

1 WYOMING WATER AND WASTE ADVISORY BOARD

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5 RE: WATER QUALITY DIVISION

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TRANSCRIPT OF MEETING PROCEEDINGS

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9 Pursuant to notice duly given to all parties
10 in interest, this matter came on for meeting
11 on the 11th day of December, 2019, at the hour of
12 9:02 a.m., at the Wyoming State Library, 2800 Central
13 Avenue, Cheyenne, Wyoming before the Wyoming Water and
14 Waste Advisory Board, Mr. Alan Kirkbride, Chairman,
15 presiding, with Ms. Lorie Cahn, and Ms. Marjorie Bedessem
16 in attendance.

17 Mr. Andrew Kuhlmann, attorney for the Board;
18 Mr. Kevin Frederick, Water Quality Administrator;
19 Ms. Gina Thompson, Water Quality Division; Mr. Richard
20 Cripe, Wastewater Program Manager; Ms. Lily Barkau,
21 Groundwater Section Manager; and Mr. Dennis Lamb, Produced
22 Water Treatment/Disposal Principal, were also in
23 attendance.

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

2 (Meeting proceedings commenced

3 9:02 a.m., December 11, 2019.)

4 CHAIRMAN KIRKBRIDE: Well, the meeting will
5 come to order, the quarterly meeting of the water and waste
6 board -- advisory board.

7 And the first item of business, might I turn to
8 our counsel here for suggestion.

9 MR. KUHLMANN: Thank you, Mr. Chair. So
10 related to the two items today for the rule package, and
11 actually really part of it, so it's not a separate item,
12 but I would recommend that the Board move into an executive
13 session for the purpose of receiving legal advice.

14 CHAIRMAN KIRKBRIDE: What do you think
15 about that, Board? Could we have a motion to that effect?

16 BOARD MEMBER CAHN: I would make a motion
17 that we move into executive session.

18 BOARD MEMBER BEDESSEM: Seconded.

19 MR. KUHLMANN: And for purpose of receiving
20 legal advice, right?

21 BOARD MEMBER CAHN: Yes. Purpose of
22 receiving legal advice.

23 MS. THOMPSON: Are we doing that now? Do
24 we need to leave the room now?

25 MR. KUHLMANN: Yes.

1 MS. THOMPSON: Okay. I wanted to
2 double-check.

3 CHAIRMAN KIRKBRIDE: So we've got to vote.
4 All in favor say aye.

5 BOARD MEMBER CAHN: Aye.

6 BOARD MEMBER BEDESSEM: Aye.

7 CHAIRMAN KIRKBRIDE: That carries.
8 If you don't mind, folks.

9 (Meeting proceedings recessed
10 9:04 a.m. to 9:53 a.m.)

11 CHAIRMAN KIRKBRIDE: I believe we can
12 reconvene, folks. And I think we're going to start with
13 Rule 28 -- Chapter 28.

14 And so to the Department.

15 MR. CRIPE: Okay. My name is Rich Cripe.
16 I'm the Water/Wastewater Section Manager. As you might
17 recall, we're bringing back the rule that we talked with
18 you in October. From that point we've edited the rules
19 from the recommendation the Board provided. We edited the
20 comments -- response to comments to Paragon. We also
21 provided comments -- or responses to PRBRC.

22 And from that time, we also are requesting the
23 board -- we kind of set this rule aside, because we'll
24 probably need to come back. And as I go through this, I'll
25 kind of explain.

1 During this time period, we had some internal
2 discussions -- probably the last two, three weeks -- on
3 this rule. And we're trying to make sure this rule covers
4 everything that we're going to run into. And so we're --
5 we're going to give you two things for you to look at and
6 consider. And we're wanting to be proactive. And one of
7 the items that we will be covering here -- and realized we
8 did not get it out for public comment, so we realize it
9 needs to have that done, and so that's why we will be
10 coming back to you -- is on reuse and land application of
11 commercial oil leased wastewater.

12 Historically, when -- in the life of a COWDF
13 wastewater, the water ends up one of two ways, either in
14 injection wells or in the evaporation ponds. There's an
15 interest across the nation, as well as in Wyoming, where
16 many of the operators are exploring this. They're wanting
17 to use this water for various things. It could be wanting
18 to use it for drilling. They might want to be using it for
19 fracking, as well as land applying it.

20 We -- we discussed that internally, and so we
21 presented that in front of our director, and he agrees to
22 our approach here. But basically where we -- we don't
23 cover anything in the rule as far as tracking or
24 transferring of that reuse. Basically -- our rule
25 basically is identifying the water just ending up in the

1 ponds, and that's really all it applies to. So what we're
2 going to present here is going to lay out the framework of
3 what we think might need to be included in that.

4 Where we're looking at is we see a need for
5 reporting requirements to be put in place, and so we've got
6 two handouts that we have provided you. One of them covers
7 the water reuse and transfer. And so these would be
8 decisions that we would need to add to the rule, but we
9 also need to make sure we have public comment on it. So we
10 are providing this for your consideration and advice and
11 look at the language that we crafted.

12 The one document -- when I finish here, I'll kind
13 of go through each section -- kind of lays out how we think
14 that will fit in the rule.

15 The second document that we provided you is a
16 summary of areas that we expect we will be editing based on
17 discussions with the attorney general's office this week.
18 We just recently received their edits, and so this is a
19 very detailed coverage of it. I'll give you a thumbnail
20 sketch of what that looks like later in this. But we
21 wanted to give you an update and allow you to look at this
22 so when we do present it, it's not new to you when it does
23 come, and our changes, when we do go out to public comment,
24 will incorporate both of these.

25 Like I said, we discussed this reuse passage in

1 the handouts I've provided with the director, and he agrees
2 with the idea, and it's worth considering for adoption of
3 this rule. We would like you to give us consideration and
4 advice on what -- this language that we provided. We
5 realize it's what -- the definition, I understand, being
6 substantive.

7 MS. THOMPSON: Uh-huh.

8 MR. CRIPE: And so we do realize it will
9 have to go out to public comment and let others comment on
10 this.

11 The other thing that I want to give you a
12 heads-up before I get into 28, is 14. In our last meeting
13 of you guys took action on and -- and voted it to go
14 forward with the condition that 28 would be going with it.
15 14 has also went in front of the AG, and there are some
16 edits and changing that -- or in that document as well.
17 Some of the high points is we're trying to make that rule
18 consistent with other bonding in the agency. Land Quality
19 just recently went through that process, and so Chapter 14
20 will have changes that reflect self-bonding requirements.
21 Recently the -- it -- those changes will be consistent with
22 what you see with Land Quality. And we want to be
23 consistent. The other part is there's a section that has
24 been added to 14 on corrective action plans -- action plan
25 requirements. When you look at 14, we really didn't have

1 any narrative or any language that really defined that well
2 enough, and so we -- there's actually a section there that
3 will be a framework that I think will generate good
4 comments, and maybe there's edits and changes as we go
5 through that, but we'll have to bring 14 back to you guys
6 when we incorporate all of those edits and changes. So
7 that's just some high points there.

8 We would like to at that time, when we bring both
9 of those, have those published so that hopefully, knock on
10 wood, we've made a very good attempt and can move this rule
11 forward.

12 BOARD MEMBER BEDESSEM: Rich, will these go
13 to public comment together, then?

14 MR. CRIPE: Yes. Yes.

15 BOARD MEMBER BEDESSEM: Okay.

16 MR. CRIPE: So basically today what we're
17 going to go through is I'll start with 28 and just kind of
18 go through what language we crafted up here as to how we
19 thought it might be added or amended to 28. And so that's
20 the document that you should have in front of you as a
21 handout that is titled water reuse and transfer.

22 As we went through these discussions, we felt
23 that it fell into three sections in the chapter. The first
24 place that we felt it had a place was under prohibitions.
25 Chapter 3 allows us -- I don't know the specificity of it,

1 but 3 speaks to reuse falling in our authority to do this,
2 and so we're trying to kind of craft this to identify what
3 that looks like here. So in Section 5(e) would be an
4 addition, "No person shall land apply or reuse except as
5 provided in Chapter 3, Section 5(d) and (e)," is where that
6 is identified.

7 And then in Section 8, we needed to add a
8 paragraph in there, (vii) that wastewater transfer records,
9 as required in Section 11(g) below of this chapter needed
10 to be identified in the annual reporting requirements.

11 And then in Section 11, this is the language that
12 we have crafted for monitoring and reporting requirements.

13 And then what you see in the next page is in
14 Appendix A, that were the required constituents for pre --
15 for reuse transfer testing of this water before they do
16 something with it. And we identified that in Appendix A.

17 We realized that there's a couple -- we realize
18 where our authority falls. We also realize where oil and
19 gas falls with their authority, and we just felt that this
20 language that we were presenting here helped us do a better
21 job of trying to track, report, and monitor this type of
22 activity, because we really don't identify that. What that
23 would look like and with the interest of them wanting to do
24 reuse, we're a little concerned with liability, and we
25 don't have a good feel of how much activity, but we've been

1 approached by many folks on wanting to use this reuse, even
2 putting pipelines in, and discussions on drilling and
3 fracking. And we'll probably have to have further
4 discussions with oil and gas to make sure we're consistent
5 with them. But this is our framework.

6 So with that, without going into a lot of detail,
7 would you like to go through each of these items and
8 provide your suggestions or comments or thoughts at this
9 time?

10 CHAIRMAN KIRKBRIDE: What do you think,
11 Board? This is kind of the first time we've seen it --

12 BOARD MEMBER BEDESSEM: Yeah.

13 BOARD MEMBER CAHN: Yeah.

14 CHAIRMAN KIRKBRIDE: -- is one of our
15 problems.

16 So perhaps we do need to kind of walk through it.
17 Do we? Or do we want to take it back? What do you want to
18 do?

19 BOARD MEMBER BEDESSEM: Well, I mean -- I
20 guess, I mean, other than general questions, my feeling
21 right now is it's pretty just a kind of broad idea in
22 framework and not anything specific yet, as you're still
23 kind of working on this.

24 It will be interesting -- and probably a
25 difficult task to figure out how to kind of piece that

1 together to make sure that you're covering, you know, the
2 reuses. Because it says, you know, this was for facilities
3 that are, you know, basically making ponds for commercial
4 oil field waste disposal. And who else is doing reuse and
5 how is that being regulated? It just seems like that would
6 be very challenging to figure out how you get all the
7 players wrapped into what you have authority, what oil and
8 gas has authority in, and how to describe it appropriately
9 to make sure that you're kind of getting everybody. So I
10 guess -- but there's not any detail here, so I guess we'll
11 see when you come back. But I can certainly see how that
12 interest came up.

13 As far as this -- this rule, though, what we had
14 been provided prior to this meeting was how you had
15 responded and edits that had been made for our previous
16 comments. And so we potentially would like to have the
17 opportunity to talk about those a little bit --

18 MR. CRIPE: Okay.

19 BOARD MEMBER BEDESSEM: -- to kind of get
20 those squared away, and then look forward to kind of what
21 you'll be bringing back. So I'm just speaking for myself.

22 Do you have any other thoughts with respect to
23 that?

24 BOARD MEMBER CAHN: Yeah, I would also like
25 you to maybe address this new Appendix A, Table 1, on

1 page 2 and 3 in terms of testing -- prewater transfer
2 testing, maybe just address the -- it's a fairly long
3 table, so a lot of constituents. Am I hearing you just
4 address this addition here?

5 BOARD MEMBER BEDESSEM: So address meaning
6 to --

7 BOARD MEMBER CAHN: Just discuss the basis
8 for --

9 BOARD MEMBER BEDESSEM: -- discuss what the
10 intent was.

11 BOARD MEMBER CAHN: Yeah.

12 MR. CRIPE: So maybe some background on how
13 we came about it?

14 BOARD MEMBER BEDESSEM: Uh-huh. Yeah, that
15 would be great.

16 MR. CRIPE: Okay. We recently had to deal
17 with a land application of retreated reuse water. And this
18 is something that nationally is being done all over. I
19 mean, Oklahoma, Texas, several states, even California,
20 they've been doing this for a long time. And when asked to
21 do that, we kind of researched it from a lot of places.
22 There's the Environmental Defense -- EDF -- Defense Fund
23 was one.

24 We also looked at EPA's list that they have in
25 rule that addresses this. We also looked at the

1 Groundwater Protection Council. We also looked at various
2 states. And when we pulled all that together, what we
3 found out is science hasn't caught up with this.
4 There's -- there's a lot of constituents out there. If I
5 recall correctly, there is I believe 1600 that are out
6 there. Of that, there's only 400 of them that they know
7 something about. And of that, it's even less that they
8 have an idea that there's a toxicity or a problem with it.
9 And as we develop this list in trying to deal with that
10 situation, these were the -- the constituents that were of
11 concern. I don't recall how many of them that are here.
12 I'd have to count them again. But this is where we felt
13 with that exercise that what we knew we could get a value
14 for the land application of all of these different
15 constituents that are of concern when you're treating, you
16 know, and reusing water.

17 I mean, you have a lot of things going on with
18 fracking where they add a lot of stuff. You have
19 constituents that are naturally occurring in the
20 formations. And then you have mixing and coming from
21 various -- this is kind of where we fell from our research
22 of looking, what we were comfortable providing a list of
23 constituents that we could come -- with that application of
24 value.

25 Now realizing there's some authorities here, oil

1 and gas has the authority of water quality when it deals
2 with fracking. And they also have it on drilling. And on
3 drilling, it's interesting -- and hopefully in our
4 discussions with them, we can encourage them to maybe
5 improve that. But they don't -- they don't identify a lot
6 of stuff. I mean, I think they look at, what, TDS.

7 MR. LAMB: Chloride.

8 MR. CRIPE: Chlorides.

9 MR. LAMB: Chlorides are the big one.

10 MR. CRIPE: On other facilities we've dealt
11 with previously -- Anticline is one that comes to mind
12 where they actually are using water in reuse applications.
13 And one of them was I believe they wanted to use it for
14 drilling. Well, when you start using it for drilling, it
15 would be a concern for us, but that doesn't fall within
16 our purview for this. You know, you're going through a lot
17 of -- potentially a lot of water-bearing zones when they do
18 that. And so hopefully they address that. Our concern is
19 is that we want to know what's in there and where it's
20 going, and there really isn't, you know, a -- a -- anything
21 in place that tracks or monitors that, because you're not
22 just leaving that water in the ponds now. Now you're
23 putting it to a different purpose.

24 And so as we developed this list, that was kind
25 of the mindset behind it is we felt comfortable asking them

1 to test for these things to give us an idea what are we
2 dealing with and what are the potential problems we may
3 have to deal with in the future going forward.

4 BOARD MEMBER BEDESSEM: So now this is kind
5 of a recordkeeping request, meaning that you're asking for
6 every load or -- I don't know if it's for every load,
7 but...

8 MR. CRIPE: I think we identified in here
9 as -- to do it per transfer per pond as -- as a test.

10 BOARD MEMBER BEDESSEM: So you're assuming
11 that if -- if -- so it's a facility if they're taking water
12 from their pond and -- and doing a land application with
13 it, per that transfer, then they would do this monitoring.
14 And they would keep those records available for, you know,
15 DEQ to look at. But there isn't an approval required for
16 doing that transfer, or they don't have to meet certain
17 requirements for any of these constituents. It's just --
18 it's basically so you can track and you know what went
19 where.

20 MR. CRIPE: For the purpose of this rule,
21 that's what this is.

22 BOARD MEMBER BEDESSEM: Okay.

23 MR. CRIPE: In other rules that we have on
24 the books, Chapter 11(e) has a place in there for land
25 application, but it's very limited. It identifies a

1 continual application. It also identifies one time
2 application. Chapter 8 also has information in there, and
3 in the past we've used those as a means of doing land
4 application. But as we were going through this, we
5 actually have a permit that we are dealing with that uses
6 this and does have some requirements for land application
7 that we're working through. But this is not there.

8 BOARD MEMBER BEDESSEM: But in this
9 chapter, it's just going to be this monitoring and
10 tracking.

11 MR. CRIPE: Yes.

12 CHAIRMAN KIRKBRIDE: I've been wondering
13 what land application -- how broad is that? Is that just
14 anywhere you apply it back on to the land somehow?

15 BOARD MEMBER CAHN: Or inject it.

16 CHAIRMAN KIRKBRIDE: Or inject it. Is that
17 what that means?

18 MR. CRIPE: Typically, what they're doing
19 with a land application is you'll treat it, but you're
20 putting it to -- there's a term that gets -- I don't like
21 to use the term, because it's misused. Some folks use the
22 term "beneficial." I don't like that because it implies
23 things. I would prefer to say that you're putting it to a
24 use that doesn't create your problems. Like you can see
25 here from this list, there's a lot of stuff in that reuse.

1 And when you treat it, which takes a lot of effort to do,
2 you can apply it to the soil, to crops. Our Chapter 11(e)
3 identifies that, but there's a lot of things that you got
4 to consider with that. You don't want to degrade -- you
5 don't want it to go into groundwater. You don't want it to
6 go into surface water. You don't want it to ruin the soil.
7 You don't want it to kill the crops. You know, I suppose
8 there would even be an opportunity where maybe animals
9 could, you know, use it. But --

10 CHAIRMAN KIRKBRIDE: I was just wondering
11 what is not land application? Putting it in a pond and
12 letting it evaporate?

13 MR. CRIPE: Yeah, that wouldn't be a land
14 application.

15 CHAIRMAN KIRKBRIDE: Is there something
16 else that's not land application use?

17 MR. CRIPE: If you put it in an injection
18 well, that wouldn't be land application. So those would be
19 just a way of --

20 CHAIRMAN KIRKBRIDE: Okay.

21 MR. CRIPE: -- doing land application.

22 BOARD MEMBER CAHN: But you can use it for
23 drilling fluids, and then that -- it's not injection --

24 MR. CRIPE: Well, land application --

25 BOARD MEMBER CAHN: -- but it's getting

1 down into the --

2 MR. CRIPE: -- and drilling and that is all
3 what they put in a category of reuse. And they all have
4 differing water quality parameters that would go with that.
5 I kind of cover what a land application would be. I would
6 hope that the decision makers, when they do decide if this
7 is what they're wanting to do for drilling, take those
8 things into consideration, because you can see from this
9 list, there's a lot of nasty stuff that could impact public
10 water supplies out there.

11 CHAIRMAN KIRKBRIDE: Uh-huh. Uh-huh.

12 MR. CRIPE: But right now that framework's
13 not clearly identified as it should, if they were to use
14 that and you were to go through water-bearing zones.

15 Now, on drilling, on fracking, I -- I couldn't
16 speak to that, but my general understanding is that it
17 could be -- the water quality is not as stringent, but it
18 probably has a part to play on how that matches up with the
19 recipe of what they're trying to do to stimulate and get
20 the oil out. They probably have a lot more flexibility.
21 But then it also depends probably how deep, you know,
22 they're going with that as well.

23 So there are different water quality parameters
24 as to what that reuse would look like is, I guess, the best
25 way I'm trying to --

1 CHAIRMAN KIRKBRIDE: Are we on the front
2 end of regulating reuse?

3 MR. CRIPE: Yeah.

4 CHAIRMAN KIRKBRIDE: I'm a little amazed at
5 that.

6 MR. CRIPE: Well, reuse has been around a
7 long time. It typically, back in the day -- and that's
8 what really Chapter 11 addressed. It was around simple
9 industrial -- CBM was our first go at that. Also
10 wastewater. That's not uncommon for them to do that. We
11 do that with -- Wheatland's an example where it actually
12 goes through lagoon system and is treated, and then is land
13 applied to crops that are -- animals eat, human don't. But
14 some part of the world, believe it or not -- like in
15 Israel, they actually treat it clean enough that humans
16 actually eat that.

17 California is kind of the front runner on a lot
18 of this. They've been doing reuse, whether it's wastewater
19 or any of this -- they started way back I think it was like
20 19 -- early 1900s when they did the purple pipe, which
21 you'll see in various communities like Cheyenne and Casper.
22 They treat here in Cheyenne and run it into purple pipe,
23 and you'll see it being used on cemeteries, on the golf
24 courses.

25 CHAIRMAN KIRKBRIDE: Uh-huh. Right.

1 MR. CRIPE: Yeah. Reuse is coming.

2 CHAIRMAN KIRKBRIDE: Just new reuses in a
3 way, right? Isn't that kind of what's happening here?

4 MR. CRIPE: Yeah. Some states like New
5 Mexico and Texas, they're really struggling with water.
6 Even California. So they're trying to find ways of trying
7 to deal with reuse of water, because it's scarce. You
8 know, we're -- we're fortunate in the state of Wyoming that
9 we're not there at that point, but other states are pushing
10 that more so than us. However, as oil and gas changes
11 their model on how they're trying to get stuff out of the
12 ground, they're trying to make it economical. And if they
13 can put some of this to reuse instead of paying the cost of
14 getting, you know, water from some other place, then, you
15 know, the bottom line is what's cheaper for them, you know?
16 And right now I don't know that it -- how that will work,
17 because treatment costs a lot, but it is -- it is being --
18 we are being approached daily on this. I mean, I think
19 we've had three or four conversations with consultants, and
20 they're even to the point, like Anticline, which happened
21 quite a few years ago, or even I think it's Anadarko that's
22 down by Boysen, and it does a different way of treating
23 produced water. Those are the two plants that I'm aware of
24 in the state that really have pushed the treatment
25 technology and cost a lot of money to do that. You're

1 seeing Encore Green and various folks want to go down that
2 road and see what that's going to cost. Now, economically,
3 I don't know how that all is going to shape out for them,
4 but depending on how they put that water back to reuse, if
5 it makes sense moneywise, a lot of them are really looking
6 at it. So we wanted to be proactive and have this in a
7 rule and try to be ahead of it before we have a problem.

8 CHAIRMAN KIRKBRIDE: Very good. Okay.

9 BOARD MEMBER BEDESSEM: So this is just a
10 general question. I notice that you have the pesticide
11 list here. Have pesticides turned up much in commercial
12 oil field waste disposal? I just -- I'm not familiar.

13 MR. CRIPE: I -- can one of you guys answer
14 that?

15 MR. FREDERICK: Sure. Kevin Frederick,
16 Water Quality Administrator.

17 What we've seen -- and Mr. Chairman -- is quite
18 commonly as part of oil and gas production wells, workovers
19 and stimulation, they have to deal with bacteria. And they
20 apply biocides to help minimize reduced presence of
21 bacteria in the oil and gas wells. So the biocides fall
22 under a broader category of pesticides. The bacteria are
23 problematic, they plug up the perforations -- or they can
24 plug off the perforations in production wells and so forth.
25 So that's -- that's typically what they're used for.

1 So we see that the wastewater that goes into
2 commercial oil field waste disposal facilities, the
3 evaporation ponds and so forth, that are not only produced
4 water that comes about from -- as a result of oil and gas
5 production, but also wastewater that has been essentially
6 pumped out of a well to help clean it, to help stimulate
7 it, to help develop it. And so as Rich mentioned, a lot of
8 different types of chemicals are used to help do those
9 processes. Hydraulic fracturing. After hydraulic
10 fracturing occurs, the fluids are essentially pumped back
11 out. It's called flow-back. And a lot of that also ends
12 up in these commercial oil field waste disposal facilities.

13 BOARD MEMBER CAHN: Can you speak a little
14 louder, Kevin?

15 MR. FREDERICK: Sure.

16 BOARD MEMBER BEDESSEM: Such as -- a
17 question. It's a long list of parameters. Do we have an
18 idea on the average cost per sample? Is it like -- how
19 much?

20 MR. FREDERICK: As a matter of fact we do.
21 We asked an independent lab to give us a price estimate
22 what it cost to do the analysis, and it was \$1,430.

23 BOARD MEMBER BEDESSEM: I had a feeling it
24 was going to be pretty pricey.

25 MR. FREDERICK: So --

1 BOARD MEMBER BEDESSEM: So -- so I'm
2 just -- I have no idea how much of the cost is for a load
3 of applying wastewater, to know whether that would
4 discourage people from doing reuse or not.

5 MR. FREDERICK: I haven't done the math on
6 that particular type of question.

7 BOARD MEMBER BEDESSEM: Uh-huh.

8 MR. FREDERICK: I don't know if Dennis
9 might have any thoughts on that.

10 MR. LAMB: My understanding is this would
11 be one test per pond in the pond to be used. So it could
12 be quite a few loads. It would not be this test per load,
13 right?

14 BOARD MEMBER BEDESSEM: I thought you said
15 per transfer.

16 MR. CRIPE: Per transfer, yes.

17 MR. LAMB: A lot of this transfer that's
18 being talked about is going to be done through pipelines.

19 BOARD MEMBER BEDESSEM: Okay.

20 MR. LAMB: So they'll pipe out of the pond,
21 and they'll pipe it -- that's what they're talking about.
22 Nobody's doing it except for Anticline yet, but they'll
23 pipe the pipe out of the pond into the facility where
24 they're going to frack. And so I take it for granted it
25 would be one sample out of the pond or maybe two. But I'm

1 not -- that's not exactly explicit here. It says per
2 transfer. So with a -- that kind of has to be shaken out
3 yet. But if it were per truckload it would be prohibitive,
4 because that's a thousand gallons in a truck, is the
5 biggest -- about 1500 is about the biggest truck you can
6 use.

7 BOARD MEMBER BEDESSEM: So clearly there
8 would need to be some wordsmithing to --

9 MR. LAMB: Yeah, I guess so.

10 BOARD MEMBER BEDESSEM: -- to make that
11 usable.

12 MR. LAMB: But I'm taking it that we --
13 they would be so many samples out of a pond, and that pond
14 could be transferred.

15 MR. FREDERICK: I think it's fair to say
16 that we're interested in getting public comment on what
17 that frequency of sampling might look like.

18 BOARD MEMBER BEDESSEM: Uh-huh. Okay.

19 MR. FREDERICK: We're certainly open to
20 some combinations and suggestions along those lines.

21 BOARD MEMBER CAHN: I'm going to show my
22 ignorance here, but, you know, after Marge asked the
23 question about why pesticides, and you answered biocides.
24 Which of those pesticides on this list are biocides? That
25 would be -- that would be dealing with the bacteria that it

1 could clog the wells.

2 MR. FREDERICK: Mr. Chairman. I can't
3 answer that. I would actually have to go through and do
4 further analysis on that.

5 BOARD MEMBER CAHN: Okay.

6 CHAIRMAN KIRKBRIDE: Well, what do you need
7 from us? Where do things stand?

8 MR. CRIPE: I don't know that we really
9 need -- Mr. Chairman, I don't know that we really need
10 to -- an action from you today, other than, you know, these
11 consideration and discussion points are appreciated. We'd
12 like to hear any of what that might be.

13 CHAIRMAN KIRKBRIDE: Uh-huh.

14 MR. CRIPE: We would like -- as we go
15 forward, we'll evidently have to put this up for public
16 comment, and do so. Our hope and desire was to discuss
17 this a little bit and not surprise you. We realize we had
18 done this in a short amount of time. We would like you to
19 really look it over, and by all means, provide whatever
20 those comments or thoughts might be so that we can improve
21 it.

22 But we would really like to incorporate that into
23 the rule, and we were trying to make a fair attempt of
24 presenting what we thought that might look like. But, of
25 course, we discussed a few things of, you know, what does

1 that look like, cost and things like that, that might have
2 to be parsed out a little bit more. But it was more kind
3 of a get your take and your thoughts on it as a big picture
4 moving forward, you know, technically. Is there some
5 things we could do to maybe improve it? Is there some
6 things maybe we didn't consider? And if that's not
7 something we can address now, we'd be more than happy to
8 address it when we do come in for public comment. But we
9 just wanted to have that conversation with you today and
10 see what your thoughts and what advice you might have as we
11 go forward, because we really feel this is a need that
12 should be addressed, and we want that rule to be complete
13 when we go forward and try to cover anything that we can
14 foresee going forward. So I don't --

15 CHAIRMAN KIRKBRIDE: That's very
16 appreciated, I think.

17 BOARD MEMBER BEDESSEM: Uh-huh. Uh-huh.

18 MR. CRIPE: I don't know that you
19 necessarily have an action, but I believe any discussion or
20 any points --

21 CHAIRMAN KIRKBRIDE: Well, I have a
22 question, sir, about the -- the oil patch is kind of
23 creeping out towards my ranch, and they're talking about
24 putting new pipeline system, which sounds good to get --
25 one for gas, one for oil, one for -- for --

1 MR. LAMB: Water.

2 CHAIRMAN KIRKBRIDE: -- water.

3 So it will be good water going to the wells
4 initially through -- I assume through this pipeline. Might
5 there be reused water of a different quality going through
6 the same waterlines?

7 MR. LAMB: Could be.

8 CHAIRMAN KIRKBRIDE: Yeah.

9 MR. LAMB: Very much so. It's already
10 done -- Anticline has done -- Anticline has done 18 billion
11 barrels -- 18 million barrels of water for reuse piped out
12 to the -- and come back in. I think they've treated
13 40 million barrels of water overall. And they figure
14 they've treated the same water 20 or 30 times, because it
15 goes out, comes back, goes out, comes back. And so that's
16 a lot of trucks off the road.

17 CHAIRMAN KIRKBRIDE: Yeah.

18 MR. LAMB: But that's the only people that
19 are doing it at this point in time. But other people are
20 talking about doing the pipelines, basically to avoid the
21 trucking.

22 CHAIRMAN KIRKBRIDE: Uh-huh.

23 MR. FREDERICK: Mr. Chairman, if I may.
24 Just a point of clarification. I think your question was
25 whether or not we were on the front end of regulating

1 reuse.

2 CHAIRMAN KIRKBRIDE: I sort of asked that,
3 yes.

4 MR. FREDERICK: And I -- Rich -- Rich
5 explained that -- and I just wanted to reinforce what Rich
6 was saying. Was that we've been regulating at DEQ certain
7 types of reuse for decades. And our regulations, when they
8 were developed back in the -- I believe the '80s, really
9 focused on regulation of the reuse of wastewater associated
10 with sewage from publicly owned treatment works. And so I
11 just want -- want to make sure you understand that this --

12 CHAIRMAN KIRKBRIDE: Yes.

13 MR. FREDERICK: -- this isn't the first
14 attempt at regulating reuse of wastewater. Rich mentioned
15 how some of the communities are using it to water golf
16 courses and soccer fields and so forth. So that's been
17 going on for quite some time.

18 What we're seeing now really has to do with the
19 water that's being used in the oil field, or that is a
20 result of oil and gas development. All of that produced
21 water. And we're seeing interest in reusing that. Now, if
22 they want to reuse it for land application, for irrigation,
23 we've been permitting that sort of activity for a long,
24 long time.

25 As Rich mentioned, we see a lot of interest in

1 moving forward and using this wastewater and these
2 impoundments that we regulate for drilling and hydraulic
3 fracturing and other types of activities. And there's a
4 little bit of a cradle-to-grave concept here where
5 historically we've been regulating the disposal of this
6 wastewater, produced water, and impoundments.

7 And now we're beginning to see that, well, people
8 want to take that water and reuse it for something else.
9 And that's fine. And if they want to land apply it,
10 they'll get a permit from us. If they want to use it for
11 drilling and fracking, they have to deal with the Oil and
12 Gas Conservation Commission.

13 And we think it's important for us to understand
14 where this wastewater is going and is it being properly
15 handled and managed and used so that it's not causing
16 problems for the state water resources. We don't want to
17 see water supplies deteriorated, because this wastewater is
18 being introduced into aquifers that are important not only
19 to your livelihood, but to everyone across the state. And
20 although we don't directly regulate that, we want to -- we
21 want to understand where this stuff is going and what it's
22 being used for. So if a problem does develop, we'll have
23 some information.

24 CHAIRMAN KIRKBRIDE: I appreciate the
25 clarification, and I believe you.

1 MR. FREDERICK: Thank you.

2 CHAIRMAN KIRKBRIDE: And what's happening
3 now, while we're thinking -- trying to decide what
4 parameters should be on it? I mean, so I mean oil patch is
5 working. They're busy at things. They want to do things.
6 Where do things stand? What can they do? Are they up
7 against stuff they can do right now? I presume they are.

8 MR. FREDERICK: They are using produced
9 water for drilling and hydraulic fracturing. Absolutely,
10 yes.

11 BOARD MEMBER CAHN: Through the Oil and Gas
12 Conservation Commission.

13 MR. FREDERICK: Right.

14 BOARD MEMBER BEDESSEM: Can you repeat
15 again where in your rules land application permitting is
16 currently done? You said there were two places.

17 BOARD MEMBER CAHN: Chapter 11.

18 MR. FREDERICK: Let me take a first shot at
19 that. The requirement in our regulations that in order to
20 land apply, you need to have a permit for -- from DEQ is in
21 Chapter 3. And those are the type of permits that we've
22 historically issued for land application. You can take
23 some of the confined animal feeding operations, the swine
24 facilities in particular in the eastern part of the state
25 that I know the chairman is familiar with. They also land

1 apply wastewater. So they get a Chapter 3 permit from us
2 in order to do that. The standards that need to be met in
3 order to get a permit are in Chapter 11. And which
4 sections --

5 MR. CRIPE: Well, there's several sections.
6 But if you looked at part (e) of Chapter 11, there's
7 Sections 50 through 56 that identify it. Most of them,
8 has -- as -- Mr. Chairman, most of them that Kevin
9 explained there had kind of the history around those type
10 of activities, as sewage and industrial.

11 There are standards there in 11. We also
12 referred to Chapter 8. There are standards there as well,
13 when we were doing those land applications. And as Kevin
14 covered, if a facility ever changed and implicated the
15 Chapter 20 -- I believe 20 is the one that's the swine
16 rule --

17 MS. THOMPSON: Uh-huh.

18 MR. CRIPE: -- that could come into play.

19 We never had the opportunity to use that rule.
20 It was put in place, but -- so 20, 11, Chapter 8, has that.
21 3 gives us the authority. So it's in several places there.

22 BOARD MEMBER BEDESSEM: So are there
23 sampling requirements for that land application permit that
24 would be different than what you're going to have in
25 Appendix A, or what they sample for in Appendix A can then

1 also apply to the standards they might have to meet to get
2 their permit?

3 MR. FREDERICK: So, Mr. Chairman, as I
4 understand the question, if it's going to be land
5 application or produced water, yes, then these sampling
6 requirements here would apply.

7 BOARD MEMBER BEDESSEM: Okay.

8 MR. FREDERICK: If it's land application of
9 sewage or something like that --

10 BOARD MEMBER BEDESSEM: That's different.

11 MR. FREDERICK: -- that's different type of
12 sampling requirements.

13 BOARD MEMBER BEDESSEM: But there isn't a
14 list like this in these other chapters?

15 MR. FREDERICK: Mr. Chairman. Yes, there
16 are lists, but --

17 BOARD MEMBER BEDESSEM: But not for
18 produced water?

19 MR. FREDERICK: Yes.

20 BOARD MEMBER BEDESSEM: Yeah. That's what
21 I mean. Thank you.

22 MR. FREDERICK: Yeah.

23 BOARD MEMBER CAHN: So -- Mr. Chairman.

24 CHAIRMAN KIRKBRIDE: Yes.

25 BOARD MEMBER CAHN: So, Rich, I

1 appreciate -- I think you've done a really good job of kind
2 of laying out what things you're going to be working on,
3 and we appreciate the heads-up. And it sounds like, just
4 from this discussion, that one of the areas that you'll be
5 working on will be in Section 11, the monitoring and
6 reporting requirements, because, as I read this language,
7 it's not really clear, like (a) saying the sample shall be
8 representative -- be a representative sample per pond or
9 tank per transfer. So that's not clear if that's truckload
10 or, you know, do the pond and then --

11 BOARD MEMBER BEDESSEM: It worked out.

12 BOARD MEMBER CAHN: -- before you add
13 anything else to the pond, you can continue to transfer
14 from that pond, taking into account what might change with
15 evaporation or whatever. So, anyways, I mean, it seems
16 like that's an area that sounds like you guys will be
17 working on getting more specificity to make it more clear.
18 But thank you for providing this to us.

19 CHAIRMAN KIRKBRIDE: Uh-huh.

20 BOARD MEMBER BEDESSEM: Can we go back to a
21 couple questions on the first part?

22 CHAIRMAN KIRKBRIDE: Yes.

23 MR. CRIPE: Sure. I think we kind of got
24 off --

25 BOARD MEMBER BEDESSEM: Yeah. No, but it

1 was good. Thank you. It was good discussion.

2 As far as the revisions that were made to
3 Chapter 28, thank you. It looks great with respect to the
4 changing -- you know, eliminating Appendix A and putting
5 in, you know, more of a kind of readable version of what
6 you want in the O&M plan. I think it's significantly
7 better, and appreciate all the revisions you've done to
8 that chapter.

9 I had just I think maybe one little question, and
10 then one little request for a word. This is line 612 in
11 the strike-out and -- whatever, where it says wastewater
12 receiving procedures including procedures refusing loads.
13 Can we just put "for" in there?

14 MS. THOMPSON: Uh-huh.

15 BOARD MEMBER BEDESSEM: Procedures for
16 refusing loads.

17 Okay. Thank you.

18 The other question I had, and I noticed there --
19 you know, in the most recent response to comments that I
20 think Gina emailed a few days ago, there were some comments
21 regarding the I think Section 11(c) regarding the number of
22 samples and the -- and by the way, I thought the response
23 to comments read really well and was really complete.

24 BOARD MEMBER CAHN: I agree.

25 BOARD MEMBER BEDESSEM: I know sometimes

1 we've made comments before we wanted a little more meat in
2 the response to comments, and you guys certainly have risen
3 to the occasion, and I thought it was done really well.

4 BOARD MEMBER CAHN: Yeah.

5 BOARD MEMBER BEDESSEM: But in the response
6 to comments, it was mentioned that, well, you didn't really
7 need to have any more water samples here, because I think
8 Section -- Chapter 3 --

9 BOARD MEMBER CAHN: The monitoring.

10 BOARD MEMBER BEDESSEM: Yeah, such and
11 such, there was a -- a quote as to -- excuse me, a
12 reference of a section of the -- of another chapter that
13 said, well, you know, there's all these requirements there,
14 so we don't have to put them over here. I wasn't really
15 sure what those were. So as far as -- so that was one
16 question. If somebody would fill us in a little bit more
17 about that.

18 But the other was this now says that the class of
19 use shall be established. And, you know, I thought that
20 the agency determines the class of use that -- that DEQ
21 does that, so -- so that's a little different than what it
22 says before. Before it said baseline groundwater quality.
23 I think most people would have read that as if they took
24 the sample and provided the analysis, then they were done
25 here. But now that it says "class of use," does that mean

1 that DEQ has to make a determination and say your
2 underground water class is such and such, before they can
3 put any water in the pond?

4 So that's my question. Because there's a change
5 in term here, and I didn't know what the ramifications were
6 of that.

7 MR. FREDERICK: Do you understand the
8 question? Our response to the comment?

9 MS. BARKAU: Not fully.

10 MR. FREDERICK: Mr. Chair, if we might have
11 just a minute.

12 BOARD MEMBER BEDESSEM: Sure. I hope you
13 didn't say that because I had a really convoluted question,
14 but...

15 I didn't see -- yeah, I didn't print out the
16 response to comments, but I didn't see it on the table
17 there. I just --

18 BOARD MEMBER CAHN: Yeah, I was just going
19 to look in my mail again and pull it up again.

20 BOARD MEMBER BEDESSEM: I just pulled it up
21 on my computer. Yeah, pull it up on my phone.

22 MS. THOMPSON: Would you like me to read
23 the response into the record? While the --

24 BOARD MEMBER CAHN: I think that would be
25 helpful, because we don't have it in front of us.

1 MS. THOMPSON: Okay.

2 BOARD MEMBER BEDESSEM: And I don't think
3 it addressed the class of use. That was my own separate
4 question, but...

5 MS. THOMPSON: So the comment stated from
6 Powder River Basin Resource Council in Section 11, the
7 rules require only one sample and analysis of unconfined
8 aquifers prior to waste disposal into ponds. We do not
9 believe this minimal data sampling can establish a
10 sufficient sample and suggest at least three preoperational
11 sampling events, at least two weeks apart from one another,
12 to establish a class of use for the aquifers.

13 And the Department's response is WDEQ WQD
14 considered this request. The sampling analysis noted in
15 the comment refers to paragraph C, which refers to sampling
16 to establish the class of use for the aquifer. As stated
17 in Section 11(b), additional sampling is already required
18 by Chapter 3, Section 17(b) (ii) through (viii) as part of
19 the preoperational monitoring plan. Paragraph C will
20 remain as written.

21 BOARD MEMBER BEDESSEM: So my first
22 question was -- I was curious as to what that said, because
23 I didn't know.

24 And then regarding the class of use, which I
25 thought was a DEQ determination, and this change of wording

1 meaning that DEQ had to issue a -- a class of use
2 determination before they could put water or not.

3 MS. BARKAU: I would say that the class of
4 use -- my name's Lily Barkau. I'm the Groundwater Section
5 Manager. I would say the class of use determination would
6 be issued prior to water being -- or waste being placed
7 into those impoundments as part of the whole preoperational
8 preconstruction data that's collected. So one -- one
9 sample, as we have previously written, is sufficient as
10 part of that classification.

11 MS. THOMPSON: And for the Board's
12 information, the reference -- the Chapter 3, Section 17
13 reference -- Section 17 in Chapter 3 is Environmental
14 Monitoring Program For Protection of Waters of the State
15 and Permit Application Requirements. And so it covers the
16 environmental monitoring requirements and the documentation
17 that facilities need to provide.

18 MR. FREDERICK: So -- Mr. Chairman. I
19 understand Chairman [sic] Bedessem's point that it doesn't
20 seem like the response is directly addressing the -- the
21 issue that was raised. There seems to be a little bit more
22 clarification that we could add to that.

23 BOARD MEMBER BEDESSEM: Well, I just -- I'm
24 just a little confused, because it seems like, from this
25 discussion here, indicating that you probably have enough

1 samples based on what was approved for preoperational
2 monitoring to develop a class of use. But the way the
3 Section 11 is currently structured, (b) is the
4 preoperational monitoring plan, and (c) talks about class
5 of use, but then talks about this one sample. So I can
6 understand why Powder River Basin thought the one sample
7 was what was related to the class of use, because those are
8 combined together in that paragraph. So maybe -- so, you
9 know, maybe you got an adequate sampling to develop your
10 class of use, but you might want to look at rearranging, I
11 don't know, these -- (b) and (c) in some way so that it
12 doesn't imply that the class of use is based on the one
13 round of sampling from all wells from the common ownership,
14 which is kind of together within that --

15 MR. FREDERICK: Mr. Chairman.

16 BOARD MEMBER BEDESSEM: -- (c).

17 MR. FREDERICK: I think really the --

18 BOARD MEMBER BEDESSEM: Or am I

19 misunderstanding it?

20 MR. FREDERICK: I guess I interpret the
21 comment seems to be that more than one sampling event is
22 necessary in order to establish class of use.

23 BOARD MEMBER CAHN: Base --

24 BOARD MEMBER BEDESSEM: Uh-huh.

25 MR. FREDERICK: Excuse me.

1 BOARD MEMBER CAHN: Maybe baseline is what
2 they were addressing, because baseline was crossed out.

3 BOARD MEMBER BEDESSEM: Yeah, I think what
4 you just -- my interpretation is same as yours, that
5 they're saying that more than one round of sampling is
6 needed to develop a class of use. But the response says,
7 well, we're doing more than one round of sampling, because
8 the preoperational monitoring plan will be more than one
9 round of sampling. And what that is is specified in
10 Chapter 3, Section 17.

11 MR. FREDERICK: Right. So just for
12 clarification. On reviewing Chapter 3, Section 17(b)(ii)
13 through (viii), and I'm not seeing the requirement -- let
14 me rephrase this. There is a requirement that
15 preoperational monitor wells be placed to characterize a
16 subsurface environment, including, among other things,
17 background water quality.

18 BOARD MEMBER CAHN: Maybe if 11(c) starts
19 out in addition, the class of use shall be established, so
20 that the -- there's a break between what (b) has, which is
21 the preoperational sampling, and (c), just class of use.
22 Would that -- would that help?

23 BOARD MEMBER BEDESSEM: I don't know. I'm
24 confused about what --

25 BOARD MEMBER CAHN: Yeah.

1 BOARD MEMBER BEDESSEM: -- what all --

2 BOARD MEMBER CAHN: I agree.

3 BOARD MEMBER BEDESSEM: I understand Powder
4 River Basin's --

5 BOARD MEMBER CAHN: Concern.

6 BOARD MEMBER BEDESSEM: -- comment that
7 clearly you can't do a class of use on one round of
8 sampling. But I'm not sure how to fix (b) and (c). I
9 don't know that just saying that it's addressed in
10 Chapter 3 Section 17(b)(ii) through (viii) probably does
11 it.

12 So since this is not -- I don't -- I don't know
13 that I have a great solution for that, but I guess my
14 request is if you could look at (b) and (c) and figure out
15 how to do that to respond better to Powder River's comment,
16 and so that when you read it, it doesn't look like you
17 established a class of use on one -- one round of sampling.
18 You're doing a lot more changes in Chapter 8, just put it
19 on the list.

20 BOARD MEMBER CAHN: Well, and is it (b),
21 then, that's establishing the baseline?

22 BOARD MEMBER BEDESSEM: Right. That's
23 what's --

24 BOARD MEMBER CAHN: Yeah.

25 BOARD MEMBER BEDESSEM: So if you could

1 look at Section 11(b) and (c) and see if you can clarify,
2 that would be appreciated.

3 MR. FREDERICK: We can do that.

4 BOARD MEMBER BEDESSEM: Okay. Good. You
5 made lots of other changes, and they were all phenomenally
6 great, and that was the only one that I was still confused
7 about. So, anyway, thank you for all the hard work on 28
8 so far. That's all I have.

9 CHAIRMAN KIRKBRIDE: All right. Lorie,
10 what do you think?

11 BOARD MEMBER CAHN: I'm just checking my
12 notes.

13 BOARD MEMBER BEDESSEM: I wanted to say one
14 of the reasons that that particular section of the rule was
15 more apparent to me of late is because we've been
16 struggling with data on a number of facilities where we
17 need to do a bunch of statistical tests. And find out to
18 run these statistical tests we need eight samples, with at
19 least four of those samples being actual numbers, like not
20 nondetects, and finding data records we have for a lot of
21 facilities don't provide us with that. And so it's
22 frustrating to try to come up with, you know, background
23 water quality for a particular site when we don't have the
24 level of data that we need. So -- so, anyway, so that it
25 kind of zoomed out at me, because that's been a problem

1 with multiple data sets that I've been embroiled in lately,
2 so...

3 BOARD MEMBER CAHN: Yeah, and I would echo
4 the same concern with a high false positive -- site-wide
5 false positive rate from limited samples, and even over the
6 years getting more and more sample, still having high
7 site-wide false positive rates.

8 MR. FREDERICK: Okay.

9 BOARD MEMBER CAHN: I have -- back to the
10 suggested new table. I would never show my ignorance, but
11 what's RSC on page 3, after zinc and before radium --
12 combined radium? It's like -- so you go down the list of
13 metals, and then there's -- after zinc there's RSC, and
14 then go into the RAD.

15 MR. FREDERICK: Mr. Chairman. RSC is an
16 abbreviation for -- I'm drawing a blank right now, but I
17 believe it -- it is a water quality-type parameter that we
18 recognize in Chapter 8.

19 MS. THOMPSON: Uh-huh.

20 BOARD MEMBER CAHN: What does it stand for?

21 MS. THOMPSON: It's right there. And this
22 is Chapter 8.

23 BOARD MEMBER BEDESSEM: It must not come up
24 very often.

25 BOARD MEMBER CAHN: I guess I can Google

1 it.

2 MR. MCKEE: I found something you can
3 always make up.

4 MR. FREDERICK: Yes. Thanks. It's the
5 residual sodium carbonate index of irrigation water or soil
6 water.

7 MS. THOMPSON: Yeah, it's not in any of
8 the -- it's not in any of the footnotes.

9 BOARD MEMBER CAHN: Maybe just spelling
10 that out in this table.

11 MR. CRIPE: Okay.

12 BOARD MEMBER BEDESSEM: It was residual
13 sodium --

14 BOARD MEMBER CAHN: Carbonate.

15 I Googled it. All I got was Royal Shakespeare
16 Company.

17 CHAIRMAN KIRKBRIDE: There was a lot of
18 cute things it could have been.

19 BOARD MEMBER CAHN: Or the Royal Society of
20 Chemistry, so...

21 BOARD MEMBER BEDESSEM: Thank you.

22 BOARD MEMBER CAHN: Thanks. That's all I
23 have, Mr. Chairman.

24 CHAIRMAN KIRKBRIDE: All right. So what
25 should we -- what do we do with this?

1 BOARD MEMBER BEDESSEM: I guess I don't
2 know that we have any advice for the agency, as your intent
3 is to come back for further discussion.

4 CHAIRMAN KIRKBRIDE: Uh-huh. Okay.

5 MR. FREDERICK: Thank you.

6 BOARD MEMBER CAHN: Can we take a
7 five-minute break?

8 CHAIRMAN KIRKBRIDE: Let's do. Five-minute
9 break.

10 (Meeting proceedings recessed

11 11:02 a.m. to 11:09 a.m.)

12 CHAIRMAN KIRKBRIDE: All right. Let's
13 reconvene. And we have had a request for a clarification
14 from Ms. Barkau.

15 MS. BARKAU: So my name, again, is Lily
16 Barkau. I'm Groundwater Section Manager, Water Quality
17 Division. I wanted to provide further clarification in
18 regards to the Powder River Basin Resource Council comment
19 for Chapter 28.

20 In regards to the sampling for Section 11
21 establishing class of use. The original text included a
22 baseline, a valuation suggesting only one sample would be
23 sufficient for establishing baseline. We agree that that
24 was not what the intent was and had removed the text within
25 Section 11(c), removing the baseline to discuss strictly

1 the class of use, where you can use one sample to establish
2 a class of use. We would agree that in order to establish
3 baseline or background, you would need further samples,
4 typically about 10 samples, to establish that background,
5 which that number of samples is accounted for in
6 preoperation, preconstruction sampling, to establish the
7 proper construction requirements for the facility.

8 So, in short, or just to recap, class of use can
9 be established based on one sample being collected.
10 Baseline or background is established we would say at a
11 minimum of 3 -- a minimum of 10 samples. So we will revise
12 our response to Powder River Basin to clarify that
13 discrepancy.

14 BOARD MEMBER BEDESSEM: Thank you very much
15 for clarifying the difference between baseline and class of
16 use. And that was educational for all of us, and helps
17 with the response to comments, thanks.

18 MS. BARKAU: Thank you.

19 CHAIRMAN KIRKBRIDE: Thank you.

20 (This portion of the meeting
21 proceedings concluded 11:11 a.m.
22 December 11, 2019.)

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C E R T I F I C A T E

I, KATHY J. KENDRICK, a Registered Professional Reporter, do hereby certify that I reported by machine shorthand the foregoing proceedings contained herein, constituting a full, true and correct transcript.

Dated this 30th day of December, 2019.


KATHY J. KENDRICK
Registered Professional Reporter

