



1           WHEREUPON, the following proceedings were  
2 had and testimony taken, to-wit:

3                           \* \* \* \* \*

4           CHAIR DEVENY: My computer says it's  
5 9:00 so I guess we'll go ahead and get started.

6           I'm Chris Deveny, Chair of the Board of  
7 Environmental Review, and I call this meeting to  
8 order. Just for the record, this is a special  
9 meeting of the Board of Environmental Review, and  
10 we're meeting via Zoom technology because of the  
11 COVID-19 pandemic. And with that, I'll turn it  
12 over to Deb to take roll call, and then we'll do  
13 an introduction of all of the other people that  
14 are on board this morning. Go ahead, Deb.

15           MS. SUTLIFF: Thank you. We have Chris  
16 Deveny.

17           CHAIR DEVENY: Here.

18           MS. SUTLIFF: Hillary Hanson.

19           BOARD MEMBER HANSON: Here.

20           MS. SUTLIFF: Jerry Lynch.

21           BOARD MEMBER LYNCH: Here.

22           MS. SUTLIFF: David Lehnherr.

23           BOARD MEMBER LEHNHERR: Here.

24           MS. SUTLIFF: John DeArment.

25           BOARD MEMBER DEARMENT: Here.

1 CHAIR DEVENY: We should have Dexter and  
2 Chris Tweeten yet.

3 MS. SUTLIFF: I don't see Dexter and --

4 BOARD MEMBER BUSBY: Dexter is on the  
5 phone.

6 MS. SUTLIFF: All right. Dexter. Thank  
7 you.

8 CHAIR DEVENY: Dexter, could you speak  
9 up just so we can get it on the record.

10 BOARD MEMBER BUSBY: Yes, I'm here.

11 CHAIR DEVENY: Thank you.

12 MS. SUTLIFF: Chris Tweeten.

13 (No response)

14 MS. SUTLIFF: I do not see him yet. All  
15 right. And then we have George Mathieus with DEQ.

16 CHAIR DEVENY: We do have a quorum, so  
17 we will go on. If you want to do the other  
18 introductions, go ahead.

19 MS. SUTLIFF: Absolutely. It looks like  
20 we just have one person on the phones as our  
21 guest. We have a Michael Ryan as a guest, and  
22 Angela.

23 MS. CLERGET: Deb, I'm sorry to  
24 interrupt you, but as you go through and introduce  
25 people, could you ask them, please, whether or not

1 they want to make public comment.

2 MS. SUTLIFF: Absolutely. Michael Ryan.  
3 Michael, would you like to make comments today?

4 MR. RYAN: No, thank you.

5 MS. SUTLIFF: We have David Brooks is a  
6 guest with us. David, will you be making comments  
7 today?

8 MR. BROOKS: Yes, I likely will. Thank  
9 you.

10 MS. SUTLIFF: We have Brad Smith. Brad,  
11 will you be making comments today?

12 MR. SMITH: Yes, please.

13 MS. SUTLIFF: I have Travis Schmidt with  
14 the Montana Water Science Center. Travis, will  
15 you be making comments today?

16 MR. SCHMIDT: If needed.

17 MS. SUTLIFF: I have Angela Colamaria.  
18 I'm sorry if I'm pronouncing your name wrong.  
19 Angela is with the DEQ Legal.

20 MS. COLAMARIA: I don't need to speak  
21 today.

22 MS. SUTLIFF: Thank you. I'm trying not  
23 to do this very rough today. Jason Gildea.

24 MR. GILDEA: Hi. No comments.

25 MS. SUTLIFF: We have Erin Sexton.

1 Erin, will you be making comments today?

2 MS. SEXTON: Yes, I will. Thank you.

3 MS. SUTLIFF: We have Kirsten Bowers,  
4 DEQ Legal. Kirsten, will you be making comments  
5 today?

6 MS. BOWERS: No, I will not.

7 MS. SUTLIFF: Thank you. Kelsea Harris.  
8 She's a guest with us. Kelsea, will you be making  
9 comments today?

10 MS. HARRIS: No, thank you.

11 MS. SUTLIFF: We have Kayla Glossner is  
12 a guest. Kayla, will you be making comments  
13 today?

14 MS GLOSSNER: No.

15 MS. SUTLIFF: I have Julianne McLaughlin  
16 with EPA. Will you be making comments today?

17 MS. JULIANNE McLAUGHLIN: No comments.  
18 Thank you.

19 MS. SUTLIFF: John Kilpatrick with USGS.  
20 John, will you be making comments today?

21 MR. KILPATRICK: No comments.

22 MS. SUTLIFF: Lars Sander-Green is a  
23 guest with us today. Lars, will you be making  
24 comments?

25 MR. SANDER-GREEN: Yes, please.

1 MS. SUTLIFF: I have Lauren Sullivan  
2 with DEQ.

3 MS. SULLIVAN: I'll be presenting, but  
4 no other comment.

5 MS. SUTLIFF: Thank you, Lauren. We  
6 also have a Mark Adzick. (Phonetic)

7 MR. ADZICK: Good morning. No comments  
8 today.

9 MS. SUTLIFF: Thank you, Marko. We have  
10 a Mora Devin (phonetic) a guest with us today.  
11 Mora, will you be making comments?

12 MS. DEVIN: I will not. Thank you.

13 MS. SUTLIFF: The speaker with us today  
14 will be Myla Kelly with Montana DEQ.

15 MS. KELLY: Good morning.

16 MS. SUTLIFF: We have a Rachel Malison.  
17 Rachel, will you be making comments today?

18 MS. MALISON: No, I won't. Thank you.

19 MS. SUTLIFF: We have Rebecca Harbage  
20 with Montana DEQ. Rebecca, will you be making  
21 comments today?

22 MS. HARBAGE: No, I will not. Thanks,  
23 Deb.

24 MS. SUTLIFF: Sandy Scherer is with us  
25 this morning. Sandy, will you be making any

1 comments this morning?

2 MS. SCHERER: No, I will not.

3 MS. SUTLIFF: Thank you. We have Sarah  
4 Clerget, the Board's attorney. Sarah, will you be  
5 making comments today?

6 MS. CLERGET: No.

7 MS. SUTLIFF: We have Steve Gunderson, a  
8 guest with us today. Steve, will you be making  
9 comments?

10 MR. GUNDERSON: Yes, ma'am.

11 MS. SUTLIFF: Thank you, Steve.

12 MR. CUFFE: Can you hear me?

13 MS. SUTLIFF: Yes.

14 MR. CUFFE: This is Senator Mike Cuffe,  
15 and I'll be joining Steve on his computer here.

16 MS. SUTLIFF: Thank you, Senator. We'll  
17 note that. We have Tonya Fish with EPA. Tonya,  
18 will you be making comments?

19 MS. FISH: No, thank you.

20 MS. SUTLIFF: With DEQ Water Quality  
21 Division we have Tim Davis. Tim, will you be  
22 making comments today?

23 MR. DAVIS: No, but I'll be on to help  
24 answer any questions that may arise.

25 MS. SUTLIFF: All right. Thank you. I

1 do believe I've captured names today on our Zoom.  
2 Welcome, everybody.

3 CHAIR DEVENY: Thank you, Deb. I think  
4 there were some people that might have been  
5 missed. It looks like Vicki Marquis is on.

6 MS. MARQUIS: Good morning. Thank you,  
7 Madam Chair, and yes, I would like to give  
8 comments today. Thank you.

9 MS. SUTLIFF: Thank you so much.

10 CHAIR DEVENY: Is there any other people  
11 that we might have missed?

12 MS. SCHMIT: Good morning. This is Ayn  
13 Schmidt with EPA, and I will be making some brief  
14 comments.

15 CHAIR DEVENY: Thank you.

16 MS. SUTLIFF: I also see a Clayton  
17 Elliot. I don't see a microphone for Clayton.  
18 And that's our newest member. That's all I have,  
19 Madam Chair. Thank you.

20 MR. LEVIT: Madam Chair, if I could, Stu  
21 Levit with the Confederated Salish and Kootenai  
22 Tribes is also on, and I would appreciate the  
23 opportunity to make comments. Thank you. Stu  
24 Levit, S-T-U L-E-V-I-T. Thanks.

25 MS. SUTLIFF: Thank you, Stu, and



1 welcome.

2 MR. JAMISON: Madam Chair, this is  
3 Michael Jamison with the National Parks  
4 Conservation Association, and I likewise would  
5 like to make comments, please.

6 CHAIR DEVENY: Thank you, Michael.  
7 Anybody else?

8 MR. HADDEN: Dave Hadden with Headwaters  
9 Montana.

10 CHAIR DEVENY: Welcome, Dave. Thank  
11 you. We've got you on the list.

12 MS. JOANNA McLAUGHLIN: Joanna  
13 McLaughlin with DEQ. I won't be making comment.

14 CHAIR DEVENY: Anybody else?

15 MR. McGRATH: Good morning. Shaun  
16 McGrath from Montana DEQ, and I'll just be on  
17 observing. Thank you.

18 MS. SUTLIFF: Thank you, Shaun.

19 CHAIR DEVENY: I notice that Chris  
20 Tweeten has joined us as our Board member, so we  
21 have a full board complement this morning.

22 UNKNOWN SPEAKER: Madam Chair, I know  
23 others are trying to call in but they have trouble  
24 with the Zoom.

25 CHAIR DEVENY: I think we'll go ahead

1 with the meeting and get started, and then as  
2 people come in, when it's time for public comment,  
3 we'll double check and see if there are others on  
4 the list. We wanted to get an idea how many were  
5 speaking today, so just for matter of time  
6 management for the meeting. So thank you  
7 everybody, and appreciate your patience.

8 So with that, I will proceed. DEQ has,  
9 the Department has requested that the Board  
10 initiate rulemaking for the selenium water quality  
11 standards for Lake Koochanusa and the Kootenai  
12 River, and let's just start out with the  
13 presentation by the DEQ folks. And George  
14 Mathieus, I'll turn it over to you or whoever else  
15 was going to make the presentation.

16 MR. MATHIEUS: Sorry, Madam Chair. I'm  
17 talking with mute. Good morning. Both Lauren  
18 Sullivan and Myla Kelly will be presenting to the  
19 Board. You should be able to see their power  
20 point on our screen shortly.

21 CHAIR DEVENY: All right. So welcome,  
22 Myla and Lauren.

23 MS. CLERGET: Folks are who are not  
24 talking or Board members, could you turn off your  
25 video, because it helps with the bandwidth. Turn

1 off your video and mute your microphone, please.  
2 Go ahead. Sorry to interrupt.

3 MS. KELLY: Good morning, Madam Chair,  
4 Members of the Board. Can you hear me okay?

5 CHAIR DEVENY: Yes. We're all muted,  
6 but yes, we can hear you.

7 MS. KELLY: Okay. Good morning. Madam  
8 Chair, Members of the Board, my name is Myla  
9 Kelly. I'm the manager of Montana DEQ's Water  
10 Quality Standards and Modeling Section. And today  
11 myself and our technical project lead Lauren  
12 Sullivan will be providing you with a presentation  
13 to support our request to the Board today to  
14 initiate rulemaking for selenium water quality  
15 standards for both Lake Kooconusa and Kootenai  
16 River.

17 So I'll begin the presentation  
18 discussing the background, framework, and process  
19 of how we have arrived here; and then Lauren will  
20 address the technical and scientific aspects of  
21 the standards that we're proposing. Next slide,  
22 please.

23 I want to begin with the foundational  
24 concept of water quality standards, which may be a  
25 review for you all, but it is critical to our

1 presentation and discussion today.

2 As you well know, Montana has been  
3 delegated authority under the Clean Water Act to  
4 establish water quality standards for the  
5 protection of beneficial uses, and in turn,  
6 Montana's Board of Environmental Review has  
7 authority to adopt water quality standards.

8 We have water quality standards for  
9 multitudes of pollutants, and those standards  
10 provide a measure for how clean we want our water.  
11 And what do we mean by how clean.

12 We want clean water for aquatic life to  
13 propagate; for recreation; for swimming; sometimes  
14 for drinking; or for agriculture; or industry  
15 purposes. These are what we call our beneficial  
16 or designated uses, and our standards are  
17 established to protect those beneficial uses of  
18 our water bodies.

19 Selenium standards for Lake Koocanusa  
20 and the Kootenai River which we're discussing  
21 today are being set to protect our aquatic life,  
22 which means that the standard represents the limit  
23 or the cap of selenium concentration below which  
24 we have confidence that the aquatic life is  
25 protected. Next slide, please.

1           This timeline provides a high level  
2 overview of how we have arrived at this point.

3           In 2010 as a result of a Memorandum of  
4 Understanding and Cooperation between British  
5 Columbia and Montana, which was spurred by events  
6 pertaining to the transboundary Flathead River,  
7 coordinated efforts began between BC Environmental  
8 and DEQ to address regional transboundary water  
9 quality issues, including those in Elk Valley,  
10 British Columbia, which is upstream of Lake  
11 Koochanusa.

12           In 2012, increasing trends in selenium  
13 concentrations in Lake Koochanusa led Montana DEQ  
14 to list the lake as threatened for selenium on our  
15 impaired water bodies list. In 2013, in  
16 recognition of water quality impacts from past,  
17 current, and future mining activities in the Elk  
18 Valley in Lake Koochanusa, a BC ministerial order  
19 was signed to remediate water quality effects, and  
20 guide environmental management.

21           This led to the establishment in 2015 of  
22 the bi-national Lake Koochanusa Monitoring and  
23 Research Working Group, which has guided the  
24 subsequent work that we are here to present today.

25           In 2016, EPA updated their 1987 national

1 criteria for selenium, and that update included  
2 standards for fish tissue, as well as the water  
3 column, and recommended using site specific data  
4 where feasible, due to the unique way that  
5 selenium bioaccumulates, depending on local  
6 factors, such as species composition, water  
7 chemistry, and hydrology.

8           And since 2015, BC and Montana have been  
9 working in close collaboration with the goal of  
10 establishing an aligned transboundary selenium  
11 standard in 2020, which is protective of aquatic  
12 life in Lake Koochanusa. Next slide, please.

13           This has been a multi-year  
14 multi-national transboundary effort with  
15 significant collaborative actions, including six  
16 years of coordination with DEQ, BC Environment,  
17 co-leading this effort. Participation of an  
18 engaged working group consisting of broad ranging  
19 entities -- state, tribal, federal, industry, etc.  
20 -- involvement and dedication from top selenium  
21 experts in the US and Canada guiding the  
22 development of this standard; coordinated  
23 transboundary data sharing and data collection;  
24 development of an extensive co-managed public  
25 website which houses all of our data, our meeting

1 summaries, our sampling and analysis plans,  
2 technical reports and relevant literature.

3 Public meetings were held in Montana  
4 beginning in 2015. Seven of those were large  
5 panel formats organized with assistance from the  
6 Kootenai River network; and in 2019, DEQ also met  
7 on a smaller scale with local officials in Troy,  
8 Eureka, and Libby, to provide an update on trends  
9 and standards developments.

10 As we work through our standards setting  
11 process based on the science you'll hear from  
12 Lauren, BC Environment is currently working  
13 through their standard setting process as well,  
14 again with the goal which is an aligned  
15 transboundary water column selenium standard.  
16 Next slide, please.

17 The forum we utilized for this  
18 transboundary effort was the Lake Kooconusa  
19 Monitoring and Research Working Group. Formed in  
20 2015 to address transboundary water quality  
21 issues, the group has met eleven times on a  
22 semi-annual basis.

23 Selenium, in particular determination of  
24 the appropriate water quality standard, was  
25 determined to be the first priority, thus selenium

1 technical subcommittee was formed comprised of top  
2 experts in selenium to guide data collection and  
3 modeling work. That group has had nearly thirty  
4 meetings during which they consult on sampling  
5 plans, analyses and selenium modeling. Next  
6 slide, please.

7 I'll now provide an overview of the  
8 proposed standards, so you can have that in your  
9 mind as a framework as Lauren explains how we  
10 arrived at these values.

11 The standard is comprised of fish tissue  
12 values. These are the same for Lake Koochanusa and  
13 the Kootenai River, and they mirror EPA's national  
14 recommended criteria. These are detailed as egg  
15 ovary, full body, and muscle values.

16 There's also water column values, which  
17 for Lake Koochanusa is based on site specific data  
18 listed here proposed as 0.8 micrograms per liter;  
19 and for the Kootenai River, 3.1 micrograms per  
20 liter. This is based on EPA's national  
21 recommended criteria for flowing waters. Next  
22 slide, please.

23 Why now? So this is a question that has  
24 been raised, and so I really want to address it  
25 directly. Substantial and critical milestones



1 have been met. Each of them are significant  
2 achievements in and of themselves. We have  
3 completed a multi-year data collection effort.

4 The resulting peer reviewed modeling  
5 report has been completed by the United States  
6 Geological Survey. As one of the penultimate  
7 science agencies in the US, this has been peer  
8 reviewed under stringent scientific standards.  
9 Recommendations on model inputs were solicited and  
10 received by our selenium technical subcommittee  
11 members.

12 And based on those two previous  
13 milestones, BC and DEQ co-developed and agreed  
14 upon scenarios for protective water quality  
15 selenium standard.

16 And I'd like to emphasize these last two  
17 points. These standards are necessary to prevent  
18 impacts to aquatic life. Remembering back to that  
19 timeline, for over a decade there has been  
20 certainty that the selenium standard that now  
21 applies to Lake Koochanusa of five micrograms per  
22 liter does not protect our aquatic life, and  
23 uncertainty about what the standard should be to  
24 protect our aquatic life.

25 And for that reason, all the ensuing

1 work, and the reason we're here today, was put  
2 into answering that one simple question: What is  
3 the right standard? We've arrived at that point  
4 of what is the right standard, and we have arrived  
5 at that point before seeing the substantial  
6 fisheries impacts that are occurring upstream.

7 The Lake Koochanusa and Kootenai River  
8 fisheries remain today a healthy fishery, and it  
9 is our responsibility to maintain it that way.

10 You will learn from Lauren that selenium impacts  
11 to aquatic life can be challenging to first  
12 detect, because the impacts happen at the  
13 reproductive phase.

14 If we were to get to the point of a  
15 fishery population crisis as a result of high  
16 selenium concentrations, that would be a hard  
17 point to come back from, which is why Montana  
18 Fish, Wildlife and Parks has been a key partner in  
19 all of this work from day one, and their fishery  
20 biologists support the standard that we're  
21 proposing.

22 Secondly, there are no adverse economic  
23 impacts to Montana. The standards proposed today  
24 have no adverse impact, economic impacts on our  
25 Montana businesses and permitted communities, and

1 that is because we don't have selenium sources in  
2 this watershed. The known source of increasing  
3 selenium in the Elk Valley is the Elk Valley in  
4 British Columbia.

5 We have no permitted sources of selenium  
6 for a couple of reasons, and the first reason is  
7 simple geology. These watersheds simply do not  
8 have a selenium rich geologic strata that are  
9 found in areas such as the Elk Valley.

10 And secondly, selenium mobilization and  
11 introduction to aquatic systems come from only a  
12 couple of human activities, one being opencut  
13 mining that creates large overburden spoil piles,  
14 and without the underlying geology, this is not a  
15 factor in the Montana portion of these watersheds.

16 Montanore Mine, a metals mine in the  
17 watershed, does not have selenium as a pollutant  
18 of concern.

19 Though our regulatory authority is  
20 pertinent only in the state of Montana, an  
21 established protective standard allows Canadian  
22 industry and regulators the certainty to apply  
23 treatment technologies and permit conditions to  
24 ensure this standard is met, and that our aquatic  
25 life is protected.

1           It also allows for certainty in  
2 determining whether the beneficial use is  
3 impaired, and whether transboundary clean water  
4 commitments are maintained.

5           Finally, outdoor recreation, fishing,  
6 and angling are all an important part of the local  
7 economy, and this standard will be a factor in  
8 ensuring that that sector remains strong.

9           We preceded this meeting with a  
10 presentation to our advisory council, WPCAC, the  
11 Water Pollution Control Advisory Council, who  
12 voted unanimously to bring this rule forward to  
13 the Board to initiate rulemaking. And with that,  
14 I'm going to turn it to Lauren.

15           MS. SULLIVAN: Thanks, Myla. Madam  
16 Chair, Members of the Board, my name is Lauren  
17 Sullivan. I'm a water quality scientist with  
18 Montana DEQ, and I'll be presenting the second  
19 portion of today's presentation.

20           To orient everybody to the location  
21 we're discussing today, this slide shows the  
22 Kootenai River watershed. You can see here that  
23 it's a transboundary watershed spanning British  
24 Columbia, Montana, and Idaho.

25           The Kootenai River originates in

1 northwest British Columbia. You can see it on the  
2 map over in the middle right. It flows south into  
3 Montana, into Lake Koochanusa, and flows out of the  
4 Libby Dam, turns west into Idaho, and then around  
5 Bonners Ferry, Idaho, the river turns north going  
6 back into British Columbia, where it enters  
7 Kootenai Lake, and eventually joins the Columbia  
8 River.

9 Lake Koochanusa is a reservoir created by  
10 the Libby Dam in the 1970s. It is a transboundary  
11 reservoir located in both Montana and British  
12 Columbia, with the majority located in Montana.

13 You can see here on the map the northern  
14 portion of the reservoir is located in British  
15 Columbia just below where the Elk River joins the  
16 Kootenai River.

17 Increasing levels of selenium have been  
18 detected over time in the Elk River, British  
19 Columbia. This graph here on the left shows  
20 selenium concentrations plotted over time from  
21 1984 through 2019. The data comes from a  
22 Federal/Canadian long term water quality  
23 monitoring station located on the Elk River where  
24 this red circle is located on the map. It is  
25 about two miles upstream from Lake Koochanusa.

1           The purple line on the graph is marking  
2           the two micrograms per liter, which is the current  
3           British Columbia Provincial Water Quality  
4           Guideline for selenium. British Columbia  
5           additionally has an alert level at one microgram  
6           per liter, which is defined as a concentration  
7           below the guideline, but above which there may be  
8           risk to some environments and/or species that are  
9           sensitive to selenium bioaccumulation.

10           The graph shows levels quite a bit  
11           higher than the provincial guideline, and shows an  
12           increasing trend over time in selenium in the Elk  
13           River. And it's been identified that 95 percent  
14           of selenium entering Lake Koochanusa is coming from  
15           the Elk River.

16           The source of selenium in the Elk River  
17           is from historic and present day coal mining  
18           operations in the Elk Valley. The locations of  
19           these mining operations are circled here on the  
20           map on the right. This map shows the upper  
21           Kootenai watershed boundary. The orange areas  
22           represent existing mines, and the yellow areas  
23           represent coal bearing geology.

24           There are currently four mines in  
25           operation, solely owned and operated by one

1 company, Teck Resources, Limited, and there are  
2 four mines in the environmental assessment  
3 process.

4 The reason there are high concentrations  
5 of selenium detected in the Elk River is because  
6 selenium enters surface and groundwater from waste  
7 rock piles that are a byproduct of the open pit  
8 coal mining operations in Elk Valley.

9 This schematic at the bottom left walks  
10 through Step 1, how bedrock, which has naturally  
11 occurring selenium, is excavated to access coal  
12 seams underneath. That excavation process creates  
13 a byproduct called overburden or waste rock; this  
14 is labeled two in the schematic.

15 In this process selenium becomes exposed  
16 to oxidation, increasing mobilization or leaching  
17 through precipitation, infiltration, and runoff to  
18 nearby surface and/or groundwater . And that last  
19 step of entering surface water is labeled in the  
20 schematic as three.

21 To put some context to the extent of the  
22 mining, what you're seeing in the background of  
23 this image in the bottom right is one of these  
24 waste rock piles in the Elk Valley. It may be  
25 hard to see, but these are very large piles. They

1 can look like mountains themselves. The waste  
2 rock in the image is labeled two, and you can see  
3 by the sheer size they're too large to cap and  
4 piles like these are expansive throughout the Elk  
5 Valley.

6 The selenium leaches out of these piles  
7 and enters nearby surface or groundwater, and you  
8 can see a stream in the foreground of this photo  
9 labeled three. The selenium eventually makes its  
10 way downstream into Lake Koochanusa.

11 And I'm getting a little bit of  
12 feedback, so I might just ask if everyone can mute  
13 themselves. Thank you.

14 This schematic here is from the USGS,  
15 and effectively describes the dietary exposure of  
16 selenium in an aquatic ecosystem. It is a well  
17 established principle in the scientific community  
18 that the toxicity of selenium is predominantly  
19 through dietary exposure, so I'll just briefly  
20 walk you through this schematic.

21 In the upper left is the source of  
22 selenium, in this case waste rock, from openpit  
23 coal mining in the Elk Valley. The mobilized  
24 selenium enters surface water as dissolved  
25 selenium, from there becomes incorporated into



1 particulate matter.

2           That partitioning to biological  
3 particulate material is the first step in selenium  
4 entering the food web, and the partitioning  
5 between dissolved selenium to particulate selenium  
6 is referred to as a  $K_d$ . That step is displayed  
7 with the red arrow on the diagram.

8           That particulate matter is then consumed  
9 by invertebrates, transferring selenium into  
10 invertebrate tissues. Moving through the food  
11 chain, those invertebrates are then consumed by  
12 fish, further transferring selenium up the food  
13 chain and into the fish tissues.

14           The TTF labeled by the green arrows  
15 stands for trophic transfer factor, and that  
16 describes the transfer of selenium from prey to  
17 predator. It is a measure of bioaccumulative  
18 potential.

19           This understanding of how selenium moves  
20 through the food web, how aquatic organisms can  
21 experience toxicological effects due to dietary  
22 exposure, is important to understand because this  
23 is the reason fish tissue standards are necessary,  
24 and this understanding is the foundation of the  
25 selenium modeling that was done for Lake

1 Kooocanusa.

2           One other point that is important to  
3 make is that the way selenium is processed in a  
4 lake or reservoir is different than in a river.  
5 There are a number of factors influencing that,  
6 but one of the primary ones is simply residence  
7 time. When water is not flowing, there is more  
8 time for organisms to interact with selenium to  
9 process it, moving that selenium through the food  
10 web.

11           This is why the updated EPA national  
12 recommended criteria, which is based on years of  
13 research in the collective scientific  
14 understanding of selenium by scientists across the  
15 country and the globe, recommends that lakes and  
16 reservoirs have a lower water column selenium  
17 standard than rivers.

18           Selenium is an interesting element  
19 because while it is an essential nutrient, it can  
20 become toxic at only slighter greater  
21 concentrations than what is required by an  
22 organism.

23           This figure here shows some of the  
24 reproductive efforts of selenium for fish.  
25 Selenium can cause reduced production of viable

1 eggs, reduced growth, mortality or deformity,  
2 altered liver enzyme function, and winter stress  
3 syndrome.

4 Winter stress syndrome is important to  
5 understand, in that fish that will experience any  
6 one of these toxicological effects that I just  
7 listed may simply not survive the environmental  
8 stresses of the winter.

9 Selenium can cause mortality to adult  
10 fish, but it's not common. More commonly the fish  
11 population level effects occur at the reproductive  
12 stage. For example, reduced viable egg production  
13 would eventually lead to population decreases.

14 Important to note, the Montana Fish  
15 Biologists DEQ works with in Lake Koochanusa has  
16 stated that selenium impacts reproductive success,  
17 and they do not necessarily expect to observe  
18 deformities in surviving adult fish, which is most  
19 often what is captured during their sampling  
20 efforts.

21 This figure shows selenium  
22 concentrations in egg ovary tissue from data  
23 collected in Montana and Lake Koochanusa from 2008  
24 through 2018. Along the X axis are the different  
25 fish species, and the shaded points indicate the

1 year of data collection.

2           Along the Y axis is selenium  
3 concentration in micrograms per gram dry weight.  
4 Two horizontal lines are displayed. The lower  
5 line represents the British Columbia Provincial  
6 fish tissue guideline of eleven for egg ovary  
7 tissue, and the upper line represents the US EPA  
8 recommended fish tissue criteria of 15.1 for egg  
9 ovary tissue.

10           The reason for the difference in these  
11 guidelines has to do with the protection goals for  
12 the water bodies that differ between the US and  
13 British Columbia. As Myla mentioned, DEQ is  
14 proposing the 15.1 for Lake Koochanusa, and as you  
15 can see, at current water column concentrations,  
16 there are some individual fish exceeding that  
17 level.

18           The average selenium levels are  
19 currently around one microgram per liter. While  
20 data in British Columbia dating back to the 1980s  
21 for selenium that were shown on one of the  
22 previous slides, in Montana selenium has only been  
23 monitored in Lake Koochanusa since 2013, so we do  
24 not have that same sort of long term trend data.

25           This figure is showing dissolved

1 selenium on the Y axis. Along the X axis is time  
2 from 2013 through 2019. The points represent all  
3 sites within the reservoir at all depths. And  
4 based on these data, the average concentration is  
5 approximately one microgram per liter.

6 The proposed water column standard of  
7 0.8 is only slightly lower than current  
8 concentrations, and is necessary to ensure that  
9 aquatic life beneficial use is being protected,  
10 and that no further exceedences in egg ovary  
11 tissue occur.

12 Data collection efforts for Lake  
13 Koochanusa selenium data increased in 2016.  
14 Impressive coordination between a whole variety of  
15 monitoring entities occurred, and those are listed  
16 here at the top: Montana Fish, Wildlife and  
17 Parks; the US Army Corps of Engineers; USGS; the  
18 US Fish and Wildlife Service; the British Columbia  
19 Ministry of Environment; and Teck, which is the  
20 company that owns and operates the mines in the  
21 Elk Valley, and who leads their monitoring efforts  
22 in the Elk River and the British Columbia portion  
23 of Lake Koochanusa.

24 A list of parameters collected over the  
25 years are shown here. Some of these parameters

1 were already included in routine monitoring, while  
2 other parameters have not previously been  
3 collected, and were recommended by the selenium  
4 technical subcommittee to be included.

5 There are four primary monitoring areas  
6 described by the boxes in this map. They include  
7 south of the Elk River, International Boundary,  
8 Tenmile, and Forebay.

9 Important to note: While there is  
10 extensive data collection upstream by Teck in the  
11 Elk Valley, British Columbia, and downstream in  
12 Idaho by the Kootenai Tribe of Idaho, Idaho DEQ,  
13 and the USGS, the data specifically used to  
14 develop a site specific selenium standard for Lake  
15 Kooconusa is Lake Kooconusa Reservoir data only.  
16 This gets back to the point that lakes and  
17 reservoirs process selenium different than rivers.

18 Working with the selenium technical  
19 subcommittee, these eleven resident species were  
20 identified to focus on for modeling. Bull trout  
21 at the top of that list is a federally listed  
22 species under the Endangered Species Act.

23 And not listed here, but also discussed  
24 and considered in standard development is the  
25 federally listed endangered downstream Kootenai

1 River white sturgeon, which is the known most  
2 sensitive fish species to selenium in the country.

3 DEQ partnered with the USGS to complete  
4 the selenium bioaccumulation modeling effort.  
5 That was done throughout the early part of 2020  
6 and completed during the summer. The modeling  
7 work is quite complex, but to summarize, there are  
8 key model inputs required to calculate a  
9 protective dissolved selenium value.

10 Those inputs include a fish tissue  
11 selenium target; a food web; the trophic transfer  
12 and bioavailability percentage; the Kd -- which is  
13 that ratio between the suspended particulate  
14 selenium and the dissolved selenium.

15 The modeling effort for Lake Koochanusa  
16 was based on the peer reviewed ecosystem scale  
17 selenium model by Presser and Luoma that was  
18 published in 2010. The Lake Koochanusa model takes  
19 the Presser and Luoma model, which is the best  
20 science available on modeling selenium in aquatic  
21 ecosystems, and tailored it to Lake Koochanusa  
22 using site specific data.

23 The result of this modeling effort was a  
24 peer reviewed Lake Koochanusa modeling report that  
25 presented a range of candidate criteria based on

1 specified model inputs.

2 An organizing principle for the  
3 methodology of the model is the progressive  
4 solution of a set of equations, each of which  
5 quantifies a process important in selenium  
6 exposure. Ultimately those are combined and  
7 described by the equation listed here.

8 Looking at this equation in the  
9 numerator in the top where it states, "C tissue  
10 criterion element," this is the concentration or  
11 target whole body tissue number; and the  
12 denominator, the bottom, the TTF, is the trophic  
13 transfer factor. The TTF is what links the  
14 particulate selenium to prey and predator  
15 selenium.

16 The composite means it's the product of  
17 all the TTF in a given food web, and then the Kd,  
18 which is the base of the food web, and  
19 characterizes uptake and bioconcentration of  
20 selenium. Solving for this equation then  
21 calculates a protective dissolved selenium  
22 concentration.

23 The USGS presented two food webs with  
24 different consumption patterns. Summarized here,  
25 the two webs are the invertebrate to fish model,



1 or IFM; and the trophic fish model or TFM.

2 First focusing on the IFM on the left,  
3 this is the fish consuming insects and/or  
4 zooplankton. The TFM model on the right accounts  
5 for a piscivorous diet in which predator fish  
6 consume cray fish, with a diet of aquatic insects,  
7 zooplankton, or a mixture. That is illustrated  
8 here on the right, and that's the culturally and  
9 ecologically important fish species burbot that  
10 has been added to this diagram to represent a  
11 piscivore.

12 The eleven focal fish species shown on  
13 the previous slide were categorized into these  
14 different food web models and consumption  
15 patterns, informed by fish diet data from the  
16 reservoir.

17 To help visualize how the trophic  
18 transfer factors are applied, here are some  
19 example food webs and consumption patterns.  
20 Remember, TTF's are a measure of bioaccumulative  
21 potential. It's the transfer of selenium between  
22 an animal and its food.

23 These values here are TTF's from a  
24 robust global data set, to include an aquatic  
25 insect TTF of 2.8, zooplankton of 1.5, and fish

1 1.1. What you see here is that the highest TTF is  
2 lower in the food chain. This is getting back to  
3 that point that the greatest step in  
4 bioaccumulation is occurring at the base of the  
5 food web.

6           Going back to these diagrams on dietary  
7 exposure, in the context of the USGS ecosystem  
8 scale selenium model, ultimately the model tracks  
9 selenium as it bioaccumulates through the food web  
10 from dissolved to particulate through multiple  
11 trophic levels to fish tissue.

12           The last model input to talk about here  
13 is the  $K_d$ . Remember, this is the environmental  
14 partitioning between dissolved and particulate  
15 selenium. It is the base of the food web, and is  
16 a critical model parameter because as you've seen  
17 in these slides, the greatest step in  
18 bioaccumulation potential is occurring at the base  
19 of the food web.

20           There is a huge data collection effort  
21 in Lake Koochanusa to collect matched, dissolved,  
22 and particulate matter to inform this model  
23 parameter. This  $K_d$  is environment specific, and  
24 influenced by local environmental factors, and the  
25  $K_d$ 's in Lake Koochanusa are influenced by the

1 complex hydrodynamics of the reservoir and dam  
2 operations.

3           There is a wide range of Kd's from the  
4 lowest being around 400, to the highest being  
5 around 7500. Each Kd was considered an  
6 independent scenario for modeling. There are 87  
7 Kd observations. These are listed on this figure  
8 on the left, or from lowest to highest.

9           What was determined and is detailed  
10 extensively in the peer reviewed Lake Koocanusa  
11 modeling report by the USGS is that any one of  
12 these Kd's could exist at any time at any place in  
13 the reservoir, so all must be considered. The  
14 result was 87 predictive dissolved selenium values  
15 for each model scenario.

16           An example of one of those model  
17 scenarios is here on the right, where 87 orange  
18 points represent the results of one of these  
19 modeling scenarios: The lowest Kd results in the  
20 highest predicted dissolved water column selenium  
21 concentration; and the highest Kd results in the  
22 lowest predicted water column selenium value.

23           MR. GUNDERSON: Lauren, are your slides  
24 showing properly? Because we're seeing fish  
25 identified by SeTSC for modeling, and nothing else

1 that you're covering. This is Representative  
2 Gunderson.

3 MR. CUFFE: And Senator Mike Cuffe.

4 MR. GUNDERSON: We're not seeing  
5 anything other than the fish identified by SeTSC  
6 for modeling slide; is that correct?

7 MS. SULLIVAN: I'm showing Slide 19, the  
8 Kd slide. Is anyone else seeing that Slide 19?

9 UNKNOWN SPEAKER: I'm seeing that slide.

10 BOARD MEMBER TWEETEN: This is Chris.  
11 I'm seeing that.

12 CHAIR DEVENY: Yes, I'm seeing it. Is  
13 anybody not seeing Slide 19 besides the people  
14 that just spoke up?

15 UNKNOWN SPEAKER: I'm seeing 19.

16 BOARD MEMBER LYNCH: I'm seeing 19.  
17 I'm sorry. This is Board Member Lynch.

18 MS. SULLIVAN: It sounds like it might  
19 just be one person or one group that's not seeing  
20 the slides. Would you recommend I continue with  
21 the presentation?

22 CHAIR DEVENY: Yes. This is Chris  
23 Deveny, Chair. It's unfortunate that some people  
24 are having technical difficulties, but it looks  
25 like the majority of the people are able to see

1 it, as well as particularly the Board members. So  
2 I'm going to ask you to continue, Lauren, and  
3 apologize for the fact that during this pandemic  
4 that we sometimes have to have some things that  
5 don't quite work out. So please go ahead, Lauren.

6 MS. CLERGET: Can I interrupt for one  
7 second. I'm sorry. The presentation is also  
8 available on the BER website. You can download it  
9 as a PDF, so you can follow along in hard copy,  
10 which is what I'm doing. And if you want to just  
11 indicate as you're going through maybe the slide  
12 number that you're on, and then people could  
13 follow along on the PDF or in their hard copy as  
14 well, if you can't see the share screen.

15 CHAIR DEVENY: Thank you, Sarah, for  
16 always coming up with a good solution.

17 MS. SULLIVAN: So I'll continue on. I'm  
18 going to continue on to Slide 20.

19 The USGS modeling applied the EPA  
20 national whole body criterion of 8.5 as the target  
21 tissue value, although other whole body values  
22 could be applied, such as the British Columbia  
23 guideline or appropriate target tissue values.

24 Modeling choices and assumptions were  
25 guided by the goals stated in the report, and

1 previously defined by technical subcommittee  
2 members.

3 USGS scientists produced a peer reviewed  
4 report on the selenium modeling of Lake Koochanusa  
5 which provided the foundation from which DEQ was  
6 able to develop a protective water column selenium  
7 standard in collaboration with British Columbia.

8 To summarize some of the goals  
9 previously defined by the technical subcommittee  
10 and listed in the report, I'll just read these  
11 four goals off here: Consideration of  
12 ecologically significant species and those  
13 important to stakeholders; protection of the  
14 ecosystem during maximum dietary exposure, so the  
15 most sensitive food web; 100 percent protection of  
16 the fish species in the reservoir, assuming a  
17 reproductive end point of reproductively mature  
18 females feeding in a lentic ecosystem; and long  
19 term protection for fish in all parts of the  
20 reservoir during all phases of reservoir  
21 operation, all selenium profiles in all water  
22 years.

23 Following the USGS publication, DEQ and  
24 British Columbia worked collaboratively going  
25 through the following steps: First, the Lake

1 Kooocanusa working group steering committee chaired  
2 by both a DEQ and BC representative solicited  
3 recommendations from the selenium technical  
4 subcommittee and model inputs and final criteria  
5 recommendations.

6 Those technical subcommittee members  
7 provided recommendations during a half day  
8 teleconference, which had 100 percent attendance  
9 and participation, and following that meeting  
10 additional written recommendations from some  
11 members were submitted.

12 DEQ and British Columbia considered the  
13 recommendations from the technical subcommittee,  
14 as well as recommendations from members of the  
15 broader working group, to develop three additional  
16 scenarios for consideration; and ultimately DEQ  
17 identified a selenium standard protective of the  
18 aquatic life beneficial use.

19 I won't go into all of the detail on  
20 this slide, but presented here are a summary of  
21 technical subcommittee recommendations and  
22 modeling.

23 Five out of seven members recommended a  
24 whole body tissue value of lower than 8.5 be  
25 applied. Three out of seven members specifically

1 recommended the trophic fish model, or piscivore  
2 model, assuming a 100 percent aquatic insect diet;  
3 and there were no specific recommendations for any  
4 other food web to be used.

5           There is general agreement that the 60  
6 percent bioavailability applied to the literature  
7 TTF may be over-predicting, and recommendations on  
8 this range from maintaining use of this  
9 bioavailability percentage of 60 percent as a  
10 conservative measure, given the uncertainties in  
11 the ecosystem, particularly if applying an 8.5  
12 whole body value.

13           Other recommendations were to calculate  
14 more site specific TTF, and two of the seven  
15 members did that and provided some recommended  
16 values.

17           For Kd selection, there was general  
18 agreement that the median or 50th percentile would  
19 be appropriate if a whole body tissue value of  
20 less than 8.5 is applied; but if 8.5 is applied,  
21 then a more conservative Kd percentile would be  
22 appropriate.

23           Final recommendations were presented by  
24 four of the seven participating members. Those  
25 values ranged from 0.6 to 1.5, with three of the



1 four specific water column recommendations falling  
2 between 0.6 and 0.8 micrograms per liter.

3 Presented here are four modeling  
4 scenarios. The top three were co-developed  
5 between DEQ and British Columbia, and the bottom  
6 one was developed solely by DEQ based on the USGS  
7 modeling assumption presented in their  
8 publication, and it applies to the US EPA  
9 recommended fish tissue value.

10 British Columbia has more stringent fish  
11 tissue guidelines than the US does, and several  
12 technical subcommittee members provided a  
13 recommendation to apply a whole body value of less  
14 than 8.5, and several members recommended a value  
15 of 5.6. This value is consistent with British  
16 Columbia's guidelines.

17 The 5.6 was calculated using an egg  
18 ovary to whole body conversion factor applied to  
19 the British Columbia egg ovary guideline of  
20 eleven. So similar to the way the EPA recommended  
21 8.5 whole body value is linked to recommended egg  
22 ovary tissue of 15.1, this 5.6 whole body value is  
23 linked to the BC egg ovary guideline of eleven.

24 From there food web scenarios were  
25 discussed, one IFM model and two TFM models with

1 different diet considerations. A bioavailability  
2 was calculated to 45 percent, which is less  
3 conservative, but determined appropriate to  
4 consider if using a 5.6 whole body tissue  
5 threshold; and a median 50th percentile from the  
6 Kd's was selected to come up with the range of  
7 values you see here.

8           Following the guidance from the  
9 technical subcommittee, DEQ selected the TFM food  
10 web model, assuming a diet of 100 percent aquatic  
11 insects, and arrived at a protective water column  
12 value of 0.8 micrograms per liter.

13           DEQ additionally applied the 8.5 whole  
14 body value to create a model scenario in step with  
15 our US process, applied the same TFM at 100  
16 percent of aquatic insects, the 60 percent  
17 bioavailability which was determined appropriate  
18 by the technical subcommittee if applying the 8.5  
19 whole body value, and a Kd value at the 75th  
20 percentile was selected as again following  
21 guidance to select a more conservative percentile  
22 if the 8.5 whole body tissue value was used.

23           The 75th percentile resulted at a  
24 protective water dissolved water column value of  
25 .08, following these two methodologies, one

1 co-developed with British Columbia, and the other  
2 developed by DEQ but in line with the EPA fish  
3 tissue recommendations, to arrive at the same  
4 protective water column criteria 0.8 micrograms  
5 per liter.

6 Today we are requesting that the Board  
7 initiate rulemaking on the following standards:  
8 Listed here are the proposed standards for Lake  
9 Koochanusa, the dissolved selenium value of 0.8  
10 micrograms per liter, and the EPA nationally  
11 recommended fish tissue standards are proposed for  
12 egg ovary, muscle, and whole body.

13 And in the absence of site specific data  
14 for the Kootenai River, DEQ is proposing the EPA  
15 nationally recommended criteria for the Kootenai  
16 River, which includes water column standards, a  
17 water column standard of 3.1, and fish tissue  
18 standards the same as the EPA recommended values  
19 for Lake Koochanusa, which are 15.1 for eggs and  
20 ovaries, 11.3 for muscle, and 8.5 for whole body.

21 That is the end of the presentation, and  
22 at this point, we're happy to take questions.

23 CHAIR DEVENY: Thank you, Lauren. Let's  
24 give everybody a minute to get back on their  
25 videos, for Board members particularly. And

1 unmute if you're going to be speaking.

2 So first of all, I'd like to ask: Do  
3 any of the BER members have questions of Lauren or  
4 Myla regarding their presentation this morning?

5 BOARD MEMBER LYNCH: This is Board  
6 Member Lynch. I do have a question, Madam Chair.

7 CHAIR DEVENY: Go ahead, Jerry.

8 BOARD MEMBER LYNCH: If I understand  
9 correctly -- Lauren, I guess this is directed to  
10 you -- British Columbia has a 5.6 standard, is  
11 that correct, for whole body?

12 MS. SULLIVAN: Madam Chair, Board Member  
13 Lynch. Actually British Columbia has a whole body  
14 fish tissue standard of four micrograms per gram  
15 dry weight, so it's lower than the 5.6.

16 BOARD MEMBER LYNCH: And so the DEQ is  
17 proposing, again if I understand correctly, an 8.6  
18 standard for whole body?

19 MS. SULLIVAN: 8.5. That's correct.

20 BOARD MEMBER LYNCH: Why would we go  
21 higher than the British Columbia standard? Is it  
22 necessary?

23 MS. SULLIVAN: That's a great question,  
24 and that comes back to the different protection  
25 goals between the US and British Columbia. And so

1 the 8.5 is following the US EPA guidance, which  
2 protects 95 percent of species nationwide.

3 British Columbia has more stringent  
4 guidelines. They updated their selenium  
5 guidelines in 2014, and they included a safety  
6 factor of two, which provides protection at 100  
7 percent species in all life stages, and so it's  
8 more protective.

9 BOARD MEMBER LYNCH: That's where I'm a  
10 bit confused, if you bear with me for a moment.  
11 The 8.5 seems dramatically higher than what  
12 British Columbia has imposed, not that the United  
13 States or Montana is bound by that. But I  
14 understand the State's wanting to go along with,  
15 if you will, the EPA suggestion, but the State is  
16 not -- Montana is not bound by that, right? It  
17 has discretion?

18 MS. SULLIVAN: In the absence of data  
19 for site specific tissue standards, DEQ is  
20 comfortable adopting the US EPA recommended  
21 criteria. The science behind the EPA criteria is  
22 more recent than British Columbia's. And Myla, do  
23 you want to expand on that at all?

24 BOARD MEMBER LYNCH: Let me interrupt  
25 for one moment. I'm very sorry for doing this.

1 But one of my concerns is the white sturgeon,  
2 which as I understand the presentation is the most  
3 sensitive species, yet we have no data regarding  
4 how this affects white sturgeon, correct?

5 CHAIR DEVENY: That's correct. We need  
6 an oral response.

7 BOARD MEMBER LYNCH: That is correct,  
8 right?

9 MS. KELLY: Madam Chair, and Member  
10 Lynch, the 8.5 value from EPA does include data  
11 from the white sturgeon, so that incorporates the  
12 white sturgeon into that analysis.

13 And I would just add one additional  
14 note. The modeling efforts were designed, that we  
15 were discussing today, were designed to establish  
16 that protective water column value. So it's  
17 perhaps feasible, or potentially in the future  
18 there would be additional data collection that  
19 might adjust those fish tissue values; but we  
20 don't have that data at that time. So at this  
21 point in time, those EPA values are what we are  
22 confident moving forward with.

23 BOARD MEMBER LYNCH: So a followup  
24 question, if I may.

25 CHAIR DEVENY: Go ahead, Jerry.

1           BOARD MEMBER LYNCH: The EPA analysis  
2 regarding white sturgeon, is that based upon the  
3 white sturgeon in the ecosystem we're talking  
4 about, or is it somewhere else?

5           MS. KELLY: It's based on toxicity data  
6 for the white sturgeon, so --

7           BOARD MEMBER LYNCH: From which  
8 ecosystem?

9           MS. KELLY: I believe that was on a  
10 national scale. I'm not sure. I don't have the  
11 details of how the EPA conducts their toxicity  
12 studies.

13           BOARD MEMBER LYNCH: The reason I bring  
14 that up is I'm familiar with the problems created  
15 by the Libby Dam and the white sturgeon population  
16 in the Kootenai River, and the tremendous efforts  
17 made by the Kootenai Tribes of Idaho.

18           And I'm concerned that this level that  
19 DEQ is proposing for that ecosystem, the Kootenai  
20 ecosystem, may be dangerous to the white sturgeon  
21 without any data as to that population.

22           MS. KELLY: Thank you. And I do want to  
23 note that the Kootenai Tribe of Idaho has been  
24 integral throughout this entire process, and is  
25 supportive of the criteria that we're moving

1 forward with, and might be here to speak on their  
2 behalf today.

3 In addition, I think moving forward, I  
4 think it would be important to collect some  
5 additional site specific data on the Kootenai  
6 River to ensure that we have the correct standard  
7 in place.

8 BOARD MEMBER LYNCH: Just a final  
9 question, if I may, and then I'll be --

10 CHAIR DEVENY: Go ahead, Jerry.

11 BOARD MEMBER LYNCH: The Tribe,  
12 according to the letter that I read in the  
13 materials -- Richard Jamison from the Confederated  
14 Salish and Kootenai Tribes, Susan Ireland from the  
15 Kootenai Tribe of Idaho -- they're proposing a  
16 5.6, which is more conservative than the 8.5  
17 proposed by the DEQ. Why shouldn't the Board look  
18 at the 5.6? Give me the most compelling reason  
19 the Board should not consider the 5.6.

20 MS. KELLY: Well, Board Member, Chair,  
21 Members of the Board. I would like to refresh our  
22 memory that in the last, the second to last table  
23 that Lauren was highlighting, the water column  
24 value of .8, based on the three scenarios that BC  
25 and Montana co-developed, the water column of .8



1 was based on an input of using the fish tissue  
2 value of 5.6.

3 BOARD MEMBER LYNCH: Thank you. That  
4 helps very much.

5 MR. DAVIS: Madam Chair, this is Tim  
6 Davis with DEQ. If I can add one more thing.

7 CHAIR DEVENY: Okay. Go ahead, Tim.

8 MR. DAVIS: Thank you. I just wanted to  
9 add, Board Member Lynch, one thing I just wanted  
10 to note is the 3.1 on the main stem, micrograms  
11 per liter on the main stem of the Kootenai that  
12 we're proposing matches Idaho's 3.1 as well, and  
13 the Kootenai Tribe of Idaho was supportive of that  
14 in its design to be protective of white sturgeon.

15 Myla is right. There may be additional  
16 site specific data could be used in the future,  
17 but right now it would match up with what's across  
18 the border on the main stem of Idaho as well.

19 BOARD MEMBER LYNCH: Thank you.

20 CHAIR DEVENY: Other questions from  
21 Board members?

22 (No response)

23 CHAIR DEVENY: I have one, either Myla  
24 or Lauren, and/or Tim, and that kind of has to do  
25 with the fact that we have a limited amount of

1 data, and that things may change in the future.  
2 Do you have a monitoring plan in place to  
3 determine if in the future we need to change these  
4 standards to be lowered, or even if they're too  
5 stringent?

6 MS. KELLY: Madam Chair, one of the  
7 really excellent outcomes of all of this work has  
8 been this collaboration and these partnerships  
9 that have been developed, so we have very close  
10 partnerships at the United States Geological  
11 Survey, with Fish, Wildlife, and Parks, all who  
12 are partnering with us in monitoring efforts; and  
13 the USGS has monitoring efforts that will be  
14 continuing in the next couple of years, and maybe  
15 beyond that as well.

16 We've established, in conjunction with  
17 our Canadian partners, a transboundary monitoring  
18 group, where we set out our goals for monitoring  
19 for a variety of pollutants and parameters; and in  
20 that, we have I think strengthened those  
21 partnerships for long term monitoring.

22 And of course, as with any water quality  
23 standard, we go through a process where we look at  
24 our standards every three years through a  
25 triennial review.

1 CHAIR DEVENY: Okay. Great. Thank you,  
2 Ms. Kelly. Any other questions from Board  
3 members?

4 BOARD MEMBER LEHNHERR: Madam Chair, I  
5 have a question.

6 CHAIR DEVENY: Yes. David.

7 BOARD MEMBER LEHNHERR: I actually have  
8 a question and then a request, a question for  
9 either Lauren or Myla.

10 As I understood, the current selenium  
11 level average in Lake Koochanusa is 1.0, and we're  
12 proposing a selenium standard of 0.8, so there's a  
13 .2 difference obviously. Does that have any  
14 practical implications? What does that mean, if  
15 you're proposing a slightly lower selenium  
16 standard than the current average?

17 MS. KELLY: Madam Chair, Board Member  
18 Lehnherr. I think that we do, our research labs  
19 do have the capacity to test and analyze selenium  
20 levels in water column to very low levels, so that  
21 there is actually a difference between a 0.8 and a  
22 one, if that's what was -- micrograms per liter,  
23 and we can detect that.

24 BOARD MEMBER LEHNHERR: I'm just  
25 wondering. I understand that. I'm just wondering

1 if you have a slightly -- if you're proposing a  
2 slightly lower standard than the current average,  
3 does any action have to be taken to lower that  
4 average of 1.0 to 0.8?

5 MS. KELLY: Yes. So any standard that  
6 we have in place is the standard, the judgment by  
7 which we determine whether through our monitoring  
8 efforts, whether there's an impairment on a water  
9 body, and then subsequent actions that would -- or  
10 load allocations through a TMDL process that would  
11 need to be taken from there. So it would be the  
12 .8 that we would be -- if that is the standard  
13 that we ultimately end up adopting, it would be  
14 the .8 that we would be looking at for impairment  
15 decisions and subsequent load allocations.

16 BOARD MEMBER LEHNHERR: Thank you. And  
17 what would you have to do to then lower the --  
18 what sort of enforcement actions, or mitigation  
19 actions would have to be taken to lower the  
20 current level of selenium to 0.8?

21 MS. KELLY: Tim, do you want to take  
22 that one?

23 MR. DAVIS: Madam Chair.

24 CHAIR DEVENY: Go ahead, Tim.

25 MR. DAVIS: Again, Tim Davis, DEQ. So

1 Myla is correct. If the Board sets the standard  
2 as a protective standard as proposed at .8, and we  
3 do, we find that the monthly average, on a monthly  
4 average that that standard is exceeded, we would  
5 then determine that there's an impairment coming,  
6 and we would work with our federal partners, BC,  
7 in order to make sure that steps are taken on the  
8 British Columbia side of the border to address  
9 that impairment.

10 Teck has made significant investments in  
11 research and development on wastewater treatment  
12 for selenium, so we would -- but we would work  
13 with our federal partners as well as British  
14 Columbia to make sure that the selenium levels are  
15 brought down to address the impairment going  
16 forward.

17 BOARD MEMBER LEHNHERR: Thank you, Tim,  
18 and Myla. And just one last thing, just for my  
19 information.

20 There's a difference between the  
21 selenium standard between a river and a reservoir,  
22 and can you -- I know Lauren dealt with that, but  
23 can you just give me another nutshell summary of  
24 why, sort of the biodynamics that are different  
25 that justifies or that explains why there's a

1 difference between the selenium standard in rivers  
2 and reservoirs.

3 MS. SULLIVAN: Madam Chair, Board Member  
4 Lehnherr, I can summarize a bit on that. So like  
5 I mentioned in the presentation, there are a  
6 number of factors contributing to that, and one of  
7 the main ones is residence time.

8 So if you think of selenium in water  
9 passing by an organism, if it's flowing water,  
10 it's going to pass by faster, there's less time  
11 for interaction to occur; versus in a lake or a  
12 reservoir where the water is still. There's just  
13 more time for that selenium to interact with  
14 organisms, for organisms to process it, and move  
15 it through the food chain.

16 Other contributing factors include water  
17 chemistry, dissolved oxygen, organic matter in the  
18 system, species composition, zooplankton or other  
19 species. Does that help answer your question?

20 BOARD MEMBER LEHNHERR: Yes. That was  
21 very helpful. Thank you.

22 BOARD MEMBER TWEETEN: Madam Chair.

23 CHAIR DEVENY: Go ahead, Board Member  
24 Tweeten.

25 BOARD MEMBER TWEETEN: Thank you. Just

1 to clarify my thinking on this. Since all of the  
2 selenium exists in Canada and not in the United  
3 States, as I understand your presentation, any  
4 mitigation -- (inaudible) --

5 CHAIR DEVENY: Chris, we lost you. Can  
6 you start over.

7 BOARD MEMBER TWEETEN: Okay. Since all  
8 of the sources of selenium are in Canada and not  
9 in the United States, as I understand the  
10 presentation, any mitigation effects to try to  
11 reduce that level from 1.0 to 0.8 are going to  
12 have to take place in Canada, correct? Anybody?

13 MS. KELLY: Yes, Board Member Tweeten, I  
14 think that really has been the impetus of why this  
15 partnership and collaboration between the two  
16 countries has been so important all along, and why  
17 we're striving for that aligned standard.

18 BOARD MEMBER TWEETEN: Madam Chair,  
19 follow up.

20 CHAIR DEVENY: Go ahead, Chris.

21 BOARD MEMBER TWEETEN: And we don't know  
22 of any geology on the US side of the border that  
23 could produce releases of selenium into this water  
24 body, correct?

25 MS. KELLY: We do not have any sources

1 of selenium right now in Montana, that's correct,  
2 in those watersheds, that's correct.

3 BOARD MEMBER TWEETEN: So the likelihood  
4 of the selenium standard affecting a permitting  
5 decision for some release into the water on the  
6 United States side, the likelihood of the standard  
7 affecting that is you think very, very low,  
8 correct?

9 MS. KELLY: Negligible, yes, and we do  
10 not see any permits right now that will be  
11 affected.

12 BOARD MEMBER TWEETEN: Okay. Thank you.

13 CHAIR DEVENY: Any other questions or  
14 comments from Board members?

15 BOARD MEMBER LYNCH: This is Board  
16 Member Lynch, Madam Chair.

17 CHAIR DEVENY: Go ahead, Jerry.

18 BOARD MEMBER LYNCH: Question to either  
19 Lauren or Myla. Do we have information as to what  
20 the concentration is on the Canadian side,  
21 concentration of selenium in the Elk River?

22 Because I understood that British  
23 Columbia is striving for a low standard of four, I  
24 think, Lauren, you said. What is the information  
25 that the DEQ has in terms of the concentration in



1 that river? Which is the main source.

2 MS. SULLIVAN: Madam Chair, Board Member  
3 Lynch. The current concentrations in the Elk  
4 River most recently range between six and nine  
5 micrograms per liter, and that was displayed on  
6 that figure I think on eight or so of the  
7 increasing trends over time.

8 BOARD MEMBER LYNCH: So in a nutshell,  
9 why should the Board not consider the two tribes  
10 5.6 standard versus the 8.5? That's where I'm  
11 struggling in terms of -- I know you mentioned the  
12 Idaho tribe was in agreement, but I don't see that  
13 in the letter. I'm just trying to get my head  
14 wrapped around the 5.6 versus the 8.5 proposed by  
15 DEQ.

16 MS. KELLY: Board Member Lynch, I don't  
17 think I have a better answer other than what I  
18 said previously, but just want to refer back to  
19 that we don't have -- (inaudible) -- process of  
20 collecting the data that we needed to in order to  
21 establish what exactly the right fish tissue  
22 selenium concentrations would be in Lake  
23 Kooconusa, but again that was used as an input --  
24 the 5.6 was used as an input to come up with a  
25 water column value of .8.

1 MR. DAVIS: Madam Chair, Board Member  
2 Lynch.

3 CHAIR DEVENY: Tim Davis. Go ahead.

4 MR. DAVIS: This is Tim Davis again. I  
5 would just when -- I do think it's important just  
6 to remember that those scenarios, those three  
7 scenarios that use the 5.6, were developed with  
8 British Columbia, and that they were technical  
9 scenarios that we're calculating.

10 British Columbia has -- they are still  
11 working through their standard setting process at  
12 this point, but that 5.6 which did result in the  
13 0.8 water column criteria that we're proposing was  
14 developed with British Columbia, just the scenario  
15 itself.

16 BOARD MEMBER LYNCH: Thank you.

17 BOARD MEMBER TWEETEN: Madam Chair.

18 CHAIR DEVENY: Board Member Tweeten.  
19 Chris, go ahead.

20 BOARD MEMBER TWEETEN: This is just a  
21 comment. I think Jerry raises an interesting and  
22 potentially important question, but I think it's  
23 important for us to remember that we're at the  
24 stage of initiating rather than adopting at this  
25 point, and I would expect that both of the

1 affected tribes would be offering comments at the  
2 hearing or in writing through the rulemaking  
3 process --

4 CHAIR DEVENY: Chris, we lost you again.  
5 Can you -- just the very last part of what you  
6 said.

7 BOARD MEMBER TWEETEN: During the  
8 rulemaking process, I'm confident that the Tribes  
9 will voice any concerns they have about the 8.0  
10 standard with respect to their own standards, and  
11 that will be information that we can take into  
12 consideration with respect to the question of  
13 final adoption.

14 CHAIR DEVENY: Okay. Great. I'm seeing  
15 a phone flashing up, and I just want to check in.  
16 Dexter, are you trying to speak up?

17 BOARD MEMBER BUSBY: Not yet.

18 CHAIR DEVENY: All right. Just wanted  
19 to make sure we weren't leaving you out.

20 BOARD MEMBER BUSBY: (Inaudible)

21 CHAIR DEVENY: Last call for Board  
22 members that might have any comments or questions.  
23 There'll be opportunity later as well. But I  
24 think I'd like to move forward.

25 I think what Chris Tweeten just said

1 kind of segues into the fact that we're here today  
2 to take action on whether or not DEQ should  
3 initiate rulemaking. We're not actually adopting  
4 rule at this point, so I want everybody to keep  
5 that in mind.

6 Let me, before we start in with public  
7 comments -- which we have quite a few of --  
8 We're going to take a ten minute break, and we  
9 will reconvene then at about 10:23. I wanted to  
10 thank Myla and Lauren for their presentation. See  
11 you in ten minutes.

12 (Recess taken)

13 CHAIR DEVENY: Our ten minute break is  
14 over. Just double check in with Board members.  
15 Deb, do you want to run through the roll call.  
16 I'm here.

17 MS. SUTLIFF: Chris Tweeten.

18 BOARD MEMBER TWEETEN: Here.

19 MS. SUTLIFF: John Dearment.

20 BOARD MEMBER DEARMENT: Here.

21 MS. SUTLIFF: Dexter Busby.

22 BOARD MEMBER BUSBY: I'm here.

23 MS. SUTLIFF: Hillary, are you still on?

24 (No response)

25 CHAIR DEVENY: Hillary, are you here?

1 (No response)

2 MS. SUTLIFF: David Lehnherr.

3 BOARD MEMBER LEHNHERR: Here.

4 MS. SUTLIFF: Jerry Lynch.

5 (No response)

6 CHAIR DEVENY: We're missing Jerry and

7 Hillary. Let's wait another 15 seconds or so.

8 Sarah, are you on?

9 MS. CLERGET: Yes.

10 CHAIR DEVENY: Hillary, have you joined  
11 us yet?

12 (No response)

13 CHAIR DEVENY: We do have a quorum, so I  
14 think we'll go ahead and continue.

15 At this point, do we have any other  
16 members of the public that have joined the meeting  
17 since we did an introduction at the beginning?  
18 And particularly, we need to find out if there are  
19 other members of the public besides those who  
20 identified themselves earlier that want to give  
21 public comment today on the proposed initiation of  
22 the selenium rulemaking. Deb, could you check in  
23 with folks.

24 MS. SUTLIFF: I have Sue Ireland has  
25 joined us. Sue, will you be offering comments?

1 MS. IRELAND: Yes, I would like to offer  
2 comments, please. Thank you very much.

3 MS. SUTLIFF: Sue Ireland is with the  
4 Kootenai Tribes. I don't see any other new  
5 connections.

6 CHAIR DEVENY: Let's just ask. Are  
7 there people who have joined in this meeting since  
8 we did an introduction at the beginning? If you  
9 could speak up right now.

10 MR. ELLIOTT: Madam Chair, this is  
11 Clayton Elliott with Montana Trout Unlimited, and  
12 actually David Brooks, our Executive Director, had  
13 to get on another call, but I will just be taking  
14 his place.

15 CHAIR DEVENY: Thank you, Clayton.  
16 Anybody else?

17 (No response)

18 CHAIR DEVENY: Okay. That gives me a  
19 good idea. It looks like we have about a dozen to  
20 15 people that want to speak, so I'm going to ask  
21 people to limit their comments to three minutes,  
22 and Sarah Clerget is going to time for us, and  
23 when she -- she has to leave by eleven, so after  
24 that, Deb will take over as timer.

25 And I'm going to start out with opening

1 the proposed initiation of rulemaking for public  
2 comment, and I really request that people limit  
3 their comments to whether or not the BER should  
4 initiate this rulemaking. This isn't the time for  
5 comments on the specifics of the proposed rules,  
6 it's whether or not we should initiate rulemaking  
7 or not on this particular subject. So just try to  
8 keep that in mind.

9 With that, I'm going to ask Clayton  
10 Elliott to go ahead and start, because I believe  
11 David Brooks was the first person I had on my  
12 list.

13 MR. ELLIOTT: Thank you, Madam Chair.  
14 And lucky enough as I may be then, I appreciate  
15 the opportunity today to offer public comment on  
16 the question, and I do really think that that is  
17 the heart of the matter here is the question of  
18 whether or not to initiate rulemaking.

19 I think, one, I just wanted to say how  
20 deeply Montana Trout Unlimited and our chapters  
21 appreciate the thoroughness, the thoughtfulness,  
22 and the integrity of which DEQ has approached the  
23 question of selenium on Lake Kootenai and the  
24 Kootenai River.

25 I think this has been a robust public

1 process; I think it's been a scientifically valid  
2 process; and I think that the right question today  
3 is about whether or not we go forward through the  
4 Administrative Procedures Act. So I just wanted  
5 to offer our thanks to the Department, obviously a  
6 whole threaded support of moving forward, and that  
7 the Board do in fact initiate rulemaking on this  
8 question.

9 I'll reserve our substantive comments  
10 about the merits of the question to that public  
11 comment period, but I think to not move forward  
12 would be the incorrect way to go here. So I just  
13 wanted to again thank the Department, thank the  
14 Board for the opportunity to offer this public  
15 comment, and thank you.

16 CHAIR DEVENY: Thank you, Mr. Elliott.  
17 Let's go now to Brad Smith.

18 MR. SMITH: Thank you, Madam Chair, and  
19 Members of the Board. My name is Brad Smith. I'm  
20 the North Idaho Director of the Idaho Conservation  
21 League, and on behalf of ICL and our members, I  
22 want to urge the Board to initiate rulemaking on  
23 this matter.

24 Here in Idaho we're downstream of just  
25 about everybody else in the Kootenai River



1 drainage, and actions that are taken upstream of  
2 us affect our water quality and our fisheries here  
3 in the Kootenai River as it flows through Idaho.

4           Although I'm not here to represent the  
5 Kootenai Tribe, I want to acknowledge and commend  
6 their work to recover Kootenai River sturgeon  
7 which are protected under the Endangered Species  
8 Act, as well as their proactive efforts to recover  
9 burbot and prevent them from being added to the  
10 Endangered Species list.

11           Adoption of a limit on selenium  
12 pollution in Lake Koocanusa and the river below  
13 the dam is necessary to protect our water quality  
14 and our fisheries in Idaho, and prevent regression  
15 of those recovery efforts.

16           And in fact, as suggested by Board  
17 Member Lynch, a more protective standard for the  
18 Kootenai River below the dam may be necessary, and  
19 following this process, I would urge Montana DEQ  
20 and its partners to gather site specific data, so  
21 that we can review that proposed standard in the  
22 future and to see if it is adequate.

23           I want to address a couple of concerns  
24 I've heard during other meetings on this matter.  
25 I've heard it expressed that this process could

1 negatively affect the economy here in the United  
2 States.

3 It's my understanding that there are  
4 currently no sources of selenium pollution in the  
5 Kootenai River south of the border, and in fact,  
6 as you've heard, 95 percent of the selenium  
7 pollution in Lake Koochanusa originates from coal  
8 mines in the Elk River Valley north of the border.

9 Therefore these standards will not  
10 affect current industry in the United States, and  
11 while not necessarily advocating for pollution on  
12 either side of the border, a strong standard at  
13 the border would provide more flexibility for  
14 industry in the US if that is your concern.

15 It has also been suggested that this  
16 process should be slowed down, but we know that  
17 selenium pollution in our waterways is rising and  
18 needs to be addressed. The proposed standards  
19 will be reviewed triennially, and as the science  
20 is further refined, there will be future  
21 opportunity to update these standards as  
22 necessary.

23 So in conclusion, I would urge the Board  
24 to initiate rulemaking on this matter. Thank you,  
25 Madam Chair, and Members of the Board.

1 CHAIR DEVENY: Thank you, Mr. Smith.  
2 Travis Schmidt.

3 MR. SCHMIDT: Yes, ma'am. I don't have  
4 a prepared statement. I think I was going to make  
5 myself available to chime in on science issues,  
6 and I think they've been handled.

7 CHAIR DEVENY: You're with USGS?

8 MR. SCHMIDT: Yes, ma'am.

9 CHAIR DEVENY: So okay. Thank you.  
10 Moving on, and I'm sorry I didn't get this  
11 person's last name, but his first name I believe  
12 was Jason.

13 MR. GILDEA: This is Jason Gildea, and I  
14 don't have any comments. Thank you.

15 CHAIR DEVENY: Thank you, Jason. Thank  
16 you very much. Next I have an Erin Sexton.

17 MS. SEXTON: Thank you, Madam Chair.  
18 And I really appreciate the opportunity to make a  
19 brief comment here.

20 My name is Erin Sexton. I'm a senior  
21 scientist for the University of Montana Flathead  
22 Lake Biological Station, and a water quality  
23 scientist by training. I've also represented the  
24 Confederated Salish and Kootenai Tribes in the  
25 long history of mining processes, mine expansion

1 processes that have taken place over the last  
2 decade and a half, starting with the process in BC  
3 to expand the Line Creek Coal Mine in 2012.

4 And so I just want to emphasize that  
5 this has been a very -- one of the most  
6 collaborative processes I've ever engaged in in  
7 terms of setting a site specific criteria for the  
8 reservoir.

9 There has been great cooperation across  
10 the province of BC, the State of Montana, all of  
11 our federal entities that have monitoring  
12 interests and activities in the reservoir in the  
13 river, as well as the -- (inaudible) -- nation in  
14 BC, the Confederated Salish and Kootenai Tribe,  
15 and the Kootenai Tribe of Idaho.

16 And so I think it should not be under  
17 emphasized how long this process has gone on, how  
18 much science has gone into it, and the  
19 collaborative nature of the work done to date.

20 I also just want to highlight the really  
21 amazing stature of the scientists that have been  
22 involved in the process. They're some of the top  
23 selenium experts from North American that have  
24 been participating in these conversations over the  
25 years.

1           And so with all that, I just want to say  
2           that we know that for decades contaminants have  
3           been leaching from the mines in the Elk and  
4           Fording Rivers into Koochanusa Reservoir and the  
5           Kootenai River downstream; and that the time, this  
6           is the right time to initiate this rulemaking  
7           process. We very much support this, very  
8           appreciative of the great conversation across the  
9           members of the Board, and very good questions  
10          regarding protection of water quality and fish  
11          species in the reservoir and the Kootenai River  
12          downstream.

13                 And with all that, I just want to  
14          support the initiation of the rulemaking process,  
15          and also express support for the site specific  
16          criteria of 0.8 micrograms per liter at the  
17          international boundary and the reservoir. So  
18          thank you very much for your time.

19                 CHAIR DEVENY: Thank you, Ms. Sexton.  
20          Lars Sander-Green.

21                 MR. SANDER-GREEN: Yes. Hello. Thanks  
22          for the opportunity to speak. So I'm Lars  
23          Sander-Green. I'm with Wild Side, which is a  
24          conservation organization in the southeast of  
25          British Columbia, so just north of the border

1 there, and I just want to say we're very  
2 supportive of starting the rulemaking process  
3 here.

4 We also, like Erin, we've been very  
5 impressed with the quality of the science. It's  
6 frankly better than what we're used to in British  
7 Columbia, so we're very happy to see that.

8 And I also want to emphasize the long  
9 term nature of this problem. It's not a pollution  
10 problem that's only going to last as long as the  
11 mines are operating, it's a pollution problem  
12 that's going to be coming downstream for hundreds  
13 of thousands of years after the mines stop  
14 operating.

15 So it's really important when we have  
16 these four proposed mines in environmental  
17 assessment process in BC that both BC and Montana  
18 can adopt a shared standard that's going to  
19 provide some certainty for industry and regulators  
20 with respect to those expansions before they're  
21 approved.

22 And I also want to emphasize that we're  
23 not just upstream and the source of this problem,  
24 but we're also downstream. The Kootenai River of  
25 course returns to Canada at Creston, and into

1 Kootenai Lake, and there are a lot of concerns  
2 where with that same population of white sturgeon,  
3 who are also endangered in Canada, and travel back  
4 and forth between Idaho and Canada, so we're very  
5 concerned that the Kooconusa limit be set in a way  
6 that's going to be protective of that population  
7 as well. Thank you.

8 CHAIR DEVENY: Thank you, Mr.  
9 Sander-Green.

10 Let's see. Next Steve Gunderson, and he  
11 has a State Senator with him who I apologize, but  
12 I didn't catch your name because we were having  
13 some technical difficulties. But Mr. Gunderson,  
14 if you'd go ahead.

15 MR. CUFFE: Representative Gunderson had  
16 to go to another meeting. This is Senator Mike  
17 Cuffe, Senate District 1, which is Lincoln County,  
18 home to Lake Kooconusa, Kootenai River, Libby Dam.

19 And I will start -- I made a question to  
20 Director McGrath at DEQ and Myla Kelly that this  
21 process should be slowed down just a little bit.  
22 We seem to be rushing it all of a sudden. I was  
23 part of it in the beginning, a very integral  
24 active part; and then later we broke into two  
25 groups, and the group I was in kind of

1 disintegrated or something.

2 But anyway, I have trouble keeping up  
3 with all the data when it's particularly presented  
4 on the screen, and the malfunction -- which we  
5 lost a good part of the presentation today, the  
6 visual part -- we were listening, and blamed on  
7 COVID-19 when I requested a meeting at DEQ  
8 headquarters, so I could sit down and review and  
9 touch the paper -- I'm more of a paper kind of guy  
10 -- and discuss. And I was told because of  
11 COVID-19 we couldn't do that, we did it by phone.

12 So number one, it looks to me like, if I  
13 understand it right, what we're proposing is the  
14 lowest selenium standard anyplace in the world.  
15 Please correct me if I'm wrong. I have a little  
16 bit of confusion. There was talk about .85, and  
17 8.5, 5.6, 3.2, and I'm not sure how those are  
18 comparable.

19 I'd like to also point out there was  
20 discussion that we should lower -- if I understood  
21 it right -- someone was suggesting that we lower  
22 the number for Lake Kooconusa and the site  
23 specific number there because of white sturgeon,  
24 and white sturgeon are not in the lake. I would  
25 think you would be more concerned about the down



1 stream river flow than what's in the lake, of  
2 reducing it when it's already at 1.5.

3 The fish species involved, where the --  
4 how accurate, how much double check there has  
5 been. I felt earlier that there was some  
6 misleading data, some outlier data that was  
7 included in some of the graphs earlier.

8 And there's also Teck -- as I believe it  
9 was Tim Davis said -- Teck hasn't already invested  
10 considerable time and money, with I believe  
11 considerable success. If you pay attention to the  
12 numbers. I've been to the sites. I've looked at  
13 the water treatment facilities, and their new  
14 breaking ground.

15 And this is cutting edge stuff. Teck  
16 has been criticized a lot over the years, and I'm  
17 sure as heck not here to protect Teck. I live  
18 downstream. My house is only a few miles from the  
19 mouth of the Elk River. But I'm also about being  
20 fair, and being protective as we need to be, but  
21 not over-protective.

22 Now, we say that there would be no  
23 economic, no adverse economic impact; that could  
24 be argued. This isn't the place for me to argue  
25 it. We're saying that there's no potential source

1 of selenium in that lake.

2 Now, there could be some minerals in the  
3 mountains on the east side of the Tobacco Valley  
4 which is not far away. Is that the timer with  
5 your hand up? Anyway I'm nearing the end.

6 So there are some mineral deposits,  
7 potentially mineral, important mineral deposits up  
8 there that at some point could want to be  
9 developed.

10 So I'm going to stop there, but I will  
11 make the same request to the Board that I did to  
12 Director McGrath, that this almost seems to me  
13 like it exploded, and I'm the Senator for this  
14 district, and all of sudden hit in the face with  
15 this. So are the County Commissioners, so are the  
16 two State Representatives.

17 So with that, we are in agreement. It  
18 should be just slowed down a little bit. There's  
19 nothing imminent, there's no crisis here that  
20 waiting until January, April, July. There's no  
21 crisis that all of a sudden, bam, the world turns  
22 upside down.

23 Please consider my request to slow down  
24 on this thing, and help all of us to understand  
25 what the heck we're really talking about; and I

1 think including information that the Board may  
2 need to digest. Thank you.

3 CHAIR DEVENY: Thank you, Senator.  
4 Vicki Marquis.

5 MS. MARQUIS: Good morning, Madam Chair,  
6 Members of the Board. Thank you for this  
7 opportunity. My name is Vicki Marquis. I'm an  
8 attorney with Holland and Hart in Billings, and I  
9 represent Teck. And I've confined my comments to  
10 initiation of this rulemaking package, and we  
11 believe that it should not go forward for two  
12 reasons.

13 First, the basis that's been presented  
14 for initiation is wrong at this time. The  
15 threatened listing for Lake Kooconusa is wrong,  
16 and you can see this by looking at DEQ's water  
17 quality assessment records that are all available  
18 online.

19 As Myla noted, the lake was listed as  
20 threatened in 2012, and at that time DEQ projected  
21 based on estimates from the Elk River that Lake  
22 Kooconusa would exceed the current water quality  
23 standard of five micrograms per liter by 2015; but  
24 now here we are in 2020 and DEQ reports --  
25 (inaudible) -- in Lake Kooconusa is less than 1.5

1 micrograms for selenium.

2 So clearly the estimates that led to the  
3 impairment listing or the threatened listing were  
4 wrong, and it's really not impaired based on water  
5 quality.

6 Now, DEQ has presented long term water  
7 quality data for the Elk River, but that's  
8 inappropriate to consider here. If you look at  
9 the data that's presented for Lake Koochanusa --  
10 which should take precedence because this is a  
11 site specific standard -- that data indicates that  
12 from 2013 to the present, there is no increasing  
13 trend in selenium concentrations, and that is seen  
14 on Page 20 of the derivation document that you  
15 have before you. It's a clear graph with no  
16 increasing trends.

17 Also it's inappropriate to rely on the  
18 Elk River data, and this was presented in Slide 9  
19 by Lauren. DEQ uses that data to say that there's  
20 an increasing trend in selenium, but in fact --  
21 and this is shown in a 2016 report by a study team  
22 that included DEQ -- the trends in selenium  
23 loading in the Elk River have been decreasing, and  
24 the loads in 2019 were less than in 2018 and 2017.  
25 So to the extent that the proposed rule relies on

1 a presumption of increasing loads and  
2 concentrations, it simply is erroneous.

3           Similarly, most of what you've heard  
4 today has included some reference to Teck. The  
5 slides had a lot of information about Teck.  
6 There's a lot of stuff in the derivation document.  
7 No other Montana water quality standard setting  
8 process has been premised on a single  
9 corporation's operation, let alone a corporation  
10 that operates on the other side of an  
11 international border, and is wholly regulated by a  
12 foreign government.

13           So to the extent that this rulemaking is  
14 being initiated based on Teck's operation, it's  
15 ultra vires.

16           One other important point I want to make  
17 -- I realize I'm getting to the end of my time --  
18 but you've been told here today by DEQ that there  
19 are exceedences in egg ovary fish tissues, and  
20 that they don't want to see any more exceedences.

21           But that statement presumes that there's  
22 a threshold level for exceedences in Montana which  
23 doesn't exist. So what DEQ and what this  
24 rulemaking is asking you to do is they've said,  
25 "Here we're exceeding 15.1, so you have to adopt

1 15.1 as the criterion." That's not accurate or  
2 true. It's circular reasoning.

3 And in fact we don't even have an  
4 assessment method in Montana for considering fish  
5 tissue data, and that's really important.

6 So I ask you if you're going to go down  
7 this road -- which as Board Member Lehnherr has  
8 suggested -- would result in an impairment  
9 listing, let's make sure we understand what that  
10 impairment listing is going to be, and that we  
11 have a valid assessment method for that.

12 We have that in other scenarios. There  
13 are two out for public comment --

14 CHAIR DEVENY: Ms. Marquis, you've  
15 exceeded your time by quite a bit. I'd like you  
16 to just take ten seconds and wrap up if you could.

17 MS. MARQUIS: Thank you. I apologize.  
18 I asked you to -- You know, the science and the  
19 research isn't going anywhere. It will still be  
20 there. Let's back this up, send this back to DEQ,  
21 get an assessment methodology in place, go back to  
22 the selenium subcommittee and make sure that  
23 there's consensus among all of those experts. The  
24 numbers here today indicate there isn't consensus.

25 And then do this the proper way, because

1 we know that triennial reviews --

2 CHAIR DEVENY: Thank you, Ms. Marquis.  
3 I appreciate your comments.

4 MS. MARQUIS: Thank you.

5 CHAIR DEVENY: I apologize for my  
6 scribbling here. There was somebody from EPA,  
7 Tim.

8 MS. SCHMIT: Thank you, Madam Chair.  
9 This is Ayn Schmit with EPA. Would you like me  
10 to --

11 CHAIR DEVENY: Yes, thank you. Go  
12 ahead.

13 MS. SCHMIT: Thank you. Good morning,  
14 Madam Chair, Board members. My name is Ayn  
15 Schmidt, and I'm senior water policy advisor in  
16 EPA's Region 8 office in Denver, and I have been  
17 leading EPA's multi-office engagement on Lake  
18 Kooocanusa and the Kootenai watershed. I  
19 appreciate this opportunity to make a brief  
20 statement on behalf of EPA.

21 EPA appreciates the robust process that  
22 Montana DEQ in collaboration with British Columbia  
23 has implemented to develop a site specific  
24 selenium water quality criterion for Lake  
25 Kooocanusa, a process which has been scientifically

1 rigorous and broadly inclusive.

2 As was mentioned earlier, EPA's selenium  
3 criteria guidance encourages states to adopt site  
4 specific standards for selenium where the data  
5 exists to inform that.

6 EPA supports the State moving forward at  
7 this time using the existing science that was so  
8 clearly explained by Lauren to establish a site  
9 specific selenium criterion for Lake Kooconusa and  
10 an updated selenium criteria for the Kootenai  
11 River.

12 If Montana ultimately adopts the  
13 proposed criteria, EPA will be reviewing those  
14 criteria as submitted by Montana DEQ in accordance  
15 with the Federal Clean Water Act and our  
16 implementing regulation.

17 Recognizing that scientific  
18 understanding of complex pollutants like selenium  
19 evolve over time, I'll note that the standards  
20 adoption process under the Clean Water Act is  
21 designed to set protective standards based on  
22 existing science, with states required to revisit  
23 those every three years, and resubmit to EPA where  
24 appropriate.

25 Finally I'd like to note that a



1 protective water quality standard is the best tool  
2 we have to assure that water flowing across the  
3 boundary of Canada is not, quote, "polluted on  
4 either side to the injury of health or property,"  
5 end quote, in the US as required by Article 4 of  
6 the Boundary Waters Treaty, and to give the US the  
7 clarity and certainty to ensure that Canada is  
8 accountable for meeting Article 4. Thank you,  
9 Madam Chair, and Board members.

10 CHAIR DEVENY: Thank you, Ms. Schmit.  
11 Stu Levit, please.

12 MR. LEVIT: Thank you, Madam Chair, and  
13 Board. Hopefully this is -- I apologize -- I'm on  
14 the phone, having a little bit of digital issues  
15 with other users in my area on broadband. So I  
16 appreciate the opportunity to speak.

17 The CSKT and the State DEQ have worked  
18 for many years on this process, and the CSKT  
19 greatly appreciates the State coordination and  
20 consultation on the matter.

21 The collaborative group that has been  
22 working on this has included, as Erin Sexton  
23 noted, the foremost experts in selenium, fish, and  
24 water, that we could really ask for, including US  
25 EPA and USGS experts and staff. You couldn't ask

1 for a more robust and experienced, knowledgeable  
2 team working on this.

3 I personally have been working in mining  
4 issues for the better part of thirty years, and  
5 contamination in the Elk watershed is consistent  
6 with my experience, that without an enforceable  
7 standard, polluters have many reasons to state  
8 that they're dealing with things, and are being  
9 unfairly singled out, but the pollution keeps on  
10 happening. We are urged to believe based on the  
11 past pollution is a problem of old mines and old  
12 ideas, and the new processes and new thinking will  
13 change things, but contamination keeps happening.

14 These impacts degrade water, and  
15 species, and cultural uses that depend on the  
16 water. The contamination of the Elk has been  
17 going on for many years, and in fact mining in Elk  
18 watershed is increasing, with new mining companies  
19 seeking operating permits, and Teck itself seeking  
20 to almost double its mining activities with the  
21 proposed Castle Mine permit.

22 The criteria process has been going on  
23 for years also, and that process is robust,  
24 supportable, and essential. I therefore urge the  
25 Board to move forward with this process. Thank

1 you.

2 CHAIR DEVENY: Thank you, Mr. Levit.  
3 Dave Hadden.

4 MR. HADDEN: Thank you, Madam Chair, and  
5 committee. My name is Dave Hadden. I work for  
6 Headwaters Montana, a regional conservation  
7 organization in northwest Montana with over 2,000  
8 subscribers. I'll try to be very brief, of  
9 course.

10 I would want to observe first that there  
11 were several other Lincoln County citizens who  
12 wished to be participating in this conversation  
13 and observe the meeting, but because of work  
14 obligations were unable to join, including two  
15 elected officials.

16 I would like to state that I've been  
17 involved in this as an observer on the selenium  
18 technical committee. This process has gone on for  
19 five years. Those who have wanted to stay  
20 engaged, the opportunities to stay informed and  
21 keep abreast of this issue were available to them.

22 This has been a robust process, as has  
23 been commented before. The science is peer  
24 reviewed. It's been highly collaborative. Myself  
25 as just an observer have had plenty of opportunity

1 to comment on the process throughout the process.  
2 And I think the adoption of -- the initiation of  
3 the rulemaking process at this time is very  
4 timely.

5 I think Montana must protect itself. We  
6 needn't and we shouldn't rely on BC to set a  
7 standard for us, or promise, make promises as to  
8 what that standard should be, or what they think  
9 they can achieve.

10 One of the questions earlier in the  
11 conversation amongst the Board was what the levels  
12 of contamination were in the Elk River. They are  
13 off the charts. And BC probably will never meet  
14 their own guidelines. They don't have standards,  
15 they have guidelines.

16 So I believe Montana needs to protect  
17 itself. We need to set a current standard based  
18 on best science. The 5 micrograms per liter  
19 standard is too high. And there's been plenty of  
20 opportunity to participate. I would urge you to  
21 adopt and move on rulemaking at this time. Thank  
22 you very much.

23 CHAIR DEVENY: Thank you, Mr. Hadden.  
24 Michael Jamison.

25 MR. JAMISON: Yes. Madam Chair, thank

1 you very much, and thank you to the Board for  
2 giving us the opportunity to participate today. I  
3 also want to thank the agencies, and particularly  
4 the scientists who have undertaken this process  
5 over many years.

6 I work for the National Parks  
7 Conservation Association. We've been working on  
8 transboundary river issues for many, many years  
9 now over where I live full time in the  
10 transboundary Flathead drainage, as well as where  
11 I live part of my year in the  
12 Flathead/Elk/Kootenai system.

13 This process, as has been mentioned, has  
14 been one of really quite remarkable integrity.  
15 It's been very satisfying to see agencies as  
16 diverse as EPA, USGS, DEQ, the UM Bio Station, and  
17 even now the Province of British Columbia, come  
18 together around consensus, scientific consensus,  
19 and around that number that they agree should be  
20 implemented.

21 Industry clearly has an opinion contrary  
22 to that science, which is perhaps not surprising.  
23 This has gone on for a long time. Teck has  
24 acknowledged its selenium problems as far back as  
25 the early to mid-1980s. The trend lines since

1 then have been troubling, and it's not just the  
2 selenium trend lines, but also the industrial  
3 trend lines.

4 As Mr. Levit spoke to earlier, Teck and  
5 other companies have active proposals on the table  
6 today to actively expand the mining footprint in  
7 our headwaters, and I would suggest that any delay  
8 initiating our rulemaking process at this time  
9 only increases our long term exposure to Canadian  
10 mining contamination.

11 It is correct that Teck Resources has  
12 been investing heavily in mitigation technologies,  
13 and hopefully will at some time in the future  
14 reduce selenium to an appropriate level. But in  
15 the meantime, we strongly support moving forward  
16 with this rulemaking process at this time.

17 As Mr. Hadden mentioned, those of us who  
18 have chosen to stay involved have been able to  
19 keep up with the science, and keep up with the  
20 process over many, many years. We've been  
21 dedicated to sticking to it. Any delay at this  
22 point really only exposes our liabilities. Thank  
23 you.

24 CHAIR DEVENY: Thank you, Mr. Jamison.  
25 Sue Ireland.

1 MS. IRELAND: Good morning. Thank you  
2 very much. On behalf of the Kootenai Tribe, we  
3 would like to support that the Board of  
4 Environmental Review move forward with this  
5 rulemaking process.

6 We very much appreciate Board Member  
7 Lynch's remarks, and we agree that potentially  
8 fish tissue may be needing to be lowered to 5.6 at  
9 some point in time in the future, but we support  
10 the water column number of .8 at the border. We  
11 feel like this is extremely important to support  
12 all of the -- and protect all of the downstream  
13 resources.

14 The Kootenai Tribe has been implementing  
15 large scale restoration over many, many decades in  
16 their area of cultural concern. And we have the  
17 endangered white sturgeon, the burbot that were  
18 almost wiped out, that have been restored to the  
19 point that we have a public fishery on them now in  
20 Idaho. We implement millions of dollars of large  
21 scale river restoration downstream on the banks of  
22 the Kootenai River.

23 And to have this threat of additional  
24 selenium coming downstream and potentially  
25 affecting all of those important cultural

1 resources is very, very concerning to Kootenai  
2 Tribe.

3 We support the .8 micrograms per liter  
4 at the Canadian border. It's really, really  
5 important to have a protective water quality  
6 standard. We need an enforceable standard, and so  
7 for that reason Kootenai Tribe would like to say  
8 that we have appreciated the collaborative and  
9 inclusive process that has gone on. There has  
10 been so much science that has gone into all these  
11 developed recommendations.

12 And so for that reason, we would like to  
13 support the initiation of rulemaking. Thank you.

14 CHAIR DEVENY: Thank you, Ms. Ireland.  
15 That's all I have on my list, but that doesn't  
16 mean that there aren't more members of the public  
17 who would wish to comment, so at this time I'd  
18 like to ask: Are there any other members of the  
19 public either on phone or on Zoom that would like  
20 to comment this morning on the rule initiation for  
21 selenium standards?

22 (No response)

23 MS. SUTLIFF: Madam Chair, I believe  
24 Rachel Malison had some comments. Rachel?

25 MS. MALISON: Thank you, but no.



1 CHAIR DEVENY: Are there any other  
2 members of the public that would wish to comment?

3 (No response)

4 CHAIR DEVENY: At this point, I'd like  
5 to thank everybody for their patience this  
6 morning, and for the comments, and for sticking to  
7 the limits, time limits; and I believe there was  
8 some good opportunity for people to comment on  
9 this, and I think the Board has a feel for maybe  
10 where people are standing on that.

11 At this point I'd like to have a  
12 discussion among the Board members, and I see  
13 Chris Tweeten, you're ready to start that. Go  
14 ahead, Chris.

15 BOARD MEMBER TWEETEN: Question for Tim  
16 Davis.

17 CHAIR DEVENY: Mr. Davis. Tim.

18 MR. DAVIS: Madam Chair, Board Member  
19 Tweeten.

20 BOARD MEMBER TWEETEN: Hi, Tim. We're  
21 having a special -- This is a special meeting of  
22 the Board, and as I recall, we scheduled it as a  
23 special meeting because of some time concerns.  
24 Can you refresh our memory about that.

25 MR. DAVIS: Madam Chair, Board Member

1 Tweeten. Yes, we have been targeting for years  
2 now 2020 for the proposed adoption of the rule,  
3 and we've been working towards that for years, and  
4 we've been working with the stakeholders, as well  
5 as the other agencies and industry on that, and  
6 British Columbia.

7 So when we looked out towards the -- in  
8 order to meet that, or propose to the Board to be  
9 able to meet that time period, we proposed this  
10 meeting, so that we could have a 45 day public  
11 comment period, get everybody's comments on the  
12 proposed rule prior to -- so then you would  
13 possibly take action at your final meeting of the  
14 year.

15 So that was the primary reason to remain  
16 consistent with our goal. We have all the science  
17 completed, and for all the reasons that Myla Kelly  
18 laid out as well, we're requesting today that you  
19 move forward, that the Board move forward with the  
20 rulemaking.

21 BOARD MEMBER TWEETEN: Madam Chair,  
22 follow up.

23 CHAIR DEVENY: Go ahead, Chris.

24 BOARD MEMBER TWEETEN: I'm concerned,  
25 because under MAPA, the Legislature can of course

1     overrule our rulemaking decision if we decide to  
2     adopt a rule. I'm concerned about Senator Cuffe's  
3     comments regarding complaints about process.

4             If challenges are to be made to any rule  
5     that we adopt -- not just this one, but any rule  
6     -- I would really prefer that they be made on the  
7     basis of substance, not process.

8             So I want to, if we do decide to proceed  
9     with rulemaking, I want to encourage DEQ to  
10    provide Senator Cuffe with whatever paper  
11    documents he needs, and to engage in whatever  
12    outreach needs to be done between now and the time  
13    of the hearing that's in the rulemaking request  
14    set for the fifth of November to be sure that all  
15    of their concerns regarding information are  
16    addressed as best we can.

17            And it may be that they can't all be  
18    eliminated, but certainly any opportunities for  
19    attacks on our regulations based on process I  
20    think need to be eliminated, if we can.

21            So I really want to encourage DEQ to  
22    work with Senator Cuffe and his colleagues to make  
23    sure that they have all of the information that  
24    they request, and that any questions they have  
25    about the data are answered, and that those

1 answers are documented, so if any issues arise  
2 about that later on, we'll have a record with  
3 respect to how those matters were addressed.

4 MR. DAVIS: Madam Chair, Board Member  
5 Tweeten. I actually sent Senator Cuffe a note  
6 after his testimony this morning offering to send  
7 him a hard copy.

8 I do want to note that we have had years  
9 of public meetings. There were two public  
10 meetings, and obviously they're virtual, just in  
11 the last couple weeks with local leaders, decision  
12 makers, to address their questions, walk through,  
13 you know, Lauren and Myla present a --

14 We're more than happy to continue to  
15 work with Senator Cuffe and others. We will --  
16 The Water Policy Interim Committee has requested a  
17 presentation on the science as well, and so we'll  
18 be doing that in October.

19 But I hear your request, and we're  
20 taking it very seriously.

21 CHAIR DEVENY: Thank you, Tim. Chris,  
22 do you have any followup on that?

23 BOARD MEMBER TWEETEN: I don't, but I'm  
24 prepared with a motion as soon as the Board  
25 comment is concluded.

1           CHAIR DEVENY:   Let's have some more  
2 discussion by Board members, if there is any.  
3 Jerry.

4           BOARD MEMBER LYNCH:   Thank you, Madam  
5 Chair. I just want to first of all thank Lauren  
6 and Myla, as well as the DEQ and other agencies,  
7 for an excellent report and analysis.

8           That being said, I believe it's better  
9 to start sooner than later the process to address  
10 the standard. The environment does not wait until  
11 we administratively do things.

12           And with due respect to the two  
13 opponents who spoke today, I did not hear anything  
14 that persuasively -- or no persuasive argument why  
15 this process should not proceed, understanding  
16 that the brakes can always be put on if new  
17 information comes to light.

18           So I emphasize here we're talking about  
19 process. I want to thank Chris for reminding me I  
20 was putting the cart before the horse, because we  
21 are just simply talking about initiating  
22 rulemaking. The Board is not making a final  
23 decision.

24           And so I believe with the five years of  
25 collaborative effort, the excellent scientific

1 report, that there's no harm in proceeding forward  
2 with the initiation -- again emphasize --  
3 initiation of the rulemaking. Thank you.

4 CHAIR DEVENY: John DeArment.

5 BOARD MEMBER DEARMENT: Thanks, Madam  
6 Chair. I would just second what Jerry Lynch had  
7 to say. Clearly some world class science went  
8 into this, a very robust collaboration process.  
9 It seems to me that the Department has very  
10 clearly met any bar they would need to meet for us  
11 to move forward with initiation, and I think by  
12 starting that process, we give opponents a chance  
13 to weigh in with suggestions on how to improve the  
14 standard or change the standard, but we should  
15 move forward with initiation today, would be my  
16 vote.

17 And also just thanks for the  
18 presentation, and to DEQ and everybody who was  
19 involved in the many years that have gone into the  
20 process. A lot of great work. So thanks,  
21 everyone.

22 CHAIR DEVENY: Thanks, John. Other  
23 Board member comments?

24 BOARD MEMBER BUSBY: This is Dexter. A  
25 couple quick questions to Tim Davis, please.

1 CHAIR DEVENY: Tim, are you still there?

2 MR. DAVIS: Madam Chair, Board Member --

3 CHAIR DEVENY: Busby.

4 MR. DAVIS: Busby. That's right. I  
5 can't see your picture, Dexter. Sorry. Go ahead.

6 BOARD MEMBER BUSBY: I'm on the phone.  
7 So Tim, as a practical matter, I've always been  
8 opposed to regulating for regulation sake, and  
9 regulating when we have no control or no way of  
10 enforcing.

11 So tell me how, from a practical side,  
12 will you be able to as the Water Quality Division  
13 enforce any regulation we pass, much less a little  
14 more stringent than what's already existing in the  
15 lake.

16 MR. DAVIS: Madam Chair, Board Member  
17 Busby. I think I would start by just reiterating  
18 what Myla and Lauren had pointed out. Right now  
19 we don't have a standard that is protective. The  
20 first place that we need to begin when adopting it  
21 to be able to protect Montana's water quality is  
22 to have a protective standard based on the  
23 science.

24 Then as Ms. Schmit from EPA talked  
25 about, once we have that standard in place, then

1 we have a benchmark in order to work either under  
2 the boundary waters treaty, or work directly with  
3 British Columbia, to make sure that that standard  
4 is met.

5 So we do think there's ways to be able  
6 to implement the standard, but the first thing we  
7 need to do is to have a protective standard, which  
8 we do not have, to ensure that Montana's water  
9 quality and aquatic life is protected. Does that  
10 help?

11 BOARD MEMBER BUSBY: Yeah, that goes a  
12 way in helping my thought pattern. My concern  
13 really comes from the whole idea of -- We don't  
14 know the impact of these standards downstream.  
15 They will have actually at this point no impact on  
16 the Idaho, and the Kootenai folks, or what goes  
17 back into Canada on the river.

18 But I'm just really reluctant to say  
19 we're going to have a one standard, or .8  
20 standard, when the lake is already one -- and tell  
21 if I'm wrong on the tech -- and there is no  
22 upstream true enforcement mechanism that has been  
23 enacted.

24 They may be working very hard  
25 technically, and they may be successfully working



1 very hard; but as Montana, we really don't have  
2 any input on a foreign entity, a foreign state, or  
3 any other state. We can talk, we can advise, but  
4 we certainly don't have any control.

5 So I'm not sure we're going to affect  
6 the selenium in the river or the lake by passing  
7 these rules or by not passing these rules, but  
8 even initiating rulemaking until we have some form  
9 of commitment that's enforceable, and I don't see  
10 that happening.

11 MR. DAVIS: Madam Chair, Board Member  
12 Busby. I would just reiterate that I think this  
13 really is foundational. It's not possible right  
14 now, given our nonprotective standard, for us to  
15 -- we don't have a benchmark to work with British  
16 Columbia or Canada that is protective.

17 Until we have that in place, there  
18 really isn't a -- we can't have those  
19 conversations about whether or not that standard  
20 is being violated, and what steps they will take.  
21 Once we have a standard in place that is  
22 protective, that's where the State department gets  
23 involved, and it is possible that we could work  
24 out an agreement with BC on implementation once we  
25 have it.

1           But without that benchmark to begin  
2 with, it's not possible to have those enforcement  
3 conversations because we don't know, because right  
4 now, nothing in the United States is being  
5 violated, and we haven't taken that first  
6 important step to protect ourselves.

7           BOARD MEMBER BUSBY: Okay. That's all I  
8 had. Thank you.

9           CHAIR DEVENY: Thank you, Dexter. Other  
10 Board members that wish to make comments or have  
11 questions of DEQ?

12           (No response)

13           CHAIR DEVENY: Seeing none, I guess I'd  
14 like to commend DEQ for the work that they've done  
15 on this, and I have to say I'm very impressed with  
16 the collaborative work, and the number of  
17 agencies, and cross border groups, tribes, that  
18 have been involved in this.

19           I'm not sure in my tenure with the Board  
20 that I've seen quite that expansive amount of  
21 collaboration, and work, and I have to say from my  
22 reading of the science, it does seem quite  
23 rigorous, and that there's been a lot of really  
24 good work done there.

25           With that, Chris, I think you were ready

1 to make a motion for the Board, and so if you'd  
2 like to do so, I'll call on you.

3 BOARD MEMBER TWEETEN: Madam Chair, I  
4 move that we initiate rulemaking in accordance  
5 with the notice of intended rulemaking that's been  
6 provided to us by DEQ, and that Sarah Clerget be  
7 appointed as the party to conduct the  
8 administrative hearing.

9 CHAIR DEVENY: I would second that. Is  
10 there Board member discussion on the motion before  
11 us?

12 (No response)

13 CHAIR DEVENY: Any discussion?

14 (No response)

15 CHAIR DEVENY: With that, we will have a  
16 vote. All those in favor of initiating rulemaking  
17 as proposed by DEQ, and assigning Sarah Clerget as  
18 our Hearing Officer, please signify by saying aye.

19 (Response)

20 CHAIR DEVENY: Are there any opposed?

21 BOARD MEMBER BUSBY: I'm opposed. This  
22 is Dexter.

23 CHAIR DEVENY: So we have five in favor,  
24 one opposed. The motion passes. So with that, I  
25 believe we can move on to opening the meeting up

1 to any general public comment that is not  
2 concerning issues that we've already discussed  
3 today and I'd --

4 BOARD MEMBER TWEETEN: Madam Chair.

5 CHAIR DEVENY: Go ahead, Chris.

6 BOARD MEMBER TWEETEN: I'm late for an  
7 appointment, so I'm going to have to get off.

8 CHAIR DEVENY: Okay. Any other public  
9 comment?

10 MR. GUNDERSON: Madam Chair, I would  
11 like to make comment. Representative Gunderson.

12 CHAIR DEVENY: Yes, Mr. Gunderson.

13 MR. GUNDERSON: Madam Chair, the process  
14 I think that we're making -- and I apologize by  
15 not being able to make comment before because I  
16 had a meeting that conflicted here -- but I would  
17 like to point out that the procedural problems  
18 with the standard setting are great.

19 DEQ has not followed through following  
20 proper procedure by utilizing EQC or WPCAC to  
21 actually keep the Legislature in the loop on the  
22 standard.

23 I also feel there's scientific data that  
24 has been left out, and that includes the water  
25 treatment numbers from -- (inaudible) -- made

1 great strides in reducing the amount of selenium,  
2 and I think we are making a decision that's too  
3 fast, too soon. We need to take a step back and  
4 actually look at that data, and see what --  
5 (inaudible) -- long term.

6 But again, nobody has shown me the trout  
7 where there is a selenium crash. Nobody has shown  
8 me the cause of the fish population decline on the  
9 Elk and upper Fording, and that's still under  
10 investigation to find out what actually caused it,  
11 and it appears that it's not selenium related.

12 So again, I think we're going too fast.  
13 We're on a steam roller mission to get something  
14 done that can actually take a little more time,  
15 and take in a little more debate, and look at more  
16 scientific data.

17 CHAIR DEVENY: Thank you, Mr. Gunderson.  
18 And with that, I would like to move that we  
19 adjourn this meeting.

20 BOARD MEMBER LYNCH: I'd second.

21 CHAIR DEVENY: It's been moved and  
22 seconded. All in favor of adjourning today's  
23 meeting, please signify by saying aye.

24 (Response)

25 CHAIR DEVENY: Any opposed?

1 (No response)

2 CHAIR DEVENY: Thank you, everybody, and  
3 we'll see you in a couple weeks.

4 (Chat received by Myla Kelly  
5 to be included in the transcript)

6 \* \* \* \* \*

7 From Shawna Kelsey to Everyone: 10:02 AM.

8 I apologize for missing the  
9 introductions at the beginning of the meeting. My  
10 name is Shawna Kelsey. I'm on the City Council in  
11 Troy, MT. I was born and raised in Troy and am  
12 now raising my family here and starting a business  
13 after many years in the non-profit world.

14 Thank you for all of the detailed  
15 information about selenium standards and the  
16 biological effects. I am in support of the DEQ  
17 recommended standards and that the BER move  
18 forward with establishing the standard. It is in  
19 the best interest of our watershed, our community  
20 and our economy to act now to prevent the negative  
21 consequences of higher selenium levels -  
22 especially when we can do so based on the best  
23 available science. Thank you for your work  
24 protecting this watershed that many of us take for  
25 granted.

\* \* \* \* \*

(The proceedings were concluded

at 11:17 am. )

\* \* \* \* \*

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

C E R T I F I C A T E

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

STATE OF MONTANA )  
: SS.  
COUNTY OF LEWIS & CLARK )

I, LAURIE CRUTCHER, RPR, Court Reporter,  
Notary Public in and for the County of Lewis &  
Clark, State of Montana, do hereby certify:

That the proceedings were taken before me at  
the time and place herein named; that the  
proceedings were reported by me in shorthand and  
transcribed using computer-aided transcription,  
and that the foregoing - 103 - pages contain a  
true record of the proceedings to the best of my  
ability.

IN WITNESS WHEREOF, I have hereunto set my  
hand and affixed my notarial seal this 5th day of  
October, 2020.

\_\_\_\_\_  
LAURIE CRUTCHER, RPR  
Court Reporter - Notary Public  
My commission expires  
March 9, 2024.



<u>0</u>	75:20 <b>2013 [4]</b> 13:15, 28:23, 29:2, 76:12 <b>2014 - 45:5</b> <b>2015 [5]</b> 13:21, 14:8, 15:4, 15:20, 75:23 <b>2016 [3]</b> 13:25, 29:13, 76:21 <b>2017 - 76:24</b> <b>2018 [2]</b> 27:24, 76:24 <b>2019 [4]</b> 15:6, 21:21, 29:2, 76:24 <b>2020 [6]</b> 1:14, 14:11, 31:5, 75:24, 90:2, 104:17 <b>2024 - 104:22</b> 24 - 1:14	<u>6</u>	95:21, 96:5, 100:15 <b>abreast -</b> 83:21 <b>absence [2]</b> 43:13, 45:18 <b>Absolutely [2]</b> 3:19, 4:2 <b>access - 23:11</b> <b>accordance</b> <b>[2]</b> 80:14, 99:4 <b>according -</b> 48:12 <b>accountable -</b> 81:8 <b>accounts -</b> 33:4 <b>accurate [2]</b> 73:4, 78:1 <b>achieve - 84:9</b> <b>achievements</b> <b>- 17:2</b> <b>acknowledge -</b> 65:5 <b>acknowledged</b> <b>- 85:24</b> <b>across [5]</b> 26:14, 49:17, 68:9, 69:8, 81:2 <b>act [7]</b> 12:3, 30:22, 64:4, 65:8, 80:15, 80:20, 102:20 <b>action [3]</b> 52:3, 60:2, 90:13 <b>actions [5]</b> 14:15, 52:9, 52:18, 52:19, 65:1 <b>active [2]</b> 71:24, 86:5 <b>actively -</b> 86:6 <b>activities [4]</b> 13:17, 19:12, 68:12, 82:20 <b>add [3]</b> 46:13, 49:6, 49:9 <b>added [2]</b> 33:10, 65:9 <b>addition -</b> 48:3 <b>additional [7]</b> 39:10, 39:15, 46:13, 46:18, 48:5, 49:15, 87:23 <b>additionally</b> <b>[2]</b> 22:5,	<u>7</u>	42:13 <b>address [9]</b> 11:20, 13:8, 15:20, 16:24, 53:8, 53:15, 65:23, 92:12, 93:9 <b>addressed [3]</b> 66:18, 91:16, 92:3 <b>adequate -</b> 65:22 <b>adjourn -</b> 101:19 <b>adjourning -</b> 101:22 <b>adjust - 46:19</b> <b>administrative</b> <b>[2]</b> 64:4, 99:8 <b>administratively</b> <b>- 93:11</b> <b>adopt [7]</b> 12:7, 70:18, 77:25, 80:3, 84:21, 91:2, 91:5 <b>adopting [5]</b> 45:20, 52:13, 58:24, 60:3, 95:20 <b>adoption [6]</b> 1:6, 59:13, 65:11, 80:20, 84:2, 90:2 <b>adopts -</b> 80:12 <b>adult [2]</b> 27:9, 27:18 <b>adverse [3]</b> 18:22, 18:24, 73:23 <b>advise - 97:3</b> <b>advisor -</b> 79:15 <b>advisory [2]</b> 20:10, 20:11 <b>advocating -</b> 66:11 <b>Adzick [2]</b> 6:6, 6:7 <b>affect [4]</b> 65:2, 66:1, 66:10, 97:5 <b>affected [2]</b> 56:11, 59:1 <b>affecting [3]</b> 56:4, 56:7, 87:25 <b>affects - 46:4</b> <b>affixed -</b> 104:16 <b>agencies [6]</b> 17:7, 85:3,	<u>8</u>	85:15, 90:5, 93:6, 98:17 <b>agree [2]</b> 85:19, 87:7 <b>agreed -</b> 17:13 <b>agreement [5]</b> 40:5, 40:18, 57:12, 74:17, 97:24 <b>agriculture -</b> 12:14 <b>ahead [24]</b> 2:5, 2:14, 3:18, 9:25, 11:2, 37:5, 44:7, 46:25, 48:10, 49:7, 52:24, 54:23, 55:20, 56:17, 58:3, 58:19, 61:14, 63:10, 71:14, 79:12, 89:14, 90:23, 95:5, 100:5 <b>alert - 22:5</b> <b>aligned [3]</b> 14:10, 15:14, 55:17 <b>allocations [2]</b> 52:10, 52:15 <b>allows [2]</b> 19:21, 20:1 <b>alone - 77:9</b> <b>already [6]</b> 30:1, 73:2, 73:9, 95:14, 96:20, 100:2 <b>altered - 27:2</b> <b>although [2]</b> 37:21, 65:4 <b>amazing -</b> 68:21 <b>amendment -</b> 1:5 <b>American -</b> 68:23 <b>among [2]</b> 78:23, 89:12 <b>amongst -</b> 84:11 <b>amount [3]</b> 49:25, 98:20, 101:1 <b>analyses -</b> 16:5 <b>analysis [4]</b> 15:1, 46:12, 47:1, 93:7 <b>analyze -</b> 51:19
<u>1</u>	<u>3</u>	<u>9</u>	<u>A</u>				
10.6 [2] 40:25, 41:2 10.8 [13] 16:18, 29:7, 41:2, 42:12, 43:4, 43:9, 51:12, 51:21, 52:4, 52:20, 55:11, 58:13, 69:16 <b>08 - 42:25</b>	<u>4</u>	<u>5</u>	<u>6</u>				
1 [2] 23:10, 71:17 1.0 [3] 51:11, 52:4, 55:11 1.1 - 34:1 1.5 [4] 33:25, 40:25, 73:2, 75:25 <b>100 [6]</b> 38:15, 39:8, 40:2, 42:10, 42:15, 45:6 <b>103 - 104:12</b> <b>10:02 - 102:7</b> <b>10:23 - 60:9</b> <b>11.3 - 43:20</b> <b>1192 - 1:24</b> <b>11:17 - 103:3</b> <b>15 [2]</b> 61:7, 62:20 <b>15.1 [6]</b> 28:8, 28:14, 41:22, 43:19, 77:25, 78:1 <b>17.30.602 -</b> 1:5 <b>19 [5]</b> 36:7, 36:8, 36:13, 36:15, 36:16 <b>1970s - 21:10</b> <b>1980s - 28:20</b> <b>1984 - 21:21</b> <b>1987 - 13:25</b>	3.1 [4] 16:19, 43:17, 49:10, 49:12 <b>3.2 - 72:17</b>	8 [10] 48:24, 48:25, 52:12, 52:14, 53:2, 57:25, 79:16, 87:10, 88:3, 96:19 <b>8.0 - 59:9</b> <b>8.5 [19]</b> 37:20, 39:24, 40:11, 40:20, 40:20, 41:14, 41:21, 42:13, 42:18, 42:22, 43:20, 44:19, 45:1, 45:11, 46:10, 48:16, 57:10, 57:14, 72:17 <b>8.6 - 44:17</b> <b>85 - 72:16</b> <b>87 [3]</b> 35:6, 35:14, 35:17	<b>a.m. - 1:15</b> <b>ability -</b> 104:14 <b>able [9]</b> 10:19, 36:25, 38:6, 86:18, 90:9, 95:12,				
<u>2</u>	4 [2] 81:5, 81:8 <b>400 - 35:4</b> <b>45 [2]</b> 42:2, 90:10	<u>7</u>	<u>8</u>				
2 - 51:13 2,000 - 83:7 2.8 - 33:25 20 [2] 37:18, 76:14 2008 - 27:23 2010 [2] 13:3, 31:18 2012 [3] 13:12, 68:3,	5 - 84:18 <b>5.6 [17]</b> 41:15, 41:17, 41:22, 42:4, 44:10, 44:15, 48:16, 48:18, 48:19, 49:2, 57:10, 57:14, 57:24, 58:7, 58:12, 72:17, 87:8 <b>50th [2]</b> 40:18, 42:5 <b>59624 - 1:24</b> <b>5th - 104:16</b>	60 [3] 40:5, 40:9, 42:16	95:21, 96:5, 100:15 <b>abreast -</b> 83:21 <b>absence [2]</b> 43:13, 45:18 <b>Absolutely [2]</b> 3:19, 4:2 <b>access - 23:11</b> <b>accordance</b> <b>[2]</b> 80:14, 99:4 <b>according -</b> 48:12 <b>accountable -</b> 81:8 <b>accounts -</b> 33:4 <b>accurate [2]</b> 73:4, 78:1 <b>achieve - 84:9</b> <b>achievements</b> <b>- 17:2</b> <b>acknowledge -</b> 65:5 <b>acknowledged</b> <b>- 85:24</b> <b>across [5]</b> 26:14, 49:17, 68:9, 69:8, 81:2 <b>act [7]</b> 12:3, 30:22, 64:4, 65:8, 80:15, 80:20, 102:20 <b>action [3]</b> 52:3, 60:2, 90:13 <b>actions [5]</b> 14:15, 52:9, 52:18, 52:19, 65:1 <b>active [2]</b> 71:24, 86:5 <b>actively -</b> 86:6 <b>activities [4]</b> 13:17, 19:12, 68:12, 82:20 <b>add [3]</b> 46:13, 49:6, 49:9 <b>added [2]</b> 33:10, 65:9 <b>addition -</b> 48:3 <b>additional [7]</b> 39:10, 39:15, 46:13, 46:18, 48:5, 49:15, 87:23 <b>additionally</b> <b>[2]</b> 22:5,				

and/or [4] 22:8, 23:18, 33:3, 49:24	40:22, 42:3, 42:17, 80:24, 86:14	assumption - 41:7	23:15, 24:25	bit [9] 22:10, 24:11, 45:10, 54:4, 71:21, 72:16, 74:18, 78:15, 81:14	60:18, 60:20, 60:22, 61:3, 64:7, 64:14, 64:19, 64:22, 65:16, 66:23, 66:25, 69:9, 74:11, 75:1, 75:6, 78:7, 79:14, 81:9, 81:13, 82:25, 84:11, 85:1, 87:3, 87:6, 89:9, 89:12, 89:15, 89:18, 89:20, 89:22, 89:25, 90:8, 90:19, 90:21, 90:24, 92:4, 92:23, 92:24, 93:2, 93:4, 93:22, 94:5, 94:23, 94:24, 95:2, 95:6, 95:16, 96:11, 97:11, 98:7, 98:10, 98:19, 99:1, 99:3, 99:10, 99:21, 100:4, 100:6, 101:20			
Angela [3] 3:22, 4:17, 4:19	approved - 70:21	assumptions - 37:24	bedrock - 23:10	blamed - 72:6	Board's - 7:4			
angling - 20:6	approximate- ly - 29:5	assure - 81:2	begin [4] 11:17, 11:23, 95:20, 98:1	board [147] 1:1, 1:18, 2:6, 2:9, 2:14, 2:19, 2:21, 2:23, 2:25, 3:4, 3:10, 9:20, 9:21, 10:9, 10:19, 10:24, 11:4, 11:8, 11:13, 12:6, 20:13, 20:16, 36:10, 36:16, 36:17, 37:1, 43:6, 43:25, 44:5, 44:5, 44:8, 44:12, 44:16, 44:20, 45:9, 45:24, 46:7, 46:23, 47:1, 47:7, 47:13, 48:8, 48:11, 48:17, 48:19, 48:20, 48:21, 49:3, 49:9, 49:19, 49:21, 51:2, 51:4, 51:7, 51:17, 51:24, 52:16, 53:1, 53:17, 54:3, 54:20, 54:22, 54:23, 54:25, 55:7, 55:13, 55:18, 55:21, 56:3, 56:12, 56:14, 56:15, 56:15, 56:18, 57:2, 57:8, 57:9, 57:16, 58:1, 58:16, 58:17, 58:18, 58:20, 59:7, 59:17, 59:20, 59:21, 60:14,	animal - 33:22	attacks - 91:19	beginning [5] 15:4, 61:17, 62:8, 71:23, 102:9	bodies [3] 12:18, 13:15, 28:12
answered - 91:25	April - 74:20	attendance - 39:8	benchmark [3] 96:1, 97:15, 98:1	body [22] 16:15, 32:11, 37:20, 37:21, 39:24, 40:12, 40:19, 41:13, 41:18, 41:21, 41:22, 42:4, 42:14, 42:19, 42:22, 43:12, 43:20, 44:11, 44:13, 44:18, 52:9, 55:24	Bonnors -			
answering - 18:2	aquatic [21] 12:12, 12:21, 12:24, 14:11, 17:18, 17:22, 17:24, 18:11, 19:11, 19:24, 24:16, 25:20, 29:9, 31:20, 33:6, 33:24, 39:18, 40:2, 42:10, 42:16, 96:9	attention - 73:11	beneficial [6] 12:5, 12:15, 12:17, 20:2, 29:9, 39:18	BER [4] 37:8, 44:3, 63:3, 102:17				
answers - 92:1	aren't - 88:16	attorney [2] 7:4, 75:8	besides [2] 36:13, 61:19	best [7] 31:19, 81:1, 84:18, 91:16, 102:19, 102:22, 104:13				
anyplace - 72:14	argue - 73:24	authority [3] 12:3, 12:7, 19:19	besides [2] 36:13, 61:19	better [4] 57:17, 70:6, 82:4, 93:8				
anyway [2] 72:2, 74:5	argued - 73:24	available [6] 31:20, 37:8, 67:5, 75:17, 83:21, 102:23	best [7] 31:19, 81:1, 84:18, 91:16, 102:19, 102:22, 104:13	beyond - 50:15				
apologize [7] 37:3, 71:11, 78:17, 79:5, 81:13, 100:14, 102:8	argument - 93:14	average [8] 28:18, 29:4, 51:11, 51:16, 52:2, 52:4, 53:3, 53:4	bi-national - 13:22	bi-national - 13:22				
appears - 101:11	arise [2] 7:24, 92:1	axis [4] 27:24, 28:2, 29:1, 29:1	Billings - 75:8	Bio - 85:16				
applied [10] 33:18, 37:19, 37:22, 39:25, 40:6, 40:20, 40:20, 41:18, 42:13, 42:15	ARM - 1:5	aye [2] 99:18, 101:23	Bio - 85:16	bioaccumulates [2] 14:5, 34:9				
applies [2] 17:21, 41:8	Army - 29:17	Ayn [3] 8:12, 79:9, 79:14	bioaccumulates [2] 14:5, 34:9	bioaccumulation [4] 22:9, 31:4, 34:4, 34:18				
apply [2] 19:22, 41:13	arrive - 43:3	background [2] 11:18, 23:22	bioaccumulation [4] 22:9, 31:4, 34:4, 34:18	bioaccumulative [2] 25:17, 33:20				
applying [2] 40:11, 42:18	arrived [6] 11:19, 13:2, 16:10, 18:3, 18:4, 42:11	bam - 74:21	bioaccumulative [2] 25:17, 33:20	bioavailability [5] 31:12, 40:6, 40:9, 42:1, 42:17				
appointed - 99:7	arrow - 25:7	bandwidth - 10:25	bioavailability [5] 31:12, 40:6, 40:9, 42:1, 42:17	bioconcentration - 32:19				
appointment - 100:7	arrows - 25:14	banks - 87:21	bioconcentration - 32:19	biodynamics - 53:24				
appointments [9] 8:22, 10:7, 63:14, 63:21, 67:18, 79:3, 79:19, 81:16, 87:6	Article [2] 81:5, 81:8	bar - 94:10	biodynamics - 53:24	biological [3] 25:2, 67:22, 102:16				
appreciated - 88:8	asking - 77:24	base [4] 32:18, 34:4, 34:15, 34:18	biological [3] 25:2, 67:22, 102:16	biologists [2] 18:20, 27:15				
appreciates [2] 79:21, 81:19	aspects - 11:20	BC [18] 13:7, 13:18, 14:8, 14:16, 15:12, 17:13, 39:2, 41:23, 48:24, 53:6, 68:2, 68:10, 68:14, 70:17, 70:17, 84:6, 84:13, 97:24	biologists [2] 18:20, 27:15					
appreciative - 69:8	assessment [6] 23:2, 70:17, 75:17, 78:4, 78:11, 78:21	bear - 45:10						
approached - 63:22	assigning - 99:17	bearing - 22:23						
appropriate [8] 15:24, 37:23, 40:19,	assistance - 15:5	become - 26:20						
	Association	becomes [2]						
	[2] 9:4, 85:7							
	assuming [3] 38:16, 40:2, 42:10							

21:5 <b>border</b> [12] 49:18, 53:8, 55:22, 66:5, 66:8, 66:12, 66:13, 69:25, 77:11, 87:10, 88:4, 98:17 <b>born</b> - 102:11 <b>bottom</b> [4] 23:9, 23:23, 32:12, 41:5 <b>bound</b> [2] 45:13, 45:16 <b>boundary</b> [6] 22:21, 30:7, 69:17, 81:3, 81:6, 96:2 <b>Bowers</b> [2] 5:3, 5:6 <b>Box</b> - 1:24 <b>boxes</b> - 30:6 <b>Brad</b> [4] 4:10, 4:10, 64:17, 64:19 <b>brakes</b> - 93:16 <b>break</b> [2] 60:8, 60:13 <b>breaking</b> - 73:14 <b>brief</b> [4] 8:13, 67:19, 79:19, 83:8 <b>briefly</b> - 24:19 <b>bring</b> [2] 20:12, 47:13 <b>British</b> [46] 13:4, 13:10, 19:4, 20:23, 21:1, 21:6, 21:11, 21:14, 21:18, 22:3, 22:4, 28:5, 28:13, 28:20, 29:18, 29:22, 30:11, 37:22, 38:7, 38:24, 39:12, 41:5, 41:10, 41:15, 41:19, 43:1, 44:10, 44:13, 44:21, 44:25, 45:3, 45:12, 45:22, 53:8, 53:13,	56:22, 58:8, 58:10, 58:14, 69:25, 70:6, 79:22, 85:17, 90:6, 96:3, 97:15 <b>broad</b> - 14:18 <b>broadband</b> - 81:15 <b>broader</b> - 39:15 <b>broadly</b> - 80:1 <b>broke</b> - 71:24 <b>Brooks</b> [4] 4:5, 4:8, 62:12, 63:11 <b>brought</b> - 53:15 <b>Bull</b> - 30:20 <b>burbot</b> [3] 33:9, 65:9, 87:17 <b>Busby</b> [16] 1:19, 3:4, 3:10, 59:17, 59:20, 60:21, 60:22, 94:24, 95:3, 95:4, 95:6, 95:17, 96:11, 97:12, 98:7, 99:21 <b>businesses</b> - 18:25 <b>byproduct</b> [2] 23:7, 23:13 <hr/> <b>C</b> <hr/> <b>calculate</b> [2] 31:8, 40:13 <b>calculated</b> [2] 41:17, 42:2 <b>calculates</b> - 32:21 <b>calculating</b> - 58:9 <b>can't</b> [4] 37:14, 91:17, 95:5, 97:18 <b>Canada</b> [11] 14:21, 55:2, 55:8, 55:12, 70:25, 71:3, 71:4, 81:3, 81:7, 96:17, 97:16 <b>Canadian</b> [5] 19:21, 50:17, 56:20, 86:9, 88:4	<b>candidate</b> - 31:25 <b>cap</b> [2] 12:23, 24:3 <b>capacity</b> - 51:19 <b>captured</b> [2] 8:1, 27:19 <b>cart</b> - 93:20 <b>case</b> - 24:22 <b>Castle</b> - 82:21 <b>catch</b> - 71:12 <b>categorized</b> - 33:13 <b>cause</b> [3] 26:25, 27:9, 101:8 <b>caused</b> - 101:10 <b>Center</b> - 4:14 <b>certainly</b> [2] 91:18, 97:4 <b>certainty</b> [5] 17:20, 19:22, 20:1, 70:19, 81:7 <b>certify</b> - 104:7 <b>chain</b> [4] 25:11, 25:13, 34:2, 54:15 <b>Chair</b> [144] 1:17, 2:4, 2:6, 2:17, 3:1, 3:8, 3:11, 3:16, 8:3, 8:7, 8:10, 8:15, 8:19, 8:20, 9:2, 9:6, 9:10, 9:14, 9:19, 9:22, 9:25, 10:16, 10:21, 11:3, 11:5, 11:8, 20:16, 36:12, 36:22, 36:23, 37:15, 43:23, 44:6, 44:7, 44:12, 46:5, 46:9, 46:25, 48:10, 48:20, 49:5, 49:7, 49:20, 49:23, 50:6, 51:1, 51:4, 51:6, 51:17, 52:23, 52:24, 54:3, 54:22, 54:23, 55:5, 55:18,	55:20, 56:13, 56:16, 56:17, 57:2, 58:1, 58:3, 58:17, 58:18, 59:4, 59:14, 59:18, 59:21, 60:13, 60:25, 61:6, 61:10, 61:13, 62:6, 62:10, 62:15, 62:18, 63:13, 64:16, 64:18, 66:25, 67:1, 67:7, 67:9, 67:15, 67:17, 69:19, 71:8, 75:3, 75:5, 78:14, 79:2, 79:5, 79:8, 79:11, 79:14, 81:9, 81:10, 81:12, 83:2, 83:4, 84:23, 84:25, 86:24, 88:14, 88:23, 89:1, 89:4, 89:17, 89:18, 89:25, 90:21, 90:23, 92:4, 92:21, 93:1, 93:5, 94:4, 94:6, 94:22, 95:1, 95:2, 95:3, 95:16, 97:11, 98:9, 98:13, 99:3, 99:9, 99:13, 99:15, 99:20, 99:23, 100:4, 100:5, 100:8, 100:10, 100:12, 100:13, 101:17, 101:21, 101:25, 102:2 <b>chaired</b> - 39:1 <b>challenges</b> - 91:4	<b>challenging</b> - 18:11 <b>chance</b> - 94:12 <b>change</b> [4] 50:1, 50:3, 82:13, 94:14 <b>chapters</b> - 63:20 <b>characterizes</b> - 32:19 <b>charts</b> - 84:13 <b>Chat</b> - 102:4 <b>check</b> [5] 10:3, 59:15, 60:14, 61:22, 73:4 <b>chemistry</b> [2] 14:7, 54:17 <b>chime</b> - 67:5 <b>choices</b> - 37:24 <b>chosen</b> - 86:18 <b>Chris</b> [22] 1:17, 1:19, 2:6, 2:15, 3:2, 3:12, 9:19, 36:10, 36:22, 55:5, 55:20, 58:19, 59:4, 59:25, 60:17, 89:13, 89:14, 90:23, 92:21, 93:19, 98:25, 100:5 <b>circle</b> - 21:24 <b>circled</b> - 22:19 <b>circular</b> - 78:2 <b>citizens</b> - 83:11 <b>City</b> - 102:10 <b>clarify</b> - 55:1 <b>clarity</b> - 81:7 <b>Clark</b> [2] 104:4, 104:7 <b>class</b> - 94:7 <b>Clayton</b> [5] 8:16, 8:17, 62:11, 62:15, 63:9 <b>clean</b> [7] 12:3, 12:10, 12:11, 12:12, 20:3, 80:15, 80:20 <b>clear</b> - 76:15 <b>clearly</b> [5] 76:2, 80:8, 85:21, 94:7, 94:10	<b>Clerget</b> [9] 3:23, 7:4, 7:6, 10:23, 37:6, 61:9, 62:22, 99:6, 99:17 <b>close</b> [2] 14:9, 50:9 <b>co-developed</b> [4] 17:13, 41:4, 43:1, 48:25 <b>co-leading</b> - 14:17 <b>co-managed</b> - 14:24 <b>coal</b> [7] 22:17, 22:23, 23:8, 23:11, 24:23, 66:7, 68:3 <b>Colamaria</b> [2] 4:17, 4:20 <b>collaboration</b> [7] 14:9, 38:7, 50:8, 55:15, 79:22, 94:8, 98:21 <b>collaborative</b> [8] 14:15, 68:6, 68:19, 81:21, 83:24, 88:8, 93:25, 98:16 <b>collaboratively</b> - 38:24 <b>colleagues</b> - 91:22 <b>collect</b> [2] 34:21, 48:4 <b>collected</b> [3] 27:23, 29:24, 30:3 <b>collecting</b> - 57:20 <b>collection</b> [8] 14:23, 16:2, 17:3, 28:1, 29:12, 30:10, 34:20, 46:18 <b>collective</b> - 26:13 <b>Columbia</b> [45] 13:5, 13:10, 19:4, 20:24, 21:1, 21:6, 21:7, 21:12, 21:15, 21:19, 22:3, 22:4, 28:5, 28:13, 28:20, 29:18,
---	---	--	---	---	---

29:22, 30:11, 37:22, 38:7, 38:24, 39:12, 41:5, 41:10, 41:19, 43:1, 44:10, 44:13, 44:21, 44:25, 45:3, 45:12, 53:8, 53:14, 56:23, 58:8, 58:10, 58:14, 69:25, 70:7, 79:22, 85:17, 90:6, 96:3, 97:16 <b>Columbia's</b> [2] 41:16, 45:22 <b>column</b> [22] 14:3, 15:15, 16:16, 26:16, 28:15, 29:6, 35:20, 35:22, 38:6, 41:1, 42:11, 42:24, 43:4, 43:16, 43:17, 46:16, 48:23, 48:25, 51:20, 57:25, 58:13, 87:10 <b>combined</b> - 32:6 <b>comes</b> [4] 21:21, 44:24, 93:17, 96:13 <b>comfortable</b> - 45:20 <b>coming</b> [5] 22:14, 37:16, 53:5, 70:12, 87:24 <b>commend</b> [2] 65:5, 98:14 <b>comment</b> [23] 4:1, 6:4, 9:13, 10:2, 58:21, 61:21, 63:2, 63:15, 64:11, 64:15, 67:19, 78:13, 84:1, 88:17, 88:20, 89:2, 89:8, 90:11,	92:25, 100:1, 100:9, 100:11, 100:15 <b>commented</b> - 83:23 <b>comments</b> [46] 4:3, 4:6, 4:11, 4:15, 4:24, 5:1, 5:4, 5:9, 5:12, 5:16, 5:17, 5:20, 5:21, 5:24, 6:7, 6:11, 6:17, 6:21, 7:1, 7:5, 7:9, 7:18, 7:22, 8:8, 8:14, 8:23, 9:5, 56:14, 59:1, 59:22, 60:7, 61:25, 62:2, 62:21, 63:3, 63:5, 64:9, 67:14, 75:9, 79:3, 88:24, 89:6, 90:11, 91:3, 94:23, 98:10 <b>commission</b> - 104:21 <b>Commissioners</b> - 74:15 <b>commitment</b> - 97:9 <b>commitments</b> - 20:4 <b>committee</b> [4] 39:1, 83:5, 83:18, 92:16 <b>common</b> - 27:10 <b>commonly</b> - 27:10 <b>communities</b> - 18:25 <b>community</b> [2] 24:17, 102:19 <b>companies</b> [2] 82:18, 86:5 <b>company</b> [2] 23:1, 29:20 <b>comparable</b> - 72:18 <b>compelling</b> - 48:18 <b>complaints</b> - 91:3 <b>complement</b> - 9:21 <b>complete</b> - 31:3 <b>completed</b> [4]	17:3, 17:5, 31:6, 90:17 <b>complex</b> [3] 31:7, 35:1, 80:18 <b>composite</b> - 32:16 <b>composition</b> [2] 14:6, 54:18 <b>comprised</b> [2] 16:1, 16:11 <b>computer</b> [2] 2:4, 7:15 <b>computer-aided</b> - 104:11 <b>concentration</b> [10] 12:23, 22:6, 28:3, 29:4, 32:10, 32:22, 35:21, 56:20, 56:21, 56:25 <b>concentrations</b> [12] 13:13, 18:16, 21:20, 23:4, 26:21, 27:22, 28:15, 29:8, 57:3, 57:22, 76:13, 77:2 <b>concept</b> - 11:24 <b>concern</b> [4] 19:18, 66:14, 87:16, 96:12 <b>concerned</b> [5] 47:18, 71:5, 72:25, 90:24, 91:2 <b>concerning</b> [2] 88:1, 100:2 <b>concerns</b> [6] 46:1, 59:9, 65:23, 71:1, 89:23, 91:15 <b>concluded</b> [2] 92:25, 103:2 <b>conclusion</b> - 66:23 <b>conditions</b> - 19:23 <b>conduct</b> - 99:7 <b>conducts</b> - 47:11 <b>Confederated</b> [4] 8:21, 48:13, 67:24, 68:14 <b>confidence</b> - 12:24 <b>confident</b> [2] 46:22, 59:8	<b>confined</b> - 75:9 <b>conflicted</b> - 100:16 <b>confused</b> - 45:10 <b>confusion</b> - 72:16 <b>conjunction</b> - 50:16 <b>connections</b> - 62:5 <b>consensus</b> [4] 78:23, 78:24, 85:18, 85:18 <b>consequences</b> - 102:21 <b>conservation</b> [5] 9:4, 64:20, 69:24, 83:6, 85:7 <b>conservative</b> [5] 40:10, 40:21, 42:3, 42:21, 48:16 <b>consider</b> [5] 42:4, 48:19, 57:9, 74:23, 76:8 <b>considerable</b> [2] 73:10, 73:11 <b>consideration</b> [3] 38:11, 39:16, 59:12 <b>considerations</b> - 42:1 <b>considered</b> [4] 30:24, 35:5, 35:13, 39:12 <b>considering</b> - 78:4 <b>consistent</b> [3] 41:15, 82:5, 90:16 <b>consisting</b> - 14:18 <b>consult</b> - 16:4 <b>consultation</b> - 81:20 <b>consume</b> - 33:6 <b>consumed</b> [2] 25:8, 25:11 <b>consuming</b> - 33:3 <b>consumption</b> [3] 32:24, 33:14, 33:19 <b>contain</b> - 104:12 <b>contaminants</b> - 69:2 <b>contamination</b>	[5] 82:5, 82:13, 82:16, 84:12, 86:10 <b>context</b> [2] 23:21, 34:7 <b>continue</b> [6] 36:20, 37:2, 37:17, 37:18, 61:14, 92:14 <b>continuing</b> - 50:14 <b>contrary</b> - 85:21 <b>contributing</b> [2] 54:6, 54:16 <b>control</b> [3] 20:11, 95:9, 97:4 <b>conversation</b> [3] 69:8, 83:12, 84:11 <b>conversations</b> [3] 68:24, 97:19, 98:3 <b>conversion</b> - 41:18 <b>cooperation</b> [2] 13:4, 68:9 <b>coordinated</b> [2] 13:7, 14:22 <b>coordination</b> [3] 14:16, 29:14, 81:19 <b>corporation</b> - 77:9 <b>corporation's</b> - 77:9 <b>Corps</b> - 29:17 <b>correct</b> [15] 36:6, 44:11, 44:19, 46:4, 46:5, 46:7, 48:6, 53:1, 55:12, 55:24, 56:1, 56:2, 56:8, 72:15, 86:11 <b>correctly</b> [2] 44:9, 44:17 <b>couldn't</b> [2] 72:11, 81:25 <b>council</b> [3] 20:10, 20:11, 102:10 <b>countries</b> - 55:16 <b>County</b> [5] 71:17, 74:15, 83:11, 104:4, 104:6	<b>couple</b> [7] 19:6, 19:12, 50:14, 65:23, 92:11, 94:25, 102:3 <b>course</b> [4] 50:22, 70:25, 83:9, 90:25 <b>Court</b> [3] 1:23, 104:5, 104:20 <b>covering</b> - 36:1 <b>COVID-19</b> [3] 2:11, 72:7, 72:11 <b>crash</b> - 101:7 <b>cray</b> - 33:6 <b>create</b> - 42:14 <b>created</b> [2] 21:9, 47:14 <b>creates</b> [2] 19:13, 23:12 <b>Creek</b> - 68:3 <b>Creston</b> - 70:25 <b>crisis</b> [3] 18:15, 74:19, 74:21 <b>criteria</b> [20] 14:1, 16:14, 16:21, 26:12, 28:8, 31:25, 39:4, 43:4, 43:15, 45:21, 45:21, 47:25, 58:13, 68:7, 69:16, 80:3, 80:10, 80:13, 80:14, 82:22 <b>criterion</b> [5] 32:10, 37:20, 78:1, 79:24, 80:9 <b>critical</b> [3] 11:25, 16:25, 34:16 <b>criticized</b> - 73:16 <b>cross</b> - 98:17 <b>CRUTCHER</b> [3] 1:22, 104:5, 104:19 <b>CSKT</b> [2] 81:17, 81:18 <b>Cuffe</b> [11] 7:12, 7:14, 7:14, 36:3, 36:3, 71:15, 71:17, 91:10,
---	--	--	--	--	---

91:22, 92:5, 92:15 <b>Cuffe's</b> - 91:2 <b>cultural</b> [3] 82:15, 87:16, 87:25 <b>culturally</b> - 33:8 <b>current</b> [12] 13:17, 22:2, 28:15, 29:7, 51:10, 51:16, 52:2, 52:20, 57:3, 66:10, 75:22, 84:17 <b>currently</b> [4] 15:12, 22:24, 28:19, 66:4 <b>cutting</b> - 73:15	101:4, 101:16 <b>date</b> - 68:19 <b>dating</b> - 28:20 <b>Dave</b> [4] 9:8, 9:10, 83:3, 83:5 <b>David</b> [8] 1:20, 2:22, 4:5, 4:6, 51:6, 61:2, 62:12, 63:11 <b>Davis</b> [23] 7:21, 7:23, 49:5, 49:6, 49:8, 52:23, 52:25, 52:25, 58:1, 58:3, 58:4, 58:4, 73:9, 89:16, 89:17, 89:18, 89:25, 92:4, 94:25, 95:2, 95:4, 95:16, 97:11 <b>dealing</b> - 82:8 <b>dealt</b> - 53:22 <b>Dearment</b> [7] 1:18, 2:24, 2:25, 60:19, 60:20, 94:4, 94:5 <b>Deb</b> [8] 2:12, 2:14, 3:23, 6:23, 8:3, 60:15, 61:22, 62:24 <b>debate</b> - 101:15 <b>decade</b> [2] 17:19, 68:2 <b>decades</b> [2] 69:2, 87:15 <b>decide</b> [2] 91:1, 91:8 <b>decision</b> [5] 56:5, 91:1, 92:11, 93:23, 101:2 <b>decisions</b> - 52:15 <b>decline</b> - 101:8 <b>decreases</b> - 27:13 <b>decreasing</b> - 76:23 <b>dedicated</b> - 86:21 <b>dedication</b> - 14:20 <b>deeply</b> - 63:20 <b>defined</b> [3]	22:6, 38:1, 38:9 <b>deformities</b> - 27:18 <b>deformity</b> - 27:1 <b>degrade</b> - 82:14 <b>delay</b> [2] 86:7, 86:21 <b>delegated</b> - 12:3 <b>denominator</b> - 32:12 <b>Denver</b> - 79:16 <b>department</b> [5] 10:9, 64:5, 64:13, 94:9, 97:22 <b>depend</b> - 82:15 <b>depending</b> - 14:5 <b>deposits</b> [2] 74:6, 74:7 <b>depths</b> - 29:3 <b>DEQ</b> [67] 3:15, 4:19, 5:4, 6:2, 6:14, 6:20, 7:20, 9:13, 9:16, 10:8, 10:13, 13:8, 13:13, 14:16, 15:6, 17:13, 20:18, 27:15, 28:13, 30:12, 31:3, 38:5, 38:23, 39:2, 39:12, 39:16, 41:5, 41:6, 42:9, 42:13, 43:2, 43:14, 44:16, 45:19, 47:19, 48:17, 49:6, 52:25, 56:25, 57:15, 60:2, 63:22, 65:19, 71:20, 72:7, 75:20, 75:24, 76:6, 76:19, 76:22, 77:18, 77:23, 78:20, 79:22, 80:14,	81:17, 85:16, 91:9, 91:21, 93:6, 94:18, 98:11, 98:14, 99:6, 99:17, 100:19, 102:16 <b>DEQ's</b> [2] 11:9, 75:16 <b>derivation</b> [2] 76:14, 77:6 <b>described</b> [2] 30:6, 32:7 <b>describes</b> [2] 24:15, 25:16 <b>design</b> - 49:14 <b>designated</b> - 12:16 <b>designed</b> [3] 46:14, 46:15, 80:21 <b>detail</b> - 39:19 <b>detailed</b> [3] 16:14, 35:9, 102:14 <b>details</b> - 47:11 <b>detect</b> [2] 18:12, 51:23 <b>detected</b> [2] 21:18, 23:5 <b>determination</b> - 15:23 <b>determine</b> [3] 50:3, 52:7, 53:5 <b>determined</b> [4] 15:25, 35:9, 42:3, 42:17 <b>determining</b> - 20:2 <b>develop</b> [4] 30:14, 38:6, 39:15, 79:23 <b>developed</b> [7] 41:6, 43:2, 50:9, 58:7, 58:14, 74:9, 88:11 <b>development</b> [4] 14:22, 14:24, 30:24, 53:11 <b>developments</b> - 15:9 <b>Deveny</b> [94] 1:17, 2:4, 2:6, 2:16, 2:17, 3:1, 3:8, 3:11, 3:16, 8:3, 8:10, 8:15, 9:6, 9:10,	9:14, 9:19, 9:25, 10:21, 11:5, 36:12, 36:22, 36:23, 37:15, 43:23, 44:7, 46:5, 46:25, 48:10, 49:7, 49:20, 49:23, 51:1, 51:6, 52:24, 54:23, 55:5, 55:20, 56:13, 56:17, 58:3, 58:18, 59:4, 59:14, 59:18, 59:21, 60:13, 60:25, 61:6, 61:10, 61:13, 62:6, 62:15, 62:18, 64:16, 67:1, 67:7, 67:9, 67:15, 69:19, 71:8, 75:3, 78:14, 79:2, 79:5, 79:11, 81:10, 83:2, 84:23, 86:24, 88:14, 89:1, 89:4, 89:17, 90:23, 92:21, 93:1, 94:4, 94:22, 95:1, 95:3, 98:9, 98:13, 99:9, 99:13, 99:15, 99:20, 99:23, 100:5, 100:8, 100:12, 101:17, 101:21, 101:25, 102:2 <b>Devin</b> [2] 6:10, 6:12 <b>Dexter</b> [12] 1:19, 3:1, 3:3, 3:4, 3:6, 3:8, 59:16, 60:21, 94:24, 95:5, 98:9, 99:22 <b>diagram</b> [2] 25:7, 33:10	<b>diagrams</b> - 34:6 <b>diet</b> [6] 33:5, 33:6, 33:15, 40:2, 42:1, 42:10 <b>dietary</b> [5] 24:15, 24:19, 25:21, 34:6, 38:14 <b>differ</b> - 28:12 <b>difference</b> [5] 28:10, 51:13, 51:21, 53:20, 54:1 <b>difficulties</b> [2] 36:24, 71:13 <b>digest</b> - 75:2 <b>digital</b> - 81:14 <b>directed</b> - 44:9 <b>directly</b> [2] 16:25, 96:2 <b>Director</b> [4] 62:12, 64:20, 71:20, 74:12 <b>discretion</b> - 45:17 <b>discuss</b> - 72:10 <b>discussed</b> [3] 30:23, 41:25, 100:2 <b>discussing</b> [4] 11:18, 12:20, 20:21, 46:15 <b>discussion</b> [6] 12:1, 72:20, 89:12, 93:2, 99:10, 99:13 <b>disintegrated</b> - 72:1 <b>displayed</b> [3] 25:6, 28:4, 57:5 <b>dissolved</b> [14] 24:24, 25:5, 28:25, 31:9, 31:14, 32:21, 34:10, 34:14, 34:21, 35:14, 35:20, 42:24, 43:9, 54:17 <b>district</b> [2] 71:17, 74:14 <b>diverse</b> - 85:16 <b>Division</b> [2]
---	---	--	--	---	--

## D

7:21, 95:12 <b>document</b> [2] 76:14, 77:6 <b>documented</b> - 92:1 <b>documents</b> - 91:11 <b>dollars</b> - 87:20 <b>double</b> [4] 10:3, 60:14, 73:4, 82:20 <b>download</b> - 37:8 <b>downstream</b> [13] 24:10, 30:11, 30:25, 64:24, 69:5, 69:12, 70:12, 70:24, 73:18, 87:12, 87:21, 87:24, 96:14 <b>dozen</b> - 62:19 <b>drainage</b> [2] 65:1, 85:10 <b>dramatically</b> - 45:11 <b>drinking</b> - 12:14 <b>dry</b> [2] 28:3, 44:15 <b>due</b> [3] 14:4, 25:21, 93:12	<b>edge</b> - 73:15 <b>effectively</b> - 24:15 <b>effects</b> [6] 13:19, 25:21, 27:6, 27:11, 55:10, 102:16 <b>effort</b> [9] 14:14, 14:17, 15:18, 17:3, 31:4, 31:15, 31:23, 34:20, 93:25 <b>efforts</b> [12] 13:7, 26:24, 27:20, 29:12, 29:21, 46:14, 47:16, 50:12, 50:13, 52:8, 65:8, 65:15 <b>egg</b> [12] 16:14, 27:12, 27:22, 28:6, 28:8, 29:10, 41:17, 41:19, 41:21, 41:23, 43:12, 77:19 <b>eggs</b> [2] 27:1, 43:19 <b>eight</b> - 57:6 <b>either</b> [7] 49:23, 51:9, 56:18, 66:12, 81:4, 88:19, 96:1 <b>elected</b> - 83:15 <b>element</b> [2] 26:18, 32:10 <b>eleven</b> [7] 15:21, 28:6, 30:19, 33:12, 41:20, 41:23, 62:23 <b>eliminated</b> [2] 91:18, 91:20 <b>Elk</b> [35] 13:9, 13:17, 19:3, 19:3, 19:9, 21:15, 21:18, 21:23, 22:12, 22:15, 22:16, 22:18, 23:5,	23:8, 23:24, 24:4, 24:23, 29:21, 29:22, 30:7, 30:11, 56:21, 57:3, 66:8, 69:3, 73:19, 75:21, 76:7, 76:18, 76:23, 82:5, 82:16, 82:17, 84:12, 101:9 <b>Elliot</b> - 8:17 <b>Elliott</b> [5] 62:10, 62:11, 63:10, 63:13, 64:16 <b>emphasize</b> [6] 17:16, 68:4, 70:8, 70:22, 93:18, 94:2 <b>emphasized</b> - 68:17 <b>enacted</b> - 96:23 <b>encourage</b> [2] 91:9, 91:21 <b>encourages</b> - 80:3 <b>endangered</b> [6] 30:22, 30:25, 65:7, 65:10, 71:3, 87:17 <b>enforce</b> - 95:13 <b>enforceable</b> [3] 82:6, 88:6, 97:9 <b>enforcement</b> [3] 52:18, 96:22, 98:2 <b>enforcing</b> - 95:10 <b>engage</b> - 91:11 <b>engaged</b> [3] 14:18, 68:6, 83:20 <b>engagement</b> - 79:17 <b>Engineers</b> - 29:17 <b>ensuing</b> - 17:25 <b>ensure</b> [5] 19:24, 29:8, 48:6, 81:7, 96:8 <b>ensuring</b> - 20:8 <b>entering</b> [3] 22:14,	23:19, 25:4 <b>enters</b> [4] 21:6, 23:6, 24:7, 24:24 <b>entire</b> - 47:24 <b>entities</b> [2] 29:15, 68:11 <b>entitles</b> - 14:19 <b>entity</b> - 97:2 <b>environment</b> [5] 14:16, 15:12, 29:19, 34:23, 93:10 <b>environmental</b> [12] 1:1, 2:7, 2:9, 12:6, 13:7, 13:20, 23:2, 27:7, 34:13, 34:24, 70:16, 87:4 <b>environments</b> - 22:8 <b>enzyme</b> - 27:2 <b>EPA</b> [31] 5:16, 7:17, 8:13, 13:25, 26:11, 28:7, 37:19, 41:8, 41:20, 43:2, 43:10, 43:14, 43:18, 45:1, 45:15, 45:20, 45:21, 46:10, 46:21, 47:1, 47:11, 79:6, 79:9, 79:20, 79:21, 80:6, 80:13, 80:23, 81:25, 85:16, 95:24 <b>EPA's</b> [5] 16:13, 16:20, 79:16, 79:17, 80:2 <b>EQC</b> - 100:20 <b>equation</b> [3] 32:7, 32:8, 32:20 <b>equations</b> - 62:4 <b>Erin</b> [6] 4:25, 5:1, 67:16, 67:20, 70:4, 81:22 <b>erroneous</b> - 77:2 <b>especially</b> - 102:22	<b>essential</b> [2] 26:19, 82:24 <b>establish</b> [4] 12:4, 46:15, 57:21, 80:8 <b>established</b> [4] 12:17, 19:21, 24:17, 50:16 <b>establishing</b> [2] 14:10, 102:18 <b>establishment</b> - 13:21 <b>estimates</b> [2] 75:21, 76:2 <b>etc</b> - 14:19 <b>Eureka</b> - 15:8 <b>events</b> - 13:5 <b>eventually</b> [3] 21:7, 24:9, 27:13 <b>everybody</b> [9] 8:2, 10:7, 20:20, 43:24, 60:4, 64:25, 89:5, 94:18, 102:2 <b>everybody's</b> - 90:11 <b>everyone</b> [3] 24:12, 94:21, 102:7 <b>evolve</b> - 80:19 <b>exactly</b> - 57:21 <b>example</b> [3] 27:12, 33:19, 35:16 <b>excavated</b> - 23:11 <b>excavation</b> - 23:12 <b>exceed</b> - 75:22 <b>exceeded</b> [2] 53:4, 78:15 <b>exceedences</b> [4] 29:10, 77:19, 77:20, 77:22 <b>exceeding</b> [2] 28:16, 77:25 <b>excellent</b> [3] 50:7, 93:7, 93:25 <b>Executive</b> - 62:12 <b>exist</b> [2] 35:12, 77:23 <b>existing</b> [4] 22:22, 80:7, 80:22, 95:14 <b>exists</b> [2] 55:2, 80:5 <b>expand</b> [3]	45:23, 68:3, 86:6 <b>expansion</b> - 67:25 <b>expansions</b> - 70:20 <b>expansive</b> [2] 24:4, 98:20 <b>expect</b> [2] 27:17, 58:25 <b>experience</b> [3] 25:21, 27:5, 82:6 <b>experienced</b> - 82:1 <b>experts</b> [6] 14:21, 16:2, 68:23, 78:23, 81:23, 81:25 <b>expires</b> - 104:21 <b>explained</b> - 80:8 <b>explains</b> [2] 16:9, 53:25 <b>exploded</b> - 74:13 <b>exposed</b> - 23:15 <b>exposes</b> - 86:22 <b>exposure</b> [7] 24:15, 24:19, 25:22, 32:6, 34:7, 38:14, 86:9 <b>express</b> - 69:15 <b>expressed</b> - 65:25 <b>extensive</b> [2] 14:24, 30:10 <b>extensively</b> - 35:10 <b>extent</b> [3] 23:21, 76:25, 77:13 <b>extremely</b> - 87:11
<hr/> <b>E</b> <hr/>					<hr/> <b>F</b> <hr/>
<b>earlier</b> [6] 61:20, 73:5, 73:7, 80:2, 84:10, 86:4 <b>east</b> - 74:3 <b>ecologically</b> [2] 33:9, 38:12 <b>economic</b> [4] 18:22, 18:24, 73:23, 73:23 <b>economy</b> [3] 20:7, 66:1, 102:20 <b>ecosystem</b> [10] 24:16, 31:16, 34:7, 38:14, 38:18, 40:11, 47:3, 47:8, 47:19, 47:20 <b>ecosystems</b> - 31:21					<b>face</b> - 74:14 <b>facilities</b> - 73:13 <b>factor</b> [6] 19:15, 20:7, 25:15, 32:13, 41:18, 45:6 <b>factors</b> [6] 14:6, 26:5, 33:18, 34:24, 54:6,

54:16 fair - 73:20 falling - 41:1 familiar - 47:14 family - 102:12 fast [2] 101:3, 101:12 faster - 54:10 favor [3] 99:16, 99:23, 101:22 feasible [2] 14:4, 46:17 federal [5] 14:19, 53:6, 53:13, 68:11, 80:15 Federal/canadian - 21:22 federally [2] 30:21, 30:25 feedback - 24:12 feeding - 38:18 feel [3] 87:11, 89:9, 100:23 felt - 73:5 females - 38:18 Ferry - 21:5 fifth - 91:14 figure [5] 26:23, 27:21, 28:25, 35:7, 57:6 final [6] 39:4, 40:23, 48:8, 59:13, 90:13, 93:22 Finally [2] 20:5, 80:25 fish [54] 7:17, 7:19, 14:2, 16:11, 18:18, 25:12, 25:13, 25:23, 26:24, 27:5, 27:10, 27:10, 27:14, 27:18, 27:25, 28:6, 28:8, 28:16, 29:16, 29:18, 31:2, 31:10, 32:25, 33:1,	33:3, 33:5, 33:6, 33:9, 33:12, 33:15, 33:25, 34:11, 35:24, 36:5, 38:16, 38:19, 40:1, 41:9, 41:10, 43:2, 43:11, 43:17, 44:14, 46:19, 49:1, 50:11, 57:21, 69:10, 73:3, 77:19, 78:4, 81:23, 87:8, 101:8 fisheries [4] 18:6, 18:8, 65:2, 65:14 fishery [4] 18:8, 18:15, 18:19, 87:19 fishing - 20:5 five [6] 17:21, 39:23, 75:23, 83:19, 93:24, 99:23 flashing - 59:15 Flathead [3] 13:6, 67:21, 85:10 Flathead/elk/ko - 85:12 flexibility - 66:13 flow - 73:1 flowing [4] 16:21, 26:7, 54:9, 81:2 flows [3] 21:2, 21:3, 65:3 focal - 33:12 focus - 30:20 focusing - 33:2 folks [4] 10:13, 10:23, 61:23, 96:16 follow [4] 37:9, 37:13, 55:19, 90:22 followed - 100:19 followup [2] 46:23, 92:22 footprint - 86:6	Fording [2] 69:4, 101:9 Forebay - 30:8 foregoing - 104:12 foreground - 24:8 foreign [3] 77:12, 97:2, 97:2 foremost - 81:23 formats - 15:5 formed [2] 15:19, 16:1 forth - 71:4 forum - 15:17 forward [20] 20:12, 46:22, 48:1, 48:3, 53:16, 59:24, 64:3, 64:6, 64:11, 75:11, 80:6, 82:25, 86:15, 87:4, 90:19, 90:19, 94:1, 94:11, 94:15, 102:18 foundation [2] 25:24, 38:5 foundational [2] 11:23, 97:13 framework [2] 11:18, 16:9 frankly - 70:6 full [3] 9:21, 16:15, 85:9 function - 27:2 future [9] 13:17, 46:17, 49:16, 50:1, 50:3, 65:22, 66:20, 86:13, 87:9	3:15, 10:13 gets [2] 30:16, 97:22 Gildea [4] 4:23, 4:24, 67:13, 67:13 given [3] 32:17, 40:10, 97:14 gives - 62:18 giving - 85:2 global - 33:24 globe - 26:15 Glossner [2] 5:11, 5:14 goal [3] 14:9, 15:14, 90:16 goals [6] 28:11, 37:25, 38:8, 38:11, 44:25, 50:18 goes [2] 96:11, 96:16 gone [7] 68:17, 68:18, 83:18, 85:23, 88:9, 88:10, 94:19 government - 77:12 gram [2] 28:3, 44:14 granted - 102:25 graph [4] 21:19, 22:1, 22:10, 76:15 graphs - 73:7 greater - 26:20 greatest [2] 34:3, 34:17 greatly - 81:19 green - 25:14 ground - 73:14 groundwater [3] 23:6, 23:18, 24:7 group [11] 13:23, 14:18, 15:19, 15:21, 16:3, 36:19, 39:1, 39:15, 50:18, 71:25, 81:21 groups [2] 71:25, 98:17 growth - 27:1 guess [3] 2:5, 44:9, 98:13	guest [8] 3:21, 3:21, 4:6, 5:8, 5:12, 5:23, 6:10, 7:8 guidance [4] 42:8, 42:21, 45:1, 80:3 guide [2] 13:20, 16:2 guided [2] 13:23, 37:25 guideline [7] 22:4, 22:7, 22:11, 28:6, 37:23, 41:19, 41:23 guidelines [7] 28:11, 41:11, 41:16, 45:4, 45:5, 84:14, 84:15 guiding - 14:21 Gunderson [13] 7:7, 7:10, 35:23, 36:2, 36:4, 71:10, 71:13, 71:15, 100:10, 100:11, 100:12, 100:13, 101:17	hasn't - 73:9 haven't - 98:5 having [4] 36:24, 71:12, 81:14, 89:21 headquarters - 72:8 headwaters [3] 9:8, 83:6, 86:7 health - 81:4 healthy - 18:8 hear [6] 7:12, 11:4, 11:6, 15:11, 92:19, 93:13 headlines [4] 65:24, 65:25, 66:6, 77:3 hearing [5] 1:11, 59:2, 91:13, 99:8, 99:18 heart - 63:17 heavily - 86:12 heck [2] 73:17, 74:25 held - 15:3 Helena - 1:24 Hello - 69:21 helpful - 54:21 helping - 96:12 helps [2] 10:25, 49:4 hereby - 104:7 herein - 104:9 hereunto - 104:15 Hi [2] 4:24, 89:20 higher [4] 22:11, 44:21, 45:11, 102:21 highest [5] 34:1, 35:4, 35:8, 35:20, 35:21 highlight - 68:20 highlighting - 48:23 highly - 83:24 Hillary [6] 1:20, 2:18, 60:23, 60:25, 61:7, 61:10 historic -
<b>H</b>					
Hadden [7] 9:8, 9:8, 83:3, 83:4, 83:5, 84:23, 86:17 half [2] 39:7, 68:2 handled - 67:6 Hanson [3] 1:20, 2:18, 2:19 happen - 18:12 happening [3] 82:10, 82:13, 97:10 happy [3] 43:22, 70:7, 92:14 Harbage [2] 6:19, 6:22 harm - 94:1 Harris [2] 5:7, 5:10 Hart - 75:8					

22:17 history - 67:25 hit - 74:14 Holland - 75:8 hopefully [2] 81:13, 86:13 horizontal - 28:4 horse - 93:20 houses - 14:25 huge - 34:20 human - 19:12 hundreds - 70:12 hydrodynamics - 35:1 hydrology - 14:7 <hr/> <b>I</b> <hr/> ICL - 64:21 Idaho [21] 20:24, 21:4, 21:5, 30:12, 30:12, 30:12, 47:17, 47:23, 48:15, 49:13, 49:18, 57:12, 64:20, 64:20, 64:24, 65:3, 65:14, 68:15, 71:4, 87:20, 96:16 Idaho's - 49:12 idea [3] 10:4, 62:19, 96:13 Ideas - 82:12 identified [6] 22:13, 30:20, 35:25, 36:5, 39:17, 61:20 IFM [3] 33:1, 33:2, 41:25 illustrated - 33:7 image [2] 23:23, 24:2 imminent - 74:19 impact [4] 18:24, 73:23, 96:14, 96:15 impacts [9] 13:16,	17:18, 18:6, 18:10, 18:12, 18:23, 18:24, 27:16, 82:14 impaired [3] 13:15, 20:3, 76:4 impairment [8] 52:8, 52:14, 53:5, 53:9, 53:15, 76:3, 78:8, 78:10 impetus - 55:14 implement [2] 87:20, 96:6 implementation - 97:24 implemented [2] 79:23, 85:20 implementing [2] 80:16, 87:14 implications - 51:14 imposed - 45:12 impressed [2] 70:5, 98:15 Impressive - 29:14 improve - 94:13 inappropriate [2] 76:8, 76:17 inaudible [7] 55:4, 57:19, 59:20, 68:13, 75:25, 100:25, 101:5 include [5] 30:6, 31:10, 33:24, 46:10, 54:16 included [9] 14:1, 30:1, 30:4, 45:5, 73:7, 76:22, 77:4, 81:22, 102:5 includes [2] 43:16, 100:24 including [5] 13:9, 14:15, 75:1, 81:24, 83:14 inclusive [2] 80:1, 88:9	incorporated - 24:25 incorporates - 46:11 incorrect - 64:12 increased - 29:13 increases - 86:9 increasing [11] 13:12, 19:2, 21:17, 22:12, 23:16, 57:7, 76:12, 76:16, 76:20, 77:1, 82:18 independent - 35:6 indicate [3] 27:25, 37:11, 78:24 indicates - 76:11 individual - 28:16 industrial - 86:2 industry [8] 12:14, 14:19, 19:22, 66:10, 66:14, 70:19, 85:21, 90:5 infiltration - 23:17 influenced [2] 34:24, 34:25 influencing - 26:5 inform [2] 34:22, 80:5 information [10] 53:19, 56:19, 56:24, 59:11, 75:1, 77:5, 91:15, 91:23, 93:17, 102:15 informed [2] 33:15, 83:20 initiate [13] 10:10, 11:14, 20:13, 43:7, 60:3, 63:4, 63:6, 63:18, 64:7, 64:22, 66:24, 69:6, 99:4	initiated - 77:14 initiating [5] 58:24, 86:8, 93:21, 97:8, 99:16 initiation [12] 61:21, 63:1, 69:14, 75:10, 75:14, 84:2, 88:13, 88:20, 94:2, 94:3, 94:11, 94:15 injury - 81:4 input [5] 34:12, 49:1, 57:23, 57:24, 97:2 inputs [5] 17:9, 31:8, 31:10, 32:1, 39:4 insect [2] 33:25, 40:2 insects [4] 33:3, 33:6, 42:11, 42:16 integral [2] 47:24, 71:23 integrity [2] 63:22, 85:14 intended - 99:5 interact [2] 26:8, 54:13 interaction - 54:11 interest - 102:19 interesting [2] 26:18, 58:21 interests - 68:12 Interim - 92:16 international [3] 30:7, 69:17, 77:11 interrupt [4] 3:24, 11:2, 37:6, 45:24 introduce - 3:24 introduction [4] 2:13, 19:11, 61:17, 62:8 introductions [2] 3:18, 102:9 invertebrate [2] 25:10, 32:25 invertebrates	[2] 25:9, 25:11 invested - 73:9 investigation - 101:10 investing - 86:12 investments - 53:10 involved [7] 68:22, 73:3, 83:17, 86:18, 94:19, 97:23, 98:18 involvement - 14:20 Ireland [7] 48:14, 61:24, 62:1, 62:3, 86:25, 87:1, 88:14 isn't [5] 63:4, 73:24, 78:19, 78:24, 97:18 issue - 83:21 issues [8] 13:9, 15:21, 67:5, 81:14, 82:4, 85:8, 92:1, 100:2 itself [4] 58:15, 82:19, 84:5, 84:17 <hr/> <b>J</b> <hr/> Jamison [6] 9:2, 9:3, 48:13, 84:24, 84:25, 86:24 January - 74:20 Jason [4] 4:23, 67:12, 67:13, 67:15 JEREMIAH - 1:19 Jerry [10] 2:20, 44:7, 46:25, 48:10, 56:17, 58:21, 61:4, 61:6, 93:3, 94:6 Joanna [2] 9:12, 9:12 John [7] 1:18, 2:24, 5:19, 5:20, 60:19, 94:4, 94:22	join - 83:14 joined [5] 9:20, 61:10, 61:16, 61:25, 62:7 joining - 7:15 joins [2] 21:7, 21:15 judgment - 52:6 Julianne [2] 5:15, 5:17 July - 74:20 justifies - 53:25 <hr/> <b>K</b> <hr/> Kayla [2] 5:11, 5:12 Kd [13] 25:6, 31:12, 32:17, 34:13, 34:23, 35:5, 35:7, 35:19, 35:21, 36:8, 40:17, 40:21, 42:19 Kd's [4] 34:25, 35:3, 35:12, 42:6 keeping - 72:2 keeps [2] 82:9, 82:13 Kelly [23] 6:14, 6:15, 10:18, 11:3, 11:7, 11:9, 46:9, 47:5, 47:9, 47:22, 48:20, 50:6, 51:2, 51:17, 52:5, 52:21, 55:13, 55:25, 56:9, 57:16, 71:20, 90:17, 102:4 Kelsea [2] 5:7, 5:8 Kelsey [2] 102:7, 102:10 key [2] 18:18, 31:8 Kilpatrick [2] 5:19, 5:21 Kirsten [2] 5:3, 5:4 knowledgeable - 82:1 known [2] 19:2, 31:1 Kooanusa [55] 1:8,
---	--	---	--	---	---



10:11, 11:15, 12:19, 13:11, 13:13, 13:18, 13:22, 14:12, 15:18, 16:12, 16:17, 17:21, 18:7, 21:3, 21:9, 21:25, 22:14, 24:10, 26:1, 27:15, 27:23, 28:14, 28:23, 29:13, 29:23, 30:15, 30:15, 31:15, 31:18, 31:21, 31:24, 34:21, 34:25, 35:10, 38:4, 39:1, 43:9, 43:19, 51:11, 57:23, 63:23, 65:12, 66:7, 69:4, 71:5, 71:18, 72:22, 75:15, 75:22, 75:25, 76:9, 79:18, 79:25, 80:9	49:11, 49:13, 62:4, 63:24, 64:25, 65:3, 65:5, 65:6, 65:18, 66:5, 67:24, 68:14, 68:15, 69:5, 69:11, 70:24, 71:1, 71:18, 79:18, 80:10, 87:2, 87:14, 87:22, 88:1, 88:7, 96:16	57:22, 63:23, 65:12, 66:7, 67:22, 71:1, 71:18, 72:22, 72:24, 73:1, 74:1, 75:15, 75:19, 75:21, 75:25, 76:9, 79:17, 79:24, 80:9, 95:15, 96:20, 97:6	59:19 <b>led</b> [3] 13:13, 13:21, 76:2 <b>Legal</b> [2] 4:19, 5:4 <b>Legislature</b> [2] 90:25, 100:21 <b>Lehnherr</b> [14] 1:20, 2:22, 2:23, 51:4, 51:7, 51:18, 51:24, 52:16, 53:17, 54:4, 54:20, 61:2, 61:3, 78:7 <b>lentic</b> - 38:18 <b>less</b> [7] 40:20, 41:13, 42:2, 54:10, 75:25, 76:24, 95:13 <b>let's</b> [9] 10:12, 43:23, 61:7, 62:6, 64:17, 71:10, 78:9, 78:20, 93:1 <b>letter</b> [2] 48:12, 57:13 <b>level</b> [10] 13:1, 22:5, 27:11, 28:17, 47:18, 51:11, 52:20, 55:11, 77:22, 86:14 <b>levels</b> [9] 21:17, 22:10, 28:18, 34:11, 51:20, 51:20, 53:14, 84:11, 102:21 <b>Levit</b> [7] 8:20, 8:21, 8:24, 81:11, 81:12, 83:2, 86:4 <b>Lewis</b> [2] 104:4, 104:6 <b>liabilities</b> - 86:22 <b>Libby</b> [5] 15:8, 21:4, 21:10, 47:15, 71:18 <b>likelihood</b> [2] 56:3, 56:6	<b>likely</b> - 4:8 <b>likewise</b> - 9:4 <b>limit</b> [5] 12:22, 62:21, 63:2, 65:11, 71:5 <b>limited</b> [2] 23:1, 49:25 <b>limits</b> [2] 89:7, 89:7 <b>Lincoln</b> [2] 71:17, 83:11 <b>lines</b> [4] 28:4, 85:25, 86:2, 86:3 <b>linked</b> [2] 41:21, 41:23 <b>links</b> - 32:13 <b>listed</b> [11] 16:18, 27:7, 29:15, 30:21, 30:23, 30:25, 32:7, 35:7, 38:10, 43:8, 75:19 <b>listening</b> - 72:6 <b>listing</b> [5] 75:15, 76:3, 76:3, 78:9, 78:10 <b>liter</b> [18] 16:18, 16:20, 17:22, 22:2, 22:6, 28:19, 29:5, 41:2, 42:12, 43:5, 43:10, 49:11, 51:22, 57:5, 69:16, 75:23, 84:18, 88:3 <b>literature</b> [2] 15:2, 40:6 <b>liver</b> - 27:2 <b>load</b> [2] 52:10, 52:15 <b>loading</b> - 76:23 <b>loads</b> [2] 76:24, 77:1 <b>local</b> [5] 14:5, 15:7, 20:6, 34:24, 92:11 <b>located</b> [5] 21:11, 21:12, 21:14, 21:23, 21:24 <b>location</b> - 20:20 <b>locations</b> - 22:18	<b>looking</b> [3] 32:8, 52:14, 75:16 <b>looks</b> [5] 3:19, 8:5, 36:24, 62:19, 72:12 <b>loop</b> - 100:21 <b>lost</b> [3] 55:5, 59:4, 72:5 <b>low</b> [3] 51:20, 56:7, 56:23 <b>lower</b> [13] 26:16, 28:4, 29:7, 34:2, 39:24, 44:15, 51:15, 52:2, 52:3, 52:17, 52:19, 72:20, 72:21 <b>lowered</b> [2] 50:4, 87:8 <b>lowest</b> [5] 35:4, 35:8, 35:19, 35:22, 72:14 <b>lucky</b> - 63:14 <b>Luoma</b> [2] 31:17, 31:19 <b>Lynch</b> [37] 1:19, 2:20, 2:21, 36:16, 36:17, 44:5, 44:6, 44:8, 44:13, 44:16, 44:20, 45:9, 45:24, 46:7, 46:10, 46:23, 47:1, 47:7, 47:13, 48:8, 48:11, 49:3, 49:9, 49:19, 56:15, 56:16, 56:18, 57:3, 57:8, 57:16, 58:2, 58:16, 61:4, 65:17, 93:4, 94:6, 101:20 <b>Lynch's</b> - 87:7
	<b>L</b>				
<b>L-E-V-I-T</b> - 8:24 <b>labeled</b> [5] 23:14, 23:19, 24:2, 24:9, 25:14 <b>labs</b> - 51:18 <b>laid</b> - 90:18 <b>lake</b> [66] 1:8, 10:11, 11:15, 12:19, 13:10, 13:13, 13:14, 13:18, 13:22, 14:12, 15:18, 16:12, 16:17, 17:21, 18:7, 21:3, 21:7, 21:9, 21:25, 22:14, 24:10, 25:25, 26:4, 27:15, 27:23, 28:14, 28:23, 29:12, 29:23, 30:14, 30:15, 31:15, 31:18, 31:21, 31:24, 34:21, 34:25, 35:10, 38:4, 38:25, 43:8, 43:19, 51:11, 54:11,		<b>later</b> [4] 59:23, 71:24, 92:2, 93:9 <b>Lauren</b> [29] 6:1, 6:5, 10:17, 10:22, 11:11, 11:19, 15:12, 16:9, 18:10, 20:14, 20:16, 35:23, 37:2, 37:5, 43:23, 44:3, 44:9, 48:23, 49:24, 51:9, 53:22, 56:19, 56:24, 60:10, 76:19, 80:8, 92:13, 93:5, 95:18 <b>LAURIE</b> [3] 1:22, 104:5, 104:19 <b>lauriecrutcher@g</b> - 1:25 <b>leaches</b> - 24:6 <b>leaching</b> [2] 23:16, 69:3 <b>lead</b> [2] 11:11, 27:13 <b>leaders</b> - 92:11 <b>leading</b> - 79:17 <b>leads</b> - 29:21 <b>League</b> - 64:21 <b>learn</b> - 18:10 <b>leave</b> - 62:23 <b>leaving</b> -			
					<b>M</b>
					<b>ma'am</b> [3] 7:10, 67:3, 67:8 <b>Madam</b> [50] 8:7, 8:19, 8:20, 9:2, 9:22, 10:16, 11:3, 11:7, 20:15, 44:6,

44:12, 46:9, 49:5, 50:6, 51:4, 51:17, 52:23, 54:3, 54:22, 55:18, 56:16, 57:2, 58:1, 58:17, 62:10, 63:13, 64:18, 66:25, 67:17, 75:5, 79:8, 79:14, 81:9, 81:12, 83:4, 84:25, 88:23, 89:18, 89:25, 90:21, 92:4, 93:4, 94:5, 95:2, 95:16, 97:11, 99:3, 100:4, 100:10, 100:13 <b>main</b> [5] 49:10, 49:11, 49:18, 54:7, 57:1 <b>maintain</b> - 18:9 <b>maintained</b> - 20:4 <b>maintaining</b> - 40:8 <b>majority</b> [2] 21:12, 36:25 <b>makers</b> - 92:12 <b>makes</b> - 24:9 <b>making</b> [23] 4:6, 4:11, 4:15, 5:1, 5:4, 5:8, 5:12, 5:16, 5:20, 5:23, 6:11, 6:17, 6:20, 6:25, 7:5, 7:8, 7:18, 7:22, 8:13, 9:13, 93:22, 100:14, 101:2 <b>malfunction</b> - 72:4 <b>Malison</b> [4] 6:16, 6:18, 88:24, 88:25 <b>management</b> [2] 10:6, 13:20 <b>manager</b> -	11:9 <b>map</b> [6] 21:2, 21:13, 21:24, 22:20, 22:20, 30:6 <b>MAPA</b> - 90:25 <b>March</b> - 104:22 <b>Mark</b> - 6:6 <b>marking</b> - 22:1 <b>Marko</b> - 6:9 <b>Marquis</b> [9] 8:5, 8:6, 75:4, 75:5, 75:7, 78:14, 78:17, 79:2, 79:4 <b>match</b> - 49:17 <b>matched</b> - 34:21 <b>matches</b> - 49:12 <b>material</b> - 25:3 <b>materials</b> - 48:13 <b>Mathieus</b> [3] 3:15, 10:14, 10:16 <b>matter</b> [12] 1:4, 10:5, 25:1, 25:8, 34:22, 54:17, 63:17, 64:23, 65:24, 66:24, 81:20, 95:7 <b>matters</b> - 92:3 <b>matre</b> - 38:17 <b>maximum</b> - 38:14 <b>maybe</b> [3] 37:11, 50:14, 89:9 <b>McGrath</b> [4] 9:15, 9:16, 71:20, 74:12 <b>McLaughlin</b> [4] 5:15, 5:17, 9:12, 9:13 <b>means</b> [2] 12:22, 32:16 <b>meantime</b> - 86:15 <b>measure</b> [4] 12:10, 25:17, 33:20, 40:10 <b>mechanism</b> - 96:22	<b>median</b> [2] 40:18, 42:5 <b>meet</b> [4] 84:13, 90:8, 90:9, 94:10 <b>meeting</b> [23] 2:7, 2:9, 2:10, 10:1, 10:6, 14:25, 20:9, 39:9, 61:16, 62:7, 71:16, 72:7, 81:8, 83:13, 89:21, 89:23, 90:10, 90:13, 99:25, 100:16, 101:19, 101:23, 102:9 <b>meetings</b> [5] 15:3, 16:4, 65:24, 92:9, 92:10 <b>member</b> [93] 2:19, 2:21, 2:23, 2:25, 3:4, 3:10, 8:18, 9:20, 36:10, 36:16, 36:17, 44:5, 44:6, 44:8, 44:12, 44:16, 44:20, 45:9, 45:24, 46:7, 46:9, 46:23, 47:1, 47:7, 47:13, 48:8, 48:11, 48:20, 49:3, 49:9, 49:19, 51:4, 51:7, 51:17, 51:24, 52:16, 53:17, 54:3, 54:20, 54:22, 54:23, 54:25, 55:7, 55:13, 55:18, 55:21, 56:3, 56:12, 56:15, 56:16, 56:18, 57:2, 57:8, 57:16, 58:1, 58:16, 58:17, 58:18, 58:20, 59:7,	59:17, 59:20, 60:18, 60:20, 60:22, 61:3, 65:17, 78:7, 87:6, 89:15, 89:18, 89:20, 89:25, 90:21, 90:24, 92:4, 92:23, 93:4, 94:5, 94:23, 94:24, 95:2, 95:6, 95:16, 96:11, 97:11, 98:7, 99:3, 99:10, 99:21, 100:4, 100:6, 101:20 <b>members</b> [40] 1:18, 10:24, 11:4, 11:8, 17:11, 20:16, 37:1, 38:2, 39:6, 39:11, 39:14, 39:23, 39:25, 40:15, 40:24, 41:12, 41:14, 43:25, 44:3, 48:21, 49:21, 51:3, 56:14, 59:22, 60:14, 61:16, 61:19, 64:19, 64:21, 66:25, 69:9, 75:6, 79:14, 81:9, 88:16, 88:18, 89:2, 89:12, 93:2, 98:10 <b>Memorandum</b> - 13:3 <b>memory</b> [2] 48:22, 89:24 <b>mentioned</b> [6] 28:13, 54:5, 57:11, 80:2, 85:13, 86:17 <b>merits</b> - 64:10 <b>met</b> [6] 15:6, 15:21, 17:1, 19:24, 94:10, 96:4	<b>metals</b> - 19:16 <b>method</b> [2] 78:4, 78:11 <b>methodologies</b> - 42:25 <b>methodology</b> [2] 32:3, 78:21 <b>Michael</b> [6] 3:21, 4:2, 4:3, 9:3, 9:6, 84:24 <b>microgram</b> [3] 22:5, 28:19, 29:5 <b>micrograms</b> [18] 16:18, 16:19, 17:21, 22:2, 28:3, 41:2, 42:12, 43:4, 43:10, 44:14, 49:10, 51:22, 57:5, 69:16, 75:23, 76:1, 84:18, 88:3 <b>microphone</b> [2] 8:17, 11:1 <b>mid-1980s</b> - 85:25 <b>middle</b> - 21:2 <b>Mike</b> [3] 7:14, 36:3, 71:16 <b>miles</b> [2] 21:25, 73:18 <b>milestones</b> [2] 16:25, 17:13 <b>millions</b> - 87:20 <b>mind</b> [3] 16:9, 60:5, 63:8 <b>mine</b> [5] 19:16, 19:16, 67:25, 68:3, 82:21 <b>mineral</b> [3] 74:6, 74:7, 74:7 <b>minerals</b> - 74:2 <b>mines</b> [10] 22:22, 22:24, 23:2, 29:20, 66:8, 69:3, 70:11, 70:13, 70:16, 82:11 <b>mining</b> [14] 13:17, 19:13, 22:17,	22:19, 23:8, 23:22, 24:23, 67:25, 82:3, 82:17, 82:18, 82:20, 86:6, 86:10 <b>ministerial</b> - 13:18 <b>Ministry</b> - 29:19 <b>minute</b> [3] 43:24, 60:8, 60:13 <b>minutes</b> [2] 60:11, 62:21 <b>mirror</b> - 16:13 <b>misleading</b> - 73:6 <b>missed</b> [2] 8:5, 8:11 <b>missing</b> [2] 61:6, 102:8 <b>mission</b> - 101:13 <b>mitigation</b> [4] 52:18, 55:4, 55:10, 86:12 <b>mixture</b> - 33:7 <b>mobilization</b> [2] 19:10, 23:16 <b>mobilized</b> - 24:23 <b>model</b> [23] 17:9, 31:8, 31:17, 31:18, 31:19, 32:1, 32:3, 32:25, 33:1, 33:4, 34:8, 34:8, 34:12, 34:16, 34:22, 35:15, 35:16, 39:4, 40:1, 40:2, 41:25, 42:10, 42:14 <b>modeling</b> [24] 11:10, 16:3, 16:5, 17:4, 25:25, 30:20, 31:4, 31:6, 31:15, 31:20, 31:23, 31:24, 35:6, 35:11, 35:19, 35:25, 36:6, 37:19, 37:24, 38:4, 39:22, 41:3,
---	--	---	--	--	--

41:7, 46:14 <b>models</b> [2] 33:14, 41:25 <b>moment</b> [2] 45:10, 45:25 <b>money</b> - 73:10 <b>monitored</b> - 28:23 <b>monitoring</b> [15] 13:22, 15:19, 21:23, 29:15, 29:21, 30:1, 30:5, 50:2, 50:12, 50:13, 50:17, 50:18, 50:21, 52:7, 68:11 <b>Montana</b> [49] 1:2, 4:14, 6:14, 6:20, 9:9, 9:16, 11:9, 12:2, 13:5, 13:13, 14:8, 15:3, 18:17, 18:23, 18:25, 19:15, 19:20, 20:18, 20:24, 21:3, 21:11, 21:12, 27:14, 27:23, 28:22, 29:16, 45:13, 45:16, 48:25, 56:1, 62:11, 63:20, 65:19, 67:21, 68:10, 70:17, 77:7, 77:22, 78:4, 79:22, 80:12, 80:14, 83:6, 83:7, 84:5, 84:16, 97:1, 104:2, 104:7 <b>Montana's</b> [3] 12:6, 95:21, 96:8 <b>Montanore</b> - 19:16 <b>monthly</b> [2] 53:3, 53:3 <b>Mora</b> [2]	6:10, 6:11 <b>morning</b> [19] 2:14, 6:7, 6:15, 6:25, 7:1, 8:6, 8:12, 9:15, 9:21, 10:17, 11:3, 11:7, 44:4, 75:5, 79:13, 87:1, 88:20, 89:6, 92:6 <b>mortality</b> [2] 27:1, 27:9 <b>motion</b> [4] 92:24, 99:1, 99:10, 99:24 <b>mountains</b> [2] 24:1, 74:3 <b>mouth</b> - 73:19 <b>move</b> [14] 54:14, 59:24, 64:11, 82:25, 84:21, 87:4, 90:19, 90:19, 94:11, 94:15, 99:4, 99:25, 101:18, 102:17 <b>moved</b> - 101:21 <b>moves</b> - 25:19 <b>moving</b> [9] 25:10, 26:9, 46:22, 47:25, 48:3, 64:6, 67:10, 80:6, 86:15 <b>MT</b> [2] 1:24, 102:11 <b>multi-national</b> - 14:14 <b>multi-office</b> - 79:17 <b>multi-year</b> [2] 14:13, 17:3 <b>multiple</b> - 34:10 <b>multitudes</b> - 12:9 <b>muscle</b> [3] 16:15, 43:12, 43:20 <b>mute</b> [3] 10:17, 11:1, 24:12 <b>muted</b> - 11:5 <b>Myla</b> [22] 6:14, 10:18, 10:22, 11:8, 20:15, 28:13, 44:4,	45:22, 49:15, 49:23, 51:9, 53:1, 53:18, 56:19, 60:10, 71:20, 75:19, 90:17, 92:13, 93:6, 95:18, 102:4 <b>myself</b> [3] 11:11, 67:5, 83:24 <hr/> <b>N</b> <hr/> <b>named</b> - 104:9 <b>names</b> - 8:1 <b>nation</b> - 68:13 <b>national</b> [8] 9:3, 13:25, 16:13, 16:20, 26:11, 37:20, 47:10, 85:6 <b>nationally</b> [2] 43:10, 43:15 <b>nationwide</b> - 45:2 <b>naturally</b> - 23:10 <b>nature</b> [2] 68:19, 70:9 <b>nearby</b> [2] 23:18, 24:7 <b>nearing</b> - 74:5 <b>nearly</b> - 16:3 <b>necessarily</b> [2] 27:17, 66:11 <b>necessary</b> [7] 17:17, 25:23, 29:8, 44:22, 65:13, 65:18, 66:22 <b>needed</b> [2] 4:16, 57:20 <b>needing</b> - 87:8 <b>needn't</b> - 84:6 <b>needs</b> [4] 66:18, 84:16, 91:11, 91:12 <b>negative</b> - 102:20 <b>negatively</b> - 66:1 <b>Negligible</b> - 56:9 <b>network</b> - 15:6 <b>newest</b> - 8:18	<b>nine</b> - 57:4 <b>nobody</b> [2] 101:6, 101:7 <b>non-profit</b> - 102:13 <b>none</b> - 98:13 <b>nonprotective</b> - 97:14 <b>north</b> [5] 21:5, 64:20, 66:8, 68:23, 69:25 <b>northern</b> - 21:13 <b>northwest</b> [2] 21:1, 83:7 <b>notarial</b> - 104:16 <b>Notary</b> [3] 1:23, 104:6, 104:20 <b>note</b> [10] 7:17, 27:14, 30:9, 46:14, 47:23, 49:10, 80:19, 80:25, 92:5, 92:8 <b>noted</b> [2] 75:19, 81:23 <b>nothing</b> [3] 35:25, 74:19, 98:4 <b>notice</b> [2] 9:19, 99:5 <b>November</b> - 91:14 <b>numbers</b> [3] 73:12, 78:24, 100:25 <b>numerator</b> - 32:9 <b>nutrient</b> - 26:19 <b>nutshell</b> [2] 53:23, 57:8 <hr/> <b>O</b> <hr/> <b>obligations</b> - 83:14 <b>observations</b> - 35:7 <b>observe</b> [3] 27:17, 83:10, 83:13 <b>observer</b> [2] 83:17, 83:25 <b>observing</b> - 9:17 <b>obviously</b> [3] 51:13, 64:5, 92:10 <b>occur</b> [3]	27:11, 29:11, 54:11 <b>occurred</b> - 29:15 <b>occurring</b> [4] 18:6, 23:11, 34:4, 34:18 <b>October</b> [2] 92:18, 104:17 <b>offer</b> [4] 62:1, 63:15, 64:5, 64:14 <b>offering</b> [3] 59:1, 61:25, 92:6 <b>office</b> - 79:16 <b>Officer</b> - 99:18 <b>officials</b> [2] 15:7, 83:15 <b>ones</b> [2] 26:6, 54:7 <b>online</b> - 75:18 <b>open</b> - 23:7 <b>opencut</b> - 19:12 <b>opening</b> [2] 62:25, 99:25 <b>openpit</b> - 24:22 <b>operated</b> - 22:25 <b>operates</b> [2] 29:20, 77:10 <b>operating</b> [3] 70:11, 70:14, 82:19 <b>operation</b> [4] 22:25, 38:21, 77:9, 77:14 <b>operations</b> [4] 22:18, 22:19, 23:8, 35:2 <b>opinion</b> - 85:21 <b>opponents</b> [2] 93:13, 94:12 <b>opportunities</b> [2] 83:20, 91:18 <b>opportunity</b> [14] 8:23, 59:23, 63:15, 64:14, 66:21, 67:18, 69:22, 75:7, 79:19, 81:16, 83:25, 84:20, 85:2, 89:8	<b>opposed</b> [5] 95:8, 99:20, 99:21, 99:24, 101:25 <b>oral</b> - 46:6 <b>orange</b> [2] 22:21, 35:17 <b>order</b> [6] 2:8, 13:18, 53:7, 57:20, 90:8, 96:1 <b>organic</b> - 54:17 <b>organism</b> [2] 26:22, 54:9 <b>organisms</b> [4] 25:20, 26:8, 54:14, 54:14 <b>organization</b> [2] 69:24, 83:7 <b>organized</b> - 15:5 <b>organizing</b> - 32:2 <b>orient</b> - 20:20 <b>originates</b> [2] 20:25, 66:7 <b>others</b> [3] 9:23, 10:3, 92:15 <b>ourselves</b> - 98:6 <b>outcomes</b> - 50:7 <b>outdoor</b> - 20:5 <b>outlier</b> - 73:6 <b>outreach</b> - 91:12 <b>ovaries</b> - 43:20 <b>ovary</b> [11] 16:15, 27:22, 28:6, 28:9, 29:10, 41:18, 41:19, 41:22, 41:23, 43:12, 77:19 <b>over-predicting</b> - 40:7 <b>over-protective</b> - 73:21 <b>overburden</b> [2] 19:13, 23:13 <b>overrule</b> - 91:1 <b>overview</b> [2] 13:2, 16:7 <b>owned</b> - 22:25 <b>owns</b> - 29:20 <b>oxidation</b> - 23:16
--	--	--	--	---	---

oxygen - 54:17	passes - 99:24	56:4	87:19, 89:4, 89:11, 96:15, 100:17	35:20, 35:22	65:8
<hr/> <b>P</b> <hr/>	<b>passing</b> [3] 54:9, 97:6, 97:7	<b>person's</b> - 67:11	<b>pointed</b> - 95:18	<b>predictive</b> - 35:14	<b>probably</b> - 84:13
<b>P.O</b> - 1:24	<b>past</b> [2] 13:16, 82:11	<b>personally</b> - 82:3	<b>points</b> [4] 17:17, 27:25, 29:2, 35:18	<b>predominantly</b> - 24:18	<b>problem</b> [5] 70:9, 70:10, 70:11, 70:23, 82:11
<b>package</b> - 75:10	<b>patience</b> [2] 10:7, 89:5	<b>persuasive</b> - 93:14	<b>policy</b> [2] 79:15, 92:16	<b>prefer</b> - 91:6	<b>problems</b> [3] 47:14, 85:24, 100:17
<b>pages</b> - 104:12	<b>pattern</b> - 96:12	<b>persuasively</b> - 93:14	<b>pollutant</b> - 19:17	<b>premised</b> - 77:8	
<b>pandemic</b> [2] 2:11, 37:3	<b>patterns</b> [3] 32:24, 33:15, 33:19	<b>pertaining</b> [2] 1:7, 13:6	<b>pollutants</b> [3] 12:9, 50:19, 80:18	<b>prepared</b> [3] 1:22, 67:4, 92:24	
<b>panel</b> - 15:5	<b>pay</b> - 73:11	<b>pertinent</b> - 19:20	<b>polluted</b> - 81:3	<b>present</b> [4] 13:24, 22:17, 76:12, 92:13	<b>procedural</b> - 100:17
<b>parameter</b> [2] 34:16, 34:23	<b>PDF</b> [2] 37:9, 37:13	<b>phase</b> - 18:13	<b>polluters</b> - 82:7	<b>presentation</b> [19] 10:13, 10:15, 11:12, 11:17, 12:1, 20:10, 20:19, 36:21, 37:7, 43:21, 44:4, 46:2, 54:5, 55:3, 55:10, 60:10, 72:5, 92:17, 94:18	<b>procedure</b> - 100:20
<b>parameters</b> [4] 29:24, 29:25, 30:2, 50:19	<b>peer</b> [7] 17:4, 17:7, 31:16, 31:24, 35:10, 38:3, 83:23	<b>phases</b> - 38:20	<b>pollution</b> [10] 20:11, 65:12, 66:4, 66:7, 66:11, 66:17, 70:9, 70:11, 82:9, 82:11	<b>presented</b> [11] 31:25, 32:23, 39:20, 40:23, 41:3, 41:7, 72:3, 75:13, 76:6, 76:9, 76:18	<b>Procedures</b> - 64:4
<b>Parks</b> [5] 9:3, 18:18, 29:17, 50:11, 85:6	<b>penultimate</b> - 17:6	<b>phones</b> - 3:20	<b>populations</b> [8] 18:15, 27:11, 27:13, 47:15, 47:21, 71:2, 71:6, 101:8	<b>proceed</b> [3] 10:8, 91:8, 93:15	
<b>participate</b> [2] 84:20, 85:2	<b>per</b> [20] 16:18, 16:19, 17:21, 22:2, 22:6, 28:3, 28:19, 29:5, 41:2, 42:12, 43:5, 43:10, 44:14, 49:11, 51:22, 57:5, 69:16, 75:23, 84:18, 88:3	<b>phonetic</b> [2] 6:6, 6:10	<b>portion</b> [4] 19:15, 20:19, 21:14, 29:22	<b>proceeding</b> - 94:1	
<b>participating</b> [3] 40:24, 68:24, 83:12	<b>percent</b> [13] 22:13, 38:15, 39:8, 40:2, 40:6, 40:9, 42:2, 42:10, 42:16, 42:16, 45:2, 45:7, 66:6	<b>photo</b> - 24:8	<b>possible</b> [3] 97:13, 97:23, 98:2	<b>proceedings</b> [6] 1:11, 2:1, 103:2, 104:8, 104:10, 104:13	
<b>participation</b> [2] 14:17, 39:9	<b>percentage</b> [2] 31:12, 40:9	<b>piles</b> [6] 19:13, 23:7, 23:24, 23:25, 24:4, 24:6	<b>possibly</b> - 90:13	<b>process</b> [61] 11:18, 15:11, 15:13, 23:3, 23:12, 23:15, 26:9, 30:17, 32:5, 42:15, 47:24, 50:23, 52:10, 54:14, 57:19, 58:11, 59:3, 59:8, 64:1, 64:2, 65:19, 65:25, 66:16, 68:2, 68:17, 68:22, 69:7, 69:14, 70:2, 70:17, 71:21, 77:8, 79:21, 79:25, 80:20, 81:18, 82:22, 82:23, 82:25, 83:18, 83:22, 84:1, 84:1, 84:3, 85:4, 85:13, 86:8, 86:16, 86:20, 87:5, 88:9, 91:3, 91:7, 91:19,	
<b>particular</b> [2] 15:23, 63:7	<b>percentile</b> [6] 40:18, 40:21, 42:5, 42:20, 42:21, 42:23	<b>pit</b> - 23:7	<b>potential</b> [4] 25:18, 33:21, 34:18, 73:25		
<b>particularly</b> [6] 37:1, 40:11, 43:25, 61:18, 72:3, 85:3	<b>permitted</b> [2] 18:25, 19:5	<b>plan</b> - 50:2	<b>potentially</b> [5] 46:17, 58:22, 74:7, 87:7, 87:24		
<b>particulate</b> [9] 25:1, 25:3, 25:5, 25:8, 31:13, 32:14, 34:10, 34:14, 34:22	<b>permit</b> [2] 19:23, 82:21	<b>plans</b> [2] 15:1, 16:5	<b>power</b> - 10:19		
<b>partitioning</b> [3] 25:2, 25:4, 34:14	<b>permits</b> [2] 56:10, 82:19	<b>please</b> [19] 3:25, 4:12, 5:25, 9:5, 11:1, 11:22, 12:25, 14:12, 15:16, 16:6, 16:22, 37:5, 62:2, 72:15, 74:23, 81:11, 94:25, 99:18, 101:23	<b>practical</b> [3] 51:14, 95:7, 95:11		
<b>partner</b> - 18:18	<b>permitted</b> [2] 18:25, 19:5	<b>plot</b> - 21:20	<b>preceded</b> - 20:9		
<b>partnered</b> - 31:3	<b>permitting</b> -	<b>point</b> [26] 10:20, 13:2, 18:3, 18:5, 18:14, 18:17, 26:2, 30:16, 34:3, 38:17, 43:22, 46:21, 58:12, 58:25, 60:4, 61:15, 72:19, 74:8, 77:16, 86:22, 87:9,	<b>precedence</b> - 76:10		
<b>partnering</b> - 50:12			<b>precipitation</b> - 23:17		
<b>partners</b> [4] 50:17, 53:6, 53:13, 65:20			<b>predator</b> [3] 25:17, 32:14, 33:5		
<b>partnership</b> - 55:15			<b>predicted</b> [2]		
<b>partnerships</b> [3] 50:8, 50:10, 50:21					
<b>party</b> - 99:7					
<b>pass</b> [2] 54:10, 95:13					

93:9, 93:15, 93:19, 94:8, 94:12, 94:20, 100:13 <b>processed</b> - 26:3 <b>processes</b> [4] 67:25, 68:1, 68:6, 82:12 <b>produce</b> - 55:23 <b>produced</b> - 38:3 <b>product</b> - 32:16 <b>production</b> [2] 26:25, 27:12 <b>profiles</b> - 38:21 <b>progressive</b> - 32:3 <b>project</b> - 11:11 <b>projected</b> - 75:20 <b>promise</b> - 84:7 <b>promises</b> - 84:7 <b>pronouncing</b> - 4:18 <b>propagate</b> - 12:13 <b>proper</b> [2] 78:25, 100:20 <b>properly</b> - 35:24 <b>property</b> - 81:4 <b>proposals</b> - 86:5 <b>propose</b> - 90:8 <b>proposed</b> [23] 1:4, 16:8, 16:18, 18:23, 29:6, 43:8, 43:11, 48:17, 53:2, 57:14, 61:21, 63:1, 63:5, 65:21, 66:18, 70:16, 76:25, 80:13, 82:21, 90:2, 90:9, 90:12, 99:17 <b>proposing</b> [13] 11:21, 18:21, 28:14,	43:14, 44:17, 47:19, 48:15, 49:12, 51:12, 51:15, 52:1, 58:13, 72:13 <b>protect</b> [11] 12:17, 12:21, 17:22, 17:24, 65:13, 73:17, 84:5, 84:16, 87:12, 95:21, 98:6 <b>protected</b> [5] 12:25, 19:25, 29:9, 65:7, 96:9 <b>protecting</b> - 102:24 <b>protection</b> [8] 12:5, 28:11, 38:13, 38:15, 38:19, 44:24, 45:6, 69:10 <b>protective</b> [25] 14:11, 17:14, 19:21, 31:9, 32:21, 38:6, 39:17, 42:11, 42:24, 43:4, 45:8, 46:16, 49:14, 53:2, 65:17, 71:6, 73:20, 80:21, 81:1, 88:5, 95:19, 95:22, 96:7, 97:16, 97:22 <b>protects</b> - 45:2 <b>Provencial</b> - 22:3 <b>provide</b> [6] 12:10, 15:8, 16:7, 66:13, 70:19, 91:10 <b>provided</b> [5] 38:5, 39:7, 40:15, 41:12, 99:6 <b>provides</b> [2] 13:1, 45:6 <b>providing</b> - 11:12 <b>province</b> [2] 68:10, 85:17 <b>provincial</b> [2]	22:11, 28:5 <b>public</b> [27] 1:11, 1:23, 4:1, 10:2, 14:24, 15:3, 60:6, 61:16, 61:19, 61:21, 63:1, 63:15, 63:25, 64:10, 64:14, 78:13, 87:19, 88:16, 88:19, 89:2, 90:10, 92:9, 92:9, 100:1, 100:8, 104:6, 104:20 <b>publication</b> [2] 38:23, 41:8 <b>published</b> - 31:18 <b>purple</b> - 22:1 <b>purposes</b> - 12:15 <b>putting</b> - 93:20 <hr/> <b>Q</b> <hr/> <b>quality</b> [34] 7:20, 10:10, 11:10, 11:14, 11:24, 12:4, 12:7, 12:8, 13:9, 13:16, 13:19, 15:20, 15:24, 17:14, 20:17, 21:22, 22:3, 50:22, 65:2, 65:13, 67:22, 69:10, 70:5, 75:17, 75:22, 76:5, 76:7, 77:7, 79:24, 81:1, 88:5, 95:12, 95:21, 96:9 <b>quantities</b> - 32:5 <b>quick</b> - 94:25 <b>quite</b> [8] 22:10, 31:7, 37:5, 60:7, 78:15, 85:14, 98:20, 98:22	<b>quorum</b> [2] 3:16, 61:13 <b>quote</b> [2] 81:3, 81:5 <hr/> <b>R</b> <hr/> <b>Rachel</b> [4] 6:16, 6:17, 88:24, 88:24 <b>raised</b> [2] 16:24, 102:11 <b>raises</b> - 58:21 <b>raising</b> - 102:12 <b>range</b> [5] 31:25, 35:3, 40:8, 42:6, 57:4 <b>ranged</b> - 40:25 <b>ranging</b> - 14:18 <b>rather</b> - 58:24 <b>ratio</b> - 31:13 <b>reading</b> - 98:22 <b>ready</b> [2] 89:13, 98:25 <b>realize</b> - 77:17 <b>really</b> [24] 16:24, 50:7, 55:14, 63:2, 63:16, 67:18, 68:20, 70:15, 74:25, 76:4, 78:5, 81:24, 85:14, 86:22, 88:4, 88:4, 91:6, 91:21, 96:13, 96:18, 97:1, 97:13, 97:18, 98:23 <b>reason</b> [11] 17:25, 18:1, 19:6, 23:4, 25:23, 28:10, 47:13, 48:18, 88:7, 88:12, 90:15 <b>reasoning</b> - 78:2 <b>reasons</b> [4] 19:6, 75:12, 82:7, 90:17 <b>Rebecca</b> [2] 6:19, 6:20 <b>received</b> [2] 17:10, 102:4	<b>recent</b> - 45:22 <b>recently</b> - 57:4 <b>Recess</b> - 60:12 <b>recognition</b> - 13:16 <b>Recognizing</b> - 80:17 <b>recommend</b> - 36:20 <b>recommendation</b> - 41:13 <b>recommendations</b> [15] 17:9, 39:3, 39:5, 39:7, 39:10, 39:13, 39:14, 39:21, 40:3, 40:7, 40:13, 40:23, 41:1, 43:3, 88:11 <b>recommended</b> [18] 14:3, 16:14, 16:21, 26:12, 28:8, 30:3, 39:23, 40:1, 40:15, 41:9, 41:14, 41:20, 41:21, 43:11, 43:15, 43:18, 45:20, 102:17 <b>recommends</b> - 26:15 <b>reconvene</b> - 60:9 <b>record</b> [4] 2:8, 3:9, 92:2, 104:13 <b>records</b> - 75:17 <b>recover</b> [2] 65:6, 65:8 <b>recovery</b> - 65:15 <b>recreation</b> [2] 12:13, 20:5 <b>red</b> [2] 21:24, 25:7 <b>reduce</b> [2] 55:11, 86:14 <b>reduced</b> [3] 26:25, 27:1, 27:12 <b>reducing</b> [2] 73:2, 101:1 <b>refer</b> - 57:18 <b>reference</b> - 77:4 <b>referred</b> -	25:6 <b>refined</b> - 66:20 <b>refresh</b> [2] 48:21, 89:24 <b>regarding</b> [6] 44:4, 46:3, 47:2, 69:10, 91:3, 91:15 <b>Region</b> - 79:16 <b>regional</b> [2] 13:8, 83:6 <b>regression</b> - 65:14 <b>regulated</b> - 77:11 <b>regulating</b> [2] 95:8, 95:9 <b>regulation</b> [3] 80:16, 95:8, 95:13 <b>regulations</b> - 91:19 <b>regulators</b> [2] 19:22, 70:19 <b>regulatory</b> - 19:19 <b>reiterate</b> - 97:12 <b>reiterating</b> - 95:17 <b>related</b> - 101:11 <b>release</b> - 56:5 <b>releases</b> - 55:23 <b>relevant</b> - 15:2 <b>relies</b> - 76:25 <b>reluctant</b> - 96:18 <b>rely</b> [2] 76:17, 84:6 <b>remain</b> [2] 18:8, 90:15 <b>remains</b> - 20:8 <b>remarkable</b> - 85:14 <b>remarks</b> - 87:7 <b>remediate</b> - 13:19 <b>Remembering</b> - 17:18 <b>reminding</b> - 93:19 <b>report</b> [9] 17:5, 31:24, 35:11, 37:25, 38:4, 38:10, 76:21, 93:7, 94:1 <b>reported</b> -
--	--	---	--	--	---

104:10 <b>Reporter</b> [3] 1:23, 104:5, 104:20 <b>reports</b> [2] 15:2, 75:24 <b>represent</b> [7] 22:22, 22:23, 29:2, 33:10, 35:18, 65:4, 75:9 <b>representative</b> [4] 36:1, 39:2, 71:15, 100:11 <b>Representatives</b> - 74:16 <b>represented</b> - 67:23 <b>represents</b> [3] 12:22, 28:5, 28:7 <b>reproductive</b> [5] 18:13, 26:24, 27:11, 27:16, 38:17 <b>reproductively</b> - 38:17 <b>request</b> [8] 11:13, 51:8, 63:2, 74:11, 74:23, 91:13, 91:24, 92:19 <b>requested</b> [3] 10:9, 72:7, 92:16 <b>requesting</b> [2] 43:6, 90:18 <b>required</b> [4] 26:21, 31:8, 80:22, 81:5 <b>research</b> [6] 13:23, 15:19, 26:13, 51:18, 53:11, 78:19 <b>reserve</b> - 64:9 <b>reservoir</b> [19] 21:9, 21:11, 21:14, 26:4, 29:3, 30:15, 33:16, 35:1, 35:13, 38:16, 38:20, 38:20, 53:21, 54:12, 68:8, 68:12, 69:4, 69:11, 69:17 <b>reservoirs</b> [3] 26:16,	30:17, 54:2 <b>residence</b> [2] 26:6, 54:7 <b>resident</b> - 30:19 <b>resources</b> [4] 23:1, 86:11, 87:13, 88:1 <b>respect</b> [5] 59:10, 59:12, 70:20, 92:3, 93:12 <b>response</b> [16] 3:13, 46:6, 49:22, 60:24, 61:1, 61:5, 61:12, 62:17, 88:22, 89:3, 98:12, 99:12, 99:14, 99:19, 101:24, 102:1 <b>responsibility</b> - 18:9 <b>restoration</b> [2] 87:15, 87:21 <b>restored</b> - 87:18 <b>resubmit</b> - 80:23 <b>result</b> [6] 13:3, 18:15, 31:23, 35:14, 58:12, 78:8 <b>resulted</b> - 42:23 <b>resulting</b> - 17:4 <b>results</b> [3] 35:18, 35:19, 35:21 <b>returns</b> - 70:25 <b>review</b> [9] 1:1, 2:7, 2:9, 11:25, 12:6, 50:25, 65:21, 72:8, 87:4 <b>reviewed</b> [8] 17:4, 17:8, 31:16, 31:24, 35:10, 38:3, 66:19, 83:24 <b>reviewing</b> - 80:13 <b>reviews</b> - 79:1 <b>revisit</b> - 80:22 <b>rich</b> - 19:8	<b>Richard</b> - 48:13 <b>rigorous</b> [2] 80:1, 98:23 <b>rising</b> - 66:17 <b>risk</b> - 22:8 <b>river</b> [59] 1:9, 10:12, 11:16, 12:20, 13:6, 15:6, 16:13, 16:19, 18:7, 20:22, 20:25, 21:5, 21:8, 21:15, 21:16, 21:18, 21:23, 22:13, 22:15, 22:16, 23:5, 26:4, 29:22, 30:7, 31:1, 43:14, 43:16, 47:16, 48:6, 53:21, 56:21, 57:1, 57:4, 63:24, 64:25, 65:3, 65:6, 65:12, 65:18, 66:5, 66:8, 68:13, 69:5, 69:11, 70:24, 71:18, 73:1, 73:19, 75:21, 76:7, 76:18, 76:23, 80:11, 84:12, 85:8, 87:21, 87:22, 96:17, 97:6 <b>rivers</b> [4] 26:17, 30:17, 54:1, 69:4 <b>road</b> - 78:7 <b>robust</b> [7] 33:24, 63:25, 79:21, 82:1, 82:23, 83:22, 94:8 <b>rock</b> [5] 23:7, 23:13, 23:24, 24:2, 24:22 <b>roll</b> [2] 2:12, 60:15 <b>roller</b> - 101:13 <b>rough</b> - 4:23 <b>routine</b> - 30:1	<b>RPR</b> [3] 1:22, 104:5, 104:19 <b>rule</b> [10] 1:6, 20:12, 60:4, 76:25, 88:20, 90:2, 90:12, 91:2, 91:4, 91:5 <b>rulemaking</b> [37] 10:10, 11:14, 20:13, 43:7, 59:2, 59:8, 60:3, 61:22, 63:1, 63:4, 63:6, 63:18, 64:7, 64:22, 66:24, 69:6, 69:14, 70:2, 75:10, 77:13, 77:24, 84:3, 84:21, 86:8, 86:16, 87:5, 88:13, 90:20, 91:1, 91:9, 91:13, 93:22, 94:3, 97:8, 99:4, 99:5, 99:16 <b>rules</b> [3] 63:5, 97:7, 97:7 <b>run</b> - 60:15 <b>runoff</b> - 23:17 <b>rushing</b> - 71:22 <b>Ryan</b> [3] 3:21, 4:2, 4:4	<b>saying</b> [3] 73:25, 99:18, 101:23 <b>says</b> - 2:4 <b>scale</b> [6] 15:7, 31:16, 34:8, 47:10, 87:15, 87:21 <b>scenario</b> [4] 35:6, 35:15, 42:14, 58:14 <b>scenarios</b> [11] 17:14, 35:17, 35:19, 39:16, 41:4, 41:24, 48:24, 58:6, 58:7, 58:9, 78:12 <b>scheduled</b> - 89:22 <b>schematic</b> [5] 23:9, 23:14, 23:20, 24:14, 24:20 <b>Scherer</b> [2] 6:24, 7:2 <b>Schmidt</b> [7] 4:13, 4:16, 8:13, 67:2, 67:3, 67:8, 79:15 <b>Schmit</b> [6] 8:12, 79:8, 79:9, 79:13, 81:10, 95:24 <b>science</b> [23] 4:14, 15:11, 17:7, 31:20, 45:21, 66:19, 67:5, 68:18, 70:5, 78:18, 80:7, 80:22, 83:23, 84:18, 85:22, 86:19, 88:10, 90:16, 92:17, 94:7, 95:23, 98:22, 102:23 <b>scientific</b> [9] 11:20, 17:8, 24:17, 26:13, 80:17, 85:18, 93:25, 100:23, 101:16 <b>scientifically</b>	[2] 64:1, 79:25 <b>scientist</b> [3] 20:17, 67:21, 67:23 <b>scientists</b> [4] 26:14, 38:3, 68:21, 85:4 <b>screen</b> [3] 10:20, 37:14, 72:4 <b>scribbling</b> - 79:6 <b>seal</b> - 104:16 <b>seams</b> - 23:12 <b>seconded</b> - 101:22 <b>secondly</b> [2] 18:22, 19:10 <b>seconds</b> [2] 61:7, 78:16 <b>Section</b> - 11:10 <b>sector</b> - 20:8 <b>seeing</b> [14] 18:5, 23:22, 35:24, 36:4, 36:8, 36:9, 36:11, 36:12, 36:13, 36:15, 36:16, 36:19, 59:14, 98:13 <b>seeking</b> [2] 82:19, 82:19 <b>seem</b> [2] 71:22, 98:22 <b>seems</b> [3] 45:11, 74:12, 94:9 <b>segues</b> - 60:1 <b>select</b> - 42:21 <b>selected</b> [3] 42:6, 42:9, 42:20 <b>selection</b> - 40:17 <b>selenium</b> [152] 1:7, 10:10, 11:14, 12:19, 12:23, 13:12, 13:14, 14:1, 14:5, 14:10, 14:20, 15:15, 15:23, 15:25, 16:2, 16:5, 17:10, 17:15, 17:20, 18:10,
<b>S</b>					
<b>S-T-U</b> - 8:24 <b>safety</b> - 45:5 <b>sake</b> - 95:8 <b>Salish</b> [4] 8:21, 48:14, 67:24, 68:14 <b>sampling</b> [3] 15:1, 16:4, 27:19 <b>Sander-green</b> [6] 5:22, 5:25, 69:20, 69:21, 69:23, 71:9 <b>Sandy</b> [2] 6:24, 6:25 <b>Sarah</b> [7] 7:3, 7:4, 37:15, 61:8, 62:22, 99:6, 99:17 <b>satisfying</b> - 85:15					

18:16, 19:1, 19:3, 19:5, 19:8, 19:10, 19:17, 21:17, 21:20, 22:4, 22:9, 22:12, 22:14, 22:16, 23:5, 23:6, 23:11, 23:15, 24:6, 24:9, 24:16, 24:18, 24:22, 24:24, 24:25, 25:3, 25:5, 25:5, 25:9, 25:12, 25:16, 25:19, 25:25, 26:3, 26:8, 26:9, 26:14, 26:16, 26:18, 26:24, 26:25, 27:9, 27:16, 27:21, 28:2, 28:18, 28:21, 28:22, 29:1, 29:13, 30:3, 30:14, 30:17, 30:18, 31:2, 31:4, 31:9, 31:11, 31:14, 31:14, 31:17, 31:20, 32:5, 32:14, 32:15, 32:20, 32:21, 33:21, 34:8, 34:9, 34:15, 35:14, 35:20, 35:22, 38:4, 38:6, 38:21, 39:3, 39:17, 43:9, 45:4, 51:10, 51:12, 51:15, 51:19, 52:20, 53:12, 53:14, 53:21, 54:1, 54:8, 54:13, 55:2, 55:8, 55:23, 56:1,	56:4, 56:21, 57:22, 61:22, 63:23, 65:11, 66:4, 66:6, 66:17, 68:23, 72:14, 74:1, 76:1, 76:13, 76:20, 76:22, 78:22, 79:24, 80:2, 80:4, 80:9, 80:10, 80:18, 81:23, 83:17, 85:24, 86:2, 86:14, 87:24, 88:21, 97:6, 101:1, 101:7, 101:11, 102:15, 102:21 <b>semi-annual -</b> 15:22 <b>Senate -</b> 71:17 <b>Senator [12]</b> 7:14, 7:16, 36:3, 71:11, 71:16, 74:13, 75:3, 91:2, 91:10, 91:22, 92:5, 92:15 <b>send [2]</b> 78:20, 92:6 <b>senior [2]</b> 67:20, 79:15 <b>sensitive [4]</b> 22:9, 31:2, 38:15, 46:3 <b>sent - 92:5</b> <b>September -</b> 1:14 <b>seriously -</b> 92:20 <b>Service -</b> 29:18 <b>sets - 53:1</b> <b>SeTSC [2]</b> 35:25, 36:5 <b>setting [6]</b> 15:10, 15:13, 58:11, 68:7, 77:7, 100:18 <b>seven [5]</b> 15:4, 39:23, 39:25, 40:14, 40:24 <b>several [3]</b>	41:11, 41:14, 83:11 <b>Sexton [7]</b> 4:25, 5:2, 67:16, 67:17, 67:20, 69:19, 81:22 <b>shaded -</b> 27:25 <b>share - 37:14</b> <b>shared -</b> 70:18 <b>sharing -</b> 14:23 <b>Shaun [2]</b> 9:15, 9:18 <b>Shawna [2]</b> 102:7, 102:10 <b>She's - 5:8</b> <b>sheer - 24:3</b> <b>shorthand -</b> 104:10 <b>shortly -</b> 10:20 <b>shouldn't [2]</b> 48:17, 84:6 <b>showing [3]</b> 28:25, 35:24, 36:7 <b>shown [6]</b> 28:21, 29:25, 33:12, 76:21, 101:6, 101:7 <b>shows [7]</b> 20:21, 21:19, 22:10, 22:11, 22:20, 26:23, 27:21 <b>signed - 13:19</b> <b>significant [4]</b> 14:15, 17:1, 38:12, 53:10 <b>signify [2]</b> 99:18, 101:23 <b>similar -</b> 41:20 <b>Similarly -</b> 77:3 <b>simple [2]</b> 18:2, 19:7 <b>simply [5]</b> 19:7, 26:6, 27:7, 77:2, 93:21 <b>single - 77:8</b> <b>singled - 82:9</b> <b>sit - 72:8</b> <b>site [17]</b> 14:3, 16:17,	30:14, 31:22, 40:14, 43:13, 45:19, 48:5, 49:16, 65:20, 68:7, 69:15, 72:22, 76:11, 79:23, 80:3, 80:8 <b>sites [2]</b> 29:3, 73:12 <b>six [2]</b> 14:15, 57:4 <b>size - 24:3</b> <b>slide [18]</b> 11:21, 12:25, 14:12, 15:16, 16:6, 16:22, 20:21, 33:13, 36:6, 36:7, 36:8, 36:8, 36:9, 36:13, 37:11, 37:18, 39:20, 76:18 <b>slides [5]</b> 28:22, 34:17, 35:23, 36:20, 77:5 <b>slighter -</b> 26:20 <b>slightly [4]</b> 29:7, 51:15, 52:1, 52:2 <b>slow - 74:23</b> <b>slowed [3]</b> 66:16, 71:21, 74:18 <b>smaller - 15:7</b> <b>Smith [6]</b> 4:10, 4:12, 64:17, 64:18, 64:19, 67:1 <b>solely [2]</b> 22:25, 41:6 <b>solicited [2]</b> 17:9, 39:2 <b>solution [2]</b> 32:4, 37:16 <b>Solving -</b> 32:20 <b>somebody -</b> 79:6 <b>someone -</b> 72:21 <b>somewhere -</b> 47:4 <b>sooner - 93:9</b>	<b>sorry [9]</b> 3:23, 4:18, 10:16, 11:2, 36:17, 37:7, 45:25, 67:10, 95:5 <b>sort [3]</b> 28:24, 52:18, 53:24 <b>sounds -</b> 36:18 <b>source [6]</b> 19:2, 22:16, 24:21, 57:1, 70:23, 73:25 <b>sources [5]</b> 19:1, 19:5, 55:8, 55:25, 66:4 <b>south [3]</b> 21:2, 30:7, 66:5 <b>southeast -</b> 69:24 <b>spanning -</b> 20:23 <b>speak [8]</b> 3:8, 4:20, 48:1, 59:16, 62:9, 62:20, 69:22, 81:16 <b>speaker [4]</b> 6:13, 9:22, 36:9, 36:15 <b>speaking [2]</b> 10:5, 44:1 <b>special [4]</b> 2:8, 89:21, 89:21, 89:23 <b>species [21]</b> 14:6, 22:8, 27:25, 30:19, 30:22, 30:22, 31:2, 33:9, 33:12, 38:12, 38:16, 45:2, 45:7, 46:3, 54:18, 54:19, 65:7, 65:10, 69:11, 73:3, 82:15 <b>specific [20]</b> 14:3, 16:17, 30:14, 31:22, 34:23, 40:3, 40:14, 41:1, 43:13, 45:19, 48:5, 49:16, 65:20, 68:7, 69:15, 72:23,	76:11, 79:23, 80:4, 80:9 <b>specifically</b> <b>[2]</b> 30:13, 39:25 <b>specifics -</b> 63:5 <b>specified -</b> 32:1 <b>spoil - 19:13</b> <b>spoke [3]</b> 36:14, 86:4, 93:13 <b>spurred - 13:5</b> <b>SS - 104:3</b> <b>staff - 81:25</b> <b>stage [2]</b> 27:12, 58:24 <b>stages - 45:7</b> <b>stakeholders</b> <b>[2]</b> 38:13, 90:4 <b>standard [80]</b> 12:22, 14:11, 14:22, 15:13, 15:15, 15:24, 16:11, 17:15, 17:20, 17:23, 18:3, 18:4, 18:20, 19:21, 19:24, 20:7, 26:17, 29:6, 30:14, 30:24, 38:7, 39:17, 43:17, 44:10, 44:14, 44:18, 44:21, 48:6, 50:23, 51:12, 51:16, 52:2, 52:5, 52:6, 52:12, 53:1, 53:2, 53:4, 53:21, 54:1, 55:17, 56:4, 56:6, 56:23, 57:10, 58:11, 59:10, 65:17, 65:21, 66:12, 70:18, 72:14, 75:23, 76:11, 77:7, 81:1, 82:7,
---	---	--	--	---	---

84:7, 84:8, 84:17, 84:19, 88:6, 88:6, 93:10, 94:14, 94:14, 95:19, 95:22, 95:25, 96:3, 96:6, 96:7, 96:19, 96:20, 97:14, 97:19, 97:21, 100:18, 100:22, 102:18	19:20, 45:15, 68:10, 71:11, 74:16, 80:6, 81:17, 81:19, 82:7, 83:16, 97:2, 97:3, 97:22, 104:2, 104:7	<b>strides</b> - 101:1 <b>stringent</b> [5] 17:8, 41:10, 45:3, 50:5, 95:14 <b>striving</b> [2] 55:17, 56:23 <b>strong</b> [2] 20:8, 66:12 <b>strongly</b> - 86:15 <b>struggling</b> - 57:11 <b>Stu</b> [4] 8:20, 8:23, 8:25, 81:11 <b>studies</b> - 47:12 <b>stuff</b> [2] 73:15, 77:6 <b>surgeon</b> [16] 31:1, 46:1, 46:4, 46:11, 46:12, 47:2, 47:3, 47:6, 47:15, 47:20, 49:14, 65:6, 71:2, 72:23, 72:24, 87:17 <b>subcommittee</b> [14] 16:1, 17:10, 30:4, 30:19, 38:1, 38:9, 39:4, 39:6, 39:13, 39:21, 41:12, 42:9, 42:18, 78:22 <b>subject</b> - 63:7 <b>submitted</b> [2] 39:11, 80:14 <b>subscribers</b> - 83:8 <b>subsequent</b> [3] 13:24, 52:9, 52:15 <b>substance</b> - 91:7 <b>substantial</b> [2] 16:25, 18:5 <b>substantive</b> - 64:9 <b>success</b> [2] 27:16, 73:11 <b>successfully</b> - 96:25 <b>sudden</b> [3] 71:22, 74:14, 74:21 <b>Sue</b> [4] 61:24, 61:25, 62:3, 86:25	<b>suggest</b> - 86:7 <b>suggested</b> [3] 65:16, 66:15, 78:8 <b>suggesting</b> - 72:21 <b>suggestion</b> - 45:15 <b>suggestions</b> - 94:13 <b>Sullivan</b> [15] 6:1, 6:3, 10:18, 11:12, 20:15, 20:17, 36:7, 36:18, 37:17, 44:12, 44:19, 44:23, 45:18, 54:3, 57:2 <b>summaries</b> - 15:1 <b>summarize</b> [3] 31:7, 38:8, 54:4 <b>Summarized</b> - 32:24 <b>summary</b> [2] 39:20, 53:23 <b>summer</b> - 31:6 <b>support</b> [13] 11:13, 18:20, 64:6, 69:7, 69:14, 69:15, 86:15, 87:3, 87:9, 87:11, 88:3, 88:13, 102:16 <b>supportable</b> - 82:24 <b>supportive</b> [3] 47:25, 49:13, 70:2 <b>supports</b> - 80:6 <b>surface</b> [5] 23:6, 23:18, 23:19, 24:7, 24:24 <b>surprising</b> - 85:22 <b>Survey</b> [2] 17:6, 50:11 <b>survive</b> - 27:7 <b>surviving</b> - 27:18 <b>Susan</b> - 48:14 <b>suspended</b> - 31:13 <b>SUTLIFF</b> [50] 2:15, 2:18, 2:20, 2:22, 2:24, 3:3, 3:6, 3:12, 3:14, 3:19, 4:2, 4:5, 4:10, 4:13, 4:17, 4:22, 4:25, 5:3, 5:7, 5:11, 5:15, 5:19, 5:22, 6:1, 6:5, 6:9, 6:13, 6:16, 6:19, 6:24, 7:3, 7:7, 7:11, 7:13, 7:16, 7:20, 7:25, 8:9, 8:16, 8:25, 9:18, 60:17, 60:19, 60:21, 60:23, 61:2, 61:4, 61:24, 62:3, 88:23	39:6, 39:13, 39:21, 41:12, 42:9, 42:18, 58:8, 71:13, 83:18 <b>technically</b> - 96:25 <b>technologies</b> [2] 19:23, 86:12 <b>technology</b> - 2:10 <b>Teck</b> [15] 23:1, 29:19, 30:10, 53:10, 73:8, 73:9, 73:15, 73:17, 75:9, 77:4, 77:5, 82:19, 85:23, 86:4, 86:11 <b>Teck's</b> - 77:14 <b>teleconference</b> - 39:8 <b>ten</b> [4] 60:8, 60:11, 60:13, 78:16 <b>Tenmile</b> - 30:8 <b>tenure</b> - 98:19 <b>term</b> [8] 21:22, 28:24, 38:19, 50:21, 70:9, 76:6, 86:9, 101:5 <b>terms</b> [3] 56:25, 57:11, 68:7 <b>test</b> - 51:19 <b>testimony</b> [2] 2:2, 92:6 <b>TFM</b> [5] 33:1, 33:4, 41:25, 42:9, 42:15 <b>thank</b> [104] 2:15, 3:6, 3:11, 4:4, 4:8, 4:22, 5:2, 5:7, 5:10, 5:18, 6:5, 6:9, 6:12, 6:18, 7:3, 7:11, 7:16, 7:19, 7:25, 8:3, 8:6, 8:8, 8:9, 8:15, 8:19, 8:23, 8:25, 9:6, 9:10, 9:17, 9:18, 10:6, 24:13, 37:15,
--	--	--	---	---

---

**T**


---

**table** [2]  
48:22, 86:5  
**tailored** -  
31:21  
**taken** [10]  
2:2, 52:3,  
52:11,  
52:19, 53:7,  
60:12, 65:1,  
68:1, 98:5,  
104:8  
**takes** - 31:18  
**taking** [2]  
62:13, 92:20  
**target** [4]  
31:11,  
32:11,  
37:20, 37:23  
**targeting** -  
90:1  
**team** [2]  
76:21, 82:2  
**tech** - 96:21  
**technical** [20]  
11:11,  
11:20, 15:2,  
16:1, 17:10,  
30:4, 30:18,  
36:24, 38:1,  
38:9, 39:3,



43:23, 47:22, 49:3, 49:8, 49:19, 51:1, 52:16, 53:17, 54:21, 54:25, 56:12, 58:16, 60:10, 62:2, 62:15, 63:13, 64:13, 64:13, 64:15, 64:16, 64:18, 66:24, 67:1, 67:9, 67:14, 67:15, 67:15, 67:17, 69:18, 69:19, 71:7, 71:8, 75:2, 75:3, 75:6, 78:17, 79:2, 79:4, 79:8, 79:11, 79:13, 81:8, 81:10, 81:12, 82:25, 83:2, 83:4, 84:21, 84:23, 84:25, 85:1, 85:3, 86:22, 86:24, 87:1, 88:13, 88:14, 88:25, 89:5, 92:21, 93:4, 93:5, 93:19, 94:3, 98:8, 98:9, 101:17, 102:2, 102:14, 102:23	54:10, 54:12, 73:8, 73:25, 74:18, 74:19, 74:20, 76:19, 77:6, 77:21, 78:23, 84:19, 94:1, 96:5, 98:23, 100:23 <b>therefore [2]</b> 66:9, 82:24 <b>they're [7]</b> 24:3, 48:15, 50:4, 68:22, 70:20, 82:8, 92:10 <b>they've [3]</b> 67:6, 77:24, 98:14 <b>thing [5]</b> 49:6, 49:9, 53:18, 74:24, 96:6 <b>thinking [2]</b> 55:1, 82:12 <b>thirty [2]</b> 16:3, 82:4 <b>thoroughness</b> - 63:21 <b>Though -</b> 19:19 <b>thoughtfulness</b> - 63:21 <b>thousands -</b> 70:13 <b>threaded -</b> 64:6 <b>threat - 87:23</b> <b>threatened [4]</b> 13:14, 75:15, 75:20, 76:3 <b>threshold [2]</b> 42:5, 77:22 <b>throughout [4]</b> 24:4, 31:5, 47:24, 84:1 <b>thus - 15:25</b> <b>Tim [20]</b> 7:21, 7:21, 49:5, 49:7, 49:24, 52:21, 52:24, 52:25, 53:17, 58:3, 58:4, 73:9, 79:7, 89:15, 89:17, 89:20, 92:21, 94:25, 95:1, 95:7	<b>timeline [2]</b> 13:1, 17:19 <b>timely - 84:4</b> <b>timer [2]</b> 62:24, 74:4 <b>tissue [32]</b> 14:2, 16:11, 25:23, 27:22, 28:6, 28:7, 28:8, 28:9, 29:11, 31:10, 32:9, 32:11, 34:11, 37:21, 37:23, 39:24, 40:19, 41:9, 41:11, 41:22, 42:4, 42:22, 43:3, 43:11, 43:17, 44:14, 45:19, 46:19, 49:1, 57:21, 78:5, 87:8 <b>tissues [3]</b> 25:10, 25:13, 77:19 <b>TMDL - 52:10</b> <b>to-wit - 2:2</b> <b>Tobacco -</b> 74:3 <b>today [50]</b> 4:3, 4:7, 4:11, 4:15, 4:21, 4:23, 5:1, 5:5, 5:9, 5:13, 5:16, 5:20, 5:23, 6:8, 6:10, 6:13, 6:17, 6:21, 7:5, 7:8, 7:22, 8:1, 8:8, 10:5, 11:10, 11:13, 12:1, 12:21, 13:24, 18:1, 18:8, 18:23, 20:21, 43:6, 46:15, 48:2, 60:1, 61:21, 63:15, 64:2, 72:5, 77:4, 77:18, 78:24, 85:2, 86:6, 90:18, 93:13, 94:15, 100:3 <b>today's [2]</b> 20:19, 101:22	<b>Tonya [2]</b> 7:17, 7:17 <b>tool - 81:1</b> <b>top [7]</b> 14:20, 16:1, 29:16, 30:21, 32:9, 41:4, 68:22 <b>touch - 72:9</b> <b>towards [2]</b> 90:3, 90:7 <b>toxic - 26:20</b> <b>toxicity [3]</b> 24:18, 47:5, 47:11 <b>toxicological</b> <b>[2]</b> 25:21, 27:6 <b>tracks - 34:8</b> <b>training -</b> 67:23 <b>transboundary</b> <b>[14]</b> 13:6, 13:8, 14:10, 14:14, 14:23, 15:15, 15:18, 15:20, 20:3, 20:23, 21:10, 50:17, 85:8, 85:10 <b>transcribed -</b> 104:11 <b>transcript [2]</b> 1:11, 102:5 <b>transcription -</b> 104:11 <b>transfer [6]</b> 25:15, 25:16, 31:11, 32:13, 33:18, 33:21 <b>transferring</b> <b>[2]</b> 25:9, 25:12 <b>travel - 71:3</b> <b>Travis [3]</b> 4:13, 4:14, 67:2 <b>treatment [4]</b> 19:23, 53:11, 73:13, 100:25 <b>treaty [2]</b> 81:6, 96:2 <b>tremendous -</b> 47:16 <b>trend [7]</b> 22:12, 28:24, 76:13, 76:20, 85:25, 86:2,	86:3 <b>trends [5]</b> 13:12, 15:8, 57:7, 76:16, 76:22 <b>tribal - 14:19</b> <b>tribe [13]</b> 30:12, 47:23, 48:11, 48:15, 49:13, 57:12, 65:5, 68:14, 68:15, 87:2, 87:14, 88:2, 88:7 <b>tribes [9]</b> 8:22, 47:17, 48:14, 57:9, 59:1, 59:8, 62:4, 67:24, 98:17 <b>triennial [2]</b> 50:25, 79:1 <b>triennially -</b> 66:19 <b>trophic [7]</b> 25:15, 31:11, 32:12, 33:1, 33:17, 34:11, 40:1 <b>trouble [2]</b> 9:23, 72:2 <b>troubling -</b> 86:1 <b>trout [4]</b> 30:20, 62:11, 63:20, 101:6 <b>Troy [3]</b> 15:7, 102:11, 102:11 <b>true [3]</b> 78:2, 96:22, 104:13 <b>TTF [8]</b> 25:14, 32:12, 32:13, 32:17, 33:25, 34:1, 40:7, 40:14 <b>TTF's [2]</b> 33:20, 33:23 <b>turn [6]</b> 2:11, 10:14, 10:24, 10:25, 12:5, 20:14 <b>turns [3]</b> 21:4, 21:5, 74:21 <b>Tweeten [33]</b> 1:19, 3:2, 3:12, 9:20,	36:10, 54:22, 54:24, 54:25, 55:7, 55:13, 55:18, 55:21, 56:3, 56:12, 58:17, 58:18, 58:20, 59:7, 59:25, 60:17, 60:18, 89:13, 89:15, 89:19, 89:20, 90:1, 90:21, 90:24, 92:5, 92:23, 99:3, 100:4, 100:6 <hr/> <b>U</b> <hr/> <b>ultimately [5]</b> 32:6, 34:8, 39:16, 52:13, 80:12 <b>ultra - 77:15</b> <b>UM - 85:16</b> <b>unable -</b> 83:14 <b>unanimously -</b> 20:12 <b>uncertainties -</b> 40:10 <b>uncertainty -</b> 17:23 <b>underlying -</b> 19:14 <b>underneath -</b> 23:12 <b>understand</b> <b>[12]</b> 25:22, 27:5, 44:8, 44:17, 45:14, 46:2, 51:25, 55:3, 55:9, 72:13, 74:24, 78:9 <b>understanding</b> <b>[7]</b> 13:4, 25:19, 25:24, 26:14, 66:3, 80:18, 93:15 <b>understood</b> <b>[3]</b> 51:10, 56:22, 72:20 <b>undertaken -</b> 85:4 <b>unfairly -</b> 82:9 <b>unfortunate -</b> 36:23
---	--	--	--	---	---

<p>unique - 14:4  <b>United [9]</b>  17:5, 45:12,  50:10, 55:2,  55:9, 56:6,  66:1, 66:10,  98:4  <b>University -</b>  67:21  <b>UNKNOWN [3]</b>  9:22, 36:9,  36:15  <b>Unlimited [2]</b>  62:11, 63:20  <b>unmute - 44:1</b>  <b>update [3]</b>  14:1, 15:8,  66:21  <b>updated [4]</b>  13:25,  26:11, 45:4,  80:10  <b>upon [2]</b>  17:14, 47:2  <b>upper [4]</b>  22:20,  24:21, 28:7,  101:9  <b>upside - 74:22</b>  <b>upstream [7]</b>  13:10, 18:6,  21:25,  30:10, 65:1,  70:23, 96:22  <b>uptake -</b>  32:19  <b>urge [5]</b>  64:22,  65:19,  66:23,  82:24, 84:20  <b>urged - 82:10</b>  <b>users - 81:15</b>  <b>uses [5]</b> 12:5,  12:16,  12:17,  76:19, 82:15  <b>USGS [16]</b>  5:19, 24:14,  29:17,  30:13, 31:3,  32:23, 34:7,  35:11,  37:19, 38:3,  38:23, 41:6,  50:13, 67:7,  81:25, 85:16  <b>using [7]</b>  14:3, 31:22,  41:17, 42:4,  49:1, 80:7,  104:11  <b>utilized -</b>  15:17  <b>utilizing -</b>  100:20</p>	<p style="text-align: center;"><b>V</b></p> <p><b>valid [2]</b>  64:1, 78:11  <b>Valley [14]</b>  13:9, 13:18,  19:3, 19:3,  19:9, 22:18,  23:8, 23:24,  24:5, 24:23,  29:21,  30:11, 66:8,  74:3  <b>value [24]</b>  31:9, 35:22,  37:21,  39:24,  40:12,  40:19, 41:9,  41:13,  41:14,  41:15,  41:21,  41:22,  42:12,  42:14,  42:19,  42:19,  42:22,  42:24, 43:9,  46:10,  46:16,  48:24, 49:2,  57:25  <b>values [14]</b>  16:10,  16:12,  16:15,  16:16,  33:23,  35:14,  37:21,  37:23,  40:16,  40:25, 42:7,  43:18,  46:19, 46:21  <b>variety [2]</b>  29:14, 50:19  <b>versus [3]</b>  54:11,  57:10, 57:14  <b>via [2]</b> 1:12,  2:10  <b>viable [2]</b>  26:25, 27:12  <b>Vicki [3]</b> 8:5,  75:4, 75:7  <b>video [2]</b>  10:25, 11:1  <b>videos - 43:25</b>  <b>violated [2]</b>  97:20, 98:5  <b>vires - 77:15</b>  <b>virtual -</b></p>	<p>92:10  <b>visual - 72:6</b>  <b>visualize -</b>  33:17  <b>voice - 59:9</b>  <b>vote [2]</b>  94:16, 99:16  <b>voted - 20:12</b></p> <p style="text-align: center;"><b>W</b></p> <p><b>wait [2]</b> 61:7,  93:10  <b>waiting -</b>  74:20  <b>walk [2]</b>  24:20, 92:12  <b>walks - 23:9</b>  <b>wanted [9]</b>  10:4, 49:8,  49:9, 59:18,  60:9, 63:19,  64:4, 64:13,  83:19  <b>wanting -</b>  45:14  <b>waste [5]</b>  23:6, 23:13,  23:24, 24:1,  24:22  <b>wastewater -</b>  53:11  <b>waters [3]</b>  16:21, 81:6,  96:2  <b>watershed</b>  <b>[10]</b> 19:2,  19:17,  20:22,  20:23,  22:21,  79:18, 82:5,  82:18,  102:19,  102:24  <b>watersheds</b>  <b>[3]</b> 19:7,  19:15, 56:2  <b>waterways -</b>  66:17  <b>ways - 96:5</b>  <b>we'll [9]</b> 2:5,  2:12, 7:16,  9:25, 10:3,  61:14, 92:2,  92:17, 102:3  <b>we're [43]</b>  2:10, 11:5,  11:21,  12:20, 18:1,  18:20,  20:21,  35:24, 36:4,  43:22, 47:3,  47:25,  49:12,</p>	<p>51:11,  55:17, 58:9,  58:13,  58:23, 60:1,  60:3, 60:8,  61:6, 64:24,  70:1, 70:6,  70:7, 70:22,  70:24, 71:4,  72:13,  73:25,  74:25,  77:25,  89:20,  90:18,  92:14,  92:19,  93:18,  96:19, 97:5,  100:14,  101:12,  101:13  <b>we've [9]</b>  9:11, 18:3,  50:16, 70:4,  85:7, 86:20,  90:3, 90:4,  100:2  <b>web [15]</b>  25:4, 25:20,  26:10,  31:11,  32:17,  32:18,  33:14, 34:5,  34:9, 34:15,  34:19,  38:15, 40:4,  41:24, 42:10  <b>webs [3]</b>  32:23,  32:25, 33:19  <b>website [2]</b>  14:25, 37:8  <b>weeks [2]</b>  92:11, 102:3  <b>weigh - 94:13</b>  <b>weight [2]</b>  28:3, 44:15  <b>welcome [4]</b>  8:2, 9:1,  9:10, 10:21  <b>weren't -</b>  59:19  <b>west - 21:4</b>  <b>what's [3]</b>  49:17, 73:1,  95:14  <b>whatever [2]</b>  91:10, 91:11  <b>WHEREOF -</b>  104:15  <b>WHEREUPON -</b>  2:1  <b>whether [11]</b>  3:25, 20:2,</p>	<p>20:3, 52:7,  52:8, 60:2,  63:3, 63:6,  63:18, 64:3,  97:19  <b>whoever -</b>  10:14  <b>whole [22]</b>  29:14,  32:11,  37:20,  37:21,  39:24,  40:12,  40:19,  41:13,  41:18,  41:21,  41:22, 42:4,  42:13,  42:19,  42:22,  43:12,  43:20,  44:11,  44:13,  44:18, 64:6,  96:13  <b>wholly - 77:11</b>  <b>wide - 35:3</b>  <b>Wild - 69:23</b>  <b>Wildlife [4]</b>  18:18,  29:16,  29:18, 50:11  <b>winter [3]</b>  27:2, 27:4,  27:8  <b>wiped - 87:18</b>  <b>wish [3]</b>  88:17, 89:2,  98:10  <b>wished -</b>  83:12  <b>within - 29:3</b>  <b>WITNESS -</b>  104:15  <b>won't [3]</b>  6:18, 9:13,  39:19  <b>wondering [2]</b>  51:25, 51:25  <b>works - 27:15</b>  <b>WPCAC [2]</b>  20:10,  100:20  <b>wrap - 78:16</b>  <b>wrapped -</b>  57:14  <b>writing - 59:2</b>  <b>written -</b>  39:10  <b>wrong [6]</b>  4:18, 72:15,  75:14,  75:15, 76:4,</p>	<p>96:21</p> <p style="text-align: center;"><b>Y</b></p> <p><b>Yeah - 96:11</b>  <b>yellow - 22:22</b>  <b>yet [5]</b> 3:2,  3:14, 46:3,  59:17, 61:11  <b>you'd [2]</b>  71:14, 99:1  <b>you'll - 15:11</b></p> <p style="text-align: center;"><b>Z</b></p> <p><b>Zoom [5]</b>  1:12, 2:10,  8:1, 9:24,  88:19  <b>zooplankton</b>  <b>[4]</b> 33:4,  33:7, 33:25,  54:18</p>
--	--	--	--	---	--