

1 IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA  
2 IN AND FOR THE COUNTY OF SAN BENITO  
3 BEFORE HONORABLE HARRY J. TOBIAS, JUDGE

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5 ORGANIC PASTURES DAIRY COMPANY, LLC, and  
6 CLARAVALE FARM, INC.,

7 Plaintiffs,

8 vs. No. CU-07-00204

9 STATE OF CALIFORNIA and A.G.  
10 KAWAMURA, SECRETARY OF CALIFORNIA  
11 DEPARTMENT OF FOOD AND AGRICULTURE,  
12 Defendants.

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16 REPORTER'S TRANSCRIPT OF THE PROCEEDINGS

17 HELD ON APRIL 25, 2008

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20 APPEARANCES:  
21 FOR PLAINTIFFS: DAVID G. COX, ESQ.  
22 FOR DEFENDANTS: STATE ATTORNEY GENERAL'S OFFICE  
23 BY: ANITA E. RUUD, D.A.G.  
24 OFFICIAL REPORTER: PAULA ELLINGWORTH, CSR 3626  
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DEFENDANTS':

1 Hollister, California

April 25, 2008

2 P R O C E E D I N G S

3

4 THE COURT: Mr. Cox, why don't I let you call  
5 your witnesses first so we can make certain we get to  
6 them in a timely fashion.

7 MR. COX: Yes, your Honor. The first witness we  
8 would call would be Dr. Theodore Beals.

9 THE COURT: Dr. Beals, why don't you come around  
10 here and raise your right hand, please, to be sworn.

11 DR. THEODORE F. BEALS,  
12 called as a witness on behalf of the plaintiffs, having  
13 been first duly sworn, testified as follows:

14 THE COURT: Come up, please, and be seated.

15 Make yourself comfortable. That chair doesn't  
16 move.

17 THE WITNESS: It doesn't move.

18 DIRECT EXAMINATION

19 BY MR. COX:

20 Q. 'Morning, Dr. Beals. How are you?

21 A. Good morning.

22 Q. Sir, let's begin by having you state your full  
23 name for the record. And spell your last name, please.

24 A. My full name is Theodore, middle initial F.,  
25 Beals, B-E-A-L-S.

1 Q. Dr. Beals, where do you reside?

2 A. In Grass Lake, Michigan.

3 Q. How long have you lived there?

4 A. About 15 years.

5 Q. Dr. Beals, you've been retained on behalf of  
6 plaintiffs in this case as an expert to provide expert  
7 testimony; is that correct?

8 A. That is correct.

9 MR. COX: Your Honor, I'd like to get into the  
10 witness' qualifications at this point in order to qualify  
11 him as an expert.

12 THE COURT: Has Dr. Beals previously submitted  
13 or had a declaration submitted on his behalf?

14 MR. COX: He did, and he attached his CV to it,  
15 your Honor.

16 THE COURT: Okay.

17 MR. COX: And I don't know if Ms. Ruud was going  
18 to object to Dr. Beals being qualified as an expert in  
19 pathology and diagnostic services.

20 MS. RUUD: I just was -- I wanted to make sure  
21 that we know what he's being called as an expert on and  
22 what he's testing on -- I mean testifying on.

23 THE COURT: Okay.

24 MR. COX: Yeah.

25 THE COURT: Why don't you go ahead and lay a

1 foundation as necessary, considering that a declaration  
2 has already been submitted for which an objection has not  
3 been received.

4 MR. COX: Okay.

5 THE COURT: Go ahead.

6 BY MR. COX:

7 Q. Dr. Beals, let's talk about your educational  
8 background, then, briefly.

9 A. Yes.

10 Q. Okay.

11 A. All of my advanced degrees are from the  
12 University of Michigan. I received a bachelor of science  
13 in '56 and a masters of science in '57. These were in  
14 the Department of Botany. They were focused on  
15 microbiology not plants, as we think of botany usually.  
16 I then worked as a graduate student for a number of years  
17 in the Department of Epidemiology in the School of Public  
18 Health. I then entered the medical school and graduated  
19 with an M.D. degree in 1966, and I received a license to  
20 practice medicine in '67 which is still active.

21 Q. What kind of training have you had?

22 A. I had five years of specialized training in  
23 pathology, ending with board certification in anatomic  
24 pathology. That was in 1971. And it also remains active  
25 at this time.

1 Q. So you're still board certified in anatomic  
2 pathology?

3 A. I am still board certified.

4 Q. Are you published in peer-review journals?

5 A. Yes. I've got more than 70 articles in  
6 peer-review journals.

7 Q. Do they deal more or less with human disease?

8 A. They primarily are with human disease although  
9 some of it is animal studies. But those animal studies  
10 were dealing with human disease.

11 Q. Have you published any books?

12 A. One book published, coauthor, on biopsy  
13 interpretation for pathologists and interpreting diseases  
14 of the bronchi, which is the passage to the lungs.

15 Q. Have you written chapters in other books?

16 A. Numerous chapters in other books primarily on  
17 diagnosing illness and interpretation.

18 Q. That's talk about some of your specific work  
19 experience. Can you briefly describe for the Court some  
20 of that.

21 A. Yes. For 31 years, until I retired, which was  
22 in 2001, I served in the Veterans Administration Medical  
23 Center in Ann Arbor as a pathologist and on the faculty  
24 of the University of Michigan teaching pathology to both  
25 graduate students and to medical students.

1 Q. What was your title during that time?

2 A. I was a pathologist at the beginning, and I then  
3 became associate director and was ultimately made Chief  
4 of Pathology at the Pathology and Laboratory Medicine  
5 Service at the Ann Arbor Veterans Administration Medical  
6 Center.

7 Q. How long were you the chief?

8 A. Six years.

9 Q. And as the chief, what were some of your duties  
10 and responsibilities?

11 A. We're responsible for all of the professional  
12 and technical and laboratory operations of the pathology  
13 and clinical labs at the VA Medical Center, supervising  
14 the quality assurance and professional proficiency of our  
15 staff.

16 Q. The laboratory work, then, was that in any way  
17 related to patient diagnosis?

18 A. Yes. The primary purpose for all of the  
19 clinical labs in the pathology service is diagnosis and  
20 providing the physicians in the hospital with information  
21 on patient specimens.

22 Q. Now, this was six years as the Chief of  
23 Pathology and Lab Services in Ann Arbor, right?

24 A. Yes.

25 Q. Did you then move on to the federal level?

1           A. Yes. I was appointed to the senior executive  
2           service of the Veterans Administration Office in  
3           Washington, D.C. My first appointment was as the  
4           National Director of Pathology and Laboratory Service for  
5           the entire VA Medical Administration in the United  
6           States.

7           Q. And what were some of your duties and  
8           responsibilities as the National Director of Pathology  
9           and Lab Services?

10          A. I was responsible for the professional  
11          competency and the quality management of diagnostic  
12          services throughout the VA system in the United States.

13          Q. And when you say "diagnostic services," you mean  
14          with respect to laboratories?

15          A. The laboratories, and biopsy, blood banking,  
16          microbiology, all of the clinical lab and diagnostic  
17          services in lab service, yes.

18          Q. How long were you the National Director of  
19          Pathology and Laboratory Services?

20          A. Six years.

21          Q. And at that time approximately how many  
22          laboratories did the VA system have nationwide?

23          A. There are about a hundred and some medical  
24          centers in the VA system, and if you consider the  
25          laboratories that are in the clinics, that number goes up

1 quite a bit higher than that.

2 Q. Any other professional experience?

3 A. Yes. I was then actually appointed as the  
4 overall director for all diagnostic services in the  
5 Veterans Administration system across the United States,  
6 overseeing the activities of both pathology and  
7 laboratory medicine, the radiology departments, the  
8 nuclear medicine department, and the radiation oncology  
9 departments and was responsible in those cases with,  
10 again, reviewing and ensuring the quality of the  
11 diagnostic services and the professional competency of  
12 the physicians in the VA system.

13 Q. How long did you hold that title as the head of  
14 all VA diagnostic services, not just pathology but  
15 pathology, radiology, nuclear medicine, and oncology?

16 A. Six years, until I retired.

17 Q. Have you ever been appointed to any boards?

18 A. Yes. I was appointed to serve on the Scientific  
19 Advisory Board of the Armed Forces Institute of  
20 Pathology. This is the premier diagnostic service for  
21 the Department of Defense, serving all three branches.  
22 This board is a prestigious board which reviews the  
23 scientific and professional competency of this institute  
24 and does periodic reviews of the individual departments  
25 in the institute as well as advising the institute on

1       whether they are abiding by the quality standards of  
2       current science.

3           Q.   And how long did you serve on the board?

4           A.   Eight years.

5           Q.   And these reviews of the scientific quality and  
6       professional competency that you were talking about, how  
7       often were those conducted?

8           A.   They were conducted at least once a year and  
9       oftentimes two times a year.

10          Q.   Have you ever testified as an expert before?

11          A.   I have.

12          Q.   In what capacity?

13          A.   Early in my career when I was a deputy medical  
14       examiner, in criminal cases, always for the prosecution.

15          Q.   And as a result of your testimony, what usually  
16       happened in a case?

17          A.   Usually what happened was they were settled;  
18       plea bargains were determined.

19          Q.   Okay.

20               MR. COX:  At this time, your Honor, I would move  
21       to have Dr. Beals designated as an expert in pathology  
22       and diagnostic services -- laboratory diagnostic  
23       services.

24               THE COURT:  Any voir dire or any comment, any  
25       objection?

1 MS. RUUD: I just have a couple questions.

2 THE COURT: Go ahead.

3 VOIR DIRE EXAMINATION

4 BY MS. RUUD:

5 Q. Do you have any experience with cows, dairy  
6 farms or dairy plants?

7 A. I do. Not in my professional service, but in  
8 the years since I've retired, I've been actively involved  
9 with a group of dairy farmers in the state of Michigan  
10 who are working very vigorously to provide food  
11 management practices in providing what we refer to as  
12 fresh unprocessed milk, which is the same thing as what  
13 you're referring to here as raw milk except that in the  
14 state of Michigan, the Michigan laws define raw milk as  
15 being milk destined for pasteurization so we had to have  
16 a different term. And I've been -- I was invited to be a  
17 participant with the Michigan Department of Agriculture  
18 and other stakeholders in a group that was sitting down  
19 to review a way forward to provide this quality product  
20 to consumers in the state of Michigan.

21 MS. RUUD: Okay, that's all I have at this  
22 time.

23 THE COURT: I believe that Dr. Beals is  
24 qualified to testify to the extent that you have  
25 represented he will be testifying. So please go ahead.

1 MR. COX: Thank you, your Honor.

2 BY MR. COX:

3 Q. Dr. Beals, this case is all about coliforms.  
4 Can you explain to the Court what a coliform is.

5 A. Coliform is interesting because it's not a  
6 particular bacteria. It's any bacteria which will grow  
7 on a set media under a set of laboratory conditions which  
8 include 48 hours at 37 degrees. It's not defined as an  
9 entity but as any organism, any bacterium, that would  
10 grow under those culture conditions.

11 Q. So under these culture conditions, if you have a  
12 coliform, does coliform itself tell you the origin of the  
13 bacteria?

14 A. It does not.

15 Q. Do you know where they come from?

16 A. There's been a considerable amount of research  
17 on that that shows that in fact organisms that will  
18 culture under these conditions, depending on what the  
19 specimen is and where it's from, can be from the  
20 environment, can be from soil, can actually be from  
21 plants, and obviously is also present from fecal  
22 material.

23 Q. So then is it safe to say that a coliform is  
24 bacteria?

25 A. Coliforms are bacteria by definition, but it's

1 not a kind of bacteria.

2 Q. All right. So these bacteria, then, that we're  
3 talking about, are some of them beneficial?

4 A. Overwhelmingly they are beneficial, yes.

5 Q. Are any of them pathogenic? And explain what  
6 "pathogenic" means.

7 A. Yeah, a few of them are pathogenic, and by  
8 pathogenic in this case, for the court's purposes, we're  
9 talking about bacteria, and we're talking about human  
10 illness. So in fact a pathogen, in the case of the  
11 court, would be a bacteria that causes illness in humans.

12 Q. Now, with respect to a material that's  
13 pathogenic, we're dealing with bacteria in this case,  
14 right?

15 A. Right.

16 Q. We're not dealing with a virus or a yeast or a  
17 mold or anything like that, right?

18 A. In the context of what I understand this court  
19 is hearing testimony on, that is the way I'm interpreting  
20 the -- when I say pathogen, I mean human pathogen and I  
21 mean bacteria.

22 Q. Okay. With respect to bacteria, then, how is  
23 illness contracted in humans?

24 A. A variety of ways. Let's talk about the two  
25 common ways. One of the ways is that the bacteria

1 invades the human tissue, grows in the tissues and  
2 damages the tissues because of the growth in that area.  
3 The other way is a little more complicated. Bacteria can  
4 in fact produce substances which are toxic to the tissues  
5 of the human, and although the bacteria don't actually  
6 invade, the toxins produce the illness because of their  
7 presence and the body's reaction to them.

8 Q. With respect to pathogenic bacteria, then, are  
9 there some of those in dairy products?

10 A. Yes. The list is actually relatively short,  
11 consists of salmonella, Campylobacter jejuni, Listeria  
12 monocytogenes, and very rare forms of a specific variety  
13 of E. coli which has the Shiga toxin, and the most common  
14 one is referred to as zero -- 0157:H7.

15 Q. Now, are all E. coli pathogenic?

16 A. The vast majority of E. coli are not, and the  
17 ones in our bodies, of which there are very large  
18 numbers, are almost entirely beneficial. We would be in  
19 serious trouble if we didn't have E. coli in our colons.

20 Q. Do we as humans, then, do we have bacteria in  
21 our bodies?

22 A. We have large numbers of beneficial bacteria on  
23 all parts. Our skin is covered with bacteria. Oral  
24 cavity has numerous bacteria, other places in the body,  
25 and certainly in our intestine there are very large

1 numbers of bacteria. It's been calculated that the total  
2 number of bacteria in our colon is greater than the  
3 number of cells in our body.

4 Q. And these bacteria that's in our bodies, do they  
5 provide a benefit to us?

6 A. The most obvious benefit is that they assist us  
7 in digesting the food that we take in and providing the  
8 nutrients which are assimilated and are the way that our  
9 wellness and our nutrition is accomplished.

10 Q. Do they provide other benefits?

11 A. Yes. Beneficial bacteria provide benefits in a  
12 number of ways other than the one which is fairly well  
13 understood. One of the ways that they provide benefit is  
14 by producing specific substances which kill other  
15 bacteria. Another way that they are beneficial to people  
16 is that they inhibit the growth of other bacteria  
17 indirectly rather than just simply killing them.

18 Additionally, they have been shown -- beneficial bacteria  
19 have been shown to block the entrance of bacteria into  
20 the body, therefore preventing the illness which I  
21 described previously.

22 Q. Is it safe to say, then, that there's a lot of  
23 bacteria in our guts?

24 A. There's a huge number of beneficial bacteria in  
25 our guts.

1 Q. And is it safe that say, then, that there's good  
2 bacteria in our guts and there's bad bacteria in our  
3 guts?

4 A. There are good bacteria in our guts. It's only  
5 rare that there are any bad bacteria there.

6 Q. And what happens if we lose all of the good  
7 beneficial bacteria in our guts?

8 A. For a period of time we're in serious trouble as  
9 individual people. Until there is a recolonization of a  
10 microflora of good bacteria, we tend to lose all of those  
11 benefits that the beneficial bacteria conferred that I  
12 just mentioned, and until recolonization occurs, people  
13 are in serious trouble.

14 Q. Now, as a physician have you ever performed a  
15 coliform test?

16 A. No.

17 Q. And why not?

18 A. In medical clinical laboratories we're very  
19 focused on diagnosing disease and identifying disease-  
20 causing organisms, and there is no association of the  
21 coliform test, no aid with a coliform test in determining  
22 --

23 MS. RUUD: Objection, providing the coliform  
24 test in humans, I mean, we're not --

25 THE WITNESS: We don't provide that.

1 MS. RUUD: Pardon me. I think that's irrelevant  
2 to the question before the Court as to the coliform count  
3 in raw milk provided from cows.

4 THE COURT: Mr. Cox, comment?

5 MR. COX: Your Honor, it goes to what a coliform  
6 is. Coliforms are in the environment.

7 THE COURT: I don't mind getting into this on a  
8 limited basis just for my background information.

9 MR. COX: It's just limited -- it's just to  
10 show, your Honor, that the medical profession doesn't use  
11 coliforms at all because it's not an indicator of health.

12 THE COURT: I'll overrule the objection.

13 BY MR. COX:

14 Q. So have you ever performed a coliform test? and  
15 your answer was no, and I asked you why, and you're  
16 explaining why not.

17 A. I simply explained that the coliform test in the  
18 setting of a medical diagnosis for patient care and  
19 diagnosis doesn't serve any useful purpose because the  
20 test doesn't tell you anything about pathogens.

21 Q. Now, you said there's beneficial bacteria in our  
22 guts. Are there also beneficial bacteria in raw,  
23 unpasteurized milk?

24 A. Yes, there are. And it's been shown quite  
25 regularly.

1 Q. And what's the benefits of that bacteria in raw,  
2 unpasteurized milk?

3 A. Well, there's two well-documented ones that we  
4 know about. One of them is the primary scientific  
5 information that deals with newborn infants who are  
6 receiving milk from their mothers in which beneficial  
7 bacteria play an instrumental role in initially  
8 colonizing the intestine, which at birth is sterile. It  
9 also plays a very critical role in priming the naive  
10 immunology system of the newborn by stimulating that  
11 immune mechanism. Without this priming and without this  
12 colonization, the newborn is at great risk of challenge  
13 from pathogens and other organisms MS. RUUD: Excuse  
14 me, your Honor. Objection to the testimony regarding the  
15 bacteria coming from mother's milk in newborns. Again I  
16 fail to see the relevance of coliforms in raw milk that  
17 were -- from cows. It's a different physiology.

18 THE COURT: It's in response to the general  
19 questioning, which again I overruled the objection. I'm  
20 not certain that it's relevant directly, but it's perhaps  
21 foundational for this witness' further testimony. So --

22 MR. COX: Yes, your Honor. Dr. Beals is  
23 explaining the --

24 THE COURT: -- I'm going to overrule the  
25 objection. Continue on.

1 BY MR. COX:

2 Q. Dr. Beals, are you familiar with the terms  
3 prebiotic and probiotic?

4 A. I am.

5 Q. And what do they mean?

6 A. Prebiotic is a substance which when introduced  
7 to beneficial bacteria stimulates their growth or  
8 stimulates their beneficial activity. A probiotic is  
9 defined technically as bacteria, beneficial bacteria,  
10 which when added to a product or as a supplement provides  
11 those beneficial bacteria to the person that's drinking  
12 the milk. My personal take on this is it's obvious from  
13 the definitions that fresh market -- raw market milk is  
14 in fact a prebiotic. It does stimulate beneficial  
15 organisms. And although not technically meeting the  
16 definition of a probiotic because it's not added, these  
17 beneficial bacteria that are present are natively present  
18 in milk.

19 Q. So an example of a probiotic, would that be like  
20 acidophilus, which is added to yogurt?

21 A. Yes. There's been a really significant interest  
22 in these beneficial bacteria, much of it deriving from  
23 the very good studies that showed that human breast milk  
24 contains large numbers of these beneficial bacteria. And  
25 I've indicated it's been demonstrated that these play a

1 critical role in the newborn infant. It's been -- from a  
2 business point of view, it's then been speculated that  
3 they would apply very similar roles to adults.

4 Q. So in other words, do we need bacteria in order  
5 to be healthy?

6 A. It is absolutely essential to remain healthy  
7 that we have large numbers of beneficial bacteria that  
8 over evolution have become associated with us and are  
9 really critical to our well-being, not only for  
10 nutrition, which I think most people understand, but also  
11 because of the protective effects that they have.

12 Q. Does it help our immune system?

13 A. It helps our immune system very much, and it  
14 provides other alternative beneficial defensive  
15 mechanisms against the invasion of pathogens.

16 Q. Dr. Beals, have you reviewed documents in  
17 preparation for your testimony in this case?

18 A. I have. I have reviewed the State witnesses'  
19 declarations. I have reviewed AB 1735 in its final  
20 signed form. I've done extensive scientific review of  
21 milk, particularly as it relates to human pathogens and  
22 testing of milk.

23 Q. And when you say "milk," what type of milk,  
24 human and animal milk?

25 A. Both human and animal milk.

1           If you would at this time, the question was  
2           asked: What is the relevance of mother's breast milk?  
3           The answer to that question is mainly in milk there's  
4           definitely an evolution that happened a long time ago.

5           THE COURT: Maybe I --

6           THE WITNESS: Mammals are all defined -- yes?

7           THE COURT: Maybe I can interrupt for a minute.  
8           I'm not sure I need to hear a lot of information on the  
9           beneficial bacteria. I think we're -- the State is  
10          primarily concerned with the bacteria that's bad in  
11          passing this legislation, so we need to focus on the  
12          purpose of the legislation, which is to prevent bad  
13          bacteria.

14          MR. COX: Yes, your Honor. We'll focus on that.

15          BY MR. COX:

16          Q. Dr. Beals, did you review the scientific  
17          literature as it pertains to pathogens in milk?

18          A. I did.

19          Q. Did you review the plaintiffs' test data?

20          A. I did.

21          Q. Do you have an expert opinion to a reasonable  
22          degree of scientific certainty whether or not AB 1735  
23          does or does not ensure the safety of milk? The coliform  
24          standard, I should say, in AB 1735.

25          A. My opinion is that there is scientific evidence

1 that there is no association between a standard for  
2 coliforms and the presence of pathogens, which is what  
3 safety is all about.

4 Q. Can you -- do you need to elaborate on your  
5 answer or not?

6 A. If you --

7 Q. Or provide the basis of your opinion?

8 A. Oh, yeah. There are references that I can give  
9 in that regard. Is that what you were --

10 Q. Do you have references?

11 A. Yes. There's been extensive studies on the  
12 presence of human pathogens in milk across the United  
13 States by a number of authors. Jayarao in 2006 did an  
14 example of a review. There was an extensive review by  
15 Van Kessel in 2004 on many of these studies. These  
16 studies were performed primarily on samples of dairy milk  
17 product which were obtained as part of the regulatory  
18 process and were all performed on samples that were  
19 collected as part of the regulatory process. So they all  
20 came from dairies that were under regulatory control.

21 The different authors that did these studies  
22 looked specifically at whether there were the individual  
23 human pathogens present. They all detected them,  
24 sometimes singly in some of the specimens, sometimes  
25 doubly in the specimens, but they were there at

1 significant numbers in milk that was essentially under  
2 regulation, under control. So it's clear that it is  
3 possible and it has been proven that human pathogens do  
4 exist in milk samples that are regulated by the coliform  
5 standard.

6 Q. Now, are you familiar with what's known as the  
7 Pasteurized Milk Ordinance?

8 A. I am.

9 Q. And did you read the deposition testimony of  
10 Stephen Beam as he discussed the origin of the ten  
11 coliform standard in AB 1735?

12 A. I did.

13 Q. And what's your understanding of the origin of  
14 the ten Coliform standard in AB 1735?

15 A. From what he said and from what I can observe,  
16 they essentially made the -- essentially borrowed, if you  
17 will, the ten coliform standard from experience that has  
18 been present across the country in testing pasteurized  
19 milk and in fact then applied that standard to a new  
20 product, which is fresh raw market milk.

21 Q. So in essence they took the standard that  
22 applied to pasteurized milk and they transferred it to  
23 raw milk. Is that essentially what they did?

24 A. That is right.

25 Q. Did you have an opinion to a reasonable degree

1 of scientific certainty whether or not it was appropriate  
2 to use the pasteurized coliform standard and apply it to  
3 raw milk?

4 A. The answer is: It is my opinion that it was  
5 inappropriate.

6 Q. And then why is that?

7 A. There are two reasons. There's a fundamental  
8 reason and a confirmation of that reason. As people have  
9 developed standards for testing on specimens -- and I've  
10 had significant experience with that, particularly when  
11 there's variation in the test results and some variation  
12 in the specimens -- that in order to be able to establish  
13 a standard, you need to collect a substantial number of  
14 test results under standard operating conditions, then  
15 take those results and perform some form of statistical  
16 analysis to determine what in fact an appropriate  
17 standard would be.

18 One of the additional things that we learned as  
19 we were establishing standards was that having done such  
20 a solid foundation for a particular test and a particular  
21 standard, it was inappropriate to simply apply that  
22 standard to a new specimen. And in fact this issue came  
23 before the FDA in their process of review that they do as  
24 a regular basis, and they were specifically asked about  
25 whether it was appropriate or not to use an approved test

1 on an approved dairy product and use it as a regulatory  
2 standard for a different dairy product. And they issued  
3 a Memorandum of Information, 02-8, which if you read it,  
4 it explicitly says that you cannot use a -- you cannot  
5 use a standard that's been approved for a given test when  
6 it is being applied to a new dairy product that has not  
7 been studied and validated. That supports what I just  
8 said and what we have learned all along, and that is if  
9 you have a new specimen, you need to do a -- you have to  
10 develop a new database and analyze it to do that. Yes.

11 MR. COX: And, your Honor, just for the record  
12 this FDA Memorandum of Information that Dr. Beals is  
13 talking about is attached to my affidavit in reply to the  
14 State's opposition to the preliminary injunction as  
15 Exhibit C.

16 THE COURT: Thank you.

17 BY MR. COX:

18 Q. Now, based on your reading of Dr. Beam's  
19 deposition transcript, what's your understanding of  
20 whether or not the State of California ever conducted a  
21 statistical analysis of samples collected from raw milk  
22 in order to determine whether or not -- what the  
23 appropriate standard would be?

24 A. I looked carefully in that testimony, and I  
25 looked also in every other piece of information that I

1 had related to this issue to see whether or not such a  
2 foundation, a scientific and statistical analysis, had  
3 been performed in order to establish this new regulatory  
4 standard, and I could not find one.

5 Q. And after reading Dr. Beam's deposition  
6 transcript, what's your understanding of whether or not  
7 the State of California conducted a statistical analysis  
8 of the samples collected from the bulk tanks for milk  
9 intended for pasteurization?

10 MS. RUUD: Objection, your Honor. That's not  
11 necessarily within his knowledge based on our papers.

12 MR. COX: He read the deposition transcript.

13 MS. RUUD: Again, that's not within his  
14 knowledge.

15 THE COURT: Restate the question, please.

16 BY MR. COX:

17 Q. Did you read Dr. Beam's deposition transcript?

18 A. I did.

19 Q. And what does he say in there about whether or  
20 not the State of California conducted a statistical  
21 analysis of the bulk tank samples for milk that's  
22 intended for pasteurization?

23 A. I saw nothing in his testimony that said that  
24 the State had performed that type of analysis.

25 MS. RUUD: Again, your Honor, the deposition

1 speaks for itself and --

2 THE COURT: It does. I don't think he was  
3 saying anything different. He didn't see anything in the  
4 deposition.

5 Is that what the answer was?

6 MR. COX: (Nodding head up and down.)

7 BY MR. COX:

8 Q. Dr. Beals --

9 THE COURT: I have a detention hearing that I  
10 need to do at 11:30. I'm going to look for a convenient  
11 place to take a break.

12 MR. COX: This would be good, your Honor. This  
13 would actually be good.

14 THE COURT: I don't want to interrupt your train  
15 of thought. If each of you would write down in your  
16 notes as to where we were at, if that helps you -- I  
17 apologize, but this is something I need to take up.

18 Dr. Beals, you can step down if you wish or you  
19 can remain seated.

20 I'll take a recess. It will probably take me  
21 about -- at least five minutes. Shouldn't take any  
22 longer than ten minutes. I'll come back at 20 minutes to  
23 12:00.

24 MR. COX: Can we leave our materials here?

25 THE COURT: You may. I'm going to a different

1 courtroom.

2 (Whereupon, a recess was taken.)

3 THE COURT: Do you want to start your  
4 examination or just take a break? Maybe you can be  
5 thinking about that as we go along.

6 MS. RUUD: Okay. Again, I'm reserving any  
7 opportunity to fully cross-examine. At this point I have  
8 like two or three questions.

9 THE COURT: Okay. Maybe if I give you the lunch  
10 hour to think about it, you'll have some more.

11 MS. RUUD: Exactly. Wouldn't you rather I kept  
12 it short?

13 THE COURT: Maybe I better not take a break.  
14 That's okay.

15 Go ahead.

16 MR. COX: Thank you, your Honor.

17 BY MR. COX:

18 Q. Dr. Beals, we're back on the record, and we're  
19 resuming your testimony, okay? Is that okay?

20 A. That is okay.

21 Q. Okay. Dr. Beals, based on your background,  
22 education, training, your experience, do you have an  
23 opinion to a reasonable degree of scientific certainty  
24 whether milk that is unpasteurized is safe for human  
25 consumption?

1 A. I do.

2 Q. And what is your opinion?

3 A. My opinion is that it is, and historically it's  
4 been shown clearly that it is. Pasteurization was only  
5 introduced in about 1900. And the history of human  
6 consumption of milk goes back well before recorded  
7 history. And as a matter of fact, in recorded history we  
8 know that the domestication of animals for the purpose of  
9 providing fluid milk for human consumption is present in  
10 almost all civilizations across the world. And recorded  
11 history and historians have well documented the fact that  
12 this consumption of milk was in fact very advantageous to  
13 civilization. It was advantageous for cultures that  
14 migrated because they were able to take domestic animals  
15 with them and have a continuous supply of fluid milk.

16 And it's well recorded also in history that the ability  
17 to take domestic animals that provided fresh milk with  
18 armies as they moved across the country was a distinct  
19 advantage to them.

20 If a food is unsafe for consumption, it is very  
21 quickly eliminated from the diet of cultures. And in  
22 fact history shows that the consumption of milk from  
23 domestic animals has persisted throughout history, and on  
24 the basis of that, I don't believe that there's any  
25 argument but that the consumption of fresh milk is in

1 fact safe, confers competitive advantage to those that  
2 drink it.

3 Q. Dr. Beals, based on your background, training,  
4 education, and experience, do you have an opinion to a  
5 reasonable degree of scientific certainty whether or not  
6 milk must be free of bacteria in order for it to be safe  
7 for human consumption?

8 A. As a matter of fact, the studies that I alluded  
9 to previously are studies by Grnlund, Perez, and Martin,  
10 as examples, that clearly demonstrate that human milk is  
11 rich in beneficial bacteria straight fresh from healthy  
12 mothers. And there's no evidence that I know of  
13 scientifically to conclude that human breast milk is  
14 different from all the rest of the mammalian milk on this  
15 critical beneficial value.

16 Q. Do you know if anybody has done research on the  
17 benefits of bacteria in cow's milk?

18 A. There are a few studies out there and more  
19 recently, very recently, studies on domestic animals in  
20 which very large numbers of beneficial bacteria have been  
21 cultured from direct milk, right out of the teat of the  
22 animals. I don't have any personal information on this,  
23 but I have talked to Dr. Hull, and he is prepared to talk  
24 about this.

25 MR. COX: I hate to do this with my own witness,

1 but I'm not sure if he answered my question.

2 BY MR. COX:

3 Q. Do you have an opinion about whether or not milk  
4 must be free from bacteria in order to be safe for human  
5 consumption?

6 A. And the answer to that is that it does not need  
7 to be free of bacteria.

8 Q. Thank you, Dr. Beals.

9 Based on your background, training, education,  
10 and experience, do you have an expert opinion to a  
11 reasonable degree of scientific certainty whether or not  
12 the testing of milk for pathogens is either not available  
13 or it's not effective?

14 A. Yes. In working with a group of dairy farmers  
15 that I mentioned earlier in my testimony, this group is  
16 particularly interested in providing a safe product to  
17 the people that are obtaining their milk. They're  
18 working together for the purposes of trying to find out  
19 how best to do this, and one of the things that they  
20 determined early on was that they wanted to test their  
21 milk, and so they were trying to determine what would be  
22 the best way to do it, and the advice was that it be  
23 direct testing for pathogens in the milk. We inquired on  
24 the dairy laboratories in the state of Michigan, and all  
25 of the laboratories that we asked all provided rapid

1 techniques for testing for pathogens in milk samples.  
2 And in fact they all said that they would be able to  
3 provide the farmer with a phoned report in the event that  
4 that test was positive within 24 hours. And many of our  
5 farmers are already routinely using the testing of  
6 pathogens by these labs as part of their safety plan for  
7 their milk quality.

8 Q. And is it cost effective for those farmers as  
9 well?

10 A. Knowing those farmers, they're all very small  
11 farmers; they're operating on limited amounts of money,  
12 and I can assure you that they would not do this if they  
13 didn't think it was cost effective.

14 MR. COX: Thank you, Dr. Beals. I have nothing  
15 further.

16 THE COURT: Ms. Ruud, any questions?

17 CROSS-EXAMINATION

18 BY MS. RUUD:

19 Q. 'Morning, Dr. Beals. It's still morning. I  
20 just have a few quick questions.

21 Do you agree that coliforms may be an indicator  
22 of environmental contamination?

23 A. I have stated in my declaration that they may be  
24 an indicator of environmental.

25 Q. And how do pathogens get into milk?

1           A. There are undoubtedly a variety of ways that  
2 pathogens can get into milk. I'm not sure -- as a matter  
3 of fact, many of the scientific studies that I've  
4 reviewed that asked this question say that in fact we  
5 need to do considerably more research in order to find  
6 out just exactly where this is. And so the answer to  
7 your question is: I don't know, and the people that are  
8 studying this are still very seriously pursuing this  
9 question because they don't know where it's coming from.

10           Q. Is cow feces a possible method of the  
11 introduction of pathogens into milk?

12           A. Certainly if a cow was shedding pathogens, it is  
13 entirely possible that it -- that it might be possible,  
14 yes.

15           Q. And do you agree that the infective dose of E.  
16 coli 0157:H7 is ten coliforms? Is ten?

17           A. The answer to that is that it has been published  
18 that ten is, with footnotes, ample footnotes, saying that  
19 that depends entirely on the conditions and the source  
20 and the supply. So the answer is: It is generally used,  
21 but it is always documented with footnotes that say that  
22 you can't use that as an absolute certainty.

23                   Let me specifically answer that it isn't true  
24 that every person that got ten bacteria of E. coli would  
25 become ill. As a matter of fact, there's ample evidence

1 out there that the vast majority of people who consume  
2 milk that is -- that has that do not get sick.

3 MS. RUUD: Your Honor, that's all I have for  
4 right now, but I absolutely reserve the right to do  
5 further and more extensive cross-examination of Dr. Beals  
6 at whatever set time we decide upon.

7 THE COURT: I think that was my qualification  
8 for oral testimony.

9 MR. COX: That's fine. We're perfectly  
10 comfortable with that, your Honor.

11 THE COURT: He is subject to recall.  
12 You can step down.

13 THE WITNESS: Thank you.

14 MR. COX: Your Honor, could I follow up?

15 THE COURT: Oh, rebuttal. I'm sorry. Go ahead,  
16 please.

17 MR. COX: Thank you, your Honor.

18 REDIRECT EXAMINATION

19 BY MR. COX:

20 Q. You agree that coliforms are an indicator of  
21 environmental contamination; is that correct?

22 A. Correct.

23 Q. Is all environmental contamination bad?

24 A. Absolutely not. Very, very small amount of  
25 environmental contamination -- we are surrounded by

1 bacteria. We're surrounded by bacteria that would test  
2 as coliforms, and that -- that's not bad in the vast  
3 majority of cases.

4 Q. You were also asked some questions or a question  
5 about how does a pathogen get into milk. Do you recall  
6 that?

7 A. Yes, I do.

8 Q. Let me ask you this question: Which is more  
9 likely to have a pathogen in it, raw milk that has  
10 bacteria in it or pasteurized milk that does not have  
11 bacteria in it? Which is more likely to have a pathogen  
12 in it?

13 MS. RUUD: Objection to the -- I mean the --

14 THE COURT: Why don't you wait for the answer.  
15 Overruled.

16 Can you answer that? Do you remember the  
17 question?

18 THE WITNESS: Yeah. Please repeat the question,  
19 sure.

20 BY MR. COX:

21 Q. You said that scientists need to know how do  
22 pathogens -- how do pathogens get into milk, and my  
23 question is: Which is more likely to have a pathogen in  
24 it? Some raw, fresh, unprocessed milk that has good  
25 bacteria in it or pasteurized milk where all the bacteria

1       has been killed?

2           A.   Pasteurized milk where the beneficial bacteria  
3       have been killed.

4           Q.   And with respect to the infective dose, that  
5       information is from what federal agency?

6           A.   The CDC publishes a bad book -- bad bug book  
7       which lists things of this nature.

8           Q.   And this infective dose of ten E. coli, I  
9       believe, does that infective dose apply to raw milk or  
10       does it apply to pasteurized milk?

11          A.   It is not clear from that, and I'm not even sure  
12       that when they established those numbers that that  
13       distinction was made.

14          Q.   Do you know whether that 10 infective dose  
15       applies to cooked foods?

16          A.   The CDC's bad bug book does not make a  
17       distinction between the source.

18           MR. COX:   Thank you.   That's all I have.

19           THE COURT:   Ms. Ruud?

20           MS. RUUD:   Nothing further at this time.

21           THE COURT:   Your comment was that there's a  
22       greater chance that pasteurized milk is contaminated with  
23       pathogens as opposed to raw milk?

24           THE WITNESS:   Not contaminated.   I believe the  
25       understanding was whether they were present in the milk.

1 THE COURT: Okay. I just want to make sure I  
2 understood that so I pay attention to what I'm learning.

3 Any other questions of Dr. Beals?

4 MR. COX: No, your Honor.

5 THE COURT: All right. Thanks. You can step  
6 down.

7 THE WITNESS: Thank you.

8 THE COURT: It's almost 12 noon. So let's take  
9 a break. How much -- do you expect an hour is adequate?

10 MR. COX: I would think, yes, your Honor.

11 THE COURT: If we reconvene at 1:00 o'clock, is  
12 that acceptable to everyone?

13 MR. COX: It's acceptable for the plaintiffs.

14 MS. RUUD: Yes, your Honor.

15 THE COURT: We're in recess until 1:00 o'clock.

16 (Whereupon, the lunch recess was held.)

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AFTERNOON PROCEEDINGS

THE COURT: We're reconvening on this preliminary injunction order to show cause.

Mr. Cox, I think we're probably waiting for you to call your next witness.

MR. COX: Thank you, your Honor. At this time the plaintiffs would call Dr. Ron Hull, H-U-L-L.

THE COURT: Dr. Hull, come around, please.

DR. RONALD R. HULL,  
called as a witness on behalf of the plaintiffs, having been first duly sworn, testified as follows:

THE COURT: Come up, please, and be seated.

THE WITNESS: Thank you.

THE COURT: That chair doesn't move so make yourself comfortable.

DIRECT EXAMINATION

BY MR. COX:

Q. Good afternoon, Dr. Hull. How are you?

A. Very well, thank you.

Q. You're from Australia, is that correct?

A. That's correct.

Q. So I would ask you to speak proper English for us all here in this courtroom, please.

THE COURT: Make sure you give him the answers

1 he wants.

2 THE WITNESS: I will try. On both counts.

3 BY MR. COX:

4 Q. Thank you. Let's start off by having you state  
5 your name for the record.

6 A. Certainly. My name is Ronald R. Hull, H-U-L-L.

7 Q. And you're from Australia, right?

8 A. I'm from Australia. I live in Melbourne,  
9 Australia.

10 Q. And you've been retained on behalf of the  
11 plaintiffs in this case to provide expert testimony; is  
12 that correct?

13 A. Correct.

14 Q. And you sat through the testimony of expert  
15 witness Dr. Ted Beals; is that correct?

16 A. Correct.

17 Q. And at the very end of Dr. Beals's testimony,  
18 there was some questions about infective dose; do you  
19 remember that testimony?

20 A. I remember that.

21 Q. And are you prepared to testify about infective  
22 dose in the context of raw milk today?

23 A. Yes.

24 Q. Okay. And we'll get to that at the appropriate  
25 time; is that right?

1 A. Thank you, yes.

2 Q. Let's get into your qualifications as an expert.  
3 Can you describe for the Court, please, your educational  
4 background.

5 A. Thank you. I'm a graduate, a science graduate,  
6 from Adelaide University with a bachelor of science, and  
7 I have a Ph.D. in microbiology from the same university,  
8 University of Adelaide, in 1971. My thesis topic was the  
9 mode of action of colicins, which are bacterial  
10 antibiotics produced by Escherichia coli. They're  
11 antibiotics which kill other members of the same genus,  
12 Escherichia. They're of interest, great interest today  
13 in food systems and in medical health as a useful  
14 prophylaxis. That's my formal training. I then had a  
15 fellowship to come to the United States and to  
16 California, to the Stanford Medical Center, in pathology  
17 as a postdoctoral fellow, where I worked for a year on  
18 cancer research using again an E. coli model. E. coli  
19 what are called small chromosomes which replicate out of  
20 control under some circumstances, and that's a useful  
21 model for studying cancer, where we have cells  
22 replicating out of control in the body.

23 Q. How long were you at Stanford doing this type of  
24 research?

25 A. I was there for three years, initially as a

1 postdoctoral fellow funded partially from Australia, and  
2 then as a staff member for a further two years.

3 Q. And what time period are we talking about?

4 A. '71 to '74.

5 Q. Okay. And then after that, what kind of work  
6 did you do?

7 A. Then I took a position back in Australia at the  
8 Commonwealth Scientific Industrial Research Organization.  
9 The acronym is CSIRO. And that organization is federally  
10 funded. Its charter is to research and develop for all  
11 of the rural industries in Australia, which includes  
12 dairy, and also manufacturing industries.

13 Q. And what was your title with CSIRO?

14 A. My initial title was a research scientist, and  
15 over the 20 years I was there I became, after about five  
16 years, the head of the dairy section within the division  
17 of food science.

18 Q. And how long were you in total with CSIRO?

19 A. Twenty years.

20 I should just clarify I was not -- sorry, I was  
21 not the head of the division, the dairy division, but  
22 head of the dairy microbiology section within the  
23 division.

24 Q. What kind of work did you do at CSIRO?

25 A. Well, there were two streams of work. The first

1 one was similar to my previous experience in the medical  
2 field in pathology, and that was to do with classical  
3 dairy microbiology, finding the spoilage organisms, the  
4 pathogens, and learning how to control them better for  
5 the industry and also how to formulate regulations. The  
6 second part of my role there was as head of the CSIRO  
7 office called the starter culture collection, which was  
8 the good bacteria which are used in food fermentations,  
9 quite distinct from the spoilage ones. CSIRO was the  
10 primary reserve of those cultures in Australia for the  
11 dairy industry and contributed the starter cultures, as  
12 they're generally called, for more than half of the total  
13 manufacture of dairy in Australia. It's important to  
14 note that although Australia and New Zealand collectively  
15 only produce four percent of the world's milk globally,  
16 they contribute nearly half of all international trade in  
17 dairy products. So there's a very high level of  
18 technology in Australia to meet those markets, much of  
19 which centers around not just quality, meeting the  
20 customer's requirements, but also meeting standards in a  
21 whole variety of countries and meeting those  
22 microbiological standards for those foods.

23 Q. Does the term "probiotics" mean anything to you?

24 A. Yes, it does. It's defined as a beneficial  
25 microbe, microorganism, that beneficially helps the host

1 when consumed either directly in a food or indirectly in  
2 a supplement. It helps the host in terms of nutrition  
3 and health.

4 Q. How long were you with CSIRO?

5 A. Twenty years.

6 Q. From what time period?

7 A. Oh, beg your pardon, 1974 to 1994.

8 Q. And then after 1994, what did you do?

9 A. After 1994 I left CSIRO and started a consulting  
10 business, Ron Hull and Associates, which I'm still with  
11 as a principal consultant, microbiologist, and in that  
12 role I consult to various dairy companies and other food  
13 companies in the areas of food quality and spoilage,  
14 product development, and in particular the food safety  
15 plans, which are a requirement of all food manufacturers  
16 in Australia at this point in time.

17 Q. So you do work for the dairy industry as a  
18 consultant?

19 A. Yes, I do.

20 Q. Do you do work for other industries as a  
21 consultant as well?

22 A. Yes, I do. I consult quite widely to the food  
23 industry, and I've served on committees, government  
24 committees, in terms of regulation in the state of  
25 Victoria.

1 Q. And who are some of the clients that you have as  
2 a consultant with Hull and Associates?

3 A. You mean the names of those clients or --

4 Q. Well, I guess generally what kind of products do  
5 those clients ask your assistance for.

6 A. I consult to dairy companies, and in that role I  
7 am the technical officer, if you like, the technical  
8 person for milk procurement from the farm. So I manage  
9 the farm production of milk through field offices. I  
10 manage those field offices. I also manage the milk  
11 through the manufacture in the various dairies, and I  
12 also consult to retail companies that actually retail  
13 dairy products. So I cover the whole spectrum from farm  
14 to plate, so to speak.

15 Q. Describe for the Court some of the research that  
16 you've done.

17 A. Okay. The early research in CSIRO was concerned  
18 with starter cultures which are infected by viruses which  
19 stall the fermentation. There is a major cost associated  
20 with those problems. At CSIRO we developed a technology  
21 to immunize the starter cultures to make them immune to  
22 virus infection. We did it by making the starter  
23 cultures immune, not by tackling the virus. So often in  
24 the food industry we see companies trying to control the  
25 problem by tackling the pathogen or the virus, but it's

1 rarely effective. I'll just remind you that in human  
2 medicine we control disease by immunization of the  
3 population, not by going after the pathogens. In other  
4 words, all of our children are vaccinated against the  
5 common pathogens, and that immunity confers resistance to  
6 the disease in the presence of the pathogen. Now we can  
7 do the same thing in food systems. We can create  
8 immunity in our consumers if we feed them probiotics in  
9 their foods.

10 Q. Do you have experience with the horse racing  
11 industry in Australia?

12 A. Yes, I do. In the horse -- you may not have  
13 heard of the Melbourne Cup, but it's a very prestigious  
14 race in Australia, and it's centered on Melbourne, and  
15 our laboratory was in Melbourne, and around 1980 there  
16 was a major problem in the horse industry with rotavirus  
17 causing deaths not only amongst foals but also amongst  
18 the horses that were due to race in this very prestigious  
19 carnival. We in fact have a holiday proclaimed for that  
20 race day the second -- the first Tuesday in November each  
21 year. What we did at CSIRO was develop a probiotic  
22 preparation which essentially cured and eliminated that  
23 rotavirus problem in the horse racing industry, and since  
24 that time we've applied that same technology to other  
25 sectors of agriculture.

1 Q. Such as?

2 A. Such as dairy, beef, calf raising and sheep.

3 Q. Okay. Do you have experience with fermented  
4 foods?

5 A. Yes, I do. As part of CSIRO's role in the  
6 region, we took a very active interest in Asia, and there  
7 was -- there still is an association for science  
8 cooperation in Asia, which is very much promoted by the  
9 Australian government as a way of keeping friendly with  
10 our neighbors, and I spent two years on a program looking  
11 at fermented foods in the Asian region and was a coeditor  
12 of a handbook published on those products. The purpose  
13 of that handbook was to define the products in the  
14 region, particularly the microbiology of those products  
15 and the starter cultures and to encourage research to  
16 better understand those products. Because as you are  
17 aware, fermented foods around the world, and particularly  
18 in Asia at this point in time, are a key to health and  
19 nutrition in those countries.

20 Q. Have you had any involvement with developing the  
21 food standards in Australia?

22 A. Yes, I have. I was a primary author of one  
23 standard for rennet, which is a food additive used in  
24 cheese manufacture in Australia.

25 Q. Do you have -- have you been published?

1 A. Yes, I have, yes.

2 Q. In peer review articles?

3 A. Yes.

4 Q. Or **peer review journals**, I should say.

5 A. Yes, I have, yes.

6 Q. Approximately how many, and what has been the  
7 focus?

8 A. Probably around the **70, 80 mark for**  
9 **publications. The focus has been mainly on dairy and**  
10 **probiotics.**

11 Q. The beneficial effects of probiotics?

12 A. The beneficial effects of probiotics, yes.

13 Q. Have you written any books?

14 A. I have done. I'm the author of a publication on  
15 starter cultures, the CSIRO starter culture collection,  
16 as curator. We published the collection and the history  
17 of the collection and how to culture and so on as a book.  
18 Also I have been an editor on a publication on mold  
19 spoilage in dairy products in Australia. I also was on  
20 the -- I was chairman of the organizing committee of the  
21 First International Conference on Intestinal Health --  
22 sorry, on Intestinal Flora and Human Health, beg your  
23 pardon, which was published in the Asia Pacific Journal  
24 of Nutrition in 1996.

25 Q. Have you had experience with the use of

1 probiotics as relates to the productivity of certain  
2 products?

3 A. Yes.

4 Q. And can you describe to the Court that  
5 experience.

6 A. Probiotics are an essential -- or I should say  
7 intestinal flora, healthy intestinal flora, is an  
8 essential part of nutrition, and particularly in animal  
9 production where we are trying to get optimum production  
10 from our animals. It is very easy to push those animals  
11 into a situation where they become diseased and will shed  
12 pathogens. It's a very common problem in intensive  
13 farming. If we control the diet and feed probiotics  
14 appropriate to the diet, then we can control that  
15 problem, and the animals do not shed pathogens, and the  
16 productivity is greatly improved. And that is commonly  
17 practiced, and as I understand the organic farming  
18 practice, they're doing it essentially by default.

19 Q. Let me see if I've got this straight. By  
20 administering probiotics to the feed of animals --

21 A. Yes.

22 Q. -- it reduces their ability to shed pathogens?

23 A. Correct, correct. That's well known.

24 Q. Do you have any experience researching the use  
25 of probiotics on *Listeria monocytogenes*?

1           A. Yes, I do. There are starter cultures available  
2           which produce bacteriocins which kill Listeria, and these  
3           are now extensively used in the dairy industry to control  
4           Listeria in dairy factories and the environment.

5           Q. Have you published research on that subject?

6           A. Yes, I have. If Listeria, for example, is  
7           inoculated into raw milk, then they're killed actively by  
8           the raw milk's natural antimicrobial systems.

9           Q. Did you say killed?

10          A. Killed, yes.

11          Q. How much time does it take before the Listeria  
12          is killed?

13          A. If you inoculate 10,000 Listeria into raw milk,  
14          then in 48 hours they're all killed. That's at body  
15          temperature.

16          Q. Was that research published in a peer review  
17          journal?

18          A. Yes, it was.

19          Q. Are you familiar with what's known as a HACCP?

20          A. Yes, I am.

21          Q. Describe your experience with HACCPs.

22          A. HACCP is world's best practice. Also called  
23          food safety plans based on HACCP principles. It's  
24          world's best practice for food safety in today's food  
25          industry.

1 Q. What exactly is a HACCP?

2 A. Well, HACCP is an -- first of all an analysis of  
3 the food production from start to finish to ensure -- or  
4 to identify any risks and then to control those risks in  
5 appropriate ways, document what you're doing, and provide  
6 a safer food product at the end of the day. It's a  
7 well-tested system. I introduced the first HACCP plan to  
8 a food company in 1996 and have since commissioned many  
9 plans into various factories, and it's very common now  
10 that that approach is used. Sometimes people are  
11 confused by the terminology, but in reality, when working  
12 through it, it's quite simple and it delivers up, I  
13 believe, the best food safety system at this point in  
14 time.

15 MR. COX: At this time, your Honor, I would move  
16 to accept Dr. Hull as an expert in microbiology.

17 MS. RUUD: No objection.

18 THE COURT: Okay. Thank you.

19 Your request is granted.

20 MR. COX: Thank you, your Honor.

21 BY MR. COX:

22 Q. Dr. Hull, let's describe milk a little bit.

23 A. Yes.

24 Q. Is all milk the same?

25 A. No, definitely not.

1 Q. What types of milk are there?

2 A. Well, there is raw milk. Raw market milk, I'll  
3 describe first, is a living food. And on the other hand  
4 we have pasteurized milk, which is a cooked -- I would  
5 describe it as a dead food. The raw market milk is  
6 living just as you and I are living because it contains a  
7 number of live components. The first one -- the first  
8 component is the competitive flora, which are the same  
9 microorganisms that live inside of our intestinal tract  
10 when we're healthy. It's the same flora that's used to  
11 make cheese and yogurt. That competitive flora competes  
12 out other pathogens. And we use that in commercial  
13 production. We have available to us now strains of  
14 lactic acid bacteria for use in specific ferments which  
15 will kill all of the pathogens which can exist in that  
16 particular product. So that's highly developed science.  
17 And not only is it science, but it's in commercial  
18 practice.

19 Q. What's the second component?

20 A. The second component is what nature provided in  
21 milk from the mammal, and that again we refer to as  
22 innate immunity. Innate immunity consists of several  
23 components, at least five or six components. There are  
24 probably more, but for today we'll just discuss a few of  
25 them. The first one is raw milk contains white cells,

1 which if you like are the --

2 MS. RUUD: I'm sorry?

3 THE WITNESS: Contains white cells -- sorry if I  
4 didn't say it clearly -- which are the same cells that  
5 our immune system, our innate immune system, uses to  
6 combat infection. That same system is in milk and  
7 operating when it's drawn from a cow. We then have a  
8 subset of enzyme systems which are destined to kill  
9 pathogens which get into milk. And just to mention five  
10 of those systems, there's the complement system, which  
11 I'll just mention the temperature of inactivation as we  
12 go. The complement works with the white cells. It's  
13 inactivated at temperatures -- I'm going to use Celsius  
14 here -- 56 degrees Celsius. I apologize. We have been  
15 using Celsius now for about 35 years, and I have  
16 difficulty converting back to Fahrenheit. Although I did  
17 learn Fahrenheit at school. So we have complement, which  
18 is inactivated at 56 degrees, which is way below body  
19 temperature. So it's just a little above body  
20 temperature. Body temperature is 37 degrees, just for  
21 reference. The second element is the lactoperoxidase  
22 system, which is inactivated at 82 degrees centigrade.  
23 And the third one is lactoferrin, which is inactivated at  
24 about 95 degrees centigrade, which is nearly boiling.  
25 And the last one, last enzyme, survives boiling.

1           So if we look at **pasteurized milk, the white**  
2           **cells are killed, the complement system is killed, but**  
3           **the other three remain active. So we've essentially**  
4           **killed off half of the innate immunity in milk.**

5           Q. And innate immunity, that's the second component  
6           of raw milk that makes it a living food.

7           A. That makes it a living food. The third  
8           component is --

9           Q. Let me get a question on the record. What's the  
10          third component?

11          A. Thank you. The third component is a group of  
12          **enzymes which digest the milk.** Milk consists of fat,  
13          proteins, carbohydrates, and minerals. They're in a very  
14          complex state in milk, very concentrated form, and very  
15          difficult to digest without those enzymes. Those enzymes  
16          there are specifically to digest each of those components  
17          down into smaller molecules. Those smaller molecules are  
18          the things that we absorb when we drink milk. They're  
19          also the **nutrients for the competitive flora,** the number  
20          one living system in milk. **So the natural enzymes in**  
21          **milk actually foster the protective flora in milk.** And  
22          so the three work together. But in pasteurized milk, or  
23          cooked milk if you like, those systems are essentially  
24          dead.

25          So the two milks are very different. One is a

1 living food. And I've brought an apple up with me. This  
2 is a living food. When we cook it, it's a dead food.  
3 And raw milk is like the apple. Cooked, the pasteurized  
4 milk is like the apple strudel. And food safety issues  
5 with these two products are very different.

6 Q. What would be some of those issues, then?

7 A. Well, the issues with cooked products are that,  
8 yes, you do need to be very clean in how you handle it.  
9 You do need to prevent contamination. You need to  
10 operate in a very clean environment. And in the case of  
11 pasteurized milk, we in fact use the coliform index to  
12 ensure that we have pasteurized it. And going to that  
13 point, the American Public Health Association in 1920  
14 recommended to the dairy industry that they adopt the  
15 coliform test as a measure and a monitor of  
16 pasteurization. And it has served the -- and the dairy  
17 industry adopted it in 1930. And it's been adopted, and  
18 so it's served the dairy industry extremely well as a  
19 monitor for pasteurization, nothing more. And that's  
20 true today. It's an excellent monitor for that process.  
21 Remembering the coliforms in raw milk, plentiful in  
22 number, are killed by pasteurization, so they should not  
23 be in the finished product. That argument is very clear  
24 and very logical for pasteurized milk, the cooked  
25 product, but it doesn't apply to raw milk.

1 Q. And why not?

2 A. Because the raw milk contains coliforms, and we  
3 would expect to see them in the finished product. It has  
4 really no relevance to the raw milk product.

5 Q. What's the effect, then, of pasteurization on  
6 the bacteria in the raw milk?

7 A. Well, the pasteurization step kills all of the  
8 pathogens that we know of except prions, which are the  
9 things that cause mad cow disease and may also cause  
10 similar disease in man. They don't inactivate that  
11 biological entity. But they kill all known pathogens.  
12 So it's a very useful step, if we're starting with a food  
13 product that contains pathogens, to use the  
14 pasteurization step.

15 Sorry. You need to prompt me again; I've gone  
16 off stray there.

17 Q. Well, let's talk about the difference, then,  
18 between a glass of pasteurized milk and a glass of  
19 unpasteurized raw milk.

20 A. Yes.

21 Q. If you set those two milks out and let them sit  
22 at room temperature, what happens to them after a certain  
23 period of time?

24 A. Thank you. If we set raw milk, which is the  
25 living food, aside at room temperature, it will curdle,

1 and that product is perfectly safe to drink. If you set  
2 it aside at body temperature, in other words, if you  
3 carry it around in your pocket or sit it next to the  
4 stove at body temperature, it will also curdle or sour,  
5 and that product is perfectly safe to drink. It will not  
6 make you sick. In contrast, if you set aside pasteurized  
7 milk at room temperature or body temperature, it will  
8 spoil and putrefy, and if you do drink it, it will make  
9 you sick. In fact it may make you very sick. So the two  
10 products have a quite different behavior if just left at  
11 room temperature or body temperature. Now, the same  
12 thing happens when we drink those products. One turns to  
13 a sour yogurt-type product; the other one putrefies. And  
14 I think the two products are quite different in that  
15 respect.

16 Q. Let's get back to the end of Dr. Beals's  
17 testimony, then, when he talked about the infective dose.

18 A. Yes.

19 Q. Does that infective dose apply to raw milk?

20 A. No.

21 Q. And why not?

22 A. I think what the authorities are talking about  
23 is infective dose to the most susceptible individual in  
24 the community, the nonimmune individual, and the most  
25 susceptible foods, the cooked foods. Yes, the infective

1 dose is one organism under those conditions. Not ten,  
2 probably one. But when we talk about a food that has --  
3 a living food that has inbuilt immunity, the infective  
4 dose is not ten, it's not a hundred, it's not a thousand  
5 even. You have to give a huge dose of E. coli, something  
6 like ten million, to make someone sick, and then it's not  
7 an infective dose, it's a toxic dose.

8 Q. And what's the difference?

9 A. The difference is a toxic dose is you're giving  
10 sufficient of the chemical in the cell surface of E. coli  
11 to cause a reaction in the gut, and it's that reaction  
12 that then can lead later to infection. But in a healthy  
13 individual it's almost impossible -- in fact, **ten million**  
14 **E. coli, if that's present in milk, the milk smells so**  
15 **bad that you would not drink it. So we've got a very**  
16 **good inbuilt food safety system right here in our**  
17 **olfactory.** It's just that modern food systems tend to  
18 try to mask that olfactory with all sorts of flavors and  
19 odors. And so we can be tricked sometimes. We can be  
20 drinking pasteurized milk with a chocolate flavor, and it  
21 could have a high infective dose in it, and the olfactory  
22 will not detect it. **But if it's raw milk, plain milk,**  
23 **then, yes, it would be detected.**

24 Q. Does raw milk with a built-in immunity system,  
25 then?

1 A. Yes, it does.

2 Q. And because of that immunity system, can raw  
3 milk be subjected to a less, quote, clean environment?

4 A. Yes, definitely. And that's part of the reason  
5 I brought this apple here. I can leave this apple  
6 sitting around for I don't know how many weeks in  
7 California, but certainly at home an apple or orange can  
8 sit on the kitchen table or outside for many days and  
9 still be fine to eat. Not a health hazard, not a food  
10 safety issue. But if we cook that product, then we  
11 cannot do that. We have to protect it from  
12 contamination, from infection, from the environment  
13 because it has no longer living immunity in the apple.  
14 The same is true of raw milk.

15 Q. Now, the State of California has argued that  
16 coliforms is used as an indicator of environmental  
17 contamination. What do you think of when you hear the  
18 word "contamination"?

19 A. Contamination means, as I understand it, a food  
20 which will cause disease. Not simply the act of adding  
21 pathogens to the food. Because we know many foods,  
22 fermented foods, for example -- if we take yogurt, for  
23 example, we can inoculate yogurt with ten thousand E.  
24 coli pathogens, and 24 hours later they'll all be dead.

25 In fact, the industry does this routinely. They often

1 make a batch of yogurt where the plant was not clean, but  
2 you simply keep the product and retest it in 24 hours,  
3 and it will be clear. The E. coli, you can hold it and  
4 it will be clear. So many foods, fermented foods in  
5 particular, have inbuilt immunity as I've talked about in  
6 raw milk, and that kills pathogens if they get into the  
7 product. So contamination is used to describe the  
8 situation where the food will cause disease. So now  
9 we're not just talking about is the pathogen present or  
10 absent, but we're talking about will the food system kill  
11 the pathogen or not, and if it doesn't, will it then  
12 facilitate infection? So contamination means a pathogen  
13 must be present; the food must facilitate infection.  
14 Those two things are critical. And even then the  
15 contaminated food -- you know that when there is a food  
16 poisoning outbreak, some people still don't get sick.  
17 There's always those odd people who don't get sick. Why  
18 don't they get sick? They don't get sick because they  
19 have immunity. The same as we have immunity to smallpox  
20 or whatever. They have got immunity. And we understand  
21 the chemistry and the science of that as well.

22 Q. And let's talk about this --

23 A. So when we say contamination --

24 Q. Excuse me.

25 A. -- in science we have a very clear understanding

1 of what that means, and through it to commercial  
2 application.

3 Q. So contamination doesn't necessarily mean the  
4 presence of coliforms --

5 A. No.

6 Q. -- it means in fact the presence of pathogens  
7 which can cause illness in the absence of competing,  
8 let's say, bacteria.

9 A. Correct.

10 Q. Now let's talk about AB 1735, then, and the ten  
11 coliform standard. Based on your background, training,  
12 education, and experience, do you have an opinion to a  
13 reasonable degree of scientific certainty whether or not  
14 that standard is appropriate for raw, unpasteurized milk?

15 A. I believe it's not appropriate.

16 Q. And in your expert opinion, what do you think  
17 would be an appropriate alternative to a ten-coliform  
18 standard?

19 A. I believe an alternative would be the use of a  
20 food safety plan based on HACCP, which is world's best  
21 practice, and in that I would suggest end-product testing  
22 for known pathogens.

23 Q. Do you have an expert opinion about whether or  
24 not AB 1735's ten-coliform standard protects human health  
25 and safety?

1           A. I don't believe it does.

2           Q. Did you review the declaration of Linda Harris  
3 today in preparation for your testimony?

4           A. I did.

5           MR. COX: If it pleases the Court, I would like  
6 to go through the declaration so Dr. Hull can rebut  
7 statements made by Dr. Harris in her declaration.

8           THE COURT: I don't think there's a problem with  
9 that.

10          BY MR. COX:

11          Q. Dr. Hull, I'm handing you what's been presented  
12 to the Court as the declaration of Linda Harris, Ph.D.,  
13 in opposition to order for preliminary injunction. Do  
14 you have that in front of you?

15          A. I do.

16          Q. I would ask you to look at paragraph five.

17          A. Yes.

18          Q. Read the first sentence into the record for us,  
19 and then could you respond to that.

20          A. Yes, please. Thank you.

21                 Paragraph five says, "In the dairy farm and  
22                 milk-handling environment, the presence of  
23                 harmful bacteria in raw milk cannot be reliably  
24                 controlled independently of sanitary controls  
25                 against all bacteria in general."

1 I disagree with that.

2 Q. You disagree why?

3 A. Because we know where pathogens come from in the  
4 dairy industry. In the case of shedding cows, we know  
5 why they shed pathogens, and we have procedures to  
6 eliminate those pathogens from the gastrointestinal tract  
7 of those animals, and that's been commercial practice now  
8 since -- in the poultry industry at least since 1970.  
9 We're talking 38 years that's been knowledge, and it's  
10 now practiced in other agricultural industries. So we  
11 can be assured that our animals are not shedding  
12 pathogens. So we can be very specific in our control  
13 measures for controlling pathogens in the dairy herd and  
14 in the milking environment.

15 Q. Can you read the next sentence into the record,  
16 please, and then provide a response to that.

17 A. The second sentence is, "The most common reason  
18 for elevated coliform counts is environmental  
19 contamination, which is generally fecal  
20 contamination."

21 Well, I would agree with it's environmental  
22 contamination, but fecal contamination? It varies. It  
23 can equally well be from the environment, pasture, the  
24 water environment, depending on the particular  
25 situation.

1           Q. Can you read -- do you have a response to the  
2 next sentence?

3           A. Do you want me to read that one?

4           Q. Yes.

5           A. "Sanitation procedures that prevent this  
6           contamination are designed to impact a wide  
7           range of microorganisms."

8           Again, I disagree with that. There are --  
9 sanitizers have a very specific biological action. And  
10 there are some sanitizers, for example, quaternary  
11 ammonium compounds, which kill the beneficial bacteria in  
12 food systems and in animals and in fermentation  
13 industries, and indeed we cannot use those sanitizers in  
14 those industries. So sanitation procedures do not impact  
15 on a wide range of organisms; they're usually specific.  
16 There are none that impact on all organisms.

17          Q. How about the next sentence? Can you read that,  
18 please, and then provide a response.

19          A. The next sentence is, "It would be impossible to  
20          develop dairy or milk-handling procedures that  
21          could separately target either pathogens or  
22          nonpathogenic bacteria."

23          I disagree with that for what I've already said.

24          Q. Can you restate it, then.

25          A. Oh, restate it? Yes, we have very specific

1 techniques for controlling pathogens in animals, and we  
2 have very specific techniques for controlling pathogens  
3 in the dairy and creamery. And **Listeria** is an example.  
4 We now have **biological control for both of those types**  
5 **of pathogens, and they're very effective and have been**  
6 **used extensively for the last decade.**

7 Q. How about the last sentence in paragraph five.

8 A. "The cleanliness measures necessary to lower the  
9 coliform counts in milk will reduce all  
10 environmental contamination, reducing the  
11 risk that raw milk will carry a pathogen."

12 Well, I disagree with that also.

13 Q. Why is that?

14 A. Well, because **I don't believe cleanliness**  
15 **measures on their own are an effective measure of**  
16 **controlling pathogens. I think biological controls are**  
17 **far superior, and that's borne out by science and by**  
18 **commercial experience.**

19 Q. I believe we need to go to paragraph six, and  
20 then this will be it.

21 A. Yes.

22 Q. Let's rebut these sentences in paragraph six.

23 A. Yes.

24 Paragraph six reads, "Testing of finished  
25 product for specific pathogens is not a more

1           efficient or reliable means to ensure the safety  
2           of raw milk compared to regulatory standards for  
3           sanitary indicators such as the coliform count."

4           I disagree with that because I don't -- the  
5           coliform count is not a monitor for pathogens in raw milk  
6           whereas direct testing is.

7           Q. How about the next sentence?

8           A. "Testing finished product for specific pathogens  
9           is considered to be an ineffective means of  
10          ensuring the safety of foods."

11          I disagree. It's a very effective means of  
12          ensuring the safety of foods.

13          "The problems with this approach include the  
14          typical sporadic nature of pathogen  
15          contamination, the difficulty in recovering  
16          these organisms from foods, the costs of the  
17          tests and time of testing, often several days."

18          Those issues are not relevant because the food  
19          industry lodge tests for pathogens routinely now. So I  
20          don't think those -- those are not issues that would  
21          impact on testing for pathogens in finished product.

22          Do you want me to continue or . . .

23          Q. If you feel you need to respond.

24          A. I think that probably covers it.

25          Q. Let's look to the declaration of Dr. Hailu

1 Kinde. Did you read this prior to your testimony today?

2 A. Yes, I did.

3 Q. And for the record, Dr. Hull, I've handed you  
4 the declaration of Hailu Kinde, D.V.M., in opposition to  
5 order for preliminary injunction. Do you have that in  
6 front of you?

7 A. I do.

8 Q. Let's look at paragraph eight.

9 A. Yes.

10 Q. And there's -- I believe there's a highlighted  
11 sentence in there.

12 A. Yes.

13 Q. Can you read the highlighted sentence.

14 A. There's actually two sentences.

15 Q. Just read the first one.

16 A. "The most useful application of coliform,  
17 Enterobacteriaceae, and E. coli testing is an  
18 assessment of the overall quality of a food and  
19 the hygienic conditions present during food  
20 processing."

21 Q. Do you agree with that statement?

22 A. I agree with it with the proviso that he's  
23 talking about pasteurized milk.

24 Q. And then let's read the next highlighted  
25 sentence.

1           A. Which he is -- well, it doesn't specify one or  
2           the other. **But if it's for raw milk, I disagree; if it's**  
3           **for pasteurized milk, I agree.**

4           The next sentence says, "None of the these  
5           organisms are reliable when used as an index of  
6           pathogen contamination." Which I would agree  
7           with.

8           Q. So the testing for coliforms, are you saying  
9           it's not reliable when used as an index of pathogen  
10          contamination?

11          A. Correct.

12          Q. Now, Dr. Hull, you have been selected as a  
13          member of a blue ribbon panel; is that correct?

14          A. That's correct.

15          Q. Can you describe what this blue ribbon panel is  
16          all about?

17          A. The blue ribbon panel was asked to make  
18          recommendations as a way forward on how to regulate raw  
19          milk and ensure food safety.

20          Q. And asked by whom?

21          A. Asked by Senator Florez.

22          Q. Dean Florez?

23          A. Dean Florez, yes.

24          Q. Do you know what committee he sits on?

25          A. He sits on -- I'm sorry, I don't have the full

1 title, but it's, I understand, of food and agriculture  
2 and also of foodborne illness. I don't have the correct  
3 wording, I'm sorry.

4 Q. Of the California General Assembly?

5 A. Of California state, yes.

6 Q. Okay. And was there a legislative hearing held  
7 sometime this month?

8 A. Yes, last week on Tuesday there was a hearing  
9 held, and there were a number of presentations, including  
10 one by myself to that hearing.

11 Q. And you have already testified about the  
12 declaration of Linda Harris, correct?

13 A. Yes.

14 Q. Was she also on that blue ribbon panel?

15 A. Yes, she was.

16 Q. And what can you tell us about, I guess,  
17 Dr. Harris' participation in that panel?

18 MS. RUUD: Objection, your Honor. I mean, that  
19 would be hearsay and -- that's hearsay.

20 MR. COX: It's not hearsay; it's an admission.  
21 It's their own declarant.

22 MS. RUUD: It's hearsay.

23 MR. COX: It's not hearsay, your Honor. She's  
24 an agent of the State. She's made statements on behalf  
25 of CDFA and the State of California at that blue ribbon

1 panel, and they've provided a declaration of the same  
2 individual.

3 MS. RUUD: Your Honor, she's not an agent of the  
4 State; she's an independent researcher. And she did  
5 happen to testify at that hearing, but again, her  
6 testimony there is hearsay.

7 THE COURT: It's hearsay. The question is  
8 whether or not it comes within the exception. And I  
9 don't -- I guess -- what's the purpose of the examination  
10 of Dr. Harris' testimony at the -- are you saying -- are  
11 you thinking that it's in conflict with that contained in  
12 her declaration?

13 MR. COX: Yes. I'd like to use this witness,  
14 who was there, who saw her testimony, and have this  
15 witness testify to that contradiction.

16 MS. RUUD: Your Honor, we are going to be  
17 providing Dr. Harris to testify live here when we set a  
18 hearing. She can testify for herself as to what she  
19 said.

20 THE COURT: Well, if she's going to be a witness  
21 at the continued hearing, then maybe I should allow this  
22 witness to speak as to what his understanding is, and  
23 then we'll -- and then we'll know whether or not there  
24 was some conflict in her testimony.

25 MS. RUUD: Well, again --

1 MR. COX: Thank you, your Honor.

2 THE COURT: I'll overrule the objection.

3 BY MR. COX:

4 Q. So there was a blue ribbon panel, right?

5 A. Correct.

6 Q. And Dr. Harris was there, right?

7 A. Correct.

8 Q. Can you describe her involvement at that  
9 legislative hearing last week.

10 A. Dr. Harris made a presentation, and in that  
11 presentation she talked about food safety plans based on  
12 HACCP, and when questioned by Senator Florez which would  
13 she prefer in terms of food safety regulation, a coliform  
14 test for raw milk or a food safety plan based on HACCP,  
15 she came down on the side of HACCP as the preferred food  
16 safety measure.

17 MR. COX: I have nothing further, your Honor.

18 THE COURT: Cross-examination?

19 MS. RUUD: I just have one question.

20 CROSS-EXAMINATION

21 BY MS. RUUD:

22 Q. When were you asked to participate in this  
23 hearing?

24 A. Oh, um, I need to refer to my diary, but about  
25 three weeks ago.

1 Q. Okay. Thank you.

2 MS. RUUD: No further questions.

3 THE WITNESS: I'm sorry, it's --

4 MS. RUUD: That's okay.

5 THE WITNESS: It's probably about three weeks  
6 ago, I think.

7 MS. RUUD: Thank you.

8 MR. COX: I have nothing further, your Honor.

9 THE COURT: You can step down.

10 THE WITNESS: Thank you.

11 THE COURT: Thank you, Doctor.

12 THE WITNESS: Thank you.

13 THE COURT: That completes the oral testimony,  
14 correct?

15 MR. COX: Yes, your Honor.

16 THE COURT: All right.

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I, PAULA JO ELLINGWORTH, Official Court Reporter for  
the Superior Court of the State of California, County of  
San Benito, do hereby certify that the foregoing is the  
official transcript of the proceedings held in said court  
in the above-entitled action.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2008.

\_\_\_\_\_  
PAULA JO ELLINGWORTH, CSR 3626