MONTANA BOARD OF ENVIRONMENTAL REVIEW

IN THE MATTER OF:)
APPEAL AMENDMENT AM4)
WESTERN ENERGY)
COMPANY, ROSEBUD STRIP)
MINE AREA B)
PERMIT NO. C1984003B)

DEPOSITION OF ANNE HEDGES

On the 11th day of May, 2016, beginning at 9:00 a.m., the deposition of ANNE HEDGES, appearing at the instance of Intervenors, was heard at the Montana Department of Environmental Quality, 1520 East Sixth Avenue, Helena, Montana, before Lisa R. Lesofski, Registered Professional Reporter, Notary Public.

A P P E A R A N C E S:

APPEARING ON BEHALF OF INTERVENORS WESTERN ENERGY COMPANY, NATURAL RESOURCE PARTNERS, L.P., INTERNATIONAL UNION OF OPERATING ENGINEERS, LOCAL 400, AND NORTHERN CHEYENNE COAL MINERS ASSOCIATION:

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Bill Schafer
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1 The following proceedings were had and
2 testimony taken:
3 * * * * * * * * * *
4 (Witness sworn)
5
6 ANNE HEDGES,
7 called as a witness herein, having been first duly
8 sworn, was examined and testified as follows:
9
10 **EXAMINATION**
11 **BY MR. MARTIN:**
12 Q. For the record, Ms. Hedges, can you state
13 your name?
14 **A. Sure. Anne Hedges, Deputy Director of the**
15 **Montana Environmental Information Center.**
16 Q. And how long have you worked for the
17 Montana Environmental Information Center?
18 **A. Twenty-three years.**
19 Q. And in your current position what are your
20 duties?
21 **A. Lobbying and program work, reviewing**
22 **agency activity, helping citizens organize in their**
23 **communities regarding environmental threats, and**
24 **overseeing some of our litigation.**
25 Q. I like to begin a deposition with some

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1 preliminary instructions, and I know you've had your
2 deposition taken a couple of times at least. But,
3 nonetheless, if you don't mind, I'd like to go
4 through some of that.
5 **A. Uh-huh.**
6 Q. First is something that I'm guilty of and
7 that is, I will occasionally ask a question that's
8 unclear. For whatever reason sometimes what I ask
9 is ambiguous. If there ever comes a time where you
10 say to yourself I really don't understand that
11 question, feel free to ask me and I'll be pleased to
12 explain the question, rephrase the question, and in
13 some fashion clarify it.
14 And if you don't ask me to clarify a
15 question, I will assume that you understand the
16 question. Do you understand that instruction?
17 **A. Yes.**
18 Q. Second, we have, as you can see, a court
19 reporter who's taking down what we say. In ordinary
20 conversation you and I have a tendency to shrug our
21 shoulders, shake our heads, use gestures rather than
22 verbal responses. If you don't mind, I'd appreciate
23 it if you would give us a verbal response to all of
24 the questions that I ask.
25 And then last, with respect to breaks, if

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1 at any point during the course of the deposition
2 you'd like to take a break, let me know and I'll be
3 happy to accommodate you. The only exception to
4 that is if I have a question pending, I'll ask that
5 you answer that question and then we can go ahead
6 and go to a break.
7 Do you understand those instructions?
8 **A. Sure.**
9 Q. Let's start with some exhibits. I'm sure
10 I've seen it by now. We issued a Notice of
11 Deposition and let's go ahead and have this marked
12 by the reporter.
13 (Deposition Exhibit 1 marked for
14 identification.)
15 Q. (By Mr. Martin) I'm not going to spend a
16 lot of time on this. Ms. Hedges, have you seen that
17 document before?
18 **A. Yes.**
19 Q. What is that document?
20 **A. That is the Intervenor Respondent's Notice**
21 **of Deposition on Appellant and it lists 26**
22 **questions. I think it's 26.**
23 Q. And, Ms. Hedges, do understand that you've
24 been designated today to testify on those topics
25 that are listed on that deposition notice?

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1 **A. Yes.**
2 Q. And you're testifying on behalf of both
3 MEIC and the Sierra Club; is that right?
4 **A. Correct.**
5 Q. You've reviewed that document?
6 **A. Yes.**
7 Q. And you're prepared to testify on those
8 topics?
9 **A. Yes.**
10 Q. The second document and, again, this is
11 for purposes of clarity. We'll ask that the court
12 reporter mark this document.
13 (Deposition Exhibit 2 marked for
14 identification.)
15 Q. (By Mr. Martin) And it's been designated
16 as Exhibit 2. Ms. Hedges, can you identify that
17 document for the record?
18 **A. It is Western Environmental Law Center's**
19 **letter to Chris Yde with DEQ regarding objections to**
20 **DEQ's acceptability determination for Rosebud Area B**
21 **expansion.**
22 Q. And, Ms. Hedges, are these the comments
23 that MEIC submitted with respect to the AM4 permit?
24 **A. Yes.**
25 Q. And you're familiar with that document?

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1 **A. Yes.**
2 Q. You submitted those comments in August of
3 2015; is that right?
4 **A. Correct.**
5 Q. And eventually on December 4th when DEQ
6 made its decision with respect to this permit, they
7 responded to those comments. Do you recall that?
8 **A. Yes.**
9 Q. And I'll hand you a document that we're
10 having marked as Exhibit 3.
11 (Deposition Exhibit 3 marked for
12 identification.)
13 Q. (By Mr. Martin) And you'll see that it is
14 toward the top of this document described as
15 Responses to Public Comments. Have you seen that
16 document before?
17 **A. Yes.**
18 Q. And for purposes of the record, I'll say
19 that this is a document that's taken from the
20 written findings prepared by Montana DEQ on
21 December 4th, 2014. And what is that document?
22 **A. This is DEQ's response to public comments**
23 **on -- basically responding to the previous letter**
24 **from WELC.**
25 Q. And you've reviewed that document?

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1 **A. Yes.**
2 Q. And, again, for clarity's sake we're going
3 to show you another document and this is the
4 Petitioners' Response to Respondent-Intervenors'
5 First Set of Interrogatories and Requests for
6 Production of Documents. We'll have that marked for
7 identification as Exhibit 4.
8 (Deposition Exhibit 4 marked for
9 identification.)
10 Q. (By Mr. Martin) Ms. Hedges, I'd like, if
11 you don't mind, for you to examine that document
12 that's been marked as Exhibit 4. Do you recognize
13 that document?
14 **A. Yes.**
15 Q. And what is it?
16 **A. That is our Response to**
17 **Respondent-Intervenors' First Set of Interrogatories**
18 **and Request for Production of Documents.**
19 Q. And I take it you've seen this document
20 before?
21 **A. Yes.**
22 Q. And, in fact, you participated in
23 preparing the responses, did you not?
24 **A. Yes.**
25 Q. You've reviewed the document then?

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1 **A. Yes.**
2 Q. Inviting your attention to Exhibit 2.
3 Let's talk initially about the first topic that was
4 mentioned in MEIC's comments. On the first page of
5 Exhibit 2 do you see a title, "Current Violations of
6 Environmental Laws"?
7 **A. Yes.**
8 Q. And if I understood that passage from the
9 MEIC's comments, MCD was asserting that there were
10 violations of various environmental laws that were
11 committed by Western Energy and related
12 corporations; is that right?
13 **A. Yes.**
14 Q. And the assertion in this set of comments
15 is that those violations are ongoing; is that right?
16 **A. I have to look back and read this. Sorry.**
17 Q. I'll invite your attention to page 2 of
18 Exhibit 2.
19 **A. Yes. That's what I'm reading.**
20 Q. Let's start with --
21 **A. At the time that these were written, yes,**
22 **that's what it says, "is in violation of the Clean**
23 **Water Act."**
24 Q. And let's be clear about this, and I'll
25 read this in the record. The second sentence of the

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1 full paragraph on page 2 of Exhibit 2 reads as
2 follows, "The Absaloka Mine is in current violation
3 of the Clean Water Act and has been in violation of
4 the Clean Water Act for every quarter (save one) for
5 the past three years."
6 I guess my first question is, are you
7 familiar with those alleged violations?
8 **A. I am not.**
9 Q. Okay. So you don't know what those past
10 violations would have been?
11 **A. I would have to look at those citations to**
12 **bring that to mind. I don't recall.**
13 Q. And what would it take to bring those to
14 mind?
15 **A. I would look at the Footnotes 2 and 3.**
16 Q. Well, I'll ask you to go ahead and look at
17 Footnotes 2 and 3.
18 **A. The EPA, Enforcement Compliance Data**
19 **Online, the ECHO Database, Westmoreland Resources,**
20 **Inc., Absaloka Mine and it's available at**
21 **echo.epa.gov.**
22 Q. Do you recall how DEQ responded to this
23 allegation?
24 **A. They were dismissive. But, no. I could**
25 **look it up. Would you like me to look it up?**

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1 Q. I would invite you to. And let the record
2 reflect that I believe the witness is looking at
3 what we will describe as, by its acronym the CHIA
4 that was developed in connection with permit AM4 for
5 the Rosebud Mine. And that was a document that was
6 issued on December 4th, 2015.
7 Am I right that you're looking at the CHIA
8 right now, Ms. Hedges?
9 **A. No. I was looking at our exhibits to see**
10 **if they included an Exhibit 1.**
11 Q. Well, I'll make things easier --
12 **A. Which apparently they did not. The one**
13 **that I have does not and --**
14 Q. I'll invite for your --
15 **A. -- and I don't think the one you have does**
16 **either.**
17 Q. I'm sorry. With respect to -- first, by
18 way of definition, CHIA, C-H-I-A, is an acronym that
19 stands for Cumulative Hydrologic --
20 **A. Impact.**
21 Q. -- Impact Assessment. And you have that
22 document in front of you, I take it?
23 **A. I do, yes.**
24 Q. I'll invite your attention to paragraphs
25 16 and 17 of the written findings.

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1 **A. Which exhibit? I can look in my notebook**
2 **or I can look in yours.**
3 Q. Feel free to look in your own notebook at
4 the CHIA.
5 **A. The CHIA?**
6 Q. Yes.
7 **A. And what page?**
8 Q. It's written findings number 16 and 17. I
9 can give you a page number if you like. It would be
10 on --
11 **A. This is DEQ written findings December --**
12 Q. On page 6.
13 **A. Okay. Yes.**
14 Q. And I'll ask that you review first written
15 finding number 16.
16 **A. "There are no pending and MSUMRA**
17 **violations for Western Energy at the Rosebud Coal**
18 **Mine Area B."**
19 Q. Let's stop there for a moment. First with
20 respect to that sentence, do you agree with that
21 assertion?
22 **A. I don't have any evidence in front of me**
23 **one way or the other whether that's accurate. I'm**
24 **sorry.**
25 Q. So you don't have an answer to that

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1 question?
2 **A. I don't have an answer to the question.**
3 **MR. SULLIVAN:** I think her answer is as
4 she stated.
5 Q. (By Mr. Martin) Let me be more precise.
6 Does MEIC/Sierra Club have a position with respect
7 to that assertion?
8 **A. Can I look at our complaint?**
9 Q. By all means.
10 **MR. SULLIVAN:** I'm going to object to the
11 extent it calls for a legal conclusion.
12 Q. (By Mr. Martin) And feel free to answer
13 the question.
14 **A. I don't see that as part of our notice of**
15 **appeal.**
16 Q. Okay. So at this point in time you're not
17 aware of a violation of the Montana Strip Mining
18 Act, if I can describe it that way?
19 **MR. SULLIVAN:** I'm going to interject an
20 objection as beyond the scope of the 30(b)(6)
21 Notice of Deposition. But if counsel can
22 direct us to where they have notified us that
23 that would be one of the issues, I would
24 appreciate it.
25 **MR. MARTIN:** I'll direct your attention to

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1 the last item in the Notice of Deposition where
2 this witness was invited to speak and be
3 prepared with respect to the comments of MEIC.
4 **A. Yes. And my answer to that is our notice**
5 **of appeal was the, was our response to what DEQ**
6 **had -- to DEQ's written findings.**
7 Q. (By Mr. Martin) And getting back to my
8 question then. You're not at this point in time
9 aware of any pending MSUMRA and that is an acronym,
10 that is MSUMRA, violations for Western at the
11 Rosebud Coal Mine Area B?
12 **MR. SULLIVAN:** I'm going to interject two
13 objections, to the extent it calls for a legal
14 conclusion and the question has been asked and
15 answered in terms of the organizations have
16 stated the issues that they're appealing in
17 their notice of appeal dated January 4, 2016.
18 **MR. MARTIN:** Can you read back the
19 question?
20 (Previous question read.)
21 **A. I am not aware of any.**
22 Q. (By Mr. Martin) And let's go back to the
23 Absaloka Mine that, again, was mentioned in your
24 comments. Are you aware at this point in time --
25 **A. I'm sorry. I was thinking we were still**

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1 **talking Absaloka Mine. I misheard the question.**
2 **I do believe that there are some**
3 **violations at the Western Energy Mine but that is**
4 **not necessarily -- that is not part of our**
5 **complaint. That is not part of this record before**
6 **us right now. We raised it in comments, it was**
7 **dismissed, and that is outside of what our complaint**
8 **is.**
9 Q. Okay. Then let's move on to the Absaloka
10 Mine.
11 **A. Okay.**
12 Q. Are you aware of at this point in time any
13 violations at the Absaloka Mine?
14 **A. I am not aware of.**
15 Q. And, again, that's outside of your notice
16 of appeal?
17 **A. That's correct.**
18 Q. All right. Moving on then. I'd like to
19 talk, if I may, about the interaction between
20 different areas of the Rosebud Mine. And to make
21 this testimony go more smoothly, my understanding
22 based on discovery responses and positions that were
23 taken elsewhere by MEIC/Sierra Club is that you're
24 currently asserting that there are potential impacts
25 on Area F from the proposed mining in Area B that's

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1 known as AM4. Do you understand that?
2 **A. I think that's a mischaracterization of**
3 **our position.**
4 Q. I'd appreciate it, if you don't mind, if
5 you could characterize it for yourself then.
6 **MR. SULLIVAN:** And, Counsel, can you just
7 for purposes of keeping me square, which of the
8 26 issues is this addressing?
9 **MR. MARTIN:** You know, I can go through
10 it. If you look at the deposition notice, I
11 think you'll find that there is a reference to
12 Area F and Area B and that's probably the most
13 direct of them.
14 **MR. SULLIVAN:** So would it be fair to say
15 that this, you're asking for the 30(b)(6)
16 designee to be responsive to Item Number 2?
17 **MR. MARTIN:** I think among others. These
18 tend to overlap.
19 Q. (By Mr. Martin) And I'd ask, if you don't
20 mind, if you could characterize MEIC/Sierra Club's
21 position.
22 **A. I would be happy to. Our position is that**
23 **state law Rule 17.24.405(6)(c) requires, "The**
24 **Department may not approve an application submitted**
25 **pursuant to ARM 17.24.401(1) unless the application**

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1 **affirmatively demonstrates and the Department's**
2 **written findings confirm on the basis of information**
3 **set forth in the application or information**
4 **otherwise available that is compiled by the**
5 **Department that, C, the hydrologic consequences and**
6 **cumulative hydrologic impacts will not result in**
7 **material damage to the hydrologic balance outside**
8 **the permit area."**
9 Q. And to bring this down to the
10 circumstances at the Rosebud Mine, is it your
11 position that the proposed mining in Area B would
12 affect what's been designated by applications and
13 other documents as Area F of the Rosebud Mine?
14 **A. Our position is that the Department has**
15 **determined what the cumulative -- Let me find a map**
16 **for you. It is Figure 5.1 in the CHIA and in that**
17 **the Department has established surface matter**
18 **cumulative impact area and groundwater cumulative**
19 **impact area. Those are the areas by which they have**
20 **to comply with 17.24.405.**
21 Q. Okay. And let's talk about cumulative
22 impact area for a moment. I gather from what you
23 said that you don't necessarily disagree with the
24 way the cumulative impact area was designated by
25 DEQ; is that correct?

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1 **A. I don't believe we do disagree.**
2 Q. As you sit here today, you've got no basis
3 to disagree at this point?
4 **A. Not that I can think of.**
5 **MR. MARTIN:** Let's go off the record here
6 for a moment.
7 (Discussion off the record.)
8 Q. (By Mr. Martin) Ms. Hedges, while we were
9 off the record, I showed you a map of the Rosebud
10 Mine that has designations of Areas A through F and
11 these are, I'll say for the record, areas of permits
12 for mining purposes of the Rosebud Mine. Have you
13 had a chance to look at that map?
14 **MR. SULLIVAN:** And, Counsel, may I
15 interject my objection at this point?
16 **MR. MARTIN:** By all means.
17 **MR. SULLIVAN:** Okay. We would object to
18 the extent that it's proposed as an exhibit in
19 the record of this proceeding. As counsel is
20 aware, it's our position that the board's
21 decision will be predicated upon the record and
22 this was not part of the record. I presume
23 you're using this for demonstrative purposes
24 during the deposition. But with that objection
25 stated, proceed, please.

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1 **MR. MARTIN:** Okay.
2 Q. (By Mr. Martin) While we were off the
3 record, Ms. Hedges, you noted that this does not
4 include every feature of the Rosebud Mine, notably
5 you said it doesn't identify the Big Sky Mine, it
6 doesn't have the cumulative impact area and it
7 doesn't include, I will also say for the record,
8 every single feature that one might identify with a
9 map; is that right?
10 **A. Correct.**
11 Q. Let's go ahead and mark the document.
12 (Deposition Exhibit 5 marked for
13 identification.)
14 Q. (By Mr. Martin) Again, referring to
15 Exhibit 5, the map that we've been talking about.
16 What it does identify is the different areas,
17 doesn't it?
18 **A. It identifies the different areas of this,**
19 **of Western Energy's Rosebud Mine.**
20 Q. And we have Area B; is that correct? Do
21 you see that on the map?
22 **A. I do.**
23 Q. And you see Area F on the map?
24 **A. Yes.**
25 Q. And Area C is in between. Do you see

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1 those features identified on the map?
2 **A. Yes.**
3 Q. And do you have any reason to believe that
4 this map is inaccurate with respect to the
5 identification of those areas?
6 **A. I have no way to tell one way or the other**
7 **without spending more time with it.**
8 Q. So at least as you sit here today, you
9 can't identify a deficiency in terms of where those
10 areas are located; is that right?
11 **A. Right.**
12 **MR. SULLIVAN:** And I would object on the
13 basis of asked and answered.
14 Q. (By Mr. Martin) And, again, just for
15 purposes of the record, if you don't mind, based on
16 this map and looking at its legend, can you say for
17 the record how far away Area F is from Area B?
18 **A. A mile or two. I can't tell. I mean, I**
19 **see a legend but, you know, that's...**
20 Q. Is it fair to say it's over four miles
21 away?
22 **A. It's -- yes. No, it's -- I don't know. I**
23 **can't tell you for sure. Possibly.**
24 Q. Based on this map, isn't it apparent that
25 it's more than four miles away from Area B?

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1 **A. More than four miles? No. I don't think**
2 **that's apparent.**
3 Q. Would you say about four miles?
4 **A. It could be, uh-huh.**
5 Q. Okay. And Area C is between Area B and
6 Area F; is that correct?
7 **A. That's correct.**
8 Q. In response to my question about the
9 interface between Area F and Area B, you recounted
10 the regulation that governs material damage under
11 the Montana Surface Mining Act, didn't you?
12 **A. Correct.**
13 Q. And how would that apply vis-a-vis Areas B
14 and F?
15 **A. Because Area B is -- Area B and Area F are**
16 **within the cumulative hydrologic impact, or**
17 **cumulative impact area that has been determined for**
18 **the mine and they both affect some of the same**
19 **watersheds, which are outside the permit boundary.**
20 Q. And you're talking now about surface
21 waters; is that right?
22 **A. Surface and groundwaters.**
23 Q. And you're looking at the CHIA again. Can
24 you say for the record what document you're looking
25 at, that is to say what table or map that you're

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1 looking at from the CHIA?
2 **A. It's page 13-7 and it is Figure 5-1.**
3 Q. Is there a map in the CHIA that you would
4 take issue with?
5 **A. No. I'd have no reason to take issue with**
6 **them.**
7 Q. Was this concern about the interaction
8 between Area F and Area B addressed in MEIC's
9 comments?
10 **A. Yes, it was.**
11 Q. Can you show me where it was?
12 **A. It was a reference to our scoping**
13 **comments.**
14 Q. Can you describe that for the record?
15 **A. I'd have to see the scoping comments to**
16 **get them perfectly accurate. But it was a reference**
17 **to the fact that they needed to consider other areas**
18 **of the mine that were -- "where anticipated mining**
19 **could occur, which includes at a minimum the entire**
20 **projected lives through bond release of all**
21 **operations with pending applications and all**
22 **operations required to meet diligent development**
23 **requirements for leased federal coal for which there**
24 **is actual mine development information available."**
25 Q. Ms. Hedges, what did you just read from?

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1 **A. I just read from Montana Rules**
2 **17.24.301(32.)**
3 Q. And I appreciate the text of the
4 regulation. Can you show me anywhere in your
5 comments where that issue was raised on August 3rd,
6 2015?
7 **A. It was a -- I believe it's in Footnote 1,**
8 **a letter from MEIC and Sierra Club to Nate Arave,**
9 **BLM, on October 10th, 2014.**
10 Q. Do you have that document with you right
11 now?
12 **A. I do not.**
13 Q. And as you sit here today, how do you know
14 that that issue was raised in the letter from
15 MEIC/Sierra Club of October 10, 2014?
16 **A. Well, because I reviewed it at the time.**
17 Q. When did you review it?
18 **A. A long time ago. And then I read about it**
19 **again in preparation for this deposition.**
20 Q. And, Ms. Hedges, that's the only basis for
21 your testimony that this issue was raised in MEIC's
22 comments?
23 **A. I'd have to look back in our comments and**
24 **check.**
25 Q. Well, by all means. Go ahead and review

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1 those comments.
2 **A. Okay.**
3 Q. Should we go ahead and take a break here
4 so you've got a chance to review this more
5 carefully?
6 **MR. SULLIVAN:** Sure.
7 (Break taken.)
8 Q. (By Mr. Martin) Ms. Hedges, we broke for
9 a few minutes and I think you had an opportunity to
10 review Exhibit 2.
11 **A. Uh-huh.**
12 Q. And are there other places in Exhibit 2
13 where this issue was raised, specifically the issue
14 regarding the interaction between Area F and Area B?
15 **A. Exhibit 2 raised this issue in the**
16 **footnote that we attached as an Exhibit A to our**
17 **comments. But ultimately the company and DEQ,**
18 **primarily the company, have the burden and the**
19 **administrative record is supposed to demonstrate**
20 **that there is compliance with the standards in the**
21 **law, and that was the expectation that you would**
22 **comply with the standards in the law.**
23 **The definition of anticipated uses is a**
24 **regulation by which you were supposed to comply. So**
25 **we certainly expected compliance and we have raised**

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1 **this in our responses to your comments in one of**
2 **these documents that you have provided me. Our**
3 **response to interrogatories, it was an issue we**
4 **raised.**
5 Q. But focusing directly on Exhibit 2, if I
6 understood your testimony, the only way this issue
7 was raised was by the footnote, i.e, Footnote 1; is
8 that correct?
9 **A. The only way it was raised it was raised.**
10 **It was raised whether you think that one time was**
11 **sufficient or we needed to repeat ourselves multiple**
12 **times. The bottom line is we raised this in our**
13 **comments.**
14 Q. And --
15 **A. And it is a requirement in law.**
16 Q. Ms. Hedges, the only place where this was
17 raised in Exhibit 2 is the footnote; is that
18 correct?
19 **MR. SULLIVAN:** I'm going to object on the
20 basis of the form of the question. It is
21 argumentative and it has also been asked and
22 answered and, finally, the document speaks for
23 itself.
24 **MR. MARTIN:** Read back the question.
25 (Previous question read.)

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1 **A. And attached as Exhibit A in our comments.**
2 Q. (By Mr. Martin) Okay. That's a fair
3 point. So the footnote and the attachment that
4 included the document referenced in the footnote; is
5 that right?
6 **A. From my knowledge and my review of this**
7 **letter at this time, that appears to be the case.**
8 Q. So prior to the issuance of the CHIA, to
9 the best of your knowledge was that issue raised to
10 DEQ other than what you've just described?
11 **A. That is the avenue by which we raise**
12 **issues to DEQ is to provide comments, which we did,**
13 **and it was included in our comments.**
14 Q. All right. For the record, I'm going to
15 move to strike that answer as not responsive.
16 **MR. MARTIN:** Would you read back the
17 question?
18 (Previous question read.)
19 **MR. SULLIVAN:** And I'll object to that
20 question as asked and answered.
21 Q. (By Mr. Martin) You may answer the
22 question.
23 **A. It was raised in our comments, as you**
24 **stated.**
25 Q. And no other place, to the best of your

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1 knowledge?
2 **A. To the best of my knowledge.**
3 Q. To the best of your knowledge, yes?
4 **A. Yes.**
5 Q. Thank you.
6 For purposes of the record, I'd like to
7 clarify. I misspoke when I described our last
8 exhibit and I indicated that all of the areas were
9 areas of permitted mining. Am I right that Area F
10 is a proposed area of mining as opposed to one
11 that's been permitted?
12 **A. It is an area where mining is anticipated.**
13 Q. But no permit has been issued?
14 **A. The permit has been applied for and is**
15 **pending. DEQ is reviewing that now.**
16 Q. And it's not been issued?
17 **A. No.**
18 **MR. MARTIN:** Off the record.
19 (Discussion off the record.)
20 (Deposition Exhibit 6 marked for
21 identification.)
22 Q. (By Mr. Martin) Ms. Hedges, we've laid
23 out a map that's been marked for identification as
24 Exhibit 6. You'll note in the bottom left-hand
25 corner it has the designation Figure 8-5,

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1 Potentiometric Surface of the Rosebud Coal and
2 Spoil. And I'll certify for the record that that is
3 a document that was taken from the CHIA and I
4 believe it's at page 13-21. And let's talk about
5 where it came from.
6 You have the CHIA in front of you, do you
7 not, Ms. Hedges?
8 **A. I do.**
9 Q. And is this document the same map that
10 appears within the CHIA at page 13-21?
11 **A. Yes, it appears to be.**
12 Q. I'll ask you, if you don't mind, if you
13 would look at this map and review it. You'll see
14 that there are certain lines that are drawn on the
15 map. Do you know what those are?
16 **A. This is the potentiometric surface of**
17 **Rosebud Coal and Spoil plotted for monitoring well**
18 **water levels at the Rosebud and Big Sky Mines in**
19 **2012.**
20 Q. And you know, don't you, what
21 potentiometric contours are?
22 **A. More or less. I am not a scientist. I am**
23 **not an expert.**
24 Q. But you're familiar with those sorts of
25 contours, aren't you?

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1 **A. I have some familiarity.**
2 Q. And do they give you an indication as to
3 the direction of groundwater flow?
4 **A. I believe that that's the purpose.**
5 Q. And you'll see designations of Areas A, B,
6 C on this map. Do you see that?
7 **A. Yes.**
8 Q. And you also see, do you not, a
9 designation for Big Sky Mine?
10 **A. Yes.**
11 Q. Do you have any reason to believe that
12 these potentiometric contours are not drawn
13 accurately?
14 **MR. SULLIVAN:** And before you answer, I'm
15 going to object both on the basis of foundation
16 in terms of the witness as not being advanced
17 as an expert and, second, I'm not sure as to
18 where this fits into the 26 issues that you've
19 specified an organizational representative to
20 appear this morning.
21 Q. (By Mr. Martin) Okay, you can answer the
22 question.
23 **A. Can you repeat it?**
24 **MR. MARTIN:** Go ahead.
25 (Previous question read.)

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1 **A. I am not an expert so I have no way to**
2 **know one way or the other.**
3 Q. (By Mr. Martin) So is it fair to say that
4 on that issue MEIC/Sierra Club has no position?
5 **A. No, it is not fair to say.**
6 **MR. SULLIVAN:** And I would say that that
7 also calls for a legal conclusion, object on
8 that basis.
9 Q. (By Mr. Martin) So the accuracy of
10 potentiometric contours is not something that you're
11 able to testify about at this point in time; is that
12 right?
13 **A. I am not. I am not a hydrologist.**
14 Q. And the organizations are not prepared at
15 this point in time to contest the accuracy of those
16 potentiometric contours; is that correct?
17 **MR. SULLIVAN:** And I would object as being
18 beyond the basis of the 30(b)(6) deposition.
19 Q. (By Mr. Martin) You can answer the
20 question.
21 **A. Can you repeat it?**
22 **MR. MARTIN:** Go ahead.
23 (Previous question read.)
24 **A. To the best of my knowledge, no.**
25 Q. (By Mr. Martin) Would you agree with me

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that potentiometric contours tend to provide evidence of the direction of groundwater flow?
MR. SULLIVAN: And, John, do you mind if I have a standing objection on the same grounds if you're going to pursue this potentiometric map? I've stated objections as being on foundation --
MR. MARTIN: That's fine.
MR. SULLIVAN: -- and also as beyond the scope of the 30(b)(6) --
MR. MARTIN: That's fine.
MR. SULLIVAN: -- deposition notice.
A. Can you repeat the question?
(Previous question read.)
A. I believe that's what they indicate.
Q. (By Mr. Martin) And I'll invite your attention to Area B. Do you see that designation?
A. I do.
Q. And can you discern from the potentiometric contours the direction of groundwater flow?
A. No. I am just not an expert in this arena and if I tried to guess, I would probably be in error and I don't want to be in error. I would probably want to seek expert advice.

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Q. Okay. And let's talk about that for a minute. Are you aware of any scientific evidence that groundwater would flow from Area B to the west toward Area F?
A. I believe there are certain areas in which the drainages do flow into the same drainage.
Q. And, again, I'll invite your attention to Exhibit 6. Can you point to one of those drainages?
A. The Area B, if you look at all of Area B and you go beyond this -- I would like to stop and say that was the purpose of our complaint is we do not believe that you have adequately shown what Area F is going to do in relation to the impacts from Area B. They are both potentially going to impact the same watersheds and it is your burden to show what that impact will be. And we do not believe that that has been done in the record.
Q. And you would agree with me that this document is from the record; is that right?
A. That is correct.
Q. And with potentiometric contours, it does give you an indication of the direction of groundwater, doesn't it?
A. That's -- Yes, I believe so.
Q. Is there any evidence, any credible

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scientific evidence that would suggest to you that groundwater from Area B would flow in the direction of Area F?
A. I believe that is your job to demonstrate.
Q. And I appreciate the legal burden. But do you know of any evidence that demonstrates to the contrary?
A. I'd have to look at the record. It's possible that it is in the CHIA.
Q. But you don't know?
MR. SULLIVAN: Objection, asked and answered.
MR. MARTIN: She didn't answer the question.
Q. (By Mr. Martin) You don't know, do you?
A. The CHIA map indicates that there is a hydrologic connection at some point, whether it's ground or surface water, between these areas and that was not analyzed in the CHIA.
Q. Ms. Hedges, can you identify any map, any place in the CHIA that even suggests that connection?
MR. SULLIVAN: Objection, asked and answered.
A. Any map? I don't know of any, but I

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haven't looked closely at the maps because I am not a hydrologist.
Q. (By Mr. Martin) Ms. Hedges, if I understood your testimony a moment ago, you referenced what you described a, "a CHIA map," that demonstrated a hydrologic connection between Area F and Area B. Where is that map?
A. That map -- well, the map -- Let me find the map. Where is that map? These are my stickies. The map is map 5.1, but it does not include Area F. But Area F is within, as stated by DEQ in its response to our interrogatories, their response is -- if you'd like me to find them, I can -- there is parts of Area F that are within the Area B hydrologic impact areas.
Q. Let me see if I understand your testimony. I think your answer to my question is that Area B and a part of Area F is within the cumulative impact area; is that right?
A. I believe that's stated correctly.
Q. Okay. And so the basis for your testimony that there is a hydrologic connection between Area F and Area B is simply that a part of Area F is within the cumulative impact area; is that correct?
MR. SULLIVAN: And I think that it

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1 misstates the deponent's testimony.
2 **MR. MARTIN:** And that's why I'm asking the
3 question.
4 Q. (By Mr. Martin) Answer the question.
5 **A. DEQ in its response to our -- in**
6 **Respondent's Response to Petitioners' First Set of**
7 **Requests for Admissions and Requests for Production,**
8 **there are a number of places in which DEQ identifies**
9 **that portions of Area F are within the Area B area.**
10 Q. And do you have any evidence anywhere in
11 the CHIA or elsewhere that there is a hydrologic
12 connection between Area B and Area F?
13 **A. That is the purpose of a CHIA is to make**
14 **that determination and that is not in the record.**
15 **MR. MARTIN:** Read back the question.
16 (Previous question read.)
17 **MR. SULLIVAN:** And I object on the basis
18 of asked and answered and argumentative.
19 **A. There is a failure to meet your burden**
20 **showing that there is no connection between the two**
21 **of them.**
22 Q. (By Mr. Martin) But am I right in saying
23 that at this point in time you're not aware of any
24 scientific information that there is a hydrologic
25 connection between Area F and Area B?

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1 **A. We have not seen any presented.**
2 Q. I don't want to be argumentative. And I
3 think what your testimony is is that there is not,
4 to the best of your knowledge, any scientific
5 evidence that demonstrates a hydrologic connection
6 between Area B and Area F; is that right?
7 **A. On the record? No, I don't believe there**
8 **is any.**
9 Q. Is there any elsewhere off the record?
10 **A. Goodness sakes, I don't know.**
11 Q. Okay. Have you worked at all with
12 potentiometric contours?
13 **A. No. I'm not a water, groundwater expert**
14 **by any means.**
15 Q. So is it fair to say you don't know the
16 direction of the groundwater from the AM4 area
17 within Area B; is that right?
18 **A. It's listed in the CHIA, and I'd be happy**
19 **to find it for you in the CHIA and read it back to**
20 **you. That information, some of it is provided in**
21 **the CHIA.**
22 Q. And Exhibit 6 is taken from the CHIA as
23 well; is that right?
24 **A. Which one was Exhibit 6?**
25 Q. It's this one.

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1 **A. Oh, yes. Yes, it was.**
2 Q. And you don't know at this point in time
3 whether or not Exhibit 6 gives you an indication as
4 to the direction of groundwater flow from Area B and
5 specifically from AM4, do you?
6 **A. Could you repeat that question?**
7 Q. Why don't I rephrase it. I'm sorry.
8 Do you know the direction of groundwater
9 flow from the area that's designated as Area B
10 and/or AM4?
11 **A. I know that the CHIA, the written CHIA**
12 **describes a lot of the groundwater flow as going**
13 **towards East Fork Armells Creek, and there is a lot**
14 **of places in the CHIA that describe groundwater flow**
15 **in this area. Because I am not a hydrologist, I**
16 **rely more on words than I do on potentiometric maps.**
17 **I go to experts for that type of information.**
18 Q. And have you been to an expert or seen
19 words that would indicate to you that groundwater
20 was flowing from Area B to Area F?
21 **MR. SULLIVAN:** And I'm going to object to
22 the form of the question on several bases.
23 First, it's a compound question; second, it's
24 confusing; and, third, we have not disclosed
25 that we will be using any testifying experts in

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1 this proceeding and to the extent the petition
2 organizations have consulted with experts with
3 their attorneys, that's attorney work product
4 and otherwise privileged.
5 Q. (By Mr. Martin) Well, let's clarify the
6 question. Are you aware of any expert opinion that
7 would suggest to you that groundwater flows from
8 Area B to Area F?
9 **A. I am not aware.**
10 Q. And is there an indication someplace in
11 the text that groundwater would flow from Area B to
12 Area F?
13 **A. I believe you are mistaken in how you are**
14 **representing what you think is our position. Our**
15 **position is that it is the area that is impacted, so**
16 **it would be not that groundwater might flow**
17 **underneath Area F from Area B, it is that the**
18 **development of both areas has the potential to**
19 **impact the hydrology in the area.**
20 Q. Do they interact with one another?
21 **A. They may.**
22 Q. And what would make you say that?
23 **A. Because they both lie within the**
24 **cumulative impact area.**
25 Q. And that's the only basis for that

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1 testimony; is that right?
2 **A. It seems like a good reason.**
3 Q. But that's the only basis for your
4 testimony; is that right?
5 **A. That is what the law requires.**
6 Q. Is it correct that that's the only basis
7 for your testimony that these two areas at least in
8 part are within the cumulative impact area?
9 **A. Yes.**
10 Q. Let's go to the next exhibit.
11 **MR. SULLIVAN:** John, do you know where in
12 the CHIA it is, just to get our bearings?
13 **MR. MARTIN:** We will here in a moment.
14 (Deposition Exhibit 7 marked for
15 identification.)
16 Q. (By Mr. Martin) Ms. Hedges, we have a
17 document that's been marked for identification as
18 Exhibit 7. And if recollection serves, this is
19 actually a document, or I should say a map that you
20 referred to in your testimony a few minutes ago. It
21 is, according to the legend in the bottom left-hand
22 corner, Figure 5-1, locations and extents of surface
23 water and groundwater cumulative impact boundaries
24 and it is taken from page 13-7 of the CHIA. Could
25 you take a look at that document, please?

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1 **A. Yes.**
2 Q. Is this, in fact, a document that's taken
3 from the CHIA?
4 **A. Yes, it is.**
5 Q. And this was the document that you
6 referred to a few moments ago; is that right?
7 **A. Yes.**
8 Q. And just for clarity of the record, can
9 you explain what the red line depicts in this
10 exhibit?
11 **A. It's the groundwater cumulative impact**
12 **area.**
13 Q. And a few minutes ago you testified that
14 you believed that there were both surface and
15 groundwater connections between Area B and Area F.
16 Did I get that right?
17 **A. No, you did not.**
18 **MR. SULLIVAN:** And I'm going to object on
19 the basis of misstating the testimony.
20 **MR. MARTIN:** Fair enough.
21 Q. (By Mr. Martin) Is it fair to say that
22 you are uncertain as to whether or not there was a
23 connection between Area F and Area B?
24 **A. That is incorrect. I am certain that DEQ**
25 **has drawn a line on a map indicating the cumulative**

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1 **hydrologic impact area that includes, based upon**
2 **DEQ's response to our interrogatories, it includes**
3 **portions of Area F. Both of those mine developments**
4 **could have an impact on the hydrology in the area**
5 **both surface and ground.**
6 Q. And I understand that that's the basis of
7 your testimony. Is it your position that DEQ did
8 not examine that issue?
9 **A. That is our position.**
10 Q. And as you sit here today, you don't know
11 whether Exhibit 6, the document that we looked at
12 just prior to this, really addresses that issue?
13 **A. It didn't appear to, because Area F wasn't**
14 **even marked on that map.**
15 Q. But there were potentiometric contours
16 that were drawn around Area F; is that right?
17 **A. DEQ declined in the record to analyze**
18 **Area F because it said that it was not anticipated.**
19 **We know that's part of the record.**
20 **MR. MARTIN:** Can you read back the
21 question?
22 (Previous question read.)
23 **A. Perhaps. I'd have to go back and look.**
24 Q. (By Mr. Martin) Let's do that.
25 **A. But DEQ did not identify Area F on the map**

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1 **or in the record because it declined to do so**
2 **intentionally.**
3 Q. All right. You see, don't you,
4 potentiometric contours that were drawn around
5 Area B, do you not?
6 **A. B, yes.**
7 Q. And do you see contours that were drawn
8 around the western portion of that exhibit?
9 **A. Yes.**
10 Q. And do they give you any indication as to
11 the direction of groundwater flow?
12 **MR. SULLIVAN:** I'm going to object on the
13 basis of foundation, and I'm also going to
14 object on the basis of a failure to identify
15 this as an issue in the notice, the 30(b)(6)
16 that was issued.
17 **MR. MARTIN:** Just for the record, we did
18 identify in Item 4 that the issue as between
19 Area B and Area F would be the subject of this
20 deposition.
21 **A. Uh-huh.**
22 Q. (By Mr. Martin) Now, going back to the
23 question, is there an indication as to the direction
24 of groundwater flow from the potentiometric
25 contours?

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1 **MR. SULLIVAN:** Counsel, where --
2 Q. (By Mr. Martin) -- and if the answer is
3 you don't know, I understand that.
4 **A. The answer --**
5 **MR. SULLIVAN:** For foundation, on this
6 where is Area F? I don't see an Area F on this
7 map.
8 Q. (By Mr. Martin) Do you know where Area F
9 would be on this map?
10 **A. Approximately but not definitely, which is**
11 **one of the reasons that we would want it included in**
12 **the analysis.**
13 Q. And it would be on the western side of
14 this map; would it not?
15 **A. Yes.**
16 Q. And the groundwater, can you tell what the
17 direction of the groundwater is?
18 **A. Only from certain areas. I don't know**
19 **where Area F is. It has not been identified.**
20 Q. And to the extent that this document and
21 this analysis provides for the direction of
22 groundwater, wouldn't that be an evaluation as to
23 whether or not Area F impacted BLM?
24 **MR. SULLIVAN:** And I'm going to again
25 object on the basis of foundation and also

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1 calling for a legal conclusion.
2 **A. No.**
3 Q. (By Mr. Martin) And why not?
4 **A. Because you haven't identified where**
5 **Area F is so I don't even -- I can't tell if the**
6 **potentiometric map actually includes all or just a**
7 **portion of Area F.**
8 Q. And if you know that Area F is on the
9 western side of this map and you know the direction
10 of the groundwater, isn't that an evaluation of the
11 impact between Area F and Area B?
12 **A. No.**
13 Q. And what would you demand beyond that?
14 **A. I would like to see Area F indicated on**
15 **the map and I'd like to see an analysis of Area F**
16 **and where groundwater would flow and what its impact**
17 **may be on the hydrology in the area both West Fork**
18 **Armells Creek and East Fork Armells Creek and their**
19 **tributaries.**
20 Q. And that's the level of response that you
21 would require?
22 **A. Off the top of my head, that's what I can**
23 **think of, yes.**
24 Q. And you didn't require that level of
25 response in your comments, did you?

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1 **MR. SULLIVAN:** And I'm going to object on
2 the basis of calling for a legal conclusion.
3 **A. That burden is not on us. That burden is**
4 **on you. We think the law is clear on what your**
5 **legal obligations were.**
6 Q. (By Mr. Martin) And you didn't ask for
7 that level of response in your comments, did you?
8 **A. We wanted you to include Area F in the**
9 **analysis. In our mind the analysis includes what is**
10 **required by law.**
11 Q. And you didn't, however, in your comments,
12 even mention Area F, did you?
13 **MR. SULLIVAN:** Well, that whole area has
14 been asked and answered, so I'm going to object
15 on form on that basis.
16 **A. We did raise it in our comments.**
17 Q. (By Mr. Martin) And you're talking now
18 about the footnote in the attachment; is that right?
19 **A. That's correct.**
20 Q. And that's the only place?
21 **A. That is the place.**
22 Q. And you didn't ask for a detailed analysis
23 of Area 4 in your comments, did you?
24 **MR. SULLIVAN:** I'm sorry, John. Area
25 what?

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1 Q. (By Mr. Martin) I'm sorry. I misspoke.
2 Area F in your comments.
3 **A. We believe that we -- well, yes, we did.**
4 **It was raised as an issue in our comments, which**
5 **indicates it's something that should have been**
6 **considered because it is required under law.**
7 Q. And let me just be clear on this question.
8 And I don't want to be ambiguous in any respect.
9 And for purposes of the record, you never asked for
10 a detailed analysis of Area F in your comments?
11 **A. Why would we ask for an analysis of Area F**
12 **if it weren't going to be detailed?**
13 **MR. MARTIN:** Read back the question.
14 (Previous question read.)
15 **A. We raised it in our comments and that**
16 **indicates we thought it should be included in the**
17 **analysis. We included it as an attachment to our**
18 **comments, which indicates it was something that we**
19 **thought was important.**
20 Q. (By Mr. Martin) You never asked -- is it
21 correct to say that you never asked for a detailed
22 analysis of Area F in your comments?
23 **MR. SULLIVAN:** And I'm going to object as
24 asked and answered.
25 **A. We raised it in our comments.**

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1 Q. (By Mr. Martin) But with respect to
2 asking for a detailed analysis, you never asked for
3 that; is that correct?
4 **A. In your opinion you don't think that was a**
5 **request for detailed analysis. In our opinion when**
6 **we raise something in comments, we expect a response**
7 **that provides the appropriate level of detail;**
8 **otherwise, we wouldn't include it in our comments.**
9 Q. Okay. Let's move on.
10 Why don't we take a break right now and
11 give us about ten minutes. Is that okay?
12 **A. Sure.**
13 **(Break taken.)**
14 **(Deposition Exhibit 8 marked for**
15 **identification.)**
16 Q. (By Mr. Martin) Ms. Hedges, I'm handing
17 you a document that's marked for identification as
18 Deposition Exhibit Number 8. Can you identify that
19 document for the record?
20 **A. That is Western Environmental Law Center's**
21 **comments to the Bureau of Land Management on**
22 **October 10th, 2014 regarding scoping**
23 **comments-Rosebud Mine lease modification EA.**
24 Q. And I'll direct your attention to the
25 comments. I think it was Exhibit 2, Footnote 1.

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1 **A. Uh-huh.**
2 Q. And this is the document that's referred
3 to in Footnote 1; is that correct?
4 **A. Yes.**
5 Q. Is it fair to say that the only place
6 where Area F is referenced is Footnote 24?
7 **A. You know, it's been a while since I have**
8 **reviewed this document and I'd have to review it**
9 **again to be able to say that that's true.**
10 Q. Well, let's take a minute so you can
11 review it.
12 **A. Okay.**
13 **(Off the record briefly.)**
14 **(Mr. Johnson is no longer**
15 **present.)**
16 Q. (By Mr. Martin) Ms. Hedges, have you had
17 a chance to review what's been marked as Exhibit 8?
18 **A. Yes, I have.**
19 Q. And am I right in saying there is only one
20 place where the words Area F appear?
21 **A. You are incorrect.**
22 Q. Okay. Can you show me where they are?
23 **A. Yes. And I didn't read this word for word**
24 **so there may be more than what I identified. But as**
25 **you indicated, there is a footnote that talks about**

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1 **it. Then -- where did I see it? I thought I marked**
2 **it. There are a few places. So Footnote 33. Oh,**
3 **sorry. Page 17, second paragraph there is a whole**
4 **discussion about Area F and Area B and cumulative**
5 **impacts.**
6 **MR. SULLIVAN:** I'm sorry. Could you -- I
7 was still on Footnote 33.
8 **THE WITNESS:** Sorry. Page 17, section 5,
9 connected and cumulative actions, Area F is
10 discussed.
11 **A. Also in that Footnote 53, which proceeds**
12 **onto page 18, it talks about Area F and documents**
13 **that DEQ had regarding this issue.**
14 **And is that all? There may be more but**
15 **without a computer to actually do a -- oh, there is.**
16 **Sorry. Page 24, Section 7, cumulative impacts, the**
17 **second paragraph discusses both Area B and Area F.**
18 Q. (By Mr. Martin) Page 24; is that right?
19 **A. Yes, page 24, Section 7, cumulative**
20 **effects. Then again, Footnote 104, a letter from**
21 **WELC to Chris Yde cites the Area F application.**
22 Q. Before the reference on page 24, I think
23 you indicated that there was a reference that was
24 earlier. What was that? And I'm sorry I missed it.
25 **A. I believe there is one on page 24, page 17**

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1 **was it? Page 18 in the footnote and page 17 in the**
2 **text of the document. Those are the ones that I**
3 **found quickly after a cursory review of a long**
4 **letter that we sent a while ago. But, yes, in fact,**
5 **Area F was raised multiple times in that letter.**
6 Q. Okay. Let's go through those individual
7 designations. First at page 8, Footnote 24, can you
8 read into the record the sentence that's footnoted
9 for Footnote 24?
10 **A. Footnote 24 says, "WECo, Probable**
11 **Hydrologic Consequences Analysis Area F at 314-22,**
12 **attached as Exhibit 7."**
13 Q. And what is that a footnote to, what
14 sentence?
15 **A. It is a sentence and -- "BLM's NEPA**
16 **assessment must also assess impacts to groundwater.**
17 **WECo acknowledges the dissolved solids, TDS,**
18 **increase up to 200 percent in groundwater that**
19 **resaturates pits backfilled with spoils."**
20 Q. And that is the sentence to which
21 Footnote 24 applies; is that correct?
22 **A. Yes.**
23 Q. And does it discuss the interaction
24 between Area B and Area F?
25 **A. I haven't looked at it in context. It**

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1 **does not in that sentence.**
2 Q. Okay. And then directing your attention
3 to pages 9 and 10. You mentioned Footnote 33, which
4 again is a reference to an -- and I'll quote the
5 document, "WECo, Probable Hydrologic Analysis Area F
6 at 314-22." And the sentence to which that footnote
7 is attached reads as follows. "WECo suggests that
8 this may take as long as 200 years." And then the
9 footnote.
10 And let me be more precise for context
11 purposes. The text of Exhibit 8 reads as follows,
12 "Strip mining will also dramatically impact quantity
13 of available groundwater, the most important water
14 source in the area. BLM must assess the amount of
15 time required for groundwater to recover
16 post-mining. WECo suggests that this may take as
17 long as 200 years." And then the footnote that you
18 referenced. Do you see that text?
19 **A. Yes.**
20 Q. And does that discuss the interaction
21 between Area B and Area F?
22 **A. No, because these were comments that were**
23 **regarding things that they should be considering.**
24 **So these were not intended to reach any conclusions.**
25 **They were scoping comments, not comments in which we**

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1 **were telling them the answer.**
2 Q. Fair enough. And the next place is at
3 page 17, I believe. And can you help me here?
4 Where is it that we have a reference to Area F?
5 **A. Second paragraph, second sentence.**
6 Q. And why don't you read that text into the
7 record, please?
8 **A. "Here, there are a number of connected and**
9 **cumulative actions that must be included in this**
10 **NEPA analysis. First, BLM must include the two**
11 **other proposed mine expansions: Area B and Area F."**
12 Q. And that is one of the references that
13 you're referring to in the footnote to Exhibit 2?
14 **A. This entire letter is but, yes, that --**
15 **yes.**
16 Q. And that's the extent to which the
17 interaction between B and F is considered at least
18 for purposes of this reference?
19 **A. It's putting them on notice that they**
20 **should identify the cumulative impacts of their**
21 **actions and what is occurring on the ground.**
22 Q. And this is a document that's written to
23 BLM; is that correct?
24 **A. That is correct.**
25 Q. And directing your attention to page 24.

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1 **A. You forgot the Footnote 53.**
2 Q. Well, let's go back to Footnote 53, and do
3 you want to read that text into the record?
4 **A. Sure. "MDEQ" -- Do you want me to read**
5 **the sentence and the text or just the footnote?**
6 Q. Go ahead and read the sentence first.
7 **A. "The coal would not be burned but for**
8 **combustion at the Colstrip Power Plant and the power**
9 **plant would not be able to operate without this**
10 **coal, as it is limited by permit to burning coal**
11 **from the Rosebud seam. Footnote 53." Footnote 53**
12 **says, "MDEQ Operating Permit Number OP0513-06 (The**
13 **applicant will utilize only coal from the Rosebud**
14 **seam." Then there is a semicolon. "See also letter**
15 **from WELC to Greg Hallsten, MDEQ (November 5th,**
16 **2012) (attached as Exhibit 13) (these comments**
17 **related to the connected and cumulative Area F**
18 **expansion are incorporated wholly into this comment**
19 **letter by reference)."**
20 Q. And, Ms. Hedges, does that speak to the
21 interaction between Area B and Area F?
22 **A. That speaks to the cumulative impacts of**
23 **what is occurring on the ground.**
24 Q. But is there an indication as to the
25 interaction between Area B and Area F?

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1 **A. There is a potential interaction when it**
2 **comes to cumulative impacts and it speaks to the**
3 **cumulative impacts. They are both part of the**
4 **cumulative impacts that are present.**
5 Q. And, Ms. Hedges, then is it your testimony
6 that the phrase cumulative impacts should have
7 placed DEQ on notice that you required, to use your
8 words, "a detailed analysis" of the interaction
9 between Area B and Area F?
10 **A. I believe the law put DEQ and WECo on**
11 **notice that they needed to analyze the impacts. We**
12 **highlighted some of the cumulative impacts that we**
13 **believe could occur and need to be analyzed in these**
14 **processes.**
15 Q. But this particular text wouldn't give
16 them notice; is that right?
17 **A. No, I would disagree. It talks about**
18 **connected and cumulative impacts.**
19 Q. And that's sufficient in your view to
20 place DEQ on notice that you wanted a detailed
21 analysis of the interaction between Area B and
22 Area F?
23 **A. Because the law already requires that,**
24 **yes.**
25 Q. And I'll direct your attention to page 24.

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1 I think this was the next reference that you
2 correctly pointed out that references Area F. Can
3 you read into the record the last sentence on that
4 page?
5 **A. The last sentence on that page or the**
6 **second-to-last sentence on that page?**
7 Q. I'm sorry. Begin with the second-to-last
8 sentence. You're right.
9 **A. Okay. "Further, future mining in Area B**
10 **and Area F, as well as other potential mine**
11 **expansions, will lead to additional cumulative**
12 **impacts. BLM must consider these past, present, and**
13 **reasonably foreseeable future acts in its cumulative**
14 **impacts analysis."**
15 Q. And I gather it's your testimony then that
16 this should have placed DEQ on notice that you would
17 require a detailed analysis of the interaction
18 between Area B and Area F; is that correct?
19 **A. Because they already were required to**
20 **comply with the law, yes.**
21 Q. Let's go to page 28, Footnote 104.
22 **A. Uh-huh.**
23 Q. This is another portion where you
24 suggested that this was language that would put DEQ
25 on notice of MEIC and Sierra Club's position. Can

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1 you first review Footnote 104?
2 **A. Yes.**
3 Q. And what passage does that footnote apply
4 to?
5 **A. It applies to the following sentence.**
6 **"WECo" -- this is long. "WECo itself acknowledges**
7 **that the strip mining process will lead to**
8 **significantly elevated levels of TDS after the pit**
9 **is backfilled, that the TDS levels will exceed (i.e.**
10 **violate) the standards for the current water**
11 **classification and consequently will require at**
12 **least a temporary reclassification of the**
13 **groundwater to a lower use class and that the levels**
14 **will not decrease until the pit has fully recharged**
15 **and emptied at least one time, a process that will**
16 **at a minimum take hundreds of years and likely much**
17 **longer."**
18 Q. And that's the passage to which Footnote
19 104 applies; is that right?
20 **A. Yes.**
21 Q. And can you read Footnote 104 into the
22 record?
23 **A. "Letter from WELC to Chris Yde, MDEQ,**
24 **supra at 4-7 (citing Area F application)."**
25 Q. And, Ms. Hedges, is there anything in that

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1 footnote or that text that would suggest to you that
2 DEQ should have been on notice that you required a
3 detailed analysis of the interaction between Areas B
4 and F?
5 **A. Yes.**
6 Q. And how so?
7 **A. Because this has to do with pollutant**
8 **levels that move through groundwater that are going**
9 **to impact the hydrology in the area and the**
10 **classification of water, which is a legal term and a**
11 **legal determination that DEQ is required to comply**
12 **with.**
13 Q. And so it's your testimony that that
14 passage would have placed DEQ on alert that you
15 required a detailed analysis of the interaction
16 between Area B and Area F?
17 **A. That a cumulative analysis was required,**
18 **yes.**
19 Q. So is the answer to my question yes?
20 **A. The way you phrased it, it's difficult to**
21 **say.**
22 Q. And tell me what's difficult about the way
23 I phrased it.
24 **THE WITNESS:** Could you read it back to
25 me?

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1 (Previous question read.)
2 **A. The interaction between them is not --**
3 **it's more their cumulative impact. I guess you**
4 **could say that's an interaction between the two, but**
5 **it is the thing that they're impacting. It's not**
6 **that F is impacting B directly or B is impacting F**
7 **directly, it is a cumulative impact in the hydrology**
8 **in the area that both locations have that is**
9 **required under the law to be considered.**
10 Q. (By Mr. Martin) Let's move on. And just
11 one final question here. Other than what we've
12 talked about in our examination regarding Exhibit 8,
13 are you aware of anything that MEIC or the Sierra
14 Club wrote in advance of the CHIA that concerned the
15 interaction between Area F and Area B?
16 **A. As a formal comment? A comment in just**
17 **this record? A comment outside this record? I'm**
18 **unclear on how broad a scope you're discussing.**
19 Q. Well, let's put it in the context of any
20 writing.
21 **A. Any writing?**
22 Q. Any writing prior to the CHIA.
23 **A. Could you rephrase the question then**
24 **and --**
25 **MR. MARTIN:** Why don't you read back the

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1 question.
2 (Previous question read.
3 **A. That is a very broad question and it is**
4 **quite possible that we did in newsletters. I mean,**
5 **I'm unclear on whether you mean formal writing to**
6 **DEQ or general writing, for example, alerts to our**
7 **members or news articles or anything that BLM was**
8 **considering. That is a difficult question to answer**
9 **because it's really outside the scope of what you've**
10 **asked here.**
11 **If you want what's in the record, then I**
12 **can just point to the comments that we have**
13 **submitted. But outside the record, that's too**
14 **broad.**
15 Q. (By Mr. Martin) Let's talk then about any
16 writing that you addressed to DEQ.
17 **MR. SULLIVAN:** And I'm going to object
18 also on the basis that it does exceed the scope
19 of the matters identified in the 30(b)(6)
20 notice, that it is inherently too broad and,
21 therefore, it's an inherently ambiguous and
22 confusing question. With those objections to
23 form, the deponent may answer.
24 **A. I believe that based on what I know today,**
25 **we filed comments within the comment periods that**

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1 **are allowed by law and I don't believe that we put**
2 **anything else in writing. The only written**
3 **interactions I had with DEQ were something like a**
4 **request for an extension.**
5 Q. (By Mr. Martin) Thank you. Let's go back
6 to the document that was marked for identification
7 as Exhibit 7. And then just for clarity of the
8 record --
9 **A. Is this 7? I can't see. I still can't**
10 **see.**
11 Q. Just for clarity of the record, can you
12 identify what this document is?
13 **A. This is Figure 5.1 in the CHIA that's**
14 **entitled Locations and Extents of Surface Water and**
15 **Groundwater Cumulative Impact Boundaries.**
16 Q. Okay. And in your prior testimony, if I
17 understood you correctly, you did not dispute the
18 boundary that was drawn for purposes of the
19 cumulative impact area; is that right?
20 **A. To the best of my knowledge, that's right.**
21 Q. And can you see the red line that's on
22 Exhibit 7? Do you see that?
23 **A. The pink line? Is this the one you're**
24 **referring to?**
25 Q. Pink.

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1 **A. Okay. Yes.**
2 Q. And according to the legend here, that is
3 the area for groundwater CIA; is that right?
4 **A. Yes.**
5 Q. And CIA, do you understand that to mean
6 cumulative impact area?
7 **A. Uh-huh.**
8 Q. The answer is yes?
9 **A. Yes. Sorry.**
10 Q. And the dotted line that is in I guess a
11 purple color, do you see that dotted line?
12 **A. I do.**
13 Q. And that is the cumulative impact area for
14 surface water. Do you see that?
15 **A. Yes, I do.**
16 Q. Okay. And do you know roughly where
17 Area F would be on this document?
18 **A. To the best of my knowledge, Area F is out**
19 **here.**
20 Q. And if you don't mind, if you could draw
21 on that document roughly where you think it is.
22 **A. I just want to go on the record saying I**
23 **haven't seen a map of Area F. We are looking**
24 **forward to the release of the draft environmental**
25 **impact statement soon, which will give us more**

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1 **detail. So this is just my guesstimate.**
2 **MR. MARTIN:** Let's go off the record.
3 (Discussion off the record.)
4 Q. (By Mr. Martin) Let the record reflect
5 that while we were off the record the witness
6 examined Exhibit 5 and you've circled an area on
7 Exhibit 7 roughly where you believe Area F would be;
8 is that right?
9 **A. Correct.**
10 Q. And in your prior testimony you indicated
11 that there would be interaction between Area B and
12 Area F with respect to surface waters. Did I get
13 that right?
14 **A. There would be interaction, yes, between**
15 **the hydrology of -- the drainage area basically of**
16 **ground and surface water for Area B with the**
17 **drainage area of groundwater and surface water for**
18 **Area F.**
19 Q. And Area B, can you point to the streams
20 that interact with Area B?
21 **A. Area B flows into East Fork Armells Creek**
22 **and I believe part of it, maybe, I have to look back**
23 **into the CHIA, flows into Lee Coulee, which affects**
24 **Rosebud Creek. But Area B then flows all the way to**
25 **East Fork Armells, where it combines with West Fork**

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1 **Armells Creek to form Armells Creek lower down.**
2 Q. Okay. Well, first let's talk about Lee
3 Coulee. Are you familiar with any indication that
4 groundwater would flow from AM4 into Lee Coulee?
5 **A. We are concerned with the cumulative**
6 **impacts from Area B. Amendment 4 is just one small**
7 **amendment to the Area B permit.**
8 Q. And are you familiar with whether or not
9 groundwater would flow from AM4 to Lee Coulee; do
10 you know?
11 **A. I don't know the answer to that. It's**
12 **Area B that is the subject of our concern. This is**
13 **an amendment to that permit. It is not a permit**
14 **that stands on its own.**
15 Q. So the answer is you don't know as you sit
16 here today about the flow of groundwater from AM4
17 toward Lee Coulee, do you?
18 **A. I do not know.**
19 Q. Okay. Let's go back to the two surface
20 waters that you mentioned in addition to Lee Coulee.
21 One was West Fork Armells Creek. I gather from your
22 testimony that you believe that Area F would have an
23 impact on West Fork Armells Creek; is that right?
24 **A. That's my prediction. I also believe**
25 **there is a potential for it to impact East Fork**

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1 **Armells Creek, but that's -- we will see when they**
2 **come out with their draft environmental impact**
3 **statement what they think.**
4 Q. Okay. Well, let's stop there. As you sit
5 here today, are you aware of any evidence that
6 groundwater from Area F would flow to East Fork
7 Armells Creek?
8 **A. It has not been provided in the record.**
9 Q. And even outside the record, are you aware
10 of any evidence that would suggest that groundwater
11 or surface water from Area F would flow to East Fork
12 Armells Creek?
13 **A. Not being a hydrologist, I don't know the**
14 **answer to that. I don't know if it would or not.**
15 **That's the purpose of developing a record.**
16 Q. So the answer is you just don't know?
17 **A. I just don't know.**
18 Q. Okay. And let's also go back to Area B.
19 Are you aware of any scientific evidence that would
20 suggest that groundwater or for that matter surface
21 water from Area B would make its way to West Fork
22 Armells Creek?
23 **A. I'm not aware of any evidence.**
24 Q. And you mentioned that East Fork Armells
25 Creek and West Fork Armells Creek eventually meet to

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1 the north of the Rosebud Mine; is that right?
2 **A. Yes.**
3 Q. And do you know how far north?
4 **A. No. I'd venture a guess of probably ten**
5 **miles or so, but I could be right or wrong by quite**
6 **a few miles.**
7 Q. And you talked about or I asked for your
8 testimony concerning the surface water CIA; is that
9 right?
10 **A. Yes.**
11 Q. And do you see where the CIA is limited
12 with respect to East Fork Armells Creek and West
13 Fork Armells Creek?
14 **A. I do.**
15 Q. And that's well below the ten-mile
16 distance --
17 **A. That's well below. Can you repeat that?**
18 Q. I'm sorry. Let me rephrase that. That
19 boundary is well south of the point where East Fork
20 Armells Creek meets West Fork Armells Creek; is that
21 correct?
22 **A. Yes, but the water is the same and the**
23 **legal requirements for that water are the same when**
24 **it comes to impairment.**
25 Q. Am I right that you didn't dispute the

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1 boundary of the cumulative impact area; is that
2 right?
3 **A. I did not.**
4 Q. And the place where East Fork meets West
5 Fork of Armells Creek is well outside the cumulative
6 impact area; is that correct?
7 **A. Yes. According to this map, yes.**
8 Q. And that is in the record; is that
9 correct?
10 **A. Yes, that is in the record.**
11 Q. Ms. Hedges, just to refresh your
12 recollection, I'll refer again to Exhibit 5 which,
13 of course, is the map of the Rosebud Mine that
14 designates the different areas of existing or
15 proposed permits. Do you see where Area C is
16 located?
17 **A. Yes.**
18 Q. And can you describe where it's located
19 for the record?
20 **A. Just across East Fork Armells from Area B.**
21 Q. And is it fair to say that it's between
22 Area B and Area F?
23 **A. Yes.**
24 Q. And I think you indicated that you have a
25 copy of the CHIA in front of you; is that right?

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1 **A. Yes.**
2 Q. I'll direct your attention to page 9-36 of
3 the CHIA. And if you don't mind, would you look for
4 the passage that reads, "As discussed below,
5 proposed mining in AM4 will remove additional
6 overburden in the east part of Area B but will not
7 affect overburden water levels or water quality in
8 other permit areas of Rosebud Mine"? And do you see
9 that passage in the second-to-last full paragraph on
10 page 9-36?
11 **A. I see the sentence. I'm sorry. I wasn't**
12 **listening to all of what you said because I was**
13 **trying to find the "as discussed" in the text.**
14 Q. Fair enough.
15 **A. I see a sentence that begins with "as**
16 **discussed" below in the last paragraph of the**
17 **section on overburden.**
18 Q. And just focusing for a moment on just
19 that sentence, do you have any reason to disagree
20 with that assertion?
21 **MR. SULLIVAN:** Well, I'm going to object
22 on the basis that the organizations have filed
23 their notice of appeal and that document speaks
24 for itself in terms of the organization's
25 position.

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1 Q. (By Mr. Martin) And with respect to that
2 statement in that sentence, do you have any reason
3 to disagree with that?
4 **MR. SULLIVAN:** And I'm going to object
5 further, Counsel. I'm not sure as to how that
6 relates to the identified matters. In other
7 words, we have 26 matters that the deponent has
8 been presented on. Is there -- where does this
9 fairly fit?
10 **MR. MARTIN:** And I'll bring it back into
11 the context of Item 4 in a moment.
12 **MR. SULLIVAN:** Okay.
13 Q. (By Mr. Martin) Any reason to disagree
14 with that statement at this point?
15 **A. That is a -- that's a conclusionary**
16 **statement and I believe that there are some -- I**
17 **believe there is question as to whether that**
18 **statement is accurate.**
19 Q. As you sit here today, do you know what
20 those questions might be?
21 **MR. SULLIVAN:** And I'm going to object on
22 the basis, and this will be to the form of the
23 question, as inherently ambiguous and
24 inherently unreasonably broad.
25 **MR. MARTIN:** And let me respond to that

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1 for purposes of the record. I think I've used
2 the phrase that Ms. Hedges used.
3 Q. (By Mr. Martin) You indicated that there
4 were questions, I believe, with respect to that
5 statement. What are those questions?
6 **A. Certainly AM4 will remove additional**
7 **overburden in the east part of Area B but will not**
8 **affect overburden water levels or water quality in**
9 **other permit areas of the Rosebud Mine.**
10 **I assume that might be true but because we**
11 **haven't seen all, an analysis of all of the**
12 **anticipated mining activity, that is a statement**
13 **that I'm not sure is accurate.**
14 Q. So at this point in time you don't know
15 whether that statement is accurate; is that correct?
16 **A. That's correct.**
17 Q. Okay. And then just -- All right, let's
18 go to page 9-37 of the CHIA. This one is easy.
19 **A. Okay.**
20 Q. Inviting your attention to the last
21 sentence on page 9-37. Can you read that sentence
22 into the record, please?
23 **A. "Due to its location upgradient, proposed**
24 **mining in Area B will have no impact on water**
25 **quality or quantity in Area C overburden."**

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1 Q. And as you sit here today, do you have
2 reason to disagree with that assertion?
3 **A. As I sit here today, I don't have enough**
4 **information to know, but no.**
5 Q. And inviting your attention to page 9-42
6 of the CHIA, I'll ask you to read into the record
7 the first sentence on the first full paragraph
8 beginning with due to the direction into the record,
9 please, from page 9-42 of the CHIA.
10 **A. "Due to the direction of groundwater flow,**
11 **Area B mining, including that proposed in AM4, is**
12 **not expected to increase, draw down, or otherwise**
13 **impact the Rosebud coal groundwater in or near**
14 **Area C."**
15 Q. And as you sit here today, do you have
16 reason to disagree with the assertion in that
17 sentence?
18 **A. To the best of my knowledge, no.**
19 Q. And then moving -- Let's go off the record
20 here for a moment.
21 (Off the record briefly.)
22 **MR. SULLIVAN:** Counsel, before you go
23 forward, I lodged an objection earlier to
24 conforming your questions to the matters that
25 you identified in your 30(b)(6) deposition

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1 notice, and I've also objected on the basis
2 that Ms. Hedges has neither the foundation or
3 qualifications to testify on groundwater flow
4 in general and direction of groundwater flows
5 in particular.
6 I understood that Counsel was going to
7 respond with the courtesy of correlating the
8 questions to the specific matters that were
9 identified in the 30(b)(6) notice. I haven't
10 seen that responsive statement yet.
11 **MR. MARTIN:** And you will.
12 **MR. SULLIVAN:** Well, I'm going to object
13 then. If in the future I raise such an
14 objection, I'll need to know what particular
15 matter we've presented this witness in response
16 to the 26 items, the 26 matters that have been
17 identified. And so when there is no
18 correlation between a line of questions and the
19 matters identified, it's beyond the scope of
20 the 30(b)(6) deposition notice subject to your
21 clarifying where in particular it's to be found
22 in the 26 matters identified.
23 **MR. MARTIN:** And, Roger, I will respond to
24 that here in a moment. Let's finish with this
25 line and then we'll talk about that.

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1 Q. (By Mr. Martin) Let's go to 9-47. And
2 directing your attention to the first full
3 paragraph, beginning with, "Due to the direction of
4 groundwater flow." Can you read that into the
5 record as well?
6 **MR. SULLIVAN:** John, where are we?
7 **MR. MARTIN:** 9-47.
8 **A. "Due to the direction of groundwater flow,**
9 **Area B mining, including mining proposed in AM4, is**
10 **not expected to impact Area C interburden. No**
11 **material damage is indicated to the interburden**
12 **groundwater near Area C and none is expected to**
13 **occur."**
14 **MR. SULLIVAN:** And I'm going to object on
15 the same bases as to foundation of this witness
16 and as to beyond the apparent scope of the Rule
17 30(b)(6) Notice.
18 Q. (By Mr. Martin) And, Ms. Hedges, as you
19 sit here today, do you have any reason to disagree
20 with the assertions in those two sentences?
21 **A. It's difficult to say because it says that**
22 **no material damage is indicated to the interburden**
23 **groundwater near Area C. I am not sure if that --**
24 **I'm not sure what near Area C actually means. Near**
25 **Area C could be East Fork Armells. Near Area C**

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1 **could be part of Area B. It could be part of**
2 **Area F. I am unclear on the scope of that**
3 **statement.**
4 Q. So as you sit here today, you don't know
5 whether you agree or disagree with that statement;
6 is that right?
7 **A. I can't tell, yes.**
8 **MR. MARTIN:** For purpose of the record,
9 let me explain the connection.
10 **MR. SULLIVAN:** Yes.
11 **MR. MARTIN:** I don't think that you and I
12 have a disagreement as to whether or not we
13 properly are asking this witness about the
14 subject matter of the interaction between
15 Area F and Area B. Are we agreed on that
16 point?
17 **MR. SULLIVAN:** Yes. And specifically you
18 identified matter number 2 in regards to my
19 earlier inquiry, which I appreciated.
20 **MR. MARTIN:** Okay. So let me read into
21 the record, and I'll ask the witness this
22 question as well, and I don't think it's
23 necessary for me to mark this document but we
24 can if you'd like. And this is the response to
25 interrogatories that were promulgated by

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1 MEIC/Sierra Club and this is a response that
2 was submitted on behalf of Montana DEQ. I'll
3 read to you from page 8 of that document.
4 **MR. SULLIVAN:** Excuse me, John. This is
5 DEQ's responses to our interrogatories?
6 **MR. MARTIN:** That's correct.
7 **MR. SULLIVAN:** Let me just get my copy
8 here. What's the date of those, John? Is that
9 the February 27, 2016 DEQ?
10 **MR. MARTIN:** 26th of February is what I
11 have on my draft.
12 **MR. SULLIVAN:** Okay. And which number are
13 we on?
14 **MR. MARTIN:** And it's page 8.
15 **MR. SULLIVAN:** Okay.
16 Q. (By Mr. Martin) I've asked you about
17 passages in the CHIA, Ms. Hedges. DEQ goes on to
18 assert in response to your interrogatory the
19 following, "Although impacts from the permitted
20 operation in Area C may interact with potential
21 impacts from Area F, impacts from the proposed
22 operation in Area B, AM4, do not interact with any
23 potential impacts from Area F, thus, no analysis is
24 required."
25 Do you see that quote?

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1 **A. I do.**
2 Q. And do you agree with the assertion that
3 DEQ made in its response to your interrogatories?
4 **A. No.**
5 Q. And why not?
6 **A. Because we haven't seen the analysis that**
7 **is required under law to be provided to the public**
8 **during the CHIA process and the permit review**
9 **process.**
10 Q. And, in essence, you're suggesting that
11 further analysis was required?
12 **A. I don't know what analysis they did to**
13 **reach this conclusion because it's not like**
14 **there's -- I look at Area C and I look at Area F on**
15 **the map that you have provided and it's not like any**
16 **water from Area F would have to go through Area C to**
17 **get to East Fork Armells or other water bodies, so I**
18 **can't tell.**
19 Q. And as you sit here today, you don't know
20 even the direction of groundwater flow, do you?
21 **A. No, because that hasn't been provided for**
22 **Area F.**
23 Q. And you recall, don't you, the exhibit
24 with the potentiometric contours on it, don't you?
25 **A. I do.**

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1 Q. And those contours provide the direction
2 of groundwater flow, do they not?
3 **A. For the areas on the map. But Area F is**
4 **not listed on that map so I can't tell if they**
5 **include Area F or not.**
6 Q. And simply because you don't have a label
7 Area F, you can't discern the direction of
8 groundwater flow; is that right? Is that your
9 testimony?
10 **A. That would be one of the things that we**
11 **would look at.**
12 Q. But it is true, isn't it, that they looked
13 at groundwater flow?
14 **A. They looked at groundwater flow in some**
15 **areas, yes.**
16 Q. And so when DEQ makes the statement, "Due
17 to the direction of groundwater flow, Area B mining,
18 including that proposed in AM4, is not expected to
19 increase, draw down, or otherwise impact the Rosebud
20 coal ground area in or near Area C," you wouldn't
21 disagree with that now?
22 **A. That is the analysis that is required in**
23 **the permitting process. It was not provided until**
24 **this statement was made, and this is a conclusion**
25 **that has been reached without any analysis to back**

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1 **it up. It's a conclusion, but without seeing what**
2 **went into that conclusion, it is impossible for the**
3 **public to know whether the law has been complied**
4 **with.**
5 Q. And you would disagree with the assertion
6 that impacts from the proposed operation Area B AM4
7 do not interact with any potential impacts from
8 Area F; is that correct?
9 **A. I don't have enough information in the**
10 **record to indicate whether that's true or not.**
11 Q. And you haven't had a chance to examine
12 the analysis that was done with respect to
13 groundwater, I take it?
14 **A. What -- Can you rephrase that question?**
15 **What analysis? Whose analysis?**
16 **MR. SULLIVAN:** And I would object on the
17 basis of the form that it's ambiguous as to
18 what's being referred to and inherently
19 confusing.
20 Q. (By Mr. Martin) So as you sit here today,
21 you don't recall having ever evaluated the analysis
22 that was done by DEQ concerning groundwater flow at
23 the Rosebud Mine?
24 **A. I did review in the text of the CHIA the**
25 **groundwater flow discussions in the mine but they**

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1 **failed to evaluate Area F or Area G.**
2 Q. And you simply disagree with DEQ's
3 judgment that impacts from the proposed operation in
4 Area B, AM4, do not interact with any potential
5 impacts from Area F and that, thus, no analysis was
6 required?
7 **A. There is no information on the record to**
8 **indicate whether that is true or not.**
9 Q. And obviously DEQ is pointing to this
10 information; is that right?
11 **A. DEQ is defending its position to not**
12 **include Area F in its analysis. That's what it is**
13 **saying to me right there.**
14 Q. Well, confining ourselves to my question,
15 DEQ is referring to the analysis in the text that
16 leads them to the conclusion that there is no
17 interaction; is that right?
18 **A. They have a duty to provide that in the**
19 **analysis under the law that went out for public**
20 **review.**
21 **MR. MARTIN:** Can you read back the
22 question?
23 (Previous question read.)
24 **A. No. DEQ doesn't provide any analysis.**
25 **That's a statement.**

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1 Q. (By Mr. Martin) Let's move on.
2 Let's take a break here for just a few
3 minutes, if you don't mind.
4 (Break taken.)
5 Q. (By Mr. Martin) Just a couple of
6 follow-up questions. You indicated in your
7 testimony that you were concerned with the entirety
8 of Area B, not just AM4; is that right?
9 **A. Yes.**
10 Q. And we agree, don't we, that the
11 evaluation that DEQ is required to conduct is with
12 respect to AM4 and obviously it needs to consider
13 cumulative impacts; is that right?
14 **A. DEQ's obligation under the law is to look**
15 **at the cumulative impacts and the burden is on the**
16 **company to show that they will not have -- I can**
17 **read you the text from the ARM.**
18 Q. I'm not interested in --
19 **A. Yeah. But the company has a burden to**
20 **prove that they're not going to harm the waters in**
21 **the area. I have to read this.**
22 Q. Well, and let's --
23 **A. But it's cumulative.**
24 Q. Am I right that the evaluation that we're
25 concerned with now is AM4 as opposed to past mining

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1 that may have occurred at Area B with the caveat
2 that DEQ is obligated to consider cumulative
3 impacts?
4 **MR. SULLIVAN:** Well, I'm going to object
5 because it calls for a legal conclusion.
6 **MR. MARTIN:** Let me respond to that for
7 purposes of the record. I'm reacting to an
8 assertion from the witness and I think it's
9 fair for me to walk through a door that she's
10 opened. So for that reason, I'll continue on
11 these lines when she's made an assertion of
12 that nature. I think it's necessary that I
13 react to it.
14 **MR. SULLIVAN:** Well, without you and I
15 becoming argumentative, we can each state our
16 positions and objections. I believe that the
17 question is objectionable and I've stated the
18 basis.
19 And I would also add that the further
20 objection is, as I've stated before, that it
21 exceeds the matters that have been identified
22 in the 30(b)(6) Notice of Deposition.
23 **MR. MARTIN:** Okay. Can you read back the
24 question?
25 (Previous question read.)

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1 **A. That is a caveat that we perhaps disagree**
2 **on the scope of what that means. Your caveat seems**
3 **to be the exception that swallows the rule.**
4 **The law says, "The Department may not**
5 **approve an application submitted unless the**
6 **application affirmatively demonstrates and the**
7 **Department's written findings confirm the hydrologic**
8 **consequences and cumulative hydrologic impacts will**
9 **not result in material damage to the hydrologic**
10 **balance outside the permit area." And that includes**
11 **existing and previous mining impacts from on the**
12 **hydrology of the area.**
13 Q. (By Mr. Martin) I'm not trying to make
14 this more difficult than it sounds. I'm just trying
15 to clarify for purposes of the record that the
16 evaluation that DEQ was required to do and for which
17 we submitted a PHC was for AM4 as opposed to past
18 mining that might have occurred in Area B; is that
19 right?
20 **A. I believe that an amendment to an existing**
21 **permit needs to consider the impacts from that**
22 **permitted area, including the amendment.**
23 Q. Okay. When you said it must include the
24 impacts from that permitted area, am I to understand
25 that in terms of the cumulative impact analysis, one

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1 must consider the area that was previously
2 permitted; is that right?
3 **A. Yes. The impacts from the area that is**
4 **previously mined.**
5 Q. But you're not suggesting that either
6 Western Energy or DEQ was obligated to go back and
7 reevaluate a permit that was granted and acted upon
8 many years ago?
9 **A. They are required to analyze the impacts**
10 **of the activity from that permitted activity that**
11 **could have a cumulative impact on the hydrology in**
12 **the area when combined with the impacts from the**
13 **amendment to that same permit.**
14 Q. But it's not as if you're suggesting that
15 DEQ is required to redo its permit analysis for the
16 balance of Area B; is that right?
17 **A. DEQ doesn't have to act as if Area B has**
18 **never been mined, but DEQ does have to analyze the**
19 **impacts for mining in Area B.**
20 Q. And that's in terms of the cumulative
21 impact analysis; is that right?
22 **A. Yes.**
23 Q. I look at Exhibit 5 and I see Area C is
24 between Area B and Area F and from the passages that
25 we just discussed a few minutes ago, DEQ also sees

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1 that as something that deserves some consideration.
2 As a layperson would you disagree with the notion
3 that for there to be an impact from Area B on
4 Area F, there would also have to be an impact on
5 Area C?
6 **A. No. I would disagree with that.**
7 Q. And then just as the testifying witness on
8 behalf of MEIC and the Sierra Club, do you know of
9 any science that would support that disagreement?
10 **A. Common sense would support that**
11 **disagreement.**
12 Q. And tell me what that common sense is.
13 **A. Because they only share -- Area F and**
14 **Area C only share a very small boundary. The**
15 **remainder of Area F, according to the map that he**
16 **has provided, has a much larger boundary that is not**
17 **bounded by Area C, and so there is the possibility**
18 **that water could flow off Area F either via ground**
19 **or surface water and not have any interaction with**
20 **Area C.**
21 Q. Okay. And why don't we clarify this
22 testimony. Where are you suggesting that the
23 groundwater would come from Area B to make its way
24 to Area F?
25 **A. To clarify the testimony, I never said**

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1 **groundwater from Area B would move to Area F.**
2 Q. Well, let me ask the question then. Would
3 groundwater make its way from Area B to Area F?
4 **MR. SULLIVAN:** And I'm going to object on
5 the same grounds as I've objected before, one,
6 foundation for this witness in terms of her
7 training and expertise, and also as beyond the
8 scope of the matters identified in the 30(b)(6)
9 deposition notice.
10 **A. Water flows downhill and around obstacles**
11 **and then water combines with water from other areas,**
12 **and that could happen in this instance where water**
13 **from Area B and water from Area F are both**
14 **contaminated and enter the same hydrologic area.**
15 Q. (By Mr. Martin) Can you draw on Exhibit 5
16 where groundwater might potentially come from Area B
17 and flow to Area F?
18 **MR. SULLIVAN:** And I'm going to object on
19 the same grounds and I'm also going to instruct
20 the witness not to respond because it is beyond
21 the scope of the 30(b)(6) deposition notice and
22 it's beyond the scope of her training and
23 qualifications, as the witness has stated.
24 **MR. MARTIN:** Let me remind you that this
25 is the witness that you designated in response

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1 to the notice. The notice specifically
2 addresses the interaction between Area B and
3 Area F. I don't have another witness to ask.
4 You've not designated an expert. This is the
5 only witness testifying on behalf of your
6 client. I have to ask the question of her.
7 **MR. SULLIVAN:** Well, first of all, if we
8 can get back to the protocol of making sure
9 that when you're examining the designated
10 witness that we're sure as to what matter
11 you're examining her on, that would, I think,
12 be a useful and required procedure, number one,
13 and, number two, I haven't seen specifically
14 where this item is included in your notice of
15 deposition and, number three, she has no
16 foundation and qualification for her to be able
17 to be doing hydrogeological analysis.
18 **MR. MARTIN:** And, you know, obviously
19 she's the only witness that you've designated;
20 is that right?
21 **MR. SULLIVAN:** She is the witness and if
22 you -- and certainly, John, if you want to
23 ground this in the matters that you've
24 identified as the representative of the
25 organizations appearing here this morning, you

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1 know, we can certainly take a look at that.
2 **MR. MARTIN:** Okay. Let's look at Item
3 Number 1 and I'll read it into the record.
4 "The hydrologic interaction, including surface
5 and groundwater impacts between Area B and
6 Areas F or G." Now isn't that the subject
7 matter that we're discussing right now?
8 **MR. SULLIVAN:** That is.
9 Q. (By Mr. Martin) Okay. Then let me ask
10 the question. As the designated witness on that
11 subject, can you point me in the direction -- can
12 you write on this exhibit where it is that
13 groundwater would make its way from Area B to Area F
14 even hypothetically?
15 **A. First, the burden is on you to show that**
16 **this is not the case. Second, there is a map that**
17 **draws a circle, as you have shown, around the**
18 **cumulative impact area that shows that these two**
19 **areas are affecting the same water bodies**
20 **potentially, and you have failed to provide any**
21 **analysis in the record regarding whether or not**
22 **Area B and Area F water interacts with each other.**
23 **Whether it's flowing towards the other or**
24 **not is irrelevant. It is how they interact when**
25 **they do combine and where they occurs. Your**

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1 **definition of anticipated uses, it does not include**
2 **Area F and on page 7, number 4 --**
3 Q. You know, I'm going to interrupt you and I
4 have to ask that you answer the question. Are you
5 unable to even describe or draw on this exhibit a
6 hypothetical groundwater connection between Area F
7 and Area B?
8 **MR. SULLIVAN:** I object to the
9 interruption of the answer. The answer was
10 being responsive and it was describing as best
11 this witness with her qualifications could her
12 response to your question. And I would like to
13 have at least the courtesy of her being able to
14 make her response and you can follow up with
15 whatever questions you care to, but the
16 deponent should be allowed to fully answer a
17 question that's proffered.
18 **MR. MARTIN:** And in fairness, it was not
19 responsive to the question. It was a statement
20 of the general position that your client has
21 made.
22 Now, look, I don't like to interrupt
23 witnesses and I'm not going to make that a
24 practice, but this is unusual. I asked a
25 question. I'm not getting an answer.

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1 **MR. SULLIVAN:** I object to the objection
2 to the answer. You know, you and I, John, can
3 sort this out, but I think the best way to do
4 it is to allow the witness to finish. It then
5 allows you to follow up with your questions --
6 **MR. MARTIN:** All right.
7 **MR. SULLIVAN:** -- and then we can move
8 forward with an appropriate record that we can
9 do with what we feel is appropriate.
10 Q. (By Mr. Martin) And, Ms. Hedges, if you
11 want to finish your answer, by all means, go ahead.
12 **A. Thank you. I would like to.**
13 **If you look on DEQ's response to our**
14 **interrogatories, our requests for response, if you**
15 **look on page 4, Request for Admission Number 3,**
16 **Number 4, and Number 6, Interrogatory Number 6, all**
17 **of those say that, "DEQ admits that the proposed**
18 **Area F permit areas are within the cumulative**
19 **hydrologic impact area, but DEQ's CHIA for**
20 **Amendment 4 did not address any of the potential**
21 **hydrologic impacts expected from the proposed**
22 **Area F. A portion of the currently proposed Area F**
23 **operation is within the cumulative hydrologic impact**
24 **area identified in DEQ's CHIA."**
25 **All I can go off of, because I am not a**

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1 **hydrologist, is what is in the record and DEQ's**
2 **record admits that it did not analyze this. So I**
3 **could give you an opinion and it would be**
4 **meaningless because I am not a hydrologist, I**
5 **haven't looked at the raw data, and it hasn't been**
6 **provided in the record.**
7 Q. And, Ms. Hedges, then is it fair to say
8 based on what you just described that as you sit
9 here today, you don't know of a way that groundwater
10 would interact between Areas B and F?
11 **A. It is not included in the record, so no.**
12 **MR. MARTIN:** Read back the question.
13 **A. So, no, it has not been included in the**
14 **record.**
15 Q. (By Mr. Martin) So the answer is you
16 don't know of any potential hydrologic impact
17 between Areas F and B?
18 **A. I don't know whether there is a potential**
19 **or not a potential because it hasn't been included**
20 **in the record.**
21 Q. Okay. Let's move on.
22 In various documents Sierra Club/MEIC has
23 indicated a concern for the impact of AM4 on Rosebud
24 Creek and its tributaries; is that right?
25 **A. Yes.**

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1 Q. What is that concern?
2 **A. The concern is that you failed to consider**
3 **the impacts from Area B, which you are amending the**
4 **permit on Rosebud Creek. It is that it's not**
5 **Amendment 4 per se, it is the cumulative impacts**
6 **from Area B that are impacting Lee Coulee and other**
7 **tributaries that go into the Rosebud.**
8 Q. And is it fair to say, without going
9 through what we've been through with respect to
10 Area F, you don't, as you sit here today, know the
11 direction of groundwater flow from AM4?
12 **A. I'm sure it's in, you know, there is some**
13 **evidence of that in the record and I could find it**
14 **for you if you're interested.**
15 Q. And in terms of the maps that we've showed
16 you with the potentiometric contours, that doesn't
17 tell you even the direction of the groundwater; is
18 that right?
19 **A. It gives some information regarding the**
20 **direction of the groundwater, but the hydrology in**
21 **that area is complex, as is the geology. And so the**
22 **potentiometric map is helpful but it is not a**
23 **complete analysis.**
24 Q. But you don't know as you sit here today
25 whether or not, for example, groundwater could make

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its way from Area B to Rosebud Creek?
A. From Area B to Rosebud Creek, I believe that that's in the record, yes.
Q. And your answer is that yes, it could or no, it could not?
A. Yes, I believe in the record it indicates that it can make its way to Rosebud Creek through Lee Coulee. I could find it for you and verify it.
Q. Why don't you go ahead and do that.
A. Okay. I assume that you're really asking me Question 5?
Q. Excuse me?
MR. SULLIVAN: Are you identifying this as -- Is this a matter within the ambit of matter number 5?
MR. MARTIN: Yes, and within others as well.
A. For starters, in our response to Petitioners' Response to Respondent-Intervenor's First Set of Interrogatories and Requests for Production of Documents, on page 5 it's in response to Question 3B. I believe we have answered this question -- I'm sorry, 3A, we've answered the question. "Describe all facts and summarize any expert opinions that support this allegation that

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DEQ's CHIA failed entirely to assess whether the cumulative hydrologic impacts would cause violations of application nitrogen standards designed to protect agricultural users of Rosebud Creek and tributaries to Rosebud Creek." And in our answer we objected. We said that, "CHIA states that water quality standards are material damage criteria. That CHIA further states that Rosebud Creek and tributaries to Rosebud Creek are within the cumulative hydrologic impact area. The CHIA notes that electrical conductivity standards set forth in Arm 17.30.670(4) apply to tributaries of Rosebud Creek. Electrical conductivity standards set forth in ARM 17.30.670 apply to Rosebud Creek. WECo has stated that it would not be likely that WECo could comply with these EC standards. The CHIA fails entirely to assess whether the cumulative hydrologic impacts will cause violations of these EC standards."
That's one place.
Q. (By Mr. Martin) And I'm waiting for a place in the CHIA where there is an indication that there would be an impact on Rosebud Creek. I had thought that was your testimony.
A. Okay. I'll find it. This one place is in

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Chapter 9, starting on page 95, where it discusses changes to surface water hydrology by drainage. On page 9-14 there is a discussion of Rosebud Creek and it does discuss -- I can read that to you, but that section does discuss Rosebud Creek and the impacts to Rosebud Creek that are a result of mining in some of these drainages. That's one place. I can continue.
Q. Well, Ms. Hedges, and pardon the interruption, but you would agree with me, wouldn't you, that DEQ did assess the impact on Rosebud Creek and Rosebud Creek's drainage?
A. DEQ did an assessment that we do not believe complied with the law, but they did do some analysis.
(Deposition Exhibit 9 marked for identification.)
Q. (By Mr. Martin) Okay. And, Ms. Hedges, I'll refer you to some of the text that you just referenced in your testimony. I'm handing you what's been marked as Deposition Exhibit Number 9 and I'll represent for the record that this is an excerpt from the CHIA, pages 9-14 and 9-15. Do you see that?
A. Yes.

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Q. And as you pointed out, in fact, DEQ did assess the impacts on Rosebud Creek and that drainage. You disagree with that assessment though; is that right?
A. I disagree that that assessment was complete.
Q. Okay. All right. Let's go to the second sentence under Rosebud Creek on page 9-14. It reads as follows, "Because upstream mining disturbance is more extensive in Lee Coulee, Miller Coulee, Cow Creek, and to a lesser extent Pony Creek, mining impacts are most likely in these drainages but have been predicted to be insignificant below their junctions with the much larger Rosebud Creek drainage."
Do you see that?
A. I do see that.
Q. And then there is a reference to Table 9-2.
A. Uh-huh.
Q. As you sit here today, do you have a reason to disagree with that assessment?
A. Yes. Yes.
Q. And what would that be?
A. Because the upstream mining disturbance is

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1 **more extensive at Lee Coulee in particular, mining**
2 **impacts are most likely in these drainages but have**
3 **been predicted to be insignificant below their**
4 **junctions with the much larger Rosebud Creek**
5 **drainage, there is evidence in here that is stated,**
6 **and I would be happy to find it for you if you give**
7 **me a moment, that there are two monitors on Rosebud**
8 **creek, one above Lee Coulee and one below Lee Coulee**
9 **and the impacts show that the water levels are**
10 **better above where Lee Coulee enters than below**
11 **where Lee Coulee enters out of Rosebud.**
12 Q. Let's talk about those two stations. And,
13 again, directing your attention to Exhibit 9 and
14 just turning to page 9-15, the top of that document.
15 It reads as follows, "Two stations on Rosebud Creek
16 upstream." I'll skip over the parenthetical. "And
17 downstream of Lee Coulee were used to determine if
18 hydrologic impacts to Lee Coulee could be detected
19 in Rosebud Creek. TDS is shown in Figure 9-5 as a
20 general indicator of changes in water quality."
21 Are those the two stations that you're
22 talking about?
23 **A. I believe so, yes.**
24 Q. And I'd ask you just to read to yourself
25 the remainder of the text in that paragraph.

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1 **A. Okay.**
2 Q. There is an indication that flow
3 measurements were taken between 1989 and 1993 and
4 these are obviously evaluated in the CHIA. You see
5 that, don't you?
6 **A. Yes.**
7 Q. And there was a TDS load that was
8 calculated for the two monitoring stations. You see
9 that as well, don't you?
10 **A. Uh-huh.**
11 Q. And it indicates that a salt load reveals
12 that Rosebud Creek gains salt between those two
13 monitoring points. Do you see that?
14 **A. Yes.**
15 Q. And then the ending sentence to that
16 paragraph reads as follows, "The concentration of
17 TDS measured at the downstream station has not
18 increased over time and, similarly, no trend can be
19 seen in the difference in concentration between the
20 upstream and downstream stations." Do you have a
21 basis to disagree with the conclusion in that
22 sentence?
23 **A. Let me continue reading this because I**
24 **have marked other places.**
25 Q. Okay.

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1 **A. It is difficult to look at that statement**
2 **in isolation because the remainder, the conclusion**
3 **that is drawn in this section is that, "The proposed**
4 **action is designed to prevent material damage to**
5 **Rosebud Creek because as of 2013, there has been no**
6 **change in water quality in Rosebud Creek that can be**
7 **directly attributable to mining in Lee Coulee."**
8 **I disagree that that is the proper**
9 **standard directly attributable and, therefore, I am**
10 **unclear whether the conclusions reached in that**
11 **statement that you read are subject to the same**
12 **error.**
13 Q. And in essence, if I understand your
14 testimony, your objection is based upon what you've
15 talked about as the burden of proof; is that right?
16 **A. That is correct.**
17 Q. But in terms of the factual issues
18 divorced from that legal issue, do you have a
19 factual basis to disagree with the sentence that
20 reads, "The concentration of TDS measured at the
21 downstream station has not increased over time and,
22 similarly, no trend can be seen in the difference in
23 concentration between the upstream and downstream
24 stations"?
25 **A. If you'd look at that in conjunction with**

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1 **the rest of that paragraph, which is the upstream is**
2 **different that the downstream, so Lee Coulee is**
3 **obviously adding something, then I don't disagree**
4 **that that's the conclusion that DEQ reached.**
5 Q. So explain to me and I apologize, maybe I
6 misunderstood your testimony. Is there a factual
7 basis or a scientific basis for you to disagree with
8 that statement?
9 **A. Today, no, because I am not a hydrologist**
10 **and once we see a legally compliant analysis that is**
11 **based upon your obligation to show that, to**
12 **affirmatively demonstrate that this isn't going to**
13 **be the case, I can't say one way or the other, and I**
14 **would eventually want to hire a hydrologist to make**
15 **this determination. But right now we are arguing**
16 **legal issues about whether the analysis that was**
17 **conducted was legally proper.**
18 Q. And, you know, I'm really not interested
19 in wading into that legal issue and, if I were, your
20 counsel would object. But just in terms of the
21 factual issues and the scientific issues, as we sit
22 here today you don't have a factual or scientific
23 issue with that statement; is that right?
24 **A. As a nonhydrologist, I do not.**
25 Q. And then going on to the paragraph that

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1 you touched on, let's read the last paragraph of
2 that section into the record. It reads as follows
3 "The proposed action is designed to prevent material
4 damage to Rosebud Creek because as of 2013, there
5 has not been a change in water quality in Rosebud
6 Creek that can be directly attributable to mining in
7 Lee Coulee, Miller Coulee, Cow Creek, Pony Creek,
8 Hay Coulee, and Spring Creek. The drainage area and
9 volume of water carried by Rosebud Creek is much
10 larger than the volume of water contributed by Lee
11 Coulee and, consequently, the water chemistry of
12 Rosebud Creek is dominated by runoff and groundwater
13 contributions upstream of Lee Coulee."
14 Setting aside again the burden of proof
15 legal issue that you and I have talked about, would
16 you disagree with any of the statements in that
17 paragraph?
18 **A. Yes. I think that that is telling me that**
19 **the solution to pollution is dilution and without**
20 **more information, I think it is difficult to say**
21 **whether the size of Rosebud Creek compared to the**
22 **effluent of Lee Coulee makes a difference in the**
23 **ultimate compliance of Rosebud Creek with the**
24 **standards. Just because one water body is bigger**
25 **than the other doesn't mean that the addition of**

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1 **pollutants from a smaller water body won't impact or**
2 **impair the larger water body.**
3 Q. And do you disagree with the notion that,
4 "The water chemistry of Rosebud Creek is dominated
5 by runoff and groundwater contributions upstream of
6 Lee Coulee"?
7 **A. I have no reason to disagree with that.**
8 **MR. MARTIN:** Why don't we break for lunch.
9 Does that make sense, Roger?
10 **MR. SULLIVAN:** That would be fine.
11 (Lunch break taken.)
12 Q. (By Mr. Martin) Ms. Hedges, I'll ask you
13 if you don't mind, to refer to Exhibit 3, DEQ's
14 "Responses to Public Comments."
15 **A. Okay.**
16 Q. And I'll invite your attention to Item 3
17 and if you look there, it describes your comment and
18 it, I believe, quotes it saying, "According to DEQ's
19 2014 Final Water Quality Integrated Report, the
20 principal stream impacted by strip mining, East Fork
21 Armells Creek, is currently not meeting water
22 quality standards. DEQ has determined that the
23 upper portion of the creek is not meeting water
24 quality standards due to 'alteration in stream-side
25 or literal vegetative covers' caused by 'surface

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1 mining.'"
2 Do you see that?
3 **A. Yes, I do.**
4 Q. And is that MEIC/Sierra Club's current
5 position?
6 **A. Yes, I believe so.**
7 Q. And DEQ responds by saying that, "The
8 Waterbody Assessment Record for East Fork Armells
9 Creek was conducted in 2006."
10 **A. Uh-huh.**
11 Q. Do you have any reason to disagree with
12 that part of the response?
13 **A. No.**
14 Q. And it goes on to say that, "No
15 substantive updates have been conducted since this
16 initial assessment."
17 Again, do you have any reason to disagree
18 with that assertion?
19 **A. I don't.**
20 Q. And later on there is the assertion that,
21 "Grazing is occurring throughout the reach with
22 little impact."
23 Do you agree with that assertion?
24 **A. I think it's possible and probable but I**
25 **don't have any evidence one way or the other.**

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1 Q. And going down to the paragraph that
2 begins at the bottom of page 8, there is in the
3 second sentence of that paragraph the following
4 text. "In 2014, Western Energy Company, under the
5 direction of DEQ, conducted an aquatic survey with
6 the objective of evaluating aquatic life support in
7 upper East Fork Armells Creek." I'll skip the
8 parenthetical. "The results of this survey show
9 that aquatic environments in upper EFAC support a
10 diverse assemblage of aquatic insects and consist of
11 taxa commonly found in eastern Montana prairie
12 streams."
13 Again, do you have a reason to disagree
14 with that sentence?
15 **A. As -- let's see. No, as far as it goes,**
16 **no.**
17 **(Mr. Johnson is present.)**
18 Q. (By Mr. Martin) And the last sentence of
19 that paragraph reads, "The recent aquatic survey
20 provides empirical evidence that aquatic life
21 support is not adversely impacted by mining
22 activity."
23 Do you have a reason to disagree with that
24 sentence?
25 **A. Yes.**

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1 Q. And can you explain for the record what
2 that reason is?
3 **A. Within the record there are a number of**
4 **places but if you'll give me a second, I would like**
5 **to refer to the questions that you asked me to**
6 **prepare for and I can find the answer that you're**
7 **seeking more efficiently.**
8 **Okay. First off, as always, we believe**
9 **that the burden is on WECo and the State to verify**
10 **and we don't believe that you've done that because**
11 **some of the evidence in the record indicates**
12 **otherwise. For example, WECo's lead consultant with**
13 **ARCADIS, Penny Hunter, had a PowerPoint conclusion**
14 **that is in the record that stated that, "Although**
15 **EFAC supports aquatic life, aquatic life criteria**
16 **are not met. Criteria are based on different**
17 **organisms not present in EFAC. Baseline conditions**
18 **are a better indicator of existing use."**
19 **So we believe the conclusion of WECo's**
20 **consultant is that they have failed to meet their**
21 **burden, among other things. Would you like me to go**
22 **on?**
23 Q. Well, let's stop there. And can you
24 explain from that PowerPoint how you draw the
25 conclusion that WECo did not meet its burden?

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1 **A. Because aquatic life criteria are not met.**
2 **You have a burden of demonstrating that you are not**
3 **harming -- Do you want me to find the law or the**
4 **rules that say this?**
5 Q. What is aquatic criteria?
6 **A. Aquatic life criteria, that's a good**
7 **question. I can look it up.**
8 Q. And where would you look that up?
9 **A. I'd probably look in either the circulars**
10 **or if you'll give me a minute, let me look. I**
11 **believe aquatic life criteria -- oh, it's like a**
12 **test -- are, I want to say -- and I'd have to keep**
13 **looking -- but off the top of my head I believe that**
14 **they're narrative standards that are based on**
15 **information provided by rule and by statute and by**
16 **other analyses and guidance of DEQ. But I can keep**
17 **looking.**
18 Q. And at this point you can't find a
19 reference to aquatic life criteria I take it?
20 **A. Not at the spur of the moment, no.**
21 Q. And you're uncertain as to what that
22 phrase really means in that context?
23 **A. Hold on. I do know the answer to this and**
24 **so you might just have to hold on a minute.**
25 **One other point to raise is that DEQ has**

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1 **argued throughout, as have you, that portions of the**
2 **water bodies are ephemeral and we would disagree**
3 **that there is evidence in the record to show that it**
4 **is ephemeral and I believe there is different**
5 **standards that apply to ephemeral versus**
6 **intermittent and perennial. That is part of our**
7 **concern.**
8 **But you have ARCADIS, who has also found**
9 **that based on 2005 operable taxonomic units found in**
10 **Appendix A of the MDEQ SOP, it was calculated for**
11 **both locations, 6.98 and 7.90 indicates fairly poor**
12 **and poor conditions. So I believe aquatic life is**
13 **a, is probably a decision that is made by DEQ based**
14 **upon a whole host of factors, including the law and**
15 **guidance.**
16 Q. Okay. And at least at this point you
17 can't find a reference to that phrase; is that
18 right?
19 **A. I'm not seeing a reference to that phrase.**
20 Q. And as you sit here today, do you know how
21 that term was used in the PowerPoint that you
22 referred to?
23 **A. I can look it up. Is it this one here?**
24 **It was used as a conclusion. It was a conclusory**
25 **statement in the document on page 12.**

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1 Q. And it doesn't give you an indication as
2 to what it means when she refers to aquatic life
3 criteria, does it?
4 **A. No. That may be in the record though.**
5 Q. Okay. And a moment ago you were reading
6 from a document and I'm going to mark for
7 identification Exhibit 10 because I believe that was
8 the document that you were reading from.
9 **A. Yes.**
10 **(Deposition Exhibit 10 marked**
11 **for identification.)**
12 Q. (By Mr. Martin) And let's talk about
13 what's in that document. And, first, can you
14 identify it for the record, please?
15 **A. Yes. This is a document that was created**
16 **on, or provided in December 2014 by Penny Hunter and**
17 **Jason Vogel with ARCADIS, it's a consulting firm, in**
18 **a memo to Western Energy Company regarding Western**
19 **Energy-Rosebud Aquatic Survey Assessment.**
20 Q. And where did you obtain your copy of that
21 document?
22 **A. From the record.**
23 Q. Okay. And I'll invite your attention to
24 page 3 under the word results.
25 **A. Uh-huh.**

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1 Q. Can you read the first sentence of that
2 document under the word results into the record,
3 please?
4 **A. "The aquatic conditions of EFAC are**
5 **indicative of low-gradient streams, with influences**
6 **from a mixture of water origins, seasonal runoff,**
7 **groundwater, and supportive of a tolerant benthic**
8 **community."**
9 Q. And do you know what a tolerant benthic
10 community is?
11 **A. I do not.**
12 Q. And then I'll direct your attention to the
13 last paragraph on that same document. Can you read
14 the first two sentences of that document into the
15 record?
16 **A. The last paragraph?**
17 Q. Yeah, beginning with "Table 3 provides."
18 **A. Oh. I'm sorry. Which page are you on?**
19 **Oh, Table 3.**
20 Q. Page 3.
21 **A. "Table 3 provides the results of the**
22 **taxonomic identification for the EFAC1 and EFAC2**
23 **benthic community samples. Community diversity and**
24 **abundance are similar between the two locations with**
25 **a total of 25 and 26 taxa identified in EFAC1 and**

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1 **EFAC2 respectively. Communities were represented by**
2 **eight orders of aquatic organisms, including aquatic**
3 **worms, snails, amphipods, mayflies, damselflies,**
4 **caddis flies, beetles, midges, and fly larvae."**
5 **Do you want me to continue?**
6 Q. No, I think that's fine. And do you know
7 what the taxonomic identification for EFAC1 and
8 EFAC2 were? Do you know what that means?
9 **A. No. I'm not a biologist.**
10 Q. Is there any place in the record that
11 you're aware of where there was evidence that mining
12 had harmed the aquatic community in EFAC? And by
13 that I mean East Fork Armells Creek.
14 **A. The definition of -- when a stream is**
15 **listed as impaired, it does not meet its beneficial**
16 **uses. That is the determination of what uses a**
17 **stream should be meeting and it has been determined**
18 **by DEQ that it is not meeting its beneficial uses**
19 **and, therefore, is impaired. That -- and what is**
20 **impaired for and the probable causes of that**
21 **impairment have been determined by DEQ. But there**
22 **has been no TMDL completed.**
23 Q. Okay. And that issue was addressed in the
24 CHIA though, wasn't it?
25 **A. Not adequately.**

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1 Q. Okay. Let's go to the next exhibit.
2 (Deposition Exhibit 11 marked
3 for identification.)
4 Q. (By Mr. Martin) Ms. Hedges, I've handed
5 you a document that's been marked for identification
6 as Exhibit 11. And I'll certify for the record that
7 this is an excerpt from Appendix I to the Cumulative
8 Hydrologic Impact Assessment. I'm sorry. This is
9 Appendix 1 -- thanks to Dan Leff -- this is
10 Appendix 1 to the written findings.
11 **MR. MARTIN:** Dan, did I get that right?
12 **MR. LEFF:** Yes. So it's the CHIA, which
13 is Appendix 1.
14 Q. (By Mr. Martin) In any event, it's page
15 9-7 from the CHIA. And I'll direct your attention
16 to the third paragraph on page 9-7 and there is an
17 indication that aquatic surveys were done in the
18 middle to late 1970s. Isn't that correct?
19 **A. Yes.**
20 Q. And in the last sentence of that same
21 paragraph it indicates, "The 1970's surveys provide
22 an indication of the presence or absence of aquatic
23 life but cannot be used to assess the quality of the
24 habitat or stream water." Do you see that?
25 **A. Yes.**

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1 Q. I think I'm missing a page. Let's go off
2 the record here for a moment.
3 (Off the record briefly.)
4 Q. (By Mr. Martin) I'll invite your
5 attention to the following page, 9-8. And it's the
6 first full paragraph beginning with, "In 2014." Can
7 you read that into the record, please?
8 **A. "In 2014, another macroinvertebrate survey**
9 **was conducted in the stream reach between the Area A**
10 **Tipple and SW-55. The sampling methodology, which**
11 **followed DEQ's 2012 standards guidelines, differed**
12 **from the methodologies used in the previous studies**
13 **so the taxa richness may not be directly comparable.**
14 **However, the survey demonstrated that a diverse**
15 **community of macroinvertebrates was using the stream**
16 **reach. Therefore, the reach currently meets the**
17 **narrative standard of providing a beneficial use for**
18 **aquatic life."**
19 Q. So is it fair to say then that DEQ did, in
20 fact, address the narrative standard regarding
21 aquatic life in the CHIA?
22 **A. It did so in a way that was inconsistent**
23 **with its methodologies that it uses consistently in**
24 **other instances.**
25 Q. But you would agree with me that they did

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1 address that issue, right?
2 **A. They did an incomplete job of addressing**
3 **that issue.**
4 Q. So the answer is yes with your
5 qualification?
6 **A. The answer is they failed to demonstrate**
7 **that they were complying with their own internal**
8 **guidance for how they should be doing that analysis.**
9 Q. Is that your only objection to the
10 analysis?
11 **A. Well, it's hard to object to what I don't**
12 **know. So if they had done the analysis properly,**
13 **then I would know whether the analysis actually**
14 **showed a proper result. But as they failed to do**
15 **the analysis properly, it is impossible to know what**
16 **information the information would have shown.**
17 Q. And how was it that that analysis differed
18 from the methodology that DEQ ordinarily uses?
19 **A. That is --**
20 Q. If you know.
21 **A. That's in the record. It's in the record**
22 **and it is not information that I have in front of**
23 **me.**
24 Q. Okay. And do you have any reason as you
25 sit here today to believe that the deficiency that

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1 you cited would change the conclusion that, "The
2 reach currently meets the narrative standard of
3 providing a beneficial use for aquatic life"?
4 **A. Yes, I do. I think that there is, there**
5 **was concern raised in the record elsewhere, not**
6 **here, that this could be a problem and so DEQ**
7 **adjusted the scope of its analysis to accommodate**
8 **concerns from WECo.**
9 Q. Why don't you go ahead and find that in
10 the record.
11 **A. I don't have that record with me.**
12 Q. Okay.
13 **A. We will provide that.**
14 Q. And if I understand correctly, the staff
15 at DEQ concluded nonetheless that the narrative
16 standard of providing a beneficial use for aquatic
17 life had been met. Is that your interpretation?
18 **A. The hydrologist that reviewed WECo's**
19 **consultant's analysis that was intentionally**
20 **narrowed from the traditional process that DEQ uses**
21 **to make these decisions determined that this -- they**
22 **concluded that it met the beneficial use for aquatic**
23 **life.**
24 Q. You used the phrase intentionally
25 narrowed. What do you mean by that?

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1 **A. There was communication between WECo and**
2 **DEQ, email correspondence, meetings, that is in the**
3 **record that indicates that the scope was initially**
4 **supposed to be broader than the final results ended**
5 **up being.**
6 Q. And so your position then is that this
7 issue, the aquatic life issue, should be evaluated
8 with an analysis of this email correspondence as
9 well; is that right?
10 **A. An analysis using DEQ's traditional**
11 **methods for determining impacts to aquatic life.**
12 Q. Well, and let me rephrase the question. I
13 think it was ambiguous. If I'm understanding your
14 testimony, what you're suggesting is that whether or
15 not the reach currently meets the narrative standard
16 of providing a beneficial use for aquatic life is a
17 conclusion that can only be evaluated by examining
18 email correspondence between DEQ and WECo. Is that
19 what I'm understanding?
20 **A. No.**
21 Q. Okay.
22 **A. It's an analysis that needs to be done**
23 **under the law that was improperly done. Had it been**
24 **done, then that analysis that was properly done**
25 **could then be used to evaluate compliance with a**

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1 **standard. But the law is the -- the law does not**
2 **allow them to say this is an ephemeral stream. The**
3 **law does not allow you to say because there is a**
4 **lack of evidence that there is no impact to aquatic**
5 **life, and that is what has been done in this**
6 **instance. And we believe that a proper analysis**
7 **done under the law using the standard operating**
8 **procedures that DEQ traditionally uses would**
9 **potentially show a different result.**
10 Q. Okay. And, you know, I understand again
11 your legal position and you used the phrase that it
12 was intentionally narrowed at one point in your
13 testimony and you've indicated that it diverged from
14 standard operating practice I believe was the phrase
15 you used.
16 **A. Uh-huh.**
17 Q. And you don't know at this point what that
18 diversion was?
19 **A. Not off the top of my head, but it is in**
20 **the record.**
21 Q. And since you don't know how it differed
22 from the standard procedure, you really can't
23 conclude, can you, that DEQ's assertion that the
24 reach currently meets the narrative standard is
25 correct or incorrect?

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1 **A. I can't conclude much without the proper**
2 **legal analysis being conducted.**
3 Q. Set aside the legal analysis. I'm not
4 here to argue with you about legal issues. But
5 factually, scientifically, not knowing how it was
6 "narrowed," you can't at this point in time conclude
7 whether or not that reach currently meets the
8 narrative standard?
9 **A. I can't and neither can anybody else**
10 **because the analysis hasn't been conducted.**
11 Q. Well, suppose, for example, that the
12 standard procedure were to write these surveys on
13 pink paper and instead it was written on blue paper.
14 That wouldn't bother you, would it?
15 **A. That's an absurd comparison.**
16 Q. Well, you don't know the nature of how
17 Ms. Hunter's survey diverged from operating
18 procedures, do you?
19 **A. I have read that in the record but I don't**
20 **have it in front of me. You haven't provided it**
21 **here and I did not bring it with me. But it is in**
22 **the record and we will be providing that to you.**
23 Q. And as things stand right now, you don't
24 know really whether this reach meets the narrative
25 standard or doesn't meet the narrative standard; is

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1 that right?
2 **A. Nobody knows.**
3 Q. And the only issue for you --
4 **MR. SULLIVAN:** Well, I'm going to object
5 on the basis that I believe that actually
6 misstates the record, because I believe that
7 there was an admission against interest that
8 was made by Western's analyst in that very
9 regard. The record speaks for itself, but I
10 believe that's a misstatement of the record.
11 Q. (By Mr. Martin) You know, my only point
12 is that since you can't recall what this deviation
13 from operating procedure is, you really can't know
14 at this point in time whether or not it was a
15 material violation of procedure or something that
16 made a difference in terms of the conclusion; is
17 that right?
18 **A. It was a material difference, but whether**
19 **I can recollect the exact reason for that, I can't**
20 **off the top of my head right here. It is in the**
21 **record.**
22 Q. And not knowing what that is, as you sit
23 here today, you really don't have a basis to
24 disagree with the DEQ expert's conclusion that this
25 reach currently meets the narrative standard, do

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1 you?
2 **MR. SULLIVAN:** And I'm going to object to
3 the form on the basis that that's already been
4 asked and answered.
5 **A. I believe that WECo's own consultant**
6 **concluded otherwise.**
7 Q. (By Mr. Martin) Okay. Let's go to WECo's
8 own consultant. Directing your attention then to
9 Exhibit 10. Where on Exhibit 10 did WECo's own
10 consultant reach a different conclusion?
11 **A. I am not referring to 10, although 10 does**
12 **reach the conclusion that the water quality rating**
13 **was fairly poor to poor. This is on page 4 and in**
14 **the chart on page 4 of the figures and tables. It**
15 **came to the conclusion that for both locations it**
16 **indicates fairly poor and poor conditions.**
17 Q. And fairly poor, is there any indication
18 as to whether or not those are natural conditions or
19 conditions caused by mining?
20 **A. There is a -- there is a reason for water**
21 **quality standards and water quality standards are**
22 **intended to protect certain uses and when you fail**
23 **to comply with those water quality standards, you**
24 **may not be protecting those uses and it may harm, it**
25 **may cause harm. I don't have to show that there is**

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1 **dead bugs floating on the surface of water.**
2 Q. Ms. Hedges, what I'm trying to get at
3 is -- and let me ask the question and try to be more
4 direct about it than I have been. Is there any
5 indication that the poor water quality that's
6 described in that document is from natural results,
7 natural causes, or that it's from mining? Any
8 indication in that document?
9 **A. In that document? I'd have to read the**
10 **whole document. I'm guessing no since it's a**
11 **document that was prepared by WECo. But there is**
12 **certainly plenty of evidence in the record that**
13 **mining has impacted water.**
14 Q. So you don't know as you sit here today
15 whether or not the expert here, Ms. Hunter, was
16 saying that this stream was of poor water quality
17 because of mining or because of natural causes, do
18 you?
19 **A. No, I do not. All I know is that she said**
20 **aquatic life criteria are not met. That was her**
21 **conclusion.**
22 Q. And, again, you don't know what that
23 phrase means?
24 **A. She put it as a stand-alone phrase. I**
25 **think that's pretty telling.**

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1 Q. And then what does it tell you?
2 **A. It tells me that aquatic life criteria are**
3 **not met, that they have failed to meet their burden**
4 **and they have failed to show that there is not harm.**
5 Q. Look, I don't want to be argumentative
6 about this, Ms. Hedges, but really there is no
7 definition of aquatic life criteria that you can see
8 in the document that you referred to, is there?
9 **A. In the document that I referred to, no.**
10 Q. And you really don't know how that phrase
11 was used by Ms. Hunter there, do you?
12 **A. I just know what I see in black and white.**
13 Q. Is it possible that aquatic life criteria
14 as it was used in that PowerPoint is the criteria
15 that comes from natural causes?
16 **A. Perhaps, yes, perhaps, no.**
17 Q. Fair enough. Let's look at, again, going
18 back to the response to comments and I'll invite
19 your attention to Item Number 10 on page 11 of the
20 response to comments.
21 **A. On page 11?**
22 Q. On page 11 and it's Item Number 10. This
23 would be from Exhibit 3. If you don't mind, could
24 you just read to yourself the description of the
25 comment from MEIC/Sierra Club. It's in the

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1 paragraph after the number 10.
2 **A. Okay.**
3 Q. Okay. And there is -- Well, first, is
4 that an accurate account of the comment?
5 **A. I believe so. I'd have to go back and,**
6 **you know, compare but it seems about right.**
7 Q. Okay. Then I'll direct your attention to
8 the following paragraph, "DEQ response." And in the
9 second sentence within that response we see the
10 following text. "The standard for determination of
11 material damage is deterioration of the quality or
12 quantity of water outside the permit area to an
13 extent that land uses or beneficial uses are
14 adversely affected or water quality standards are
15 violated."
16 Do you agree that that's the right
17 standard?
18 **MR. SULLIVAN:** And I'm going to object to
19 the extent it calls for a legal conclusion.
20 **A. Without being a lawyer, I'd say that's**
21 **close.**
22 Q. (By Mr. Martin) And without asking for a
23 legal conclusion, is that the understanding of MEIC?
24 **A. That that is the law or what?**
25 Q. Yeah, that this is the standard.

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1 **MR. SULLIVAN:** Well, I'm going to object
2 again, because if you're referring to anything
3 other than the legal standard, it's ambiguous.
4 So I object to the form on that basis and I
5 also object to the extent that it calls for a
6 legal conclusion. The regulatory and statutory
7 standards speak for themselves.
8 **A. Material damage, according to the statute,**
9 **means, "With respect to protection of the hydrologic**
10 **balance, degradation or" -- I'm guessing it's**
11 **reduction, I have a hole punch there -- "by coal**
12 **mining and reclamation operations of the quality or**
13 **quantity of water out of the permit area in a manner**
14 **or the extent that land uses or beneficial uses of**
15 **water are adversely affected, water quality**
16 **standards are violated or water rights impacted.**
17 **Violation of a water quality standard, whether or**
18 **not an existing water use is affected, is material**
19 **damage."**
20 Q. (By Mr. Martin) Okay. And I think it's
21 fair to use just the language of the regulation.
22 And that coincides roughly with the sentence that I
23 just read into the record, doesn't it?
24 **A. I think roughly. I'd have to think about**
25 **it to say yes or no.**

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1 Q. And let's not get lost on that. Let's go
2 to the next sentence. "The predicted increase in
3 TDS from mining does not anticipate violation of
4 numeric standards or decline in water quality so
5 that listed beneficial uses as defined by the
6 narrative standards are adversely affected."
7 Do you see that sentence?
8 **A. I do.**
9 Q. And do you agree with that sentence?
10 **A. Not necessarily, no.**
11 Q. And when you say "not necessarily," I
12 gather based on your prior testimony that you don't
13 know, it's possible but you just don't know?
14 **A. A 13 percent increase in TDS may adversely**
15 **affect macroinvertebrates in EFAC. We don't know**
16 **because that analysis wasn't properly conducted.**
17 Q. And so your testimony is that analysis was
18 not conducted at all?
19 **A. No, it wasn't properly conducted.**
20 Q. Okay. You disagree with the way it was
21 done by DEQ?
22 **A. Yes.**
23 Q. Then --
24 **MR. SULLIVAN:** I'm sorry. The question
25 is -- object to form because the question is

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1 confusing as to whether DEQ did the analysis or
2 whether Western Energy's contractor did the
3 analysis.
4 Q. (By Mr. Martin) Okay. Let's go on.
5 Maybe just to address that issue. There was a
6 survey that was conducted in 2014, 2015, correct?
7 **A. Yes.**
8 Q. It was done by Ms. Hunter?
9 **A. I believe so.**
10 Q. And it was under DEQ's direction, was it
11 not?
12 **A. It was -- I don't know if under direction**
13 **is proper. But DEQ provided some sideboards for how**
14 **that analysis would be conducted.**
15 Q. And, in fact, doesn't the record use that
16 phrase under DEQ's direction, if you remember?
17 **A. I don't recall.**
18 Q. Let's go to the third sentence in that
19 same paragraph. "For the most sensitive use of EFAC
20 water aquatic life, there is no scientific evidence
21 that the 13 percent increase in TDS will adversely
22 affect macroinvertebrates in EFAC."
23 Do you see that sentence?
24 **A. Yes.**
25 Q. And do you disagree with that sentence?

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1 **A. I disagree that the lack of scientific**
2 **evidence is sufficient to overcome the burden to**
3 **affirmatively demonstrate.**
4 Q. And as you sit here today, you don't know
5 whether that sentence is correct or not? And I
6 appreciate the caveat that you believe DEQ and WECo
7 bear the burden of proof, but you don't know at this
8 point in time whether that statement is accurate or
9 inaccurate?
10 **A. No, and I don't know how -- and I don't**
11 **believe they know how it will impact water in an**
12 **intermittent or perennial stream.**
13 Q. And there is also an indication that, "DEQ
14 will require the operator to monitor aquatic life to
15 determine whether mining activity is materially
16 detrimental to aquatic life in EFAC."
17 Do you see that sentence?
18 **A. I do.**
19 Q. Does monitoring, is that something that's
20 helpful in your view?
21 **A. The point of permitting is to prevent**
22 **pollution. Monitoring only determines whether**
23 **pollution exists or not and it is an after-the-fact**
24 **remedy and only really necessary if the permitting**
25 **action failed to prevent pollution as it was**

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1 **intended.**
2 Q. So you think monitoring is not effective;
3 is that your point?
4 **A. I think monitoring is critical, but**
5 **monitoring is an after-the-fact remedy for a good**
6 **permit, or for a bad permit. It's essential. But**
7 **it is far more essential that we prevent pollution**
8 **at the permitting stage, not identify it after it is**
9 **a problem.**
10 Q. Would you ordinarily encourage monitoring
11 in the context of a permit?
12 **A. Always.**
13 Q. Let's see if we can skip over some of
14 this. Do you agree that the standard prescribed and
15 the evaluation that was conducted here applies to --
16 **A. What's here? Can you describe what you**
17 **mean by here?**
18 **MR. SULLIVAN:** May I interject just an
19 objection and it will help also? I was going
20 to object on the basis of form, ambiguity,
21 which standard, when you refer to the standard
22 just to clarify, since we've had quite a
23 conversation.
24 Q. (By Mr. Martin) There came a point in
25 time when you have argued, and by you I mean MEIC/

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1 Sierra Club has argued that TDS in the groundwater
2 would move the classification of the groundwater
3 from Class II to Class III; is that accurate?
4 **A. Yes, we did argue that there could be a**
5 **change, and I believe it's in the CHIA where DEQ**
6 **indicates there could be a change from Class II to**
7 **Class III and there is a failure to analyze impacts**
8 **to Class I.**
9 Q. Okay. Let's go back to the same document.
10 That is to say, I believe it's Exhibit 3, the
11 response to comments and paragraphs 8 and 9.
12 **A. Response to comments, paragraphs 8 and 9.**
13 **On page 10?**
14 Q. On page 10. And the comment that came
15 from MEIC/Sierra Club is recounted after number 8.
16 Do you see that? Can you read it to yourself?
17 **A. Okay.**
18 Q. And beneath that comment and the comment
19 addresses TDS levels in the spoils and it says that
20 they would be two to three times that of the
21 baseline coal groundwater. And DEQ's response is,
22 "The comment is mistaken to the extent that it
23 applies the material damage requirement to
24 hydrologic consequences of mining within the permit
25 area."

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1 Do you agree with that statement?
2 **A. Generally I think I do.**
3 Q. Within the permit area the act requires
4 the operator to minimize disturbance to the
5 hydrologic balance.
6 **A. Excuse me. Is somebody on the phone?**
7 **(Discussion off the record.)**
8 **MR. SULLIVAN:** So are we on the second
9 sentence to the DEQ response, John?
10 **MR. MARTIN:** Yes. Go ahead.
11 Q. (By Mr. Martin) Within the permit area
12 the act requires the operator to minimize
13 disturbance to the hydrologic balance; is that
14 right?
15 **A. I'd have to go back and review the statute**
16 **and the rule. Assuming that that's close but I**
17 **can't guarantee it's identical.**
18 Q. And then the next sentences says, "A
19 reduction of water quality in the mining area is
20 expected and is not grounds for denial of a mine
21 permit application as long as reasonable
22 conservation practices are being applied."
23 Do you agree with that statement?
24 **A. Yes, however, water flows downhill and so**
25 **the question is will that eventually move offsite in**

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1 **a way that harms the hydrologic balance outside the**
2 **permit area.**
3 Q. And you don't have an opinion on that as
4 you sit here today?
5 **A. I don't have an opinion on what? I have**
6 **an opinion on many things.**
7 Q. On whether or not the groundwater from
8 this area would move outside the permit area and
9 provoke some sort of material damage off the permit?
10 **A. Could you give me a minute? I can't**
11 **answer that question off the top of my head. The**
12 **record -- this is in response to your question**
13 **number 19, I believe. This is what you're asking**
14 **about and there are a number of places where we do**
15 **have an opinion about that. Is the question you're**
16 **asking different than number 19 or is it similar to**
17 **number 19?**
18 **MR. MARTIN:** Read back the question.
19 (Previous question read.)
20 Q. (By Mr. Martin) And let me rephrase that.
21 As you sit here today, you don't have a view as to
22 whether or not groundwater would move from the
23 permit area to areas outside the permit area and
24 provoke some sort of material damage to the
25 groundwater; is that correct?

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1 **A. That is incorrect. I believe that there**
2 **is a number of pieces of evidence in the record that**
3 **are contrary to that conclusion. In the CHIA at**
4 **9-58 through 9-59, MEIC's response to comments or**
5 **comments, sorry, in August of 2015 in which we refer**
6 **to a study by Clark on page 4, the answers to**
7 **interrogatories on page 11, 5B, and DEQ response at**
8 **page 27. And I would be happy to find all those for**
9 **you.**
10 Q. Well, let's focus for a moment on the
11 CHIA. But before we do that, let me ask. If I
12 understood your testimony this morning, you didn't
13 have a view as to what direction the groundwater
14 would flow; is that right?
15 **A. I believe that some of the data indicates**
16 **what direction it would flow, but as I am not a**
17 **hydrologist or a geohydrologist and I don't**
18 **understand the complex nature of the hydrology and**
19 **the geology in the area, I am not the best person to**
20 **determine which direction groundwater will flow out**
21 **there in any one location.**
22 Q. And so as you sit here today, you don't
23 know whether groundwater would flow from AM4 or
24 Area B to areas outside the permit area and cause
25 material damage; is that correct?

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1 **A. I believe there is evidence in the record**
2 **to that effect but I don't believe that you have met**
3 **your burden of proving that it will not.**
4 Q. And, Ms. Hedges, I'm asking what your view
5 is. I'm asking what MEIC/Sierra Club's view is on
6 that issue. And I recognize what your legal
7 position is.
8 **MR. SULLIVAN:** And I'm going to object on
9 the basis that it's been asked and answered and
10 she has stated the organization's position on
11 the issue.
12 Q. (By Mr. Martin) And if I understood your
13 testimony earlier today, you don't know what
14 direction the groundwater would flow beneath AM4; is
15 that right?
16 **A. Me personally? No. I believe that there**
17 **is some information in the record. But me, all I**
18 **can do is point to information in the record.**
19 Q. Okay. Let's go ahead and go to that
20 record then. And first let's talk about --
21 (Deposition Exhibit 12 marked
22 for identification.)
23 Q. (By Mr. Martin) Ms. Hedges, we're handing
24 you a document that's been marked for identification
25 as Exhibit 12. And, for the record, I will explain

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that this is an excerpt from the CHIA and it is page 9-31 through 9-33. Do you see that?
A. Yes, I do.
Q. And first let's talk about the 13 percent that's mentioned in your comment. And I'll invite your attention to the third full paragraph of Exhibit 12. Why don't you read the first two sentences of that paragraph into the record.
A. Starting with flow from Area A?
Q. Yeah.
A. "Flow from Area A spoil is predicted to impact water quality in downstream East Fork Armells Creek between Area A and Area B. Western Energy Company, 2015. Based on average TDS concentrations observed in spoil and alluvial baseline in the wells used to develop the mass balance calculations at the east end of EFAC, post-mining alluvial TDS concentration is projected to be approximately 2,751 micrograms per liter, equivalent to a 13 percent increase over the 2,299 micrograms per liter baseline concentration."
Q. And, Ms. Hedges, is that the increase in TDS that your organization is focused on?
A. In regard to TDS where we raised this issue, yes, I believe so.

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Q. Is it fair to say that TDS concentrations in East Fork Armells Creek vary greatly?
A. I think that that's a fair assessment.
Q. And that's a natural circumstance, isn't it?
A. Not always, no.
Q. But even naturally there is a great deal of variation in TDS in East Fork Armells Creek, isn't there?
A. I know that the stream is impaired and I know that there are reasons for that impairment, and I can't tell you today whether that is natural or not and I don't think you can either.
Q. Well, do you know what -- TDS can be natural, can't it?
A. Sure.
Q. And how does it come to pass; do you know?
A. I assume it's just various activities, you know, storm events, for example.
Q. And going back again to the response to comments, why don't we go to -- let's skip over that for the moment. It's true, isn't it, that the CHIA addresses the increase in TDS in the alluvium, doesn't it?
A. It does discuss it, yes.

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Q. And, in fact, the PHC deals with this issue as well?
A. I believe it did, yes.
Q. And going to page 9-33, I'll direct your attention to the third full paragraph that begins with the following statement. "Material damage to the EFAC alluvium is not indicated."
Do you see that sentence?
A. I do.
Q. Can you read into the record the next two sentences, please?
A. "Mining in the cuts proposed in AM4 is not expected to contribute to the decline in water quality in EFAC. Also, changes in water quality attributed to other permitted areas of the Rosebud Mine are not expected to result in material damage to the EFAC alluvium."
Q. First, do you agree or disagree with those sentences?
A. I disagree.
Q. And can you explain what the basis for that disagreement is?
A. It's in the record and it's up above. It is starting on page 9-28 where they talk about East Fork Armells Creek at various places. It talks

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about how it has been, East Fork Armells has been harmed by mining, that various pollutant levels have increased, and that continued change to EFAC alluvial water quality predicted post-mining due to infiltration of spoil water from the south part of Area A and the north part of Area B, among other things.
Q. Okay. And so you're talking about the 13 percent increase in TDS; is that right?
A. Among other things. I mean, this is a conclusory statement that has more to do with other pollutants -- or I shouldn't say more to do -- but it has to do with other pollutants, not just TDS.
Q. Okay. But let's talk for a moment, let's confine ourselves to the 13 percent increase in TDS. Is it your position that this moves groundwater from Class II to Class III; is that right?
A. I believe that that has been DEQ's position, that it may do that.
Q. And let's talk about that for a moment. In the paragraph just prior to the one that you read into the record, beginning with as stated above, can you read the first sentence into that, in the record, please?
A. I'm sorry. Would you repeat that?

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1 Q. And it's on page 9-33.
2 **A. Could you repeat what you'd like me to**
3 **read?**
4 Q. The first sentence on the second full
5 paragraph of that page.
6 **A. "As stated above, water chemistry in EFAC**
7 **alluvium varies widely in both time and location.**
8 **Based on observed changes and predicted changes in**
9 **water quality, conductivity at some, but not all,**
10 **monitored sites has changed or may change from the**
11 **conductivity range for Class II to the range for**
12 **Class III groundwater."**
13 Q. So is it fair to say then that as a matter
14 of background or natural conditions, water in EFAC
15 can move from Class II to Class III?
16 **A. Could you repeat that question?**
17 **MR. MARTIN:** Why don't you read it back.
18 (Previous question read.)
19 **A. No.**
20 Q. (By Mr. Martin) So water can't move from
21 Class II to Class III as a natural phenomenon?
22 **A. I suppose it could. But this doesn't**
23 **indicate that that is a natural phenomenon.**
24 Q. Setting aside what this indicates, would
25 you agree with me that the water in East Fork

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1 Armells Creek can move from Class II to Class III
2 naturally?
3 **MR. SULLIVAN:** And I'm going to object on
4 the basis of foundation and also object on the
5 basis that it exceeds the scope of the matters
6 identified in the 30(b)(6) deposition notice.
7 Q. (By Mr. Martin) You can go ahead and
8 answer the question.
9 **A. I don't know whether water -- I can't**
10 **imagine an instance in which water from natural**
11 **conditions would move from Class II to Class III. I**
12 **suppose it's possible but I have no evidence.**
13 Q. Do you know where the break point is
14 between Class II and Class III?
15 **A. That's in rule. I can read it to you.**
16 **Break point in rule --**
17 Q. Why don't you just look it up for the
18 moment and see whether or not it's 2,500 milligrams
19 per liter.
20 **A. Under 17.30.1006, Class II groundwater are**
21 **those waters within natural specific conductance**
22 **that is greater than a thousand and less than or**
23 **equal to 2,500 microsiemens per centimeter at 25**
24 **degrees centigrade. Class III waters, groundwaters,**
25 **are those groundwaters with a natural specific**

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1 **conductance that is greater than 2,500 and less than**
2 **or equal to 15,000 microsiemens per centimeter at 25**
3 **degrees centigrade. And there are all sorts of**
4 **subparts to each one of those.**
5 Q. And I'm sorry, I misstated this when I
6 said milligrams per liter. It should be
7 microsiemens per centimeter.
8 **A. That's okay.**
9 Q. So if you're going from Class II to
10 Class III, it's a question as to whether or not TDS
11 levels exceed 2,500?
12 **A. It's far more than that. Because the**
13 **quality of water has to be maintained so that these**
14 **waters are at least marginally suitable for the**
15 **following beneficial uses. It is a determination**
16 **that is made based upon your beneficial uses and the**
17 **beneficial uses between those two differ. So**
18 **Class II to Class III change could be significant.**
19 Q. Well, am I go right that in terms of TDS,
20 the threshold difference is between that which is
21 higher than 2,500, in which case it's Class III, or
22 that which is lower, in which case it is Class II;
23 is that right?
24 **A. Yes.**
25 Q. And would you agree with me that --

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1 **A. Partially. I mean, there is more to the**
2 **definition than that.**
3 Q. I understand that beneficial uses plays
4 into the evaluation. But for purposes of TDS,
5 that's the threshold, is it not?
6 **A. That is a threshold question.**
7 Q. Okay. And would you agree with me that
8 there are reaches of East Fork Armells Creek that
9 naturally vary between Class II and Class III for
10 purposes of TDS?
11 **A. They vary between Class II and Class III**
12 **but I don't know if it's natural.**
13 Q. You've also reviewed, have you not, the
14 Probable Hydrologic Consequences Report that was
15 submitted by Western Energy in this case?
16 **A. I've looked it over. I have not looked at**
17 **the whole thing recently. I've looked at parts.**
18 **(Deposition Exhibit 13 marked**
19 **for identification.)**
20 Q. (By Mr. Martin) Ms. Hedges, I've handed
21 you a document that is taken from the Probable
22 Hydrologic Consequences Report that was submitted by
23 Western Energy in February of 2015. It is
24 Figure 10, described as, "TDS Concentrations, East
25 Fork Armells Creek, ABC PHC Addendum."

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1 Do you see that document?
2 **A. I do.**
3 Q. Can you go ahead and review that table,
4 please, that figure?
5 **A. Okay.**
6 Q. And do you understand what this figure
7 shows?
8 **A. Yes.**
9 Q. And why don't you describe it for the
10 record?
11 **A. Okay. It is East Fork Armells Creek**
12 **samples taken between the mine areas and upgradient**
13 **from the mine. The black dots indicate baseline TDS**
14 **concentrations and the blue or gray squares**
15 **represent nonbaseline TDS concentrations by year.**
16 Q. And in terms of total dissolved solids,
17 would this reflect a great deal of variation in TDS?
18 **A. Yes.**
19 Q. And what does it vary from, if you can
20 tell?
21 **A. I don't understand your question.**
22 Q. Let me rephrase it. Am I correct in
23 saying that the variation in TDS, according to this
24 document, is anywhere from just above zero all the
25 way to 5,000 milligrams per liter?

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1 **A. That is correct, the samples fall within**
2 **that range.**
3 Q. And would you agree with me that that
4 variation is significant?
5 **A. I would say that's great variation.**
6 Q. And do you know what the baseline
7 concentration is for TDS either in surface waters or
8 alluvium for EFAC? Do you have any idea?
9 **A. I believe it's in the CHIA.**
10 Q. Why don't you go ahead and look. Let me
11 see if I can refresh your recollection. Depending
12 on what document you're looking at, it could be from
13 2,200 to 2,300, I think, milligrams per liter.
14 **A. I am looking at the document actually you**
15 **just handed me a little bit ago, 9-31 in the CHIA**
16 **and also 9-32 in the CHIA give various readings on**
17 **TDS in various monitoring wells.**
18 Q. Okay.
19 **A. And I'm assuming, although I'm not reading**
20 **it closely, in East Fork Armells. Perhaps it's just**
21 **the alluvium though.**
22 Q. Okay. And, again, going back to a
23 sentence that we've discussed before and we're now
24 looking at I believe it's Exhibit 12. There is a
25 sentence that, "Based on average TDS concentrations

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1 observed in spoil and alluvial baseline, post-mining
2 alluvial TDS concentration is projected to be
3 approximately 2,751 milligrams per liter, equivalent
4 to a 13 percent increase over the 2,299 milligrams
5 per liter baseline concentration."
6 Do you see that sentence?
7 **A. Yeah.**
8 Q. Now, if we compare that 13 percent
9 increase over roughly 2,300 milligrams per liter to
10 the variation in the samples on Exhibit 13, is it
11 fair to say that a 13 percent increase from that
12 baseline falls well within the variation that you
13 see on this figure, Figure 10?
14 **A. Based upon the data provided in this**
15 **figure, which I can't verify as to what baseline**
16 **actually means here, then yes.**
17 **MR. MARTIN:** Let's take a break.
18 (Break taken.)
19 (Deposition Exhibit 14 marked
20 for identification.)
21 Q. (By Mr. Martin) Go ahead.
22 **A. First, I was a little quick to agree with**
23 **you, which you probably find hard to believe, about**
24 **one of your statements and this was in regard to the**
25 **TDS levels and DEQ's response to comments. On**

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1 **page 10 you asked me DEQ's response to number 8, if**
2 **I disagreed with that first sentence, and because**
3 **that is a compound sentence, I was really only**
4 **looking at the latter part of the sentence. I**
5 **disagree with the beginning of that sentence that**
6 **the comment is mistaken. I think the comment is not**
7 **mistaken. The context of that comment matters. But**
8 **I do agree with the ending portion of that statement**
9 **that material damage requirement to hydrologic**
10 **consequences of mining within the permit area is**
11 **accurate.**
12 **MR. MARTIN:** Off the record.
13 (Discussion off the record.)
14 Q. (By Mr. Martin) If I understood you
15 correctly, you are suggesting that the comment
16 itself was not mistaken; is that right?
17 **A. That's correct. The characterization at**
18 **the end of that sentence regarding what is material**
19 **damage is accurate.**
20 Q. And if I'm understanding you correctly,
21 you agree with me that it is not material damage if
22 the damage is within the permit area?
23 **A. The definition of material damage is,**
24 **impacts -- what is it -- violating water quality**
25 **standards and impacts outside the permitted area.**

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1 Q. Okay. Thank you.
2 **A. And there was one other clarification.**
3 **Because my brain is full. Your question regarding**
4 **aquatic standards, I didn't recognize that it, you**
5 **were really asking number 13 on the sheet that you**
6 **had given me. And the answer regarding aquatic life**
7 **standard, it is a numeric standard that is based**
8 **upon a determination and definitions in DEQ Circular**
9 **12A and DEQ's assessment report determined based**
10 **upon this information what is the appropriate**
11 **standard for aquatic life and they determined that**
12 **it was 1.3 micrograms per liter.**
13 Q. And was our questioning focused on the
14 phrase "aquatic life criteria," as opposed to
15 aquatic life standard?
16 **A. Right. Aquatic life -- to me aquatic life**
17 **standard and aquatic life criteria are very similar.**
18 Q. And you believe that the phrase that was
19 used by Ms. Hunter in the slide show that you were
20 reading from is the equivalent of aquatic life
21 standard; is that right?
22 **A. It's how you determine compliance with the**
23 **standard.**
24 Q. Okay. I think we'll have to follow up on
25 that.

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1 **A. Because it is numeric and I was thinking**
2 **it was narrative, but it's narrative with a**
3 **follow-up determination to determine --**
4 Q. Let's go back to the source of this
5 controversy. I'll be handing you in a moment a
6 document that is identified as Exhibit 14 to the
7 deposition and I'll represent to you that this is
8 the slide show, the overheads, if you will, that are
9 described as "Aquatic Study Review" and it has the
10 name Penny Hunter and the date September 21, 2015.
11 And is that the document that you were referring to
12 earlier today in your testimony?
13 **A. Yes.**
14 Q. And one of the passages that you read from
15 that document is from page 12 or Exhibit 50, page
16 13, with the title Conclusions and Recommendations.
17 Do you see that?
18 **A. I think it's page 12, isn't it?**
19 Q. It's page 13 at the top and page 12 at the
20 bottom of the document that I have.
21 **A. Oh, okay. Yes, I assume that's right.**
22 Q. And the passage that you read was,
23 "Although EFAC supports aquatic life, aquatic life
24 criteria are not met." And that was the passage
25 that you read in your testimony; is that right?

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1 **A. Right.**
2 Q. That's followed by the following sentence
3 or bullet, if you will. "Baseline conditions are a
4 better indicator of existing use"; is that right?
5 **A. Yes, that is correct.**
6 Q. And from there it goes on to say,
7 "Criteria are based on different organisms not
8 present in EFAC." Again, did I read that correctly?
9 **A. That is correct.**
10 Q. And those are two important qualifications
11 to the sentence that you read, are they not?
12 **A. They are qualifications. They're subunits**
13 **of the above.**
14 Q. And baseline conditions are a better
15 indicator of existing use. Do you agree with that?
16 **A. I don't know what that means.**
17 Q. And then the next sentence, "Criteria are
18 based on different organisms not present in EFAC."
19 Do you agree with that statement?
20 **A. I believe that that is the reason that we**
21 **needed a proper analysis that was more robust**
22 **according to the DEQ protocol, because we don't know**
23 **whether those organisms are not present in EFAC for**
24 **what reason. And it may be that they are not**
25 **present in EFAC because of, because EFAC isn't --**

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1 **because of the standards that exist for aquatic**
2 **life, we don't -- this is an incomplete statement.**
3 **It doesn't include all of the information you would**
4 **need to make a real determination.**
5 Q. And there was a bibliography attached to
6 the study that we have marked as an exhibit as well,
7 wasn't there, the December 2015 study?
8 **A. The December 2015 study, right. What**
9 **about it?**
10 Q. And that's Exhibit 10, is it not?
11 **A. Sure. Probably. Yes.**
12 Q. So as we sit here today, you don't know
13 what's meant by criteria are based on different
14 organisms not based in EFAC; is that your testimony?
15 **A. The -- that's what she said. The question**
16 **that we have is had you used the proper protocol,**
17 **you would have considered a larger variety of**
18 **organisms and we would like to see that analysis**
19 **completed to see what the impacts to aquatic life**
20 **may be.**
21 Q. And is that the deficiency that you and I
22 were talking about earlier today?
23 **A. Yes. I believe so. We talked about many**
24 **things, but I believe.**
25 Q. And if I understood your testimony before,

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1 you didn't know what the deficiency was?
2 **A. I don't recall. It's in the record.**
3 Q. Okay. And reading the next bullet,
4 "Aquatic life monitoring will likely demonstrate
5 natural variability; unlikely to demonstrate impacts
6 for mining."
7 Do you see that bullet?
8 **A. Yes.**
9 Q. And I'll take a wild guess here and I'm
10 going to guess that you disagree with that
11 statement?
12 **A. I think that statement doesn't meet your**
13 **burden because likely demonstrate doesn't actually**
14 **affirmatively demonstrate, it kind of shows.**
15 **Unlikely to demonstrate certainly doesn't meet your**
16 **burden and we would like compliance with the**
17 **requirements.**
18 Q. And the monitoring, I guess that's the
19 prospective monitoring that we talked about before;
20 is that right?
21 **A. Yes.**
22 Q. And I take it you disagree with the notion
23 that it would be unlikely to demonstrate impacts
24 from mining; is that right?
25 **A. I suspect we will see impacts from mining.**

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1 **But I do believe the purpose of the permitting**
2 **action, as I stated previously, is preventative.**
3 **Monitoring is to show harm after the fact.**
4 Q. And you obviously disagree with DEQ, who
5 determined that the survey was sufficient for its
6 purposes of discerning whether or not there was a
7 material impact, I take it?
8 **A. Yes.**
9 Q. And your basis for that disagreement is
10 the absence of a particular element of the protocol
11 that you don't recall right now?
12 **A. Yeah. Yes. That's in the record.**
13 Q. There is another bullet that you didn't
14 read into the record when you described this
15 document, and that's the bullet at the top of the
16 page. Can you read that one into the record,
17 please?
18 **A. "The large amount of variability inherent**
19 **with ephemeral systems and the low quality of**
20 **habitat in benthic communities would not provide a**
21 **strong indicator of water quality impacts due to**
22 **mining activity."**
23 Q. And might that refresh your recollection
24 about what's meant by -- strike that. Might that
25 not inform your understanding of what's meant by

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1 "aquatic life criteria" in the next bullet?
2 **A. Well, we disagree on whether the system is**
3 **ephemeral and that is a really fundamental question.**
4 **So I have a hard time getting past the error of this**
5 **statement before I go on to say it informs anything**
6 **on the second statement.**
7 Q. Is it your position that, for example, the
8 upper reaches of East Fork Armells Creek are not
9 ephemeral?
10 **A. We believe that they are intermittent and**
11 **perennial and have been indicated as such on many**
12 **occasions in the past and no analysis has been done**
13 **to change that determination.**
14 Q. And the CHIA, of course, recognizes the
15 upper reaches of East Fork Armells Creek to be
16 ephemeral; would you agree with that?
17 **A. I believe --**
18 **MR. SULLIVAN:** Well, I'm going to object
19 as ambiguous. Are you asking does she agree
20 that the CHIA states that or does she agree
21 substantively with the statement?
22 **MR. MARTIN:** The first.
23 Q. (By Mr. Martin) You would agree with me,
24 would you not, that the CHIA concludes that the
25 upper reaches of EFAC are ephemeral?

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1 **A. The CHIA concludes that the upper reaches**
2 **are ephemeral in areas without going through any**
3 **kind of determination to determine whether that is**
4 **natural or whether that has been caused by the mine.**
5 Q. And wasn't that issue discussed in the
6 CHIA?
7 **A. It was discussed and in a number of places**
8 **it indicates that the mine has impacted water in**
9 **East Fork Armells.**
10 Q. And am I to understand that while the CHIA
11 does discuss the issue, you disagree with its
12 conclusion?
13 **A. I think the CHIA is in error in concluding**
14 **that it is ephemeral because all the documentation**
15 **in the past indicate it is perennial or**
16 **intermittent.**
17 Q. And what documentation are you referring
18 to?
19 **A. It is in the record and if you'll give me**
20 **a moment, I will find it.**
21 Q. Before we get into that, why don't we
22 finish with the slide show on Exhibit 14. Again,
23 referring to the page that you read a passage from,
24 going back to page 12 or page 13, depending on
25 whether I'm looking at the top or the bottom of the

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1 document. There is a second bullet or a sub-bullet,
2 if you will, that reads as follows, "Flow and
3 natural levels of organic matter are more likely to
4 drive aquatic community dynamic than other factors."
5 Do you see that?
6 **A. I do see that, yes.**
7 Q. Do you agree with that statement?
8 **A. No. I believe that flow and natural**
9 **levels of organic matter are important and if there**
10 **is no flow, it is certainly the determining factor.**
11 **But there are many things that could drive aquatic**
12 **communities' dynamics in addition to flow and**
13 **natural levels that could have significant impacts**
14 **on aquatic communities.**
15 Q. In context, I take it that this is talking
16 about ephemeral systems, isn't it?
17 **A. It appears to be, yes.**
18 Q. And for ephemeral systems, would you agree
19 with me, or I should say agree with Ms. Hunter, that
20 flow and natural levels of organic matter are more
21 likely to drive aquatic community dynamic than other
22 factors?
23 **A. No, I don't agree with that either. I**
24 **believe that if you have high levels of pollution,**
25 **they could actually drive your aquatic communities**

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1 **more than flow or natural levels.**
2 Q. Do you agree with her statement though
3 that for ephemeral systems, flow and natural levels
4 of organic matter are more likely to drive aquatic
5 community dynamic than other factors? Do you agree
6 with that?
7 **A. No, I think that they are a factor. I**
8 **don't think that they're more likely. It depends on**
9 **what's in the system.**
10 Q. And do you base that on a study or a
11 scientific opinion someplace?
12 **A. Twenty-three years' worth of looking at**
13 **data and which when you add pollutants to a system,**
14 **they can have a significant impact on that system.**
15 **There are hundreds, if not thousands, of reports**
16 **that exist out there to that effect. Pollution can**
17 **harm aquatic communities.**
18 Q. And that's the basis for your disagreeing
19 with the assertion on Ms. Hunter's presentation?
20 **A. Yes. From my perspective, yes.**
21 Q. And can you name one study that suggests
22 that that assertion is incorrect?
23 **A. One study off the top of my head? That's**
24 **not within the scope of this. I can't name any**
25 **specifically, but there are just so many that I've**

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1 **read on various pollutants; mercury and arsenic and**
2 **other pollutants that enter waterways. Salts, salts**
3 **have significant impacts on aquatic communities.**
4 Q. And any reason to believe that that
5 statement isn't entirely accurate for the upper
6 reaches of East Fork Armells Creek?
7 **A. Can you rephrase that?**
8 Q. Why don't we strike it. Let's just move
9 on.
10 **MR. MARTIN:** And for purposes of the
11 record, I'm handing the court reporter
12 Exhibit 14.
13 Q. (By Mr. Martin) Before we broke a few
14 minutes ago, we were talking about the variation in
15 TDS in East Fork Armells Creek. And in I think it's
16 Exhibit 12. If you don't mind, could you go back to
17 Exhibit 12?
18 **A. Okay.**
19 Q. And I'll read into the record a sentence
20 in the third paragraph from the bottom. It reads as
21 follows, "It is likely that some wells which are
22 just below the threshold of Class II/Class III water
23 would change to fall within the conductivity range
24 of Class III. However" --
25 **A. Can I interrupt? Can you please direct me**

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1 **as to where you're reading?**
2 Q. It's in the third paragraph from the
3 bottom on page 9-33 from the bottom.
4 **A. Oh, 9-33. I'm sorry.**
5 Q. That's okay.
6 **A. Third paragraph from the bottom, full**
7 **paragraph?**
8 Q. Yes. It begins with, "Material damage to
9 EFAC alluvium is not indicated." And later in that
10 same paragraph it reads as follows, "It is likely
11 that some wells which are just below the threshold
12 of Class II/Class III water would change to fall
13 within the conductivity range of Class III.
14 However, this type of change also occurs naturally,"
15 and then there is a citation to a figure, "and in
16 much larger magnitude than a 13 percent change. No
17 material damage is indicated because any mine
18 related to water quality changes are not likely to
19 be distinguishable from natural variations."
20 Do you see that?
21 **A. I see it.**
22 Q. Now, we agreed, didn't we, based upon the
23 table from the PHC that there was a great deal of
24 variation in the TDS, didn't we?
25 **A. In that table, yes.**

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1 Q. And the last sentence, "No material damage
2 is indicated because any mine-related water quality
3 changes are not likely to be distinguishable from
4 natural variations." Do you agree with that
5 sentence?
6 **A. No.**
7 Q. And what would make you think that water
8 quality changes are distinguishable from natural
9 variation?
10 **A. I believe that this is a conclusion**
11 **without sufficient backup material. This is stated**
12 **as a conclusion but I don't believe that it is**
13 **supported by the evidence in the record that is in**
14 **the -- this section of the material damage analysis**
15 **for East Fork Armells Creek.**
16 Q. And you've looked at Figure 9-23 that's
17 cited there?
18 **A. Yeah, I have. Do you want me to look at**
19 **it now?**
20 Q. You don't have to. I just want to make
21 sure that I understood the basis for your
22 conclusion.
23 And then, of course, there is a discussion
24 in the preceding two paragraphs as well; is that
25 right?

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1 **A. There is.**
2 Q. But that's not sufficient for your
3 purposes?
4 **A. No.**
5 Q. What would you have DEQ do in this setting
6 that would be sufficient by way of an analysis for
7 your purposes?
8 **A. Comply with the requirement in statute and**
9 **regulation.**
10 Q. Well, what would that be? What would they
11 do that would be sufficient to, as you put it,
12 comply with the regulations and the statute?
13 **A. They would have to -- well, they would**
14 **have to -- you would have to affirmatively**
15 **demonstrate and they would have to verify that you**
16 **had demonstrated that you were not going to have**
17 **material damage off the mine site. You have to look**
18 **at all of the anticipated impacts in the area and**
19 **you have to look at the existing water quality. You**
20 **need to look at the fact that it is a perennial or**
21 **intermittent stream and not ephemeral, and you**
22 **should be changing water classifications through the**
23 **proper process if you find that you are going to be**
24 **changing the water chemistry in a way that harms**
25 **aquatic life.**

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1 Q. So what study would be sufficient to
2 achieve that level? Set aside for the moment
3 changes in water classification and those sorts of
4 things. What would you consider to be a sufficient
5 analysis for the conclusion that is recited in the
6 CHIA?
7 **A. Well, ultimately that's not my job.**
8 Q. On that we can agree.
9 **A. Yes.**
10 Q. Whose job is it? That's a serious
11 question.
12 **A. It is the -- the regulation says that you**
13 **have to affirmatively demonstrate as the applicant**
14 **and DEQ has to verify based upon evidence in the**
15 **record that you are not going to cause material**
16 **damage to the cumulative hydrology in the impacted**
17 **area. That's paraphrasing, but I would say it is**
18 **your job initially, it is DEQ's job secondarily, and**
19 **you have to work within the confines of the**
20 **requirements in statute and you have to show that**
21 **evidence in the record.**
22 Q. And who is it that makes the judgment as
23 to whether or not we, that is Western Energy, has
24 sufficient, has submitted sufficient evidence or
25 information?

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1 **A. Well, that is the permitting process that**
2 **has been developed and --**
3 Q. That's for DEQ to decide, isn't it?
4 **A. It is for DEQ to decide but they are not**
5 **the final arbiter. If we disagree and believe that**
6 **they have failed to do their job, as we have on many**
7 **occasions, and on some occasions we have been**
8 **correct, found by either the Board of Environmental**
9 **Review or a court.**
10 Q. And what I'm trying to discern is what is
11 it on this particular issue, on just this issue, the
12 TDS issue where the PHC said there may be an
13 increase of perhaps as much as 13 percent in the TDS
14 in the alluvium. What is it that either Western
15 Energy or DEQ could possibly do that would satisfy
16 you that the conclusion they've reached is accurate?
17 **A. It would be an analysis and I would --**
18 **once the analysis is properly conducted, I would**
19 **probably want to hire a hydrologist, a**
20 **geohydrologist to analyze the data that you have**
21 **provided.**
22 Q. And, of course, you know that there are
23 hydrologists that work on staff at DEQ.
24 **A. Uh-huh.**
25 Q. And you understand and appreciate that not

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1 one but several of them looked at this CHIA,
2 correct?
3 **A. Yes.**
4 Q. And so that part was done; is that right?
5 **A. It --**
6 **MR. SULLIVAN:** Well, I'm going to object
7 on the basis of the form of the question. It's
8 ambiguous as to what you're referring to when
9 you say "that part."
10 Q. (By Mr. Martin) So in terms of having
11 hydrologists examine this issue, DEQ, in fact, did
12 have hydrologists examine this issue; is that right?
13 **A. DEQ had hydrologists examine this issue**
14 **and some of those issues are outside, such as what**
15 **is aquatic life and what is the compliance with**
16 **aquatic life; some of them are outside of their**
17 **expertise. They should have looked at other**
18 **sections of DEQ who have also expertise in the**
19 **biology of an area and in water quality standards**
20 **and that would be helpful.**
21 Q. And then do you know if they conferred
22 with people who are conversant with water quality
23 standards and have the expertise that you're talking
24 about concerning aquatic life?
25 **A. According to DEQ's first sets of requests**

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1 **for admission, interrogatories, requests for**
2 **production, you can see who helped them prepare**
3 **their answers and those were hydrologists. There is**
4 **a number of places in here where DEQ does discuss**
5 **who helped throughout this process and --**
6 Q. There are a number of those people, are
7 there not?
8 **A. Yes.**
9 Q. Is it fair to say, and I really don't want
10 this to sound argumentative, but there really isn't
11 for MEIC's purpose any amount of effort that would
12 be sufficient for you to agree with the conclusion
13 that was drawn by the CHIA on the part of DEQ or
14 Western Energy?
15 **A. That is not a fair assessment at all.**
16 **(Deposition Exhibit 15 marked**
17 **for identification.)**
18 Q. (By Mr. Martin) Ms. Hedges, I've handed
19 you a document that is taken from the CHIA. It's
20 appendix -- it's from Appendix I and it is a table
21 that is on, actually Appendix 1, and it's from page
22 12-4. And I'll ask you to take a look at the limit
23 for sulphate.
24 **A. Done.**
25 Q. And you'll see that in that entry there is

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1 an indication that the threshold limit in milligrams
2 per liter for sulphate parts per million is 1,500
3 parts per million and the upper limit is 2,500 parts
4 per million. Do you see that?
5 **A. I do.**
6 Q. And let's start with the obvious
7 preliminary question. Do you agree with those
8 limits?
9 **A. No.**
10 Q. And can you tell me why not?
11 **A. Because the standard is a narrative**
12 **standard that for Class I and Class II groundwater,**
13 **which can be found in ARM 17.30.1006(1) and**
14 **2(b)(ii), and I would like to read those to properly**
15 **describe them. In Class I groundwater your -- a**
16 **person -- let me see if this is right. "No increase**
17 **of a parameter to a level that renders the waters**
18 **harmful, detrimental or injurious to a beneficial**
19 **use listed for Class I water." And for Class II**
20 **it's, "A person may not cause a violation of the**
21 **following specific water quality standards for**
22 **Class II groundwater." And ii says, "For**
23 **concentrations of parameters for which human health**
24 **standards are not listed in DEQ-7, no increase of a**
25 **parameter to a level that renders the water harmful,**

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1 **detrimental, or injurious to the beneficial uses**
2 **listed for Class II water. The Department may use**
3 **pertinent credible information to determine these**
4 **levels."**
5 Q. And so the Department is free to use
6 pertinent, credible information for these levels; is
7 that correct?
8 **A. That is what the rule says.**
9 Q. And you don't disagree with that, do you?
10 **A. No.**
11 Q. And I gather, I'm assuming that your
12 argument would be that this is not credible
13 information that was used by DEQ; is that right?
14 **A. That is correct.**
15 Q. And how so?
16 **A. They were not peer-reviewed documents and**
17 **one of the documents was from the Wyoming -- if I**
18 **get it correct -- the Wyoming Petroleum Association.**
19 **We have answered this in our answer to interrogatory**
20 **page 18, answer number 7.**
21 Q. And I don't think it's necessary to refer
22 to that at this point. I mean, you can if it
23 refreshes your recollection.
24 **A. It's been a long day.**
25 Q. I know.

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1 And you agree, don't you, that there were
2 various studies that were cited by DEQ for its
3 conclusion; is that right?
4 **A. Yes, there were studies that were cited**
5 **and we believe some of them were misrepresented in**
6 **their conclusions.**
7 Q. Which ones?
8 **A. That is...**
9 Q. Would it help if I showed you the Sigler
10 and Bauder piece?
11 **A. Perhaps. I've seen a list and I'm just**
12 **trying to remember what they all were. We**
13 **provided -- I'm trying to remember and I'm trying to**
14 **remember where I'd find it in the record. If you**
15 **could direct me where it is.**
16 **MR. MARTIN:** Let's go off the record.
17 (Discussion off the record.)
18 Q. (By Mr. Martin) Ms. Hedges, you've had a
19 chance to review a couple of documents now and did
20 it refresh your recollection as to what studies you
21 thought were important for the sulphate limit for
22 livestock?
23 **A. Yes.**
24 Q. And what study do you believe has a
25 bearing on this subject?

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1 **A. Well, certainly the DEQ study that it**
2 **refers to is something that has to be considered.**
3 **But the conclusions don't appear to be adequately**
4 **reflected in the decision in the CHIA. And we**
5 **believe the report that really should be looked at**
6 **because it is peer reviewed, and the only**
7 **peer-reviewed document is the Raisbeck study which**
8 **supports or recommends a thousand milligrams per**
9 **liter of sulphate as the chronic exposure limit at**
10 **which harm to cattle will not occur.**
11 Q. First, with respect to the Raisbeck study,
12 how is it peer reviewed?
13 **A. How was it peer reviewed? That, I don't**
14 **know the answer to that.**
15 Q. What makes you think it was peer reviewed
16 as that term is understood?
17 **A. Because I was told it was.**
18 Q. Who told you that?
19 **A. Our attorney.**
20 Q. And have you read that from a credible
21 source someplace?
22 **A. I trust my attorney.**
23 Q. Have you ever read any place that the
24 Raisbeck review of literature was peer reviewed?
25 **A. I have not investigated that myself.**

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1 Q. And what does the term peer review mean to
2 you?
3 **A. It means that it has had other experts in**
4 **the field look at it, analyze it, determine whether**
5 **the methodology was appropriate, and that it was**
6 **credible science.**
7 Q. And you've had a lot of experience with
8 environmental science, haven't you?
9 **A. Yes.**
10 Q. Both in terms of your job and in terms of
11 your education as well, right?
12 **A. Correct.**
13 Q. And what is ordinarily the methodology for
14 peer review for scientific documents?
15 **A. Generally speaking, as I understand it,**
16 **they are submitted to a journal or a publication in**
17 **which the editors make sure that a credible team of**
18 **scientists review that analysis to determine whether**
19 **it has, you know, scientific value.**
20 Q. And do you know if that was done with
21 respect to the Raisbeck study?
22 **A. I was told it was.**
23 Q. Again, you don't know the source of that
24 other than your attorney's understanding was that it
25 was done?

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1 **A. Correct.**
2 Q. And if it wasn't peer reviewed, would that
3 make a difference to you?
4 **A. Yes. But it would still be then also**
5 **another piece of information that indicates, along**
6 **with the other nonpeer-reviewed evidence that is**
7 **being relied upon, whether or not that limit will**
8 **actually protect the beneficial uses.**
9 Q. Do you know why the Raisbeck report was
10 developed in the first place? Do you have any idea?
11 **A. I do not.**
12 Q. Do you know who commissioned that study?
13 **A. I do not.**
14 Q. Do you know whether it was commissioned by
15 Wyoming DEQ?
16 **A. I do not.**
17 Q. Do you know if Wyoming DEQ ever adopted
18 the standards that were suggested by Mr. Raisbeck?
19 **A. I do not. But knowing Wyoming, I wouldn't**
20 **be surprised if they decided not to.**
21 Q. And is it possible that the reason why
22 Wyoming decided not to adopt the Raisbeck
23 recommendations is because it was a poorly conducted
24 review of the literature? Is that possible?
25 **A. Anything is possible.**

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1 Q. And you don't know whether that's the
2 reason as you sit here today?
3 **A. No.**
4 Q. Do you know if anybody has ever adopted
5 Raisbeck as the basis for state standards?
6 **A. I do not.**
7 Q. Or federal standards?
8 **A. I do not.**
9 Q. It's been out for a long time, hasn't it?
10 **A. A while. Not as long as Hutcheson but,**
11 **yes.**
12 Q. Since 2008; isn't that right?
13 **A. Yes.**
14 Q. And are you familiar with other standards
15 that have been adopted by states and regulatory
16 agencies for sulphate?
17 **A. I have not.**
18 Q. Let's go to the CHIA again. And because I
19 know you have the document in front of you, we'll be
20 working with page 6-2. And I'll have this excerpt
21 marked for identification as Exhibit 16.
22 (Deposition Exhibit 16 marked
23 for identification.)
24 Q. (By Mr. Martin) I'd ask you, if you don't
25 mind, to look at Exhibit 16 and specifically at

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1 page 6-2 of the CHIA. And you see a heading there
2 called "Livestock." Do you see that?
3 **A. I do.**
4 Q. And there is an analysis or at least a
5 reflection of an evaluation of the literature on
6 livestock effects from sulphate. Is there not?
7 **A. Yes, there is a discussion.**
8 Q. And inviting your attention to the second
9 paragraph under that title, it begins with, "Water
10 quality guidelines for livestock used in this CHIA
11 are based on limits for livestock consumption found
12 in documents published by the Montana State
13 University Extension Service (Sigler and Bauder
14 2012, Hutcheson, 2001.)" Do you see that?
15 **A. I do.**
16 Q. And is that an accurate statement, i.e.,
17 that these limits are based on the documents that
18 are referred to, that one from the Montana State
19 University Extension Service, Sigler and Bauder and
20 Hutcheson; is that right?
21 **A. That's what that statement says. Whether**
22 **they are or not, I can't tell you for sure.**
23 Q. And as you sit here today, you don't have
24 a reason to believe that that statement's
25 inaccurate, do you?

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1 **A. Can you give me a minute?**
2 Q. Sure. Would it help if we were to provide
3 you copies of those documents?
4 **A. No, not necessarily. Okay, I'm not**
5 **finding what I was hoping to find so can you direct**
6 **me back where we just were? 6-2?**
7 Q. Yeah.
8 **A. And your question was do I have any reason**
9 **to disagree with the first sentence?**
10 Q. Yes.
11 **A. As I sit here at the moment, I can't find**
12 **anything to indicate that I would disagree with it.**
13 Q. Okay. And there is, there are the
14 following two sentences that end that paragraph and
15 they read as follows, "These limits are not
16 enforceable standards but are used by DEQ for
17 guidance in evaluating the suitability of pre- and
18 post-mine water quality for livestock use. Locally
19 water quality and the naturally exceed these
20 livestock water quality guidelines." And I believe
21 we've got a typo in that last sentence.
22 **A. Uh-huh.**
23 Q. First, do you have any reason to believe
24 that the recitation of what DEQ uses this guidance
25 for is inaccurate?

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1 **A. Only the analysis that we have provided in**
2 **the record.**
3 Q. And you would agree though that DEQ uses
4 these standards as guidance for pre- and post-mine
5 water quality for livestock use, wouldn't you?
6 **A. Yes. But as your exhibit shows, you have**
7 **guidelines for livestock water quality which are**
8 **between two numbers and I would assume that those**
9 **numbers have meaning and they should not just ignore**
10 **them. So while I suppose they are guidance but they**
11 **do have meaning.**
12 Q. And you're not suggesting that DEQ
13 ordinarily ignores those numbers, i.e., their own
14 guidance, do you?
15 **A. In other context DEQ has been known to do**
16 **so. But in this one, I don't have anything to**
17 **indicate they're ignoring that guidance.**
18 Q. Okay. And you don't have anything to
19 indicate that this is the guidance that they
20 ordinarily use in evaluating the suitability of pre-
21 and post-mine water quality, do you?
22 **A. To the best of my knowledge, no, I don't**
23 **have anything. I don't have anything.**
24 Q. And the next sentence that I believe
25 contains a typo appears to suggest that locally

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1 water quality naturally exceeds the water, these
2 livestock water quality guidelines. Do you have any
3 reason to believe that that's an incorrect
4 statement, i.e., that naturally the water quality
5 exceeds these guidelines in this area?
6 **A. I don't know if it's natural or not.**
7 Q. But then let's ask the next question,
8 which is setting aside whether it's natural or
9 coming from a different source, do you have any
10 reason to believe that that is an incorrect
11 statement that water quality in this area exceeds
12 the water quality guidelines?
13 **A. I believe it's possible that it exceeds,**
14 **but when you leave the word natural out of that**
15 **conclusory statement, I think that could be**
16 **significant.**
17 Q. On that we agree. And as you sit here
18 today, you don't have a basis to disagree that any
19 exceedance is natural, do you?
20 **A. I don't have -- I don't believe the data**
21 **has been presented adequately to know whether it's**
22 **natural or not.**
23 Q. And when you search your memory and even
24 documents that you've looked at, is there anything
25 that would suggest to you that exceedances of these

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1 guidelines come from something other than natural
2 sources?
3 **A. It is difficult to say without an analysis**
4 **that usually goes along with DEQ determining**
5 **background water quality.**
6 Q. And I take it you don't believe that the
7 analysis that was conducted by DEQ is sufficient to
8 draw that conclusion; is that correct?
9 **A. I don't know.**
10 Q. And you don't know as you sit here today
11 whether or not these exceedances came from mining,
12 do you?
13 **A. I know that it is possible that they came**
14 **from mining.**
15 Q. But you don't know?
16 **A. Not for certain but it may be in the**
17 **record. I'm not saying that it might not be in the**
18 **record and I don't recall.**
19 Q. Okay, let's go to the next paragraph. The
20 first sentence reads, "There was a lack of consensus
21 in the scientific and agricultural communities on
22 the appropriate or acceptable concentration of
23 livestock drinking water quality." Do you agree
24 with that statement?
25 **A. There is a lack of consensus in the**

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1 **scientific community on just about everything.**
2 Q. So you would agree with that statement, I
3 take it?
4 **A. Scientists are skeptics, so I believe**
5 **that's probably accurate.**
6 Q. And going to the last sentence, it reads
7 as follows, "The guidelines presented for Montana
8 are within the limits for sulphate and TDS
9 determined in a risk assessment for livestock
10 drinking water that incorporated an extensive
11 literature research with empirical data from Wyoming
12 ranchers and the citation to Geomega 2007." Is that
13 an accurate statement?
14 **MR. SULLIVAN:** Well, excuse me. It's
15 ambiguous as to whether you're asking if that's
16 an accurate statement read from the CHIA or if
17 that is a substantively accurate statement.
18 Q. (By Mr. Martin) Do you agree that these
19 standards came from the Geomega study of 2007?
20 **A. I would have to review the Geomega study.**
21 **At this late time in the day, I don't recall the**
22 **Geomega study to say whether that's perfectly**
23 **accurate. Sorry.**
24 Q. And it was a risk assessment though,
25 wasn't it?

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1 **A. Do you have a copy of it?**
2 Q. We do.
3 **MR. MARTIN:** Let's go off the record.
4 (Break taken.)
5 **A. The executive summary, page 1, says that**
6 **this is an assessment of a rule change, impacts of a**
7 **rule change for produced water from coalbed methane**
8 **and that it is looking at the adequacy of the**
9 **current effluent limits and of the validity of the**
10 **proposed limits that were analyzed and performed by**
11 **Geomega, who performed ecological risk assessment of**
12 **TDS, sulphate and barium water quality to livestock**
13 **and wildlife, reviewed social and economic benefits**
14 **to Wyoming residents and evaluated potential**
15 **injuries caused by changes to effluent limits.**
16 **So it is a risk assessment that also**
17 **includes an analysis of literature regarding social**
18 **and economic benefits of a standard.**
19 Q. (By Mr. Martin) And it reviewed a number
20 of different studies on sulphate, didn't it?
21 **A. Yes, I believe it did.**
22 Q. And it reviewed many more studies than the
23 Raisbeck study; is that correct, or if you know?
24 **A. I don't know.**
25 Q. Do you have any reason to disagree with

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1 conclusions in the Geomega study?
2 **A. Well, the Geomega study is an ecological**
3 **risk assessment that considers social and economic**
4 **benefits. It is not limited to an analysis on the**
5 **impacts to livestock and wildlife and that opens it**
6 **up to a far broader range of potential changes to a**
7 **standard because they may find that social and**
8 **economic benefits to Wyoming residents would allow**
9 **livestock to be harmed. I don't know how they**
10 **weighed these things. We have to consider the**
11 **impacts to livestock and wildlife.**
12 Q. Okay, let's talk then for a moment about
13 the impacts from sulphate on livestock. As you sit
14 here today, do you have any reason to disagree with
15 the conclusions of Geomega or to suggest that this
16 was not a thorough study?
17 **MR. SULLIVAN:** Well, I'm going to object
18 on the basis that it has been asked and
19 answered.
20 Q. (By Mr. Martin) Go ahead.
21 **A. The question that this study asked is**
22 **different than the Montana regulations require.**
23 Q. Bear with me a moment. I have to find the
24 passages on sulphate. Here we go. I have marked
25 with a sticky the passage that deals with risk

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1 assessment for sulphate on livestock.
2 **MR. SULLIVAN:** Would you like Ms. Hedges
3 to review those?
4 Q. (By Mr. Martin) If you don't mind, would
5 you go ahead and review those?
6 **A. So I am looking at page 29, the fourth**
7 **paragraph down.**
8 Q. And if you don't mind, go ahead and review
9 the document between pages 29 through 33.
10 **A. May I ask why you've chosen those pages in**
11 **particular? Is that because you want me to read**
12 **1.6.2, determination of water quality compensations**
13 **and benchmark for sulphate?**
14 Q. Correct. Ms. Hedges, are you reading this
15 for the first time?
16 **A. I am.**
17 Q. I don't want to belabor this point. Just
18 taking a quick look at the bibliography, there are a
19 number of studies cited, aren't there?
20 **A. Are you looking at that paragraph?**
21 Q. No. I'm talking about the bibliography
22 that's attached to this document toward the end, the
23 second sticky, if you will.
24 **A. The second sticky. Sure. This is long.**
25 **I have no idea though, you know, this is studies on**

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1 **salt tolerance in sheep. It has a myriad of studies**
2 **that may --**
3 Q. Including a study from the National
4 Academy of Sciences, correct?
5 **A. That's probably true. There are many,**
6 **many studies. Some of them are on topic and some of**
7 **them appear to be off topic from what we are**
8 **discussing.**
9 Q. Is it fair to say that many of them are on
10 sulphate? If you know. If you don't know, that's
11 fine.
12 **A. I don't know.**
13 Q. Go to page 32. There is a passage
14 involved. Can you read that?
15 **A. "Therefore, the recommended water quality**
16 **benchmark for sulphate is 3,010 milligrams per liter**
17 **because this number is the lowest of the geometric**
18 **means for cattle and birds. It is within the range**
19 **of the NOAEL-WQCs for rodents and it is consistent**
20 **with the field-based data from Wyoming water users."**
21 Q. And I'm assuming, Ms. Hedges, that you
22 would disagree with the conclusions of Geomega's
23 risk assessment for sulphate; is that right?
24 **A. I believe that it had some useful**
25 **information in it based upon the scope of the study,**

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1 **but some of the information in this may not be**
2 **relevant. For example, I really don't care about**
3 **sulphate impacts on rats, birds, and sheep as much**
4 **as I -- well, I guess sheep; they are livestock.**
5 Q. And we'll stipulate that there are
6 sections of this study that are not relevant to this
7 action. But with respect to sulphate, is it fair to
8 say that this has a far more complete review of the
9 literature than Raisbeck, if you know?
10 **A. I cannot say whether that is accurate or**
11 **not.**
12 Q. Fair enough. And while you've indicated
13 that you believe that the standard for sulphate
14 should be much lower than what's recommended by the
15 Geomega study, is there a reason other than the
16 Raisbeck study that as you sit here today would
17 support that position?
18 **A. To the best of my knowledge at this moment**
19 **in time, I can't think of another thing but there**
20 **may be in the record.**
21 Q. Fair enough. What is the standard that
22 you were proposing for sulphate, if you can refresh
23 my recollection?
24 **A. I believe that the Raisbeck study found --**
25 **let me find the place where we list it so I don't**

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1 **err.**
2 **MR. SULLIVAN:** And to confirm, Counsel, is
3 this intended to be responsive to your item
4 number 22 in your --
5 **MR. MARTIN:** It's water quality standards,
6 Roger, and it's responsive to several of the
7 items.
8 **A. We also, to amend my last answer, have in**
9 **our comments from August 2015 where we've raised the**
10 **Raisbeck study, we also say "See Erbes," which is**
11 **another study that we had referenced. At Figure 2,**
12 **which is livestock sulphate criteria of 500**
13 **milligrams per liter, I believe Raisbeck said**
14 **between 1,500 -- and I hate to mischaracterize what**
15 **he said by trying to speed through this. And it's**
16 **in here somewhere and I'm forgetting where it is. I**
17 **believe it's above 1,500 and I may be incorrect. My**
18 **memory might not serve me. But it's above 1,500 and**
19 **below 2,500 will cause diarrhea in cattle. So I**
20 **believe that that's without, you know, spending**
21 **another half an hour, what we had recommended.**
22 **Is it on my sheet? Page 18, answer 7. I**
23 **read this earlier. I don't believe it got put into**
24 **the record because I think we were off the record**
25 **when I read it. This is our answer to**

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1 **interrogatory --**
2 Q. (By Mr. Martin) Does it recommend a
3 specific figure?
4 **A. Six -- it recommends -- oh, I'm sorry,**
5 **seven. It doesn't recommend per se but it gives**
6 **information to help inform where a cutoff should**
7 **likely occur because you might start seeing --**
8 **studies show you might start seeing changes. I**
9 **believe it is a thousand in our response to comments**
10 **based upon Raisbeck's report.**
11 Q. Okay, a thousand --
12 **A. Micrograms per liter of sulphate.**
13 **MR. SULLIVAN:** Before we go on, I just
14 want to clarify the record, that are you --
15 you're referring to the Petitioners' answer to
16 Interrogatory Number 7 that begins at the top
17 of page 18?
18 **THE WITNESS:** That is correct.
19 Q. (By Mr. Martin) So to the best of your
20 recollection at this point in time based on the
21 response to interrogatories, the recommendation is
22 1,000 milligrams per liter; is that right?
23 **A. That is where this study has indicated**
24 **there is detrimental impacts to cattle.**
25

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1 **(Deposition Exhibit 17 marked**
2 **for identification.)**
3 Q. (By Mr. Martin) Let the record reflect
4 that I've handed Ms. Hedges a document from
5 Appendix L to the PHC that was prepared by Western
6 Energy company dated January 2014. And it includes
7 Table 16. Do you see that, Ms. Hedges?
8 **A. Yes.**
9 Q. And I'd direct your attention to the
10 entries next to sulphate and there is an indication
11 of the results of a number of samples for sulphate.
12 Do you see that?
13 **A. I do.**
14 Q. Is it fair to say that in many instances
15 the average for these samples exceeds the 1,000
16 parts per million or milligrams per liter suggestion
17 that you just described?
18 **A. Upstream does not but it does in the**
19 **others.**
20 Q. And do you have any reason to believe that
21 those are not naturally recurring levels of
22 sulphate?
23 **A. This information on this chart gives**
24 **absolutely no information one way or the other where**
25 **the samples were taken, and so it's impossible to**

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1 **say whether they are upstream of mining activities**
2 **or not.**
3 Q. And even with respect to upstream, the
4 category that you said was not necessarily as
5 variable and did not necessarily exceed the limit
6 that you appear to have suggested, it's true, is it
7 not, that you have a maximum sample of over 3,000
8 milligrams per liter; is that right?
9 **A. It is, but I have no idea where that**
10 **sample was taken.**
11 Q. If you were to assume that it was natural
12 background, wouldn't you agree with me that the
13 limit for a discharge from the mine should be
14 something that is up to at least what the background
15 level would be?
16 **A. If you are implying or wanting me to admit**
17 **that I think that it would be natural to have a**
18 **3,000 limit, I absolutely disagree.**
19 Q. You don't think that 3,000 milligrams per
20 liter could be a natural recurring level of
21 sulphate?
22 **A. Not when your average is 970. I think**
23 **it's highly unlikely.**
24 Q. You don't believe that a maximum like that
25 could occur in a stream naturally even if the

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1 average is 970?
2 **A. Even if that were the case, that wouldn't**
3 **be where I would choose to set my standard.**
4 Q. But it is possible, isn't it, that that
5 could be a naturally recurring level of sulphate;
6 isn't that right?
7 **A. A naturally, did you say recurring?**
8 Q. Recurring.
9 **A. If it recurred a lot, then your average**
10 **would be higher than it is. So it is unlikely.**
11 Q. Well, okay. Then let's talk about it as
12 just an individual sample. It is possible, isn't
13 it, that you could have a sample that is 3,000
14 milligrams per liter that is from natural sources as
15 opposed to being from manmade sources or mining?
16 **A. I suppose with no other information you**
17 **can have a sample that reads anything at some point.**
18 Q. Well, and right now you don't have any
19 reason to believe that that maximum that's in the
20 first column upstream is from something other than a
21 natural source. You don't know one way or another,
22 do you?
23 **A. I don't know one way or the other, but I'm**
24 **looking at the average and the average is far less.**
25 Q. And we agreed I think earlier that TDS

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1 varied an awful lot, didn't we?
2 **A. Yes.**
3 Q. And, again, the fact that the average is
4 lower shouldn't necessarily indicate to you that the
5 maximum came from something other than a natural
6 source, should it?
7 **A. It is possible. We don't know. It**
8 **depends on where that sample was taken.**
9 Q. And as you sit here today, you just don't
10 know, do you?
11 **A. This table provides absolutely no**
12 **information in that regard.**
13 Q. And there are other entries with respect
14 to averages and with the exception of the upstream
15 entries under sulphate, the average would exceed
16 what you appear to have suggested as the limit for
17 sulphate, wouldn't it?
18 **A. Yes.**
19 Q. And, again, if these are from naturally
20 recurring sources, you would agree with me, wouldn't
21 you, that 1,000 would be a limit that would be too
22 low?
23 **A. No, I would not agree.**
24 Q. Okay. So if the average is, for example,
25 2,442 milligrams per liter, is it sensible to impose

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1 a limit of 1,000, which is less than one half of the
2 average that occurs within the stream?
3 **A. Perhaps. It depends on how the standard**
4 **is written.**
5 Q. And what would impact how the standard was
6 written?
7 **A. What percentile you are looking at for**
8 **setting the standard.**
9 Q. And would the median affect that? Is that
10 what you're thinking?
11 **A. I would want to see what the 70th, 80th**
12 **and 90th percentiles might be.**
13 Q. And have you attempted to discern where
14 these samples were taken from?
15 **A. No.**
16 Q. Any reason to think that there is a
17 problem with the samples that were taken?
18 **A. No way to know one way or the other.**
19 Q. And there are several hundred of the
20 samples, are there not?
21 **A. Collectively, yes.**
22 Q. And we've talked before about the level of
23 inquiry that's necessary to draw a conclusion. Are
24 the hundreds of samples taken of sulphate sufficient
25 by volume for DEQ to draw a conclusion?

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1 **A. No. It depends on the location. It**
2 **depends on time of year, time of -- the amount of**
3 **water in the system, the hydrology in the area, the**
4 **waterfall in the area. There are a whole host of**
5 **factors besides the number of samples that go into**
6 **setting a water quality standard.**
7 Q. And do you have any reason as you sit here
8 today to believe that the samples were taken within
9 that category are not representative samples?
10 **A. I have no idea. They all might be the**
11 **same well. I really don't know.**
12 Q. You just don't know?
13 **A. I just don't know. This does not provide**
14 **me that data.**
15 Q. And they couldn't be the same well, could
16 they?
17 **A. I don't know. It doesn't say.**
18 Q. I'll direct your attention to --
19 **A. It says one --**
20 Q. If I might.
21 **A. -- well might be upstream, one well might**
22 **be between B and C, one well might be between A and**
23 **B, one well might be downstream. I don't know**
24 **within each one of those categories how many**
25 **different wells you considered where those wells are**

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1 **located, when it was taken, was it in a drought, was**
2 **it in a high water year. These issues matter.**
3 Q. Ms. Hedges, you can determine from the
4 face of that document that they're not all taken
5 from the same well, can't you?
6 **A. I can only determine that there probably**
7 **were six wells.**
8 Q. Okay. We at least know there are a
9 minimum of six wells, don't we?
10 **A. Most likely, yes. Sorry.**
11 Q. I mean, is there a reason to think that
12 somebody is misrepresenting this on the table?
13 **A. No. But without data I can't answer yes**
14 **or no one way or the other. You have to consider**
15 **what the data shows and where the data comes from.**
16 **This does not tell me. It doesn't answer that**
17 **question and you can't set a standard without**
18 **knowing more data.**
19 Q. And I take it that you've not gone through
20 and looked at the PHC that was prepared by Western
21 Energy?
22 **A. I've looked at parts of it.**
23 Q. And you haven't evaluated the location,
24 for example, of the samples for sulphate, have you?
25 **A. No, I have not.**

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1 Q. And as you sit here today, you don't know
2 whether these are representative samples or not, do
3 you?
4 **A. No.**
5 Q. And, again, just for purposes of
6 clarifying the record, let's go back up to specific
7 conductivity in that same table. And just for a
8 simple point here, the first four columns concerned
9 East Fork Armells Creek, don't they?
10 **A. Yes.**
11 Q. And am I correct in saying there is a
12 great deal of variability among the samples?
13 **A. Do you mean from the highest to the lowest**
14 **reading?**
15 Q. Yes.
16 **A. Across all six locations?**
17 Q. Let's confine ourselves to East Fork
18 Armells Creek.
19 **A. Sorry. Those four locations?**
20 Q. Correct.
21 **A. Yes, there is variability.**
22 Q. And if I'm reading this correctly, we have
23 a high of over 8,000 decisiemens per centimeter --
24 we have a high of over 8,000 decisiemens per
25 centimeter and a low of, excuse me --

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1 **A. UMHOS per centimeter.**
2 **MR. SCHAFER:** It's micromhos. It should
3 be microsiemens per centimeter.
4 Q. (By Mr. Martin) Okay, we have a high of
5 8,070.
6 **A. Right.**
7 Q. And we have a minimum of 322; is that
8 right? That's the range that we were looking at?
9 **A. That appears to be correct.**
10 Q. And a standard deviation for upstream of
11 489; is that right?
12 **A. Yes.**
13 Q. And the standard deviation goes all the
14 way to 1,380 for the fourth column; is that right?
15 **A. Yes.**
16 Q. And that's a high standard deviation,
17 isn't it?
18 **A. Yes.**
19 Q. Let's go off the record. Let's take a
20 break here for a few minutes.
21 (Break taken.)
22 (Deposition Exhibit 18 marked
23 for identification.)
24 Q. (By Mr. Martin) For purposes of clarity
25 of the record we've marked what has been described

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1 as the Geomega study from which Ms. Hedges testified
2 a few minutes ago. It's dated January 16, 2007, and
3 it has the title Water Quality Effects and
4 Beneficial Uses of Wyoming Produced Water Surface
5 Discharges.
6 (Discussion off the record.)
7 Q. (By Mr. Martin) Ms. Hedges, for clarity
8 of the record, there came a point in time in your
9 testimony when you were talking about the aquatic
10 study review dated September 21, 2015, that being
11 the overheads from Ms. Hunter. You mentioned the
12 Figure 1.03, I believe or 1.3.
13 **A. 1.3.**
14 Q. And what was that in reference to?
15 **A. That's the nutrient standard for aquatic**
16 **life, I believe.**
17 Q. And do you have any reason to believe that
18 that's what Ms. Hunter is talking about on page 12
19 with the statement, "Although EFAC support aquatic
20 life, aquatic life criteria are not met"?
21 **A. I assume that might be a part of what**
22 **she's referring to but I don't know.**
23 Q. And the basis for that assumption is?
24 **A. Because it's an aquatic life criteria.**
25 Q. Where does it say it's an aquatic life

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1 criteria?
2 **A. 1.3? The 1.3 standard? Is that your**
3 **question?**
4 Q. You say that it's an aquatic life
5 criteria?
6 **A. Yeah. Let me go back and check my notes.**
7 **It's a numeric standard for stream health for**
8 **aquatic life and it is a numeric standard for**
9 **nitrogen.**
10 Q. Okay. It's a numeric standard for
11 nitrogen?
12 **A. Uh-huh.**
13 Q. And you don't know as you sit here today
14 whether or not this was among the aquatic life
15 criteria that is being referred to by Ms. Hunter in
16 her September 21, 2015 presentation; is that right?
17 **MR. SULLIVAN:** I'm going to object to form
18 on the basis that it's been asked and answered.
19 Q. (By Mr. Martin) Is it the case that
20 you've said you don't know in the past?
21 **A. I think this document probably speaks for**
22 **itself. I'll have to look back through it and...**
23 Q. Let's go to page 6 of the document.
24 **A. Okay.**
25 Q. And you see, don't you, that there is

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1 sampling that occurred in 1977 and 1978. Do you see
2 that?
3 **A. Yes.**
4 Q. And there are sampling locations on
5 page 4, aren't there?
6 **A. Yes.**
7 Q. And there is an indication of when the
8 sampling occurred on page 4 of the document; is that
9 right?
10 **A. Could I see your version? Can you tell me**
11 **what exhibit it is?**
12 Q. Exhibit 14 but --
13 **MR. SULLIVAN:** There is only one copy. We
14 just must want to make sure we're looking at
15 the same page. Sometimes we're off by a page.
16 Q. (By Mr. Martin) What I was trying to do
17 is I was trying to use the page that --
18 **A. My printer cut off a part of the page.**
19 Q. Your document has the page in the lower
20 left-hand corner, I think, so I'll try to use that
21 number.
22 **A. My printer cut off apparently the legend.**
23 **Okay. Gotcha. You're looking at this page. I was**
24 **looking at the other page 4. Okay, I'm there.**
25 Q. And then directing your attention then to

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1 page 9 of the same document, and what I'm trying to
2 do is establish the context for some of these
3 statements.
4 **A. Page 9, it depends on which page 9.**
5 **MR. SULLIVAN:** Is that, John, the page
6 that at the very top says, "A Temporal Trends
7 Analysis 1977-1978"?
8 **MR. MARTIN:** That's correct.
9 **A. So page 8 at the bottom must be 9 at the**
10 **top.**
11 Q. (By Mr. Martin) And does that give you an
12 indication as to whether or not the samples are mine
13 induced or background? Do you have any idea?
14 **A. It really is dependent on where the**
15 **samples were taken. Certainly '77 through '78 is**
16 **likely they were not impacted by mining but I need**
17 **more information.**
18 Q. And then going to page 11, and I'm talking
19 now about the number in the lower left-hand corner,
20 that page has water quality and aquatic life
21 criteria. Do you see that?
22 **A. Yes.**
23 Q. All right. Does that give you an
24 indication of what we're talking about with respect
25 to aquatic life criteria?

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1 **A. Calcium, magnesium, potassium, sodium**
2 **chloride and sulphate.**
3 Q. Does that help you in terms of discerning
4 what she may have been talking about when she was
5 talking about aquatic life criteria?
6 **A. Somewhat.**
7 Q. Okay. And we're talking about water
8 quality in EFAC as, "Seen in 1975, 1977, 1978"; is
9 that correct?
10 **A. Yes.**
11 Q. And so would that suggest to you that the
12 water quality criteria that's referenced on page 12
13 in the statement that you read is actually naturally
14 recurring or background water quality?
15 **A. Maybe but not necessarily.**
16 Q. Ms. Hedges, we've laid out a large
17 document here in the middle of the table. It's a
18 document that's taken from the CHIA. And for the
19 record, the document in the upper right-hand corner
20 is a figure from Amendment 4 CHIA figures and at the
21 bottom it says Figure 9-84, "Additional drawdown
22 predicted in 2026 in Rosebud coal and McKay coal
23 from mining in AM4 compared to the predicted
24 drawdown in 2026 from currently approved mining."
25 Do you see that?

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1 **A. Yeah, I do.**
2 Q. And that's --
3 **A. But I can't see it.**
4 **MR. SULLIVAN:** Is it 124?
5 **THE WITNESS:** Yes, it's this one. 9-84.
6 Uh-huh.
7 **A. I see it.**
8 Q. (By Mr. Martin) And I'll invite your
9 attention to the potentiometric marks on the upper
10 map that's titled Layer 2 Rosebud Coal. Do you see
11 that?
12 **A. Yes.**
13 Q. And those are drawn in the area of AM4,
14 are they not?
15 **A. Yes.**
16 Q. And does that give you any indication as
17 to whether or not there would be an impact on East
18 Fork Armells Creek?
19 **A. Not really.**
20 Q. And the cone of depression is some
21 distance away from East Fork Armells Creek, isn't
22 it?
23 **A. Not in terms of geohydrology and the**
24 **potential for movement of groundwater.**
25 Q. And tell me why you say that.

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1 **A. Groundwater moves, it moves downgradient**
2 **and it moves around obstacles.**
3 Q. And if it's moving downgradient, assuming
4 the accuracy of those potentiometric contours, is
5 there any way that it would make its way to East
6 Fork Armells Creek?
7 **A. It seems to me like it's possible.**
8 Q. And why would it be possible?
9 **A. Because those are -- well, those are just**
10 **rings without information regarding where spoils**
11 **might be, where things might be that are obstacles**
12 **to groundwater flow.**
13 Q. You're not suggesting, are you, that
14 somebody didn't draw those over the area of
15 anticipated spoils, are you?
16 **A. I don't know.**
17 Q. Okay. And let's talk about water
18 drawdown. Is there anything in that cone of
19 depression that would suggest to you that AM4 would
20 have the capacity to dewater East Fork Armells
21 Creek?
22 **A. I believe that you and I are talking about**
23 **different things, because Amendment 4 is a part of**
24 **Area B and WECo has indicated in its own PHC that**
25 **there have been decreased water levels in alluvial**

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1 **wells between Areas B and C and it's possible the**
2 **change in flow is the result of mine-related**
3 **dewatering. So if you look at the whole picture of**
4 **Area B, there is a potential.**
5 Q. And just confining yourself to AM4, would
6 you agree with me based on the potentiometric
7 contours from the CHIA that there is no likelihood
8 that this mining would dewater in any respect East
9 Fork Armells Creek?
10 **MR. SULLIVAN:** Object, form, asked and
11 answered.
12 **A. No, I don't agree with you.**
13 Q. (By Mr. Martin) And tell me why not.
14 **A. Because this is a very simplistic picture**
15 **of what, of a complex hydrology. This is only one**
16 **component of the information you would need to look**
17 **at to determine the impact on water quantity.**
18 Q. And if this is accurately drawn, let's
19 assume for the moment that it is accurately drawn
20 and the potentiometric contours accurately represent
21 the drawdown from the mining at AM4, assuming that
22 as a predicate, wouldn't you agree with me that
23 there is no scientific basis to conclude that mining
24 in AM4 would dewater East Fork Armells Creek?
25 **A. I wouldn't necessarily reach that**

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1 **conclusion.**
2 Q. Again, why not?
3 **MR. SULLIVAN:** And, again, object to form,
4 asked and answered.
5 **A. There is additional information I would**
6 **want to see.**
7 Q. (By Mr. Martin) What would you want to
8 see?
9 **A. I'd want to see what else is happening in**
10 **Area B. Area B is an important part and as you**
11 **earlier claimed that Area C was in the way of**
12 **Area F, Area B is -- this is connected to Area B and**
13 **it is right next to East Fork Armells Creek. What**
14 **you do here could have an impact on what happens**
15 **here.**
16 Q. And I think you made the point earlier in
17 your testimony that, "Water flows downhill."
18 **A. Uh-huh.**
19 Q. If that's true and if these potentiometric
20 contours are drawn accurately, isn't it true that
21 mining in AM4 could not dewater East Fork Armells
22 Creek?
23 **MR. SULLIVAN:** Objection, form, asked and
24 answered.
25 **A. I...**

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1 Q. (By Mr. Martin) Let me ask it a different
2 way.
3 **A. Okay.**
4 Q. Is it fair to say as you sit here today
5 based on your testimony that you don't know whether
6 or not the potentiometric contours from this
7 document demonstrate that mining in AM4 could not
8 dewater East Fork Armells Creek?
9 **A. I can't reach that conclusion based upon**
10 **the information provided.**
11 Q. You don't know?
12 **A. I don't know based upon the information**
13 **provided in this map.**
14 Q. And what more information would you need
15 other than the contours, assuming they're accurate?
16 **A. One, assuming they're accurate but, B, I'd**
17 **like to know what's going on in the rest of Area B.**
18 Q. And tell me why that would be necessary.
19 **A. Because groundwater moves.**
20 Q. Well --
21 **A. Because groundwater moves and Area B is**
22 **critical for, that the groundwater hydrology in**
23 **Area B contributes to East Fork Armells Creek and**
24 **this is a part of Area B. You'd have to look at**
25 **more than just this little slice of what is**

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1 **occurring.**
2 Q. And if that's the cone of depression,
3 would you need to look further than that?
4 **MR. SULLIVAN:** Objection, asked and
5 answered.
6 **A. You might.**
7 Q. (By Mr. Martin) And what I'm trying to
8 understand is why just even a minimal knowledge of
9 groundwater and potentiometric contours wouldn't
10 lead you to believe that in light of this cone of
11 depression, dewatering East Fork Armells Creek is
12 literally impossible.
13 **MR. SULLIVAN:** Objection, asked and
14 answered, foundation, and argumentative.
15 **MR. MARTIN:** Read back the question.
16 (Previous question read.)
17 **A. Because that's a very definitive statement**
18 **that leaves no room for error, and this is a really**
19 **simple nearly comic version of what is occurring out**
20 **at the site.**
21 Q. (By Mr. Martin) That's fair.
22 **A. Comic was not intended to be derogatory.**
23 Q. Am I to understand based on the objection
24 from counsel and based on your testimony that it is
25 beyond your knowledge to answer the question as to

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1 whether or not the cone of depression that's
2 depicted on this document that we haven't identified
3 yet would demonstrate that dewatering East Fork
4 Armells Creek is very unlikely?
5 **A. It is not my area of expertise.**
6 Q. Let's go ahead and mark this Document 19.
7 (Deposition Exhibit 19 marked
8 for identification.)
9 Q. (By Mr. Martin) Let's take a break and
10 we'll see if we can't just wrap this up.
11 (Break taken.)
12 (Deposition Exhibit 20 marked
13 for identification.)
14 Q. (By Mr. Martin) Ms. Hedges, we've handed
15 you a document that's been marked for identification
16 as Exhibit 20. Do you recognize that document?
17 **A. I do.**
18 Q. And you've cited that document, haven't
19 you, in various documents that were produced by MEIC
20 and Sierra Club; is that right?
21 **A. Yes.**
22 Q. And for what proposition have you cited
23 it, if you recall?
24 **A. It's regarding the water quality in, it is**
25 **the Water Quality Standards Attainment Record for**

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1 **East Fork Armells Creek from Colstrip to the mouth.**
2 Q. And I'll invite your attention to page 18
3 of that document.
4 **A. Uh-huh.**
5 Q. And you'll see that it refers to, and I'm
6 going to read a number to you and I apologize,
7 MT42K002_110.pdf. And that's next to assessment
8 record.
9 **A. Correct.**
10 Q. Do you recognize that as a reach of East
11 Fork Armells Creek?
12 **A. Yes.**
13 Q. And do you recall whether it's upper EFAC
14 or lower EFAC?
15 **A. It says that it's Colstrip to the mouth,**
16 **so depending on how you define upper or lower, it's**
17 **probably the Colstrip to the mouth.**
18 Q. Which you would say is lower, wouldn't
19 you?
20 **A. Probably.**
21 Q. And there is an entry next to aquatic
22 life. Do you see that entry?
23 **A. I do.**
24 Q. And with respect to number 456, do you
25 know what that refers to as the number 456?

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1 **A. That's nitrate/nitrite and in parens,**
2 **nitrite plus nitrate as N, as in nitrogen.**
3 Q. And next to that is the number 156. Do
4 you see that?
5 **A. Yes.**
6 Q. And what does 156 refer to?
7 **A. Agriculture.**
8 Q. And does that suggest to you what it was
9 that DEQ believed was the cause of elevated levels
10 of nitrite/nitrate as nitrogen?
11 **A. It indicates that that's a potential, yes.**
12 Q. Doesn't it indicate that the cause is
13 identified as agriculture?
14 **A. The source is -- it appears to me that the**
15 **source is not confirmed.**
16 Q. On this document the source is only
17 agriculture, it's not mining, is it?
18 **MR. SULLIVAN:** Excuse me. I think it
19 misstates the document. You're speaking about
20 one specific line of the document that you were
21 referring to. The document does refer to coal
22 mining. So are you referring to a line that
23 doesn't refer to coal mining?
24 **MR. SCHAFER:** What I'm talking about now
25 is 456 and that's nitrite and nitrate. Do you

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1 see that?
2 **MR. SULLIVAN:** I do.
3 **THE WITNESS:** Uh-huh.
4 **MR. MARTIN:** So I want to confine my
5 question here to nitrate/nitrite and nitrogen
6 and that would be number 456.
7 Q. (By Mr. Martin) And doesn't this document
8 identify agriculture and only agriculture as the
9 source of the elevated levels for nitrate/nitrite?
10 **A. This document appears to list agriculture.**
11 **If N is whether it's confirmed or not, which I'm**
12 **assuming it is, that means it is unconfirmed. It is**
13 **assuming that it is agriculture. It depends on what**
14 **N stands for, but it says in parentheses right above**
15 **it the source and then in parentheses it says**
16 **confirmed. N would indicate to me no and there is,**
17 **there are other documents within DEQ that indicate**
18 **that coal mining may be a source of that impairment.**
19 **(Discussion off the record.)**
20 Q. (By Mr. Martin) So with that caveat, is
21 there any indication on this document that mining is
22 the source of nitrate/nitrite in this stretch of
23 East Fork Armells Creek?
24 **A. In this whole document, I don't know. But**
25 **in this particular table I would say that that's**

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1 **what it looks like.**
2 Q. You cited this document elsewhere, haven't
3 you?
4 **A. Yes.**
5 **(Deposition Exhibit 21 marked**
6 **for identification.)**
7 Q. (By Mr. Martin) Ms. Hedges, I'm handing
8 you a document that's been marked for identification
9 as Exhibit 21. Can you identify that document?
10 **A. It's the 2014 Water Quality Standards**
11 **Attainment Record for East Fork Armells Creek, the**
12 **headwaters to Colstrip.**
13 Q. And this is a document, again, that you've
14 cited, have you not?
15 **A. I believe we have, yes.**
16 Q. And I'll invite your attention to what I
17 believe is page 5 on that document. It's marked by
18 the sticky that's attached.
19 **A. Uh-huh.**
20 Q. Would you read the first sentence of that
21 document into the record, please?
22 **A. "Stream is ephemeral."**
23 Q. And I gather from your testimony earlier
24 today that you would disagree with that statement;
25 is that correct?

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1 **A. I think that in 2014 in their look at the**
2 **stream they're not saying whether it should be**
3 **ephemeral or whether it has been perennial and**
4 **intermittent, but it just says "Stream is**
5 **ephemeral."**
6 Q. And do you see any indication that that
7 statement is qualified with what you just suggested?
8 **A. I see nothing in the statement that**
9 **indicates they've taken a historic look at that**
10 **site. In fact, I'm guessing at the end of the**
11 **document it says, "Identified threats or impairments**
12 **result from pollution categories such as dewatering**
13 **or habitat modification and, thus, the calculation**
14 **of a total maximum daily load is not required.**
15 **Available data and/or information indicate that a**
16 **water quality standard is exceeded due to an**
17 **apparent natural source in the absence of any**
18 **identified anthropogenic sources. Identified**
19 **threats or impairments result from pollution**
20 **categories such as dewatering or habitat**
21 **modification and, thus, the calculation of a TMDL is**
22 **not required."**
23 Q. And there is no indication, is there, that
24 that portion of the stream was made ephemeral by
25 anthropogenic sources, is there?

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1 **A. Possibly. On page 12 the alteration in**
2 **stream or littoral vegetative covers is caused by**
3 **surface mining, and that --**
4 Q. Vegetative cover, is that whether or not
5 the stream is ephemeral?
6 **A. It could have -- I mean, these things are**
7 **related. They can be related. If you don't have**
8 **water in a stream, you may not have vegetative**
9 **cover.**
10 Q. Is it your position that this reach of
11 East Fork Armells Creek is not ephemeral?
12 **A. I don't know the answer to that.**
13 Q. Okay. Can you think of any scientific
14 evidence anywhere that would suggest this reach of
15 EFAC is not ephemeral?
16 **A. I'd have to look back at all the data in**
17 **the record. Do you want me to look?**
18 Q. As you sit here today, do you recall
19 anything, any source of science that would suggest
20 that this reach of EFAC is not ephemeral?
21 **A. I am not willing to say that there is**
22 **nothing in the record that doesn't indicate that**
23 **portions of this might be ephemeral. I mean, might**
24 **be intermittent and perennial. I'm sorry, it --**
25 Q. When you say "the record," you're talking

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1 about the CHIA; is that right?
2 **A. No, the record.**
3 Q. Go ahead.
4 **A. The record. The entire administrative**
5 **record.**
6 Q. Okay. And let's talk about that for a
7 moment. What do you mean by the entire
8 administrative record?
9 **A. All of the information that has been**
10 **provided to DEQ to make a decision, information by**
11 **us, information by you, information that it has**
12 **generated prior to the date of its decision.**
13 Q. And I think what you're suggesting then is
14 all of that has a bearing on DEQ's decision; is that
15 right?
16 **A. All of that has a bearing on -- it is all**
17 **a part of the record by which DEQ is supposed to**
18 **look at and consider and make a permitting decision**
19 **based upon legal considerations in statute and rule.**
20 Q. And how long would it take for you to look
21 through what you have by way of the record to
22 discern whether or not there was any scientific
23 information that would support the proposition that
24 this reach of East Fork Armells Creek is not
25 ephemeral?

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1 **A. Based upon the information I have in front**
2 **of me, it would take me 10, 15 minutes.**
3 Q. Take it.
4 **MR. SULLIVAN:** For the record, I will note
5 that the -- and I'm presuming you're asking
6 this question in regards to the matter recited
7 at item number 15 in your 30(b)(6) deposition
8 notice that states the ephemeral or
9 nonephemeral nature of reaches of East Fork
10 Armells Creek. Is that fair?
11 **MR. MARTIN:** Yeah.
12 (Off the record briefly.)
13 Q. (By Mr. Martin) I think the definition of
14 upper reach is within that document and my
15 recollection is that it is --
16 **A. Headwaters to Colstrip.**
17 Q. I think that's right but I'm not sure. It
18 says assessment unit MT42K002_170. And that is a
19 distance of 24.67 miles. Does that help you?
20 **A. It says, that document says headwaters to**
21 **Colstrip.**
22 Q. Yes.
23 **A. Okay. Just to speed things up, I would**
24 **not say that that stream is ephemeral in that whole**
25 **section. It may be that historically it has been**

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1 **intermittent and perennial and I base that upon the**
2 **fact that your PHC admits that you may have**
3 **dewatered that portion of the stream. And previous**
4 **CHIAs that I don't have in front of me, I wish I**
5 **did, Area C, FEIS in 1982, the PCH in 1986, Area B**
6 **amendment to the CHIA in 1995 and, again, this CHIA**
7 **for this here, pages 28 and 29. I've also listed**
8 **the PHD addendum, which I don't believe I have with**
9 **me.**
10 Q. Okay. And you don't know what those
11 documents that you just referenced may say with
12 respect to whether or not it's ephemeral as you sit
13 here today?
14 **A. We have submitted comments that those**
15 **documents indicate that the, indicate the ephemeral**
16 **versus the nonephemeral nature of East Fork Armells**
17 **Creek and some of them likely are the areas of the**
18 **creek that are adjacent to the mine.**
19 Q. And obviously DEQ disagrees with that
20 assessment; is that correct?
21 **A. What DEQ agrees or disagrees with I don't**
22 **know, but that statement said that this section of**
23 **DEQ thought it was ephemeral. But there is a lot**
24 **more material in this document than just this**
25 **statement, so I'd have to look at it all to see what**

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1 **DEQ really thought.**
2 Q. But you have -- You will agree with me,
3 won't you, that DEQ in this document concluded that
4 that reach of EFAC was ephemeral; is that right?
5 **A. DEQ concluded in this document that that**
6 **is the case. It did not look at the historic nature**
7 **necessarily of that section of stream and whether it**
8 **has always been ephemeral.**
9 Q. And what you've just described is the
10 basis for you to say that there may be areas of this
11 portion of East Fork Armells Creek that are not
12 ephemeral; is that right?
13 **A. There may be portions of East Fork Armells**
14 **Creek that are not ephemeral based upon statements**
15 **like this in the document that you handed me, the**
16 **assessment, where the mine has not obliterated the**
17 **channel, the stream habitat is not impaired. So it**
18 **is obvious that this is just looking at the current**
19 **situation and is not looking at how the mine has**
20 **impacted that water body over time.**
21 Q. And is there any record, any historic
22 record that would indicate that the mine
23 "obliterated" East Fork Armells Creek?
24 **A. That's a statement in here. I don't know.**
25 **I think that we may have to look back at these**

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1 **historic records that are in the record that we have**
2 **cited before regarding the nature of that water**
3 **body.**
4 Q. Okay. Do you know what the proposed
5 operation is that is the subject of this hearing
6 before BER?
7 **A. Excuse me?**
8 Q. Isn't it true that the proposed operation
9 that we're talking about is AM4?
10 **A. We are talking about Area B and an**
11 **amendment to expand Area B.**
12 Q. And that would be AM4; would it not?
13 **A. Yes. AM4 is an amendment to the**
14 **existing --**
15 Q. One of the things I'm trying to understand
16 is whether or not you're suggesting that because
17 this is an amendment it somehow opens up the Area B
18 permit. Are you suggesting that?
19 **A. I am suggesting that Area B is an integral**
20 **component of Amendment 4. There would be no**
21 **amendment if you did not have Area B.**
22 Q. I'll grant you that. But it's not your
23 position that we are opening up the permit for
24 Area B as a whole, is it?
25 **A. You are looking -- It is my position that**

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1 **the law requires you to do a cumulative hydrologic**
2 **analysis and that the impacts from mining on Area B**
3 **are a part of that analysis.**
4 Q. And getting back to the question. While I
5 appreciate that one must consider other parts of
6 Area B than just AM4 for a cumulative impacts
7 analysis, you're not suggesting, are you, that with
8 AM4 we're reopening the entire permit for Area B?
9 **A. We are looking at the impacts from what**
10 **has occurred in Area B on the hydrologic balance of**
11 **the area. You cannot -- What you are arguing for,**
12 **it appears to me, is segmentation.**
13 Q. And for the record let's be clear. Our
14 position is not segmentation. We recognize what the
15 word cumulative means. What I'm trying to discern
16 is whether or not you folks are attempting to take
17 the position that by virtue of this amendment we've
18 reopened the entirety of Area B?
19 **MR. SULLIVAN:** And I'm going to object on
20 the basis that it's been asked and answered,
21 it's argumentative, and I'll leave it at that.
22 Q. (By Mr. Martin) And, sincerely, I don't
23 believe it's been answered. It's certainly been
24 asked. And I don't think this is a difficult
25 question and I'm not trying to trick you. I'm

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1 trying to understand what your position is.
2 **MR. SULLIVAN:** Well, the position of the
3 organizations is as stated in our notice of
4 appeal. We've laid out the grounds for the
5 appeal and we've stated the basis for them, and
6 so I think you really are asking for a legal
7 conclusion. And to the extent that this
8 witness is able to answer it, the witness has
9 attempted to answer it. It may not be the
10 answer that you wanted but it's been sincerely
11 attempted.
12 Q. (By Mr. Martin) And let me ask this
13 simplistic question. Are you with this action
14 attempting to reopen the permit for Area B as
15 opposed to the amendment that's been described as
16 AM4?
17 **MR. SULLIVAN:** And I'm going to object on
18 the same basis.
19 **MR. MARTIN:** Fair enough.
20 **MR. SULLIVAN:** Calls for a legal
21 conclusion, asked and answered.
22 **A. The cumulative impact analysis must**
23 **include Area B and the impacts that have occurred in**
24 **Area B.**
25 Q. (By Mr. Martin) And that's as far as you

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would go; is that right?
A. No. It is the impacts to the hydrologic balance in the cumulative impact area.
MR. MARTIN: Let's go off the record.
(Discussion off the record.)
Q. (By Mr. Martin) I don't have any further questions. Let me confer with Becky to make sure.
(Off the record briefly.)
Q. (By Mr. Martin) Let's go back on the record and just a follow-up question that we talked about. Would you agree that material damage determination for AM4 applies only to impacts to the hydrologic balance resulting from the proposed mining operation for AM4 and the impacts of previous existing and anticipated mining that interact with the impacts of the proposed mining operation for AM4?
A. That was a mouthful.
MR. SULLIVAN: I'm going to object to the extent it calls for a legal conclusion and it is a compound question, but answer it to the extent you can.
A. To the extent that that question complies with the rules and the definition of material damage and the definition of anticipated mining, I would

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agree with that statement.
Q. (By Mr. Martin) I think we're done.
(The deposition was concluded at 6:00 p.m.)
(Signature required.)
* * * * * * *

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CERTIFICATE OF WITNESS

PAGE LINE CORRECTION

I, ANNE HEDGES, have read the foregoing transcript of my testimony and believe the same to be true except for the corrections noted above.
DATED this _____ day of _____, 2016.

_____
Deponent

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C E R T I F I C A T E

COUNTY OF LEWIS AND CLARK)
STATE OF MONTANA)

I, LISA R. LESOFSKI, Registered Professional Reporter and notary public for the State of Montana, do hereby certify:
That the witness in the foregoing deposition was first duly sworn by me in the foregoing cause, that the deposition was then taken before me at the time and place herein named, that the deposition was reported by me and that the foregoing -219- pages contain a true record of the testimony of the witness to the best of my ability.
IN WITNESS WHEREOF, I have set my hand and seal on this 20th day of May, 2016.

_____
Lisa R. Lesofski

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