213:26 7214:1,4,12,16,17, 19,20 7215:1,2,11,18,27 7216:4 7217:24,25 7219:4, 26,27 7222:23 7223:3,12,23, 24 7224:8 7225:26,27 7226:2,4,6,27 7229:8 7230:19,25 7231:17,18 7235:2 7239:2 7248:8 7249:1,16 7254:3 7273:16, 17,18 7293:4,12,13 <b>cough</b> 7062:14 <b>counsel</b> 7064:21 7246:8,9 7266:22 7280:6 7281:1 7282:7 <b>counsels</b> 7299:14 <b>count</b> 7278:28 <b>counted</b> 7266:10 <b>counties</b> 7101:15,17 7276:24 7288:2,3 7289:2 <b>counting</b> 7070:10 7263:26 7264:8 <b>country</b> 7071:8 7075:11 7095:28 7112:20 7115:20 7152:21 7204:8,14,20 7239:2,5 7263:1,3 7267:11 7268:18 7277:2,5 7294:12, 24 <b>counts</b> 7266:27 <b>county</b> 7097:25 7098:6,8 7119:26 7285:26,27 7287:20,21,22 7289:9,22 7290:3 <b>couple</b> 7094:1 7108:16 7125:21 7150:5 7162:22 7194:27 7198:19 7209:7	7233:5 7235:17 7242:23 7273:10 <b>courses</b> 7135:2 7153:5 <b>court</b> 7062:2 7064:1,7,10,16, 18 7065:21,23 7067:2,6,17, 21 7068:1,9,20,22,26,28 7074:26 7075:2,8 7077:7,14, 25,28 7078:3,26,28 7079:9 7081:12,17,20,24 7089:3 7091:27 7092:3,6,8,11,22 7093:5,10 7098:14,21,27 7099:18,20,28 7100:8 7105:27 7106:6,9 7110:4 7111:11,17 7112:1,7 7125:2 7130:11,15,21,23,28 7131:7, 11,22,25 7132:1,11,24 7133:14,17,25 7134:1,4 7142:1,5 7145:11 7149:9 7150:21,25,27 7151:3,10,12, 19 7152:6,9 7158:1 7164:10, 13 7171:24 7172:4,9 7174:9, 13,16,18 7179:28 7180:5,8, 26 7181:3,12,14,20 7182:2,6 7190:24,28 7195:28 7196:23 7208:13,16,22,28 7209:3,6, 23 7210:9,12,26,28 7211:3, 6,10,15,17,21,25 7212:4,10, 12,27 7227:24,26 7228:4 7229:16 7230:10,11 7232:21 7239:11,20,25 7240:1,5,10, 14,20,22,25 7241:12 7242:22,27 7243:2,5,27 7246:2,15,17 7249:4,7 7264:27 7265:9,12,14 7266:24 7269:8,13,17,18,20, 25 7272:7,11,13,16,21,26 7273:2,7,11 7274:16,18,21, 25 7278:14,17,20,22,25 7279:2 7281:16,20,25 7288:9,14 7297:7 7298:9,14, 21 7299:25 7300:1,10 <b>cover</b> 7072:4 7215:11,18 7216:4 7277:17 7280:13 <b>coverage</b> 7073:9 7113:20 7114:19 7115:5 7116:26 7117:11 7126:3 7225:1,6,8,9 <b>covered</b> 7128:22 7132:8 7218:26 7227:1 7280:14,24 7281:6 7283:1,3 <b>covering</b> 7086:10 7117:26, 27 7280:7 <b>COVID</b> 7062:8,9,21 <b>COVID-19</b> 7222:13,27 <b>cow</b> 7070:25 7071:5,7 7076:24,27 7104:18 7105:1, 7,21 <b>cows</b> 7070:21 7108:13 7252:24	<b>cream</b> 7143:15,21,23,28 7144:3,5 7145:18,20,23,24, 25,27 7146:1,3,4,7,10,13,18, 20,22,24,26 7147:3,4,5,6,8, 9,16,18,22 7148:4,6,9,14,19, 22,27 7149:3,6,14,18,23,26, 28 7150:6,9,11,14,15 7182:13,17,20,21,27 7183:3, 4,13,21 7184:4,5,15 7185:9, 12 7186:19,22,25,27 7187:8 7188:1,23,27 7189:8 7190:6, 17 7199:23,25,28 7200:1,3,4 7204:3,11,16,18,21 7205:10 <b>creams</b> 7200:6 <b>create</b> 7107:9 7147:20 7215:26 7286:9 <b>created</b> 7097:20,21 7107:7,8 7132:19 7277:26 <b>creates</b> 7249:22 7252:4 7265:24 7266:3 7298:2 <b>creating</b> 7088:1 <b>creation</b> 7070:1 7131:17 7133:6 <b>credit</b> 7224:13,15 <b>Creek</b> 7136:2 7188:16 <b>crews</b> 7276:22,26 <b>critical</b> 7223:19 7224:21 <b>crop</b> 7088:10 7089:20,21,26 7091:6 7126:18 7128:6 <b>crop-related</b> 7070:4 <b>cropped</b> 7129:1 <b>cropping</b> 7128:2,9,13,16 <b>crops</b> 7070:6 7091:7 <b>cross</b> 7132:21 7133:3 7298:28 <b>cross-calves</b> 7129:2 <b>cross-examination</b> 7091:26 7093:12,13 7111:22 7112:9 7118:20 7119:5 7125:6 7150:20 7151:6,23 7177:26 7191:2 7194:24 7196:1 7197:1 7227:22 7228:6,11 7232:26 7279:23 7280:1 7298:11 <b>cross-examine</b> 7112:8 7125:4 7209:28 <b>cross-examined</b> 7299:1 <b>cross-examiner</b> 7191:1 <b>crowding</b> 7129:20 <b>crumble</b> 7258:26 7264:1
---	--	---	--



<p><b>crumblier</b> 7164:21</p> <p><b>crush</b> 7074:5</p> <p><b>Cryan</b> 7195:28 7196:2,6,21</p> <p><b>CSA</b> 7224:27</p> <p><b>cultures</b> 7147:11 7149:21</p> <p><b>cumulative</b> 7084:15,27 7085:3,9 7086:6,17</p> <p><b>curd</b> 7136:28 7139:7 7140:6, 11,14,15,17,19,24 7143:5,6, 7,25 7145:21 7157:18,20 7163:9 7164:5 7165:5,7,10, 11,12,14,15,17,18 7166:1,2, 3,4,5,9,12,13,14,18,22,23 7167:13,17 7170:26,27,28 7201:20,26 7202:1,6,8,20, 22,26</p> <p><b>curds</b> 7139:4 7141:2,5 7167:26 7198:23 7201:25 7202:26</p> <p><b>curious</b> 7101:19 7126:19 7167:26 7203:10 7236:11</p> <p><b>current</b> 7075:11 7098:6,9 7101:16 7135:15 7142:18,23 7168:22 7195:4 7268:5,12 7291:15</p> <p><b>curriculum</b> 7093:18 7094:4</p> <p><b>curtailed</b> 7147:14</p> <p><b>curve</b> 7198:16</p> <p><b>customer</b> 7231:12 7255:22, 23 7259:22,26 7262:11</p> <p><b>customer's</b> 7260:7</p> <p><b>customers</b> 7152:12 7217:19 7230:28 7231:15 7255:21 7259:16 7260:21,28 7261:6</p> <p><b>cut</b> 7106:28 7143:5 7170:24 7171:9 7201:20 7202:20,25 7253:18</p> <p><b>cut-and-paste</b> 7132:18</p> <p><b>cut-and-wrap</b> 7169:8,10,11</p> <p><b>cutness</b> 7170:23</p> <p><b>cutting</b> 7137:6,9,11,13,15 7138:10,15,20 7143:5 7144:8,12 7148:12 7158:20 7159:10,23 7161:27 7162:4, 7,8 7163:13 7176:14 7198:23 7202:6</p> <p><b>cycle</b> 7144:2 7148:2,3,5 7149:24 7182:21,25 7183:17,18 7187:14</p>	<p style="text-align: center;"><b>D</b></p> <hr/> <p><b>D-E-A-N</b> 7133:28</p> <p><b>D-E-E</b> 7220:18</p> <p><b>D-E-F</b> 7220:18</p> <p><b>daily</b> 7237:19 7247:16 7249:21 7250:6,12,16 7253:8 7256:28</p> <p><b>dairies</b> 7080:26 7085:13 7090:5,15 7097:12 7101:4 7108:25,27 7118:9,25 7119:20,28 7123:7 7127:1 7129:8</p> <p><b>dairy</b> 7068:15 7070:2,8,12, 14,15,25 7071:1,4,12,22,27 7072:2,10,20,22,28 7073:8, 9,15 7074:24 7075:5,14 7076:22 7077:16 7078:5 7080:8,19,21,24 7081:4,7 7083:5 7084:13,21,23 7086:1,27 7087:2 7090:25 7091:21 7093:16 7094:7,16, 18 7095:11 7100:28 7101:28 7102:27 7104:10 7105:5,9, 10,12,16 7108:11 7109:14, 26,27 7110:8 7111:21 7112:14 7113:19 7114:15,19 7115:5 7116:26 7117:11,18 7119:12,22,25 7120:4,5,7, 16,21 7121:7,28 7123:1 7124:8 7126:3,12 7127:7,22 7128:2,5,6,17,21,27 7129:2, 6,28 7134:19,21,24,25,26, 27,28 7135:3,4,6,17,22,27 7145:5,9 7146:8 7149:2 7152:1,3,18 7153:6,7,8,13, 14,22,25,27 7154:2,9,12,14, 20 7168:13,14 7174:25 7175:2 7177:27 7178:25 7179:8 7186:2 7191:9,14,15, 17,21,24,25,27,28 7192:5,7, 9,11,13,20 7210:21 7213:3, 4,13,16,17,18,21,23,28 7216:8 7217:5,9,15,20 7218:9 7227:19 7230:16,27 7231:6 7236:4 7238:5,6 7245:4,5 7247:2,8,15,19 7252:22,23,26 7253:3 7255:16,25 7256:17 7257:5 7270:5,20 7275:15,25 7276:2 7298:24 7299:12 7300:1</p> <p><b>dairy-related</b> 7135:1</p> <p><b>Dakota</b> 7073:25 7074:7,17, 21 7075:13,17,19,28 7076:7 7077:18 7078:7,25 7079:16 7089:24 7101:23,25,27 7102:12,14,19,26 7103:7,14 7104:1,3,14,19,26 7105:2,21 7111:26 7112:5 7114:9</p>	<p>7116:18,23</p> <p><b>Dallas</b> 7270:18 7271:5,8,15, 24 7272:6 7273:27 7274:2 7275:2</p> <p><b>damage</b> 7148:18</p> <p><b>damaged</b> 7143:18,21,24 7144:3 7147:22 7148:9,16, 17 7149:22,24 7182:27,28 7183:7</p> <p><b>dance</b> 7238:8</p> <p><b>Daniels</b> 7300:5</p> <p><b>Dannon</b> 7213:19</p> <p><b>dare</b> 7238:9</p> <p><b>darn</b> 7192:7</p> <p><b>data</b> 7074:2 7088:22 7105:15,17 7107:9 7114:13 7132:10,15 7155:15,17 7169:12 7190:19 7196:13,18 7200:23 7224:17 7229:19, 25,27,28 7230:23 7248:2,3, 4,19 7265:6 7284:23</p> <p><b>database</b> 7105:15</p> <p><b>dataset</b> 7232:8</p> <p><b>datasets</b> 7229:20</p> <p><b>date</b> 7107:18 7280:15</p> <p><b>daughter</b> 7238:8</p> <p><b>Dave</b> 7300:4</p> <p><b>David</b> 7136:18 7145:4 7241:28</p> <p><b>day</b> 7125:14 7136:17 7180:25 7183:6,14 7184:5,6, 7,11,13,14,18,26,27 7185:1, 9,13,16,18,23 7186:9,10,11 7187:5,6,12,16,20,22 7188:10,17 7234:18,21 7238:11 7253:28 7255:6,7 7261:26 7298:17 7299:25,27 7300:10</p> <p><b>day's</b> 7252:15</p> <p><b>days</b> 7143:27 7237:26 7250:11 7252:18</p> <p><b>dead</b> 7147:13</p> <p><b>deal</b> 7112:26 7123:7 7126:17 7153:25 7195:17,18 7204:4 7244:24 7252:14 7253:23 7260:26 7261:24</p> <p><b>dealer</b> 7222:22</p> <p><b>Dean</b> 7133:28 7134:5 7135:15</p> <p><b>decades</b> 7146:6,16 7213:28</p>	<p><b>Decatur</b> 7073:4 7074:1,4,23 7077:18 7116:14</p> <p><b>December</b> 7260:17</p> <p><b>decide</b> 7164:8 7168:18 7179:10</p> <p><b>decided</b> 7225:23</p> <p><b>decision</b> 7108:12 7179:7 7214:28 7230:4 7256:26,27 7289:26 7295:7</p> <p><b>decisions</b> 7256:28 7257:1 7295:23</p> <p><b>decline</b> 7072:5 7086:6,28 7109:21 7146:28</p> <p><b>declining</b> 7100:14 7216:1,11</p> <p><b>decrease</b> 7070:25 7071:28 7072:14,18 7086:22 7087:3 7095:16 7096:25</p> <p><b>decreases</b> 7217:8,9</p> <p><b>decreasing</b> 7072:7</p> <p><b>dedicated</b> 7225:24</p> <p><b>DEF</b> 7220:19</p> <p><b>defects</b> 7147:21 7149:6,13 7188:22</p> <p><b>Defense</b> 7220:27 7231:28</p> <p><b>deficit</b> 7079:17</p> <p><b>define</b> 7185:24 7279:14</p> <p><b>defined</b> 7081:3 7264:22</p> <p><b>defines</b> 7220:28</p> <p><b>defining</b> 7213:9</p> <p><b>definition</b> 7081:10,27 7264:19,24 7265:18 7284:19</p> <p><b>degradation</b> 7148:16 7185:16</p> <p><b>degree</b> 7065:8 7124:13 7136:5 7213:4,5,6</p> <p><b>degrees</b> 7245:3</p> <p><b>delays</b> 7129:20</p> <p><b>delighted</b> 7063:1</p> <p><b>deliver</b> 7113:6 7256:26,27</p> <p><b>delivered</b> 7113:2 7247:5 7271:25 7273:24 7274:3 7289:15</p> <p><b>deliveries</b> 7254:24 7275:15</p> <p><b>delivering</b> 7287:6</p> <p><b>delivery</b> 7074:4 7216:16,20, 25 7219:25 7222:25 7223:1 7250:6 7255:11</p>
---	--	--	---





<b>demand</b> 7076:11,20 7077:4, 12,23 7079:25,27,28 7080:3, 4 7091:13,14 7119:14 7247:17,18 7249:22 7251:18,24 7252:5 7253:9, 28 7254:10,28 7258:28 7263:17 7266:7	<b>details</b> 7071:15 7078:19 7096:7 7100:16 7101:2,20 7103:11 7110:26 7111:1 7122:8,26 7233:14	15 7264:15 7275:11,14,24 7276:1,9 7289:12,18 7291:28 7295:27	<b>disposed</b> 7141:5,13 7168:8
<b>demand</b> 7088:1 7244:20 7254:26 7289:15	<b>determine</b> 7115:6 7177:19 7246:4	<b>differently</b> 7171:14 7214:20 7292:5	<b>disputes</b> 7210:3
<b>demise</b> 7216:1 7263:26	<b>determined</b> 7096:15 7290:9	<b>difficult</b> 7090:28 7091:20 7111:7 7122:23 7258:22 7260:19 7262:7	<b>disruption</b> 7227:10
<b>demographics</b> 7214:22 7224:20	<b>determines</b> 7086:18 7170:1	<b>difficulties</b> 7062:24	<b>disruptions</b> 7222:13
<b>demonstrate</b> 7077:20	<b>determining</b> 7096:21 7115:16 7143:1 7169:25	<b>difficulty</b> 7062:10 7238:17	<b>distance</b> 7252:28
<b>demonstrating</b> 7073:23	<b>develop</b> 7069:25 7252:20 7279:8	<b>digging</b> 7078:19	<b>distances</b> 7216:5
<b>Dense</b> 7093:10	<b>developed</b> 7087:27 7088:17 7091:9 7289:13,17	<b>dips</b> 7250:28	<b>distant</b> 7252:23
<b>Denver</b> 7090:12 7110:13	<b>developing</b> 7192:15 7252:19,20 7276:10,18	<b>dire</b> 7067:6 7246:2	<b>distinguished</b> 7144:23
<b>department</b> 7065:14,16,18 7068:16 7179:1 7218:2,18 7220:22 7229:13 7231:4 7232:1,9	<b>development</b> 7143:6 7147:26 7148:15,24 7149:1, 21 7152:27 7170:25 7188:3	<b>direct</b> 7064:23 7134:8 7212:16 7231:20 7241:1	<b>distribute</b> 7174:11 7211:15
<b>depend</b> 7087:24	<b>devil</b> 7122:8	<b>directed</b> 7213:11	<b>distributed</b> 7174:19 7231:22
<b>depending</b> 7124:6 7167:21 7186:14 7224:12	<b>DFA</b> 7071:27 7075:26 7100:25 7104:8 7213:23,24 7215:13 7217:10 7221:20 7222:14 7224:16 7229:18 7231:3 7236:25,27 7237:7 7239:5	<b>direction</b> 7122:10 7223:11	<b>distributing</b> 7105:28 7266:2 7270:18 7284:26
<b>depends</b> 7123:10 7207:15	<b>DFA's</b> 7217:13 7239:1	<b>directly</b> 7082:9 7131:15 7141:8	<b>distribution</b> 7167:14,17
<b>depool</b> 7265:24,28	<b>died</b> 7158:3	<b>director</b> 7135:22 7175:2 7210:21	<b>districts</b> 7220:27 7231:28 7232:1
<b>derived</b> 7100:3 7295:6	<b>diesel</b> 7129:23 7130:7 7220:13,17,23 7221:10 7249:1	<b>Directors</b> 7244:25	<b>distrust</b> 7266:3
<b>describe</b> 7069:2 7249:25 7250:2	<b>difference</b> 7078:5,6,8,9,11, 14,17 7079:21,22,23 7083:18 7086:18 7090:2 7203:11 7205:14 7207:19 7210:16,18 7220:3 7250:19, 21 7253:6 7292:22	<b>disadvantage</b> 7085:27 7088:5 7281:10	<b>divide</b> 7192:27
<b>describes</b> 7158:28	<b>differences</b> 7115:21 7145:7 7204:28 7205:15 7206:13,15 7208:8 7210:15 7220:24 7221:5 7224:20 7232:6 7278:4	<b>disagree</b> 7175:25	<b>divided</b> 7250:11 7277:2
<b>describing</b> 7161:26 7183:16	<b>differential</b> 7072:1 7097:7 7098:6,9 7099:17 7110:20 7121:21 7129:16 7229:14 7259:17,21,24 7267:2,3,5,9, 11,20,22,26 7268:5,8,13,18, 19,28 7269:3,6 7270:5 7271:19 7276:7 7285:22 7291:5 7292:1 7293:6,11,14 7294:8 7295:12 7296:14 7297:22	<b>disappear</b> 7137:28	<b>dividing</b> 7192:22
<b>description</b> 7097:2 7161:22 7259:19	<b>differentials</b> 7102:7 7129:15 7246:22,25 7247:24,26 7248:3,12 7249:14 7255:9,	<b>discontinuation</b> 7221:23	<b>Division</b> 7069:14
<b>design</b> 7140:16 7141:4 7142:25 7143:2 7165:6 7166:27 7169:21 7176:3		<b>discount</b> 7142:16 7147:15 7169:16	<b>divulge</b> 7168:27
<b>designated</b> 7246:8		<b>discovered</b> 7066:15,16	<b>divulging</b> 7160:15
<b>designation</b> 7106:2 7288:26		<b>discuss</b> 7071:16 7213:26 7229:18 7282:20,24	<b>divvied</b> 7289:19
<b>designed</b> 7095:1		<b>discussed</b> 7120:28 7282:15, 23,24,26	<b>DMC</b> 7073:9
<b>designs</b> 7136:28 7137:3		<b>discussing</b> 7105:10 7136:9 7182:19	<b>DMI</b> 7178:1
<b>desirable</b> 7257:18		<b>discussion</b> 7078:27 7087:15 7101:3 7103:26 7124:16 7133:24 7142:4 7151:18 7174:15 7206:23 7211:24 7243:4 7278:3 7280:12	<b>doable</b> 7084:9
<b>desire</b> 7216:28 7226:21		<b>discussions</b> 7104:7 7108:26 7116:20	<b>doctor</b> 7131:24 7180:18 7196:4
<b>desired</b> 7147:13 7192:18		<b>dismissed</b> 7142:27 7169:24	<b>doctorate</b> 7131:25
<b>desludging</b> 7138:25		<b>display</b> 7249:27	<b>doctors</b> 7180:20
<b>destroy</b> 7147:10		<b>displayed</b> 7250:3,19	<b>document</b> 7064:5 7097:13 7098:18 7100:2 7101:14 7105:26,28 7107:7 7131:13, 21 7133:2 7174:6 7211:15
<b>destroyed</b> 7259:1			<b>documents</b> 7063:12,14,22 7130:5 7174:10 7211:22 7240:12 7281:15,22
<b>destruction</b> 7149:20			<b>dollar</b> 7071:13 7072:7,19 7076:5 7086:12 7095:19 7113:24 7212:7
<b>detail</b> 7121:16 7203:8			<b>dollar'</b> 7212:5
			<b>dollars</b> 7074:13 7080:11 7108:23 7146:15 7251:22
			<b>double</b> 7070:10 7136:22 7137:8,18,23,26,27,28 7138:9 7140:22 7144:21



7155:16 7157:12,14,15 7159:1 7160:1,8,11,17 7161:2,9,12 7171:21 7193:20 7195:25	<b>duly</b> 7064:13 7134:6 7212:14 7240:27	7116:21	7190:18
<b>doubled</b> 7248:9	<b>durability</b> 7258:19	<b>Ed's</b> 7072:4	<b>employed</b> 7147:23 7213:3
<b>dovetails</b> 7235:25	<b>duties</b> 7141:1	<b>editor</b> 7094:22,23	<b>employee</b> 7226:9 7248:21
<b>downgraded</b> 7142:21,24 7168:23 7169:13	<b>dynamic</b> 7217:6 7227:19	<b>education</b> 7069:10 7152:28	<b>employees</b> 7198:2
<b>downs</b> 7138:25	<b>dynamically</b> 7227:24	<b>educational</b> 7065:6	<b>employers</b> 7213:16 7218:15
<b>downside</b> 7197:27	<b>dynamics</b> 7227:15	<b>effect</b> 7198:9	<b>employment</b> 7091:16 7248:21,22
<b>downstream</b> 7139:1 7163:2	<hr/> <b>E</b> <hr/>	<b>effective</b> 7258:2 7267:11	<b>encapsulate</b> 7153:12
<b>dozen</b> 7160:10 7278:9	<b>e.g.</b> 7221:26	<b>effectively</b> 7253:24	<b>enclosed</b> 7136:22 7176:3
<b>dozens</b> 7140:28	<b>earlier</b> 7123:22 7171:5 7176:6 7223:24 7263:8	<b>effectiveness</b> 7248:11	<b>encompasses</b> 7153:1 7213:14
<b>drafts</b> 7175:7,9	<b>early</b> 7177:25 7252:6 7278:7 7298:18	<b>effectuate</b> 7254:5	<b>encountered</b> 7217:25
<b>drag</b> 7198:8,14	<b>easier</b> 7287:15	<b>efficiencies</b> 7148:11 7215:24,26	<b>encourage</b> 7133:20 7247:5, 11
<b>drain</b> 7166:6,7 7201:27 7236:8	<b>easiest</b> 7167:9	<b>efficiency</b> 7082:1 7085:17 7118:12 7120:22	<b>end</b> 7063:22 7085:15 7088:6 7092:17 7097:10 7103:1,5 7158:22 7161:28 7162:15 7168:20 7171:16 7172:23 7184:1,5,6,7,11,14,26 7185:9,18,22 7186:9,11 7187:12 7194:16 7206:18 7234:20 7250:2,9 7261:26 7282:22 7299:25
<b>drainage</b> 7140:16 7165:7	<b>easily</b> 7143:24 7167:12 7182:28 7183:1 7259:7,8	<b>efficient</b> 7087:2 7091:11,12 7118:10,16 7137:22 7138:7 7299:18	<b>endeavor</b> 7249:12
<b>draw</b> 7270:26	<b>east</b> 7071:16 7076:19 7103:19,22 7112:23	<b>effort</b> 7069:19 7192:19 7279:20	<b>ended</b> 7151:3
<b>drawing</b> 7086:13 7276:25	<b>eastern</b> 7217:28	<b>efforts</b> 7108:19 7179:20	<b>ends</b> 7092:19 7187:10 7299:27
<b>drawn</b> 7276:23	<b>eastward</b> 7090:12	<b>EIA</b> 7220:23	<b>energy</b> 7062:10 7073:11 7123:15 7220:22 7232:1,9 7249:2,3
<b>drew</b> 7276:23	<b>easy</b> 7203:4,5 7249:12 7254:5 7263:3 7287:14 7295:25 7296:1,3	<b>eight-axle</b> 7214:10 7223:19 7224:2,4	<b>engage</b> 7108:18 7165:8
<b>dried</b> 7201:28	<b>ebbs</b> 7253:9 7257:11	<b>elaborate</b> 7126:13	<b>engaged</b> 7069:16
<b>drip</b> 7203:17	<b>economic</b> 7069:10,28 7071:17 7080:21,22 7083:24 7086:23 7087:11,17 7149:17 7204:21 7213:8 7220:15 7244:26 7255:26 7256:12,21 7275:17	<b>elapsd</b> 7222:24	<b>English</b> 7119:4,6,8 7124:28 7125:22 7181:6 7191:3,4 7194:22 7228:7,12,15 7230:13 7232:18 7279:24 7280:2,4 7281:19,22 7282:7, 10,13,28 7288:12,15,16 7297:8,10
<b>drippings</b> 7141:8	<b>economically</b> 7082:7 7085:21 7191:24 7192:13 7275:11,20	<b>elasticities</b> 7247:19 7266:7	<b>English's</b> 7195:1
<b>drive</b> 7110:16,17	<b>economics</b> 7065:9,10,15,16, 19 7066:3 7067:14 7068:17 7094:18 7118:8 7121:12 7122:6 7213:6 7214:28 7244:17 7245:3,4,28 7246:12 7270:19 7275:12	<b>electronic</b> 7219:26	<b>enjoy</b> 7099:5
<b>driven</b> 7253:28	<b>economies</b> 7124:10	<b>element</b> 7157:20 7162:24 7165:28 7295:22	<b>enjoyed</b> 7211:4
<b>driver</b> 7219:19,22,24,26 7226:8 7253:15	<b>economist</b> 7067:1,4 7069:6 7109:18 7178:7 7245:8	<b>elementary</b> 7125:25	<b>enlarge</b> 7153:5
<b>drivers</b> 7218:4,21 7219:28 7220:5 7226:13	<b>economists</b> 7082:13 7113:6 7263:16	<b>elements</b> 7073:18 7260:1 7295:8	<b>enlarged</b> 7251:12
<b>drives</b> 7090:3	<b>economy</b> 7071:3 7091:19,20 7109:23,24 7124:10	<b>elevate</b> 7082:10	<b>enormous</b> 7110:17
<b>driving</b> 7214:28 7222:9	<b>Ed</b> 7071:27 7075:26 7100:24 7102:9 7103:9 7104:7	<b>eloquently</b> 7202:9	<b>ensure</b> 7251:16
<b>drop</b> 7120:15 7258:25		<b>else's</b> 7197:10 7262:17	<b>ensures</b> 7254:17
<b>dropped</b> 7146:20		<b>emanates</b> 7294:10,11	<b>enter</b> 7085:5
<b>drought</b> 7109:9		<b>embedded</b> 7293:7,16,17	
<b>drove</b> 7295:11		<b>emerged</b> 7080:1	
<b>dry</b> 7079:20 7089:13 7091:5 7096:3 7139:7		<b>emission</b> 7220:21	
<b>due</b> 7072:22 7077:23 7090:9 7096:28 7140:6,16 7141:14 7147:22 7148:16,26,28 7149:4 7165:6 7168:9 7187:28 7188:2 7194:4 7221:5,24 7222:26 7223:11, 26 7225:9 7227:9		<b>emissions</b> 7222:8	
		<b>emphasis</b> 7224:14 7263:27	
		<b>employ</b> 7149:27 7189:8	



<b>entered</b> 7130:26 7227:5	<b>escalates</b> 7225:14	<b>exceed</b> 7264:21 7296:17	7178:13 7185:15,18,22 7186:21 7190:16 7298:24
<b>entering</b> 7162:6 7227:8	<b>escalating</b> 7222:22	<b>exceeded</b> 7268:22,24 7269:5	<b>expectancy</b> 7221:25
<b>enterprise</b> 7128:13,16 7216:2 7217:22 7226:5,10 7227:14	<b>escalation</b> 7223:3	<b>exceeds</b> 7264:23,26	<b>expectation</b> 7178:10
<b>enterprise's</b> 7224:15	<b>espouse</b> 7257:24 7258:3	<b>Excellent</b> 7300:10	<b>expected</b> 7136:26 7219:24 7220:10
<b>enterprises</b> 7128:10 7217:6 7224:12 7225:3	<b>essence</b> 7074:12 7153:26 7267:2 7292:8	<b>Excellently</b> 7210:26	<b>expecting</b> 7253:25
<b>entire</b> 7065:13 7066:16 7087:26 7095:15,28 7144:14 7192:5 7213:15 7280:23	<b>essential</b> 7088:11,12 7132:20	<b>exception</b> 7108:17 7259:8	<b>expenses</b> 7224:10 7225:21 7226:23
<b>entirety</b> 7131:21	<b>essentially</b> 7073:10 7196:10	<b>exceptionally</b> 7076:18	<b>expensive</b> 7285:11
<b>entity</b> 7210:21	<b>establish</b> 7099:25 7247:11 7248:2	<b>exceptions</b> 7218:1	<b>experience</b> 7066:3 7087:6 7113:4,27 7124:13 7129:5 7137:8,9 7144:17 7159:1 7162:12 7173:18 7177:24 7188:26 7198:1 7213:13 7234:18 7239:1 7257:16
<b>enumerated</b> 7170:12	<b>established</b> 7291:16	<b>excess</b> 7123:9	<b>experienced</b> 7075:16 7085:5 7102:1,17,19,28 7103:4 7104:4 7221:19 7248:28
<b>environment</b> 7071:17 7072:27 7086:4,9 7087:15, 17 7091:8 7112:17 7120:18 7226:27 7256:13	<b>establishing</b> 7298:1	<b>excise</b> 7221:6	<b>experiences</b> 7140:18 7142:18 7159:4 7198:10,11 7239:2,6
<b>environmental</b> 7091:12 7220:20	<b>esteemed</b> 7144:23	<b>exclude</b> 7205:6 7206:28	<b>experiencing</b> 7075:18
<b>environments</b> 7226:8 7267:16	<b>estimate</b> 7080:15 7124:22 7127:14 7140:20 7142:22 7144:15 7168:22 7189:12	<b>excuse</b> 7081:2 7199:24 7236:24 7249:3 7250:28 7257:27 7272:4 7293:1	<b>expert</b> 7067:8,11,13 7121:13 7177:17 7245:27 7246:5,8, 11,12 7279:2
<b>envision</b> 7201:16	<b>estimated</b> 7072:5 7136:14 7156:13	<b>exhaust</b> 7220:18,21 7222:7	<b>expertise</b> 7168:17
<b>enzymes</b> 7147:25	<b>estimates</b> 7171:16 7196:11	<b>exhibit</b> 7067:26 7068:5,6,7, 10 7076:4 7078:22 7079:4 7097:14 7100:13 7101:10,26 7105:26 7106:1,14,24 7108:5,15 7130:14,16,17,19, 23,26 7131:1,9 7133:11,15 7134:12,13,17 7135:13 7150:22,27 7151:4 7154:4 7156:10 7174:7,9,19,22,25 7182:5 7187:27 7190:25 7193:10 7197:8 7198:26 7208:17,18,20,23,24,26 7209:2,4,24 7210:28 7211:1, 16,18,19 7212:23,24 7239:10,12,13,14 7241:9,16, 17,20,22,23,25,26 7242:1,2, 4,5,7,8,10,11,13,16,19,20 7243:13,28 7249:8,9,10,17 7264:28 7265:3,12 7266:24 7268:17 7269:9 7270:8 7273:4 7274:21 7281:17,26, 27 7282:4,15 7285:21 7288:11,23 7291:25 7293:4 7297:5,9	<b>explained</b> 7125:26 7182:26 7205:23
<b>EPA</b> 7220:21 7222:7	<b>et al</b> 7145:9	<b>ethanol</b> 7077:5,13,24 7080:1 7108:10 7120:19	<b>explains</b> 7227:2
<b>ephemeral</b> 7258:16	<b>etcetera</b> 7093:19 7096:3 7104:12 7108:13 7244:22	<b>events</b> 7220:16	<b>explanation</b> 7098:11 7101:17 7246:20
<b>epicenter</b> 7270:13	<b>ethanol</b> 7077:5,13,24 7080:1 7108:10 7120:19	<b>eventual</b> 7216:1 7263:26	<b>explicitly</b> 7104:15
<b>equal</b> 7296:21	<b>everybody's</b> 7242:25	<b>everybody's</b> 7242:25	<b>explore</b> 7095:19 7099:24
<b>equally</b> 7192:6	<b>everything's</b> 7252:13	<b>evidence</b> 7063:7 7130:16, 18,20,27 7131:2,9 7133:10, 16 7208:15,17,19,21,23,25, 27 7209:4,24 7210:28 7211:2 7239:13,15 7287:18 7297:14	<b>exported</b> 7112:27
<b>equation</b> 7144:27 7145:1 7231:10	<b>evolve</b> 7227:19	<b>evolve</b> 7227:19	<b>exposure</b> 7195:11,14
<b>equipment</b> 7127:28 7128:15,19 7136:21 7141:4, 15 7143:2,12 7167:3,21 7168:10 7169:27 7170:5 7172:18 7195:13 7197:25 7198:4 7206:21,27 7207:5 7219:3 7222:2,5,9,11 7223:3,12 7224:17,24 7225:25 7226:2 7248:8	<b>exacerbated</b> 7104:2	<b>examination</b> 7064:23 7134:8 7191:8 7212:16 7238:22 7241:1 7280:22	<b>express</b> 7171:13
<b>equitably</b> 7263:21	<b>exact</b> 7119:18 7132:16	<b>examined</b> 7064:13 7134:6 7212:14 7240:27	<b>extends</b> 7090:12
<b>eraser</b> 7278:1	<b>examination</b> 7064:23 7134:8 7191:8 7212:16 7238:22 7241:1 7280:22	<b>examples</b> 7084:20 7169:1 7216:9 7217:25 7235:18,23 7236:10	<b>extension</b> 7069:7,24 7080:25 7113:6 7127:21
<b>Erba</b> 7180:24 7181:5,10 7299:3,4,5	<b>examined</b> 7064:13 7134:6 7212:14 7240:27	<b>expand</b> 7118:10	<b>extensively</b> 7294:26
<b>Eric</b> 7180:24	<b>examples</b> 7084:20 7169:1 7216:9 7217:25 7235:18,23 7236:10	<b>expanded</b> 7119:15	<b>extent</b> 7103:28 7121:20,22 7132:6 7141:3 7190:13 7191:18 7294:23
<b>eroded</b> 7084:24 7147:24		<b>expanding</b> 7108:27	
<b>error</b> 7133:7 7194:28 7273:10 7278:24		<b>expansions</b> 7124:1	
		<b>expect</b> 7114:1,9 7164:24	



<p><b>extra</b> 7106:12 7151:3 7219:24 7223:20</p> <p><b>extremely</b> 7087:2 7285:11</p> <hr/> <p style="text-align: center;"><b>F</b></p> <hr/> <p><b>face</b> 7090:23 7102:17 7226:2,4 7270:19</p> <p><b>faced</b> 7085:13 7216:10 7217:23 7219:2</p> <p><b>faces</b> 7087:16</p> <p><b>facilities</b> 7109:15 7110:13 7127:28 7128:20 7154:28 7224:24 7225:24</p> <p><b>facility</b> 7074:5 7110:6,17 7155:19</p> <p><b>fact</b> 7080:18 7095:27 7101:10 7113:8 7125:26 7154:8 7177:9,28 7194:19 7238:13 7275:17 7284:8</p> <p><b>factor</b> 7168:15 7178:8,14 7187:23,26 7205:12 7224:21</p> <p><b>factored</b> 7198:22</p> <p><b>factories</b> 7136:21,25 7138:8 7140:14,23 7144:2,4,9,18, 19,20,22 7145:5 7147:1,2 7148:3 7149:25 7157:6 7165:4 7171:25 7172:13 7206:20</p> <p><b>factors</b> 7100:4 7113:20 7129:13,18 7148:26 7158:8 7187:25,28 7213:8 7224:28 7225:22,26</p> <p><b>factory</b> 7135:26 7138:2 7140:13 7143:12 7146:8 7154:6 7172:18 7198:28 7199:1 7201:21 7207:26 7221:24 7222:26</p> <p><b>facts</b> 7075:27 7105:4 7125:23 7132:15 7179:6,23</p> <p><b>factual</b> 7292:12</p> <p><b>faculty</b> 7065:13 7068:18</p> <p><b>failing</b> 7264:8</p> <p><b>fails</b> 7138:28</p> <p><b>failure</b> 7263:26</p> <p><b>fair</b> 7095:3 7099:23 7108:14, 24 7123:24 7168:14 7239:3</p> <p><b>fairly</b> 7064:19 7202:21 7210:9 7249:28</p> <p><b>faith</b> 7238:14 7261:21</p> <p><b>fall</b> 7142:19</p>	<p><b>Falls</b> 7241:7 7244:11</p> <p><b>familiar</b> 7107:2 7110:14,28 7155:8 7186:4 7229:9</p> <p><b>family</b> 7226:10,14,19,22 7238:12,14</p> <p><b>Fahrenheit</b> 7147:18</p> <p><b>Farkye</b> 7171:5,6 7182:9 7190:7</p> <p><b>farm</b> 7070:8 7072:28 7089:9 7090:18 7096:16 7117:18 7118:2 7191:17,26 7196:6 7213:11,21 7214:22 7215:15 7216:3,6,7,15,19 7217:2,7,9, 15 7220:8 7226:15 7244:28 7252:26 7256:18 7270:11, 16,17,28 7271:5</p> <p><b>farm-to-plant</b> 7136:9</p> <p><b>farmer</b> 7110:21 7111:6 7113:3,15 7168:14 7178:25 7270:20 7271:2 7298:24 7299:13</p> <p><b>farmers</b> 7071:23,27 7072:2 7073:25 7104:28 7108:11, 18,22 7110:8 7120:16 7134:27 7152:18 7153:6,7, 14,22,26 7168:13 7177:27 7191:10,14,15,23,28 7192:6, 9,13,20 7213:3,23 7230:27 7231:6 7236:17 7247:2,8,15 7252:22 7253:3 7255:16,25 7257:5 7270:5 7275:25 7299:13 7300:1</p> <p><b>farmers'</b> 7275:15</p> <p><b>Farming</b> 7090:22</p> <p><b>farmland</b> 7088:26 7089:12, 18,27 7091:15</p> <p><b>farmlands</b> 7090:15</p> <p><b>farms</b> 7112:14 7116:10 7118:9,17 7215:25 7216:7, 23 7217:4,17 7220:11 7252:23,27,28 7253:5 7256:13,15 7285:7</p> <p><b>farms'</b> 7118:7</p> <p><b>farmstead</b> 7152:17 7195:15</p> <p><b>farther</b> 7252:27</p> <p><b>fast</b> 7230:8</p> <p><b>faster</b> 7214:17</p> <p><b>fat</b> 7136:6,7,10,12,16,19,23, 25,28 7137:4,6,9,10,12,14, 16 7138:10,11,13,14,17,18, 21,22,27,28 7139:1,3,14,18, 21,24,26 7140:1,2,24,25,26, 27 7141:6,16 7142:26 7143:1,8,13,16,18,19,22,24,</p>	<p>26 7144:1,4,6,7,8,9,10,12, 13,15,21,25,26,27 7145:21, 24,26 7146:20,22,24 7147:4, 5,22,24,25,26 7148:9,10,12, 16,17,21 7149:23,24 7155:23 7156:15,22 7157:5, 22 7158:9,13,19,22 7159:1, 9,11,22,26 7161:27 7162:2, 18,21,23,25 7163:2,6,7,8,9, 11,13,16 7169:22,25 7171:1, 4,18 7172:12,19 7175:20 7176:5,18,19,21,28 7177:2 7182:27,28 7183:7,8 7186:21 7188:4 7197:24,26 7198:5,8,9,21,28 7199:6,12, 13,16 7200:25,28 7201:12, 22 7202:5,7,21,24,27 7203:2,6,9,17 7205:16 7206:19 7208:9</p> <p><b>fat's</b> 7203:3</p> <p><b>fault</b> 7253:22</p> <p><b>favor</b> 7091:9,16 7146:10</p> <p><b>favorable</b> 7109:13</p> <p><b>features</b> 7222:7</p> <p><b>fed</b> 7069:14,20 7109:22</p> <p><b>Federal</b> 7093:19,21 7118:21 7119:13 7121:13 7122:4,15, 21,22 7123:15,23 7207:4 7213:9,11 7214:3 7219:16 7224:25 7244:16,17,26 7245:7,15,28 7246:12,21,28 7247:25 7248:13 7254:4 7257:14,19 7258:4,12 7259:19,23 7260:10,25 7261:1,2,4,7,11,14,22 7262:1,6,9 7263:10,18,19 7266:15,19 7275:11,12 7291:16</p> <p><b>federally-regulated</b> 7258:20</p> <p><b>Federation</b> 7071:21 7120:14 7196:7 7228:25 7229:2,24 7246:20 7288:8 7289:22 7290:2</p> <p><b>Federation's</b> 7283:26 7291:27</p> <p><b>fee</b> 7259:24 7260:1</p> <p><b>feed</b> 7066:20,21,24 7067:1, 5,15,18 7071:15 7072:25,26 7073:9 7074:12 7076:5,9,18, 25,26 7077:3,4,10,11 7078:17 7079:17,26,28 7080:9,10 7082:12,20 7085:25 7086:10 7087:18 7088:8 7090:15 7091:7 7103:16,23 7105:10 7108:7, 10 7109:8 7112:17,22 7113:16 7114:18,21,28 7115:6,7 7116:9,26 7117:16,</p>	<p>23,27 7118:6 7119:21 7120:18,19,25 7126:2,8,9 7127:12,27</p> <p><b>feedback</b> 7235:18</p> <p><b>feeding</b> 7066:9 7070:2 7077:20 7079:18 7088:12 7090:25 7109:21,26,27</p> <p><b>feeds</b> 7090:4</p> <p><b>feedstuffs</b> 7075:20</p> <p><b>feel</b> 7160:14 7223:10 7233:4 7235:16</p> <p><b>fees</b> 7221:13 7259:18</p> <p><b>fell</b> 7217:15 7279:5</p> <p><b>feta</b> 7194:14,15,16,19,27</p> <p><b>fewer</b> 7215:21 7217:17,18, 20,21 7262:23</p> <p><b>field</b> 7067:14</p> <p><b>figure</b> 7073:21,23 7076:3 7077:15,26,27,28 7078:1,4, 6,7,23 7079:11,24 7082:13, 14,18 7084:2,15,27 7086:2,7 7089:3 7128:28 7162:20 7234:13 7259:28 7260:3 7280:23</p> <p><b>figured</b> 7197:16 7266:10</p> <p><b>figures</b> 7078:21 7079:12 7111:23 7132:18 7137:14</p> <p><b>file</b> 7078:21</p> <p><b>fill</b> 7215:26 7238:18</p> <p><b>filter</b> 7138:24</p> <p><b>final</b> 7216:16,20,24 7221:9 7222:19 7230:4 7237:5 7295:8</p> <p><b>finally</b> 7141:17 7142:12 7194:7 7225:11 7226:10</p> <p><b>financial</b> 7244:14 7247:13</p> <p><b>find</b> 7088:26 7107:14 7130:4 7133:7 7205:24 7238:17 7246:28 7255:2 7260:15 7296:25</p> <p><b>finding</b> 7079:2 7153:15 7192:14 7217:21</p> <p><b>fine</b> 7098:18 7122:12 7131:16 7164:18 7242:27 7264:23</p> <p><b>finest</b> 7139:27 7140:3,5,12, 14,15,20 7163:9 7164:2,6,25 7165:6 7166:17,22,23 7167:19 7173:23,27 7203:9 7205:15,21 7206:6,9,10</p>
--	--	--	---



<b>finish</b> 7063:18 7180:11,22 7181:1,8 7299:2	<b>follow-up</b> 7150:5	7129:25,27 7220:6 7248:16	<b>garage</b> 7224:24
<b>finished</b> 7096:14 7140:12 7143:8 7164:6 7175:8 7180:3 7181:17	<b>food</b> 7094:19,26 7134:18 7135:16 7136:5 7140:4 7213:5	<b>freighting</b> 7114:15	<b>gas</b> 7109:11 7254:16,17
<b>firm</b> 7170:22,23	<b>Foods</b> 7093:16 7109:28 7111:21 7174:25	<b>frequency</b> 7266:12 7267:28	<b>gasoline</b> 7077:6,13 7080:1
<b>firmness</b> 7143:5 7170:26	<b>foodservice</b> 7150:12,16	<b>fresh</b> 7164:25	<b>gather</b> 7063:6 7123:13 7204:4
<b>fit</b> 7127:25 7263:14	<b>footnote</b> 7233:7	<b>fresher</b> 7164:22	<b>gave</b> 7097:16 7106:7,12 7172:4 7193:17 7279:6
<b>fix</b> 7085:19	<b>footprint</b> 7262:24	<b>Friday</b> 7252:11	<b>geared</b> 7094:24 7095:14,25
<b>fixed</b> 7080:14,16,26 7081:7, 18,25 7082:2,5,9,10,21,23 7083:17,18 7084:14,16,18, 20,28 7085:13,22 7086:10, 11,14 7087:4 7117:26 7126:11 7127:16,25 7128:19 7215:1,3 7259:17,21,24,25 7260:1 7267:26	<b>forage</b> 7066:25 7069:26 7076:16 7088:11 7103:23 7105:11 7112:22 7119:20 7120:20	<b>front</b> 7064:20 7066:4,13 7088:1 7123:17 7125:18 7174:19 7180:20 7181:5 7238:26 7251:11 7278:18 7281:23	<b>general</b> 7087:15 7088:14 7105:3 7143:2 7170:13,16 7177:6 7178:21 7198:1 7215:25 7218:1 7243:19 7244:14 7297:14
<b>flat</b> 7079:13 7085:1 7146:24 7215:10 7262:4	<b>forages</b> 7091:7 7103:17 7130:3	<b>FSA</b> 7073:24,28 7075:11 7077:16 7080:8 7093:3 7105:16	<b>generally</b> 7076:11,24 7079:16 7103:22 7129:12 7165:27 7200:6 7236:16 7287:15
<b>flavor</b> 7147:21 7148:19 7149:6,13 7188:22	<b>force</b> 7244:27	<b>fuel</b> 7217:24 7220:13,19,23, 26 7221:5,7,10,12 7230:28 7231:7,12 7232:7 7248:7,26, 28 7249:1	<b>generate</b> 7140:15 7165:5 7286:18 7287:18
<b>flavors</b> 7149:22 7183:9	<b>forced</b> 7217:5	<b>fulfill</b> 7090:19 7254:11	<b>generated</b> 7101:6 7139:8, 12,24 7146:4 7176:22 7200:8 7286:18
<b>fleet</b> 7213:23 7222:14 7229:4,11	<b>forces</b> 7141:11	<b>full</b> 7063:1 7100:21 7158:17 7214:26 7215:8,21,24 7237:3 7245:19	<b>generation</b> 7148:22 7208:6 7226:21 7255:24 7257:5
<b>flip</b> 7175:12	<b>forecast</b> 7244:19	<b>full-time</b> 7245:24	<b>generations</b> 7226:20
<b>floor</b> 7141:3,12 7167:26,28 7173:24,26 7176:7	<b>forecasting</b> 7094:8 7244:18	<b>fully</b> 7062:12	<b>genetic</b> 7128:26
<b>flour</b> 7296:23	<b>foreign</b> 7141:14 7168:9	<b>fun</b> 7063:2	<b>gentleness</b> 7143:5 7171:9
<b>flow</b> 7234:14 7247:12	<b>foreseeable</b> 7091:2	<b>function</b> 7063:4,6 7170:8 7257:27 7263:23	<b>geographically</b> 7262:20
<b>flows</b> 7257:11	<b>forever</b> 7098:20	<b>functions</b> 7225:28 7245:14	<b>geography</b> 7259:6 7262:5 7263:7
<b>fluid</b> 7110:12 7120:3 7123:10 7220:18 7231:7 7259:16 7260:27 7261:6,14 7262:21 7286:6 7287:4	<b>forgotten</b> 7180:25 7266:22	<b>funded</b> 7177:28 7191:15	<b>George</b> 7300:7
<b>flush</b> 7215:21	<b>form</b> 7139:2 7163:3 7266:16 7269:3 7270:4 7271:18	<b>fund</b> 7063:2	<b>Georgia</b> 7245:8
<b>flushing</b> 7138:24	<b>formal</b> 7112:21	<b>funny</b> 7126:23 7212:6 7235:14	<b>giant</b> 7141:10
<b>fly</b> 7133:6	<b>forming</b> 7139:9	<b>fuse</b> 7165:12	<b>gist</b> 7189:15
<b>FMCSA</b> 7219:17	<b>formula</b> 7077:16 7084:13 7105:16 7116:25 7126:6 7178:15 7192:3 7198:20	<b>future</b> 7071:18 7091:2 7135:6 7227:15,17 7244:20	<b>give</b> 7082:13 7105:27 7126:25 7127:12,13 7131:6 7152:19 7160:4 7162:13 7167:13 7169:1 7179:6,23 7192:2,26 7207:9 7236:14 7271:9,26 7284:25 7295:24 7299:24
<b>focus</b> 7075:27,28 7102:11, 15 7103:2 7138:14 7207:4	<b>Fort</b> 7065:2 7090:11,13 7110:1	<b>futures</b> 7094:12,13	
<b>focused</b> 7102:13 7117:9 7121:25 7146:11	<b>fourfold</b> 7248:8	<b>G</b>	
<b>focusing</b> 7084:22 7087:7	<b>fourth</b> 7157:14 7218:11 7242:22	<b>gaining</b> 7120:22	<b>glad</b> 7233:4
<b>fold</b> 7248:7	<b>foxes</b> 7264:10,12	<b>Gallagher</b> 7071:27 7072:5 7075:26 7100:24 7102:9 7103:9 7104:7 7118:22 7124:18	<b>Glanbia</b> 7165:25
<b>folks</b> 7094:26 7108:26 7126:19 7155:2 7187:24 7192:2 7263:9 7277:3 7289:17	<b>fragile</b> 7227:14	<b>Gallagher's</b> 7120:13	<b>glaze</b> 7219:6
<b>follow</b> 7105:12 7133:20	<b>frankly</b> 7123:18 7270:1	<b>Gallery</b> 7169:3	<b>globules</b> 7143:18,19,22,24 7144:1,4 7147:24,26 7148:9, 17
	<b>fraught</b> 7147:9	<b>gallon</b> 7221:7,10 7259:20,21 7260:5	<b>goal</b> 7153:4,6,12,13 7177:26
	<b>free</b> 7141:11		<b>good</b> 7064:2,7,25 7065:24
	<b>freight</b> 7113:18 7114:6,16		



7067:18 7076:1 7078:3 7083:13 7093:7,15 7102:14 7106:9 7112:11,12,25 7119:4,7 7121:11 7125:8,9 7134:10,11 7143:12 7152:15 7172:10,18 7174:2 7181:14 7182:6 7190:15,28 7191:4 7196:7,8,21 7197:3,4,23 7204:21 7205:28 7207:8,24 7211:6 7212:18 7214:9,15 7218:8 7221:8 7228:13,14 7232:28 7233:1 7237:23 7241:3 7244:24 7246:18 7248:22 7252:13 7255:8 7280:3,4 7300:10	<b>Greeley</b> 7090:12 7110:1,3,4, 5,6,16 <b>green</b> 7084:22 <b>grew</b> 7080:2 7244:28 <b>grocery</b> 7119:16 7213:14 7263:1 <b>gross</b> 7080:11,18 <b>ground</b> 7087:21 7099:23 7213:14 7276:16 7277:4 <b>group</b> 7119:9 7127:4 7191:5 7228:8,16 7258:3 7277:8 7279:25,26 7289:13 <b>groups</b> 7276:21,22 <b>grow</b> 7080:3 7128:11 <b>growing</b> 7075:18 7216:4 7223:13 7225:7 <b>grown</b> 7070:13 7076:22 7104:10 7107:23 7108:21 7112:26 7113:10,17 7119:26 7227:17 <b>growth</b> 7070:23 7071:1 7080:2 7084:26 7087:28 7090:27 7107:28 7108:2 7109:26 7262:27 <b>guarantee</b> 7142:25 7169:21 <b>guess</b> 7167:25 7168:12 7189:19 7209:7 7210:23 7234:12 7235:3,7 7238:5,10 7265:16 7266:9 7268:3 7297:25 <b>guessing</b> 7154:11 <b>guesstimate</b> 7162:13 7163:11 7197:17 <b>guidance</b> 7152:19 7234:26	<b>hand</b> 7064:11 <b>handed</b> 7106:23 7282:7 <b>handful</b> 7080:19 <b>handle</b> 7106:10 7248:21,22 7288:10 <b>handled</b> 7136:15 7156:14,17 7157:21 7280:20 <b>handler</b> 7266:1 <b>handlers</b> 7265:27,28 <b>handling</b> 7143:5 7146:3 7148:21,22 7157:18 <b>hands</b> 7143:13 7172:19,24 <b>hanging</b> 7277:24 <b>happen</b> 7099:1,10 7101:7 7103:10 7108:23 7124:4 7184:3 7275:18 <b>happened</b> 7119:12 7187:17 7289:11 7292:3 <b>happening</b> 7259:3 <b>happier</b> 7237:26 <b>happy</b> 7067:19 7132:17,21 7151:11 7180:6 7237:28 7288:21 <b>hard</b> 7065:22 7082:13 7130:4 7229:21 7255:26 7256:1 7258:23 7259:13,26 7262:11,13 7275:16 7295:7, 16 <b>hardest</b> 7090:19 <b>harm</b> 7191:9 <b>harmful</b> 7072:19 <b>harvest</b> 7090:19 <b>hat</b> 7258:25 <b>hate</b> 7164:16 7298:9 <b>haul</b> 7216:28 7217:19 7227:12 7248:25,26 7270:5 7271:2,7,14 7273:27,28 7274:4 7275:2 <b>hailed</b> 7227:7 <b>hauler</b> 7216:13,17,21,27 7217:1,9,21 7219:1,27 7221:20 7222:8 7223:4 7224:11,16,20,25 7225:3 7226:3 7227:12 7234:23 7237:19 7238:1,10,18 <b>hauler's</b> 7219:25 7224:21,28 7226:14 <b>haulers</b> 7214:25 7215:9,12, 23,25,28 7216:10 7217:11, 12,18,20,22 7218:13,15 7219:13,20,21 7220:9,16 7221:19,22 7222:3 7223:6, 10 7224:17 7225:12,21,28 7226:4,12 7233:17,19,21 7234:10,12 7235:9,11,19,21 7236:14,16,25 7237:6,8 <b>hauling</b> 7213:26 7214:1,18 7215:27 7216:2,3,6,27,28 7217:6 7218:28 7219:3,27 7220:3,8 7222:10 7224:3 7226:5,6,10,16,18,19,22 7227:3,6,8,10,13,16 7229:7, 14 7230:19,25 7231:8,17,18 7239:2 7248:4,6,8,10,17 7253:4 7255:17 7270:11 7271:24,27 7273:16,17,18, 21 7274:7 7275:1 <b>hauls</b> 7273:26 <b>havoc</b> 7276:2 <b>hay</b> 7070:4 7073:3,10,11,20, 27 7074:10 7076:16,19 7077:19 7078:15,23 7079:22 7087:8 7113:2,10,12,19 7116:13,17 7245:1 <b>he'll</b> 7239:26 7243:20 <b>head</b> 7104:26 7168:5 7184:28 <b>headed</b> 7169:21 <b>heading</b> 7160:1 <b>headquartered</b> 7244:11 <b>headroom</b> 7264:4 <b>heads-up</b> 7299:24 <b>headwinds</b> 7090:28 7120:26 7121:8 <b>healing</b> 7171:10 <b>health</b> 7083:24 7179:8 7252:18 <b>healthcare</b> 7226:12 <b>healthy</b> 7062:25 7108:20 7191:23,24 7192:5 7234:23 <b>hear</b> 7065:22 7069:1 7220:18 7257:10 7260:23 7284:10 7290:11 7295:13 <b>heard</b> 7077:7 7127:20 7129:17 7137:11 7159:8 7189:15 7191:9 7210:3 7244:11 7259:14 7261:3 7265:20 7276:4,9,10,14 7280:6 7283:22 <b>hearing</b> 7063:5,10 7097:14 7100:7 7101:5 7106:24 7108:5 7118:27 7122:16 7129:11 7133:6 7134:12,13
--	---	--



7135:13 7171:5 7173:5,22 7179:10 7182:9 7193:5 7208:14 7212:24 7259:14 7265:21 7290:14	<b>highest</b> 7087:4 7150:2 7153:9 7296:6,19 7297:25, 26 7298:2	<b>Honor's</b> 7243:16	<b>idea</b> 7124:19,21 7126:8 7189:25 7230:5 7246:23 7257:17
<b>hearing's</b> 7192:25	<b>highfalutin</b> 7258:17	<b>hope</b> 7097:16 7153:21 7192:2 7205:26 7210:23 7218:6 7238:14	<b>ideal</b> 7196:20 7198:6
<b>hearings</b> 7206:23	<b>highly</b> 7082:17 7083:5 7089:14 7192:18 7224:11 7259:2	<b>hopeful</b> 7062:20	<b>ideas</b> 7096:6
<b>heating</b> 7147:18 7148:19	<b>highway</b> 7221:27	<b>hopper</b> 7197:15	<b>identification</b> 7068:8 7106:15 7174:23 7211:20 7241:18,21,24,27 7242:3,6, 9,12,17,21
<b>heavier</b> 7223:19 7285:3	<b>hill</b> 7131:10,11,12,24 7132:4 7209:5,6,7,13,21 7210:1,11 7262:14 7274:25	<b>horizon</b> 7094:13 7119:22	<b>identified</b> 7095:10 7209:11
<b>heavily</b> 7218:9	<b>Hilmar</b> 7160:16,25 7165:25	<b>horizontal</b> 7137:4,10,23,27 7138:7 7144:20 7155:7,21 7159:13,15 7171:19 7176:4 7207:25 7208:1,2,7,8	<b>identify</b> 7211:27 7240:15 7264:28
<b>heavy</b> 7147:15 7218:4,20	<b>hinted</b> 7209:14	<b>horsepower</b> 7223:5	<b>IDFA</b> 7151:4 7179:14,15
<b>held</b> 7136:23 7238:5 7250:24 7251:3	<b>hire</b> 7226:3	<b>HOS</b> 7219:15,18,22	<b>II</b> 7264:20,24 7267:19,23,26, 28 7268:22,26 7269:4
<b>helpful</b> 7069:4 7184:19 7192:14 7281:12	<b>historic</b> 7229:28	<b>hour</b> 7218:5,12,19,20,21 7253:17 7299:17	<b>III</b> 7082:24,26 7083:1 7094:12 7117:7,9 7123:8 7178:14,16 7192:4 7264:21, 24 7267:25 7268:1,4,10,22, 26 7269:4 7270:7,14,21,22, 26 7271:2,3,4,10,11,17,21 7272:5,17,20 7273:8,14,22, 24 7274:3,7,22 7287:10,14
<b>helping</b> 7153:17	<b>historical</b> 7141:17 7142:12	<b>hours</b> 7062:24 7219:14,19 7220:9 7237:27 7238:17 7242:23	<b>Illinois</b> 7065:10 7073:3,4 7074:1 7077:18
<b>helps</b> 7215:1	<b>historically</b> 7096:13 7146:4 7166:11 7204:15 7224:4	<b>house</b> 7264:11,14	<b>illustrate</b> 7072:27
<b>hen</b> 7264:11,13	<b>history</b> 7136:12 7146:3 7224:21 7244:6,28 7245:22 7248:24 7249:1	<b>Houston</b> 7270:18 7271:13 7272:6 7274:4,8 7275:6	<b>illustrates</b> 7078:4,23 7079:11 7085:9
<b>herd</b> 7070:25	<b>hit</b> 7167:13 7170:8	<b>How's</b> 7299:8	<b>illustration</b> 7133:9
<b>herdsman</b> 7213:20	<b>hobby</b> 7211:6	<b>hub</b> 7073:4	<b>images</b> 7250:27
<b>Hereford</b> 7270:12,15,28 7273:21	<b>hold</b> 7069:6 7098:13 7213:4 7251:25 7252:17	<b>huge</b> 7221:19	<b>imagine</b> 7169:16 7175:15 7228:23
<b>hermetically-sealed</b> 7203:12	<b>holding</b> 7074:8 7147:18 7247:9	<b>human</b> 7091:10 7157:20 7158:8 7187:23 7226:1	<b>imbalances</b> 7259:1
<b>hesitant</b> 7269:13	<b>holes</b> 7199:13	<b>hundred</b> 7254:21,22 7286:9, 10,26	<b>immediately</b> 7139:7
<b>hey</b> 7233:22 7236:21 7237:21 7253:14 7264:2	<b>holidays</b> 7220:9	<b>hundreds</b> 7073:16 7255:17, 27 7257:6 7270:6	<b>impact</b> 7071:22,28 7072:6 7085:23 7086:1,12 7095:5, 16 7096:24 7099:15,16 7100:27 7101:3 7108:10 7109:23 7119:20 7120:19 7121:27 7124:26 7158:9 7169:13 7170:14 7206:16 7214:23 7275:15
<b>high</b> 7070:17 7072:26 7073:11,13,14 7075:21 7076:18 7077:23 7082:5 7085:20,25 7088:11 7089:28 7090:3,4 7091:5,6,7 7103:20 7114:5 7129:26 7215:20 7225:9 7250:16,18,20,21,22, 25 7251:6 7271:20	<b>Holland</b> 7285:4,19	<b>hundredweight</b> 7071:14,25 7072:8,15 7074:14,16,18,20, 21,25 7075:7 7076:6 7078:8, 11,12 7080:11,27,28 7081:6 7082:21,22 7083:18 7084:28 7085:19,22,27 7086:5,15,23 7095:16 7096:25 7097:11 7098:23 7099:2,3,20,21 7100:23,28 7116:4 7121:26, 27 7127:16 7219:21 7267:7 7271:7,10,14,27 7273:22 7292:1 7293:15 7294:8	<b>imacted</b> 7082:10 7109:10
<b>high-cost</b> 7112:17 7120:18	<b>home</b> 7062:12 7237:28 7238:6 7257:8	<b>hung</b> 7296:21	<b>impacting</b> 7124:8 7215:2
<b>high-quality</b> 7113:9,10	<b>honest</b> 7265:4 7295:16	<b>hypothetical</b> 7186:13,17 7268:2,3 7270:11,14,16 7271:4	<b>impacts</b> 7068:14 7071:11,19 7084:12 7118:25 7158:13 7219:2 7220:14
<b>higher</b> 7076:10,11,12,24 7077:19,20,22,23 7078:10 7079:15,19 7098:9 7101:16 7103:25 7104:11 7113:16,24 7115:10 7118:6 7127:17 7139:14,19 7143:16 7147:4 7158:26 7161:5 7164:25 7176:19,20 7177:2 7183:8 7191:28 7192:14,16 7199:6 7205:5 7215:8 7216:6 7217:27 7219:21 7221:28 7223:23 7225:9 7262:13 7268:25,27 7273:18 7287:3 7289:7 7294:24	<b>Honestly</b> 7261:9	<b>I</b>	<b>imperative</b> 7256:3 7257:8
<b>higher-of</b> 7266:17	<b>honor</b> 7064:22 7066:27 7068:3 7091:25 7092:25 7098:13,15,26 7099:12 7106:4,7 7111:20 7112:6 7119:4 7130:12,22,25 7131:10 7132:2,5,12,17 7133:13 7141:20 7145:14 7151:1,8,22 7171:28 7172:16 7174:6,17,21 7180:15 7208:14 7209:1,5, 22 7210:2,19 7211:5,9,13 7212:6,11 7227:20,25 7230:12 7233:3 7234:12 7239:9,19,21 7240:13 7241:8 7242:28 7243:8 7245:26 7265:2 7272:9,24 7274:9 7277:6 7279:22,24 7298:20	<b>i.e.</b> 7214:17 7215:1,7,15	<b>implementation</b> 7069:17 7214:2
		<b>Idaho</b> 7070:19 7285:26,27 7287:23	<b>implementing</b> 7196:17



<b>implies</b> 7086:7,9 7118:16	<b>including</b> 7067:18 7108:15 7110:27 7136:21 7176:22 7248:26	7124:9,26 7126:12 7127:3,5 7129:2,4,24,26,27 7134:26 7137:19,20,24 7146:17 7160:3,18 7169:8 7174:3 7177:19 7179:8 7191:19,22 7192:5 7195:14 7196:14 7197:15 7213:13,16,28 7216:8 7226:8 7227:19 7262:5	<b>inputs</b> 7073:16 7090:7 7126:8 7127:12 7217:23 7223:16 7224:7 7225:20 7233:20 7234:16
<b>importance</b> 7085:10	<b>inclusion</b> 7287:9	<b>inedible</b> 7141:5	<b>inserted</b> 7142:8
<b>important</b> 7070:12 7085:4 7086:21 7087:10 7090:7 7091:18 7109:10 7124:9 7138:20 7142:28 7145:27 7146:13 7167:10 7169:25 7170:13 7223:2 7238:12,15 7254:22 7258:10 7273:6 7279:14	<b>income</b> 7084:3 7117:16 7178:9,21	<b>inevitably</b> 7137:26 7141:1,8 7143:16	<b>insidious</b> 7270:4 7271:18
<b>importantly</b> 7065:23 7079:14	<b>incorporate</b> 7183:3 7204:12	<b>inexperience</b> 7263:15	<b>install</b> 7161:2
<b>impossible</b> 7186:14 7193:1 7258:23 7288:10	<b>incorporated</b> 7078:16 7213:20 7241:6 7244:10	<b>inexperienced</b> 7143:13 7172:19,24	<b>installed</b> 7137:22 7138:1 7156:8 7247:26
<b>imprecise</b> 7163:1	<b>incorrect</b> 7206:5 7293:8	<b>inflation</b> 7082:10 7083:21 7121:4,5	<b>instance</b> 7193:28 7232:11
<b>improper</b> 7287:10	<b>increase</b> 7078:17 7079:14, 25 7085:22 7086:21 7096:26 7099:15 7108:12,19 7114:25 7124:5 7153:17,21 7155:12 7178:9,15,21 7179:1,15 7217:4 7222:19 7265:23 7289:27 7293:5,14 7294:27	<b>inflation's</b> 7083:19	<b>instances</b> 7143:12 7172:17 7227:8
<b>improve</b> 7069:20 7082:1 7153:13	<b>increased</b> 7080:6 7173:20 7178:15 7214:1,6,16,17,19 7219:27 7221:21 7223:27 7248:6,7 7260:9	<b>influence</b> 7179:1 7219:4 7225:26	<b>institute</b> 7262:8
<b>improved</b> 7085:10,12,14,17, 26 7105:7 7137:5 7221:25 7226:11	<b>increases</b> 7072:22 7218:28 7219:4 7221:19 7248:10,25, 28 7292:1,11 7294:9	<b>influenced</b> 7222:8	<b>institutional</b> 7213:8
<b>improvement</b> 7128:26	<b>increasing</b> 7071:24 7078:9 7143:26 7153:20 7178:8 7216:3 7226:7	<b>influences</b> 7220:15	<b>instrumental</b> 7213:10
<b>improvements</b> 7091:17 7137:3 7157:15 7208:4 7209:18	<b>increasingly</b> 7220:4 7227:14 7252:22	<b>information</b> 7066:12 7086:13 7097:6,17 7099:6, 14 7106:20 7107:8,15 7120:10 7130:4 7131:14 7132:7,14 7168:3 7192:3,27 7195:5 7210:3 7220:22 7227:26 7229:16 7230:1 7231:13,14,16,17,21 7233:7, 19,22 7234:3,4,7,8 7235:5, 22 7236:13,18 7238:27 7243:17 7249:2,3 7276:18 7285:14	<b>insufficient</b> 7275:14,16
<b>in-depth</b> 7155:22	<b>independently</b> 7283:27	<b>informative</b> 7093:11	<b>insurance</b> 7073:28 7126:18 7224:8,19,28 7225:5,11,13, 14,17
<b>in-house</b> 7221:20 7224:16 7225:28	<b>index</b> 7248:15	<b>informed</b> 7072:11 7222:27	<b>insure</b> 7254:6,7
<b>in-specific</b> 7289:14	<b>Indiana</b> 7224:5 7284:26 7285:4,5,19	<b>infrastructure</b> 7220:11	<b>intended</b> 7280:13
<b>inactivated</b> 7147:17	<b>indirect</b> 7225:27	<b>ingredient</b> 7153:9	<b>intending</b> 7297:18
<b>inadmissible</b> 7131:20	<b>Indirectly</b> 7219:2	<b>ingredients</b> 7073:19	<b>intense</b> 7269:18
<b>incentive</b> 7265:24	<b>individual</b> 7123:7 7186:14 7223:28 7224:14 7249:21	<b>initial</b> 7139:9 7212:2 7278:10 7286:21	<b>intent</b> 7191:13 7214:26
<b>incentives</b> 7247:13 7255:13 7256:22	<b>individuals</b> 7089:25	<b>initially</b> 7222:17	<b>intention</b> 7087:14
<b>incentivize</b> 7254:24 7296:2, 5 7297:23	<b>industrially</b> 7194:4	<b>initiated</b> 7227:9	<b>intentional</b> 7065:26
<b>incentivizing</b> 7255:10	<b>industries</b> 7069:23,26 7070:2,4,11 7094:18 7095:5 7126:20 7218:16 7225:8	<b>Innovation</b> 7119:8 7191:5 7228:7,16 7279:25,26	<b>interaction</b> 7229:26
<b>incidence</b> 7164:25 7268:11	<b>industry</b> 7066:10,11,18,20, 21,23 7068:15 7069:12,19 7070:14 7071:1,5,12 7072:11,20 7080:17,21,24 7082:15,18 7083:6,11,24 7084:12 7085:6 7086:16,18, 28 7091:21 7094:27,28 7095:3 7105:5,6,9,10,12 7107:28 7108:2,26 7109:5, 20,25 7110:15 7119:19 7120:21 7121:28 7123:1,3	<b>innovative</b> 7071:4 7105:6	<b>interacts</b> 7262:24
<b>incidences</b> 7266:8		<b>input</b> 7111:6 7175:10 7217:23 7219:1,4 7220:13 7221:18 7283:28	<b>interest</b> 7094:7,27 7095:2 7134:26,27 7224:7,9,10 7254:8 7269:27
<b>inclined</b> 7147:2			<b>interested</b> 7094:6 7128:27 7130:1 7159:16
<b>include</b> 7089:10 7163:7,9,25 7170:17 7172:24 7186:5,6 7216:16,20,24 7224:7,28 7225:22,24 7244:15			<b>interesting</b> 7093:8 7123:14 7133:21 7207:8
<b>included</b> 7194:19 7243:21 7282:16 7285:22 7293:18 7297:5			<b>interests</b> 7224:17
<b>includes</b> 7113:20 7153:7 7173:27 7219:20 7279:26			<b>interject</b> 7256:6





<b>intervention</b> 7172:1	23,28 7273:8 7274:11,13,14, 22,28 7275:1,3,4,5 7287:15	<b>Kentucky-based</b> 7216:13	<b>laptop</b> 7064:5
<b>introduce</b> 7244:2 7276:6		<b>key</b> 7264:27	<b>large</b> 7083:8 7087:1 7090:1 7110:6 7120:2 7135:20,28 7136:1 7137:21,25 7138:7 7140:9,19 7142:20 7143:13 7146:10 7154:15,16 7160:7, 23 7164:3 7165:24 7168:21 7172:19 7189:17 7207:20,21 7214:10 7215:25 7218:14 7221:28 7224:2,6 7225:5 7240:12 7247:16 7262:4 7263:6
<b>introduction</b> 7228:9	<hr/> <b>J</b> <hr/>	<b>keyed</b> 7294:21	<b>largely</b> 7066:8 7079:18 7082:26 7109:18 7138:6 7140:6 7146:9 7191:15 7224:19 7249:27
<b>invariably</b> 7226:26	<b>J-E-F-F-R-E-Y</b> 7240:18	<b>kid</b> 7237:24,25	<b>larger</b> 7156:7 7189:13 7191:13 7193:16,23 7223:4, 9,14,21,23,28
<b>inversion</b> 7264:20 7265:19 7267:19 7268:4,21 7269:1,4 7297:27	<b>January</b> 7070:22 7175:14 7247:26 7251:7 7260:17 7267:18 7272:4 7273:15	<b>kids</b> 7258:15	<b>largest</b> 7071:8 7087:6 7135:26 7154:5 7195:16 7218:28
<b>inversions</b> 7247:22 7264:16, 18 7265:19,23 7266:8,28 7267:17 7268:11 7296:11,12 7297:6,8 7298:1	<b>Jeff</b> 7180:23,28 7239:21 7244:8	<b>kilter</b> 7209:19	<b>lastly</b> 7135:24 7142:27
<b>investment</b> 7128:16 7226:28	<b>Jeffrey</b> 7180:27 7240:18,26 7244:8	<b>kind</b> 7066:12 7125:25 7126:14 7127:25 7129:5 7152:24 7189:28 7197:23 7199:9,16 7206:19,24 7207:6 7219:5,7 7233:7,14 7234:7,11 7235:18,25 7236:11 7243:19 7246:24 7248:17 7250:1 7251:20 7257:23 7270:12 7275:10,24 7277:8,10,11 7278:5,12 7279:5,9,14 7285:4,14 7299:21,22	<b>late</b> 7119:13,23 7139:5,24 7201:10 7202:2 7238:7 7252:6 7255:7
<b>investments</b> 7108:18,23 7226:25	<b>Jill</b> 7062:4	<b>knaw</b> 7209:6,10	<b>latest</b> 7142:25 7169:21
<b>invite</b> 7232:24	<b>job</b> 7062:11 7090:18 7125:22 7192:21,24,25	<b>knives</b> 7170:24	<b>laughed</b> 7126:24
<b>invoices</b> 7248:17	<b>John</b> 7174:28 7209:27	<b>knowing</b> 7123:23 7192:28 7195:9 7261:28 7285:1	<b>Lauren</b> 7300:5
<b>invoicing</b> 7248:16	<b>Johnny</b> 7300:6	<b>knowledge</b> 7098:17 7123:14 7177:19 7229:26 7239:1 7276:16 7277:3,24 7289:14	<b>Law</b> 7063:5
<b>involve</b> 7223:4 7225:27	<b>Johnson</b> 7144:24,27	<b>Koontz</b> 7063:27 7064:12,25 7066:28 7067:11,13,25 7068:11 7074:26 7091:24, 25,27 7093:17 7112:8,11 7119:10 7133:18	<b>lay</b> 7177:17
<b>involved</b> 7103:15 7149:4,20 7158:8 7192:23 7213:7,28 7222:21 7229:10 7230:23 7231:2 7234:24 7236:6 7260:14	<b>join</b> 7132:2	<b>Kroger</b> 7213:17	<b>lead</b> 7148:24
<b>involvement</b> 7062:18	<b>joined</b> 7245:6 7249:5	<hr/> <b>L</b> <hr/>	<b>leaders</b> 7135:6
<b>involves</b> 7219:9 7220:8 7224:21 7225:12,21	<b>joining</b> 7197:5	<b>labeled</b> 7249:10	<b>leading</b> 7149:25
<b>Iowa</b> 7114:24	<b>journal</b> 7094:23,24 7145:5,9	<b>labor</b> 7090:8,18,19,24 7091:15 7121:5 7127:7,8 7128:23 7217:24,26 7218:2, 18,27 7219:2,9,12,25 7222:23 7223:11 7226:14	<b>leads</b> 7195:3 7235:25
<b>irrigated</b> 7088:10,21,25,28 7089:7,13,19,24 7090:1,3 7091:6	<b>journal</b> 7094:23,24 7145:5,9	<b>lack</b> 7091:10 7223:11 7295:10	<b>leak</b> 7141:11 7143:25 7148:1 7171:1 7182:28 7199:16
<b>irrigation</b> 7076:17 7087:19, 27 7090:2,11	<b>Judge</b> 7062:7 7063:5,11,16 7164:12	<b>lacking</b> 7161:8	<b>leakage</b> 7171:12
<b>isolating</b> 7062:12	<b>judges</b> 7063:10	<b>Lacrosse</b> 7218:10	<b>leaks</b> 7183:1
<b>isolation</b> 7124:2	<b>judgment</b> 7266:18	<b>lactose</b> 7203:19	<b>lean</b> 7234:13
<b>issue</b> 7090:6 7094:22 7100:25 7173:6 7205:23 7249:19,20 7264:27 7275:10 7281:10 7297:8	<b>judicial</b> 7132:6,9,13	<b>Lafayette</b> 7295:18	<b>learn</b> 7135:3 7234:18
<b>issues</b> 7069:8,14 7085:20 7090:7 7109:4 7152:11 7157:23 7244:17 7259:14 7260:7 7265:5	<b>July</b> 7094:17 7217:10 7236:24,25 7252:2	<b>Lakes</b> 7169:2	<b>learned</b> 7146:12 7191:22
<b>item</b> 7253:27	<b>jump</b> 7077:21	<b>land</b> 7088:24,25,28 7089:1, 7,8,9,13,16,20,21,24,26 7090:1,3,7,8,24 7091:14 7128:1 7239:5	<b>learning</b> 7155:20 7198:16
<b>items</b> 7267:15	<b>jump-off</b> 7279:7	<b>lands</b> 7089:13	<b>leave</b> 7132:22 7179:28 7180:1 7264:4 7281:1
<b>iterations</b> 7277:28 7283:20 7284:8,15	<b>jumped</b> 7077:22		<b>leaving</b> 7147:25 7199:1 7224:3
<b>IV</b> 7264:21,24 7267:27 7268:9,10,22,26 7269:5 7270:7,14,23,26 7271:20,23, 24,25,26 7272:5,14,16,19,	<b>June</b> 7117:15,25 7252:2 7267:18 7270:20 7271:1,6,9, 20 7272:1,4 7273:15 7274:6		<b>left</b> 7117:24 7129:25 7136:3 7138:23 7149:10 7154:24 7180:21 7242:23 7245:16
	<b>juxtaposition</b> 7210:14		
	<hr/> <b>K</b> <hr/>		
	<b>K-O-O-N-T-Z</b> 7063:28		
	<b>K.J.</b> 7145:9		
	<b>Kansas</b> 7070:20 7076:21 7087:21 7114:4,11		
	<b>Keefe</b> 7180:25		
	<b>keeping</b> 7257:7		
	<b>Kentucky</b> 7245:13		



7250:6 7278:17 7279:17 7280:14 7290:15	<b>livestock</b> 7069:5,17,26 7070:2,3,7 7075:21 7076:10 7079:28 7088:12 7090:22 7109:18,19 7129:6	7147:1,11 7161:27 7162:2, 23,25 7163:6,16 7198:23 7201:23 7202:5 7203:9 7205:16	7298:18 7299:11,17,22
<b>legislation</b> 7223:28	<b>living</b> 7069:2	<b>losses</b> 7083:15 7136:6,7,9, 10 7137:6,9,10,12,15 7138:10,11,13,15,18,28 7139:1,26 7140:20 7141:3,6 7143:14,17,26 7144:12 7157:21 7158:19,22 7159:2, 9,11,22,26 7162:18,20 7163:2,9 7166:17 7167:19 7172:19 7173:26,28 7198:23,27 7200:15 7201:12 7206:5	<b>luncheon</b> 7181:24
<b>legitimate</b> 7293:17	<b>load</b> 7214:5,26 7215:8,22,24 7221:27 7223:10,23,28 7224:6 7253:14,18 7255:7 7285:12	<b>lost</b> 7145:21 7162:21 7163:7,8,11,13 7167:28 7183:1 7202:7,21 7206:13	<b>M</b>
<b>lenders</b> 7113:7,11	<b>loads</b> 7216:5 7223:9,15,21 7224:3	<b>lot</b> 7062:11 7082:16 7085:8 7095:5 7102:10 7104:13 7105:9 7109:11 7118:20 7126:17 7128:10 7129:8 7130:7 7152:4,11,12,20 7153:13 7170:19 7171:2 7172:1 7176:19,26 7180:19 7187:22 7195:12 7197:24 7204:19 7210:3 7212:8 7233:21 7248:17,21,23 7252:25 7261:27 7277:28 7278:2,4 7295:19	<b>MA</b> 7245:10
<b>length</b> 7105:24	<b>loan</b> 7224:12	<b>lots</b> 7090:15 7127:11 7128:3,8 7252:10	<b>made</b> 7073:12 7086:20 7093:6 7111:22 7142:6 7150:13,14 7157:21 7177:1 7183:20 7190:24 7203:24 7205:17 7206:14,16 7257:1 7262:28 7289:21,22,26 7290:3
<b>Leprino</b> 7109:28 7110:15	<b>loans</b> 7224:8,17	<b>loud</b> 7064:2	<b>maintain</b> 7091:18 7219:3 7244:18
<b>lessons</b> 7191:22	<b>local</b> 7221:27 7255:28	<b>Louisiana</b> 7295:18	<b>maintained</b> 7251:25
<b>level</b> 7070:8 7077:23 7096:16 7177:18 7179:20 7260:2 7293:12	<b>located</b> 7065:1 7132:15 7217:28 7218:14 7252:21,23 7270:14 7284:26	<b>Louisville</b> 7245:12	<b>maintaining</b> 7118:11
<b>levels</b> 7183:8 7257:19	<b>location</b> 7109:13 7132:25 7264:21,25 7286:11,27 7287:19	<b>love</b> 7210:12 7233:22	<b>maintenance</b> 7219:4,7,8
<b>levied</b> 7215:15 7221:6	<b>logical</b> 7113:14 7254:12	<b>low</b> 7076:26,27 7086:14 7089:28 7215:6 7226:17 7287:22 7288:4 7292:20	<b>major</b> 7066:9 7109:14 7110:1 7248:13
<b>liability</b> 7225:5,6,7,9	<b>logically</b> 7125:17	<b>lower</b> 7076:8 7086:3,8 7103:22,23 7118:5 7124:4,7 7136:26 7157:6 7158:25 7195:21 7215:22 7216:4 7264:3	<b>majority</b> 7101:17 7110:26 7257:15 7296:15,17 7298:7
<b>license</b> 7223:15,18,25	<b>logistics</b> 7213:18,22,24 7227:11 7229:4,11 7231:2,4 7233:24	<b>lowered</b> 7071:13	<b>make</b> 7065:22 7067:28 7071:11,24 7072:13,17 7077:7 7091:22,25 7092:9, 14 7095:21,28 7096:2,3,4,6, 9,11,13,21,26 7099:16,21 7100:6,19 7101:16 7102:6 7103:12 7108:4,5,11,12,23 7110:19 7121:21 7125:23,26 7126:1,6,15 7131:4 7140:26 7142:2 7143:3 7150:12,21 7153:6,7 7156:13,21,27 7165:2 7166:4 7167:2 7168:13 7170:14,16 7171:17 7177:26 7179:7 7183:13,26 7186:12 7188:16 7192:4,17, 19 7197:10 7204:12 7209:17 7215:25 7227:22 7231:14 7234:15,22,24 7236:6 7238:25 7239:24 7251:15 7254:6,15,16 7256:28 7266:17 7273:2 7274:25 7275:13,16,20,28 7279:17, 22 7280:11 7281:5 7285:12 7287:12 7292:8 7296:6,19 7297:24 7298:6 7299:18
<b>life</b> 7161:9 7221:24 7237:13 7238:13 7259:25	<b>logs</b> 7219:26	<b>lowest</b> 7087:4 7287:20 7294:7	
<b>lifespan</b> 7206:27 7207:5	<b>Lone</b> 7241:6 7244:10,13,15 7245:24	<b>Lucey</b> 7174:28 7175:17,18, 19,25 7176:2 7193:11,15 7194:14 7195:4 7209:27 7210:20	
<b>lighter</b> 7274:5	<b>long</b> 7062:24 7087:13 7091:13 7129:24 7151:9 7170:3,21 7183:17,21 7184:8 7196:12 7204:27 7237:27 7238:17 7239:26,27 7255:19 7259:2 7266:26	<b>Luis</b> 7113:8	
<b>likelihood</b> 7226:16	<b>long-run</b> 7080:5,6 7088:5,15	<b>lump</b> 7208:1	
<b>likewise</b> 7084:24	<b>long-term</b> 7066:17 7192:8 7257:3	<b>lunch</b> 7180:7,12,13 7190:26	
<b>limit</b> 7105:8 7223:27	<b>longer</b> 7127:17 7154:20 7207:14 7216:28 7221:24 7227:12 7250:4 7253:1 7254:27		
<b>limitations</b> 7120:24 7170:4 7257:28 7258:7 7263:12,25	<b>looked</b> 7083:25 7093:17,24 7094:16 7109:19 7111:1 7115:17,18 7155:18 7175:28 7194:27 7199:10		
<b>limited</b> 7063:6 7087:22 7091:10 7166:13 7194:9 7196:12 7198:1 7293:5,14	<b>lose</b> 7140:10 7164:5 7202:23 7203:17 7271:10,26		
<b>limiting</b> 7101:2 7264:16 7298:1	<b>losing</b> 7118:3 7205:20		
<b>Lincoln</b> 7218:3	<b>loss</b> 7136:12 7137:16 7138:17,21,22,27 7139:3,24 7140:1,2,3,25,26,27 7141:16 7144:8,12,13 7146:28		
<b>Linehaul</b> 7248:15			
<b>liner</b> 7203:15			
<b>lines</b> 7066:17 7119:18 7138:24 7195:1 7279:14			
<b>Lipase</b> 7147:25			
<b>liquid</b> 7202:23			
<b>list</b> 7094:17 7180:16,21,23 7235:17 7246:27 7247:1 7299:3,6 7300:3,4			
<b>listed</b> 7097:25 7107:1 7235:2			
<b>listeners</b> 7132:26			
<b>literally</b> 7184:7,11			
<b>live</b> 7252:1,25			
<b>lived</b> 7257:15			



<b>maker</b> 7142:28 7143:2 7164:20 7183:14 7200:10	7143:16 7146:11 7148:4 7165:9 7166:14 7189:2 7213:17 7218:16 7247:14 7251:23 7261:17 7275:17	<b>marking</b> 7241:13	<b>mechanical</b> 7145:23
<b>maker's</b> 7169:24		<b>Marty</b> 7300:6	<b>mechanics</b> 7122:2
<b>maker-driven</b> 7143:11	<b>map</b> 7221:1 7231:28 7232:3, 12	<b>mass</b> 7165:13 7198:27	<b>mechanism</b> 7260:11
<b>makers</b> 7138:4 7143:13 7150:1,2 7152:17,18 7163:15 7171:3 7172:19,25 7195:16 7204:17 7230:4	<b>maps</b> 7276:23	<b>massive</b> 7097:15	<b>Medina</b> 7212:21,22
<b>makes</b> 7096:20 7165:14 7207:18 7210:18 7260:19 7268:9 7290:24	<b>Marathon</b> 7169:2	<b>master</b> 7145:11 7158:1 7164:21 7213:5	<b>medium</b> 7138:8
<b>making</b> 7132:21 7135:3 7136:20 7137:17 7139:2,6, 25 7140:14 7143:10,19,24, 26,28 7144:5,14 7145:21 7147:3,16,23 7148:1,7,11,21 7152:22 7153:8 7157:19 7160:10 7163:3 7165:5,21 7183:4,18 7199:19,24 7201:11,16,18 7202:25 7204:3 7206:21,27	<b>margin</b> 7073:1,8,24 7074:10, 12,15,24 7075:5 7077:16,21 7078:5 7080:8,12,18 7081:4 7082:20 7084:13 7103:25 7105:16 7108:9 7113:19 7114:19,28 7115:5,7,16,18 7116:11,26 7117:1,11,14,16, 19 7126:3	<b>Master's</b> 7169:3 7245:3,4	<b>medium-sized</b> 7161:18 7195:19,21
<b>man</b> 7237:26	<b>marginal</b> 7286:26 7287:18	<b>matched</b> 7279:15	<b>meet</b> 7142:18 7219:22
<b>manage</b> 7078:21 7226:18 7244:15,17	<b>margins</b> 7076:7 7123:2 7216:7	<b>material</b> 7222:23	<b>meeting</b> 7185:27 7278:9
<b>management</b> 7069:11 7073:1 7128:23 7224:9 7225:21 7226:1,24 7244:13	<b>mark</b> 7144:24 7174:7 7239:23 7241:9 7300:8	<b>materials</b> 7141:14 7168:9 7280:7,9	<b>meetings</b> 7127:2
<b>manager</b> 7213:23 7222:14 7244:14 7255:7	<b>marked</b> 7068:3,7 7097:14 7105:26 7106:14,24 7174:22 7211:17,19 7212:24 7241:17,20,23,26 7242:2,5, 8,11,16,20 7265:6	<b>math</b> 7116:23,25 7164:1 7297:26	<b>meets</b> 7297:22
<b>manages</b> 7142:21	<b>market</b> 7066:7,17,18 7069:5, 11,13,20,22 7075:19 7077:3, 4,10,11,12 7079:26 7080:4 7086:2,8 7099:16 7109:8,11 7119:21 7120:20 7122:3,7,9 7123:10 7127:10 7235:23,27 7244:9 7245:6,11,13,14,16, 28 7254:23 7255:28 7259:5, 9 7264:3,4 7276:16	<b>matrix</b> 7143:25	<b>melts</b> 7087:25
<b>mandatory</b> 7069:18	<b>marketable</b> 7185:19,23,24, 25	<b>matter</b> 7062:5 7063:17 7103:20 7210:13 7275:12 7278:25 7297:13	<b>member</b> 7134:18 7135:16 7235:26 7236:1 7244:12,18, 24
<b>manner</b> 7132:23	<b>marketed</b> 7227:7	<b>matters</b> 7063:24 7085:7 7168:15	<b>member's</b> 7227:7
<b>Manual</b> 7090:18	<b>marketing</b> 7069:13 7084:4 7093:20,22 7121:13 7122:15,22 7123:4,23 7125:3,5 7142:20 7168:21, 25,28 7180:10 7196:24,26 7213:9 7227:2,18 7231:10 7232:22,25 7236:7 7245:5, 17,21,28 7246:13 7247:7 7263:19 7265:22 7266:3	<b>matting</b> 7140:13,23 7166:21 7201:27 7206:10	<b>members</b> 7080:24 7126:13 7226:10 7234:22 7285:7
<b>manufacture</b> 7136:6 7140:3, 28 7143:17 7144:16 7145:19 7148:10,14,25,28 7149:3 7162:26 7169:4 7188:2	<b>marketplace</b> 7192:16 7247:10	<b>maximize</b> 7171:3 7215:23	<b>membership</b> 7236:20
<b>manufactured</b> 7136:3,15 7142:23 7146:5 7156:14 7168:23	<b>markets</b> 7066:9,24,25 7067:1,4,16,17 7069:26 7094:8 7105:11 7108:10 7112:22 7117:8 7120:19 7124:22 7127:22 7249:20 7259:3,4 7263:20,23 7265:26 7276:3 7284:23	<b>maximizing</b> 7153:14	<b>membranes</b> 7147:24
<b>manufacturer</b> 7135:26 7137:26 7140:10,20 7154:5 7160:7,12,23 7161:14,23,24 7164:4,24,26 7165:24 7182:24 7189:18 7222:22		<b>maximum</b> 7074:19,20,22 7075:6 7122:5 7170:5,8 7192:19 7219:18	<b>mention</b> 7129:7 7154:2 7197:28 7199:5 7237:21
<b>manufacturers</b> 7135:20 7137:25 7138:3 7142:22 7146:6,14 7148:7,27 7149:4, 12,18,27 7153:8,17,21,24,26 7161:21 7188:1,21,27 7189:7,13 7190:10,11		<b>maximums</b> 7123:5	<b>mentioned</b> 7110:27 7120:25 7148:16 7172:16 7200:13 7223:23 7255:16 7259:7 7261:1
<b>manufacturing</b> 7070:16,19 7071:24 7085:28 7136:8,10, 13 7138:11,14,17,19		<b>Mcafee</b> 7300:8	<b>mess</b> 7187:15
		<b>meal</b> 7073:3,4,13,14,20,28 7074:1,3,9,11,24 7077:19 7105:17 7113:21 7114:7,12, 15,20 7116:14,15	<b>message</b> 7108:16 7138:4 7143:10 7275:10
		<b>meaning</b> 7141:25 7198:9 7204:16	<b>met</b> 7087:5 7173:3
		<b>means</b> 7109:18 7118:1 7218:15 7254:19 7262:23,24 7267:9 7280:24 7286:7 7291:3	<b>method</b> 7143:4
		<b>meantime</b> 7063:15	<b>methods</b> 7082:1
		<b>measure</b> 7080:9,17,20 7082:15,18 7083:27 7084:6, 11 7168:2	<b>metropolitan</b> 7217:27 7218:4,14
		<b>measured</b> 7074:18 7167:27	<b>Mexico</b> 7070:20 7076:21 7112:14,24,27 7113:3,11,13, 14 7114:10 7115:9 7118:5 7213:19
		<b>measurement</b> 7080:10	<b>mic</b> 7125:18 7288:10,11,13
		<b>measurements</b> 7168:3 7276:12	<b>Michigan</b> 7065:16 7068:19 7071:8 7127:23 7224:3,5 7225:17
		<b>measures</b> 7074:12 7084:3	<b>Michigan-based</b> 7214:11
		<b>meat</b> 7094:18 7277:24	<b>microbial</b> 7148:23
			<b>microphone</b> 7064:19 7152:7 7181:4
			<b>microscope</b> 7199:11



<b>mid-contract</b> 7260:8	3,6,11,12,13,18,19,21,22 7218:13,15,27 7219:1,3,13, 20,23,25,27 7220:3,8,9,14 7221:19,22 7222:3,10 7223:4,6,8 7224:3,11,17,20, 21 7225:3,12,18,21,28 7226:4,5,6,10,16,18,19,22 7227:2,3,6,7,10,12,13,16,18 7228:7,15,16,25 7229:1,18, 23 7231:7 7235:26,27,28 7236:7,25 7241:6 7244:10, 13,19,21,23,25 7245:7,25,28 7246:12,19 7247:3,4,5,9,11, 12,13 7248:6,10,12 7249:12 7250:7,10,13,17 7251:14,16, 17,19,20,23,26 7252:5,11,23 7253:4 7254:8,10,13,18,25 7255:1,4,5,11,14,17,26 7256:13,20,22,26,28 7257:7, 11,14,25 7258:12,15,28 7259:12,16 7260:5,21,27,28 7261:4,6,9,14,17 7263:19, 20,21,23 7265:3 7267:5 7270:6,13,22 7271:5,24,27 7272:19 7273:26 7274:7 7275:2,15,26 7276:3,12,17, 20 7277:1 7279:25,26 7283:26,27 7284:22,27 7285:1,2,3,8 7286:6,10,13, 27 7287:4,9,11,19 7288:7 7289:4,10,15,21 7290:2 7291:11,21,27 7293:22 7294:12 7296:2,4,5,18 7297:18,23 7298:5	21 7163:25 7176:20 7261:18 7267:3,5,20 7268:5 7289:1, 4,20,27,28 7290:1,16 7291:7,8,12,17 7292:12,15 7293:19,24 7294:16,22,25 7296:13	<b>moment</b> 7078:26 7133:22 7174:14 7244:12 7288:19 7299:8
<b>middle</b> 7084:23 7115:24 7158:18 7168:7 7175:19 7187:27 7212:2 7260:13,16, 18 7277:8		<b>momentarily</b> 7221:2 7281:21	
<b>Mideast</b> 7213:9,27 7214:4 7215:13 7217:8,13,20 7221:16,20 7223:6 7225:4 7228:17 7230:28 7231:8 7237:4,6,8 7238:28 7277:8		<b>Monday</b> 7063:1 7299:21	
<b>Midwest</b> 7074:5 7075:24 7112:15 7114:17,25 7115:20 7128:8 7204:14,16,18 7205:2,5 7232:11,12,14 7277:13		<b>money</b> 7118:3 7168:14 7178:26 7224:10 7254:3 7255:11 7287:12,16	
<b>Midwestern</b> 7076:7		<b>money's</b> 7253:6	
<b>migrated</b> 7070:14		<b>Montana</b> 7287:20,21,28	
<b>mild</b> 7149:3,5,12 7188:18, 21,26 7205:8		<b>month</b> 7084:4 7097:23 7217:14,15 7250:7,10,12,16, 18,19,20,21,22,23,25 7251:2,6 7268:20 7271:21 7272:2 7286:22	
<b>mileages</b> 7273:17		<b>month's</b> 7250:25	
<b>miles</b> 7214:21,23 7215:2,7, 24 7216:14,16,18,20,22,24 7219:21 7255:17,27 7257:6 7270:6,15,28 7271:6,13,28		<b>month-to-month</b> 7083:7,16, 22,28 7084:2	
<b>miles-per-hundredweight</b> 7215:4,9,22		<b>monthly</b> 7073:26 7083:11 7116:12 7247:17 7249:22	
<b>milk</b> 7068:14,15 7070:15,18, 21,26 7071:9,11,12,21,23 7072:6,9,14,19 7074:11,13, 14,19 7075:16,18 7076:4,23, 24,27 7078:9,13 7079:18 7080:11,13,17,28 7082:24, 25,28 7083:1,4,10 7084:4,7, 17 7085:11,24,28 7086:4,10, 11,25 7087:8 7088:13 7091:21 7093:19,22,25,26, 28 7094:13 7096:3,14,20 7101:1,28 7102:5,16,18,28 7103:4,7,14 7104:3,17,26 7105:1,6,25 7106:8 7107:18, 28 7108:7,19,21 7109:3,13 7110:12 7112:13 7117:8,16 7119:8 7120:14 7121:13,27 7122:3,9,15,21,22 7123:23, 26 7124:4,8,19,22,24 7126:8 7127:22 7132:4 7133:21 7136:10 7138:22,23,24,26 7143:15,18,19,22,23,28 7145:24,28 7147:3,8 7148:21 7151:26 7153:9,10, 16 7156:1 7157:10 7162:2,5, 10 7163:8 7170:21 7177:2 7178:7 7183:4,13,26 7187:3 7191:4,25,26 7192:1,13 7198:28 7201:18 7204:12 7213:11,24,26 7214:1,5,11, 22,24,25,27 7215:3,6,9,12, 16,19,20,26,28 7216:1,2,4, 11,15,19,23,27,28 7217:1,2,	<b>Milk's</b> 7243:18	<b>mirror</b> 7250:27 7251:28 7295:10	
	<b>milking</b> 7128:20	<b>missed</b> 7289:25	
	<b>million</b> 7070:9 7136:3 7217:14 7225:6,7	<b>missing</b> 7171:25	
	<b>millions</b> 7146:15	<b>mission</b> 7254:11	
	<b>Miltner</b> 7112:10,13 7119:2 7151:8,21,22,24,25 7158:5 7164:12,17 7171:28 7172:7, 10,11 7174:6,12,17,21,24 7179:26 7180:1,2,6 7181:18, 19 7182:3,4,7 7190:21 7191:8 7193:3 7194:7,25 7195:27 7208:28 7209:1 7210:19,27 7285:25	<b>misstated</b> 7173:25	
	<b>Miltner's</b> 7158:3	<b>mix</b> 7128:4 7252:24	
	<b>mind</b> 7064:27 7067:25 7083:10 7206:17 7290:25	<b>model</b> 7072:2 7083:10 7097:1,4,22,24 7098:7,8 7099:6 7100:21 7101:11,15, 19 7103:11 7110:20,22,24, 25,26 7111:5,8 7229:7 7233:23 7277:23 7278:9 7283:22 7284:15,18,22,24, 28 7285:6,12,15,21 7286:4, 7,18,21 7287:2,17 7288:3 7290:6,22 7292:20,23 7293:27 7294:21	<b>months</b> 7097:23 7117:12 7217:4 7222:25 7223:1 7250:15 7251:27,28 7252:3 7267:18 7268:28 7286:21 7296:13,14,15,16,17
	<b>mindful</b> 7062:19 7067:27 7212:27	<b>model's</b> 7071:26 7094:9 7101:8 7111:2 7285:1	
	<b>minimize</b> 7247:22	<b>moderate</b> 7177:18	
	<b>minimizes</b> 7140:14	<b>moderated</b> 7212:27	
	<b>minimizing</b> 7264:16	<b>modern</b> 7137:12,21 7138:6 7144:19 7159:9,12,14 7163:15 7176:3 7193:22 7206:24 7207:6,25	
	<b>minimum</b> 7074:19,20,22 7075:6 7121:15,23 7122:6,	<b>modest</b> 7083:6 7084:28 7293:12	
		<b>modestly</b> 7071:6 7080:3 7083:8 7105:12 7247:27	
		<b>modifications</b> 7292:24	
		<b>modified</b> 7298:16	
		<b>modifying</b> 7298:19	
		<b>moisture</b> 7167:9,10,12,13 7199:14	
		<b>mozzarella</b> 7110:1 7136:1	



7176:27,28 7177:3,4,7 7194:20	<b>negotiating</b> 7217:1	<b>non-irrigated</b> 7088:25 7089:1,8,12,20,26	7241:13 7247:28 7266:26 7278:15 7288:4
<b>multi-regional</b> 7262:28	<b>neighbor</b> 7233:25	<b>non-uniform</b> 7265:27	<b>numeral</b> 7273:8 7274:22
<b>multiple</b> 7222:24 7226:17	<b>neighborhood</b> 7207:13,22 7236:5	<b>nonetheless</b> 7121:14 7124:15 7287:17	<b>numerous</b> 7223:12 7225:8
<b>multipliers</b> 7146:19,21,23, 26	<b>neighboring</b> 7076:13 7090:21 7103:15,17 7221:4, 14,16 7224:5	<b>nonfat</b> 7096:3	<b>Nutrien</b> 7065:2
<b>multitude</b> 7073:15,18	<b>net</b> 7264:5 7270:6 7271:16, 25 7272:16,22 7273:24 7274:2,6,10,13 7275:1,4	<b>noon</b> 7180:6 7299:11	<hr/> <b>O</b> <hr/>
<b>myriad</b> 7148:20	<b>nets</b> 7271:3	<b>North</b> 7094:19	<b>O's</b> 7161:9
<hr/> <b>N</b> <hr/>	<b>newer</b> 7136:20,28 7193:23 7195:12,13 7197:24,25,28 7206:24	<b>northeast</b> 7090:23 7127:1 7129:19 7277:7	<b>object</b> 7067:10 7131:10,12, 21 7209:8,9,22 7246:7
<b>names</b> 7126:25,28 7164:10 7169:1 7197:28 7236:14 7237:21 7299:19 7300:1	<b>newest</b> 7135:26 7137:22 7138:6 7154:5	<b>nostalgia</b> 7276:23,25	<b>objected</b> 7209:27
<b>Nana</b> 7171:5	<b>news</b> 7069:13 7197:23 7248:20	<b>note</b> 7072:11 7112:16,25 7137:14 7145:27 7151:8 7156:25 7158:8 7166:16 7189:4 7223:2,24 7278:12	<b>objecting</b> 7210:8
<b>NASS</b> 7073:26 7077:17 7082:27 7089:23 7105:14,15 7107:7,15 7132:15,18,25 7133:1	<b>nice</b> 7232:8 7237:24 7284:27	<b>noted</b> 7137:21 7145:2,10 7157:18 7158:11 7177:25 7222:11 7272:1	<b>objection</b> 7099:8 7112:1 7130:15 7131:8 7132:3 7133:10 7208:16,22 7209:3, 5 7210:8 7239:11 7246:4,10
<b>nation</b> 7073:5 7116:18	<b>nicely</b> 7285:9	<b>notes</b> 7148:19	<b>objections</b> 7067:12 7132:1 7209:23
<b>national</b> 7069:18 7070:14 7071:21 7073:2 7074:23 7075:4,9,20 7077:17 7080:5 7082:24 7088:23 7113:25 7114:23,28 7115:6,10,19 7116:7,24 7117:2,7,14,15,17 7118:5,6 7120:14 7132:3 7142:20 7168:21 7186:2 7228:25 7229:1,18,23 7243:18 7244:25 7246:19 7262:27 7265:3 7267:5 7276:8,20 7283:26,27 7288:7 7289:4,10,21 7290:2 7291:10,21,27 7293:22 7294:3 7297:18	<b>Nicholson</b> 7228:19 7276:11 7283:19,25 7284:5,10,17 7285:26	<b>notice</b> 7111:24 7112:2,3 7132:6,9,13 7250:26 7258:21 7273:16	<b>objective</b> 7247:6 7254:5 7295:28 7297:22,23 7298:4, 5
<b>nationwide</b> 7218:19	<b>Nicole</b> 7132:3	<b>noticeable</b> 7185:15 7221:5	<b>objectives</b> 7287:8
<b>natural</b> 7109:11	<b>night</b> 7174:27 7238:7,8	<b>noticed</b> 7125:16 7129:28 7232:4	<b>observation</b> 7164:20 7167:25 7230:11
<b>nature</b> 7296:25	<b>NMPF</b> 7265:6 7281:14,15,22 7293:7,16	<b>notices</b> 7222:22	<b>observations</b> 7156:27 7159:25 7196:12
<b>NDPSR</b> 7185:28	<b>NMPF-37</b> 7241:9,16 7280:14	<b>notion</b> 7095:15	<b>observe</b> 7082:6 7141:1 7159:22
<b>nearby</b> 7226:15	<b>NMPF-37A</b> 7241:19 7265:5,7	<b>notorious</b> 7081:21	<b>observed</b> 7063:12 7079:24 7129:17 7157:5 7158:22,25 7159:11,20 7221:15
<b>Nebraska</b> 7076:21 7087:20 7114:4 7218:3	<b>NMPF-37B</b> 7241:22 7282:15	<b>November</b> 7062:27 7250:8 7251:5	<b>obtain</b> 7196:18
<b>necessarily</b> 7095:4 7161:8 7173:27 7190:1 7265:25 7290:4,15 7292:6 7296:23	<b>NMPF-37C</b> 7241:25	<b>number</b> 7068:6,7 7095:19 7098:9 7099:25 7105:28 7106:14 7109:14,21 7115:14,15 7116:14,24 7119:11 7120:1 7130:19 7133:15 7135:5 7137:24 7142:19 7163:24 7174:2,9, 22 7175:23,28 7176:7,28 7187:1 7190:20 7193:21,25 7208:20,26 7211:1,19 7216:12 7233:10 7239:14,22 7241:17,20,23,26 7242:2,5, 8,11,16,20 7246:21 7247:2 7249:8,10 7250:11 7258:27 7264:28 7265:1 7266:22,28 7270:9 7281:6 7282:5 7286:21 7290:16 7291:28 7294:22 7295:16,25 7297:19	<b>obtaining</b> 7214:26
<b>necessitates</b> 7287:8	<b>NMPF-37D</b> 7241:28 7270:8	<b>numbered</b> 7278:27 7281:11	<b>obvious</b> 7217:24
<b>needed</b> 7091:17 7116:21 7121:6 7247:14 7266:9	<b>NMPF-37E</b> 7242:4	<b>numbers</b> 7100:3 7106:28 7107:17 7108:14 7126:12,14 7127:19 7144:11 7162:22 7196:10 7217:7,9,10,15	<b>occasionally</b> 7141:13 7168:7,8 7248:20
<b>needing</b> 7142:16 7223:20	<b>NMPF-37F</b> 7242:7		<b>occupation</b> 7219:13
<b>negative</b> 7062:9 7072:10 7086:1,12 7182:16 7183:10 7270:4 7271:18	<b>NMPF-37G</b> 7242:10		<b>occupations</b> 7218:17
	<b>NMPF-37H</b> 7242:13 7243:28 7249:10 7265:14		<b>occur</b> 7086:24 7124:12 7138:13 7148:17,19,20,23 7172:20 7194:4 7253:10 7266:11 7267:21,24 7268:2
	<b>NMPF-37I</b> 7241:10 7242:18		<b>occurred</b> 7143:14
	<b>NMPF-49</b> 7211:16 7212:23 7239:13		<b>occurrence</b> 7264:16,17
	<b>NMPF-55</b> 7068:5		<b>occurring</b> 7253:2
	<b>no-fault</b> 7225:13,14,17		<b>occurs</b> 7139:3,5,6,24 7201:10 7267:19 7284:22
	<b>no-touch</b> 7220:6		<b>October</b> 7062:1,3 7097:24
	<b>nod</b> 7293:12		
	<b>non-agricultural</b> 7220:4		



7182:1 7251:5,7 7286:2,27	28 7215:9,12,23,28 7216:4, 10 7225:3 7226:5,26	<b>orders</b> 7093:20,22 7122:4, 16,21,22 7123:24 7207:4 7246:13 7247:28 7248:13 7250:3 7251:6 7253:25 7254:4,11 7261:1,12,15 7263:18,19 7266:19 7277:8, 13,15,18	7182:2 7243:3,6 7269:22 7299:26,28 7300:15
<b>off-farm</b> 7121:6	<b>operation</b> 7120:3 7128:2,3, 9,24 7143:3 7148:11 7155:24 7165:19 7169:7,8 7224:6 7234:24	<b>Oregon</b> 7221:14	<b>pace</b> 7212:27
<b>off-flavor</b> 7148:15	<b>operational</b> 7155:19 7216:9 7219:27 7225:22	<b>organic</b> 7119:12,14,20,21, 22,25 7120:2,4,7,11	<b>Pacific</b> 7169:3
<b>off-flavored</b> 7148:24 7149:1 7188:2	<b>operationally</b> 7234:23	<b>organization</b> 7066:7	<b>package</b> 7260:27
<b>off-grade</b> 7147:14 7149:21	<b>operations</b> 7087:2 7128:9 7135:24 7144:11 7146:5,7 7154:22,23 7155:8 7167:11, 21 7169:11,28 7170:9 7172:24 7198:12 7213:21	<b>organizations</b> 7066:10 7126:17	<b>packaged</b> 7205:25 7260:20 7261:6
<b>off-the-record</b> 7078:27 7133:24 7142:4 7151:18 7174:15 7211:24 7243:4	<b>operators</b> 7202:10 7225:23 7255:5 7279:27	<b>orient</b> 7096:23	<b>packaging</b> 7150:17
<b>offer</b> 7121:16 7135:2 7157:4 7179:11,18 7220:5 7226:8	<b>opinion</b> 7114:21 7118:26 7124:22 7176:20 7207:9 7210:10 7295:4	<b>original</b> 7143:22 7285:21	<b>packing</b> 7066:10
<b>offered</b> 7071:14	<b>opportunities</b> 7066:2 7091:15 7135:1 7226:6	<b>outcome</b> 7187:22	<b>PADD</b> 7220:28 7221:1 7232:7,12
<b>offering</b> 7118:26	<b>opportunity</b> 7065:17 7114:27 7115:14 7127:28 7173:11 7213:25 7226:4,27	<b>outcomes</b> 7086:23	<b>pages</b> 7273:10
<b>offerings</b> 7090:18	<b>opportunity-cost</b> 7128:12	<b>outlets</b> 7204:16,21	<b>paid</b> 7072:7,14 7097:11 7100:27 7219:12 7221:13 7224:17 7225:12 7265:25
<b>office</b> 7065:2 7228:21 7245:7,13,16	<b>opposed</b> 7229:19 7230:10	<b>outline</b> 7071:19	<b>Painter</b> 7300:6
<b>officer</b> 7244:10,14	<b>opposing</b> 7179:15	<b>outlook</b> 7069:11	<b>Pak</b> 7208:4
<b>official</b> 7111:23,24 7112:2,3	<b>opposite</b> 7290:26	<b>output</b> 7069:28 7071:26 7076:28 7097:22 7098:7 7101:8,11,15 7108:7	<b>pandemic</b> 7222:14,27
<b>offset</b> 7085:26	<b>opt</b> 7257:4 7287:14	<b>over-order</b> 7245:18 7257:13, 15,18,27 7258:1,6,7,9,16,19, 24 7259:2,7,10 7260:2,9,14, 24 7261:8,10,20,22 7262:2, 4,7,12,18 7263:2,6,9,13,14, 25,27 7264:4,6	<b>Panhandle</b> 7270:14
<b>offsetting</b> 7124:13	<b>optimal</b> 7142:26 7157:11,19 7169:22	<b>overabundance</b> 7148:8	<b>paper</b> 7093:1 7157:2 7276:24
<b>Ohio</b> 7212:22 7213:6 7214:6 7223:6 7224:5	<b>optimization</b> 7213:18	<b>overestimate</b> 7144:10 7149:25	<b>papers</b> 7094:2
<b>Ohio-based</b> 7216:21	<b>optimize</b> 7215:23	<b>overestimation</b> 7144:28	<b>paragraph</b> 7092:4,12 7100:21 7102:10 7103:13 7104:6 7158:17 7168:6 7188:20 7194:2,12 7237:3 7291:27
<b>Oklahoma</b> 7065:14 7068:18, 24	<b>optimizing</b> 7155:24	<b>overhead</b> 7224:9 7225:21	<b>parameters</b> 7122:15
<b>older</b> 7138:1 7193:19,20,26 7237:24	<b>optimum</b> 7144:6 7148:11	<b>oversight</b> 7283:28	<b>parentheses</b> 7081:13,14
<b>omission</b> 7141:20	<b>opting</b> 7226:3	<b>overview</b> 7111:26,27 7112:4 7243:19	<b>parents</b> 7069:3
<b>on-highway</b> 7220:23	<b>options</b> 7072:17 7094:12 7217:21	<b>overwhelmingly</b> 7087:12	<b>park</b> 7225:25
<b>one's</b> 7295:16	<b>order</b> 7118:21 7119:13 7121:13 7123:4 7213:9,11 7214:3 7222:25,28 7231:8 7244:16,17,26 7245:7,15,28 7246:21,28 7247:25,28 7248:2 7249:26,28 7250:8, 11 7251:4 7257:14,19,21,26 7258:4,12 7259:19,23 7260:10,25 7261:2,5,7,11, 14,22 7262:1,6,9 7263:10 7266:15 7270:17 7275:11,13 7277:2,13 7282:11 7291:16 7295:7 7296:4 7300:4	<b>owned</b> 7155:4	<b>Parking</b> 7251:23
<b>one-tenth</b> 7163:28	<b>orderly</b> 7236:7	<b>owner</b> 7227:7 7234:22 7236:1	<b>parlor</b> 7128:20
<b>online</b> 7065:22 7105:14 7112:2 7123:18 7228:20 7249:5		<b>owners</b> 7226:9,18	<b>part</b> 7075:19 7077:8 7079:14 7087:8 7096:20 7099:6 7101:11 7103:2 7112:19 7115:22 7122:12 7125:22 7131:12 7132:22 7133:1 7138:10 7141:1 7161:4 7165:28 7166:3 7171:13 7187:23 7188:4 7189:16 7193:16 7201:24 7204:14,20 7205:4,11,18 7219:8 7223:27 7227:5 7228:24 7236:19 7243:13,20 7253:21 7258:11 7267:25 7270:24 7276:10,11 7280:15 7282:25,26 7283:10,13,15 7294:23
<b>oops</b> 7253:18		<b>oxidative</b> 7148:18	<b>part-time</b> 7226:13
<b>open</b> 7136:17,22 7137:6,7, 18,23 7138:3,9 7144:22 7157:13,14,16 7158:19,20, 26 7160:1 7161:21 7172:13 7193:19 7195:26 7199:16 7206:11		<b>P</b>	
<b>openly</b> 7190:2		<b>P-A-D-D</b> 7220:28	
<b>opens</b> 7199:17		<b>P-L-A-T-T</b> 7092:23	
<b>operate</b> 7090:5 7202:12 7218:13 7222:10 7228:17		<b>p.m.</b> 7062:28 7181:21,22	
<b>operates</b> 7122:3			
<b>operating</b> 7085:7 7154:27,			



<b>participant</b> 7066:18	<b>per-hundredweight</b> 7215:11,18	<b>phrase</b> 7156:17,19 7171:25 7194:1 7256:7 7276:9 7291:14	16 7161:2,7,12,18 7162:15 7166:18 7168:1 7184:21 7191:24 7192:7 7193:17,18, 19,22,23,26 7195:12,16,17, 19,21 7197:24,28 7200:22 7204:4,19 7205:6 7206:25, 28 7207:18,22 7220:12 7247:6 7249:21 7251:21,22 7252:10,12,14,21,28 7253:5, 13,22,23 7257:7 7262:20,21, 22,25 7266:2 7270:6 7275:17
<b>participants</b> 7259:9	<b>per-load</b> 7215:10	<b>phrased</b> 7172:2,7	<b>plants'</b> 7152:14 7167:21 7169:28
<b>participate</b> 7125:10	<b>perceive</b> 7080:5	<b>physical</b> 7225:24 7278:9	<b>plastic</b> 7203:15
<b>participated</b> 7070:16	<b>percent</b> 7174:1 7176:21	<b>physically</b> 7147:22	<b>Plate</b> 7092:22
<b>participation</b> 7069:20	<b>percentage</b> 7162:21 7200:25 7203:3 7218:28	<b>pick</b> 7215:16 7217:2 7234:19 7280:15 7285:11	<b>Platt</b> 7092:23
<b>parties</b> 7263:26 7264:1,2	<b>percentages</b> 7210:16	<b>picked</b> 7103:14 7116:20,21, 22 7217:3	<b>Platte</b> 7090:9 7092:16,18 7129:7
<b>parts</b> 7276:4 7277:4 7280:25 7283:9 7294:12	<b>perfect</b> 7111:12	<b>picture</b> 7251:11 7275:7,19	<b>Platteville</b> 7120:3
<b>pass</b> 7186:22 7190:17 7260:8 7261:5	<b>perfection</b> 7136:16 7156:15, 18	<b>pie</b> 7153:5	<b>play</b> 7110:22 7142:28 7169:24
<b>past</b> 7222:12 7227:16 7278:28	<b>perfectly</b> 7098:18 7131:16 7156:22 7164:18 7288:20 7293:17	<b>piece</b> 7199:10 7276:24	<b>played</b> 7223:15
<b>paste</b> 7107:1	<b>performance</b> 7066:8 7079:19	<b>pieces</b> 7070:11 7094:1 7165:16 7167:3 7262:5 7263:6	<b>playing</b> 7294:15
<b>pasteurizer</b> 7138:25	<b>period</b> 7074:16,17 7077:2 7081:3 7084:5 7116:5,6 7129:24 7178:9 7217:13 7218:26 7232:6 7250:7,23 7273:14,23 7274:1,6	<b>pizza</b> 7152:14	<b>pleased</b> 7062:25 7069:1
<b>pasture</b> 7088:25 7089:1,4,8, 21,25	<b>periodically</b> 7078:10 7144:3 7148:5	<b>place</b> 7078:27 7097:12 7122:1 7132:16 7133:24 7142:4 7151:18 7174:15 7211:24 7225:25 7243:4 7249:28 7258:10 7260:17 7267:10 7275:24,26,27 7285:23 7292:9 7293:25 7294:8	<b>plug</b> 7192:3
<b>pause</b> 7158:6 7246:24 7249:24 7256:9 7257:9 7267:8	<b>periods</b> 7083:12,14 7127:15, 17 7273:28	<b>places</b> 7233:10 7274:23 7287:14 7296:16	<b>plural</b> 7281:13
<b>pay</b> 7088:3,4 7113:3,18 7114:6,16 7204:17 7253:7 7257:3 7262:12,13	<b>Perkins</b> 7300:5	<b>placing</b> 7222:25	<b>pocket</b> 7284:27
<b>paying</b> 7218:3,5,11 7260:2 7261:14	<b>perks</b> 7125:20	<b>plains</b> 7070:17 7075:21 7114:5,6	<b>poddling</b> 7261:17
<b>payment</b> 7261:15	<b>permits</b> 7224:1	<b>plan</b> 7298:19,22 7299:8,9,10	<b>podium</b> 7125:12
<b>payrolls</b> 7248:21	<b>permitting</b> 7223:10,20	<b>planning</b> 7072:27	<b>point</b> 7062:14 7073:7 7085:3 7100:1 7103:27 7106:5 7132:20 7138:20,21 7155:22 7160:17 7172:16 7175:25 7180:26 7190:21 7198:15 7201:21 7202:3,8 7216:12, 20 7230:7 7249:27 7251:8 7278:14,27 7287:17 7289:1 7296:28
<b>pays</b> 7259:22 7272:13	<b>persist</b> 7085:16 7090:26 7118:9,13,17	<b>plant</b> 7110:9 7136:2 7141:2 7146:24 7154:16 7156:8 7159:26 7160:20,25 7162:11 7166:27 7167:2 7169:26 7170:4,9 7183:16 7184:20, 25 7186:14,17 7187:25 7188:16 7191:20,25,27 7199:27 7201:16,17 7216:16,24 7220:8 7253:12, 13,22,24 7254:2 7255:5,7 7256:23,26,27 7257:3,4 7261:13 7262:14,23,24 7270:16,18,20 7271:3,4,28 7273:24 7284:26,27 7285:9 7295:18	<b>points</b> 7137:16 7138:22 7140:26,27 7155:10 7161:27 7216:26
<b>PDF</b> 7078:21 7079:2	<b>persistent</b> 7079:15 7083:12 7091:1	<b>plant's</b> 7260:2 7295:17	<b>policy</b> 7069:11 7071:20,23 7072:12,17,18 7085:24 7086:26 7091:22 7244:26
<b>peak</b> 7251:3,27	<b>person</b> 7097:20 7128:27 7232:17 7233:27	<b>plants</b> 7110:1 7135:28 7136:11 7137:22 7138:6 7139:17 7140:28 7141:7,19, 27 7142:14,18 7144:7 7152:4,11,13 7154:16,17 7155:2,3 7157:12 7160:9,10,	<b>political</b> 7220:15
<b>peaked</b> 7071:6	<b>personal</b> 7140:19 7144:16 7190:19 7201:2		<b>pool</b> 7226:15 7247:13 7250:11 7266:2 7270:17,24, 25,27 7284:25
<b>peaks</b> 7251:1	<b>personally</b> 7152:2,4,10 7159:11,20 7192:23		<b>pooled</b> 7251:22
<b>pencil</b> 7276:22,26,27 7278:1 7290:18	<b>perspective</b> 7074:22 7075:3 7115:23 7130:2 7133:19 7177:18		<b>pooling</b> 7244:16 7245:20
<b>pencilling</b> 7294:1	<b>Petroleum</b> 7220:27 7231:27		
<b>pencils</b> 7276:25	<b>Ph.d.</b> 7065:9,11		
<b>Pennsylvania</b> 7216:17 7221:17 7300:6	<b>philosophical</b> 7168:12 7191:13		
<b>people</b> 7062:15 7082:13 7095:6 7123:17 7130:6 7133:7,11 7135:2 7138:14 7152:13,21 7169:1,28 7170:9 7180:12 7189:22 7190:2 7212:4,7 7220:19 7234:6 7238:18 7249:5 7252:8,21,24,25 7254:25 7257:17,24,25 7258:1,3,6 7260:3 7261:16 7263:10 7264:2 7277:16,17 7278:15 7285:14	<b>philosophy</b> 7257:24		
	<b>phone</b> 7237:18 7259:11		



<b>population</b> 7070:21,23,25 7087:28 7090:17 7252:22	<b>precipitously</b> 7146:20	<b>preventing</b> 7297:25,28	7268:22,25 7269:5 7272:3,6 7273:13 7278:5,11 7279:8, 11 7296:18
<b>populous</b> 7217:27	<b>precise</b> 7167:15	<b>previous</b> 7118:19 7186:20 7274:5	<b>pricing</b> 7069:14 7071:9 7075:16 7085:24 7102:1,5, 16,18,28 7103:4,7 7104:3 7244:16 7245:18,19 7261:1 7263:27 7266:4
<b>pores</b> 7199:9	<b>predicted</b> 7144:26	<b>previously</b> 7064:8 7134:1 7148:16 7240:22	<b>primarily</b> 7066:24 7076:25 7077:5,13 7079:27 7105:9 7112:23 7150:16 7222:4 7242:14
<b>pork</b> 7070:3	<b>prediction</b> 7175:13	<b>price</b> 7066:15,16 7068:14 7069:15,17 7071:25 7072:1, 6,9 7073:28 7074:1,2,9,13, 24 7077:19 7079:13 7080:5, 7,13,17 7082:24,27 7083:1 7084:17 7085:24,28 7086:3, 5,9,11,20,24 7095:16 7096:25 7101:23 7114:9,11, 18 7115:19 7116:15,17,18, 26 7117:2,5,6,9,21,23 7120:15 7121:21,28 7122:5, 6,7 7123:8,9,26,27 7124:24 7129:23 7136:14 7169:12 7178:16 7204:17 7221:13, 26,28 7244:17 7247:11,18, 21,22 7249:2 7253:6 7258:4, 5,11 7259:20,21,22 7260:2, 4,8,9 7261:5,14,27,28 7262:6,7,9,10,12,13,16,19 7263:21 7264:16,17,20,21, 22,23,26 7265:18,23 7266:7, 8,11 7267:12,14,17,19,23 7268:19,21,23,25,27 7269:1, 4,5 7270:5,7,21,23,26,27 7271:2,8,11,15,16,17,18,20, 23,25,26 7272:2,14,19,20 7273:14,23 7274:1,3,7 7275:3,4,5 7276:19 7277:26 7278:7 7280:18 7286:5 7287:3,7,8,12 7288:24,27 7289:2,4,21 7290:12,18 7291:12,17 7293:11,21,22 7294:3,4,9 7296:6,11,12,16, 19 7297:6,7,8,25,26,27 7298:1,2,6,7	
<b>Portalis</b> 7113:15	<b>predictive</b> 7145:1	<b>Price's</b> 7156:11	<b>principally</b> 7245:1
<b>portion</b> 7087:16 7129:3 7145:27 7146:1 7243:22	<b>prefer</b> 7141:26 7164:14 7288:26	<b>priced</b> 7073:18	<b>principles</b> 7152:22 7248:13
<b>portions</b> 7063:13 7071:16	<b>preliminary</b> 7062:5 7063:23	<b>prices</b> 7071:12 7072:14,19 7073:2,3,5,6,25,26 7074:11, 23,27 7075:4 7076:6,12,16 7077:17,19,22 7078:15,24 7079:11,13 7082:12,25 7087:7 7094:9,13 7097:11 7103:23 7105:17 7114:2 7116:12 7118:4 7121:15,22, 23 7122:21 7123:5 7124:4,5, 8,19 7129:23,26 7142:17 7188:5 7191:28 7192:4 7220:24,26 7221:5,11,21,25 7247:18 7248:7 7257:13,14, 15,18,19,21,26,27 7258:1,6, 7,10,12,16,19,20,24 7259:2, 7,10,23 7260:10,14,24,25 7261:2,7,8,10,11,18,21,22 7262:1,2,4,8,18 7263:2,5,6, 9,10,13,14,25,27,28 7264:1, 4,5,6,21 7265:27 7266:6	<b>primary</b> 7066:6 7124:12 7220:13
<b>pose</b> 7121:8	<b>premise</b> 7232:5	<b>proceed</b> 7068:11 7100:10 7145:15 7182:6 7196:27 7212:26 7243:10,25 7244:1	<b>problem</b> 7143:27 7147:20 7237:27 7238:7 7243:1 7252:19,20 7254:27 7259:5 7265:19
<b>position</b> 7069:7 7096:13 7135:15 7217:1 7229:24 7245:10,13,25	<b>premium</b> 7224:28 7260:3	<b>proceedings</b> 7300:16	<b>problematic</b> 7131:14
<b>positioning</b> 7064:3	<b>premiums</b> 7146:19 7224:8, 19 7225:11,14	<b>proceeds</b> 7146:12	<b>problems</b> 7135:1 7147:6,9 7152:11 7182:19 7190:7 7263:13
<b>positive</b> 7062:8 7203:26	<b>prepare</b> 7180:13 7212:23	<b>process</b> 7084:3 7120:22 7136:8 7139:2,4,6,25 7143:19 7144:14 7147:17 7148:1 7152:19 7162:21 7163:3 7165:26 7166:4,10 7183:25 7184:1 7190:18 7191:27 7199:19,24 7201:11,24 7202:2,7 7204:3 7214:24 7243:19 7276:7 7278:7	<b>prior</b> 7068:18 7070:21,26 7079:27 7084:2 7087:25 7135:21 7162:7,8
<b>possibly</b> 7109:3 7152:16 7153:10 7185:17 7186:16 7192:28	<b>prepared</b> 7098:1 7115:13 7142:11 7229:17 7280:22	<b>processed</b> 7183:20 7184:2	<b>privilege</b> 7125:15
<b>post</b> 7108:10	<b>preparing</b> 7105:19 7114:26 7117:5,10	<b>processes</b> 7147:23 7148:20 7188:28	<b>proceeding</b> 7110:12,14
<b>post-2006</b> 7077:22	<b>preponderance</b> 7296:15	<b>processing</b> 7110:12,14	
<b>potent</b> 7147:10	<b>present</b> 7066:13 7229:3,11, 15 7297:18 7298:24		
<b>potential</b> 7068:14 7071:10, 19 7072:10,12 7073:16 7085:23 7109:23 7118:10 7137:4 7147:9 7197:26 7244:23	<b>presentation</b> 7095:14,15 7145:13 7243:13 7249:27		
<b>potentially</b> 7075:19 7100:28 7124:26	<b>presented</b> 7182:9 7196:10 7230:3 7239:6 7246:19		
<b>poultry</b> 7070:3	<b>presents</b> 7082:15,18 7084:15		
<b>pounds</b> 7070:27,28 7071:6 7104:17,26,27 7105:21 7107:19,23 7136:3 7156:1 7216:15,19,23 7217:14 7224:3 7250:10 7254:21,22 7286:10,26	<b>President</b> 7135:23,24		
<b>power</b> 7066:17	<b>presiding</b> 7063:4,17		
<b>powerful</b> 7199:11	<b>pressing</b> 7139:9		
<b>Powerpoint</b> 7243:12,23 7250:3 7282:16,21	<b>pressured</b> 7076:28 7108:8		
<b>practical</b> 7256:11 7285:8	<b>pressures</b> 7090:16,17,23,28 7091:1,10,13,14 7109:1,4 7123:3 7129:10,20		
<b>practice</b> 7094:20 7146:9 7147:8,20 7149:8,16 7183:15 7188:25 7189:13, 18,26 7190:2,8	<b>presume</b> 7242:24		
<b>practices</b> 7143:2 7152:22,23 7157:19 7186:15 7189:23 7198:2	<b>presumption</b> 7242:26		
<b>pre-covid</b> 7237:18	<b>pretty</b> 7073:5 7084:28 7108:20 7121:28 7129:24 7152:28 7174:5 7189:7,22 7195:7,11 7201:28 7202:1 7203:25 7253:2 7296:1		
<b>preach</b> 7255:12	<b>prevalence</b> 7189:12 7204:7		
	<b>prevalent</b> 7119:16 7204:11, 13 7205:1		
	<b>prevent</b> 7171:9		
	<b>prevented</b> 7297:27		
	<b>preventible</b> 7141:3		





7120:3 7194:5 7248:19 7249:16 7251:21,24 7252:15 7262:22 <b>processor</b> 7135:3 7191:27 7259:27 7261:14 <b>processors</b> 7134:28 7153:14 7192:6,17,20 7196:19 7228:17 7231:7 7259:15 7260:15,20,25 7261:4,9,16 <b>procuring</b> 7222:2 <b>produce</b> 7077:24 7080:1 7085:11 7104:28 7150:7 7207:2 <b>produced</b> 7076:24 7080:11 7087:18 7091:7,8 7104:18 7105:21 <b>producer</b> 7068:14 7071:25 7072:1 7113:16 7178:9,21 7214:22 7215:14 7216:3 7236:6 7250:7,10,13,17 7270:5 7271:18 7272:22 7274:13 7283:26 7291:27 7293:12 <b>producer's</b> 7273:23 <b>producers</b> 7069:10 7071:21 7072:7,15 7075:10 7080:20 7081:11,28 7083:3 7085:5, 20,21 7089:17 7100:28 7112:14 7113:11 7120:14 7126:16,21 7127:20 7128:4 7151:26 7154:1 7213:19 7215:27 7217:21 7228:25 7229:1,24 7236:2 7241:6 7244:10,13,25 7245:25 7246:19 7265:22,24 7267:5 7288:8 7289:22 7290:2 7299:15 <b>Producers'</b> 7178:7 7291:21 <b>produces</b> 7090:4 <b>producing</b> 7075:14,21 7096:19 7098:9 7101:28 7102:27 7103:14 7129:2 7141:7 7217:18 7225:18 7247:3 <b>product</b> 7070:16 7073:1,13 7074:1 7075:12,19 7096:15 7133:5 7152:27 7153:14 7175:8 7186:2 7261:6,18 7262:21 7275:17,21,22,23, 26,27 7276:2 <b>production</b> 7067:16,17 7068:15 7070:8,12,15,18,26, 28 7071:5,7,11 7072:22,23, 24 7073:5,7 7074:12 7075:18 7076:4,12,18,22,25 7079:18 7081:1,9,15,26	7083:4,10 7086:1,27 7087:2 7088:8,10,13 7090:22,25 7091:21 7096:16 7104:10, 12,26 7105:7,24,25 7106:8 7107:19,28 7108:12,19,21 7109:3,13,14,26 7110:21 7111:6 7116:1,9 7119:25 7120:1,7 7123:28 7124:5 7127:24 7140:11 7147:7,13 7149:7,14,19,23,28 7164:5 7188:23 7189:9 7214:23 7217:13 7218:20 7222:26 7245:4 7256:13 7270:13 7293:12 <b>productive</b> 7090:8,14 7091:4,14 <b>productivity</b> 7072:23 7076:23 7079:19 7085:10, 12,14,26 7087:5 7090:9,27 7091:17 7104:11,16 7105:20 <b>products</b> 7070:19 7082:26 7119:15 7135:4 7153:18 7192:17 7247:19 <b>professional</b> 7065:12 7066:1 7226:3 <b>professor</b> 7068:16 7121:12 7122:6 7123:24 <b>profile</b> 7225:9 <b>profit</b> 7083:13,20 7084:2 7216:6 <b>profitability</b> 7080:17,18 7082:15,19 7083:4,5,6,8,16, 22 7084:1,15,19,21,23,24,25 7085:9,15 7086:6,17 7109:1, 4 <b>profitable</b> 7153:7,8 7177:27 7191:23 7192:8,20 <b>profits</b> 7083:12,13 7085:3 7153:28 <b>program</b> 7073:9 7113:20 7114:19 7115:5 7126:4 7132:26 7230:16 7231:3 7296:4 <b>programming</b> 7143:3 7155:23 <b>programs</b> 7113:6,7 7234:5 <b>progress</b> 7100:6 7285:18 <b>progressed</b> 7155:21 <b>progressing</b> 7076:9 7135:23 <b>prohibited</b> 7224:6 <b>project</b> 7276:7,8 7277:18 7289:19 <b>prominent</b> 7137:25 7160:6, 7,12	<b>promote</b> 7134:26 <b>promoted</b> 7245:9,12 <b>promoting</b> 7134:27 <b>prompted</b> 7181:6 <b>prone</b> 7148:18 <b>pronounced</b> 7300:7 <b>proper</b> 7143:6 7255:13 7286:12 <b>proportion</b> 7205:5 7221:13 <b>proposal</b> 7120:14 7228:26 7229:1 7243:18 7246:20 7267:6 7277:27 7291:27 7293:7,16,18,21 7294:7 <b>proposals</b> 7118:27 <b>proposed</b> 7068:13 7071:9, 19 7075:15 7085:24 7086:26 7091:22 7101:23,28 7102:4, 16,18,20,27 7103:3,7,8 7104:3 7267:20 7268:6 7289:10 7295:8 <b>proposes</b> 7289:4 7291:28 <b>proposing</b> 7267:6 <b>proprietary</b> 7189:22,28 7224:16 7225:3 7228:16 7233:21 7234:3,7 7248:15 7279:27 <b>Protection</b> 7220:20 <b>protective</b> 7147:24 <b>protein</b> 7073:13,14 7078:17 7114:15 7116:14 7171:1 7203:18 <b>proteins</b> 7145:28 7199:15 <b>prove</b> 7133:8 <b>proves</b> 7133:1 <b>provide</b> 7120:16 7152:2,27 7158:2 7175:10 7212:19 7233:20 7234:25 7241:4 7247:13,21 7255:13 7261:25 <b>provided</b> 7084:13 7106:21 7118:21 7120:13 7124:18 7232:8 <b>providing</b> 7064:27 7067:25 7097:6 7230:23 7243:10 <b>proximity</b> 7090:10 <b>prudent</b> 7181:9 <b>public</b> 7074:2 7254:8 <b>publication</b> 7093:25 7202:17 7213:8 7247:1	<b>publications</b> 7080:25 7093:19,24 7094:17 7111:23 7127:21 <b>publish</b> 7234:8 <b>published</b> 7093:27 7136:19 7175:6 <b>publishes</b> 7104:22 <b>puddle</b> 7141:12 <b>pull</b> 7073:21 7152:6 7285:3 7299:19 <b>pulled</b> 7126:14 <b>pulling</b> 7223:14 <b>pump</b> 7170:27 7203:1 <b>pumped</b> 7166:5 <b>pumping</b> 7087:21 <b>pumps</b> 7170:26 <b>purchase</b> 7222:15 <b>purchases</b> 7222:8 <b>purchasing</b> 7223:4 <b>pure</b> 7251:16 7254:8 <b>purpose</b> 7068:12 7178:28 7179:4,6 7246:26 7286:15 <b>purposes</b> 7085:1 7097:6 7102:14 7165:2 7192:25 7221:1 7235:4 <b>pursue</b> 7082:1 <b>pursued</b> 7085:18 <b>pushed</b> 7065:20 <b>put</b> 7108:22 7125:18 7147:2 7167:24 7183:21 7185:12 7197:15 7203:16 7204:24 7212:8 7218:6,23 7232:4 7235:14 7252:11 7263:27 7264:9,11,13 7282:4 7284:19 7286:10 <b>puts</b> 7266:6 <b>putting</b> 7078:1 7170:20 7202:2 7235:4 7279:20
--	---	---	---

Q



7169:28 7198:5 7221:26 <b>quantified</b> 7167:27 <b>quantify</b> 7114:27 <b>quantities</b> 7119:18 <b>quantity</b> 7251:16,17 7254:7 <b>quarter</b> 7248:6 <b>quarterly</b> 7202:17 <b>question</b> 7095:9 7096:18 7098:25,28 7102:24 7103:6 7107:27 7115:2,4 7158:21 7168:13,19 7170:3 7173:25 7184:7 7186:13 7189:16,24 7195:2,3 7197:10 7206:18, 26 7207:8,9 7231:9 7235:26 7237:5 7253:3 7256:1 7263:8 7268:1 7283:9 7289:24 7296:22 <b>Questionable</b> 7186:8 <b>questioned</b> 7163:8 <b>questioning</b> 7099:24 7101:6 7253:7 <b>questions</b> 7069:12 7101:9 7103:2 7125:3,21,25 7130:13 7131:19 7150:5 7172:2 7173:11 7182:18 7190:22 7193:3 7194:23 7196:23,25 7197:7 7209:8 7210:1 7232:18,21,23 7233:5 7255:26 7285:26 7289:16 7297:1 <b>quick</b> 7105:14 7106:17,27 7107:2,13,14 7116:16 7132:15,27 7133:5 7180:2 7219:6 7248:14 7275:10 7276:4 7282:2 7283:12 <b>quickly</b> 7194:27 7202:21 7223:17 7259:9 <b>quit</b> 7238:3,4,11 <b>quote</b> 7101:25 7102:26 7103:1,3,5 7144:26 7222:15, 19,24	<b>ran</b> 7186:25 7237:26 7266:14,20 7267:7 <b>rancidity</b> 7147:26 7148:17 <b>range</b> 7088:1 7144:19 7146:21 7158:12 7162:11,14 7166:25 7167:19,21 7172:23 7193:17 7195:17 <b>ranged</b> 7215:17 7224:18 <b>ranges</b> 7172:22 7206:19 <b>ranked</b> 7218:11 <b>Rankin</b> 7139:15 <b>ranks</b> 7221:14 <b>rate</b> 7080:2 7108:20 7170:25 7215:10,11,18 7217:4 7218:11 7271:14 7273:27 7274:4 7294:24 <b>rates</b> 7216:3,6 7224:7,9 7248:6,26 7273:28 7294:11 <b>ratio</b> 7158:12 7215:5,9,22 <b>ration</b> 7073:17,18 7255:3 <b>rations</b> 7073:15 <b>ratios</b> 7157:10 7219:21 <b>raw</b> 7138:23 7153:16 7183:26 7198:28 7261:3 7275:21,22,25,26 <b>re-establish</b> 7258:22,24 <b>re-utilize</b> 7149:18 <b>reach</b> 7147:4 <b>reaction</b> 7124:3 <b>reactions</b> 7123:25 <b>read</b> 7067:26 7074:26 7081:12,20 7089:4 7092:6, 13,23 7095:6 7102:25 7110:24 7127:20,22 7134:16 7135:12 7141:23,26 7142:10 7149:9 7150:22 7157:2 7182:8 7227:24 7241:13 7272:21 7274:10,13 7291:26 7293:9 7299:18 <b>readily</b> 7266:1 <b>reading</b> 7080:25 7081:22 7092:22 7171:18 7212:27 7269:8 <b>reads</b> 7160:1 <b>ready</b> 7181:20 7183:22 7227:28 7240:7 7269:21 <b>real</b> 7132:27 7167:16 7219:6 7223:17 7229:9 7230:8 7237:23 7249:16,17 7256:5 7260:11 7296:22	<b>realistically</b> 7181:7 <b>reality</b> 7284:21 7287:11 7294:18 <b>reality...why</b> 7144:28 <b>realize</b> 7133:1 7162:16 7215:28 7235:15 7291:26 <b>reason</b> 7062:6 7160:15 7161:4 7172:2,7 7199:8 7204:15 7223:2 7236:1 7263:18,19 7278:6 7286:5 7287:3 <b>reasonable</b> 7076:1 7080:20 7113:26 7116:22 7186:23,24 7190:20 7204:17 <b>reasons</b> 7132:4 7149:17 7214:18 7222:21 7258:9,26, 27 <b>recall</b> 7157:8,15 7173:3,7 7175:27 7182:3,12,18 7284:7 7287:21,27 <b>recap</b> 7221:23 <b>receive</b> 7275:4 <b>received</b> 7073:25,26 7116:12 7117:6 7118:4 7130:19 7133:15 7178:24 7208:20,26 7211:1 7222:15 7237:17 7239:14 7245:2 <b>receiving</b> 7220:12 <b>recent</b> 7088:27 7089:5 7104:25 7107:22 7108:17 7140:9,18 7144:17 7155:3 7164:3 7210:9 7223:3 7225:2 7266:16 <b>recently</b> 7069:20 7075:17 7108:25,27 7142:22 7144:24 7160:6 7223:6 <b>receptive</b> 7260:6 <b>recipe</b> 7295:10 7296:20,25 7297:12 <b>recipes</b> 7192:15 <b>recital</b> 7238:8 <b>recognition</b> 7087:15 <b>recognize</b> 7066:28 7087:10 7255:9 7260:9 7261:7,8 <b>recognized</b> 7287:7 <b>recognizes</b> 7284:28 <b>recollection</b> 7157:9,12,17 7209:16 <b>recommend</b> 7277:27 <b>recommendation</b> 7278:11 7280:18	<b>recommendations</b> 7167:3 7291:6 <b>reconciles</b> 7101:18 <b>record</b> 7062:2,3 7063:7 7064:28 7065:24 7078:26,28 7079:1 7092:1,9,15 7111:15, 17,18 7123:13,19 7125:24 7133:22,25 7142:1,3,5,6 7150:25 7151:14,17,19,20 7174:10,13,16,18 7181:22 7182:2 7210:20 7211:21,23, 25,26 7212:20 7228:2,4,5 7229:7 7230:2 7236:12 7239:23 7240:8,10,11 7241:5,13 7243:2,5,6 7269:23,25,26 7273:3 7300:15 <b>records</b> 7114:14,15 <b>recovered</b> 7140:5 7143:20 7145:22,24 <b>recoveries</b> 7136:19,26 7144:6,15 7148:12 7157:5 7170:1 7171:18 7175:20 7179:16 7194:4 7195:2,22 <b>recovery</b> 7084:26 7136:16, 23 7144:11,21,25,26,27 7156:15,22 7172:13,22,28 7173:20 7179:20 7193:7,11 7197:11 7198:21 7205:16 7206:16,20 <b>recruit</b> 7219:28 <b>recruited</b> 7226:14 <b>recruitment</b> 7226:9 <b>recycle</b> 7144:1 <b>recycling</b> 7148:6,9 7149:24 7182:17,21 <b>red</b> 7085:19 7094:18 7294:1 <b>REDIRECT</b> 7238:22 <b>reduce</b> 7082:1 7085:13 7086:4 7148:10 7259:10 <b>reduced</b> 7088:7,9 7109:27 7117:23 7147:27 7176:28 7215:24 7248:11 <b>reducing</b> 7086:11 7258:5 <b>reduction</b> 7085:27 7097:11 <b>reek</b> 7276:2 <b>refer</b> 7138:16 7214:13 7218:5 7221:7 7244:19 7247:27 7258:16 7281:14 <b>reference</b> 7076:1 7101:7 7106:25 7111:22 7116:22 7145:6,8 7155:16 7156:23 7177:4,7,10 7194:12
--	--	--	---

**R**



7200:19 7213:10 7223:17	<b>relates</b> 7096:14	<b>replacements</b> 7263:9	7156:11,28 7175:3 7191:21 7192:11 7210:21 7296:8
<b>referenced</b> 7106:17 7145:7 7157:3 7158:11 7223:25	<b>relating</b> 7093:21	<b>replacing</b> 7258:4	<b>researching</b> 7128:28 7295:11
<b>references</b> 7145:3 7193:11	<b>relationship</b> 7114:9,11 7233:18,27 7234:1 7260:20 7262:19	<b>replenished</b> 7087:23	<b>reserve</b> 7247:12 7250:24 7251:2,14,24,26,27,28 7254:19
<b>referencing</b> 7102:8	<b>relationships</b> 7257:2	<b>report</b> 7089:19 7186:2,4,6, 20	<b>reserves</b> 7247:9
<b>referred</b> 7131:22 7169:7 7218:22 7259:18	<b>relative</b> 7072:23 7076:19 7087:8 7091:12,15 7104:16 7108:7 7113:2 7266:7 7271:21	<b>reportable</b> 7186:3	<b>resides</b> 7225:13
<b>referring</b> 7097:4 7102:5 7116:8 7155:2,3 7159:18 7162:4 7171:11 7219:5	<b>relay</b> 7236:17	<b>reported</b> 7074:3 7089:17,24 7107:22 7117:4,14,24 7218:19 7221:23	<b>residual</b> 7088:18
<b>reflect</b> 7221:4 7275:21	<b>relevant</b> 7069:8 7103:18 7126:15 7213:9	<b>reporter</b> 7065:21,23 7068:1 7151:10 7212:28 7230:10 7269:18	<b>residuals</b> 7062:14
<b>reform</b> 7119:13 7213:11 7214:3 7247:26 7248:2 7291:16 7295:7	<b>reliable</b> 7088:17	<b>reporting</b> 7066:16 7069:15, 17,18 7118:24 7220:28 7221:20	<b>residue</b> 7138:23
<b>refurbish</b> 7207:23	<b>relied</b> 7124:17	<b>reports</b> 7088:23 7089:23 7104:25 7105:15 7137:11 7159:9 7248:20	<b>resolve</b> 7120:16
<b>refurbished</b> 7137:28 7207:1	<b>relief</b> 7219:22	<b>represent</b> 7080:19 7085:23 7097:19 7112:13 7137:14 7141:5 7144:13 7151:25 7158:23 7213:3 7228:15 7251:2 7289:9	<b>Resource</b> 7065:19 7068:17
<b>regard</b> 7067:7 7246:3 7267:23	<b>relies</b> 7087:18	<b>representation</b> 7083:11 7288:18	<b>resources</b> 7088:6 7112:2 7223:11 7226:1
<b>region</b> 7075:14,20 7090:11, 26 7101:28 7102:27 7103:14,16,17,20 7109:22 7113:12 7218:9 7219:13 7232:13 7279:7 7295:17	<b>religious</b> 7285:8	<b>REPRESENTATIVE</b> 7131:5	<b>respect</b> 7076:15 7090:23 7095:2 7105:16 7109:21 7120:7 7171:28 7190:6 7214:10 7217:26 7224:9 7226:5 7230:24 7238:27
<b>regional</b> 7086:15 7204:28 7243:21 7262:27 7276:21,28 7280:17 7289:13 7290:5,9 7291:24	<b>reluctantly</b> 7227:5	<b>representatives</b> 7179:14	<b>respond</b> 7259:4
<b>regionality</b> 7217:23,25 7220:24,26 7232:7	<b>rely</b> 7069:26 7226:13 7260:28	<b>represented</b> 7235:8,9 7250:16	<b>response</b> 7191:11 7195:2 7257:22
<b>regions</b> 7074:9 7075:22,23 7076:14,19 7078:16 7084:9 7090:21 7109:27 7218:13 7219:20 7220:28 7231:27 7232:8 7235:28 7277:7 7278:5,7 7279:6,8,15 7289:19 7291:22	<b>remain</b> 7226:6	<b>representing</b> 7279:25	<b>responsibilities</b> 7244:15
<b>regularly</b> 7070:24 7076:20 7081:11,28 7165:8 7168:1	<b>remainder</b> 7298:10	<b>represents</b> 7097:22 7139:28 7141:15 7250:24 7293:11	<b>responsibility</b> 7226:24 7235:27
<b>regulated</b> 7121:15,22 7263:28	<b>remained</b> 7248:1	<b>reprise</b> 7120:16	<b>rest</b> 7243:17 7290:21
<b>regulation</b> 7258:4,5 7263:21	<b>remaining</b> 7070:3 7087:3,13	<b>repurposed</b> 7161:9,13	<b>restate</b> 7294:14
<b>regulations</b> 7196:17 7252:18	<b>remains</b> 7120:18 7125:15 7249:19,20	<b>reputable</b> 7142:20 7168:21	<b>restrictions</b> 7210:25
<b>Regulatory</b> 7123:15	<b>remember</b> 7155:2 7175:7 7190:24 7193:8 7206:22 7237:18,20 7253:26 7287:22	<b>request</b> 7299:20	<b>result</b> 7072:6 7080:16 7086:15,24 7087:26 7088:8, 16 7097:24 7123:28 7124:4, 7 7143:16 7146:19 7147:12 7222:4 7227:11 7286:1 7290:20 7291:23
<b>reincorporate</b> 7183:12	<b>Remembering</b> 7140:23	<b>requested</b> 7222:15	<b>resultant</b> 7147:11
<b>relate</b> 7093:19	<b>reminded</b> 7269:12 7279:26	<b>require</b> 7215:7,25 7219:18 7223:9 7225:6 7261:15	<b>resulted</b> 7071:23 7157:21
<b>related</b> 7066:20 7069:14 7070:1 7073:12 7087:17 7096:11 7140:10 7142:22 7164:4 7222:22 7224:22 7232:5	<b>reminding</b> 7130:26	<b>required</b> 7069:24 7164:13 7216:14,18,22 7219:23 7226:23	<b>resulting</b> 7075:5 7079:26 7080:10 7139:4 7146:18 7147:14 7149:21 7150:22
	<b>remotely</b> 7300:2	<b>requirement</b> 7224:1 7225:16	<b>results</b> 7072:18 7074:24 7085:14 7097:23 7103:25 7146:28 7275:13 7286:4 7287:2 7291:21
	<b>remove</b> 7144:3	<b>requirements</b> 7087:5 7249:23	<b>resume</b> 7062:5 7079:9 7274:27
	<b>rennet</b> 7170:21,22	<b>requiring</b> 7215:21	<b>retail</b> 7150:17 7253:27 7260:11,21
	<b>reopens</b> 7199:9	<b>research</b> 7066:7 7069:7 7113:1 7134:19,21,24,28 7135:17 7152:1,3 7154:9	
	<b>repair</b> 7219:3,9		
	<b>repeat</b> 7178:12		
	<b>repeating</b> 7239:7		
	<b>repetitive</b> 7265:20		
	<b>replace</b> 7223:6		
	<b>replaced</b> 7109:25		
	<b>replacement</b> 7223:3 7257:14		



<b>retailers</b> 7253:23 7262:28	7204:23 7205:9	7278:8 7286:2,22 7290:6 7292:20,23 7293:27 7294:21	<b>savings</b> 7215:27
<b>retain</b> 7219:28	<b>river</b> 7090:9,10 7092:19,23 7129:7	<b>running</b> 7128:5,6,23 7145:22 7207:16,18 7223:12 7267:4	<b>scale</b> 7084:8 7156:7 7165:24 7189:17 7250:5 7251:9,10
<b>retained</b> 7143:8 7147:28 7186:22	<b>RMA</b> 7093:2	<b>rural</b> 7091:19 7109:24 7124:10 7218:13	<b>scaled</b> 7084:11
<b>retention</b> 7137:4 7138:13 7142:26 7143:1 7144:9 7148:10 7155:23 7158:9,13 7161:5 7169:22,25 7170:5, 14 7171:4 7172:28 7178:8, 14 7179:2 7183:8 7186:18, 26 7197:24,26 7198:5,8,9 7208:9 7226:9	<b>road</b> 7212:21 7253:15,16,21 7254:14 7261:13,17	<b>Ryan</b> 7112:13 7151:25	<b>scare</b> 7270:2
<b>retentions</b> 7158:26	<b>robust</b> 7064:1	<b>S</b>	<b>scares</b> 7270:2
<b>retire</b> 7216:27	<b>Roger</b> 7196:6	<b>S-I-M-S</b> 7240:19	<b>scenario</b> 7221:15 7236:8
<b>retirement</b> 7226:12	<b>role</b> 7110:22 7142:28 7169:25 7223:15 7229:3,10 7264:15	<b>S-O-M-M-E-R</b> 7133:28	<b>scenarios</b> 7266:20 7267:2, 16
<b>return</b> 7226:27 7255:27 7272:16,23 7274:2,6,11,14 7275:1	<b>rolling</b> 7269:14	<b>S-T-E-P-H-E-N</b> 7063:28 7212:2	<b>schedules</b> 7184:20
<b>returned</b> 7139:28 7288:3	<b>Roman</b> 7273:7,8 7274:22	<b>saddest</b> 7256:19	<b>scheduling</b> 7222:26
<b>returns</b> 7153:20,22 7255:17 7256:23 7265:22	<b>room</b> 7203:4	<b>safety</b> 7140:4 7219:16 7221:25 7224:22,26 7226:1	<b>school</b> 7245:6 7252:5
<b>reuse</b> 7148:4 7149:22,26	<b>Rosenbaum</b> 7093:14,15 7100:10,12 7106:4,7,11,16 7110:7 7111:9,11,19,20 7112:6 7118:20 7124:16 7130:21,22,25 7131:23,27 7132:11,12 7133:13 7134:9 7145:15 7150:3,19 7208:13, 14	<b>sale</b> 7146:13 7271:3	<b>schools</b> 7252:3 7255:4
<b>reused</b> 7147:16	<b>Rosenbaum's</b> 7098:27 7099:11 7131:18	<b>sales</b> 7186:2 7188:5 7244:23 7251:28 7252:3,4 7253:26	<b>science</b> 7136:5 7145:6,9 7213:4,5 7276:10,11
<b>Reusing</b> 7148:14	<b>rotation</b> 7138:24	<b>Sally</b> 7180:25	<b>Sciences</b> 7065:2
<b>reutilize</b> 7148:27 7188:1	<b>rough</b> 7127:13	<b>salt</b> 7139:8,12 7141:8 7167:14,15,17 7199:8,15 7200:3 7202:1,4,8	<b>scientific</b> 7157:2
<b>reutilizing</b> 7149:28 7189:8	<b>roughage</b> 7073:10	<b>salting</b> 7139:4,7	<b>scientist</b> 7144:23 7196:9
<b>reveal</b> 7080:13 7086:23	<b>roughly</b> 7070:9 7105:1 7277:13	<b>salty</b> 7139:2,5,6,8,11,13,17, 18,20,22 7145:8 7162:19 7163:3,14,26,28 7176:8,9, 15,17,19,22 7199:5,26,28 7200:7,14,16,21,25 7201:1, 10 7202:4,16	<b>scope</b> 7098:16 7124:6 7225:1
<b>revealing</b> 7089:25	<b>roundtrip</b> 7214:5,12	<b>sample</b> 7201:22 7202:27	<b>score</b> 7224:15,27
<b>reveals</b> 7085:20 7086:2,7 7139:22	<b>route</b> 7285:12	<b>sampled</b> 7139:26 7201:12	<b>screen</b> 7166:6 7218:23 7282:1
<b>revenue</b> 7086:9 7129:4 7146:13,28 7147:1 7273:24	<b>routes</b> 7214:22,26 7215:10, 12,23	<b>sampling</b> 7202:5,15	<b>screens</b> 7140:16 7165:7
<b>revenues</b> 7147:4	<b>routinely</b> 7074:3	<b>San</b> 7113:8	<b>script</b> 7256:25
<b>review</b> 7104:23 7209:17	<b>routing</b> 7276:12	<b>sanity</b> 7121:12	<b>scrutiny</b> 7223:27
<b>reviewed</b> 7157:1 7175:27 7182:11	<b>row</b> 7123:17	<b>Saputo</b> 7154:24,27 7155:4	<b>seal</b> 7203:13
<b>revised</b> 7222:18	<b>rows</b> 7123:18	<b>Sargento</b> 7169:2	<b>sealed</b> 7141:10 7203:16,26
<b>rid</b> 7148:8 7259:10 7296:12	<b>rule</b> 7207:24 7218:2 7295:8	<b>sat</b> 7278:10	<b>seams</b> 7203:15
<b>right-hand</b> 7251:9,10	<b>ruled</b> 7130:24	<b>satisfied</b> 7077:4	<b>search</b> 7295:7
<b>rise</b> 7257:12	<b>rulemaking</b> 7063:5	<b>satisfies</b> 7077:12	<b>seasonal</b> 7247:17 7254:25, 27
<b>risen</b> 7214:12 7219:7 7223:25 7293:5,13	<b>rules</b> 7219:18	<b>satisfy</b> 7075:18 7220:19	<b>seasonality</b> 7220:15 7249:19
<b>rising</b> 7223:12,15	<b>ruling</b> 7063:16 7099:8	<b>Saturday</b> 7252:12	<b>secondary</b> 7123:25 7124:3, 11 7130:4
<b>risk</b> 7069:11 7148:4,15 7149:5,13 7183:9 7188:21 7226:25	<b>rulings</b> 7063:19	<b>save</b> 7184:11,12 7243:23	<b>seconds</b> 7281:2
<b>risks</b> 7140:8 7148:28 7149:4,20 7150:1 7188:2	<b>run</b> 7087:13 7091:13 7141:18,27 7142:14 7172:14 7184:12,18,21,22 7185:6 7199:28 7206:20 7214:12 7219:23 7233:22 7260:16		<b>secret</b> 7214:1



<b>sector</b> 7217:26	7082:27 7193:3 7208:3 7266:26 7270:1 7271:22	<b>shortcuts</b> 7069:4	<b>simply</b> 7075:28 7082:6 7083:17 7085:21 7087:11 7091:8,16,18,21 7106:28 7149:24 7183:13 7199:14 7225:25 7255:16 7260:24,28 7261:10,21 7270:10 7292:11
<b>sectors</b> 7226:7		<b>shorten</b> 7254:9	<b>Sims</b> 7180:23,27,28 7181:7, 10 7239:21 7240:18,26 7241:3 7242:15,22 7243:10, 17,25 7244:8 7245:27 7246:7,11 7279:19 7280:3 7298:28 7299:2
<b>secure</b> 7116:16	<b>serve</b> 7213:22 7246:26 7253:5 7255:20,21,22 7287:15	<b>show</b> 7097:13 7164:9 7214:7 7220:25 7221:1 7232:6 7251:13 7273:4 7288:17,21	<b>simulator</b> 7230:16,19
<b>securing</b> 7088:6		<b>showed</b> 7093:2 7099:6	<b>single</b> 7285:11
<b>sees</b> 7195:10	<b>serves</b> 7251:19	<b>showing</b> 7150:17	<b>sir</b> 7096:18 7097:28 7098:12 7100:15 7101:12 7103:24,27 7119:7 7123:11 7124:28 7131:25 7145:17 7167:5 7174:4 7175:5 7179:22 7191:6 7193:9 7230:8,14,26 7232:20 7280:10,26 7294:13,15
<b>segment</b> 7062:27	<b>service</b> 7069:13 7072:28 7088:23 7125:3,5 7129:27 7180:10 7196:24,26 7219:15 7225:27 7232:23,25	<b>shown</b> 7099:5 7108:14 7220:3	<b>sitting</b> 7267:10
<b>segments</b> 7243:18		<b>shows</b> 7079:12 7101:14 7220:25	<b>situated</b> 7062:15,21
<b>segregate</b> 7199:28	<b>services</b> 7135:23,24 7152:2 7226:3	<b>shreds</b> 7169:6	<b>situation</b> 7076:15
<b>Select</b> 7112:13 7151:26 7178:7	<b>servicing</b> 7226:2	<b>shrinkage</b> 7138:22 7163:8	<b>situations</b> 7193:20
<b>selected</b> 7249:26	<b>serving</b> 7265:22,26	<b>shuffling</b> 7299:7	<b>size</b> 7085:6,7 7143:5,21 7147:27 7222:5 7223:14 7224:6 7262:21
<b>self-authenticating</b> 7132:10	<b>SESSION</b> 7062:1 7182:1	<b>shut</b> 7138:25	<b>sizeable</b> 7215:13
<b>sell</b> 7153:18 7169:5 7244:21 7270:22	<b>set</b> 7122:5 7123:5 7196:18 7226:2 7268:14 7299:21	<b>sic</b> 7072:13 7092:23	<b>sizes</b> 7205:17 7206:14,15 7224:1
<b>seller</b> 7259:14	<b>sets</b> 7149:23	<b>side</b> 7087:7 7108:9 7110:16 7117:1 7127:7 7128:6 7130:1 7191:20 7231:10 7251:9,10	<b>skeleton</b> 7277:23 7290:6
<b>sellers</b> 7261:3	<b>setting</b> 7097:7 7148:2	<b>sides</b> 7276:1	<b>skill</b> 7142:28
<b>selling</b> 7083:3 7084:7 7272:19,20	<b>setup</b> 7170:5	<b>sign</b> 7063:12,21	<b>skills</b> 7169:24
<b>semantics</b> 7294:15	<b>seventh</b> 7194:15	<b>signed</b> 7299:13	<b>skim</b> 7145:26,27,28 7146:1 7267:27
<b>semi-arid</b> 7076:17 7079:20 7091:5	<b>severe</b> 7108:28 7109:4 7146:17 7148:18	<b>significant</b> 7121:8 7129:3 7138:22 7139:3,28 7140:2, 24 7146:28 7148:28 7158:9, 13 7169:17 7188:2 7269:7	<b>skinny</b> 7127:16 7129:24
<b>semi-regularly</b> 7257:10	<b>shaking</b> 7184:28	<b>significantly</b> 7119:26 7138:18 7139:14 7140:15 7144:10,25 7147:14 7165:6 7199:6 7214:2 7248:11	<b>skip</b> 7269:28
<b>send</b> 7201:25 7234:9 7253:11	<b>shape</b> 7165:17	<b>signing</b> 7063:13	<b>skipped</b> 7265:16 7282:16
<b>senior</b> 7063:21 7134:18 7135:16 7213:22 7244:12	<b>share</b> 7160:13 7233:22,24 7234:1 7237:16 7284:2	<b>silage</b> 7070:5 7088:11	<b>sleep</b> 7123:23
<b>sense</b> 7103:6 7108:12 7109:13 7203:27 7256:11 7268:9 7290:24	<b>shared</b> 7231:21 7238:27	<b>silos</b> 7162:6 7252:10,15,17	<b>sleeping</b> 7062:11
<b>sensory</b> 7152:23	<b>shatter</b> 7170:28	<b>similar</b> 7073:19 7076:15 7081:5 7086:17 7090:6 7101:23 7112:18 7114:2,11 7115:8 7189:24 7203:28 7221:15 7235:16 7239:6 7263:6	<b>slice</b> 7103:21 7268:18
<b>sentence</b> 7077:8 7081:13 7089:4 7102:10,21,25 7103:2,28 7104:6 7134:17 7142:8,11 7154:14 7158:28 7159:8 7161:28 7200:13 7201:9	<b>shattered</b> 7147:27	<b>similarly</b> 7062:15 7080:15 7086:14 7124:3 7148:17	<b>slides</b> 7256:6 7265:6 7269:28 7270:1
<b>separate</b> 7089:19 7128:10 7183:2 7200:1,2 7226:2	<b>shed</b> 7214:22 7216:1,11 7219:20 7235:28	<b>simple</b> 7084:1 7103:6 7129:22 7203:7 7214:28 7263:22 7272:5 7297:26	<b>slight</b> 7169:17
<b>separated</b> 7232:11	<b>sheds</b> 7215:6,20	<b>simpler</b> 7195:3	<b>slope</b> 7262:8,10,19
<b>separately</b> 7063:15 7200:8	<b>sheet</b> 7099:17	<b>simplification</b> 7284:21	
<b>separates</b> 7183:5	<b>shift</b> 7184:21		
<b>separating</b> 7145:24	<b>shifts</b> 7207:18		
<b>separator</b> 7145:23 7183:3 7184:13 7200:1,2	<b>ship</b> 7113:12 7183:14		
<b>September</b> 7062:7,8 7154:13 7252:7 7255:5	<b>shipped</b> 7076:20 7113:10		
<b>series</b> 7078:6 7079:13	<b>shipping</b> 7129:21 7130:2 7144:3 7146:10 7148:7		
	<b>ships</b> 7271:5		
	<b>shook</b> 7197:16		
	<b>short</b> 7135:2 7153:5 7155:6 7225:14 7249:28 7254:23		
	<b>shortages</b> 7222:23		



<b>slow</b> 7067:28 7147:13 7231:1 7249:24	<b>sourced</b> 7226:13	<b>speeds</b> 7170:24	7298:17,23 7299:12
<b>slowed</b> 7080:2	<b>sources</b> 7099:18 7106:20 7119:21 7146:24	<b>spell</b> 7063:26 7132:27 7133:27 7240:17	<b>started</b> 7119:22 7135:25 7154:4,12 7157:13 7250:8 7277:11,23 7280:12 7290:22 7292:15,19,22 7294:17,19 7295:9,26
<b>Slyke</b> 7136:14 7156:11 7198:20	<b>sourcing</b> 7127:6	<b>spelled</b> 7181:12	<b>starter</b> 7149:20 7201:19
<b>small</b> 7135:20 7138:2,8 7144:1 7146:7 7148:8 7161:17,20,22 7195:15,19, 20 7223:13 7273:5,6 7285:7, 11	<b>south</b> 7073:25 7074:6,17,20 7075:13,17,19,28 7076:6 7077:18 7078:7,24 7079:16 7089:23 7090:9 7092:18 7101:23,25,27 7102:12,13, 18,26 7103:7,14 7104:1,3, 14,18,25 7105:2,21 7111:26 7112:4 7114:8 7116:18,23 7129:7 7285:3	<b>spelling</b> 7211:28	<b>starting</b> 7085:3 7097:12,18 7099:11 7107:16 7122:1 7124:21 7135:22 7152:17 7241:9 7279:9 7291:28 7292:12
<b>smaller</b> 7138:1 7143:21,24 7165:18 7193:19,26 7206:28 7207:17 7225:2	<b>Southeast</b> 7245:20,22 7290:21,27,28 7291:1 7292:14,25 7293:26 7294:19	<b>spend</b> 7242:14	<b>startling</b> 7266:12
<b>smallest</b> 7195:15	<b>Southeast/southwest</b> 7277:14 7280:17 7290:5 7292:18	<b>spent</b> 7065:11 7213:15,20	<b>starts</b> 7294:10
<b>snow</b> 7087:25	<b>Southeastern</b> 7216:21 7247:28	<b>split</b> 7069:6	<b>startup</b> 7138:25 7226:16
<b>snowball</b> 7269:14,16	<b>southern</b> 7114:5 7284:26	<b>splits</b> 7232:3	<b>state</b> 7063:26 7065:1,14,16, 17 7068:17,19,24,25 7069:28 7070:22,26 7073:27 7076:10,11,12 7079:17 7084:12 7088:8 7097:17 7103:15 7104:23 7109:17,23 7111:25,27 7112:4 7113:7 7115:8 7116:12,16 7118:4 7124:10,27 7126:19 7133:27 7136:25 7158:18 7160:17 7161:7,20 7162:9 7164:3 7168:8 7172:17,22 7187:27 7213:6 7221:6,9,13,14 7225:13,17 7240:17 7292:4
<b>snowfall</b> 7087:24,25 7088:16,17	<b>southwest</b> 7205:7 7245:23 7285:5 7290:22 7291:1 7292:15 7293:27 7294:19	<b>spoke</b> 7079:25 7164:9 7230:8	<b>stated</b> 7154:4 7162:15 7165:4 7172:15 7173:13 7188:20 7193:24 7205:19 7209:10 7222:21
<b>snowpack</b> 7087:24	<b>soybean</b> 7073:3,4,13,20,28 7074:3,8,23 7077:19 7105:17 7113:21 7114:7,12, 20	<b>sponge</b> 7199:11,13	<b>statement</b> 7068:22 7086:20 7101:22 7102:15 7104:20 7105:20 7108:4,6 7114:26 7115:13 7154:3 7156:10,13 7157:25 7158:16 7159:28 7166:1,13 7167:25 7169:20 7172:3,5,12 7173:13 7180:3, 7 7182:5 7187:24 7206:19 7238:16 7292:13 7293:8 7297:2
<b>so-called</b> 7192:27	<b>space</b> 7252:10	<b>spot</b> 7279:7 7292:20 7293:23	<b>statements</b> 7299:15
<b>social</b> 7220:15	<b>spanning</b> 7218:9	<b>spots</b> 7238:18	<b>states</b> 7070:17 7074:4 7076:7,13 7079:12 7080:23 7082:28 7084:8 7087:20 7090:21,26 7103:21 7104:17 7112:19 7114:1,10,22 7116:19 7134:25 7135:6,21, 27 7176:2 7192:6 7204:5 7221:4,10,16 7223:28 7224:5 7225:15,18 7229:13 7230:16 7247:25
<b>socks</b> 7270:2,3	<b>speak</b> 7129:15 7157:23 7209:20 7213:15 7236:2 7257:16 7290:4,5	<b>spread</b> 7215:1	<b>stating</b> 7177:16 7211:28
<b>sold</b> 7086:25 7092:13,14 7142:16 7147:15 7154:23, 26,27	<b>speaking</b> 7121:1 7165:27	<b>spreadsheet</b> 7078:20 7097:15 7266:27 7288:13	<b>statistic</b> 7088:23 7215:4
<b>sole</b> 7225:2 7226:24	<b>special</b> 7094:22 7096:9 7223:9 7224:1	<b>spreadsheets</b> 7288:17	
<b>solely</b> 7077:3,11 7138:14 7146:11	<b>specialty</b> 7070:3,6 7161:13, 24 7189:4 7207:2 7223:22	<b>spring</b> 7087:25 7216:13	
<b>solid</b> 7066:23 7069:25 7092:6,13,14,15 7165:12	<b>specific</b> 7080:19 7082:28 7089:15,25 7111:4 7118:27 7182:18 7203:10 7289:14,22 7290:3 7297:1,2	<b>stability</b> 7217:7	
<b>Solomon</b> 7192:22	<b>specifications</b> 7185:28	<b>stable</b> 7084:25 7263:5	
<b>solves</b> 7147:20	<b>specificity</b> 7295:13	<b>stack</b> 7240:12 7276:25	
<b>someplace</b> 7256:22	<b>speculate</b> 7230:5	<b>stacked</b> 7141:9	
<b>Sommer</b> 7133:28 7134:5,10 7135:15 7151:7,25 7172:27 7174:28 7180:17,19,21 7182:8 7190:22 7195:1 7196:3 7209:8 7210:22	<b>speed</b> 7067:28 7198:2	<b>stages</b> 7155:20	
<b>sort</b> 7101:21 7129:21 7259:17		<b>stair-steps</b> 7078:10	
<b>sorted</b> 7299:17		<b>stamp</b> 7174:26	
<b>sought</b> 7089:13 7222:5 7224:13		<b>stand</b> 7194:26 7240:4	
<b>sound</b> 7113:26 7186:23		<b>standard</b> 7141:17,23,28 7142:8,13,14 7219:18 7276:19	
<b>sounds</b> 7152:28 7181:14 7186:24 7212:4 7215:14		<b>standards</b> 7142:19 7186:5 7220:21 7222:8 7225:22	
<b>source</b> 7129:4 7132:15 7138:16 7140:1 7146:14 7147:10 7282:4		<b>standpoint</b> 7191:13 7192:11,12	



<b>statistical</b> 7271:8,16 7272:5 7274:1	<b>strike</b> 7095:24 7098:4	<b>success</b> 7086:19	7293:21,22 7294:3,9
<b>statistics</b> 7075:24 7105:13 7218:3,18 7268:15	<b>strong</b> 7083:14 7088:1 7120:21 7122:28 7217:1	<b>successful</b> 7085:21 7091:4, 6,11	<b>surges</b> 7251:18,19 7253:8 7254:28
<b>Stats</b> 7105:14 7106:17,27 7107:2,13,14 7116:17 7132:27	<b>strongest</b> 7084:22,23	<b>sufficient</b> 7247:21 7251:15, 17 7254:7	<b>surprise</b> 7280:21
<b>stay</b> 7098:20 7180:8	<b>Strother</b> 7062:7 7063:11,16	<b>sugar</b> 7296:24	<b>surprised</b> 7273:9
<b>step</b> 7133:18 7139:5 7143:3 7211:11 7276:15	<b>structure</b> 7066:18 7069:23 7199:9,17 7214:26 7258:11 7262:9 7277:22 7279:4	<b>suggest</b> 7104:28 7292:5 7298:25	<b>Surprisingly</b> 7136:24
<b>Stephen</b> 7063:27 7064:12 7067:11,12 7211:14 7212:1, 13 7213:2	<b>struggle</b> 7167:16	<b>suggested</b> 7191:8	<b>survey</b> 7088:27 7089:16 7188:12 7200:20 7224:16 7233:10,12,16,19 7234:10 7235:3
<b>Stephenson</b> 7283:20 7284:6	<b>struggles</b> 7191:18 7198:12	<b>suggesting</b> 7300:14	<b>surveyed</b> 7139:16 7165:2 7188:5
<b>steps</b> 7148:20	<b>struggling</b> 7287:24 7288:6	<b>suggestions</b> 7209:17	<b>susceptible</b> 7259:3
<b>Sterling</b> 7090:13	<b>stuck</b> 7279:12	<b>suggests</b> 7296:9	<b>sustainable</b> 7082:7 7253:8
<b>Steve</b> 7093:15 7111:20	<b>student</b> 7094:6	<b>Suite</b> 7212:21 7241:7	<b>swear</b> 7064:10 7134:4 7212:12 7240:25
<b>sticking</b> 7073:27 7101:21	<b>students</b> 7135:5	<b>summarize</b> 7189:7 7234:8	<b>sweeps</b> 7259:5
<b>sticks</b> 7237:25	<b>studies</b> 7155:22 7157:11	<b>summarized</b> 7215:3	<b>sweet</b> 7138:15 7139:12,14, 16,19,20,21 7145:8,24,25,27 7146:26 7150:14 7163:12 7176:11,18,24 7199:5,6,18 7200:1,5,7,14,15,21,25,28 7201:22,27 7202:15
<b>stint</b> 7245:19	<b>study</b> 7136:19 7139:15 7156:23 7157:1,13 7213:7	<b>summary</b> 7080:20 7086:26 7149:17	<b>sworn</b> 7064:13 7134:6 7212:14 7240:27
<b>stir</b> 7170:22	<b>stuff</b> 7167:28 7171:1 7201:19 7207:12	<b>summer</b> 7087:25 7216:17,22	<b>symbol</b> 7150:17
<b>stirred</b> 7140:14,19 7165:5, 10,11,16,17,18,25 7166:3,9, 12,13,22,23 7167:13 7206:11	<b>style</b> 7144:21 7161:5 7177:10	<b>summing</b> 7084:2	<b>synergistic</b> 7233:28
<b>stirring</b> 7166:7	<b>styles</b> 7138:6	<b>Sunday</b> 7252:13	<b>system</b> 7096:1 7121:13,15 7137:17 7143:11 7144:4 7148:8 7149:24 7165:13 7185:5 7198:14 7202:22 7206:10,11,12 7230:18 7245:10 7253:8 7263:14 7266:4 7291:15
<b>stop</b> 7152:6 7215:14,16,26 7217:2 7258:14 7269:13,17 7279:16,18 7280:17 7298:9	<b>sub-bullet</b> 7216:26	<b>super</b> 7167:10 7199:10	<b>systems</b> 7140:21 7167:16 7248:15 7249:14
<b>stops</b> 7215:7,16,21 7216:15, 19,24	<b>subdivision</b> 7252:26	<b>super-single</b> 7221:28	
<b>storage</b> 7139:10 7148:22	<b>subject</b> 7122:22 7261:18	<b>superior</b> 7298:6	
<b>store</b> 7213:14	<b>submitted</b> 7299:16	<b>supervisor</b> 7231:21 7236:21	
<b>stores</b> 7119:16 7263:1	<b>subsequently</b> 7143:20 7145:22 7148:1	<b>supplies</b> 7075:20 7087:24 7088:2,6 7146:19 7244:20 7249:12,15 7251:14,15,25, 26 7252:5 7285:9	
<b>story</b> 7138:11 7198:8,9 7274:4,11,28	<b>subsidize</b> 7128:9	<b>supply</b> 7121:5 7191:25 7192:13 7222:13 7247:12 7248:12 7254:9 7255:12 7256:8,12 7258:28 7263:16 7275:8,9,19 7276:3 7285:3 7295:22	
<b>straight</b> 7296:26	<b>substandard</b> 7220:11	<b>supply/demand</b> 7259:1	
<b>straighten</b> 7256:4	<b>substantial</b> 7071:11 7077:21 7083:7,14 7085:6,16 7086:5, 12,16 7101:11 7121:28 7124:26 7247:8 7249:18 7252:17	<b>supplying</b> 7249:20 7254:21 7255:10 7256:20	
<b>straightforward</b> 7254:5,12 7270:10	<b>substantially</b> 7071:13 7072:10,13 7077:1 7085:28 7086:3,8 7250:4 7258:4 7259:10	<b>support</b> 7121:6 7228:24 7246:20 7296:11	
<b>streamlined</b> 7239:24	<b>substitute</b> 7257:13 7258:2, 11	<b>supported</b> 7164:12 7208:5 7269:12 7295:28	
<b>streams</b> 7200:6	<b>substituting</b> 7258:5	<b>surcharge</b> 7231:7,12	
<b>Street</b> 7241:7	<b>subtracted</b> 7080:13,16 7082:23	<b>surcharges</b> 7230:28 7248:27	
<b>stress</b> 7109:8 7226:25	<b>subtracting</b> 7084:17	<b>surface</b> 7068:14 7071:25 7072:9 7087:19,22,23,26 7088:3,15 7090:10 7262:6,7 7276:19 7277:26 7291:18	
<b>stretch</b> 7269:18	<b>subtracts</b> 7262:8		
<b>strictly</b> 7177:8 7233:20	<b>suburban</b> 7088:4		

**T**

**table** 7139:7 7166:6,9,14,18,  
22 7167:16 7201:26 7203:1  
7206:12 7214:7,13,14  
7218:5,6,22 7219:5 7220:25  
7223:18,24 7231:23 7232:1,  
3,13 7233:6 7298:16

**tables** 7140:15,17 7143:7  
7165:5,7,15 7166:1,2,3  
7167:6,11,13 7170:27  
7207:12,17 7218:26 7220:3  
7233:5



<b>tabs</b> 7078:20	28 7190:27 7197:2 7208:10 7232:27 7237:10,14 7238:16,20 7298:19,23 7299:5,9,27 7300:3	7100:17 7125:10 7145:12 7197:5 7213:25 7233:2 7255:3 7284:10 7298:25 7299:14	<b>thinking</b> 7085:1 7099:10 7117:7 7193:24 7207:3,11 7288:19 7297:19
<b>taint</b> 7149:5,13 7188:22			<b>thinks</b> 7195:10
<b>take-home</b> 7138:4 7143:10			<b>thought</b> 7063:3 7088:16 7129:14 7175:22 7181:9 7184:17 7186:10 7280:6 7284:18 7290:13
<b>takes</b> 7062:16 7158:7 7184:13,17 7230:19	<b>te</b> 7300:7	<b>testifying</b> 7066:13 7072:16 7136:7 7210:22	<b>threat</b> 7256:4,14,15,19,21,24 7259:12 7275:7,19
<b>taking</b> 7063:24 7082:19 7084:17 7112:1 7132:9 7138:17 7139:20 7144:10,16 7162:5,19 7233:2 7255:27 7276:12 7279:20	<b>teach</b> 7094:11	<b>testimonies</b> 7297:13	<b>threaten</b> 7256:8
<b>tale</b> 7192:22	<b>teaching</b> 7069:7,24 7152:20	<b>testimony</b> 7063:24 7067:26 7068:13 7071:14 7072:4 7087:14 7095:25 7096:10 7097:19 7098:16,19 7099:13 7100:21 7101:26 7105:14 7108:5 7112:16,25 7115:22 7117:5,10 7120:12 7126:22 7132:8 7134:14,16,22 7135:12 7145:3,7,16,18 7150:4 7155:16 7158:2 7173:18 7178:28 7179:4,11, 19 7182:9 7191:9 7204:4 7211:4 7212:26 7227:2 7228:19,24 7229:7,17,21 7243:11,21 7246:18 7280:7 7283:22 7292:3,27 7293:20 7297:4 7299:13	<b>threatened</b> 7248:12
<b>talk</b> 7071:18 7087:9 7102:4 7104:10 7105:24 7114:7 7122:26 7126:21 7127:7 7128:4 7129:6,9,11,16 7130:6 7144:9 7153:4 7162:19 7164:15 7168:20 7169:10 7171:11 7181:5 7182:20 7190:2 7199:4 7203:9 7206:19 7207:25 7233:10,11 7236:24 7237:19 7249:11 7256:7 7257:9,12 7267:8 7275:8 7280:8 7281:1 7298:15,21	<b>tech</b> 7065:8 7265:5	<b>tests</b> 7139:25 7201:14 7296:10	<b>threatens</b> 7276:3
<b>talked</b> 7098:17 7103:9 7110:18,19 7113:11 7119:10 7126:11,12,14,16,17 7127:1 7157:9 7160:6 7171:9 7198:20,24 7199:18,23 7200:14 7205:13,20 7238:26 7239:4 7281:8,9,25	<b>technical</b> 7135:22,23 7208:3 7243:1	<b>Tetra</b> 7208:4	<b>threats</b> 7256:11 7275:8
<b>talking</b> 7062:15 7077:25 7092:18 7096:24,27 7106:26 7121:19,20 7126:18 7127:5 7128:5 7156:11 7159:13 7171:14 7176:10,11,14,23, 26,27 7177:6,8,15,22 7194:14 7201:10,14 7204:2 7206:5 7207:7,20,21 7294:15 7297:11	<b>technologies</b> 7220:2	<b>Texas</b> 7070:20 7076:21 7087:20 7112:15 7160:26 7241:7 7244:11 7270:12,13	<b>three-</b> 7248:7
<b>talks</b> 7121:2 7155:11 7164:2 7175:13 7177:14 7238:16	<b>technologist</b> 7134:18 7135:16	<b>texture</b> 7143:6 7251:13	<b>three-mile</b> 7214:5
<b>tank</b> 7251:28	<b>technology</b> 7120:23 7207:27	<b>Thanksgiving</b> 7062:28	<b>three-person</b> 7244:12
<b>tanker</b> 7222:3,6,28 7223:13 7285:12	<b>telling</b> 7065:6 7238:2 7266:13 7288:4 7294:5	<b>theme</b> 7065:28 7101:22 7239:7	<b>three-way</b> 7069:6
<b>tankers</b> 7223:5,7,14	<b>temperature</b> 7147:19	<b>thereabouts</b> 7289:3	<b>thresholds</b> 7225:23
<b>target</b> 7202:16	<b>tempted</b> 7149:18	<b>thesis</b> 7213:7 7245:4	<b>threw</b> 7181:5
<b>targets</b> 7167:13	<b>ten</b> 7151:8,15 7216:19 7225:18 7227:28 7228:16 7240:5,6 7250:3 7269:20	<b>thin</b> 7215:6,28 7216:10 7219:20 7235:23,28	<b>thrive</b> 7191:23
<b>task</b> 7193:1 7244:26	<b>ten-minute</b> 7111:15	<b>thing</b> 7082:16 7109:17 7121:25 7128:28 7130:1 7153:3 7158:6 7197:20 7202:14 7238:15,25 7249:13 7256:17 7273:5,6 7279:12 7280:23 7299:20	<b>thumb</b> 7207:24
<b>tasked</b> 7254:4	<b>ten-year</b> 7178:9	<b>things</b> 7064:20 7066:25 7082:9 7098:16 7102:11 7107:4 7109:5,6 7121:5,6 7122:9 7123:5 7125:22 7126:20 7127:4,6 7128:4,18, 21,26 7163:10 7169:6 7170:12 7171:2,8 7176:11, 12 7189:28 7191:21 7193:26 7207:11 7212:9 7233:18 7234:19 7236:12 7249:13 7261:12 7263:17 7284:24 7290:20	<b>Thursday</b> 7062:1,4 7182:1
<b>tax</b> 7223:16,18,25	<b>tend</b> 7161:13,15 7195:21,24 7217:27 7252:21 7254:9 7262:4 7263:16 7265:21	<b>territory</b> 7227:11 7277:20	<b>tick</b> 7160:9
<b>taxes</b> 7221:6,9,13	<b>tentative</b> 7279:11	<b>test</b> 7201:12 7203:6	<b>tie</b> 7128:21
<b>TAYLOR</b> 7092:25 7093:1 7125:7 7130:9 7180:15,19,	<b>term</b> 7097:2 7237:25 7258:17 7264:9 7295:10	<b>tested</b> 7062:8,9 7136:19	<b>tied</b> 7073:6
	<b>terminal</b> 7224:24 7225:25	<b>testified</b> 7064:8,14 7066:6 7069:22 7134:1,7 7171:6,8 7173:5 7175:22 7176:6 7193:6 7212:10,15 7240:22, 28 7283:19 7284:17 7291:10 7294:26 7298:11	<b>tighter</b> 7108:9
	<b>terms</b> 7071:3 7074:13 7105:21 7108:7 7164:16 7165:16 7206:24 7217:6 7221:12 7222:5 7233:20 7267:28	<b>territory</b> 7227:11 7277:20	<b>Tillamook</b> 7205:7
	<b>territory</b> 7227:11 7277:20	<b>test</b> 7201:12 7203:6	<b>time</b> 7062:17 7065:12,13 7066:19,27 7077:2 7078:9 7079:13 7080:22 7081:3 7082:9,14 7083:5 7084:5 7085:12 7091:25 7116:5 7119:15 7120:23 7125:1 7126:8 7127:15,17 7129:24 7130:13 7136:2 7154:2 7170:18 7173:23,28 7174:26 7181:15 7183:22 7196:13 7208:11 7215:15,24 7222:24 7226:23 7227:23 7232:6,19 7233:2 7237:9 7239:9,16 7241:12 7242:14 7243:23 7249:28 7256:1 7267:20,21, 24 7268:4,6,7,9,12,13,20,23, 24,26 7269:2,27 7273:23 7275:24 7279:22 7282:21 7285:19 7298:7,16,27 7299:18
	<b>testify</b> 7066:3 7098:1,23	<b>timeframe</b> 7159:5 7250:4	





<b>times</b> 7127:11 7128:3 7139:19 7194:27 7233:21 7253:21 7268:1	7198:27 7269:2	<b>trap</b> 7199:13	7150:9,11 7175:20 7199:27 7200:25 7201:15 7202:10
<b>tiny</b> 7210:16	<b>totally</b> 7150:15 7204:24,25 7208:1	<b>trapped</b> 7199:12,14	<b>typically</b> 7087:5 7138:1 7143:21 7144:2 7145:25 7150:13,15 7165:14 7166:3 7195:17,18 7199:27 7200:8 7215:10,13
<b>tire</b> 7221:21,22,25,28	<b>touch</b> 7170:13 7262:26	<b>travel</b> 7216:14,18,22 7221:27	<b>typographical</b> 7278:24
<b>tired</b> 7255:16	<b>tough</b> 7192:24	<b>traveled</b> 7216:5	
<b>tires</b> 7221:18,23,24 7223:21, 23	<b>tower</b> 7202:3	<b>travelled</b> 7214:21,23 7215:2, 7	
<b>title</b> 7093:27 7095:12 7106:6,8 7274:13	<b>towers</b> 7139:9	<b>tremendous</b> 7149:19	<hr/> <b>U</b> <hr/>
<b>title's</b> 7274:12	<b>town</b> 7110:16	<b>trend</b> 7076:9 7223:4 7225:7, 8 7253:2	<b>U.S.</b> 7071:16 7073:4 7074:23 7075:4 7081:5 7083:1 7134:26,27,28 7138:5 7140:9 7142:23 7154:6 7164:3 7168:23 7177:1 7217:28 7218:2 7220:22 7225:19 7227:13 7232:1,9 7249:1
<b>titles</b> 7093:25	<b>track</b> 7126:6 7285:17	<b>tricky</b> 7128:19	<b>Uh-huh</b> 7156:12 7168:11 7175:24 7197:22 7198:18 7207:10 7218:8 7236:23
<b>today</b> 7064:26 7134:14 7136:7 7137:2 7142:19 7146:23 7178:3,28 7179:5, 10 7180:11,22 7181:1,8 7182:10 7190:4 7197:5 7208:11 7210:22 7213:25 7217:11 7233:2 7236:26 7239:7 7242:23 7245:25 7258:18 7262:21 7267:4 7281:3 7285:17,23 7288:2, 24 7289:2 7291:15,26 7293:21 7294:4,26 7297:15 7298:11 7300:13	<b>tracked</b> 7082:11	<b>trip</b> 7254:15 7272:13	<b>Ukraine</b> 7109:7,11
<b>today's</b> 7140:3 7141:4 7166:11	<b>tractor</b> 7222:16	<b>triple</b> 7083:19	<b>ultimate</b> 7085:7
<b>told</b> 7099:1 7230:22 7238:1, 10 7255:19 7266:22 7279:17	<b>tractor-trailer</b> 7214:6 7218:4,21	<b>trouble</b> 7079:2	<b>ultimately</b> 7135:28 7153:6, 28 7154:15 7166:7 7169:26, 27 7192:21 7198:3 7200:8 7201:28
<b>tolerate</b> 7220:11	<b>tractor-trailers</b> 7214:11	<b>troubleshooting</b> 7152:11,27	<b>umbrellas</b> 7225:5
<b>tolling</b> 7259:18,24 7260:1	<b>tractors</b> 7128:15 7223:5	<b>truck</b> 7214:24 7215:16,26 7218:4 7219:19 7222:2 7253:12,20	<b>unachievable</b> 7148:13
<b>tomorrow</b> 7185:11 7242:24 7258:18 7298:12,15,16,17, 24 7299:20,23 7300:15	<b>trade</b> 7069:21	<b>trucking</b> 7225:9 7229:4	<b>unaware</b> 7231:22
<b>ton</b> 7079:22	<b>trade-offs</b> 7082:4	<b>trucks</b> 7223:13,14,19 7237:7 7248:8	<b>uncertain</b> 7216:6
<b>tonight</b> 7288:20	<b>trades</b> 7089:16	<b>true</b> 7099:27 7136:23 7209:15 7230:27 7239:26 7252:14 7261:20 7291:15, 19,20	<b>uncertainty</b> 7088:14 7226:26 7227:15
<b>tooth</b> 7255:19	<b>trading</b> 7094:13	<b>trust</b> 7261:19 7262:15,16	<b>unchanged</b> 7248:1
<b>top</b> 7093:1,3 7106:28 7107:17 7131:13 7132:18,22 7141:24 7150:22,28 7168:5 7197:9 7218:3 7221:12 7225:18 7250:27	<b>traditional</b> 7144:22 7172:13 7276:19	<b>truth</b> 7210:5,12 7251:22 7257:21	<b>unclear</b> 7162:3
<b>topic</b> 7094:5 7098:20 7100:6 7105:26 7138:12 7144:24 7162:18 7257:10 7276:6	<b>trailer</b> 7221:20 7222:28	<b>Ts</b> 7092:19	<b>uncomfortable</b> 7160:14
<b>topics</b> 7066:12,15	<b>trailers</b> 7224:2,4 7248:8	<b>tuning</b> 7249:5	<b>under-</b> 7295:4
<b>topside</b> 7083:13	<b>train</b> 7219:28	<b>turn</b> 7092:26 7125:2 7196:24 7199:4 7206:4 7231:25 7232:22 7253:16,18 7282:1	<b>underestimate</b> 7138:18
<b>total</b> 7087:2,24 7107:19 7138:18,26,27 7139:11,13, 23 7140:21 7144:13 7156:4, 6 7162:1,2,10,23,25 7163:13,17,28 7192:12	<b>trained</b> 7135:5 7187:24 7237:23	<b>turned</b> 7097:15 7238:3 7273:4	<b>underestimating</b> 7201:3
	<b>training</b> 7135:2 7152:21 7170:9	<b>turning</b> 7120:11 7231:23	<b>undergrade</b> 7147:15 7185:26
	<b>trans-shipped</b> 7076:13	<b>turns</b> 7133:9	<b>underlying</b> 7086:18 7105:15 7107:15 7124:6
	<b>transactions</b> 7073:6 7089:15	<b>two-and-a-half</b> 7245:11 7248:7	<b>underneath</b> 7131:17
	<b>transcript</b> 7063:8,9 7269:9	<b>two-tenths</b> 7173:28	<b>understand</b> 7083:24 7096:6, 18 7098:22 7102:23,24 7107:11 7110:23 7118:19 7121:11,14,17,19,24,25 7122:4,13,14,18,20,25 7123:4,7,11,21 7124:15 7127:10,21 7128:7 7164:18
	<b>transfer</b> 7143:7	<b>type</b> 7073:12 7152:2 7155:11 7156:7 7170:26 7189:22 7206:21 7221:26 7222:4 7224:12,23 7231:11	
	<b>transferred</b> 7245:12	<b>types</b> 7095:6 7118:25 7123:5 7135:4 7162:20 7218:17 7220:1 7224:24	
	<b>transforming</b> 7096:14	<b>typical</b> 7139:21 7146:26	
	<b>transition</b> 7069:16 7079:26 7087:1,14 7227:4		
	<b>transitioned</b> 7070:15 7077:3,9,11 7227:3		
	<b>transmit</b> 7263:21		
	<b>transportation</b> 7129:10,12 7217:26 7218:17 7220:14 7226:7		
	<b>transporters</b> 7219:14 7220:5		



7165:9 7166:2 7178:6,11 7179:15,23 7186:20 7188:19 7191:18 7192:24 7196:8 7204:24,25 7210:11,18 7220:1 7230:7 7231:9 7232:10,15 7257:25,26 7258:1 7263:11,12,14,24 7264:10 7281:5 7285:13,15 7295:6	<b>upgrade</b> 7161:7 <b>upgrades</b> 7208:3 <b>upper</b> 7074:5 7075:23 7114:24 7115:19 7128:8 7158:22 7162:15 7204:14, 16,18 7205:1,5 7277:13 <b>urban</b> 7088:4 7090:16 7129:20 <b>urgent</b> 7227:9 <b>URL</b> 7107:1 7132:25 7174:26 <b>usage</b> 7221:26 7223:13 <b>USDA</b> 7069:13 7071:10 7072:28 7073:24,26 7074:1 7075:11 7077:17 7080:8 7082:27 7088:22 7096:12,20 7104:22 7105:14 7111:23 7115:1,15 7117:24 7118:26 7121:23 7126:22 7131:5 7141:23,27 7142:8,14 7150:17 7165:2 7168:18 7185:25 7188:5 7192:2,26 7281:1 7297:19 <b>USDA's</b> 7188:11 7192:21 <b>USDA/NASS</b> 7111:25,26,28 7112:4 <b>USDSS</b> 7277:22 <b>Utah</b> 7112:24 <b>utility</b> 7275:23,24,25 <b>utilize</b> 7144:5 7190:11 7277:3 <b>utilized</b> 7149:2 <b>utilizing</b> 7147:6 7149:6,14 7155:20 7166:14 7176:3 7182:20 7188:23 <b>UW</b> 7136:5	7089:19,20,24 7192:16 7263:21 <b>Van</b> 7136:14 7156:11 7198:20 <b>variability</b> 7082:16 7083:7 7218:27 7225:26 <b>variable</b> 7072:24 7074:10, 11,15 7076:5 7077:20 7078:5 7080:9,12,15,28 7081:1,8,9,15,26 7082:3,4,5, 11,17,19,23 7083:5 7084:18 7086:10 7116:1,9 7126:2 7215:2 7217:23,25 7220:13, 14 7221:18 7224:7,11 7225:20 <b>variance</b> 7120:7 <b>variation</b> 7145:26 7222:4 7225:11 7247:16 <b>variations</b> 7249:22 <b>varies</b> 7184:24 7222:3 <b>varieties</b> 7177:21 7192:15 <b>variety</b> 7070:5 <b>vary</b> 7083:12 7221:25 7224:19 <b>vast</b> 7101:16 7129:5 7257:15 7296:15,17 7298:7 <b>vastly</b> 7221:11 <b>vats</b> 7136:28 7137:1,3,15 7138:5,10,23,28 7139:26 7142:25 7143:3 7155:7,11, 15,17,25 7156:7 7162:6 7166:4,5 7169:21 7170:1,21 7176:3,14 7182:13,17,22 7183:20,21,22,23 7185:1,3, 6,12 7187:3,6 7201:12,18 7202:5,20 7208:7 <b>vats's</b> 7155:8 <b>vats</b> 7136:17,20,22 7137:4, 5,6,7,8,10,12,18,23,26,27,28 7138:3,7,9,28 7141:13 7144:20,21,22 7147:13 7155:16,21,22 7157:12,13, 14,15,16 7158:19,20,26 7159:1,9,12,13,14,20,26 7160:1,2,8,11 7161:2,5,8,12, 21 7163:16 7168:8 7171:19, 21 7172:13 7193:19,20,26 7195:4,12,25,26 7207:1,11, 12,16,26 7208:1,2,3,8 <b>vegetables</b> 7070:6 <b>vehicle</b> 7225:13,17 <b>Velde</b> 7300:7 <b>vendor</b> 7222:15,17,21	<b>venture</b> 7122:10 <b>verify</b> 7131:19 7132:10 7133:5,11 <b>versatile</b> 7167:8 <b>versatility</b> 7167:11 <b>version</b> 7193:5 <b>versus</b> 7071:15 7098:7 7104:18 7105:21 7113:3 7114:28 7167:16 7206:11 7207:6 7221:27 7222:5,9 7247:3 7263:28 7271:10 7274:6 7297:11 <b>vertical</b> 7136:22 7144:21 7171:21 <b>veterinarians</b> 7094:25,26 7095:2,4 <b>veterinary</b> 7094:19 <b>vets</b> 7095:6 <b>viability</b> 7227:17 <b>Vice</b> 7135:23,24 <b>vicious</b> 7148:2 7149:23 <b>video</b> 7155:6,10,17 <b>view</b> 7194:17,20 <b>violations</b> 7224:22 <b>virgin</b> 7221:24 <b>Virginia</b> 7065:8 7300:5 <b>virtual</b> 7299:12 <b>virtually</b> 7098:8 <b>viruses</b> 7147:10 <b>visit</b> 7127:3 7140:28 7144:7 7152:10 <b>vitae</b> 7093:18 7094:4 <b>Vitaliano</b> 7283:19 7288:7 7291:11 7292:27 7293:2 <b>voice</b> 7064:1 7067:27 7158:3 <b>voir</b> 7067:6 7246:2 <b>volatile</b> 7079:14 <b>volition</b> 7179:9 <b>volume</b> 7067:27 7090:4 7091:7 7138:27 7139:12,13 7140:21 7162:2,10 7177:1 7215:1,3,20 7216:1,4 7223:4,9,13 <b>volumes</b> 7081:9,26 7139:20 7214:23 7215:6 7223:8 <b>voluntary</b> 7069:16
<b>V</b>			
<b>vacuum</b> 7141:10 7203:13 <b>vacuum-sealed</b> 7203:14 <b>Valley</b> 7113:8 <b>valuable</b> 7133:2,20 7153:15 <b>valuation</b> 7073:1 7088:24 <b>valuations</b> 7089:10,14,15, 17,18,28 7090:1,3 <b>value-added</b> 7070:10 <b>valued</b> 7088:28 7089:1,7,8, 9,10,14,25,27 <b>values</b> 7072:2 7075:9,10			



<b>vulnerable</b> 7147:25	<b>well-informed</b> 7196:11	<b>Wilson</b> 7228:9	7195:15 7213:24 7245:20 7277:17,22 7278:10 7285:15 7291:1,2 7292:7
<b>W</b>	<b>well-managed</b> 7144:18	<b>window</b> 7222:18	
<b>wage</b> 7218:11 7220:2	<b>well-respected</b> 7196:9	<b>winter</b> 7087:25 7088:16	<b>workers</b> 7218:20,22
<b>wages</b> 7217:26 7219:12 7226:12	<b>well-run</b> 7144:19,20 7168:1 7171:25 7207:26	<b>Wisconsin</b> 7071:26 7072:2 7089:19 7096:28 7097:5,22 7098:7,8 7100:20 7101:7,11, 15,19 7103:11 7110:20 7127:23 7134:19 7135:11, 18,20,28 7136:2 7139:16 7140:19 7146:16,23 7160:9 7178:1 7200:20,22 7204:5 7218:10 7230:24 7300:5,7	<b>working</b> 7063:16 7066:22 7069:24 7094:1,2 7097:9 7100:24 7101:1 7122:2 7155:23 7213:15 7220:8 7245:17 7290:22
<b>wait</b> 7158:2 7203:1	<b>Wendorff</b> 7139:15	<b>witness's</b> 7098:16	<b>works</b> 7095:7 7096:1 7125:17 7127:5
<b>walk</b> 7241:10 7243:12 7271:9	<b>West</b> 7070:15 7087:16,28 7114:1,10,22 7115:8 7160:8, 12 7193:23 7197:25 7204:18 7205:1,6,7 7244:28 7277:18 7300:5	<b>witnessed</b> 7145:11 7257:23	<b>world</b> 7135:7 7140:4 7152:22 7166:12 7229:5 7252:1 7289:16
<b>walked</b> 7238:11	<b>western</b> 7070:17,20 7112:19 7115:10 7116:19 7204:14,20 7216:17 7217:28 7289:13	<b>witnesses</b> 7063:11 7180:11 7255:3	<b>worlds</b> 7252:2
<b>walking</b> 7141:2 7270:27	<b>whatnot</b> 7173:19	<b>wondered</b> 7126:13 7155:14 7156:17 7160:4 7209:26	<b>worried</b> 7265:4
<b>walks</b> 7227:12	<b>wheat</b> 7070:5 7109:10 7130:2	<b>wonderful</b> 7125:11	<b>worries</b> 7068:28
<b>wanted</b> 7063:20 7099:24 7151:27 7166:1 7216:27 7280:11 7299:20,23	<b>whew</b> 7137:6 7138:15,28 7139:2,5,6,8,11,12,13,15,17, 18,19,21,22,24,26,27 7140:5,16 7141:8,11 7143:15,20,23,25,26,28 7144:3,5 7145:8,18,20,22, 23,25,28 7146:1,3,4,7,10,13, 18,20,21,23 7147:2,4,5,6,8, 9,16,18,22 7148:2,4,6,9,14, 19,21,22,27 7149:3,5,6,13, 14,18,23,26,28 7150:6,9,11, 14,15 7158:20 7162:19 7163:3,7,11,12,13,14,16,17, 19,26,28 7165:6 7166:5,7 7176:5,8,9,11,14,15,17,18, 19,21,22,24,27 7177:2 7182:12,17,20,21,27 7183:2, 3,4,13,21 7184:3,5,12,15 7185:9,12 7186:19,21,25,27 7187:8 7188:1,21,23,27 7189:8 7190:6,17 7199:5,6, 18,23,25,26,28 7200:2,3,4,5, 6,7,14,15,16,21,26,28 7201:1,10,12,20,22,25,27 7202:4,16,18,23,27 7203:1, 6,17,18 7204:2,11,16,18,21 7205:10 7206:6,7,13	<b>wonders</b> 7261:23	<b>worry</b> 7274:17
<b>wanting</b> 7122:26		<b>word</b> 7092:12,14 7093:25, 26,28 7094:16 7095:11 7132:28 7149:10 7150:28 7194:15 7254:7 7257:22 7258:16,22 7278:19 7293:17	<b>worse</b> 7262:28
<b>war</b> 7109:7,11		<b>words</b> 7103:3 7118:14 7159:14 7171:27 7183:19 7268:21 7286:4 7287:2 7294:25	<b>worsens</b> 7143:27
<b>warning</b> 7227:10		<b>work</b> 7066:6 7080:25 7105:9 7113:5 7121:25 7124:21 7135:2,19 7136:17 7137:5 7152:5,10,12,15,16,17,20 7158:18 7184:13 7188:17 7196:7 7202:11 7212:21 7213:7,13,14,18 7219:10,19 7220:5,7,10 7226:8,27 7228:21 7234:21 7236:19 7237:12 7238:2 7245:4,24 7257:26 7258:23 7261:25 7263:17 7264:3,5 7269:16 7277:2,21 7285:2 7290:2,18, 19,21,28 7291:24 7295:27 7296:24	<b>worth</b> 7191:25 7276:13 7287:10,13
<b>waste</b> 7173:24 7236:9		<b>work-life</b> 7226:11	<b>wound</b> 7171:10
<b>water</b> 7076:17 7087:19,21, 22,23,26,27 7088:2,3,4,6,9, 15,17,19,20 7090:2,6,11,24 7091:13 7120:25 7202:23 7203:18	<b>whoa</b> 7294:6	<b>work/life</b> 7237:14,17	<b>worst</b> 7236:8 7296:13
<b>Waupun</b> 7135:28	<b>wholesale</b> 7260:12	<b>workable</b> 7257:18	<b>worth</b> 7191:25 7276:13 7287:10,13
<b>wave</b> 7259:5	<b>wholesalers</b> 7253:23	<b>worked</b> 7065:14 7066:9 7069:8,12,18 7094:8 7123:1 7127:19 7135:21 7153:27	<b>write</b> 7069:3 7106:24 7116:1 7197:13 7209:18
<b>wealth</b> 7070:1 7084:3,27 7085:3 7086:16	<b>wholesome</b> 7251:16 7254:8		<b>writes</b> 7175:19
<b>weather</b> 7220:10	<b>Wichita</b> 7241:7 7244:11		<b>written</b> 7093:21 7095:11 7134:14 7167:19 7173:13 7265:1
<b>weather-related</b> 7220:16	<b>wide</b> 7220:24 7236:27		<b>wrong</b> 7274:12 7275:26 7300:8
<b>website</b> 7093:17 7111:28 7131:15 7132:6,9,16,19 7152:26 7155:6	<b>wider</b> 7195:17 7196:18		<b>www.nass.usda.gov.</b> 7104:24
<b>websites</b> 7132:12	<b>widespread</b> 7137:19 7160:2, 5		<b>Y</b>
<b>week</b> 7062:27 7063:1 7113:8 7148:6 7181:8,11 7183:11, 17 7255:6 7260:23	<b>wife</b> 7237:28 7238:9		<b>yards</b> 7127:28
<b>weekend</b> 7062:28			<b>year</b> 7071:2 7088:27 7089:5 7104:25 7107:20,22 7117:15 7136:4 7141:1 7146:15 7154:25 7250:9,14,16,25
<b>weekends</b> 7220:9			<b>year's</b> 7251:3
<b>weekly</b> 7247:16 7249:21			<b>year-to-year</b> 7107:6
<b>weeks</b> 7158:7			<b>years</b> 7065:15 7069:8 7070:14 7105:8 7108:17 7109:15 7119:11,27 7126:16,27 7135:18,22 7137:2 7146:9 7149:2
<b>weight</b> 7084:4,7 7210:24 7221:27 7223:22,23,27			
<b>Weld</b> 7119:26			
<b>welfare</b> 7191:16			
<b>well-being</b> 7083:25			



7154:9 7155:3 7173:19,24  
7175:16 7191:19 7196:8  
7198:19 7200:20 7206:23,25  
7207:7,13,22,24,27 7208:4  
7213:20,24 7214:17 7222:12  
7225:2 7229:22 7234:17  
7235:12,13 7236:4 7245:9,  
11 7248:4,5 7273:19

**years'** 7108:16

**yellow** 7250:28

**yesterday** 7097:14 7180:16  
7228:19 7276:11 7283:17  
7284:10 7285:25 7288:7  
7292:27 7293:20

**yield** 7144:25,26,27 7145:1  
7147:5 7167:10 7168:14  
7171:4 7175:13 7208:6  
7274:6

**Yieldmaster** 7208:5

**yields** 7145:4 7155:12  
7158:13 7196:11,17,19

**Yogurt** 7213:19

**York** 7136:25 7145:5  
7221:17

**young** 7188:10

---

**Z**

---

**Z-A-L-A-R** 7181:13 7212:3

**Zalar** 7181:5,9 7211:14  
7212:1,13,18 7213:2  
7227:20 7228:13 7232:22  
7238:24 7239:17

**zone** 7267:19,21 7268:5,6,7,  
8,13 7269:6

**Zoom** 7065:20

