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MACKENZIE VALLEY ENVIRONMENTAL
IMPACT AND REVIEW BOARD

TECHNICAL SESSION FOR
PRAIRIE CREEK MINE

Mackenzie Valley Review Board Staff:

Facilitator	Chuck Hubert
MVEIRB Staff	Alan Ehlich

HELD AT:

Dettah, NT
October 7th, 2010
Day 2 of 3

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1 --- Upon commencing

2

3 THE FACILITATOR: ...since there's a
4 smaller group, perhaps a round of introductions, and I'll
5 -- we'll pass the microphone around in order to do that.
6 It might assist people in knowing who they're speaking
7 to, and it also assists for the purposes of
8 transcription, so we'll pass that around to begin with.

9

10 (BRIEF PAUSE)

11

12 THE FACILITATOR: I'm going to start
13 right here. I'm Chuck Hubert with the Mackenzie Valley
14 Review Board. And I should introduce our consultant we
15 have with Hatch.

16 MR. RAMLI HALIM: Hi, my name is Ramli
17 Halim. I'm a geo technical engineer in -- working for
18 Mackenzie Valley Review Board.

19 MR. ALAN EHRLICH: I'm Alan Ehrlich. I'm
20 also with the Review Board.

21 MR. BYARD MacLEAN: Byard MacLean, SNC-
22 Lavalin.

23 MR. DAVE HARPLEY: Dave Harpley, Canadian
24 Zinc.

25 MR. ALAN TAYLOR: Alan Taylor, Canadian

1 Zinc.

2 MR. CHRISTOPH WELS: Christoph Wels from
3 Robertson GeoConsultants, consultant for Canadian Zinc.

4 MS. SHANNON SHAW: Shannon Shaw with
5 Phase Geochemistry, consultant for Canadian Zinc.

6 MR. FONS SCHELLEKENS: Fons Schellekens
7 with Natural Resources Canada.

8 MS. CAROLINE LAFONTAINE: Caroline
9 Lafontaine, Yellowknife President.

10 MS. JESSICA BUDGELL: Jessica Budgell,
11 GNWT, Department of Industry Tourism and Investment.

12 MS. JANE FITZGERALD: Jane Fitzgerald,
13 Environment Canada.

14 MR. DEVIN PENNY: Devin Penny,
15 Environment Canada, Emergency Officer.

16 MS. SARAH OLIVER: Sarah Oliver,
17 Fisheries and Oceans.

18 MS. LORRAINE SAWDON: Lorraine Sawdon,
19 Fisheries and Oceans.

20 MR. JONAS ANTOINE: Jonas Antoine, Dehcho
21 First Nations.

22 MR. JOE ACORN: Joe Acorn, Dehcho First
23 Nations.

24 MR. GLENN SORENSEN: Glenn Sorensen,
25 GNWT.

1 MS. ROCHELLE DRUMM: Rochelle Drumm,
2 WESA, consultant for INAC.

3 MR. PAUL GREEN: Paul Green, with INAC
4 Water Resources.

5 MR. NATHAN RICHEA: Nathan Richea with
6 INAC Water Resources.

7 MR. JAMIE VANGULCK: Jamie VanGulck,
8 Arktis Solutions, consultant for Parks Canada.

9 MR. MIKE SUITOR: Mike Sutor, Nahanni
10 National Park, Parks Canada.

11 MS. WENDY BOTKIN: Wendy Botkin, Parks
12 Canada.

13 THE FACILITATOR: And lastly, the man who
14 needs no introduction, but will still get the
15 opportunity.

16 MR. PETER REDVERS: Peter Redvers,
17 representing the Naha Dehe Dene Band.

18 THE FACILITATOR: Thanks very much.
19 That's useful. And I'd also like to remind anybody who
20 has not signed our list of attendees sheet that's on the
21 -- the table at the front by the door.

22 I'd like to begin by just mentioning where
23 we left off yesterday, and that was some uncertainty by
24 some of the parties as to the nature of -- nature of the
25 reservoir water discharge, water quality criteria and the

1 way that that might be dealt with both in determining
2 significant -- significant adverse impacts and how that
3 might followup in a regulatory mechanism.

4 And Dave Harpley is prepared to do a brief
5 presentation on that, maybe to -- to get a better
6 understanding of how that will -- would work out. So
7 we'll pro -- proceed with that short presentation, and
8 that might assist people in understanding a bit better of
9 what this new regulatory regime might be like.

10

11 (BRIEF PAUSE)

12

13 THE FACILITATOR: Thanks, I forgot to do
14 the teleconference.

15

16 (CONNECTING TO TELECONFERENCE)

17

18 THE FACILITATOR: Okay. I think we're
19 ready.

20

21 (BRIEF PAUSE)

22

23 PRESENTATION BY CANADIAN ZINC:

24 MR. DAVE HARPLEY: Good morning. I'm
25 going to go through a -- an overview of the Water

1 Management Plan, and hopefully I'm going to cover what
2 you want. I apologize if there's some kind of duplicity
3 or cover stuff that maybe you understand already. If
4 there's something that you're not quite sure of, if
5 people catch my eye away or do something, we'll
6 backtrack and cover that.

7 I think the best place to start with the
8 water management is to consider the sources and how all
9 the different components interrelate. So I'm beginning
10 on a figure in the DAR. It's based on the water balance
11 that is contained in Appendix 9 of the DAR. There are
12 two (2) figures in the text. There are basically
13 schematics of the water balance for summer and winter.

14 So this is our summer schematic, and the -
15 - the various components on it. Up in the top right-hand
16 corner we have stockpiles. There's a small -- would be a
17 small DMS stockpile near the mill. This is the rock
18 that's separated after the crushing stage. And we would
19 also have an all stockpile from underground.

20 We're proposing to convert the existing
21 polishing pond into an all stockpile for operations. So
22 there would be a small amount of water collected in these
23 two (2) facilities when there's precipitation.

24 The waste rock pile up -- a side valley of
25 Harrison Creek will create seepage. It will collect in a

1 seepage collection pond and that water will be rooted
2 into either the underground via a borehole, or by a
3 pipeline back into the water management system in -- in
4 the vicinity of the mill.

5 So that will -- these streams will,
6 essentially, blend with the mine water coming out of the
7 mine here and this is, essentially, what we consider to
8 be the mine water stream, because the chemistry will be
9 pretty similar.

10 The next significant source is the process
11 plant here, and here you can see water coming out of the
12 process plant. I'll explain the two (2) streams in a
13 second.

14 Other sources, sewage treatment plants,
15 water will be supplied to the camp by a well. We already
16 have a well on site, and the sewage effluent would also
17 discharge to the polishing pond -- sorry, the water
18 storage pond.

19 So the way the -- the -- the flow systems
20 work, the mine water stream comprising these components
21 gets split into two (2) streams. The one (1) stream here
22 goes into what we call Cell B of the water storage pond.
23 And this split flow here, which is the majority of the
24 flow, goes direct to water treatment.

25 In a similar way, the water from the mill

1 comprises two (2) streams. One (1) stream goes to Cell A
2 in the water storage plant, and another stream also goes
3 direct to treatment in the water storage plant. So in
4 summertime we're treating mine water and mill water, and
5 the streams combine in the discharge from the water
6 treatment plant and into the catchment pond.

7 The catchment pond receives site runoff in
8 addition, and then there's final discharge from the
9 catchment pond to the -- to the receiving environment.

10 Is everybody okay with the summer balance
11 before I move to the winter?

12 MR. JOE ACORN: Yeah, normally these type
13 of balances, if you draw a box around something, your
14 input's got to equal your outputs. And if you look at
15 your inputs, you've got fifty (50) coming in from the
16 mine. You've got one point two (1.2) from the sump and
17 zero point four (0.4) from your sewage treatment plants.
18 So you've got fifty-one point six (51.6) coming in and
19 you've got fifty-five point five (55.5) plus zero point
20 six (0.6) going out to precipitation.

21 So you've got a discrepancy there of about
22 5 litres per second. And if you do the same thing around
23 your process plant, you've got twenty point six (20.6)
24 going out on one (1) line, and you've got fourteen (14)
25 going out on the other line, and only twenty-one point

1 seven (21.7) coming in, so you've got a discrepancy there
2 of about 13 litres per second.

3 So why is -- why is those -- why don't
4 those numbers add up?

5 MR. DAVE HARPLEY: The numbers don't add
6 up because this is a snapshot from an annual balance.
7 And the numbers are extracted from the annual balance.
8 And if you want to look at an accounting of all inputs
9 and outputs, you have to look at the total annual
10 picture. You can't just look at a single snapshot in
11 time.

12 THE FACILITATOR: Excuse me, please state
13 your name prior to speaking.

14 MR. JOE ACORN: Joe Acorn from DFN. But
15 wouldn't these numbers here represent averages, in which
16 case the averages should equal each other.

17 MR. DAVE HARPLEY: Well they are
18 averages, and that's probably a large part of the reason
19 that they don't actually add up on an input/output basis.
20 But as I said, you have to look at the -- the overall
21 balance on an annual basis to -- to get a -- a balance of
22 inputs and outputs.

23 MR. ALAN EHRLICH: David, it's Alan
24 Ehrlich from the Review Board. So if I understand your
25 answer, it's that when we see the winter stuff this will

1 make sense?

2 MR. DAVE HARPLEY: When you see the
3 overall annual balance, that's the detailed table that we
4 had yesterday, that nobody could see and read, that thing
5 balances.

6 MR. JOE ACORN: The winter -- the winter
7 table balances, you're saying, or the overall yearly one?

8 MR. DAVE HARPLEY: The overall annual
9 balance.

10 MR. JOE ACORN: Do you have an overall
11 yearly schematic then?

12 MR. DAVE HARPLEY: No.

13 MR. JOE ACORN: Can you get one (1)?

14 MR. DAVE HARPLEY: Well not in the matter
15 of a few minutes, no.

16 MR. JOE ACORN: Oh, okay.

17

18 (BRIEF PAUSE)

19

20 MR. DAVE HARPLEY: So here's the winter
21 balance. And much is the same here, except noticeably,
22 obviously in winter we're not getting precipitation. So
23 these sources are essentially zero (0). There's a --
24 there's a possibility that we might get some continuing
25 seepage from the collection pond, but it -- it's unlikely

1 it would be very significant.

2 So essentially, this part of the source is
3 zero (0) during winter. We still have the mine water,
4 and we still have the mill and we still have the sewage
5 treatment plant. The main difference in the winter
6 balance is that the second stream out of the mill is zero
7 (0). We're not treating mill water, so all the water is
8 going into the water storage pond.

9 Just to explain the water storage pond a
10 little bit, you will notice that we are putting the mine
11 water stream, the -- the sewage treatment plant effluent,
12 and if there is any return from the catchment pond for
13 any reason, into Cell B, where -- as we're putting the
14 process water from the mill into Cell A.

15 And there's a -- a specific reason for
16 doing this. The -- the objective of using the water
17 storage plant is that we want the mill water to take the
18 longest time possible in its flow through the pond to the
19 point where water leaves the pond to feed back into the
20 mill. The reason for this is that the water coming out
21 of the process plant retains residues from the process,
22 processed chemicals, particularly flotation reagents that
23 either depress or float individual concentrates.

24 So by aging that water in the water
25 storage plant, those residues, which are primarily

1 organic-based, can dissipate and then we're able to
2 recycle the water back to the mill without it interfering
3 with the process.

4 THE FACILITATOR: You have another
5 question from -- from INAC.

6 MR. PAUL GREEN: Yes, Paul Green, from
7 INAC. Just a quick question on that.

8 So the aging of the mill water will help
9 reduce the organics, like the, you know, the -- the
10 additional chemicals. What will happen with the metals
11 in -- in the pond? Are we going to -- are -- are they
12 going to build up over time, and will that have any
13 impact on, I guess, treatment?

14 MR. BYARD MACLEAN: Byard MacLean, SNC-
15 Lavalin. The purpose of -- of bleeding off some of the
16 process water into the -- and treating it, is to reduce
17 an internal buildup of metals, as well as an internal
18 buildup of -- well, principally metals. The reason for
19 aging the -- the reagents is this is a -- a lead-zinc-
20 zinc flotation circuit. We make three (3) separate
21 products. And if you recycle that process water back
22 into the front end of the circuit, the zinc-zinc
23 flotation products -- flotation chemicals tend to ra --
24 rake -- rank havoc with the lead circuit. So the longer
25 we can le -- age those reagents in the pond, the -- the

1 better off we are in reusing them. Aging of -- of
2 chemicals in a lead-zinc circuit is quite typical.

3 MR. PAUL GREEN: It's Paul Green again.
4 Yeah -- no, that sounds -- that sounds like a reasonable
5 strategy. I'm just looking more at the metals
6 themselves, because the -- the -- I guess the dilution
7 you'll be getting in the ponds will be primarily from the
8 mine water side of it, and it looks to be fairly steady
9 around, you know, 10 litres per second, summer and winter
10 going in, whereas, you know, you're processing about 20
11 litre -- well I guess it'll be between -- so if you have
12 to say, say six and 20 litres a second of -- of processed
13 water will be coming through the pond constantly.

14 Over time, you know, you're not -- you're
15 not adding -- you're adding more, we'll call it processed
16 water, than clean water. So, you know, I can see
17 potential for some -- some -- a gradual increase in the
18 metals concentrations. I'm just curious, if -- what the
19 projections are, or what -- what kind of -- what -- if
20 that's going to be an issue like in ten (10)/fifteen (15)
21 years, or what -- what -- what kind of a feeling is on
22 that side?

23 UNIDENTIFIED SPEAKER: At this stage we
24 didn't -- didn't really have a strong understanding of --
25 of how long we needed to age the chemicals -- ag -- age

1 the water in the treatment pond, nor do we have a -- a
2 really good feel for the metals, how they're going to
3 increase with time, because they're -- they're just --
4 the -- the lock cycle tests that are done in the pilot
5 studies just don't give you enough data to do that.

6 And so we've made a -- a -- SNC made the
7 decision to make this treatment plant as big as it is so
8 that we had the flexibility. Like we don't really know
9 whether we have to treat exactly that much. We think we
10 may have to treat less than that to fulfill our
11 objectives in terms of aging. So if there is a -- an
12 increase in the metals that is causing a problem, it
13 would be a problem in the flotation circuit. And at that
14 stage we'd have to do something about increasing the
15 treatment rate, but that would be an internal
16 metallurgical problem, I think, not a -- not a water
17 treatment, the envir -- an environmental problem.

18 MR. PAUL GREEN: It's Paul Green again.
19 So you're fairly confident that the -- the effluent
20 coming from the process plant to the water treatment
21 plant will be of a consistent quality, no matter the
22 quality of the water going into the process?

23 UNIDENTIFIED SPEAKER: Yes, sir. Yes, I
24 believe that to be true.

25 MR. PAUL GREEN: Okay. Thank you.

1 MS. ANNE WILSON: Yeah, it's Anne Wilson.

2 Can I add a question here?

3 How will the addition of tailings during
4 the first five (5) months of operation affect the water
5 balance, particularly with the ability to reclaim the
6 water back to the process plant?

7 UNIDENTIFIED SPEAKER: This is the 50,000
8 tons of tailings that goes in to start with? Is that
9 what you're referring to?

10 MS. ANNE WILSON: That's right.

11 MR. DAVE HARPLEY: Yes, that -- we don't
12 anticipate there to be an effect. That is taking up a
13 very small volume of the -- of the -- the tailings -- or
14 I mean the storage facility. And the only difference
15 between the -- the quality of the process water is that
16 one (1) is a slurry and the other one (1) is a -- has
17 been thickened prior -- is -- is thick in our overflow.

18 MS. ANNE WILSON: Anne Wilson. So that
19 won't affect the use of the water to be reclaimed back in
20 the mill?

21 UNIDENTIFIED SPEAKER: No, it won't.
22 We're -- we -- we're proposing to position it at -- at
23 one (1) end of the tailings pond, and it will have a -- a
24 long journey of several months through the tailings pond.
25 So any settling will take place, you know, shortly after

1 it's deposited. And so what -- what we're taking out of
2 the pond and putting back in the building, we don't --
3 don't anticipate the suspended solids to be an issue at
4 all.

5 MS. ANNE WILSON: Okay. Thank you.

6 THE FACILITATOR: Thank you, I have a
7 question here.

8 MR. RAMLI HALIM: Yeah, this Ramli Halim
9 with Hatch. I just want to -- I just want to find out
10 the -- from this process, the diagram, I don't see
11 anything that coming actually from -- from the outside.
12 Basically it look like a recy -- recycle during the
13 summer, and also during the winter.

14 Is there a mechanism that in case that you
15 do have -- I would assume then when you're sending the --
16 the water going to -- from the Cell B, for example, back
17 into the -- into the -- into the process plant, there
18 must be some kind of quality control that you have to do,
19 and some chemical testing and make sure they're okay.

20 And, for example, if -- for example, the
21 concentration is too high, for -- and -- and then
22 probably there is more input of water required, plan.

23 Are you actually thinking about trying to
24 redraw the water from the -- from the creek, or -- I
25 didn't see anything around here when that all come back

1 around the catchment pond going back into the -- into the
2 Cell B, as -- he was saying as a safety return there.

3 MR. DAVE HARPLEY: Dave Harpley. Your
4 first part of that question was: Are there sources from
5 outside? Well, these are sources from outside, because
6 they're rainfall, precipitation, snow melt, here, and
7 also runoff from the site comes into the catchment pond.
8 This doesn't feed into the water balance, obviously. But
9 it's -- it's part of the equation in terms of discharge.

10 And then essentially the mine water is --
11 it's effectively groundwater, so you could consider that,
12 initially fr -- at least, an outside source, because it's
13 strongly correlated with precipitation also. And that's
14 -- comes into the pond here and then that's part of the
15 recycle back to the process plant. I'm not sure if that
16 answers your question.

17 MR. RAMLI HALIM: Yes, part -- part --
18 partly, I guess. There are things I was going to find
19 out whether -- whether there is enough liquid from the
20 circulation that you'd be able to handle the -- the water
21 internally without additional water to have to be put
22 from the outside.

23 I know this is coming from the stockpile.
24 It's -- small in terms of quantity in comparison from the
25 underground mine. But, for example, the one (1) coming

1 for underground mine, is that thing can be increased if
2 it is required, just to -- to make sure that it flush
3 properly for the -- for the system.

4 MR. DAVE HARPLEY: Dave Harpley. Yeah.
5 I'm going to go to the more complicated water balance in
6 a second here and explain more how the system works and
7 try and fiddle with the things so you can actually see
8 it. But essentially, you know, these two (2) streams
9 that I mentioned are -- are split, and we can modify the
10 -- the proportions of this split to either increase or de
11 -- decrease the amount of water going to treatment and
12 which will also vary the amount of water going to the
13 water storage pond.

14 There's always going to be substantial
15 quantity of water in the water storage pond to feed the
16 mill, so they'll never be a situation where we don't have
17 enough water to feed the mill process.

18 MR. ALAN EHRLICH: Yeah. Nathen from
19 Water Resources has been patiently holding on to a
20 question that I think is a follow-up from some of Paul
21 Green's stuff.

22 MR. NATHEN RICHEA: Thank you. It's
23 Nathen Richea with INAC Water Resources. Just following
24 the conversation for both actually and including, I
25 guess, the stuff that Anne had brought up.

1 So I'm look -- I'm looking at some of the
2 concerns, I guess, that were raised about potential for
3 the aging of the water within the cell A through to cell
4 B not being sufficient to meet, sort of, the quality
5 requirements when you feed back into your processing
6 plant. And I think I heard you say, well, we design
7 treatment so that it's flexible enough to be able to
8 handle that.

9 But if the water quality is degraded in
10 your water storage pond, it means that you need to add
11 more reagents, more acids, or whatever you need to do in
12 order to change the pH and trying to extract the zinc.
13 And potential is to have even worse quality of water
14 coming out of your treatment plant into your storage
15 plant, which may require further aging or retention time
16 within your -- within your water storage pod. And then
17 the cycle continues to kind of spiral, potentially.

18 I think what you're saying is as a sort of
19 mitigation for that is, well, the treatment plant will be
20 designed to handle and -- handle that type of water such
21 that it can be treated and discharged. And if the
22 capacity is to be increased then we increase the capacity
23 of treatment. But one (1) of the limiting factors for
24 treatment out of your treatment plant is what is
25 protective of the downstream environment.

1 So if you can't discharge what you might
2 need to discharge from your water treatment plant,
3 depending on the season or depending on condition, and
4 this may not be something that happens within the first
5 three (3) to five (5) years of operation of the mine, but
6 after ten (10) years or twelve (12) years of this kind of
7 happening, and you see seepages coming out of your waste
8 rock pile that are different than what you projected, or
9 you have something coming from your dense media stockpile
10 that's different than what was predicted. There's so
11 many different sources of potential contaminants in your
12 storage pond and the limiting factor of all this isn't
13 necessarily the treatment. It is what is going to be
14 allowed to be discharged in your receiving environment.
15 And -- and that's the concern that we were trying to
16 bring up yesterday.

17 On paper you can -- you can follow along
18 on -- on how this process works, but the limiting factor
19 is what actually can be discharged effectively in your
20 dis -- in your receiving environment. It's not what
21 actually can be physically treated on site or managed on
22 site, it's what actually can be discharged.

23 So, in the absence of sort of what is
24 protective in the receiving environment, as a reviewer,
25 it's hard for us to -- to feel confident in the strategy.

1 It's not that the strategy may or may not work, how will
2 it work such that we are protected? Now at what point
3 will changes in the downstream environment mean that we
4 need to augment the different streams flowing into the
5 treatment plant such that we are protecting the
6 environment.

7 And that's not presented in the
8 developer's assessment report. That's not presented in
9 the response to the information requests. It -- it's
10 more just an explanation of sort of the process.

11 And maybe we're not -- you know, honestly
12 you have some concerns over the process but, in our
13 opinion, that's not the driver of the assessment. The
14 driver of the assessment is what is protective, not how
15 we're going to manage the water onsite. It's an
16 important component because the water management leads to
17 the discharge and potential for impacts in the downstream
18 environment.

19 But having one (1) in the absence of the
20 other leaves uncertainty, and that's what we're missing.

21 MR. BYROD MCLEAN: Byrod McLean. The --
22 the metallurgic -- let's talk about aging for just a
23 second. The aging of reagents in a pond is a -- is a
24 typical requirement and, although there's no formula for
25 how long the aging needs to be, it typically can be a few

1 days to a few weeks. And we have a design here that
2 gives aging of a few months.

3 So -- so I have no concerns that the --
4 the actual aging component of the problem is not taken
5 care of. But I think it's important to point out that
6 that's an internal processing problem, and we still have
7 to live with the -- the treatment, the -- the effluent
8 quality. So the effluent quality I think is the driver.

9 But - but the process guys have all sorts
10 of interesting things they do inside the building in
11 terms of aging reagents and -- and changing strategies
12 and -- and measuring levels of -- of things in the stream
13 that could be problematic in treating those.

14 So -- so I think we have to -- you know,
15 we either go into a long-winded discussion of the
16 internal metallurgy, which I -- I don't think this is the
17 place for that. Nor do I think anyone cares about it. I
18 think you care about what the quality of the effluent is
19 at the end of the treatment plant.

20 And -- and then in terms of if we need
21 extra water where we would get it from. We would only
22 ever get it from underground because we've taken that
23 water and we've tested it to make zinc concentrates and
24 lead concentrates and zinc carbonate concentrates and it
25 has no effect. The -- the water quality is clean enough

1 that it doesn't bring in any alkalinity or any -- any
 2 things that would cause us any problems. And so that's
 3 part of the metallurgical testing program. So if we need
 4 more water, that's where it's going to come from. It
 5 would never come from anywhere else.

6 And if we get build-ups of -- of
 7 problematic things inside our -- our internal system,
 8 those are metallurgical problems that have to be dealt
 9 with on the basis that one (1), we have to make some
 10 metal, but we -- but we also have to have that water
 11 quality because -- because the water quality is the
 12 driver. So I hope I've answered your question.

13 MR. NATHEN RICHEA: Nathen Richea, INAC
 14 Water Resources. No, thank you for that, but, again,
 15 like you say, you have to deal with the conditions on the
 16 site and what you proposed are methods to deal with
 17 issues you expect to see.

18 What we're saying is kind of like the line
 19 of questioning why can't we put a treatment plant in to
 20 meet the requirements to be protective. Like -- like the
 21 stuff that happened yesterday and -- and it's -- it's a
 22 very complex system. And like you say, we don't want to
 23 get into the metallurgy, but my comments both stand.

24 Like we're trying to protect the
 25 environment and the information of what is protective of

1 the environment is not included in the developer's
2 assessment report. We can argue about what treatment
3 needs to be put in or what valve we're going to turn,
4 that's fine, but we need to understand at what point
5 under a flow scenario will we include discharge of water
6 from the processing plant, of what concentration, and
7 what would that mean in the downstream environment. We
8 don't have that.

9 MR. DAVE HARPLEY: Two (2) things I want
10 to say before I move on. One (1) is you mentioned what
11 if there is more run-off from the -- the waste rock pile.
12 That also applies to these other surface stockpiles.
13 These sources feed into the -- the mine water circuit,
14 and, as I mentioned, this split here can address
15 fluctuations in those flows and we are able to send more
16 water to the water treatment plant if we need to.

17 This run-off will be, in terms of
18 chemistry, very similar to the mine water. So we're not
19 really susceptible to additional run-off from this waste
20 rock pile in terms of treating the discharge. And that's
21 one (1) of the reasons we developed the plan this way.

22 The second comment I want to make is I'll
23 just say that I don't agree that it's a complex system
24 and we haven't demonstrated what the impacts are and how
25 it could be managed. Let's hold fire on further

1 discussion on that until I've worked through the rest of
2 this presentation and we'll revisit it.

3 THE FACILITATOR: Question in the back.
4 Okay. We'll proceed with questions in that order then.
5 Please go ahead.

6 MR. JAMIE VANGULCK: Jamie VanGulck,
7 Parks Canada consultant. When you move forward in your
8 presentation, I was wondering if you could please address
9 where in Prairie Creek that fresh water quality will be
10 protected and what parameters are considered in that
11 assessment. So I'm hoping that you'll be able to address
12 that as you move forward in your presentation.

13

14 (BRIEF PAUSE)

15

16 THE FACILITATOR: Do you have a response
17 to Jamie's point?

18 MR. PETER REDVERS: Peter Redvers. This
19 is in -- in reference to the presentation. I'll try not
20 to hit you in the eye with this.

21 One (1) question when we look at: Is
22 there at any point a possibility given a combination
23 perhaps of, well, certainly it might be in a high
24 precipitation situation at certain times of the years
25 where you -- which would also, you know, correlate with a

1 high groundwater flow, and perhaps some fault in the
2 water treatment plant such that you're having to feed
3 more water where these -- the water storage pond would
4 actually get to the point of -- well, close to overflow
5 where there would be a need to drain or dump water from
6 the wards -- water storage pond as a precautionary
7 measure. And I don't see where would that go and how
8 would that be dealt with if that circumstance arose,
9 which would be a worst case scenario, I recognize, but
10 there isn't an outflow directly from the water storage
11 pond in the event that it -- it got excessively high.

12 If you could comment on that, David?

13 MR. DAVE HARPLEY: Dave Harpley. Yes.
14 The -- one (1) of the advantages of the water storage
15 pond in its current location is it -- it really doesn't
16 have much of a catchment. So in terms of an abnormal
17 precipitation event, we're really dealing with incident
18 precipitation onto the surface itself. And so you can
19 recognize that -- let's assume we have 10 inches of
20 rainfall in a particular period -- well, 10 inches of
21 height of water on that pond is not a real significant
22 number given the -- you know, we have a metre freeboard
23 above the maximum level. And we're unlikely to operate
24 up to the maximum level in any case. So the actual event
25 itself is not likely to affect the pond.

1 In terms of the sources, another reason we
2 developed the -- the management system this way is that
3 the balance of the pond is controlled entirely by how
4 much water you put in it from the mill and the mine. And
5 if you got to the situation where you wanted to decrease
6 the inflows to the pond, you would simply divor -- divert
7 more water to treatment. And you could do that
8 specifically in a situation where you had an abnormal
9 precipitation event, which means you have abnormal run-
10 off in the receiving environment.

11 Again, we come back to the -- we think
12 this is a much better way to manage the system because
13 you've set it up to treat and discharge water in those
14 abnormal times and take advantage of the abnormal flows
15 in the system to still maintain those targets in the
16 receiving environment.

17 MR. JOE ACORN: The first one (1) is just
18 quick. The waste rock pile -- oh, sorry, Joe Acorn. Is
19 the waste rock pile lined?

20 MR. DAVE HARPLEY: No, it isn't.

21 MR. JOE ACORN: So what about the
22 exfiltration into the ground there? I know you're
23 collecting seepage and run-off at the bottom but what
24 about anything that goes out from underneath the pile?

25 MR. DAVE HARPLEY: If anything seeps from

1 the base of the pile it will report to the mine wa --
2 mine waste management system because the underground is
3 directly underneath the pile.

4 MR. JOE ACORN: Okay. And the other
5 question is just -- your major input is from the mine
6 water and you -- you think you know what the quality is
7 going to be but you can't say for sure and you can't
8 control it. And the same way for your output from cell B
9 back to the process plant. You think you know what the
10 water quality is going to be but, again, you don't really
11 control it. So why don't you have another line running
12 from your water treatment plant back to your process
13 plant? So in case you need it it's there, but if you
14 don't need it you don't use it.

15 MR. DAVE HARPLEY: In terms of mine water
16 quality I think we have been reasonably conservative in
17 terms of the quality we expect to come out of the mine.
18 We, in fact, expect that that quality is going to improve
19 with time because we expect to draw on groundwater that
20 is deeper and not so affected by near surface oxidation.
21 So, quality-wise, we don't believe we're going to have an
22 issue with mine water.

23 I don't think the -- even if we got any
24 decrease in the quality of the mine water that it would
25 significantly impact mill water processing anyway.

1 In addition to that, it's likely that we
2 would have recycles or, in fact, not likely, we will have
3 recycles in this system. There's -- there's one (1)
4 recycle that's indicated on the schematic here. We'd
5 have a recycle here to the pond in the event that we have
6 some sort of upset or site issue that we want to close
7 the catchment pond, so then we would have the recycle to
8 -- to manage water still coming in to the catchment pond.

9 And there would also be a recycle loop in
10 the -- in the water treatment plant. If -- if it was
11 determined that there was a need for a recycle loop from
12 the treatment plant -- plant to the mill that would be an
13 easy retroactive fit because the two (2) plants are
14 basically next door to one another.

15 MR. ALAN EHRLICH: I have a -- I just
16 want to recap one (1) of the questions from Nathen
17 because I want to make sure that I understand it.

18 Nathen, is what you're asking before and
19 I'm going to totally simplify this because I'm not
20 leading this file so I'm just running to keep up with all
21 the water stuff here. As I understand it, you're saying
22 there's processes here for managing the water, what's not
23 clear is whether or not you're shooting for the right
24 target for that setting.

25 Is that a short version of -- of -- of

1 your point?

2 MR. NATHEN RICHEA: Nathen Richea, INAC
3 Water Resources. I need to think about it just because
4 I'm trying to process.

5

6 (BRIEF PAUSE)

7

8 MR. NATHEN RICHEA: Yes. Basically what
9 I was trying -- in a nutshell, trying to make it quick,
10 what I was trying to get at was we can argue about
11 recycling, we can argue about putting bells on, turning
12 them off, what the water quality might be and staging in
13 the water storage pond, and that's important, but
14 ultimately the driving factor for discharge from the mine
15 will be what is protective of the receiving environment.
16 And that will be dependent on assessment boundaries and
17 targets. It may be objectives, it may be -- I think
18 they referred to targets earlier today, what are those
19 targets? How are we going to attain those targets? What
20 if we miss those targets? What are the implications for
21 missing those -- those targets on the downstream
22 environment?

23 At what point will missing those targets
24 over a series -- not continuously but over some time, say
25 ten (10) years, fourteen (14) years, will that start to

1 cause changes in the downstream environment? At what
2 point will those changes become impacts? At what point
3 will the impacts be unacceptable no longer? And from a
4 management point, eventually we need to make a decision
5 whether this continued operation should occur.

6 Hopefully we have checks and balances
7 along the line where we can start doing a management
8 response on sites that we try to address some of the
9 concerns or changes or impacts in the downstream
10 environment. That will be something that obviously we're
11 not going to be able to cover today, but in the absence
12 of knowing what targets or objectives we have in the
13 downstream environment, sort of what the boundaries are
14 for assessing, how we're going to monitor for those and
15 what's acceptable as -- as an amount of change, we cannot
16 conduct the assessment. We need to look at that
17 information as part of this process so that we can make a
18 determination on whether this project has the potential
19 for significant adverse effects.

20 MR. ALAN EHRLICH: Alan from the Review
21 Board again. Well, in that case, I would trust that at
22 least for the environmental assessment process that
23 we're in now, the question of whether or not those
24 changes are likely to be significant in INAC's opinion,
25 is what we'll hear in INAC's technical report.

1 In -- in light of the discussions that
2 we're going to have -- that you've had here and will have
3 for -- I just -- I want to remind all the parties that
4 the Board's mandate is to look at the potential for a
5 significant adverse impacts, whether or not they're going
6 to be likely.

7 So when you're thinking about what you're
8 seeing here, please -- please bear in mind that that's
9 the big question that the Board needs to -- to try and
10 reach answers to during the environment assessment.
11 Although I -- I understand Nathen's point that -- that
12 there are other things that can be dealt with outside of
13 the realm of things that are significant, the regulatory
14 processes and ongoing environmental management if the
15 project is --

16 MR. NATHEN RICHEA: Nathen Richea, INAC
17 Water Resources. I guess to follow up on that I would
18 have to say given the current understanding of potential
19 effects or the lack of demonstration of potential effects
20 and what may be acceptable in a downstream environment,
21 our position based on the information we have right now,
22 and there's still more information coming on the dilution
23 of the new outflow pipe is that there is a potential for
24 significant adverse effects right now.

25 Hopefully we can address that through the

1 process but if it has to come to sort of a technical
2 intervention, it'll strap the Board with a very difficult
3 decision on whether to approve this operation. And I
4 don't think that's beneficial to the proponent, I don't
5 think it's beneficial to reviewers. I just wanted to
6 leave that with you.

7 MR. ALAN EHRLICH: Fair enough. Thanks.

8 THE FACILITATOR: Thank you. Our -- our
9 goal here is -- is for you to be able to have the
10 opportunity to ask direct questions and receive answers
11 that assist you in -- in firming up your perspective on -
12 - on what -- when preparing your technical report. So
13 that's -- that's our goal here today. So if you can ask
14 the right sort of questions to get those answers that's -
15 - that's our goal here.

16 Would you like to continue with your
17 presentation, Mr. Harpley?

18 MR. DAVE HARPLEY: This is that
19 complicated balance I attempted to show you yesterday.
20 The question is can -- can you actually read this now or
21 do I need to make it bigger still? Okay?

22 MS. ANNE WILSON: Anne Wilson. David,
23 could you tell me which spreadsheet that is?

24 MR. DAVE HARPLEY: Do you have the DAR
25 with you, Anne?

1 MS. ANNE WILSON: I do.

2 MR. DAVE HARPLEY: Can you look at
3 Appendix 9?

4 MS. ANNE WILSON: Okay.

5 MR. DAVE HARPLEY: And it's the 50 litre
6 second water balance.

7 MS. ANNE WILSON: Thank you.

8 MR. DAVE HARPLEY: So I'm just going to
9 go through how this balance is derived and what it's
10 based on. The upper row here is dealing with the mine
11 water and the units here are litres per second, and --
12 and this is the mine water inflow on a monthly basis.
13 And here we have the proportion that goes to treatment
14 and the proportion that goes to the water storage pond,
15 and in a similar vein, below that the mill water.

16 The quantity that the -- the plant
17 requires is here. The quantity of water in the second
18 line that is essentially lost after the process to either
19 concentrate or the DMS or the tailings is this number.
20 And so then we're left with an effluent leaving the --
21 the plant of this number here.

22 What this also shows is that, here's
23 effectively our water management plant for the mill
24 water. And you can see that in the wintertime all of the
25 effluent is going to the water storage pond. Then from

1 April onwards part of it is going to treatment and the
2 remainder is still going to the water storage pond.

3 You'll notice that through -- from May
4 through June, July, and August we are treating process
5 water at a rate of 20 litres a second. Clearly the
6 receiving environment fluctuates during that four (4)
7 month period. We have not attempted to finesse this
8 treatment number, of 20 litres a second, too much through
9 this period, except that we -- you know, we've based our
10 predictions on that twenty (20) number.

11 What I'm getting at is we know that we get
12 peak freshet some period in June, sometimes it's in July.
13 We also get significant rainfall events any time through
14 this June, to August, to September period. So there are
15 going to be times during this four (4) or five (5) month
16 period where the flows in the receiving environment will
17 be substantially higher than the average.

18 And in those times we're able to increase
19 the amount of process water treatment. So this is
20 another mechanism that we have to counterbalance the
21 possibility of a difficulty in the water storage pond
22 from an accumulation of mill process effluent metals, and
23 that kind of built-up issue that you were referring to
24 just a few minutes ago.

25 So there's more opportunity than -- than

1 we've discussed here. It's not just a -- a simple system
2 like this. Flexibility is the key. So taking these
3 litres a second numbers, they then feed into volumes in
4 the lower part of the table here.

5 This effluent number here translate in --
6 into this volume of effluent here in the water storage
7 pond. This part of the water balance is the actual water
8 storage pond. So for Cell A, which is the -- the western
9 half of the pond, here is the precipitation estimated for
10 that month. And we've made the assumption that although
11 the precipitation may be snow and may not melt straight
12 away, we're -- we're assuming that it's effectively
13 water.

14 It doesn't materially affect the balance
15 on an annual basis. It's just how we've assumed it to be
16 for simplicity. So the total inflow to Cell A is this
17 number here, fifty-six thousand (56,000).

18 The outflow from sill -- Cell A, in this
19 case, because there's no evaporation, is the same number.
20 So this water's moving towards Cell B, and it becomes an
21 inflow to Cell B. Cell B is also retaining mine drainage
22 here, which is based on this number. And it's receiving
23 water from the sewage treatment plant.

24 Wintertime there's no runoff from the
25 waste rock pile, or the other stockpiles but, again,

1 there's also precipitation that we're assuming is water.

2 And so here is the total inflow.

3 The outflow is this number here, the total
4 right there. So you can see for January that the
5 difference of inflows versus outflows is a positive
6 twenty-five thousand (25,000). So we're accumulating
7 water in the water storage pond in January.

8 And if you look at successive months, you
9 can see that this accumulative difference obviously
10 increases. And until such time as we get to a peak
11 increase of approximately 91,000 metre cubed, and this is
12 the number I was mentioning yesterday when I was talking
13 about the storage capacity between the minimum operating
14 level of 877 metres, and the maximum level of 880 metres,
15 up 220,000 metre cubed.

16 Then April and May comes around and we
17 start to treat process water. So then these numbers
18 start to decrease. The difference starts to decrease and
19 we're drawing water down in the pond again, and then
20 going to a -- a negative.

21

22 (BRIEF PAUSE)

23

24 THE FACILITATOR: Okay, got a question
25 here.

1 MR. DAVE HARPLEY: Can you hold, and just
2 let me finish the balance and then --

3 UNIDENTIFIED SPEAKER: Just -- it's just
4 that your balance that you're showing here doesn't match
5 what's in the DAR. I mean, it's a different spreadsheet.
6 So where is this coming from? Like the numbers are
7 different than what I'm seeing here on my table.

8

9 (BRIEF PAUSE)

10

11 MR. DAVE HARPLEY: The table to the right
12 here, you can see that the objective is, essentially, to
13 have this number close to zero (0), and that's the
14 balance -- total balance in the whole system for the --
15 for the year.

16 And this number is -- is varied by minor
17 differences in the quality of water going to treatment
18 here, and up here.

19

20 (BRIEF PAUSE)

21

22 MR. DAVE HARPLEY: So before I move on,
23 are there any questions on the water balance?

24 THE FACILITATOR: Yeah, Chuck Hubert,
25 Review Board. How much longer is your presentation? If

1 it's only a few minutes, we'll continue and then take a
2 break after that.

3 MR. DAVE HARPLEY: I'll probably be going
4 for a little bit.

5 THE FACILITATOR: Okay. How -- it's ten
6 (10) after 10:00. How about we take a ten (10) minute
7 break.

8 MR. DAVE HARPLEY: Sure.

9 THE FACILITATOR: And continue in ten
10 (10) minutes. Thanks.

11

12 --- Upon recessing at 10:10 a.m.

13 --- Upon resuming

14

15 UNIDENTIFIED SPEAKER: ...who I'm
16 representing. If we could just go back to the water --
17 the balance slide, David, the diagram, the schematic.
18 And I just really want to focus in on the -- sort of the
19 key issue, I guess, of relevance, is that -- and it
20 certainly relates to balance and that, but when we look
21 at this model, if I can get my little laser light to show
22 up over there.

23 I might have to borrow that one (1) back
24 again, David, sorry.

25

1 (BRIEF PAUSE)

2
3 UNIDENTIFIED SPEAKER: I don't want to
4 look into it and turn it on to see if it's working. But
5 ultimately when we look at this whole system, where there
6 is a -- a problem, that I think is acknowledged by all
7 parties, is that right here the water coming out of the
8 process plant and going into the water treatment plant
9 has high metal concentrations and, in fact, is -- has
10 toxicity.

11 And -- but regardless of everything else
12 that's going on and how -- how well it works, this is
13 really where there's an essential problem in terms of
14 ultimately impact. That mill water goes then into the
15 water treatment plant and it goes through two (2), as I
16 understand in essence, mitigative process.

17 One (1) being the use of lime, and the
18 lowering of the pH to help precipitate metals, and that
19 is effective to a certain degree. Please correct me if
20 you -- well, you'll have an opportunity to correct any --
21 any misperceptions.

22 The second then is to mix that with the
23 mine water and run that through a clarification process,
24 which also then helps to remove certain metals as well
25 and particularly metals, but perhaps other contaminants.

1

2 What is problematic though, or as I
3 understand, is that after those two (2) mitigative
4 measures, that the water coming out of that plant at
5 certain times of the year and in certain circumstances
6 still exceeds and will exceed, I believe, the CCME
7 guidelines or criteria for direct discharge into a -- a
8 receiving environment, the existing guidelines.

9 I don't still fully understand why there
10 couldn't be an enhancement of the treatment plant, and I
11 understand that could be an enhancement of clarification
12 to achieve those guidelines. So maybe we could speak to
13 that. But regardless, then if -- we're assuming at this
14 point that there still is going to be some exceedences of
15 those guidelines, then the approach being taken is to in
16 -- in essence, a -- a third mitigative measure is to then
17 control the -- well, you'd actually control the process
18 water, such that you are only exceeding those guidelines
19 and, in fact, some site specific guidelines when there is
20 enough flow in the creek to be able to adequately dilute
21 that through an in-stream process.

22 The two (2) issues that arise from that
23 particular process are -- and they are noted. I did my
24 homework last night, particularly in Appendix 10 of the
25 DAR speaks to two (2) kind of problems, I guess. One

1 (1), and that's, I think, the one (1) that Nathen is
2 referring to, is how do you gauge the impact of that, and
3 I believe some of that mixing analysis and plume analysis
4 that is going to be presented or brought forward in the
5 next day or two (2) will speak to some of that, or at
6 least help clarify and enlighten everyone on what the
7 anticipated impacts are from -- from plume.

8 I notice in Appendix 10 in the DAR, when
9 the diffuser was still being discussed, the dif --
10 diffuser was seen as being a fairly important part of the
11 process in that it really did help the mixing. The
12 reversion to the direct discharge pipe may or may not
13 impact the -- that mixing, but I'm assuming the mixing
14 analysis is based on the -- on the new -- or the revised
15 process, which is the discharge pipe above Harrison
16 Creek.

17 So that's problem one (1), is how do you
18 then gauge the impacts given that they're -- that you're
19 using the system of -- of allowing for or relying on some
20 in-stream dilution at certain times of the year to aid in
21 the -- bringing your levels within acceptable levels.
22 How far do those impacts extend? Is there any kind of
23 problem with a plume forming, or concentrations, deposits
24 building up down below, because you do have some higher
25 metal concentrations, et cetera. So we're going to have

1 some information on that.

2 The second part of the problem and the one
3 (1) I hear that Nathen is dealing with is the monitoring
4 aspect of it. And certainly in Appendix 10 there --
5 there is an approach that is discussed and spelled out by
6 the consultant that prepared that. And I believe she's
7 the -- going to be online. Monique, I think, is going to
8 be online.

9 And she notes:

10 "It's not practical to monitor
11 background water quality continuously,
12 although assumptions can be made, as
13 such parameter load related criteria
14 should be used. The problem with this
15 approach, in terms of prescribed
16 criteria is the discharge flow at any
17 given time is not known, and needs to
18 be in order to define the load that can
19 be discharged without raising in-stream
20 concentration above the site specific
21 objectives, particularly in winter
22 months."

23 And she suggests:

24 "A possible solution is for the site
25 specific objectives to be included in

1 the water licence with a predetermined
2 background of Prairie Creek water
3 quality and then leave the onus on the
4 mine [that would be the operator] to
5 determine the rate and composition of
6 discharge that by calculation would not
7 exceed the objectives. The monitoring
8 -- with monitoring data, and the
9 calculations provided as part of the
10 reporting requirement."

11 And in essence, what I'm reading in that
12 is that Canadian Zinc is proposing that to the
13 regulators, that that really be given consideration. And
14 I'm not sure we're quite there yet in terms of really
15 getting down to that level of detail and whether or not
16 and to what degree that approach would be acceptable.

17 I'm suspecting that the information on the
18 -- the mixing modelling would be very helpful because
19 then at least there would be a better sense of, you know,
20 what the -- what the impacts from this approach might be.

21 So to -- to my mind, to some degree we're
22 kind of going around in circles a little bit here, and --
23 and perhaps really not focussing really on the essence of
24 what the issue is, which is what is the -- the -- given
25 the mixing model that is being proposed, what is the

1 potential for impact below the discharge, and how does
2 one adequately monitor loads, you know, such that the --
3 INAC and the community can have a reasonable degree of
4 certainty that -- that, in fact, there isn't metals and
5 other contaminants being released that have significant
6 impacts, not only below the mine site, but certainly
7 further down, and cumulatively as well.

8 And I'm not sure we're quite there yet in
9 terms of getting to that really pointed discussion. So
10 perhaps if I could get some comment on that. Perhaps
11 again, starting with maybe the -- the rationale for not
12 simply, you know, increasing the efficiency of the
13 clarification process to -- to get the levels down,
14 because that decision then leads to the approach of using
15 the fluctuating kind of load discharges depending on the
16 season, and then moving to perhaps focussing in on those,
17 the issue of projected impacts and what is being
18 suggested in terms of specific monitoring that would put
19 everyone's mind at ease and allow for obligations to be
20 filled -- fulfilled in the sort of public domain and
21 such. Thank you.

22 MR. DAVE HARPLEY: Dave Harpley here. I
23 prefer to just to finish this presentation, and then
24 we'll get into that stuff. Again, I'll -- I don't want
25 to repeat everything I said yesterday, but let's just do

1 this first and then we can revisit that issue.

2 One thing I do want to point out before I
3 continue is that in the process of going through this
4 stuff, it seems to me we have the wrong water balance in
5 the DAR. The one that I was showing you in Excel was the
6 correct one. It doesn't affect the water balance itself,
7 but that's why the numbers are slightly different.

8 This is the one (1) that's in the DAR, and
9 you'll notice that -- if you can see my cursor, the
10 effluent to treatment -- the mill water to treatment,
11 these numbers here are not the right ones, because they
12 don't correspond with the numbers that were used for
13 water quality prediction.

14 The correct water balance is this one.
15 And you can see here, these are the right numbers. So we
16 evidently got the wrong version when we compiled the DAR,
17 and we'll rectify that. But as I say, the important
18 thing to notice, it doesn't materially affect the water
19 balance in the operation of the water storage pond.

20 THE FACILITATOR: So Canadian Zinc
21 commits to providing that as soon as possible, the
22 correct water balance table?

23 MR. DAVE HARPLEY: Yes.

24

25 --- UNDERTAKING NO. 5: Canadian Zinc to provide the

1 correct water balance table

2

3 MR. ALAN EHRLICH: The question was:

4 Could they get that in Excel as well?

5 MR. DAVE HARPLEY: Yep.

6 MR. ALAN EHRLICH: Thanks.

7 MR. DAVE HARPLEY: I want to move on to
8 the water quality side of things and the predictions, and
9 the in-stream concentrations. And I just have to
10 remember which version -- which program I should be in
11 here.

12

13 (BRIEF PAUSE)

14

15 MR. DAVE HARPLEY: So we looked at water
16 quality. We started by considering the -- the
17 guidelines, the generic guidelines, and here is our
18 treated water chemistry and here are the ge -- the -- the
19 generic guidelines, the most strict of which is CCME
20 aquatic in this table here.

21 You can see here what we've done is we've
22 flagged by bolding the guideline numbers for those
23 parameters where either the process water or the mine
24 water effluent quality exceeds the specific guidelines.

25 So cadmium is flagged, copper, lead,

1 mercury, selenium, and zinc.

2 MR. ALAN EHRLICH: Anne, it's a little
3 hard for us to hear you. Chuck is just adjusting the
4 microphone now so we're going to ask you to repeat that
5 please.

6 MS. ANNE WILSON: Sure. Anne Wilson
7 here. Could either of you refer to what document David
8 is pointing to, please?

9 MR. ALAN EHRLICH: Dave, did you get that
10 question? I didn't quite.

11 MR. DAVE HARPLEY: Yeah. It's -- Anne,
12 it's Table 8-7 in the DAR.

13 MS. ANNE WILSON: Thank you.

14 MR. DAVE HARPLEY: One thing I will point
15 out is that you'll notice that the arsenic was mentioned
16 yesterday and the highest arsenic in the effluent was in
17 the mine water, .003, and you can see that the CCME
18 guidelines point .005. So that's why arsenic wasn't
19 flagged.

20 So we took the flagged metals and brought
21 them forward for consideration of site-specific guideline
22 derivation and that's why -- that's why those metals were
23 used in the initial water quality predictions that were
24 contained in the DAR.

25 And now I'm moving on to Appendix J of the

1 IR response. And in that appendix I'm looking at Tab J-
2 1. So at the top of the table here we've got basically a
3 -- the same numbers we were just looking at. The treated
4 water numbers, the process of mine water for those
5 flagged metals, and we've got Prairie Creek background,
6 upstream water quality in this column, and then we have
7 the in-stream objectives that were derived in this column
8 here on the right.

9 So then using two (2) different mine
10 drainage flows, 29 litres a second and 100 litres a
11 second, which gives us these flow rates on a monthly
12 basis, and the process water treatment in this column on
13 a monthly basis. And in this particular case we're
14 looking at average flows in Prairie Creek. These are the
15 flows here on the left-hand side.

16 And then it's a case of arithmetic
17 blending of these three (3) streams based on this
18 chemistry and this background to derive these in-stream
19 concentrations and then comparison to the in-stream
20 objective.

21 I assume you all get that, it's fairly
22 straightforward number crunching.

23 So --

24 MR. ALAN EHRLICH: I'm going to ask you
25 to hold on for one (1) second, David, we've got a

1 question on that.

2 MR. JOE ACORN: Just, why are you using a
3 mine drainage of 29 litres per second when your water
4 balance uses a drainage of fifty (50)?

5 MR. ALAN EHRLICH: That was Joe Acorn.

6 MR. DAVE HARPLEY: Because I am modelling
7 the extremes here. I'm modelling what would be a low end
8 of that range and a high end of that range. The hundred
9 (100) up here lower down is the higher end of the
10 anticipated range.

11 MR. JOE ACORN: Do you have that model
12 there for four-fifty (450), though, since that's your --

13 MR. DAVE HARPLEY: Do I want to?

14 MR. JOE ACORN: -- prediction?

15 MR. DAVE HARPLEY: Sorry?

16 MR. JOE ACORN: Do you have that four-
17 fifty (4-50) litres per second? That table.

18 MR. DAVE HARPLEY: No, I don't but it
19 could be done. So the case we're looking at here is at
20 Harrison -- Harrison Creek for average flows. And
21 you'll notice that none of the predicted concentrations
22 on the right-hand side are in bold, so there are all
23 within the site-specific guidelines.

24 If we look at low flows, we notice that in
25 March and April for low mine flows we have an exceedance

1 of copper and selenium. And if we have high mine flows
2 we have exceedance of copper January through April. And
3 lead in April and selenium February through April.

4 So the way we address those concerns,
5 exceedances, during the low-flow condition is to cut back
6 the treatment, cut back the discharge. So that we stay
7 within the acceptable load discharge. And I assume
8 that's understood.

9 MR. PETER REDVERS: Peter Redvers. I'm
10 going to ask what might be a foolish question, but just -
11 - I need the clarity on it.

12 MR. DAVE HARPLEY: Can't hear you, Peter.

13 MR. PETER REDVERS: I'm going to ask what
14 might be a foolish question but I -- I need clarity on
15 it.

16 When you're talking about flows, process
17 flows, mine flows, and then you're moving to in-stream
18 concentrations, what was mentioned yesterday that in the
19 water treatment plant as the final stage before release
20 those process water and the mine water is mixed, is that
21 correct? Prior to --

22 MR. DAVE HARPLEY: Correct.

23 MR. PETER REDVERS: -- the clarification?

24 MR. DAVE HARPLEY: Correct.

25 MR. PETER REDVERS: So what is the

1 concentrations of those metals coming out at -- of the
2 treatment plant itself combined, when -- when you run it
3 through the clarification? Is that data included?

4 MR. DAVE HARPLEY: Well, it's effectively
5 included in this -- in this spreadsheet. I could do
6 another column here and combine those two (2) together
7 before mixing with Prairie Creek; that's a simple
8 exercise.

9 MR. PETER REDVERS: That would certainly
10 -- for me, that would be useful just to see what -- what,
11 in fact, is coming out the pipe and then how that changes
12 at that point to what I refer to as the in-stream
13 concentrations, if that's -- if that's an easy thing to
14 do then certainly that will be appreciated to -- to have
15 that added column.

16 THE FACILITATOR: Okay. Is Canadian Zinc
17 committed to preparing that so we can post it on the
18 registry for parties to look at?

19 MR. DAVE HARPLEY: Sure.

20 MR. ALAN EHRLICH: Can -- can you do it
21 within a week? Or do you need more time? By when would
22 you commit to doing that?

23 MR. DAVE HARPLEY: I suspect we can, yes.

24 MR. ALAN EHRLICH: The -- the reason I'm
25 trying to be very specific with deadlines is just to make

1 sure that parties have what they need before their
2 technical reports are due.

3

4 --- UNDERTAKING NO. 6: For Canadian Zinc to provide
5 what is the concentrations of
6 those metals coming out of
7 the treatment plant itself
8 combined, when you run it
9 through the clarification.

10

11 MR. DAVE HARPLEY: So I could con -- I
12 could continue going through these tables but I think
13 you've seen them and you can tell me whether you think I
14 need to go through all of these tables. But essentially,
15 as I said yesterday, the approach we -- we took were --
16 was to develop these site-specific guidelines for these
17 key metals that exceeded the generic guidelines.

18 I -- one change I will make to what I said
19 yesterday is that I should also include mercury in this
20 list because it -- it also exceeded the generic water
21 quality guideline.

22 MR. ALAN EHRLICH: Thank you. We've got
23 a question from Parks Canada.

24 MR. JAMIE VANGULCK: Jamie VanGulck,
25 Parks Canada consultant.

1 Are these five (5) parameters the only ones that are
2 considered by Canadian Zinc to be important to protect
3 freshwater aquatic life in Prairie Creek?

4 MR. DAVE HARPLEY: In addition to the
5 criteria that will be applied to the end-of-pipe numbers,
6 which at this point we've made a proposal and I guess
7 they'll be some consideration on that, as far as in-
8 stream objectives, we would suggest that these five (5)
9 metals plus mercury, making it six (6), and in addition
10 to that, consideration of ammonia concentrations based on
11 CCME.

12 MR. JAMIE VANGULCK: Jamie VanGulck,
13 Parks Consultant. The one (1) followup question to that
14 is: Has there been an assessment of major ions and other
15 metals to address if there will be impacts to freshwater
16 aquatic life in Prairie Creek?

17 MR. DAVE HARPLEY: Major ions in the
18 sense that we have included the predictions in the IR
19 responses. I'm not sure -- we haven't really considered
20 an assessment of the impacts per se. Many of them don't
21 actually have guidelines. So I'm not sure how we would
22 go about assessing the impacts from those.

23 The other metals, I believe, we have
24 assessed in the sense that they're mostly substantially
25 below CCME guidelines, so I'm assuming they're not

1 considered an issue.

2 MR. NATHEN RICHEA: Richea, INAC Water
3 Resources. I have a whole bunch of thoughts, but -- but,
4 anyhow, I'll start with the one that was -- when I raised
5 my hand the first time.

6 I did my homework last night as well, and
7 one (1) of the -- I guess the first question, and it's
8 probably not relevant anymore, is what was the dilution
9 factor that you used to calculate the instrument
10 concentrations. But that's changed so it's probably not
11 relevant. And we'll get that with the additional
12 information.

13 But in the documentation for the bold
14 areas it seemed to me that that assessment boundary was
15 around the Harrison Creek area within Prairie Creek, so a
16 relatively short distance around where the point
17 discharge was. I'm assuming it probably had to do with
18 the application of diffuser and the fact that it would
19 actually mix more readily with Prairie Creek water.

20 With the new proposed discharge, I -- it
21 seems under the low flow condition it -- that assessment
22 boundary's almost 1.6 kilometres or 1.3 kilometres
23 downstream from Prairie Creek, and I just want to
24 highlight that that's a limitation of the discharge
25 mechanism. It's something that we'll have to look into,

1 obviously, further, but I just wanted to flag that for --
2 for everyone because this is sort of new information that
3 everyone will need to assess.

4 MR. DAVE HARPLEY: Well, the mixing zone
5 wasn't defined so -- per se before. We've only now
6 looked at the mixing zones. So, yes, that mixing zone
7 information is new, but the rest of the information is as
8 it was before. We have changed from a diffuser approach,
9 which would have been approximately 50 metres upstream
10 from the catchment pond, to a location that's adjacent to
11 the catchment pond. So the discharge has slightly
12 changed in that regard, but we never discussed the size
13 of the dilution zone before.

14 MR. NATHEN RICHEA: Nathen Richea, INAC
15 Water Resources. Thank you for that because that's kind
16 of along the lines of what I was trying to get at
17 yesterday, and, I guess, part of today's, the objectives
18 and how the release of effluent in the receiving
19 environment will actually dictate how you manage the
20 water onsite.

21 If the -- the mixing zone is up to a
22 kilometre downstream from the point of discharge, the
23 potential exists for, under the flow condition, for
24 chronic effects to occur in Prairie Creek from the point
25 of discharge to up to 1 kilometre downstream of the point

1 discharge. So it's something that I -- we'll all have to
2 assess, and hopefully we can continue with the
3 presentation, and I won't stop you, but...

4 MR. DAVE HARPLEY: Dave Harpley. What I
5 will add, you probably haven't had a chance to review the
6 -- the mixing zone calculation, but what I did notice
7 from it is that the mixing is in fact better in winter
8 than it is in summer because the -- the width of the
9 creek is narrower, so the mixing is, occurs more rapid.
10 So from a -- from a chronic toxicity point of view, the
11 mixing's actually better in the wintertime during low
12 flows.

13 MR. JAMIE VANGULCK: Jamie VanGulck,
14 Parks Canada consultant.

15 This Table J-2 shows predictions of copper
16 and selenium above your in-stream objectives and your
17 mitigating measures to correct that would be to reduce
18 the discharge into Prairie Creek at the mine site. I
19 haven't seen in the DAR how that impacts the mine site
20 components for flows and storage, and if it's actually
21 feasible to accomplish that over a season so that your
22 water balance is not cut.

23 Am I incorrect in that assessment?

24 MR. DAVE HARPLEY: I guess you could say
25 that it's partially correct in the DAR, but it was

1 addressed in the DAR addendum in terms of the storage
2 capacity of the water storage pond, and how much
3 flexibility we have to store water given the -- the
4 variation in the -- the water balance that I showed you,
5 you know, about half an hour ago.

6 MR. JAMIE VANGULCK: Jamie VanGulck,
7 Parks consultant. In order for an assessment of the
8 discharge scenario to actually achieve concentrations in
9 Prairie Creek that are protective of fresh water aquatic
10 life, there is no calculation that demonstrates that
11 you're actually able to achieve that. And I appreciate
12 what you're saying, that there may be the information
13 available in the water balance that shows that you have
14 storage, but there isn't a demonstrated calculation that
15 shows that you can actually achieve these in-stream
16 concentrations.

17 I'm sure one could go back and, if they
18 had the tools available to them, calculate it to see if
19 it's possible. But, as a reviewer, I don't think that's
20 on my shoulders to have to complete. I would say that it
21 would be important to demonstrate that the in-stream
22 concentrations can be met on site, or different
23 conditions, so that freshwater protection can be achieved
24 at Prairie Creek.

25 MR. ALAN EHRLICH: Just for clarity. Are

1 -- are you asking Can. Zinc to do this?

2 MR. JAMIE VANGULCK: Jamie VanGulck,
3 Parks consultant. Yeah, that would be an Information
4 Request or whatever terms it is here. But it would be
5 helpful to understand the impacts.

6 MR. NATHEN RICHEA: Nathen Richea, INAC
7 Water Resources. We'd be interested in it as well.

8 MR. ALAN EHRLICH: Can Can. Zinc commit
9 to doing that? And if so, Chuck, you know the schedule
10 for this better than I do, when we would it need to
11 happen in time for parties to be able to use the
12 information when preparing technical reports? So, I
13 guess, Chuck, my first question is: By what date are we
14 asking if Can Zinc can do this? And then the question
15 goes to Can. Zinc.

16 THE FACILITATOR: Based on our current
17 schedule, the -- the next step is a second round of
18 Information Requests if required. And so as part of "if
19 required" I would need that by late next week, a response
20 from Can. Zinc.

21 MR. ALAN EHRLICH: David, can Can. Zinc
22 provide that by late next week? Or, more importantly,
23 will Can. Zinc provide that by late next week?

24 MR. DAVE HARPLEY: Yes.

25

1 --- UNDERTAKING NO. 7: For Canadian Zinc to
2 demonstrate that the in-
3 stream concentrations can be
4 met on site, or different
5 conditions, so that
6 freshwater protection can be
7 achieved at Prairie Creek.
8

9 MR. ALAN EHRLICH: Thank you. Is there
10 follow-up?

11 MR. JAMIE VANGULCK: Jamie VanGulck.
12 Just a follow-up. If you could please produce those
13 results for the tables provided in Appendix J so that we
14 can see what the concentrations would be at Harrison
15 Creek as well as all the way through to the Park's
16 boundary.

17 MR. ALAN EHRLICH: Would that be okay,
18 David?

19 MR. DAVE HARPLEY: I'm just wondering if
20 we need to do them all.

21 MR. JAMIE VANGULCK: Well, I'm definitely
22 in the parks boundary, that's the primary concern for
23 Parks Canada.

24 MR. DAVE HARPLEY: I -- I'm thinking more
25 about the -- the list of parameters. I mean, many of

1 these parameters we did just because we were asked to,
2 not that we thought that they were necessary.

3 MR. JAMIE VANGULCK: Jamie VanGulck. I
4 am interested in any parameter that can -- that is
5 necessary to look at so that freshwater protection for
6 aquatic life is achieved in Prairie Creek.

7 Your assessment that you came to,
8 identifies the five (5) on, at Table J-1. You've
9 mentioned mercury as being a parameter as well as
10 ammonia. I'm -- as a separate issue, I'm -- I'm
11 wondering if other parameters are important or not but I
12 don't want to confuse this topic beyond any other point.
13 It would be helpful to understand what is happening with
14 some of those major ions as well as other parameters.

15 THE FACILITATOR: And, INAC, does that
16 suit your needs? Do you have anything to add to that?

17 MR. NATHEN RICHEA: Nathen Richea, INAC,
18 Water Resources. Yeah. I guess the only thing I was
19 going to say at the time was we've added more onto that
20 was they were requested probably because they were
21 important as part of the review process. So I would say
22 that we would probably would need all of them, if not
23 additional.

24 THE FACILITATOR: So does Can. Zinc
25 commit to providing that by late next week?

1 MR. DAVE HARPLEY: Well, I -- I --
2 repeat the question. I think it's a little avoiding my
3 question in terms of what parameters we're talking about
4 here, because do we consider antim -- antimony to be an
5 issue? There's no guideline for it. Do we consider iron
6 to be an issue? They were asked for and then -- then --
7 they're in these tables.

8 MR. ALAN EHRLICH: Canada Parks, can you
9 please provide a response?

10 MR. JAMIE VANGULCK: Jamie VanGulck,
11 Parks Canada. I would believe that it's the developer's
12 responsibility to demonstrate what is important and what
13 isn't important in terms of water quality parameters to
14 assess impacts. If you are confident that these other
15 parameters will not have an impact, and there has been an
16 associated assessment to back that up, that would be one
17 (1) thing.

18 But I'm not too sure if you've provided
19 that sort of risk assessment to understand the impacts of
20 these other parameters on the downstream water quality
21 environment. I haven't seen something like an ecological
22 risk assessment that may ad -- address these further. I
23 have seen some sort of comparison to guidelines.

24 MR. ALAN EHRLICH: So the question again
25 is -- is Can. Zinc prepared to provide that for late next

1 week, with apologies for the short timeline, but we just
2 don't want to risk having to extend the EA, because
3 parties haven't had time to deal with the information.

4 MR. Dave Harpley: Yeah, I believe I
5 already answered that.

6 MR. ALAN EHRLICH: I'd just make sure in
7 light of that last clarification you're still on side
8 with that.

9 MR. DAVE HARPLEY: It doesn't help me,
10 but we'll continue.

11

12 --- UNDERTAKING NO. 8: For Canadian Zinc to produce
13 those results for the tables
14 provide in Appendix J what
15 the concentrations would be
16 at Harrison Creek as well as
17 all the way through to the
18 Park's boundary.

19

20 MR. ALAN EHRLICH: Thanks. Next I'm
21 going over to Parks Canada. I'm sorry, Department of
22 Fisheries and Oceans Canada.

23 MS. LORRAINE SAWDON: Lorraine Sawdon,
24 Fisheries and Oceans. Just to follow that last
25 conversation up, we do not think that the five (5)

1 parameters Canadian Zinc has identified are the only ones
 2 of concern. For us, we're very concerned about
 3 nutrients, TDS, and PDS (phonetic) downstream. We think
 4 that Canadian Zinc needs to consider background levels
 5 when looking at proposing effluent criteria and being
 6 very clear on where those criteria are going to be met
 7 within the downstream environment.

8 I would also caution that there needs to
 9 be some thought put into what guidelines are being used
 10 and why. It may or may not be appropriate to be using
 11 different values. So clear rationale should be given.
 12 And I think, as the regulators, we also need to assess
 13 whether or not CCME are the appropriate values to look at
 14 in this environment.

15 MR. ALAN EHRLICH: David...?

16 MR. DAVE HARPLEY: Lorraine, can you
 17 expand on what you mean by appropriate values? Or
 18 appropriate criteria is maybe what you said.

19 MS. LORRAINE SAWDON: There's been a lot
 20 of conver -- sorry, Lorraine, DFO. There's been
 21 conversation that, they -- you know, CCME guidelines
 22 aren't going to be exceeded. And my comments are that
 23 CCME guidelines have been established, but you need to
 24 look at the background levels in Prairie Creek when
 25 looking at what your end effluent is going to contain, or

1 your -- your -- your compliance targets are going to be.
2 You need to look at the background in Prairie Creek so
3 that you can determine what the potential impacts are
4 downstream.

5

6 (BRIEF PAUSE)

7

8 MR. ALAN EHRLICH: I'd like to remind the
9 parties, and, particularly, INAC and DFO, because I know
10 you both will have regulatory duties should this project
11 proceed, that the information we're looking for here, I
12 trust, is what you need to work out your significance,
13 your predictions about potentially significant impacts.
14 And that it's not just fishing for information you'll
15 need later on for your regulatory responsibilities.

16 Is that right, DFO?

17 MS. LORRAINE SAWDON: Lorraine Sawdon,
18 Fisheries and Oceans. We're asking for this information
19 so that we can make a determination on significance and
20 can provide that to the Board during the hearing.

21 MR. ALAN EHRLICH: That's helpful. I'm
22 going to just ask INAC to clarify. Are you also asking
23 for the same purposes?

24 MR. NATHEN RICHA: Yeah. It's Nathen
25 Richea, INAC Water Resources. We wouldn't want to go

1 down this road if we didn't think it was relevant or
2 appropriate for an environmental assessment. So I --
3 that's all I have to say.

4 MR. ALAN EHRLICH: Okay. And the reason
5 why I'm sparing Parks the same question is because they -
6 - their regulatory responsibilities in this case, I don't
7 think, deal as directly with water quality. Am I right?
8 Yeah, they're -- they're indicating that's correct.

9 While I've got the microphone I've --
10 before we get on to water quality in detail, I have a
11 question I've been holding back on from your -- the --
12 the diagram you put on earlier. It has to do with water
13 balance and -- and considering precipitation.

14 When you were working out what your flows
15 would be during freshet, were you basing that on historic
16 precipitation rates or were you basing that on current
17 climate trends? Environment Canada, over the past couple
18 of years, has been pushing people to use the current
19 climate trends as something that's a more realistic
20 indication of what we can expect than using historic
21 climate rates when the historic averages don't match the
22 current trends.

23 MR. DAVE HARPLEY: Dave Harpley. We used
24 a combination, old and new, to make assumptions. But I
25 think the more relevant point is we demonstrated in the

1 balance that the balance is not sensitive to changes in
2 precipitation or evaporation because they're a very small
3 component of the overall balance.

4 MR. ALAN EHRLICH: And my understanding
5 based on what I saw there was your mine water is -- I
6 think it was 50 litres per second. I -- did I get the
7 unit correct on that?

8 MR. DAVE HARPLEY: That's right.

9 MR. ALAN EHRLICH: But I think I heard
10 yesterday that could be up to 90 litres per second. That
11 there was some range in that. I'm thinking in terms of
12 accidents and malfunctions right now, what is the highest
13 rate of mine water flow that the system is designed to be
14 able to deal with?

15 MR. DAVE HARPLEY: What do you mean by
16 "system"?

17 MR. ALAN EHRLICH: I'm specifically
18 thinking of the -- the former tailings ponds in terms of
19 their capacity to hold water so that you can control its
20 quality prior to release.

21 MR. DAVE HARPLEY: We kind of covered
22 this yesterday.

23 MR. ALAN EHRLICH: So --

24 MR. DAVE HARPLEY: So --

25 MR. ALAN EHRLICH: -- my question again

1 is: What's the highest level of --

2 MR. DAVE HARPLEY: I understand your
3 question --

4 MR. ALAN EHRLICH: -- level of --

5 MR. DAVE HARPLEY: -- yeah. Let me
6 answer. The -- the treated mine water, and you can see
7 here in this table, is 41 litres a second. That's based
8 on a flow of 50 litres a second coming out of the mine.
9 And on a monthly basis that produces approximately a
10 hundred thousand (100,000) metre cubed. Okay.

11 If we have minimum pond level of eight-
12 seven-seven (877) and a maximum of eight-eighty (880),
13 that's the two twenty thousand (220,000) storage. So you
14 can see there by -- and if the mine flow were to be a
15 hundred (100) then that -- this quantity here would be
16 approximately two hundred (200). So we'd basically have
17 a month of storage for mine water in -- in the large
18 pond.

19 MR. ALAN EHRLICH: If there turns out to
20 be a fair bit more water coming out of the mine than is
21 predicted, and remember I'm not talking about plant
22 operations, I'm talking about accidents and malfunctions.
23 In other words, surprises. I know it's a tricky area in
24 terms of CARST (phonetic).

25 If you have more water coming out of that

1 mine than predicted, suppose you get, I don't know, a
2 hundred and fifty (150) litres per second instead of a
3 hundred (100) or a lower number of -- what would you do
4 with the water once the former tailings pond is full?

5 MR. BYARD MACLEAN: Byard MacLean. SNC-
6 Lavalin. The -- the mine water treatment plant
7 would -- is currently designed for a hundred (100) litres
8 per second and it has space in the building for extra
9 tankage to go to 200 litres per second. And it has space
10 approximal to the existing building to expand it beyond
11 that.

12 What's important to recognize is this is a
13 very small power consumer, so in the event of some major
14 crisis where the major power plants went down and -- and
15 all manner of other things, where the entire facility was
16 shut down but we were still dealing with water, temporary
17 gensets could run that plant just like the gensets they
18 have there now. We'd only need several hundred kilowatts
19 fuel, and -- and they only generate enough -- I mean
20 consume enough fuel that you could actually fly that fuel
21 in. So, for extended periods of time, the -- the very
22 simple water treatment plan could deal with those types
23 of problems.

24 MR. ALAN EHRLICH: That would work even
25 if you had 150 litres per second coming out of the mine?

1 MR. BYROD MCLEAN: Yes, if -- if you had
2 200 litres coming dir -- directly out of the mine, it
3 would flow directly into the -- the process plant, be
4 treated, and it goes through the clarifier and be
5 discharged as per the -- the design.

6 MR. ALAN EHRLICH: Okay, thanks. The
7 other question that I had yesterday that, David, you
8 asked me to save for today had to do with the kinds of
9 flood events that your -- your system is -- is designed
10 according to.

11 Is this system designed according to a
12 twenty (20) year flood event, fifty (50) year flood
13 event, a hundred year flood event? It's, again, in -- in
14 terms of risk assessment of accidents and malfunctions
15 that I ask this.

16 MR. BYROD MCLEAN: Byrod McLean again.
17 I'm not actually sure of the answer to your question, but
18 Kilborn Engineering designed the plant originally, which
19 is now a unit of SNC-Lavalin. And I'm sure it was
20 designed to some reasonable amount, but I'm sure that we
21 can de -- someone will know the answer to that question.
22 But it was -- it was a standard engineered twenty (20)
23 year or hundred-year event, but we can find that out.

24 MR. ALAN EHRLICH: The -- the reason that
25 I ask is because the design specifications have changed

1 over time on that as a part of learning from some very
2 serious problems at other mines. And so what I'm
3 interested in then is -- is getting that information
4 before the end of next week if possible, again, so that
5 it can feed into parties before technical reports are
6 due.

7 As well, it would be helpful to know if
8 when they did that their predictions were based on
9 average levels or climate trends. Thanks.

10 MR. DAVE HARPLEY: Just can you repeat
11 that question again? I missed the first part of it. I
12 was playing on my laptop here.

13 MR. ALAN EHRLICH: It's -- it's --

14 MR. DAVE HARPLEY: Which -- which thing -
15 - which design component are we talking about?

16 MR. ALAN EHRLICH: I'm talking about
17 water balances in light of -- of potential accidents and
18 malfunctions, and I'm speaking specifically to flooding.
19 Mines in the past have been designed --

20 MR. DAVE HARPLEY: So is this the erosion
21 or the flood protection berm or the high floods in
22 Prairie Creek?

23 MR. ALAN EHRLICH: Or -- or possibly
24 flooding into your -- the former tailings ponds which are
25 now water holdings ponds. I don't know if I've got the

1 terminology correct on that. But if -- if more water is
2 going to go into those due to something that's -- that
3 hasn't been planned as a part of normal operations, it
4 would be nice to know of the likelihood so that we could
5 do a proper evaluation of the risk of that.

6 MR. DAVE HARPLEY: Okay, well, the -- the
7 water storage pond is going to be re -- redesigned,
8 reconfigured, which will include upstream diversions.
9 So, effectively, it will not have any catchment.
10 Currently it has a very small catchment upslope. But
11 once it's been revised, there'll be no catchment. So
12 we're talking about incident rainfall.

13 So I'm not sure a designed-year situation
14 comes into play except for incident rainfall. And, as I
15 mentioned, you have a great height of wall -- of water
16 that could be absorbed in that pond.

17 MR. ALAN EHRLICH: Oh, I, in that case,
18 encourage you to spell out the mitigations to flooding,
19 but it would also be helpful to know to what
20 specification for flooding this site has been designed,
21 if it's a twenty (20) year, fifty (50) year, or a hundred
22 year design. It shouldn't be a difficult thing to get
23 from your engineering. It's a fairly basic figure of
24 mine engineering.

25 MR. DAVE HARPLEY: I'll have a sidebar

1 discussion with you, I thi -- I think, because I think
2 it's -- we're getting confused here.

3 MR. ALAN EHRLICH: Okay. And I would
4 encourage you, when you produce this, to also describe
5 the other mitigations you've -- you've just mentioned to
6 -- to help people understand not just the potential
7 severity, but also the -- the likelihood, which those
8 mitigations would likely reduce.

9 MR. DAVE HARPLEY: Okay.

10 MR. ALAN EHRLICH: Those are my
11 questions. Are there other questions from parties here?

12 THE FACILITATOR: Thanks. There's one
13 (1) question first here, and then we'll go over there to
14 the --

15 MR. DAVE HARPLEY: If I could interject
16 for a second, Monique, are you on the line?

17 MS. MONIQUE DUBE: Yes, I am.

18 MR DAVE HARPLEY: I would suggest that we
19 focus on asking Monique questions and dealing with
20 aquatic issues because she's only available until 12:00.

21 THE FACILITATOR: Okay. Hello, Monique,
22 on the teleconference. Can you state your full name and
23 who you represent, please, just for the transcription
24 record? Thanks.

25 MS. MONIQUE DUBE: I -- sorry, I'm having

1 a real tough time hearing you folks. Quite a -- quite an
2 echo. So I'm just kind of struggling to hear you.

3 MR. ALAN EHRLICH: Sorry, Monique, we're
4 having a -- a sound problem with the telephone. We've
5 had them before, we've been able to work them out.
6 Please bear with us for a couple of minutes.

7 Can you try repeating what you just said,
8 we'll hear if the mics pick it up. Monique, could you
9 please repeat what you just said? We're going to see
10 whether or not the microphone picks it up this time.

11 MS. MONIQUE DUBE: Actually, I just -- I
12 -- I can barely understand what you're making out to me.
13 I hear my name, but that's about it.

14 MR. ALAN EHRLICH: We can hear you loud
15 and clear now. Can you please repeat what you said?
16 Thank you.

17 MS. MONIQUE DUBE: There, I can hear that
18 nice and -- and clear. I was having quite a bit of
19 difficulty hearing with the -- the echo. I really can't
20 -- I can hear the voices but I can't make out what
21 they're saying.

22 UNIDENTIFIED SPEAKER: Can you hear that?

23 MS. MONIQUE DUBE: That was great. Yeah,
24 I hear that loud and clear, thank you.

25 THE FACILITATOR: Okay. In -- because of

1 technological difficulties, people who have questions
2 specifically for Monique, if they can please come up to
3 the table here and ask them. Okay. So part of the
4 reason we have Monique on the line is to discuss the AEMP
5 monitoring and source term predictions.

6 If you'd want to, David, to introduce what
7 Monique will -- will speak to, that would be great.

8 MR. DAVE HARPLEY: Monique Dube is with
9 University of Saskatchewan. She's a professor there, and
10 was responsible for developing the site specific
11 guidelines. So if parties have questions on the
12 derivation of the guidelines, and consideration of
13 regulatory guidelines in general, this would be the right
14 time to pose those questions.

15 MS. ANNE WILSON: It's Anne Wilson. I
16 just wanted to let you know that Eric Allan (phonetic)
17 from the Environmental Effects Monitoring Program has
18 joined me and -- on the telephone here.

19 MS. MONIQUE DUBE: Oh, great. Hi, Anne.

20 MS. ANNE WILSON: Hi, Monique. Should --
21 shall I go ahead, Chuck, and just outline some of our
22 concerns with the AEMP as proposed?

23 MR. FACILITATOR: Actually, Anne, we've
24 got Nathen here in line just in front of you and you can
25 go after him, okay.

1 MS. ANNE WILSON: Go for it, Nathen,
2 thanks.

3 MR. NATHEN RICHEA: Hello. Can everyone
4 hear me? Monique, can you hear me?

5 MS. MONIQUE DUBE: I can, yes.

6 MR. NATHEN RICHEA: Okay. Good. My name
7 is Nathen Richea and I work with the Water Resources
8 Division, Indian and Northern Affairs. I guess I just
9 have a few questions. It's kind of awkward, because I'm
10 moving around the room, but anyway, I guess first off, I
11 did review your aquatic effects monitoring final plan
12 that was submitted June 2nd, 2010.

13 And I was following through the document
14 and I think you did a really good job of actually
15 demonstrating why monitoring is important and -- and some
16 of the complications that we may have for monitoring of
17 this undertaking. But I -- I do -- I did notice a few
18 disconnects sort of with sort of monitoring that we do
19 typically for developments in the north, and also
20 disconnects sort of with INI -- INAC's aquatic effects
21 monitoring program guidelines that were released in June
22 of 2009.

23 I guess first off I should ask you, are
24 you aware of INAC's guidelines for aquatic effects
25 monitoring programs?

1 MS. MONIQUE DUBE: Yes, I -- I read
2 through the -- the guidelines, and I have to pull them up
3 here again, to speak to them literally. But when I read
4 through them there was nothing there that was a -- a
5 surprise to me.

6 MR. NATHEN RICHA: Thank you. It's
7 Nathen Richa, with INAC, Water Resources. All right.
8 Thanks for that. I guess one (1) of the first questions,
9 and it -- it kind of relates to a bit of a disconnect,
10 is, I think in the document you're proposing a sort of a
11 surveillance network program monitoring to be occurring
12 as the -- the development happened.

13 And that would be sort of the only type of
14 monitoring that you're proposing. Is that correct?

15 MS. MONIQUE DUBE: No, I don't think
16 that's correct. I think that any well planned and
17 strategic monitoring program would include a thorough
18 baseline monitoring to establish what is normal, carry
19 over of that design during construction and post-
20 development so the ultimate objective of measuring change
21 upstream, downstream, before and after, can be realized
22 in a -- in accordance with the philosophy we've adopted
23 for EEM, as well as the philosophy that's typical for an
24 effects based monitoring to detect change.

25 MR. NATHEN RICHA: Nathen with INAC

1 Water Resources.

2 So I -- I guess then I was wrong in my
3 assumption. So you are saying that you will be
4 conducting sort of EEM type monitoring as part of
5 operations and as well, if required, sort of, an aquatics
6 effective monitoring program. Is that correct?

7 MS. MONIQUE DUBE: That is my
8 understanding, yes.

9 MR. NATHEN RICHEA: All right. It's
10 Nathen with INAC Water Resources. All right. Thank you
11 for that, because that was one (1) of the first questions
12 I had.

13 I guess the question kind of stemmed from
14 -- I was reading through your document and I think you
15 mentioned somewhere that if you exceeded effluent quality
16 criteria, then that would be the trigger for sort of a
17 monitoring plan or a monitoring program. That was just -
18 - maybe that's where I was getting that from. So I stand
19 corrected.

20 If -- if you could say that -- I think
21 you've just indicated you're -- you're committing to
22 doing sort of a monitoring program, and that's -- that's
23 good. So I don't have any more questions about that
24 aspect.

25 MS. MONIQUE DUBE: Yeah. Understanding

1 of the indicators we're talking about, how -- how we're
2 going to measure and assess change, and then the
3 responses that will occur as a result of any changes that
4 have been measured.

5 I've seen many sites across Canada, mine
6 sites, where there's been extensive biological monitoring
7 done but not in a -- in an approach that was really a
8 change-based assessment or was used to trigger any
9 particular response, which to me is -- is as -- is not --
10 I mean that's -- that's not as effective as, you know,
11 even a -- a water quality based monitoring program that's
12 not change-based and tied to -- to triggers for actions.

13 So I think what's required is an
14 understanding of what effects-based monitoring is and
15 making sure that the -- the monitoring design is
16 sufficient to detect change in the key indicators. Have
17 actions tied to those changes and have, I guess, you
18 know, not -- not needing to go full blown cadillac right
19 off the top, but recognizing that as changes are detected
20 and as triggers are triggered, if indeed they are, that
21 there is a commitment to increased intensity of
22 monitoring, assessment and decisions to account for that.

23 Does that answer your question?

24 MR. NATHEN RICHEA: Yeah, thank you.

25 It's Nathen with INAC Water Resources. I was actually

1 very glad to hear you describe that in such a well-versed
2 way. Because we tend to -- I agree with you, there's a
3 number of monitoring programs that tend to be
4 implemented, maybe not so much just in the north but in
5 other areas where you end up in a situation where you're
6 monitoring for the sake of monitoring and that's not
7 really an effective approach to conduct, you know,
8 monitoring in general.

9 So I guess the -- one (1) of the
10 complexities or one (1) of the difficulties I have with
11 designing sort of a monitoring program for this,
12 obviously, you know, Anne can jump in at any time,
13 they'll be some requirements under the effluent -- or
14 sorry, the effluent effects monitoring, EEM monitoring,
15 that are -- regulations that you need to follow. But
16 also how we'll be able to sort of design a program such
17 that it can be sensitive enough to indicate what level of
18 response is needed to ensure that the environment is
19 being protected in the downstream environment.

20 Over the past few days we've had some
21 discussions on what the potential impacts are of
22 discharging effluent from the mine, be it from different
23 sources, during the course of the year and some of the
24 complexities with mixing and -- and things. And I think
25 sitting down and -- and starting to get the ball rolling

1 on this will go a long way for ensuring that the process
2 is -- is no -- not further delayed.

3 Like I understand AEMP -- like to finalize
4 the sort of monitoring program for -- for the mine may
5 not actually incur -- occur until the regulatory phase.

6 But in our guidelines that we developed
7 and finalized last -- last summer, I guess June of 2009,
8 we identify a number of steps that are to be undertaking
9 -- undertaken for developing a monitoring program, and
10 the first three (3) steps are something that we thought
11 during the design stage of the Aquatic Effects Monitoring
12 Program guidelines that are something that should begin
13 to occur in the environmental assessment stage.

14 And the idea is that, because during the
15 environmental assessment we identify the stressors, the
16 potential stressors, it can be -- it can be chemicals,
17 but they can also be other types of stressors, such as
18 temperature, water quantity, that kind of stuff that
19 could come from the mine, and then pathways for how those
20 stressors could influence conditions in the downstream
21 environment.

22 And because we talked about a lot of that,
23 typically, in an environment assessment process, it would
24 be most appropriate to deal with those kinds of things
25 and help get the foundation for the monitoring program

1 underway --

2 THE FACILITATOR: Nathen, can we -- be --
3 because we only have Monique for a short period of time,
4 can we have specific questions, please?

5 MR. NATHEN RICHEA: Yes. So the only
6 question I have is that we would like to sit down with
7 you and work on the first three (3) steps. It's nothing
8 -- it's something that hasn't been provided yet and it's
9 something that -- that we see appropriate for this
10 process.

11 So I guess that's the only question. And
12 I hope the response is that, yes, so they can sit down
13 with us and help work on this.

14 MS. MONIQUE DUBE: I -- I think, you
15 know, certainly, you know, there's a real great
16 understanding of how the approach is taken through the
17 EIA process in terms of monitoring, you know, stressor-
18 based versus effects-base processes. And I guess what
19 we've been advocating is that I think that both
20 approaches are necessary but they need to be done in an
21 integrated manner.

22 The EEM type program design is an effect-
23 base design, as you know. The environmental assessment
24 process tends to work from a stressor-based perspective.
25 And I -- I really think that to be conservative and --

1 and thorough and -- and well integrated in a one (1)
2 window type approach, both of those need to be brought
3 together.

4 And all of the building blocks are in
5 place at this site to do that, so I don't see any
6 challenges whatsoever in terms of designing a program
7 that -- that meets the needs that you've described.

8 MR. NATHEN RICHEA: Nathen Richea, INAC
9 Water Resources. So in response, yes, you will be
10 willing to sit down, not just with INAC, but maybe with
11 Environment Canada or folks from the EEM office to work
12 on that?

13 MR. ALAN EHRLICH: Monique, it's -- it's
14 Alan Ehrlich here from the Review Board. So the question
15 is: Does that mean you agree to sit down with them and --
16 and work on it after?

17 MS. MONIQUE DUBE: Oh, sure. I don't --
18 if -- all -- like I said, all the building blocks are --
19 are in place and the -- the hard -- the hard work's been
20 done, so putting together an integrated monitoring
21 strategy, with all the buildings blocks that we have
22 here, is -- is really not an issue at all, so the answer
23 to that is, yes.

24

25 --- UNDERTAKING NO. 9: For Monique Dube to sit down

1 with INAC and Environment
2 Canada to work on the three
3 steps.

4
5 MR. ALAN EHRLICH: Okay, thanks. And we
6 know Anne Wilson has a question, but I think David
7 Harpley would like to -- like to add something to that.

8 MR. DAVE HARPLEY: I don't think maybe
9 Monique understands what that question was. The question
10 was, as I understand it, some regulators want part of the
11 monitoring plan spelled out within the EA process before
12 a decision is made.

13 And so I think the question to you,
14 Monique, is: Is it appropriate to do that, or can it
15 wait until after the EA process?

16 MR. ALAN EHRLICH: Monique...?

17 MS. MONIQUE DUBE: I'm sorry, I can't --
18 can you repeat that, please, David?

19 MR. DAVE HARPLEY: Can you hear me?

20 MS. MONIQUE DUBE: Yes, I can.

21 MR. DAVE HARPLEY: I think the question
22 was: Is it appropriate, in your opinion, to start down
23 the road of development of a EEM, AEMP programs within
24 the EA process, or do you think that it can all be
25 initiated after the EA process is complete?

1 MS. MONIQUE DUBE: I -- think the earlier
2 that you start and the more aligned that the -- that the
3 partners are around the table, the better off that --
4 that the whole group is. So the sooner that that process
5 can begin, the stronger the program you have.

6 MR. ALAN EHRLICH: And I'll -- I'll flip
7 that question back to INAC. INAC, in -- in your view, is
8 the information you've asked for about the Monitoring
9 Program relevant potentially to significant impacts?
10 Nathen...?

11 MS. MONIQUE DUBE: And I can't hear that.

12 MR. ALAN EHRLICH: No, no, that's
13 directed at --

14 MR. NATHEN RICHEA: Nathen Richea, INAC
15 Water Resources. Yeah, I -- I -- it's a very difficult
16 one to answer but I'll try my best.

17 Yes, it is important as part of the
18 environmental assessment to get this done at this stage
19 not completed, obviously, but initiate the discussions
20 and get some concepts on the table. Because in the event
21 that we can't come up with a monitoring program to
22 determine with we're having effects on the downstream
23 environment, there is a potential for significant adverse
24 effects.

25 One (1) more thing I wanted to add to that

1 is through the development of preparing our guidelines
2 for monitoring programs, in the context of the north and
3 the EA and the regulatory phase we -- we found time and
4 time again that if we don't start to get the ball rolling
5 as part of the environmental assessment, potential exists
6 to basically reinvent the wheel when we hit the
7 regulatory phase, which can cause delays.

8 And if we're already sort of talking about
9 potential effects and how we're going to manage effects
10 in the environment in the environmental assessment, it
11 would be a good opportunity to -- to build on that as
12 part of the process so we don't start doing it over again
13 in the regulatory.

14 MR. ALAN EHRLICH: Thanks, Nathen.
15 You've indicated to me you don't have any other
16 questions, that's right? Okay.

17 Anne, do you have any other questions for
18 Monique Dube or Canada Zinc in general?

19 MS. ANNE WILSON: Okay. It's Anne Wilson
20 here, and I've got (INDISCERNIBLE) as well. I have two
21 (2) points that I wanted to bring up with respect to the
22 AEMP, and I do support Nathen's points as well. It is
23 important to have good confidence in the proponent's
24 ability to detect change and act upon it in the
25 environmental assessment stage. So that's why I'm -- I'm

1 glad we're looking at this now.

2 So with respect to the documents submitted
3 by Monique and others on the program, I would like to
4 back up a little bit on when the AEMP is going to be
5 implemented. I'm not comfortable with having it as a
6 reactive situation where you have an exceedance in the SE
7 -- SNP and then go to aquatic monitoring.

8 If you do that, I think you're likely to
9 miss other changes that are going on in the environment
10 and not have a good sense of what your receiving
11 environment is doing independent of the mine impacts. So
12 rather than have tier 1 followed by tier 2 being the AEMP
13 and the EEM, I would have those two (2) side-by-side.
14 But as Monique says, have the intensity reflect what
15 you're seeing.

16 The other aspect I had concerns with was
17 detecting in the indicators impacts. I would like to
18 have changes detected before they become impacts so that
19 we would keep a close eye on the water quality and keep a
20 close eye on trends so that you can see where that's
21 going before you actually see changes in the organisms.

22 So I -- I'll just stop there and see what
23 comments Monique or the company might have at this point.

24 MS. MONIQUE DUBE: From my perspective I
25 -- I think we're all talking about the same thing. I --

1 I think that -- that any -- anyone with a background in -
2 - in design of monitoring programs and measuring change
3 and determining if those changes are important or not
4 understands that there has to be a solid baseline, there
5 has to be a solid ongoing understanding of what is normal
6 and what is outside of normal. And it -- so that if
7 there's a change, what is the magnitude of the change.
8 Is it trending? Is it getting better? Or is it getting
9 worse in key indicators so that supporting indicators
10 such as water quality but then indicators like the
11 biological monitoring which are -- are really the
12 organisms that are -- are integrating multiple responses.
13 So I don't -- I don't think that we're talking about
14 different things. I

15 I think we understand that we need good
16 before and then we need a good ongoing program. They --
17 those need to be consistent and how changes are measured.
18 More development during development, after development,
19 and an ongoing basis has to be a consistent process where
20 we agree to how we calculated, quantify normal on a local
21 basis, perhaps on a more regional basis; that we don't
22 inflate the variance of normal so that there's never a --
23 a potential to detect change if one does, indeed, exist.

24 So, again, I don't -- I don't think we're
25 talking about different things, I think we're talking

1 about different things, I think we're talking about the -
2 - the same thing. And I'm 150 percent confident that a
3 program can be designed and implemented to meet the -- to
4 meet the needs that are -- are desired here by the group.

5 MS. ANNE WILSON: Okay. It's Anne
6 Wilson. Thank you for that. It does sound like we're --
7 we're not going to disagree on that at all.

8 The other aspect I was thinking about was
9 the harmonization between the AEMP and the environmental
10 effects monitoring. At this stage, we don't want all the
11 details outlined, it's just a matter of having a
12 framework that shows where you can gain some efficiencies
13 between the programs where there isn't going to be
14 duplication or -- and it's in the company's interest to
15 have single reporting so that we are using similar
16 detection limits, similar parameters, and just have a
17 more integrated program.

18 I know in Tier 2 you did have
19 environmental effects monitoring listed with the AEMP,
20 just not really too much on the details as to how that
21 would be -- be included.

22 MS. MONIQUE DUBE: Right. And I think
23 that's just because it wasn't clear in terms of how --
24 how much detail we need to get in at this point. But
25 certainly if the decision is made to get into details,

1 you know, right away, there's -- there's no problem, we
 2 have the ability to do that. I completely agree with you
 3 that common indicators, detection limits, how you define
 4 "normal." You know what's coming out of the pipe versus
 5 what you're measuring in the environment, all those
 6 things have to align or you're not going to be able to
 7 detect changes if they do or don't occur in the different
 8 environmental components.

9 When you refer to EEM, I think this is
 10 just a language thing, are you talking about the federal
 11 regulatated -- regulated program or are you just talking
 12 about an effects-based monitoring in general that
 13 includes the EM but may also include compliance
 14 monitoring under the AEMP?

15 MS. ANNE WILSON: No, I'm just thinking
 16 of the MMER --

17 MS. MONIQUE DUBE: Okay.

18 MS. ANNE WILSON: -- the regulatory
 19 requirement to be harmonized.

20 MS. MONIQUE DUBE: Okay. Yeah. I -- I
 21 think that any -- any leading monitoring programs and --
 22 that are currently being implemented in the north are
 23 harmonized -- harmonized rates right now. So I -- I
 24 don't think that that's -- I think that's very consistent
 25 (INDISCERNIBLE). MR. ALAN EHRLICH: Anne, it's Alan

1 here. I -- I trust that in your technical report you'll
2 -- you'll make it clear how this relates to the -- to
3 potentially significant impacts so that it's not just a
4 regulatory aside.

5 MS. ANNE WILSON: It's Anne Wilson.
6 Thank you Alan for keeping us on track here. As I said
7 upfront, the ability to -- to detect change is key to our
8 confidence and so the aspect of the EEM is more in line
9 with just efficiencies and doing it right upfront. If we
10 have a good program then it should include all the
11 regulatory compliance aspects. So, I don't have any
12 further questions or comments so I can turn it over to
13 the next mic.

14 MR. ALAN EHRLICH: Thanks, Anne. Peter
15 Redvers is indicating he has a question. I'm going to
16 ask him to sit up here near the telephone microphone so
17 that Monique can hear him properly.

18 MR. PETER REDVERS: Peter Redvers, with -
19 - representing the Naha Dehe Dene Band. Just a -- a
20 little bit of concern, I guess, in terms of I'm dealing
21 with a community that has a limited amount of resources
22 to participate in the different processes that are
23 available to it and, therefore, has to really choose to
24 focus on those things that are of immediate relevance to
25 the decisions that are -- need to be made.

1 And my understanding from the discussion
2 that took place yesterday and also this morning, that
3 we're still a little ways to go in the EEA process,
4 particularly with respect to some of the water quality
5 issues and mitigation of impacts, because we're still --
6 I mean, my understanding is the first thing that we need
7 is a really clear description of what's happening at the
8 point of discharge and, in this case, what has happened
9 immediately downstream of the point of discharge, given
10 that we're -- Canadian Zinc is proposing to work with
11 this in-stream concentration method, and we still don't
12 have the plume or the mixing data. So we're still at
13 that point of really understanding what is happening in
14 terms of the discharge.

15 And the next part of that then is to --
16 knowing that or having a better understanding of that
17 begin to predict impacts and begin to look at those and -
18 - and, you know, where there is baseline work that needed
19 to be done, we would assume that that is being done
20 relevant to the ability to predict impacts. And as a
21 part of that that we then need to look at the
22 significance of those impacts.

23 And certainly from a community
24 perspective, that's ultimately where I've been directed
25 to follow through on, is really an assessment of the

1 significant of impacts, recognizing that it's likely
 2 there may be some, that the community has the perspective
 3 that it has the ability to weigh the significance of
 4 those impacts in relation to the benefits that this
 5 project would provide to the community.

6 Where the significance of im -- where
 7 there is significance of impact, such that added measures
 8 need to be taken, then, of course, the -- the next step
 9 is -- is really to look at additional mitigative
 10 requirements to ensure that those impacts are below what
 11 is considered to be a problem -- problematic; certainly
 12 from a regulatory point of view, but also from a
 13 community point of view.

14 Without really understanding sort of where
 15 we're at with those issues, and -- and given sort of
 16 timing, and certainly resources with respect to the
 17 community having to sort of follow or participate in an
 18 AEMP development process, it might be taxing the
 19 community a little bit. Although it might run parallel to
 20 this, to have that as a part of an act -- an active part
 21 of the -- the AEM process is certainly going to stretch
 22 the resources somewhat.

23 Secondly, the community is, and we will be
 24 discussing this tomorrow, is really wanting to move to
 25 engage and build some capacity in relation to monitoring

1 would be, and it may -- is that is it the timing of the
2 AEMP, I -- the discussion is about when that can start.
3 Certainly everyone would agree that -- and I would agree
4 that earlier rather than later. I guess the point I
5 have, I -- maybe it's not a question. I'm simply
6 pointing out that that may be a little problematic.

7 Certainly if that was happening parallel
8 to the EA process, but left a -- a little bit longer
9 until some of these other -- the community has used its
10 resources to deal with the more immediate issues, and --
11 and is able to access some resources to be a part of that
12 process would be more helpful, so it doesn't get left
13 behind.

14 MR. ALAN EHRLICH: Than -- thanks, Peter.
15 And Joe Acorn has indicated he's got a question. He's
16 just going to come up to sit near the telephone mic as
17 well.

18

19 (BRIEF PAUSE)

20

21 MR. JOE ACORN: Hi, it's Joe Acorn from
22 Dehcho First Nations. I think it's just a simple
23 question. Your paper is written in June, and the develop
24 -- the -- it states:

25 "The discharge of treated water

1 directly to Prairie Creek would be via
2 a -- a diffuser."

3 And that's the basis for the developer's
4 assessment report as well.

5 I'm just wondering, the switched now from
6 a diffuser to a -- basically just a -- a pipe in reliance
7 on a -- a dilution zone in the river, which we haven't
8 seen the plume study yet, but apparently the longest
9 dilution zone for one (1) of the parameters is up to 1.6
10 kilometres downstream from the ex -- from the outflow
11 point.

12 So what I'm wondering is: Does that
13 switch in operations of how the -- the outflow gets into
14 the environment, will that change your paper in any way,
15 or how do you see -- see that changing the design of the
16 SMP or the aquatic effect monitoring program?

17 MS. MONIQUE DUBE: Did you want to answer
18 that, David, or did you want me to?

19 MR. DAVE HARPLEY: Go ahead, Monique.

20 MS. MONIQUE DUBE: Sorry?

21 UNIDENTIFIED SPEAKER: Go ahead.

22 MS. MONIQUE DUBE: I think that -- I
23 think what needs to be considered is where the monitoring
24 locations are relative to the -- relative to the
25 diffuser. And making sure, I guess, that we -- we -- we

1 are aware of -- I guess we're -- we're -- we have
2 stations located to pick up the spatial extent of the --
3 of the discharge.

4 One point six kilometres is -- is
5 certainly, you know, not -- not a distance that I'm
6 unfamiliar with that's for sure. I don't expect that it
7 would change the report in terms of the receiving
8 environment conditions. Although I would have to -- I
9 think as part of the ...

10

11 (PHONE CONNECTION DISCONNECTED)

12

13 MR. ALAN EHRLICH: Monique, if you can
14 hear us, we just had some kind of a technical glitch.
15 Are you still out there?

16 Okay. If everyone can just standby for a
17 minute here, we're going to try and sort this out.

18

19 (BRIEF PAUSE)

20

21 MR. ALAN EHRLICH: Great, we found you.
22 Sorry about that, our telephone conference seems to have
23 timed out or something like that. It's straightened out
24 now.

25 Paul Green from INAC Water Resources has a

1 question. But I think, Monique, were you in mid-answer
2 when you got -- when you got cut off?

3 MS. MONIQUE DUBE: And it was a really --
4 it was a really good answer too, I might add.

5 MR. ALAN EHRLICH: Well, why don't you
6 take it from the top.

7 MS. MONIQUE DUBE: I guess the point is
8 is that I -- I don't expect that the report to change but
9 what we need to include in the -- in the monitoring
10 program is ensuring that our -- our spatial locations for
11 the monitoring take into account the spatial extent of
12 the plume to ensure that if in-stream concentrations are
13 different based on the extent of the plume, we have the
14 ability to -- to measure and detect that.

15 So does that answer your question?

16 MR. ALAN EHRLICH: Joe is nodding
17 indicating "yes." Joe, do you have any follow-up or are
18 you okay? Joe is indicating that he doesn't have any
19 follow-up.

20 Here's Paul Green from INAC Water
21 Resources.

22 MR. PAUL GREEN: Hi, Monique. Can you
23 hear me all right?

24 MS. MONIQUE DUBE: Not too badly.

25 MR. PAUL GREEN: Okay. The first

1 question is a follow-up from -- from Nathen Richea, he
2 just asked me to confirm.

3 Just on page 13 of your plan, just to
4 confirm that the Tier 1 and the Tier 2 will happen
5 simultaneously? That's the routine SMP and the AEMP?

6 MS. MONIQUE DUBE: Will happen which?

7 MR. PAUL GREEN: At the same time. Not
8 one (1) triggering the next, but that they -- they will
9 happen concurrently.

10 MS. MONIQUE DUBE: Yes, I believe they --
11 I believe that they -- they have to, yes.

12 MR. PAUL GREEN: Okay. Thank you.

13 My second question just relates to the
14 calculation of the in-stream or the -- the site-specific
15 criteria. And I -- I -- you know, I recognize that what
16 you're trying to do and the methodology you've used and
17 it's -- it's not unreasonable. I guess the question I
18 have is regarding the data itself.

19 There are a number of the parameters,
20 cadmium and mercury, and several others, that there are a
21 lot of non-detects. And a lot of these non-detects are,
22 you know, at -- at the high -- so you've treated them by
23 saying we'll assume half of the detection limit, which
24 is, you know, fairly standard in many cases.

25 But the concern that I have, and it's been

1 raised by our consultant as well, is that including these
2 numbers as part of your mean and standard deviation may
3 be affecting, you know, the numbers you get. And as an
4 example, you know, with cadmium, you -- you calculate
5 your mean as point zero four eight (.048). And there are
6 a number of the data points that have been included are
7 non-detects at point -- you know, there's a few at point
8 one (.1), a few at point zero five (.05) and that sort of
9 thing. One (1) at point two (.2). And I'm -- and that
10 will -- there's two (2) things that I'm -- two (2) things
11 perhaps; one (1) to skew the mean up and also to alter
12 the standard deviation; perhaps make it appear larger
13 than it is.

14 But I guess my question is: Are there
15 alternate methods that might be more appropriate in this
16 situation given that there are a lot of non-detectable
17 data points and that -- that may provide an in-stream
18 number? Or are -- are you pretty -- yeah, I guess that
19 would be the question.

20

21 (BRIEF PAUSE)

22

23 MS. MONIQUE DUBE: Okay. Well, I think
24 that this -- this is an age old discussion, when you have
25 a detection limit there are some that take it at the

1 detection limit, there are some that remove the number
2 altogether, there are some that take half of the
3 detection limit, and then there are some that do an
4 interpellation.

5 But, to do the interpellations so that
6 you're not, you know, taking half -- I mean, the
7 detection limit puts you anywhere between zero and the
8 detection limit, so the interpellations procedure allows
9 you, based on the data that you do have, to interpret
10 where that -- that value would lie in a more accurate way
11 than saying half.

12 However, you need enormous amounts of
13 data. And the only group that I've ever seen use the
14 interpellation method is a publication from a group of
15 academics with an extraordinary data set. And I haven't
16 -- Genevieve Carr (phonetic) who was with Jems Water
17 (phonetic) and is now actually with -- with INAC working
18 on the Beaufort file, which is in Ottawa, we've talked
19 about it a lot and we've yet to see anyone have the level
20 of data required to do the interpellation procedure in a
21 manner that would be accurate.

22 So now then let's talk about how using
23 these data could affect the numbers, keeping in mind that
24 the -- the data that we're using is all baseline data and
25 we're using data from both a local reference condition as

1 well as a regional reference condition to increase our
2 sample sizes. And if we were to take the numbers -- I --
3 I think leaving the numbers out, I think, is not -- is
4 not repre -- representative. I think taking the numbers
5 at zero is obviously not representative. I think taking
6 the numbers at the detection limit is not representative.
7 So by taking it at past the detection limit, we're
8 actually being more conservative in interpreting what
9 those site-specific objectives are than if we took the
10 number at the detection limit.

11 In other words, the objectives that we are
12 suggesting are actually lower than they would be if we
13 took the number and calculated the average and the
14 variance based on the detection limit itself. So based
15 on -- on -- you know, I've done a lot of work calculating
16 site-specific objectives and I've applied them to many
17 different data sets, and I think based on what's out
18 there in terms of methodology and statistical procedures
19 right now, the approach that's been adopted is -- is the
20 way to go.

21 And I'm -- I'm comfortable that the --
22 half the detection limit inclusion is being conservative
23 and is not inflating the variance or making it any
24 larger. It's -- it's being representative and -- and
25 conservative. So I'm -- I'm pretty confident in that

1 approach.

2 Did that answer your question?

3 MR. PAUL GREEN: Yes. I'll take that
4 you're confident in the approach and that you're happy
5 with the numbers that you've been generated as going
6 forward. But -- yeah.

7 THE FACILITATOR: Thank you. Chuck
8 Hubert, Review Board. Are there further questions while
9 we have Monique on the line?

10 MR. ALAN EHRLICH: And I don't know if
11 you -- you might have not caught that. We're just
12 looking around the room for further questions.

13 Anne's on the line for another ten (10)
14 minutes. Is there anyone else who has any questions for
15 her?

16

17 (BRIEF PAUSE)

18

19 THE FACILITATOR: Okay. Given that, what
20 we'll do is take a break now for lunch. But I've been
21 advised by Can -- Canadian Zinc that we have tech --
22 technical advisors from Canadian Zinc who have to leave
23 today. And we would like to make use of their time here
24 and make use of their availability. So if there are
25 parties that have questions, fair questions specific to

1 groundwater and geochemistry we will go possibly half an
2 hour after lunch still on that topic or even a little
3 more into the other subjects in order to make use of
4 these consultants' time.

5 Is -- a question's been made: What about
6 closure? Closure is actually a -- was on the agenda for
7 the third day. However we can, if you want -- if you'd
8 like to ask a question related to that we can certainly
9 do that at this time since it is groundwater,
10 geochemistry related.

11 Is that -- is that okay with everybody?
12 Okay. Let's proceed with that then. And what we'll do
13 in this case, as well, is take a shorter lunch break. So
14 what I'd like to do is get everybody back by twenty (20)
15 to one (1). So a lunchbreak until twenty (20) to one
16 (1). Thanks.

17 MR. ALAN EHRLICH: Anne, did you catch
18 that? Lunch break at twenty (20) to one (1) -- till
19 twenty to one.

20 MS. ANNE WILSON: Thank you.

21

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22      --- Upon recessing
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23 --- Upon Resuming

24

25 THE FACILITATOR: Welcome back everybody.

1 If we can please take our seats now, Ladies and
2 Gentleman, we'll continue.

3 MS. ANNE WILSON: Anne Wilson.

4 THE FACILITATOR: Prior to lunch we had
5 decided that we would continue per -- perhaps a half and
6 hour or forty (40) minutes or longer depending on what
7 the questions are like on water quality and water
8 quantity, specifically, groundwater and geochemistry
9 issues. If -- and I'd like to proceed with those -- that
10 topic at the moment. If -- if we could do that -- we'll
11 take questions on those subjects right now, please.

12 MS. ROCHELLE DRUMM: Rochelle Drumm,
13 WESA. My question is a kind of a follow-up question to
14 Allan's earlier inquiry about increased mine inflows and
15 the mine's ability to treat and discharge. From what I
16 understand what was said that the treatment capabilities
17 can be increased enough to handle mine inflows greater
18 than two hundred (200) litres per second.

19 I was wondering if the discharge rates can
20 be sustained throughout the year during low and high
21 stream flow rates, as well over a long period if -- if
22 these mine inflows continue long term that are greater
23 than the maximum hundred litre per second expected values
24 that you've got now?

25 MR. DAVE HARPLEY: Dave Harpley. Have

1 you still got ad -- eardrums?

2 I don't believe it can, yes, because the -
3 - the treated mine water quality is relatively good and
4 that's why we're able to discharge it year round.

5 MS. ROCHELLE DRUMM: Thank you. I have
6 one (1) other question if -- it's Rochelle Drumm from
7 WESA.

8 In the tables in Appendix J it appears
9 that the zinc concentrations in the in-stream will not be
10 a problem during mine operation. In the hydro-geological
11 report from Robertson GeoConsultants in the DAR there's a
12 description of the zinc concentrations in Prairie Creek
13 currently. And there's mention there that in low stream
14 flows during the winter that the zinc concentrations can
15 range from about -- I think it was eighteen (18) to
16 thirty (30) micrograms per litre, which is above what the
17 site-specific guidelines are at twenty-two point six five
18 (22.65).

19 There is also mention in that report that
20 there's a monitoring well just down gradient from
21 Harrison Creek confluence that has high zinc
22 concentrations that over nine hundred (900) micrograms
23 per litre.

24 And so my question to you is: Are you
25 investigating this current exceedence or problem with

1 zinc in greater detail, or trying to mitigate it. And
2 could this reflect what may occur throughout the mine
3 operation as well as post-closure?

4 MR. CHRISTOPH WELS: Christoph Wels for
5 Canadian Zinc.

6 Also we have discussed this in the DAR and
7 in our Robertson reports to the potential causes. And
8 the potential causes are bypass of the -- of some seepage
9 from the tunnel with very high zinc in the immediate
10 vicinity of this area. That's -- that's one (1)
11 possibility. A -- a definite possibility is the
12 untreated discharge during the winter, which has, again,
13 very high zinc, and that will infiltrate when it melts.

14 Both of these scenarios will not occur
15 during active mining and during post-closure. So those -
16 - if this is a source of those elevated zinc, that would
17 not be the case once we go have an approved project.

18 The other potential would be that it's
19 discharge from the ford and if that was the only source
20 creating those high zinc concentrations, we have actually
21 used that zinc load with those zinc concentration, with
22 those zinc flows, to calibrate the current flow model,
23 and have carried the same analogy forward into the
24 predictions of post-closure and the post-closure
25 predictions you have, which show at Appendix J.

1 So we are consistent in saying that, at
2 least according to all our assumptions that are laid out,
3 if our assumptions are correct we believe that this
4 current scenario is worse than active mining and also is
5 worse than post-closure.

6 Does that answer your question?

7 MS. ROCHELLE DRUMM: Yes, it does answer
8 my question partially. I'm also interested in just
9 knowing if you do have a current plan to address further
10 investigation into this groundwater plume that's
11 impacting the creek presently.

12 MR. CHRISTOPH WELS: This is Christoph
13 Wels again. We are investigating it in a sense that we
14 continue monitoring. And I've requested, and we are
15 doing this, that Prairie Creek monitors again the -- not
16 only the groundwater quality but also doing a stream
17 survey in the area to see whether the discharge of
18 groundwater from the MQV into Harrison Creek, whether we
19 can detect this.

20 And that we missed measuring the flows --
21 we did a survey in June but the flows weren't measured;
22 it was too high, we couldn't measure in Harrison Creek.
23 So we're repeating this now in September, or actually
24 October now, as soon as this is over I believe. The
25 hearing is over, then we can go back to the field to try

1 to repeat. And this is also a better period because it's
2 low flow. Trying to establish whether the -- the zinc
3 concentrations that you mention which are in the alluvial
4 aquifer, whether they're coming from the Harrison Creek
5 alluvial aquifer, which would mean it comes from the MQV
6 or whether that's coming from this seasonal discharge of
7 untreated mine water.

8 So we have plans in place to -- to further
9 identify the exact source of that. We are not currently
10 anticipating doing like a contaminant transport or
11 anything like that to -- to look at the -- the plume or
12 anything like that, if that's what you're meaning, no.
13 But in terms of identifying the source of that zinc, yes.

14 MS. ROCHELLE DRUMM: Okay, thank you.

15 MR. ALAN EHRLICH: Any other questions on
16 the subject?

17 THE FACILITATOR: Thanks. If we can
18 continue then with either geo -- groundwater or
19 geochemistry. Or perhaps questions that were thought of
20 but -- but never occurred when we skipped to water
21 quality monitoring. That would be great.

22 MR. JAMIE VANGULCK: Jamie VanGulck,
23 Parks Canada consultant.

24 This isn't a question about groundwater or
25 geochemistry, I'd like to -- to move back a little bit

1 with the -- a follow-up on stream water quality that's
2 protective of aquatic life.

3 Earlier today Canadian Zinc presented a
4 table, 8.7 in the DAR, that looked at process mine water
5 quality and comparison to some standards that may be used
6 to understand aquatic life protection, and I got a
7 question about that specific table.

8 In particular, this -- this seems to be a
9 way of screening to see if -- what parameters are
10 important for freshwater aquatic life protection. Could
11 the developer comment on the impact or the contribution
12 of Prairie Creek background concentrations to the
13 selection of these screened parameters, that is basically
14 the basis of moving forward to understand what to look
15 for in terms of aquatic life production?

16 MR. DAVE HARPLEY: Dave Harpley. We did
17 not consider background concentrations in the screening.

18 JAMIE VANGULCK: Jamie VanGulck, Parks
19 Canada Consultant. The protection of aquatic life in
20 Prairie Creek is very important and should consider, in
21 my mind, the contribution of massive contaminants from
22 either the process or mine water and also in combination
23 with the background Prairie Creek concentration.

24 Yesterday we talked about appendix J and
25 there was other metals and some major ions and nutrients

1 that were also looked at to -- and compared to in-stream
2 objectives that were produced. The developer yesterday
3 said that those in-stream objectives would not be applied
4 for this case. At least that was my understanding for --
5 for objectives.

6 I'm a bit confused at the moment what
7 exact parameters and their respective concentrations is
8 protective of aquatic life in Prairie Creek. And I would
9 suggest that a simple table with just parameters and
10 concentrations that are protective of aquatic life be
11 presented in -- in -- as an information response.

12 MR. ALAN EHRLICH: Can Can. Zinc commit to
13 providing that?

14 MR. DAVE HARPELY: Dave Harpley.
15 Canadian Zinc will commit to consider it.

16
17 --- UNDERTAKING NO. 10: For Canadian Zinc to provide
18 a simple table with just
19 parameters and concentrations
20 that are protective of
21 aquatic life re Prairie Creek
22 be presented as an
23 Information Response. (Under
24 Consideration)
25

1 MR. ALAN EHRLICH: Parks, is that
2 information needed for you to figure out your position in
3 terms of potentially significant impacts on this?

4 JAMIE VANGULCK: Jamie VanGulck, Parks
5 Canada. One (1) of the criteria that I would look at to
6 assess potential impacts on Prairie Creek would be the
7 criteria that would be selected for protection of aquatic
8 life, and comparing that to the discharged concentrations
9 or the predicted concentrations in Prairie Creek.

10 Without that -- those two (2) values I
11 can't assess if there's impacts or not. So in short,
12 yes, it's a -- it's a critical piece of information
13 that's needed to assess impacts.

14 MR. ALAN EHRLICH: Can. Zinc, in light of
15 that, are you willing to do more than just consider it?
16 Are you willing to provide it?

17 MR. DAVE HARPLEY: I'm not going to make
18 an off-the-cuff comment now. We will consider it and get
19 back to you.

20 MR. ALAN EHRLICH: Can you get back to us
21 some time today?

22 MR. DAVE HARPLEY: Possibly not, but
23 within the next few days. So maybe early next week.

24 MR. ALAN EHRLICH: Okay. I'd hope that
25 you can do it in the next short time just because parties

1 have very little time left in our process to prepare
2 their technical reports and if the information doesn't
3 give them adequate time to do that, we -- we don't want a
4 pile of -- of rulings on process that slow everything
5 down and -- and really don't -- don't help us have a
6 timely process.

7 Our Board's quite mindful of its
8 responsibility to have a -- a timely process, and of
9 course that's in -- in Can. Zinc's interest, as well.

10 MR. DAVE HARPLEY: We're well aware of
11 what's at play.

12 MR. ALAN EHRLICH: Nath -- Nathen Ritchea
13 -- Ritchea?

14 MR. NATHEN RICHEA: Hi. It's Nathen
15 Ritchea with INAC Water Resources. We'd also be
16 interested in a table as part of our impact assessment
17 for the undertaking -- I guess, project. I shouldn't say
18 undertaking.

19 MR. ALAN EHRLICH: Okay, thanks. Any
20 other questions on -- Wendy Botkin of Parks Canada?

21 MS. WENDY BOTKIN: Yeah, this -- this
22 isn't a water question. It's just a question to the
23 Board staff. I understand this is being transcribed, but
24 are the specific commitments that are being agreed to, is
25 that -- is that going to be a separate table or something

1 that -- that will be available so we can -- so we can
2 track it without going through the transcripts? I mean,
3 we're tracking our own, but it's just a suggestion.

4 THE FACILITATOR: Yes, at the end of the
5 transcripts there's typically a table that itemizes all
6 of the commitments that have been made by the developer
7 or other parties. So, yes, at the end of each day's
8 transcript there will be. And we have a question or two
9 (2) here on water quality or one of the issues.

10 MR. RAMLI HALIM: Sorry. Ramli Halim with
11 Hatch, consultant to Review Board. I have a question.
12 Basically, this is related to the question that Alan
13 asked just before the lunch. This is about the extreme
14 condition of water balance. But I'm not going to go to
15 the extreme condition related to the flood, things like
16 that, but I would like to know some information about the
17 plan, what happened in the earlier part of the operation,
18 that you're going to have some tailings that -- coming up
19 on the ground, but, at that time, you're not planning to
20 do the -- the pace backfilling at that -- at that period
21 of time.

22 And the question is, the addendum of --
23 mentioned that the amount of tailings that are going to
24 be put into the wa -- water storage pond is quite small.
25 They mention about seven (7) percent, seven (7) or ten

1 (10) percent of the capacity. However, could you
2 actually explain a little bit more in terms of the
3 scheduling for the tailing that -- what happen if this
4 thing is not going to happen during that period, amount
5 of time, that you have to wait a little bit more for the
6 tailings before they'll be able to start with the base
7 backfill production going on.

8 Could you provide those information?

9 MR. BYARD MACLEAN: The mining plan at
10 startup -- by -- this is Byard MacLean. The mine plan at
11 startup, there is no space for backfill, so we have to
12 develop some stopes and get that material out of there
13 and make room for it. And the mine plan contemplates
14 that somewhere up to fifty thousand (50,000) tonnes of
15 mining has to take place, or -- or that much material
16 after going through the pace plant -- the DMS plant, is
17 required to make adequate space so we could start
18 backfilling. And that's the ba -- the basis for it, so
19 we've put it in at -- we've allowed for that amount of
20 material at the far west end of the tailings pond.

21 MR. RAMLI HALIM: Ramli Halim with Hatch,
22 consultant to the Review Board. That quantity that you
23 mentioned of fifty thousand (50,000) cubic metre or -- is
24 that including some kind of contingency in case that you
25 won't be able to start your base backfill right away?

1 And the problem is would -- going to have any impact for
2 the volume on the tailing -- the water storage pond if
3 you have to put more tailings temporarily before you'll
4 be able to start with the tailing production, the base
5 backfill production?

6 MR. BYARD MACLEAN: Byard MacLean. The
7 mine plan has estimated for us the maximum amount of
8 space they need in their early mine plan in order to make
9 space, and that -- they've set that number at -- at fifty
10 thousand (50,000) tonnes, which is something like thirty-
11 five thousand (35,000) cubic metres, and so the -- the
12 contingency was built into their estimate.

13 MR. RAMLI HALIM: Okay, I don't have
14 other question. Thank you.

15 THE FACILITATOR: Thank you. Do we have
16 any further questions water quality, quantity, ground
17 water, geochemistry related? Microphone's on its way?

18 MS. ROCHELLE DRUMM: Rochelle Drumm,
19 WESA. It's mentioned in the hydro-geological report that
20 it's likely or pretty -- it's going to happen that
21 Harrison Creek will be permanently dried up in a section
22 of it once mine de-watering reaches a certain level.

23 My question is: Is this considered a
24 significant impact, and has it been reviewed?

25 MR. CHRISTOPH WELS: Christoph Wels, for

1 Canadian Zinc. I just want to point out before Dave goes
2 into the -- what -- what is considered an impact, the --
3 I didn't like the wording, that it is definitely
4 guaranteed to happen. We're doing groundwater modelling
5 here, and I would not -- my -- in my experience, I would
6 not say that will happen.

7 We have highly simplified the system and
8 we don't know what the permeability is below Harrison
9 Creek to connecting with Harrison alluvial aquifer. We
10 don't know whether the high permeability, we assume which
11 is conservative, is actually in that area of Harrison
12 Creek going to be the case that we assume.

13 So I would actually be a little bit
14 surprised if that Harrison Creek dries up. So I just
15 want to make sure. I'm not saying it will not happen.
16 We assume that because we consider this to be a
17 conservative planning for -- for the mine, but I just
18 don't like the wording that it will happen, okay.

19 MR. DAVE HARPLEY: Dave Harp -- Dave
20 Harpley. Harrison Creek already goes subterranean
21 upstream of the mill, so, from that respect, there --
22 it's no additional impact.

23 MS. ROCHELLE DRUMM: Rochelle Drumm,
24 WESA. Does it go subterranean year round in that area?

25 MR. DAVE HARPLEY: No, during drier

1 periods, in the summertime, and, of course, during the
2 winter.

3 MS. ROCHELLE DRUMM: Ro -- Rochelle
4 Drumm, WESA. I -- I understood from your rationale of
5 why you reduced the mine inflow rates from two hundred
6 (200) litres per second down to a hundred litres per
7 second was the fact that Harrison Creek couldn't con --
8 couldn't sustain that amount of recharge. And so, for
9 that reason, have you reduced it from 200 litres per
10 second in your analysis, which would imply that Harrison
11 Creek is going to be dried up permanently during mine
12 operations?

13 MR. CHRISTOPH WELS: Yeah, Christoph Wels
14 again. That's correct. Again, I just want to emphasize
15 that we are always going along the conservative side of
16 things. So assuming that Harrison Creek is perfectly
17 hydraulically connected to a very permeable fault, then
18 we would have a mean annual flow of around a hundred
19 litres a second, okay.

20 That doesn't mean it will occur. Maybe
21 the flows -- the mean annual flow into the mine could be
22 a lot less at a hundred litres a second. I still
23 consider even a hundred litres a second a somewhat
24 conservative estimate because it relies on the fact that
25 all of Harrison Creek water flows into the mine.

1 And it's a rela -- it's not that big a
2 zone, so that all that stream water has to rush into that
3 one (1) fault. And it's a very conservative, highly
4 simplified groundwater model that we produced to come up
5 with these estimates. And I'm not convinced myself that
6 that will actually occur.

7 MS. ROCHELLE DRUMM: Rochelle Drumm,
8 WESA. Due to the fact that there is uncertainty,
9 shouldn't it still be something that's considered in your
10 evaluation of impacts? If this were to occur, what is
11 the impact of drying out part of the creek year round?

12 MR. CHRISTOPH WELS: It's Christoph Wels
13 again. It's my understanding -- I haven't been on the
14 site year round, but it's my understanding that Harrison
15 Creek discharges into Prairie Creek only for about two
16 (2) months, which is -- Dave can correct me if I'm wrong.
17 So we have nine (9) months or so there is no flow from
18 Harrison into Prairie Creek. Only under high flows you
19 see that discharge. It's a diverge -- it's not even a
20 real creek anymore.

21 We're talking about an alluvial fan which
22 incised by an -- an engineer channel to the side of the
23 mill where that water is rushing to the side at high flow
24 only into Prairie Creek. So the only impact I could see
25 that -- I -- I'm sure there's no fish, but I'm not a fish

1 expert. But the only impact is there's a -- is that if
2 this was all to occur and Harrison Creek will disappear,
3 there'll be less water discharging from the Harrison
4 Creek valley into Prairie Creek.

5 Now, we're talking about a high flow
6 scenario because on a base flow it's -- it's not -- it's
7 happening as service water anyway. So the -- the
8 contribution of Harrison Creek to the Prairie Creek's
9 surface water flow is, I believe, around a tenth. So the
10 -- if you want to have an answer, assuming all of this
11 would occur, the impact would be that you have about 10
12 percent less flow at that location in Prairie Creek,
13 ultimately.

14 MS. ROCHELLE DRUMM: Rochelle Drumm,
15 WESA. Yes, I guess my concern was more with the fish
16 habitat, if there happened to be fish habitat during that
17 part of the year where water does run through that
18 section of Harrison Creek. That's my one (1) concern.
19 Thank you.

20 MR. NATHAN RICHEA: Thank you. It's
21 Nathan Richea with INAC Water Resources. I just wanted
22 to touch on, I guess, a general concept. And I think the
23 general concept was something that was being discussed
24 there, understanding that the model is based to be
25 conservative and that there may be flow and there may not

1 be flow, and to be conservative, you've -- you've taken
2 into consideration that potentially Harrison Creek could
3 go completely underground.

4 And -- and tha -- and that's fine, but a
5 major component of an environmental assessment is if
6 something could occur onsite, even if the -- the scale of
7 the change is small in nature, it needs to be described
8 whether there is an impact or there isn't an impact.

9 And I think that's a major disconnect that
10 we have through this process so far is I think the
11 company's comfortable that they can manage the -- the
12 mine such that they can discharge and not have a change
13 or an impact. But as a reviewer, you look at that and
14 say, well, there could be changes. I can't quantify how
15 the -- how the changes will actually occur. In -- in the
16 absence of that information in the assessment report,
17 we're made to jump to conclusions.

18 And I just wanted to highlight as -- as a
19 concern, it's not that it's going to happen or it's not
20 going to happen, but if it happens, then as -- in a
21 conservative type of approach, you need to describe what
22 the impacts of that potentially happening.

23 You know, it's similar if you want to talk
24 to the one (1) -- the one hundred (100) year flood event.
25 It's similar if you want to talk to other aspects that

1 could potentially happen onsite. You need to investigate
2 what the changes from those occurrences could be and
3 whether those changes will lead to impacts.

4 I understand everyone wants to make sure
5 that everything's protected, but that's what we're --
6 sort of the information that's missing, and it's hard for
7 us to assess. We're finding all these little things that
8 we're trying to pinpoint questions at, but it's been
9 assumed that it would be minimal, and it's not discussed.
10 Or it may not actually happen, so then we not tou -- they
11 don't necessarily touch on, in the level that reviewers
12 need, to conduct an assessment.

13 MR. CHRISTOPH WELS: Yeah, it's Christoph
14 Wels -- Christoph Wels, for Canadian Zinc. I'm just
15 going to speak to the specific you -- you raised as -- as
16 a multitude of deficiencies. I'm going to talk just
17 about the last question just to keep it down to something
18 quantifiable.

19 I don't see -- I'm not with you on this
20 one, honestly, because we have said that Harrison Creek
21 will lose all of -- all of its water, so I don't know how
22 we did not express that impact. It's -- you know, you
23 speak a lot in generalities. And I -- we have described
24 it. Your consultant has -- has asked the question
25 because she read it in the DAR, so I'm not quite sure

1 where you're getting at, that -- that's it's -- it's not
2 described, okay.

3 I don't know whether Dave wants to add.

4 MR. BYARD MACLEAN: Another -- Byard
5 MacLean. An associated issue is you -- you point at
6 miscellaneous additional sources of water coming into the
7 mine. And we keep telling you that we've designed a
8 water treatment system that can deal with increased flows
9 well above what we're talking about because that is --
10 you know, when you asked what if -- what -- what do you
11 do in the event of that, we turn up the -- the flow to
12 the water treatment plant.

13 MR. NATHEN RICHEA: Nathen Richea, INAC
14 Water Resources. I guess I got two (2) separate
15 responses. The first response is to Mr. Wels. When my -
16 - when the consultant asked you a question about whether
17 the Harrison Creek would actually flow into the
18 underground you said that it likely won't flow into the
19 underground first -- as your first response.

20 Then you went to describe the model and
21 how you -- you tended to be conservative that you
22 accounted for all the flow to go into the underground.
23 And then in your -- in the response our consultant kinda
24 said, well, what are the impacts of that? And you
25 described, you know, maybe it's 10 percent of Prairie

1 Creek. That's good to hear as part of this process, but
2 the analysis of that type in nature, not specifically to
3 that component, but in nature, is missing in the
4 developer's assessment report.

5 So I'm not criticizing, you know, the
6 aspect in it's own, I -- I'm trying to constructively
7 provide comments that help us in the assessment process
8 to understand what the impacts of all these, somewhat
9 maybe unrelated, different things are on the receiving
10 environment, or in a way that we can assure -- be assured
11 that they -- we are protective.

12 In response to the comment on the design
13 of the facilities, what is the one (1) to one hundred
14 (100) year flood event? What is the quantity? It is --
15 you des -- you describe that it's -- it's accounted for
16 in the treatment plant. And I'm -- I'm not saying that
17 it doesn't exist, that you haven't designed that, I don't
18 know what that is.

19 MR. BYARD MACLEAN: I don't understand
20 the correlation between the water coming out from
21 underground and going into the water treatment plant and
22 a one (1) in one hundred (100) flood event in Prairie
23 Creek. I -- I think they're two (2) separate events.

24 MR. NATHEN RICHA: I agree with you they
25 are separate events. I guess where I'm going with the

1 question is we're being told -- or, the developer
2 assessment report describes, how things are being
3 designed on site to be protective. And in some instances
4 the modelling is done in a relatively conservative
5 manner.

6 In others, where it just kind of said,
7 It's designed for that, or we can manage our activities
8 to be protective. But we don't actually have a
9 quantification of what is protective, or what a one (1)
10 to twenty (20) year event is, what a one (1) to a hundred
11 year event is, what a one (1) to two-fifty (250) year
12 event is, and whether we actually -- it is designed, and
13 I'm -- and I'm not saying that it isn't designed, but we
14 can't quantify that as a reviewer because that specific
15 detail is missing.

16 So I'm not questioning -- I wasn't
17 relating inflows to Harrison Creek to a one (1) to one
18 hundred (100) year event. I was relating the concept of
19 what are the impacts of all of Harrison Creek going to
20 the underground on the receiving environment, maybe fish
21 habitat, whatever it happens to be, and then assuming a
22 similar thought pattern, but not related topics, in a one
23 (1) to one hundred (100) year precipitation event or
24 flood event. What does that mean for storage capacity,
25 treatment capacity in -- in the treatment plant?

1 And the developer's assessment report and
2 your responses say, well, we've designed for that. And
3 I'm not questioning that it is or it isn't designed for
4 it. It's not quantified in the document so I -- I don't
5 know -- I can't look at it as a reviewer and say, okay,
6 well, here's the number, this is the design of the
7 treatment plant, here's the contingency, does that fit
8 within there? Yeah, okay, yeah, they have designed for
9 it. I -- I'm relying on a description rather than the
10 quantified -- the quantified details.

11 MR. DAVE HARPLEY: Dave Harpley. Quite
12 frankly, I think we're going around in circles here. And
13 you keep talking in generalities that don't help us and I
14 don't think helps the process. If you have a specific
15 question on a specific facility we'd be happy to address
16 it.

17 I don't think flood protection or flood
18 magnitude is actually relevant in this particular
19 discussion on water quality. We've heard your comments
20 about receiving water and impacts and that consideration,
21 we've noted them, we'll be responding to them.

22 I -- I would urge you to be more specific
23 in your comments so that we can frame our answers
24 appropriately. But we've talked about the water storage
25 pond, we've talked about catchment. We don't see how a

1 flood magnitude actually impacts the water treatment
2 plant and a number of other facilities on site, so if you
3 can be more specific then we can consider a more reasoned
4 answer.

5 MR. ALAN EHRLICH: Are there any more
6 specific questions? I mean, your -- your comments are
7 out there on the record, we've also heard Can. Zinc's
8 views on the comments. Anyone have any other detailed
9 questions for Can. Zinc or comments on this general
10 subject?

11 We're going to have a short break to --
12 two (2) minute break to re-start the teleconference. And
13 -- and then we're going to start on access and,
14 specifically, issues dealing with the route and geo-
15 technical matters.

16
17 (BRIEF PAUSE)

18
19 THE FACILITATOR: Okay. Welcome back
20 from that brief break. And we're going to change gears
21 here and move on with our agenda and discuss the access
22 route, roads specifically -- specifically the route and
23 geo-technical.

24 For the people on the teleconference, can
25 you hear me at the moment?

1 MS. ANNE WILSON: Yes.

2 UNIDENTIFIED SPEAKER: Yeah, I can hear
3 you.

4 THE FACILITATOR: Thank you. We seem to
5 be operational. You'll note with respect to the specific
6 issues regarding access there are a number of general
7 items listed under the subject of acc -- of the access
8 road. And you know, there's quite a diversity of topics
9 there, but -- and some of them overlap. Feel free to ask
10 questions of the developer on -- on these topics and --
11 and they can be in any order of the -- really, of the
12 subjects that are -- that are listed there.

13 Who would like to go first? Oh, sorry.
14 Sorry, one (1) -- thank you very much. If we can have an
15 introduction of the new people who entered from the
16 developer's table, please.

17 MR. ALAN TAYLOR: Yes, sorry. It's Alan
18 Taylor here. We have some more of our consultants here.
19 To my right is Doug Pelly, train analyses; and Steve
20 Moore with EBA, he's a plant specialist; and at the far
21 end is Chris Schmidt with Wildlife.

22 THE FACILITATOR: Thank you very much.
23 Can proceed with questions.

24 MR. PETER REDVERS: Peter Redvers, Naha
25 Dehe Dene Band. I'd just like to mention that the -- the

1 reason the Chief Fred Tesou has been in -- in and out,
2 there's an Elder currently dying, I guess, is the --
3 locally and has come into the hospital here. So family
4 is gathering and one of Chief Tesou's relatives. So he
5 and Jonas Antoine, I think, representing Dehcho First
6 Nations have both gone to tend to that.

7 The -- we don't have any questions
8 relating to routing or the proposed realignments. I
9 think people are aware that the Naha De -- Dene Band
10 suggested some of the re-routing and realignments in
11 those areas to the east of the park boundary and are
12 continuing to work on the assumption that those would be
13 the alignments that are utilized.

14 One (1) question though -- I have -- I'll
15 have a number as this goes along, but maybe I'll start
16 with assuming that there is an acceptance, generally, of
17 the proposed routing. Then the next question relates to
18 the -- to the clearing. It -- in the recent Golder
19 report relating to vegetation and re-growth, it was
20 fairly clear that there had been significant re-growth
21 along the -- those portions of the road that were
22 utilized back in the early 1980's. And then of course,
23 with the realignment there will be some new areas through
24 which -- if -- if that's accepted or agreed upon, the
25 road would -- would go.

1 And I'm not sure how much information
2 there was in the DAR relating to the actual slashing
3 process. And I guess the two (2) issues, our main ones
4 would be the timing and scheduling of the slashing,
5 somewhat of an estimate of volume and use of the -- any
6 merchantable timber that would be pulled off of that.
7 The community may have an interest in -- in all aspects,
8 I guess, of that slashing operation, so if Canadian Zinc
9 could speak to those issues.

10 MR. ALAN TAYLOR: Yes. It's Alan Taylor
11 here. With regards to slashing, a lot depends on where
12 the route is actually finalized and such. And certainly,
13 it being a winter road, avoidance of rutting and such is
14 important. And so, construction -- or, I should say,
15 slashing exercise would not take place until you're on
16 frozen ground.

17 And -- and how we go about slashing; we've
18 got a number of opinion on that one from a leader of
19 winter roads with Klito (phonetic) Construction. And
20 that -- it has been suggested through our previous land
21 use permit with the winter road that we slash and produce
22 wind rows along -- along the side and leave them as is.
23 And there are pros and cons for that. And it's also to
24 chip and leave in the roadbed that's another possibility,
25 or chip and consume through burning. But that would all

1 be done in -- in the -- over the frozen terrain, so
2 that's when that would be taking place.

3 THE FACILITATOR: Thank you. Does that
4 answer your question?

5 MR. PETER REDVERS: Peter Redvers. I
6 guess, partially directed towards ENR at this, I think
7 there is some new regulations coming into place that do
8 speak to the type of clearing that would be associated
9 with road construction incidental.

10 And I'm just wondering if Gavin is willing
11 to maybe comment on the -- those regulations and any Naha
12 Dehe input or involvement in some discussions regarding
13 the -- the slashing process and use of materials.

14 MR. GAVIN MOORE: The incidental -- Gavin
15 Moore, Government of Northwest Territories, Department of
16 Natural Resources.

17 The incidental forest use licence that
18 Peter was just referring to has -- has not yet passed
19 through as to be in place as a regulation, but we do
20 anticipate right now that it will be in place by next
21 spring.

22 However, the other point to this is in the
23 IR response that we provided to the Board recently. The
24 other licencing still is in effect, so the transportation
25 of timber always requires a licence. So, for example, if

1 there's an agreement between the company and the
2 community to have it moved to the community, and the
3 community is doing the moving, the community would have
4 to obtai -- obtain that licence.

5 If, basically, the wood is used that's --
6 that's the key, then they would require a timber permit
7 or a timber licence. Right now it's almost business as
8 usual. If the wood is knocked down and then burnt, then
9 no, there's no requirement for a licence, other than a
10 burn permit if it happens to occur that the burning takes
11 place during the closed season.

12 So we are anticipating the new regulation
13 but right now there's still no -- no date of when it
14 might be in effect.

15 THE FACILITATOR: Thank you. Other
16 question? Did I see a hand?

17 MS. SARAH OLIVIER: Sarah Olivier with
18 DFO. We actually had some questions about some of the
19 stream crossings, and that was in one (1) of our IRs.
20 And I know that Canadian Zinc had provided us with a
21 table, Table E-1, that had, again, a list of all of the
22 various creek crossings, location and then a description
23 of what kind of crossing was expected. And we definitely
24 appreciate that information.

25 But added to that I think it would be very

1 useful in some cases to also get a little bit more
2 clarity on, I guess, a typical design structure. So,
3 again, how Canadian Zinc when, I guess as an example, for
4 a snow fill, looking at stabilizing banks, how Canadian
5 Zinc would expect to be doing that.

6 And also for the bridges and the clear
7 span, and especially for the bridges, if there's going to
8 be any abutment structures to get an idea of what those
9 may look like. And if there's going to be any sort of
10 physical -- physical footprint within any of the river
11 beds that may be fish-bearing.

12 We also would have an interest in knowing
13 a little bit more about Canadian Zinc's sediment and
14 erosion control plans, especially as it relates to the
15 road as it comes near the -- the water crossings. And
16 along those same veins, or along that same line, is maybe
17 a better understanding of Canadian Zinc's plans when it
18 comes to criteria for determining when the road opens and
19 closes. Because, again, a lot of these crossings are
20 snow-filled, so a lot will be based on temperature. And,
21 again, there's a lot of variables within that from year
22 to year of how long the road can be opened.

23 So I guess just to get a better
24 understanding of how Canadian Zinc proposes to -- when --
25 yeah. Their criteria for determining when -- when the

1 road may be opened and closed. I'll start with that.

2

3 (BRIEF PAUSE)

4

5 MS. SARAH OLIVIER: I'm not sure if it
6 would be useful for me to maybe break that down into
7 various questions, but I guess the first one (1) was:
8 Would it be possible for Canadian Zinc to provide us
9 with, I guess, the typical design of some of the
10 structures. So that includes snow-fills, bridges, and --
11 well, especially -- well, clear span, but bridges
12 especially as it relates to abutments.

13 MR. DAVE HARPLEY: Dave Harpley. We can
14 certainly look at conceptual design of structures. I'm
15 not sure how we would produce a conceptual design for a
16 snow-fill. I'm not sure you consider that a structure.
17 There is one (1) span crossing we are proposing at this
18 point off Polgy (phonetic) Creek, and that span crossing
19 would be on abutments. The abutments would be set back
20 from the creek. By visual inspection it is clear that
21 the banks adjacent to the creek are above the high water
22 mark, the normal high water mark.

23 So we could provide a conceptual design
24 for those abutments. We have in -- in mind a fifty (50)
25 or 60 foot prefabricated span which would be moved on to

1 those abutments likely with a crane. And this would be a
2 permanent structure for the -- for the life of the
3 project. So that's why we want to put it on abutments so
4 that it would not be susceptible to big run-off issues.
5 And then we wouldn't have the associated impacts of
6 annual removal and replacement.

7 All of the other crossings at this point
8 we are planning to cross with standard snow fills,
9 following the -- the DFO -- what's your term? I forget
10 it exactly, but -- operational statement, yes. We will
11 certainly give consideration to the creek banks in terms
12 of stability. We have in mind that we would employ
13 matting or perhaps logs bound together to protect the
14 banks as necessary. And that will need to be a judgment
15 call at the time, depending on conditions and the
16 particular bank in question.

17 As far as criteria for opening and closing
18 the road, criteria in the past has essentially been that
19 the -- the bed is firm enough to withstand traffic. And
20 I -- I assume the same would apply to creek crossings.
21 The -- we would have to be able to make a suitable snow
22 fill and it would have to withstand traffic and continue
23 to do so till the end of when we want to cease using it.

24 MS. SARAH OLIVIER: Maybe just to get a
25 little bit more detail on the opening and closing of the

1 road. I know you mentioned a firm bed, but, I guess,
2 maybe just a little bit more detail on -- on how you
3 propose to make that call on a yearly basis.

4 MR. BYARD MACLEAN: Byard MacLean. Maybe
5 I'll just give you a -- a rough schedule as to what we
6 plan to do on an annual basis. The driver of all this is
7 that we have a hundred and twenty thousand (120,000)
8 tonnes of concentrate at the mine, and about seventeen
9 thousand (17,000) tonnes of operating supplies, and about
10 eight (8) million litres of fuel to go in, over a period
11 when the ice road is open, the ice bridge is open, which
12 statistically we think is between the 13th of January and
13 the 15th of April. And that's based upon the best
14 available information we have from Highways in terms of
15 ice bridge openings and closings for large loads.

16 And when the mine was originally put in,
17 that ice road was built from the Liard River into the
18 mine and that's exactly the wrong way to do it. What we
19 plan to do is start from the high cold country at the
20 mine where we would have a stranded construction road --
21 ice -- winter road construction crew, and about during
22 the month of November we would start from the mine and
23 move back to the intermediate transfer facility Tet --
24 Tetcela. It's about eighty-five (85), eighty-six (86)
25 kilometres. That would be installed in November.

1 From the 1st of December till the 13th of
2 January, the 13th of January being the magic day that the
3 -- that the road opens, we start hauling concentrate from
4 the mine to the intermediate storage facility. We
5 attempt to get fifty thousand (50,000) tonnes there.

6 The reason we want to do that is we need
7 concentrate as close to the Liard -- to the ice bridge as
8 possible because our window of opportunity, as I
9 mentioned, is the 13th of January till the 15th of April.
10 While we're hauling that concentrate to the intermediate
11 site up to the 15th of January, we are also building the
12 rest of the road out between the intermediate facility
13 and the Lia -- and the Liard River.

14 During that period, the ice bridge is
15 being built across the road so that, on the statistical
16 first day that we can haul across the river, being the
17 13th of January, we start hauling concentrate from both
18 the mine and from the intermediate facility to at least
19 the highway side of Liard facility.

20 Soon as those supplies at the other side
21 of the enterprise in terms of the -- the design from the
22 1st of January to the -- the -- well, from the 1st of
23 December or whenever we can get our operating supplies to
24 our su -- facility on the highway side of the -- of the
25 highway, we -- we have our supplies there so that those

1 supplies are then going back into the mine so that the --
2 the supplies are going back in during that period that
3 the ice road is open and all the concentrate is coming
4 out.

5 So we assume that, statistically, on the
6 15th of April the road will close -- the ice road will
7 close and -- and we'll be done for the year. Now, the
8 driver on the highways is the -- on the -- on the winter
9 road is the weight of the trucks. They are going to tell
10 us when the road is too soft because they're running
11 heavier than anything else. But based upon the
12 temperature profiles we've looked at, we think that will
13 -- that is the basic plan, being driven by the opening
14 and closing of the ice bridge.

15 MS. SARAH OLIVIER: Thank you for that.
16 Maybe to go back to one (1) of my last points about
17 conceptual design. And I think one (1) of the reasons
18 that we're bringing that up is because, especially for
19 the clear span in the bridge, we would need to get a
20 better idea of whether or not there are going to be any
21 physical footprints within any of the stream beds, so,
22 again, just to make a determination of whether or not
23 there'll be a need for an authorization.

24 So, for that point, I think we might need
25 to work a little bit more closely on -- on those. And if

1 there is -- if there is a need for any sort of -- any
2 part of that bridge or clear span to be in the riverbed,
3 then we would need to be advised of that.

4 And I guess the last thing was also the
5 sediment and erosion control plan is something that we
6 would definitely have an interest in, especially as it
7 relates to the spring and fall, and the potential for
8 some of the streambanks to get eroded, and whether or not
9 Canadian Zinc has any plans to look into a sediment and
10 erosion control plan.

11 MR. DAVE HARPLEY: Dave Harpley. On the
12 first point, conceptual design, it would certainly be our
13 intent to have abutments that do not interfere with the
14 bed of the stream, so there's no issue there in terms of
15 authorization.

16 On the second point, we would be happy to
17 commit to producing an appropriate sediment and erosion
18 control plan for operations. I'm just wondering about
19 suitable timing. I'm not sure that we need to develop it
20 at the EA stage, but...

21 MS. SARAH OLIVIER: No. And I think the
22 -- the commitment is what we're looking for.

23

24 --- UNDERTAKING NO. 11: For Canadian Zinc to commit
25 to producing an appropriate

1 sediment and erosion control
2 plan for operations
3

4 MR. JAMIE VANGULCK: Jamie VanGulck,
5 Parks Canada consultant. One (1) of the Parks Canada
6 Information Request, specifically number 10, had several
7 bullet points for the developer to comment on.
8 Unfortunately, bullet points C through I were not
9 provided in -- in the response in Appendix D. And I was
10 just wondering if it was inadvertently left out, and, if
11 it was, if we could receive those responses. I'll start
12 with that.

13 THE FACILITATOR: Thank you. For
14 everybody's benefit, PC-10 is a cart -- cartography and
15 access road questions and -- from Appendix D, is that
16 correct?

17 MR. JAMIE VANGULCK: Jamie VanGulck.
18 Yeah, it was the Information Request for Parks Canada,
19 number 10. The response from the developer was provided
20 in Annex D, and specifically, it was bullet points C
21 through I, are not provided.

22 MR. DAVE HARPLEY: Okay. I -- I suspect
23 a lot of what's been asked has been answered elsewhere.
24 It may not have been answered in the consultant's report
25 as indicated, but perhaps we can look at these now and

1 see if we can address with -- most of them.

2 C asks:

3 "That if snow and -- and/or ice are not
4 present in the local area of
5 construction, the alternative plans for
6 construction. "

7 I assume the answer to that would that if
8 it's not in the local area, then it would be brought to
9 the local area.

10 D:

11 "The yearly estimate of volume of snow
12 and ice required for road construction
13 and maintenance."

14 I'm no road construction expert, but I
15 would assume that it's very difficult to make that sort
16 of an estimate at this point because it's highly
17 dependant on conditions at the time.

18 I do understand that the -- the majority
19 of our ice road is basically a frozen bed road and the
20 intent is to -- to, for the most part, use a frozen bed
21 without the need for snow or ice.

22 E:

23 "A comparison of snow requirements to
24 site conditions. "

25 Well, that's kind of the same answer as D.

1

2

F:

3

"If cut and fill locations do occur to
4 achieve desired road grade slope, the
5 mitigation measures to minimize
6 permafrost degradation."

7

8

That, I do believe, we have addressed in
the report and, if not, we can cover that again.

9

10

THE FACILITATOR: Please state your name
before you begin your response too, please.

11

12

13

MR. DOUG PELLY: My name is Doug Pelly,
I'm a consultant to Canadian Zinc and my area is the --
is describing and characterizing the terrain.

14

15

16

17

18

19

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21

The questions around, if -- if cut and
fill locations do occur, generally speaking the access
route has been arranged to avoid cut and fill locations,
but they will indeed occur in some locations. Where they
occur is generally in a place where we believe that
they're -- that permafrost does not exist in those areas,
that essentially they're -- they're dry and free of that.

22

23

24

25

But in the event that -- that that is
encountered during -- during the detailed engineering
design, it's my understanding that that -- there will
either be small adjustments made to the route to try and

1 avoid that and/or basically maintain the -- maintain the
2 -- the insulation layer or replace the insulation layer
3 through the replacement of organics if that's needed.

4 The next item on here is -- is Item G,
5 Typical Cross-sections.

6 MR. ALAN TAYLOR: It's Alan Taylor here.
7 Just while Doug's thinking about that one, I just wanted
8 to make you aware that in -- in Annex E-4 we have a --
9 that we attached to our IR response there is some volume
10 estimates in there, they're gross, as far as snow and
11 water consumption, but it -- they're just meant as a
12 guide right now.

13 MR. DOUG PELLY: Doug Pelly with
14 Canadian Zinc. The question asked in -- in item 10-G was
15 -- was the provision of typical cross-sections for the
16 access road to -- to depict various areas along the way.
17 I would say that my -- as I mentioned earlier, my role in
18 this project is one of looking at the terrain, but I also
19 have a geo-technical background and I do deal with these
20 -- these sorts of issues here.

21 I guess you guys would have to decide, but
22 I mean, it's not that -- there are a lot of available --
23 there's a lot of available information and I think these
24 typical details can be provided. I would leave that
25 subject to, of course, authorization of Canadian Zinc.

1 It's -- it's not that tough a thing to do.

2 MR. DAVE HARPLEY: Well, the -- what was
3 the -- you said C, to -- what was the last letter you
4 said was missing?

5 MR. DOUG PELLY: The last one was 'I,' I
6 believe.

7 MR. DAVE HARPLEY: 'H' talks about the
8 possibility of localized service drainage water adjacent
9 to the road shoulders that could lead to permafrost
10 degradation. I don't think we would want to in -- build
11 a road that has standing water because it -- it will be
12 detrimental to the stability of the roadbed itself, so.

13 As I understand it, in areas where there
14 is seepage or drainage the intent would be to either put
15 in some sort of drainage mechanism into the roadbed or
16 just to have a swale so that the drainage could flow from
17 one side to the other, or -- or indeed a culvert if it's
18 not anything that could be construed as a fish bearing
19 location.

20 MR. DOUG PELLY: Doug Pelly, with
21 Canadian Zinc. I'd just like to add to what Dave has --
22 has -- Dave has said, is that, generally speaking, the
23 locations where side ditches might be required on the
24 road are not areas where there -- permafrost is -- is
25 likely to exist. Mostly the areas where we're dealing

1 with that are areas of flat terrain, will be purely
 2 winter roads graded in the -- in the manner of normal
 3 winter road construction, and there wouldn't, generally
 4 speaking, be -- be side ditches in those areas.

5 I guess all I'd say is that I'm sure just
 6 good care and attention and good engineering on the -- on
 7 the road itself would avoid those circumstances as much
 8 as possible.

9 And item 'I' was a request for additional
 10 details on maintenance activities considered for the
 11 organic layer. This -- I -- I guess the answer to this
 12 question is -- is really an operational one. One has to
 13 have procedures in place in -- in terms of how the -- how
 14 the road gets constructed when the road gets constructed
 15 in the -- in the winter road areas and where there's --
 16 where there is concerns about -- about the permafrost.

17 And if that is all done in a manner that
 18 is winter type construction and you don't cause
 19 degradation to the -- to the organics, then the -- then
 20 the long-term performance of that should be -- should be
 21 adequate. That really is the -- the basic principles and
 22 it'd be -- it'll be based on year-by-year operational
 23 practices.

24 THE FACILITATOR: Thank you for those
 25 responses. Would Parks Canada like to continue with any

1 followup questions or further questions?

2 MR. JAMIE VANGULCK: Thank you. Jamie
3 VanGulck, Parks Canada consultant. Apparently, item 'L'
4 was also not addressed, so if you could please provide a
5 comment for that one.

6

7 (BRIEF PAUSE)

8

9 MR. DOUG PELLY: Doug Pelly, with
10 Canadian Zinc. The question in -- in sub-question (1) is
11 a question around the monitoring of the access road
12 during construction and operation. The -- as I
13 understand it, the monitor -- the road will be monitored
14 essentially continuously while it's in operation, and
15 then -- and then specifically at the end of operation.

16 It's obviously one (1) of the -- that sort
17 of observation is required in order to decide when you're
18 going to shut the road down. It's my understanding
19 that'll be part of the annual monitoring that would go
20 on.

21 And prior to initiating it, initiating the
22 road again the following winter, it's my understanding
23 that there would be a second review of the road, an
24 assessment of -- of what the effects were from the
25 previous year, and an adjustment to -- to address any

1 issues that -- that might have arose.

2 MR. JAMIE VANGULCK: Jamie VanGulck,
3 Parks Canada consultant. Most of these questions that
4 were requested in the IR dealt with road design
5 construction and operations with the understanding that
6 it's important to consider all of these impacts -- or
7 effects to -- to assess the impacts on the terrain, the
8 local permafrost zones, how water is going to be impacted
9 by the development, and, really, critically, the -- the
10 management to ensure that spills can be mitigated.

11 I think we can all appreciate that if you
12 have a difficult section in the road that is difficult to
13 pass through and challenging for truck drivers in a
14 sensitive terrain and a spill occurs, then it could have
15 a significant impact -- or potentially a significant
16 impact on the environment.

17 So these -- this line of questioning was
18 mostly set up to understand what the developer was
19 considering for design construction operations and
20 management. From the responses, it sounds like you have
21 an understanding of operations and maintenance that may
22 be needed but the details are not yet completed.

23 Would there be a commitment from the
24 developer that that is something that is very important
25 and should be completed at some point in time that is

1 formalized and so that all subcontractors that may use
2 this road can follow, as well?

3 MR. DOUG PELLY: We have designed the
4 operation and maintenance of the road based upon our
5 experience and the experience of others, and so, you
6 know, we understand -- we think we understand the issues.
7 We've got, you know, eighteen thousand (18,000) man hours
8 of maintenance and operations personnel on the road above
9 and beyond the truck drivers. This is a first order
10 estimate.

11 But -- but I point it out to -- to tell
12 you the level of detail we've gone to in terms of the
13 equipment we think we need, water trucks, and graders,
14 and CATs, and helicopter support, and supervision. So
15 we've -- we've -- we have a reasonable understanding of
16 how exactly we're going to do it.

17 MR. JAMIE VANGULCK: Jamie VanGulck,
18 Parks consultant. I may have missed it in the developer
19 assessment report, but is that type of understanding
20 available for parties to review and understand the -- the
21 level of detail? It sounds like it's a design that's
22 been completed, at least in -- in a conceptual sense?

23

24 (BRIEF PAUSE)

25

1 MR. DOUG PELL: Yeah, we can do that. I
2 mean, the -- the cost -- the costs will have to be taken
3 out because they're not current, but the -- the man hours
4 and the equipment and the methodologies hasn't changed.
5 And of course, if the road route changes and it shortens
6 or lengthens or whatever, that will have an impact, but -
7 - but it demonstrates the concept.

8 MR. DAVE HARPLEY: Dave Harpley. Are you
9 looking for the commitment that the design work and the
10 provision for maintenance will be there, or you actually
11 want to see the -- the engineering numbers that were
12 developed in order to give us costs, which is our
13 internal -- for our internal use?

14

15 (BRIEF PAUSE)

16

17 MR. JAMIE VANGULCK: Jamie VanGulck,
18 Parks consultant. The -- the main focus of our interest
19 is to understand what measures are in place to minimize
20 the impact from the operations of the road. Cost is not
21 a consideration that is important for us at this point,
22 but in order to understand the -- the impacts from the
23 road we do feel that a further understanding of the
24 operations of maintenance is required.

25 THE FACILITATOR: Thank you for those

1 questions and answers and commitment -- do you have
2 further comment?

3 MR. BYARD MACLEAN: Yes. We can commit
4 to a detailed summary of -- of how we plan to do it and
5 along with manpower estimates and equipment estimates to
6 give you some first order insights as to how we plan to
7 do it. Byard MacLean speaking.

8
9 --- UNDERTAKING NO. 12: Canadian Zinc to commit to
10 provide a detailed summary of
11 how they plan to do the
12 operations of maintenance on
13 the road, with manpower
14 estimates and equipment
15 estimates
16

17 MR. DEVIN PENNY: Devin Penny with
18 Environment Canada. I'd just like to turn to Appendix F,
19 and that was with the IR-EC-15 with regards to the spill
20 contingency plan and it just kind of flows in there.

21 Can -- just from Environment Canada's
22 standpoint, as stated yesterday, you believe that the
23 road is a fairly treacherous road over some very
24 sensitive terrain. And we believe that there's
25 definitely the likelihood for some significant impacts to

1 the environment if there were a spill on the road. And
2 we're not talking about normal -- a normal road, like I
3 said, to reiterate, a treacherous road with some high
4 cliffs and so on and so forth.

5 So my question to you is: Would you be
6 prepared to supply us with a contingency plan for a spill
7 in some of those areas where routine spill procedures are
8 just not going to work?

9 MR. ALLAN TAYLOR: It's Allan Taylor
10 here. I sort of take issue with the word "treacherous",
11 but be that as it may, we don't have a problem in -- in -
12 - in responding to spill contingency plans as long as it
13 applies to the actual operations that we're -- that we're
14 considering here.

15 And with the route being somewhat in flux
16 right now we'd rather not, at this stage, go to such an
17 extreme, but certainly when -- when it's been determined
18 the actual route that we're taking, yeah, we -- we would
19 be prepared to do that.

20

21 --- UNDERTAKING NO. 13: Canadian Zinc to supply
22 Environment Canada with a
23 contingency plan for a spill
24 in some of the areas where
25 routine spill procedures are

1 not going to work

2

3 MR. DEVIN PENNY: Devin Penny with
4 Environment Canada. And excuse me, I -- I just used the
5 words that you kind of talked about yesterday with
6 regards to the road and keeping people off of it, keeping
7 the public off of it. We certainly identified that there
8 is definitely areas where it's fairly dangerous for
9 people to be on the road, which we can again take a look
10 and say that it's definitely a high possibility for
11 accidents or spills on this road while you guys are in
12 production.

13 You mentioned 8 million litres going in --
14 in and out, or in that road just -- just alone for
15 operation. I mean, there's definitely high -- high
16 consideration for damage to the environment if -- if a
17 spill was to happen.

18 So just your commitment, is that something
19 that you would be willing to do in the EA process? Like,
20 would you be willing to provide us with a contingency
21 plan on -- on areas of the road that you believe are --
22 are sensitive to spills?

23 MR. DAVE HARPLEY: Dave Harpley. I think
24 when we were talking about the road yesterday in terms of
25 it being dangerous we were referring to the traffic on

1 it, not the nature of the road itself.

2 On the second point on the spill
3 contingency plan, are you suggesting that we cannot
4 develop a suitable contingency plan for all sections of
5 the road?

6 MR. DEVIN PENNY: Oh, I'm -- I'm not
7 saying that you can't develop a spill contingency plan.
8 I'm just saying, as a EA process, Environment Canada
9 would just like to assess a spill contingency plan to see
10 if it's something that can be followed out and is
11 sufficient.

12 MR. DAVE HARPLEY: Dave Harpley. My
13 personal opinion, and -- and I accept it may be -- just
14 be my personal opinion, but I tend to think that the EA
15 process is too bogged down with plans that are
16 unnecessary at this stage of the process, so that's why
17 we have been reluctant to produce plans, per se, at this
18 stage.

19 If -- if you accept that a plan can be
20 developed, I'm still not understanding why one needs to
21 be done now and it can't be done at the permit stage.

22 MR. DEVIN PENNY: I guess -- Devin Penny,
23 Environment Canada. I guess we can go back and forth
24 sort of all day what stage of the process. I just want
25 to make it known as just looking from the outside at this

1 road and looking at the possible impacts to the
2 environment, to assess the impact that it may have to --
3 to the environment, it -- it would be beneficial to see a
4 spill contingency plan, especially for the sensitive
5 areas of the road. And, again, that's -- I'm just
6 reiterating what I said, so...

7 MR. DAVE HARPLEY: Dave Harpley. If
8 we're talking about what impacts might occur from the
9 spills, then, yes, I would agree it certainly should be
10 part of the process. It's just that if -- if we accept
11 that a plan can be developed, then it's not a question of
12 it can be done, so why do it now. Why do we have the
13 formal instrument? Can we not just focus on the
14 potential impacts from spills? And if they're addressed,
15 then the plan comes later.

16 MS. ANNE WILSON: It's Anne Wilson, with
17 Environment Canada. Can I just jump in here with one (1)
18 of my concerns with this?

19 THE FACILITATOR: Yes, please jump.

20 MS. ANNE WILSON: The example that comes
21 to mind is the idea of the acid transport and further
22 details on the spill contingency plan for that substance.
23 The additional information that came back really
24 downplayed the hazard associated with potential spills,
25 and certainly for spills within very steep terrain that

1 would be extremely difficult to remediate.

2 To get an overall idea of the risk and the
3 potential impacts associated with this project a certain
4 level of detail in the spill contingency planning stage,
5 I think, is really important.

6 THE FACILITATOR: Thank you, Anne. Do
7 you have a question for the developer as a followup to
8 that comment?

9 MS. ANNE WILSON: Anne Wilson. The
10 question I would raise would be to the company. How --
11 could they explain to me the statement that the acid, if
12 spilled, would not be a contaminant as such because I
13 could foresee problems with that if it was spilled and
14 would hope for a very strong cleanup response? So if
15 they could elaborate on their response in Section F, that
16 would appreciated.

17

18 (BRIEF PAUSE)

19

20 THE FACILITATOR: I'll give a moment for
21 Canadian Zinc to find that question and -- and respond.

22 MR. ALAN EHRLICH: While -- while
23 Environment Canada is -- I guess, sorry, while Canada
24 (sic) Zinc is thinking about it, I just want to ask
25 Environment Canada to clarify -- and -- and this is

1 directed to the gentleman who just spoke before Anne --
2 are you saying that the spill contingency plan is
3 necessary for your assessment of the significance of the
4 impacts, or is this for a regulatory type duty?

5 MR. DEVIN PENNY: Devin Penny, with
6 Environment Canada. No, I -- I personally believe and
7 Environment Canada's standpoint is the contingency plan
8 would be something that we would look at to assess the
9 actual likelihood of the significant impacts that could
10 potentially happen to the environment.

11 MR. ALAN EHRLICH: Okay, thanks for the
12 clarification. Does Can Zinc want to respond to Anne's
13 point on the telephone now, or do you need another minute
14 to caucus?

15 MR. DAVE HARPLEY: Anne, I -- I didn't
16 hear you too well, but it sounds -- sounded to me like
17 you were saying can we elaborate on how we would respond
18 to specific cases of spills on different sections of the
19 road. Is that correct?

20 MS. ANNE WILSON: It's Anne Wilson,
21 Environment Canada. The -- not necessarily the specific
22 road sections, but the in -- instance I'm using as an
23 example was the sulfuric acid response, and how would
24 that be responded to. I wasn't entirely satisfied with
25 that Appendix F had said.

1 MR. DAVE HARPLEY: Okay. Dave Harpley.
2 We would be happy to respond or to elaborate on our
3 response to sulfuric acid spills. As I mentioned, I -- I
4 don't think we have a problem with assessing impacts and
5 -- and the response to avoid such impacts. I think we
6 are comfortable that that's a necessary part of
7 assessment.

8 I just reiterate that I don't see the need
9 for a formal plan as such at this point. We can
10 certainly cover the -- the basis for the content of such
11 a plan, but I still don't see the need for the actual
12 plan itself until a later date.

13 MS. ANNE WILSON: It's Anne Wilson. That
14 would be helpful, David, if you could provide further on
15 that.

16
17 --- UNDERTAKING NO. 14: Canadian Zinc to elaborate on
18 their response to sulfuric
19 acid spills

20
21 MS. ANNE WILSON: And just to follow up
22 on Devin's concerns, which I share, of course. The
23 terrain is going to present huge challenges for cleanup,
24 and it's helpful to have some elaboration at this point
25 of how the worst case scenarios are going to be addressed

1 just to demonstrate the capacity to do a cleanup, some of
2 those, you know, extremely steep scree slopes and -- and
3 very difficult areas.

4 MR. DAVE HARPLEY: Dave Harpley. I think
5 that's understood.

6 MS. WENDY BOTKIN: Wendy Botkin, with
7 Parks Canada. We, along with EC and GNWT, raise
8 questions about spills because of the length of the road
9 that's in Na -- Nahanni Park. And just a little bit of
10 history, again, illustrates why we're so concerned about
11 it. There have been spills in -- when the mine -- when
12 the road was being used thirty (30) years ago. There was
13 a spill every year. And in -- in each case the spill
14 wasn't cleaned up, and so it -- it illustrates, again,
15 you know, spills happen, accidents happen, and there
16 could be consequences to it.

17 And, as it has been said, there -- there's
18 issues with the nature of the road. It's -- it's not, as
19 I understand it, a typical winter road in the Northwest
20 Territories. It's through mountains. It's through
21 karst. It's through all kinds of areas. So there's
22 issues with the road that -- that increase the -- the
23 likelihood -- the likelihood of an accident.

24 There are also issues with the road that,
25 again, would increase the -- the consequences of an

1 accident through the karst area, alongside Funeral Creek
2 where there's bull trout. There's -- there's sensitive
3 areas in there. And then the volume of -- of the traffic
4 and the -- the nature of the things going there, and, as
5 Anne has mentioned, also the difficulty in cleanup.

6 I -- I endorse Can Zinc's intention to
7 address impacts and I -- I would really like to see that
8 expanded on. In Appendix F it feels a little bit to me
9 like the -- the second part of the response, the
10 assessment of the risks of spills occurring and
11 mitigation considerations, has maybe tended to deal more
12 with examples and ad hoc things like, for instance, acid,
13 or like, for instance, CARST.

14 And I think what would really help us is a
15 full assessment, maybe a long GIS based or some kind of
16 spacial assessment along the length of the road that
17 considers that because there are areas with high
18 frequency -- or high likelihood of accidents, high
19 sensitivity of accidents -- or, of consequences, and high
20 difficulty in actually cleaning up if it is possible.

21 And I -- I -- I think we need a much more
22 rigorous assessment of that. And -- and whether it's at
23 a detailed contingency plan level, I -- I do think we
24 need that information in the EA stage just to determine
25 what the significance of the impacts would be.

1 So, I mean -- and some of these questions
2 I'm sure you could answer right now, but it would be a
3 kind of an ad hoc basis. Like, for -- for instance,
4 there's the mention of eliminating hairpin turns. And
5 the response specifically mentions the pull-jays, which
6 is -- which is good. But, you know, are there other
7 areas where that's going to happen? And in -- in the
8 process of doing that will there also be mitigation
9 required because now the -- the road is wider, or -- you
10 know, all -- or certain cuts and fills and all those
11 sorts of things have to happen.

12 So I think we would like a broader -- a
13 broader look at that. There are -- we have some other
14 examples we could provide based on, again, the thirty
15 (30) year old information on -- that was done by Golder
16 that mentioned certain grades were 8 percent or 13
17 percent, so those are -- those are pretty scary -- scary
18 grades, at least it would seem to me.

19 So it would be nice if that could be done
20 along the length of the road, or with typical segments of
21 the road on worse-case scenarios and in -- in different
22 areas along the way. Because I don't think right now we
23 understand where the impacts are and then,
24 correspondingly, what the appropriate mitigations might
25 be in those kinds of circumstances. I mean, there --

1 there are examples in here and I don't deny that, but
2 along -- along the road, and -- for us of course,
3 especially within Nahanni National Park.

4 MR. ALAN EHRLICH: Sorry, Wendy, could
5 you just recap exactly what you're asking Can. Zinc to
6 commit to providing there.

7 MS. WENDY BOTKIN: We're asking for a
8 spacial risk assessment along the road that considers
9 frequency of spills, consequence of spills, and
10 challenging clean up.

11 MR. ALAN EHRLICH: Thanks. I think
12 that's -- that's pretty concise. Would Can. Zinc like to
13 respond?

14 MR. ALAN TAYLOR: Yes. It's Alan Taylor.
15 I -- I would like to see the documentation on your -- on
16 previous spills that you describe along that winter road.
17 We were not aware of any, but perhaps you have some
18 records that we don't.

19 And aside from that, maybe I'll put it to
20 the Review Board too, because in all our previous EAs
21 that we've been involved in we've developed spill
22 contingency plans in the permitting stage, not in the EA
23 stage.

24 MS. WENDY BOTKIN: And I -- I think for
25 us, we could deal with a contingency plan at the

1 permitting stage, but I -- I'm looking at, really, part 2
2 of the IR response with:

3 "The commitment to assessment of the
4 risk of spills occurring and mitigation
5 considerations. "

6 So I -- we're not -- I -- I think we could
7 potentially live without detailed spill contingency
8 planning, but right now I don't think we just even
9 understand what the impacts might be.

10 For instance, one of the responses says
11 that -- under impacts of the spill and the IR response
12 says:

13 "Potentially at Polgy Creek, the -- the
14 creek may flow in winter because it's
15 fed by groundwater."

16 And there's a mitigation noted that would
17 reduce the frequency of spills. So -- for instance, the
18 -- the bridge being there and -- and the crossing
19 approach is shallow so accidents should not occur.

20 So that -- I agree that that addresses the
21 frequency of occurrence, but that really doesn't address
22 the consequences if despite the mitigation to reduce the
23 -- the frequency, if a spill does occur what is the
24 consequence of that, what -- what would the impacts be?
25 Could -- could that even be cleaned up? And if it

1 couldn't be cleaned up, is -- you know, how significant
2 is that?

3 And -- and that's -- that's the kind of
4 thing that I don't think we understand yet.

5 MR. ALAN EHRLICH: Thanks. On the Review
6 Board side, just because you did ask a question of the
7 Review Board, I mean, I can't speak for the Board members
8 themselves, but details about contingency plans are often
9 done later in the process.

10 What -- I -- I think I heard Wendy ask
11 for, in the comment just before the one she made, was
12 something a bit different from the detailed spill
13 contingency plan that Environment Canada asked for
14 earlier.

15 Can you just summarize just one (1) more
16 time what you summarized for me a minute ago?

17 MR. DAVE HARPLEY: Dave Harpley. I think
18 we've got it. We understand what they want and we will
19 take a look at it and get back to you.

20 MR. ALAN EHRLICH: Well, okay, in that
21 case, I'm going to turn around and ask the gentleman from
22 Environment Canada who was asking for it before, do -- do
23 you recall what Wendy just asked for on behalf of Parks
24 Canada? It was, as far as I could recall, a linear risk
25 assessment that looked at different likelihoods and

1 severity of events on different lengths of the road and
2 potential responses.

3 Wendy, tell me if I'm getting this right.

4 MS. WENDY BOTKIN: Yeah, that's right.

5 MR. ALAN EHRLICH: Would that do the job
6 for -- for Environment Canada instead of a fully detailed
7 spill contingency plan?

8 MS. ANNE WILSON: It's Anne Wilson. I'm
9 not familiar with the level of detail that would be
10 provided. Could you say a little bit about that to
11 clarify?

12 MR. ALAN EHRLICH: Alan again. Anne, it
13 sounded to me like you just said you're not familiar with
14 the level of detail in a normal spill contingency plan,
15 is that right?

16 MS. ANNE WILSON: It's Anne Wilson. I
17 must have misheard. I heard that they were going to
18 provide a linear risk assessment and that -- would that
19 satisfy Environment Canada. Did I misunderstand that?

20 MR. ALAN EHRLICH: No, I -- I think
21 that's what Wendy was asking for and what I think Can.
22 Zinc has understood, Wendy of Parks Canada that is.

23 The question that I'm asking is, you know,
24 would that satisfy Environment Canada's information needs
25 for doing its own assessment of the impacts so that Can.

1 Zinc doesn't have to produce a full spill contingency
2 plan before they hit the regulatory stage.

3 MS. ANNE WILSON: Anne Wilson. Okay, my
4 question was -- was correct then. I'm not familiar with
5 the linear risk assessment. What level of detail would
6 be provided in such an exercise?

7 MR. ALAN EHRLICH: It's Alan again. I
8 don't know. I'm going back to Wendy Botkin so that she
9 can describe again the -- the nature of the plan she's
10 asking for, or of the -- the study she's asking for.

11 MS. WENDY BOTKIN: I -- I think the level
12 of detail should be such that we can identify impacts,
13 likelihood of impacts, and mitigations that would be
14 appropriate for them, at -- at least a kind of global
15 level. There's a -- there's an example -- as -- as we
16 were looking at this, there -- there is an example that
17 may not be entirely a good fit because of the nature of
18 the road, but for the Snap Lake project, where the Board
19 has considered this in the past, and, in that case, it
20 was a worst -- worst- case scenario.

21 So we -- we looked at that and we looked
22 at the information that there's there. There should be,
23 I think, at least that level of -- of detail that can
24 address that. I mean, who you call and all that kind of
25 stuff, I mean, we can wait for that.

1 MR. ALAN EHRLICH: Thanks, Wendy. Anne,
2 does that sound like something that will be sufficiently
3 useful for Environment Canada to address your information
4 needs in terms of risks and malfunctions related to
5 spills along the road?

6 Again, the -- the point that I'm working
7 towards here is that if Can. Zinc does not have to
8 produce a detailed spill contingency plan at this stage,
9 if there's something else that's a little less detailed
10 that would still satisfy your information needs for
11 figuring out if this is likely to be a significant
12 impact, I would encourage you to look for something a
13 little bit less -- less specific than what they would
14 normally provide during the regulatory phase.

15 MS. ANNE WILSON: Thanks, Alan. I -- I
16 suspect is it going to be adequate. And if I was there
17 in person, I would put my heads together -- my head
18 together with Devin and -- and Dave. So I would like to
19 give Devin a chance to concur with that seeing as he and
20 -- and Dave Tilden are our spill contingency plan
21 reviewers.

22 MR. DAVID TILDEN: Yeah, this is Dave
23 Tilden, of Environment Canada. I'm a hazardous material
24 specialist. I've worked in the Northwest Territories,
25 Yukon, Alaska, Circumpolar North for the past thirty 30)

1 years.

2 I just wanted to sort of step back just a
3 little bit on the whole issue of contingency planning and
4 what level of detail is required at what stage of the EA
5 and permitting process.

6 The Board itself in its terms of reference
7 uses a term called Conceptual Contingency Plan. This --
8 this term is an extraordinarily rare term. If you
9 subject it to a Google search, there's only a hundred and
10 forty-two (142) references in the entire world, almost
11 all of which originate in Alberta with the oil and gas
12 industry.

13 This term actually derives from something
14 called the Guide to Preparing Environmental Impact
15 Assessment Reports in Alberta updated August 2010; it's
16 right here. The term itself really has very little
17 meaning outside of the Alberta Government EA Program. I
18 believe the Board has seen this document and made use of
19 it. The Joint Review Panel for the Mackenzie Gas Project
20 also made use of this term, and as a result for a much,
21 much larger project than Canadian Zinc's project, there
22 was no contingency plan produced. There was no --
23 virtually nothing in the way of contingency planning was
24 made available during the EA process for a very major
25 project.

1 I would characterize this as a fairly
2 recent change. You know, I've seen EA projects going
3 back into the 1970s all across the Arctic. If you asked
4 for a contingency plan during an EA process, you got one.
5 If you go to Nunavut right now, Baffin Land Iron Mines,
6 you ask for a contingency plan during the EA process, you
7 get a massive contingency plan with hundreds of pages of
8 details and all the information you could ever want to go
9 and sit back and say, Gee, this looks really good, I'm --
10 I'm satisfied this company knows what they're doing.

11 I think contingency plans do a lot to
12 alleviate concern. And putting it off to the regulatory
13 stage may not always serve the interests of -- of a
14 company because you get all this debate back and forth
15 about, We don't have enough information, we don't have
16 enough detail. But, then the comeback is, Well, we'll
17 deal with that at the permitting stage.

18 I think a lot of the concerns are
19 expressed during the environmental assessment stage.
20 And, you know, I think our department, I think some other
21 federal departments, would be happy to see a contingency
22 plan at this stage and that's just sort of, you know,
23 stepping back from the specific questions here.

24 You know, the Board has put this out in
25 the terms of reference, Conceptual Contingency Plan. You

1 can't really find out what that is, it's -- it's fairly
2 abstract, just the term, you -- you're thinking about a
3 plan, you know, you're gonna put a little outline
4 together or something along that lines. But it doesn't
5 give you details and I think a lot of agencies would like
6 to see those details.

7 And for all the back and forth and
8 discussion about it, you could have produced a
9 contingency plan. You know, it's not a huge, onerous
10 undertaking. I don't -- I don't need an excruciatingly
11 detailed plan at this stage. I agree, during permitting
12 you can finetune contingency plans, but it would be a
13 good idea and I just think it would take away a lot of
14 the concerns. If -- if there was a detailed plan that
15 showed, each and every step of the way, that things have
16 been thought out, that, you know, equipment and resources
17 can be brought to bear, that you've thought these things
18 through, then that alleviates concern.

19 This morning we get a spill report out of
20 Agnico Eco -- Eagle mine way up in the top end of the
21 Arctic Islands and they've got -- you know, a huge oil
22 spill on their hands today and it's a B-train that's
23 emptied its contents the -- you know, onto the land. And
24 you know, there's an example of where things go wrong.

25 And you know, I -- I -- I thought the

1 answer that was provided to the Information Request about
2 contingency plans was -- was reasonable. There was some
3 things in there that we didn't agree with, like that
4 frozen conditions will, you know, isolate and control any
5 kind of impacts from an oil spill, for example. Ice is
6 not a -- a barrier. Ice is very fluid. Ice is capable
7 of having oil penetrate through it and around it and
8 under it, so frozen conditions are no guarantee that you
9 can clean up a spill easily or efficiently.

10 There's a statement in there that
11 sulphuric acid is not a contaminant. Well, I don't know
12 what chemistry that -- you know, that comes from, but, in
13 my books, sulfuric acid is a contaminant. If it's
14 spilled on the ground, it's going to contaminate things.

15 So, you know, in the end, that's just sort
16 of a bit of a stand back and look at the whole issue of
17 contingency planning. I think to just conveniently say
18 it can be dealt with at the permitting stage is going to
19 raise more questions and cause more debate and more
20 discussions and more back and forth than it's worth.

21 If a plan was, you know, put into
22 development or, you know, a half finished plan, some kind
23 of a plan was put together, it would be a lot better than
24 whatever a conceptual contingency plan is. That's it.

25 MR. ALAN EHRLICH: Thanks. Okay, I think

1 first I'll ask Ca -- Can. Zinc looks like it needs a
2 moment to caucus. Can I ask you, if Can. Zinc is not
3 producing a detailed spill response plan now, can you
4 live with the kind of plan that Parks Canada has just
5 requested which is, to my understanding, a linear risk
6 assessment that goes along the length of the road, looks
7 at -- I -- I'd rather not put words in their mouth.

8 And since I don't have a transcript in
9 front of me, did -- did you hear the description of what
10 they've asked for?

11 UNIDENTIFIED SPEAKER: I heard the
12 description, but I think a contingency plan is looking at
13 more than just a road. It's looking at the entire
14 operation. So, you know, if there was a linear risk
15 assessment, and then a risk assessment of the rest of the
16 operations and all of that was put together, I mean,
17 that's half of a contingency play right there. So, I
18 mean, putting together the other features, which is
19 equipment and resources and contacts and this type of
20 information -- I mean, I -- I don't envision this mine
21 being ten (10) years away or five (5) years away.

22 I'm thinking it's going to be sooner than
23 that. So putting together a moderately developed
24 contingency plan I don't think is that much more than
25 what they're proposing to do right now.

1 MR. ALAN EHRLICH: And I understand your
2 points and they're on the record because the recording
3 from this is going to be transcribed and put on the
4 public record.

5 My question is: Specifically for
6 determining from Environment Canada's perspective, if
7 there likely to significant adverse impacts related to
8 the road, is the kind of risk assessment that Wendy has
9 asked for going to be sufficient for Environment Canada?

10 I'll let you answer. And your colleague
11 behind also has a response. Environment Canada's asked
12 for a minute to discuss that. It looks like Can. Zinc
13 needs a minute to discuss it. Chuck, are you okay with
14 us taking a three (3) minute break here?

15 THE FACILITATOR: Yeah, if it's three (3)
16 exactly. No, we'll take three (3) to five (5) minutes,
17 sure.

18 MR. ALAN EHRLICH: Chuck's feeling
19 generous.

20

21 --- Upon recessing

22 --- Upon resuming

23

24 MR. ALAN EHRLICH: Chuck, if I may. I've
25 been -- been talking with Environment Canada and Parks,

1 and they've caucused during the little break here as
2 well, and they've clarified, and I'm going to ask them to
3 correct me if I get this part wrong, but what they're
4 asking for at this point is what -- what Can. Zinc has
5 written in its Appendix F on spill contingency planning
6 in the preamble, Can. Zinc wrote:

7 "Issues we believe are appropriate for
8 considering -- consideration at this
9 stage are [and then the second bullet
10 is] assessment of the risks of spills
11 occurring and mitigation
12 considerations."

13 And it sounds like there's an addition to
14 that bullet that Parks Canada and Environment Canada
15 would rather have it be

16 "assessment for the risks of spills
17 occurring, their impacts, cleanup, and
18 mitigation considerations."

19 So, basically, they're asking for a
20 slightly expanded second bullet in your preamble for
21 Appendix F.

22 I'm going to pass this microphone over to
23 Wendy of Parks Canada to provide any additional detail.

24 MS. WENDY BOTKIN: And along the length
25 of the road, or seg -- in some kind of segmented way or

1 some -- some way that considers that along the length of
2 the road. I had heard them agree to that before, so I --
3 is -- but, I -- I'm not sure.

4 MR. ALAN EHRLICH: Is Can. Zinc okay with
5 that?

6 MR. DAVE HARPLEY: Dave Harpley. Yes.

7 MR. ALAN EHRLICH: Could you be more
8 succinct, please -- no, no, thank you very much, Can.
9 Zinc. And can you comment on when you could provide
10 that. Could you provide that during the -- well, what
11 exactly is your question on -- hang on, I'll pass this
12 back.

13 MR. MIKE SUITOR: Mike Sutor, Parks
14 Canada. Can you provide that prior to the EA concluding?
15 We need that information for determining the significance
16 of impacts.

17 MR. ALAN EHRLICH: Thanks. It's Alan
18 from the Review Board. If you need it for determining
19 significance of the impacts, you need it, not just before
20 the EA's over, but before you write your technical
21 report. So time for parties to use before they write
22 their technical reports.

23 MR. DAVE HARPLEY: Dave Harpley. You
24 see, I try to be succinct and that's what happens.

25 We are going to be motivated to do it in

1 fairly short order. It's hard for me to be too specific
2 at this point, but we're definitely thinking in terms of
3 a few weeks, hopefully no more than that.

4
5 --- UNDERTAKING NO. 15: For Canadian Zinc to provide
6 a spacial risk assessment
7 along the road that considers
8 frequency of spills,
9 consequence of spills, and
10 challenging cleanup.

11
12 MR. ALAN EHRLICH: Okay. Well, and
13 thanks to Can. Zinc for being accommodating on that. We
14 know that you certainly have a lot going on right now.
15 It sounds like this will be quite useful to a number of
16 parties. I --

17 MR. DAVE HARPLEY: Sorry. If I can just
18 kind of add to that. We're happy with that outcome. I
19 guess we felt that a spill plan wouldn't really address
20 the issues that are on the floor here because a spill
21 plan wouldn't necessarily consider the -- the risk of an
22 impact of a spill occurring, the impact of that spill,
23 the consequence, and then how you would deal with it.

24 So, to while we're -- our way of thinking,
25 this kind of study is the backdrop and basis for the

1 detailed plan to follow it. It seems to me that the plan
2 itself, as was described just -- just recently, is more
3 like saying it gives us confidence that the company will
4 be able to implement it.

5 I would suggest that the chances of
6 Canadian Zinc not being in a position to respond and not
7 -- there not being the oversight to demonstrate that
8 they're able to respond, and that they have an
9 appropriate plan before we go into operations, the
10 chances of that occurring, given where we are and the
11 oversight, are slim to none. So I -- I can't see how
12 that is a consideration.

13 MR. PETER REDVERS: Peter Redvers and the
14 Naha Dehe Dene Band. I'd just like to maybe add then to
15 that request and, sort of, what's being considered within
16 it. Certainly, from the traditional knowledge assessment
17 that was done with the Naha Dehe Dene Band and Band
18 members the issue of protection of the integrity of the
19 wetlands and water along the haul road was -- was very
20 critical and, therefore, concerns about preventing spills
21 was a very high concern.

22 And just for your information, I don't
23 know if Parks Canada responded to that. I do have
24 documentation on a spill that did occur in '81 -- '81 or
25 '82 anyway. It was from INAC reports. It was a fairly

1 significant spill and wasn't cleaned up as far as we can
2 tell; that was noted in the TK assessment and I think the
3 addendum that was submitted to the -- to the Board.

4 But, as a part of that risk assessment, I
5 guess, which has been asked for, in terms of comfort, one
6 (1) of the issues that is going to effect risk and the
7 potentiality for spills is the amount of traffic on the
8 haul road and the speed of that traffic and just the
9 logistics of that equipment -- those trucks moving, and
10 particularly between the Fort Liard transfer station and
11 the Tetcela transfer station.

12 The numbers that were provided just at the
13 beginning of this session were a potential startup of
14 that particular road section of the 13th of January. And
15 certainly from our review and considerations, that's
16 probably a very reasonable projection.

17 With respect to the projection of
18 operating a road that would be capable of holding 30 to
19 40 tonne loads, I still believe that the 15th of April is
20 -- is a rather generous prediction and that a more
21 conservative prediction would be the 15th of March with
22 the possibility of an extension to the 31st of March
23 depending on the -- the schedule.

24 So the question I -- I'm -- I guess I'm
25 leading to is that if the -- there is the need to move

1 120,000 tonnes of material during that period, then the
2 length of winter road operation is fairly significant
3 because it's going to affect either -- and -- and/or the
4 -- the tonnage per truck and/or the number of loads that
5 would actually move along the road during -- during that
6 period.

7 And just in terms of calculating, and I'm
8 raising this again, that it might be something to
9 consider in terms of the risk assessment just to provide
10 a best- case/worst-case scenario, is it moving 120,000
11 tonnes that -- with a 30 tonne loads requires about four
12 thousand (4,000) loads if conservatively the winter road
13 was operating from mid-January to mid-March.

14 And I should note that the mitigating
15 factors is not the ice crossing on the Liard, it's the
16 landings and the stream crossings and certainly areas
17 along the road which are more of a wetland nature. That
18 if it was a conservative estimate to the 15th of March,
19 that's sixty (60) days, so that's sixty-six (66) loads
20 per day.

21 And we haven't had any estimate on the
22 speed or the actual time required for a truck to move
23 from the Liard Highway to Tetcela, load up, and move back
24 and unload. I -- I would conjecture - and please comment
25 on this if you can at this time - that it would probably

1 take -- one (1) truck could probably make two (2) loads
2 or two (2) trips per day, including offloading and
3 loading.

4 So at sixty-six (66) loads per day, that's
5 -- that's a fair bit of traffic. And certainly if it is
6 a single lane road, there's going to be a lot of
7 pullouts, et cetera, but certainly that's a lot of -- a
8 lot of trucks to have on -- on operating the road at any
9 one time, and particularly given -- moving back to that
10 switchback, unfortunately, at Wolverine pass because that
11 gradual slope would have been much better.

12 I -- I know there is some modifications to
13 that. But that just simply would -- might be a worst-
14 case scenario. I would suggest best case would be early
15 January to 31st or 31st of March; that's about seventy-
16 five (75) days. And, again, if we're assuming 30 tonne
17 loads, that would still be about fifty-three (53) loads
18 per day. If we're assuming two (2) trips per day per
19 truck, then you've got about twenty-seven (27) trucks
20 operating.

21 The -- one (1) of the mitigative measures
22 that was proposed was to move to 40 tonne loads. And if
23 we start to calculate that, then, again, for a worst-case
24 scenario, March 15th, that works out to about -- where do
25 I have that? Sorry, that would be about fifty (50) loads

1 per day -- or fifty (50) trips per day or loads per day,
2 twenty-five (25) trucks.

3 The other scenario, March 31st, would
4 bring it down to forty (40). And I think the number
5 that's been used is in around forty (40), so I'm assuming
6 the calculations have been based on a best-case scenario.

7 So in terms of risk, may -- I may or may
8 not be correct on that, and certainly feel free to
9 comment on that, that the feeling would be that the more
10 loads per day would increase, to some degree, the risk
11 and the -- the possibility of higher tonnage,
12 particularly if vehicles are travelling, you know, at --
13 well, we don't know what the speed is, but that may also
14 increase some risk.

15 So some detail, I guess all I'm looking
16 for would be somewhat of a comparison of what the
17 possible scenarios are in order to, in terms of the
18 number of trucks, the number of loads per day and the
19 tonnage based on a few scenarios. If -- if -- certainly
20 if April 15th or -- is a date that you're wanting to work
21 with, then that -- that could be a scenario as well.

22 And a little bit more information or more
23 detail on the -- the actual travel time and the actual
24 speed of the vehicles along the -- along the road. I do
25 note that in the IR response, the recent one, that was

1 the first, I think, direct documented reference to the
2 use of ice road, or sections of it as an ice road as
3 opposed to packed snow and frozen -- frozen soil or
4 frozen ground and certainly Nahanni would see that as a
5 mitigative measure that an ice road is certainly a much
6 more effective roadbed than a packed snow or a frozen
7 bed.

8 So the question is, I guess: Is it
9 possible to add some in that risk assessment, some
10 scenarios in terms of movement of materials and how it
11 impacts both the load -- given the -- the vari --
12 possible variation and the length of the season, how
13 that's going to affect the number of loads per day and
14 also tonnage per load. I don't need the numbers right
15 now, just a commitment to do that.

16 And then I guess a kind of side note on
17 that, it's not directly as -- directly related to a risk
18 assessment, but I've got the mic, so I might as well
19 raise it.

20 Assuming there are, we'll say fifty (50)
21 or -- trucks, or fifty (50) loads per day and twenty-five
22 (25) trucks if -- and assuming two (2) trips per day that
23 would be about fifty (50) truck drivers, as well as all
24 the maintenance. And I'm just wondering where, in terms
25 of the Liard Highway transfer facility in the DAR or the

1 other documentation if there was a description or notice
2 of a -- of a camp being required that may be of interest
3 to the Naha Dehe Dene Band if there was a need -- one
4 would assume there would be a need for a camp at the
5 Liard Transfer facility. And I -- I can't quite remember
6 whether that was detailed or spoken to, but certainly
7 perhaps some detail or information on that might be
8 useful. So I think I'll leave it at that. Thank you.

9 MR. BYARD MACLEAN: Byard MacLean. The
10 short -- your question around about the sensitivity and
11 all the road issues, I mean, we've provided this plan as
12 to how many trucks and what the windows are going to be
13 and we've incorporated some conservatism into that.

14 First of all, we're using forty (40)
15 kilometres an hour, or twenty-five (25) miles an hour on
16 -- on the road, thirty (30) tonne trucks. Raising it up
17 to forty (40) tonnes isn't useful because, I mean, that's
18 a benefit that we have, but what we're attempting to do
19 is demonstrate reality and downside risk.

20 The -- the basis of our model is a fairly
21 long witted excel spreadsheet with trucks going from A to
22 B, and loading times, and -- and all those types of
23 things. And it's really -- that's really the document.
24 With -- with one provision, we had a statistical opening
25 time of January 13th to April 15th, but our design is to

1 have -- have the trucks off the road March 31st; anything
2 after that is gravy, anything before that we lose.

3 So if the road was open four (4) more days
4 we would bring out four more day's worth of concentrate,
5 so we will operate the road through that window as much
6 as we can. And if we're pushed off it prematurely -- and
7 if we open up the road a week early, we would open up the
8 rig -- the road a week early. But, the centre design
9 basis is about forty (40) trucks -- well, basically
10 provided exactly how many trucks there are.

11 And that time and motion study is based up
12 transport -- our transportation people at SNC-Lavalin who
13 have experience in northernized roads, advising us about
14 turnaround times, loading, unloading, travel times, et
15 cetera.

16 Yes, and of course the -- the window of
17 opportunity across the -- the bridge is -- is based upon,
18 I think, thirty (30) years worth of ice da -- ice bridge
19 data. And of course, we start back at the -- the owners
20 of Prairie Creek having experience with when we can build
21 road up close to the mine, that's why we started in that
22 direction.

23 THE FACILITATOR: Thanks. One (1) of the
24 questions as well was whether there would be a camp at
25 the Liard transfer facility.

1 MR. BYARD MACLEAN: Oh, the camp, yes.
2 Sorry. Byard MacLean again. When we install the road we
3 have a portable camp that moves with the equipment as we
4 go from the mine site out to the -- out to the Liard
5 transfer facility. And at the end of -- once the road is
6 built in there will be a small camp, I think it's about
7 twelve (12) people, which will provide the support for
8 the -- the loader operators and -- and basically people
9 at the transport facility.

10 THE FACILITATOR: A mic is on it's way,
11 Mr. Redvers.

12 MR. PETER REDVERS: Peter Redvers. Where
13 would the drivers -- or, the truck drivers be lodged
14 during --

15 MR. BYARD MACLEAN: At the mine site --

16 MR. PETER REDVERS: -- during the
17 operation?

18 MR. BYARD MACLEAN: Mine site.

19 MR. PETER REDVERS: For the -- for the
20 for the Liard Highway to -- to Tetcela --

21 MR. BYARD MACLEAN: The Liard Highway
22 people will stay -- the -- the operations crew at the
23 Liard Highway will stay there and the truck drivers will
24 be -- will -- will overnight at the camp at the mine
25 site.

1 MR. DAVE HARPLEY: Dave Harpley. Just to
2 add a bit more detail on the -- the road operations
3 schedule. As you know, winter roads in the north are
4 entirely dependant on weather, so we made our -- what we
5 think are the best projections on the operating period,
6 subject to the weather. So, who knows how soon or how
7 late we'll be able to start, or how soon or how late we
8 have to finish, that depends on the particular year in
9 question. But, what we don't want to have happen is have
10 an arbitrary road closure date when conditions are
11 perfectly good to continue hauling.

12 MR. BYARD MACLEAN: It is important to
13 note that the -- the thirty (30) years of data, the ice
14 bridge opens plus or minus a few days each year, it's not
15 as if it's opening a week early and closing ten (10) days
16 late, it -- it's very predictable.

17 MR. DAVE HARPLEY: Dave Harpley. One
18 other thing I wanted to add was one of the advantages, I
19 guess, from the realignments is that particularly on the
20 eastern end the road would traverse more firmer ground
21 than the old road. So, in that respect, we can also hope
22 to have better haulage conditions late in the season.

23 THE FACILITATOR: Thank you very much.
24 Any additional questions on the access road?

25 MR. PETER REDVERS: Peter Redvers. Yeah,

1 it -- it may be a small point, but it might be of
2 socioeconomic interest. I'm still not clear that -- my -
3 - my understanding of the trucking would be truck drivers
4 would leave the Liard transfer station, drive to the
5 Tetcela and re -- load up and return. Is that correct?

6 Or are they going right through to the
7 mine site and there's another set of trucks that are . .
8 . that -- my understanding, Liard junction to Tetcela and
9 back, is that one trip?

10 MR. BYARD MACLEAN: That's -- that's one
11 trip early in the exercise. When we're removing the
12 fifty thousand (50,000) tonnes. So that's a good
13 question.

14 MR. PETER REDVERS: But, no -- the early
15 in -- early would be mine site to Tetcela and back, and
16 then as of January 13th, it would be --

17 MR. BYARD MACLEAN: Once --

18 MR. PETER REDVERS: -- fully --

19 MR. BYARD MACLEAN: -- yeah, once -- once
20 the road opens --

21 MR. PETER REDVERS: It would be Liard
22 Highway to Tetcela and back. And then you still have
23 trucks doing the mine site. So I'm just still wondering
24 about a camp facility at the Liard Highway, that's all;
25 something the Naha Dehe Band might be interested in

1 discussing.

2 MR. DAVE HARPLEY: Dave Harpley. Peter,
3 what I believe is going to happen here is that the mine
4 haul fleet will always stay at the mine, and when the
5 haul road opens that mine haul fleet is traversing from
6 the mine to the LTF and back and those folks will still
7 always stay at the mine.

8 When the haul road is open from
9 approximately mid-January onwards and we're reliant on
10 the contractor fleet to come in and remove the fifty
11 thousand (50,000) from the TDF and continue the -- to
12 bring supplies in, those folks, I believe, will either
13 sleep in their own cabs if they need a break, or they
14 will simply stop at Fort Nelson and rest there and then
15 come back. So we don't intend that we're going to have a
16 housing complex at the LTF.

17 MR. ALAN EHRLICH: Okay. I've got a
18 question from INAC, or is it a comment?

19 MR. NATHEN RICHEA: Yeah, thanks. It's
20 Nathen Richea, INAC Water Resources. Just so this could
21 be on the record, I'm just curious to see if, you know,
22 potentially someone could read the transcripts and say,
23 Well, INAC never said anything about spills. So, we are
24 concerned about spills. And we'd be interested in seeing
25 the documentation that previously was committed to.

1 So, that's all I have. Thanks.

2 MR. ALAN EHRLICH: Thanks. And Sarah
3 Olivier with DFO has a question or comment.

4 MS. SARAH OLIVIER: I do. Sarah Olivier
5 with DFO. These questions are around water withdrawal
6 for the road. And obviously it's a winter road, a lot of
7 the crossings will be snow filled, there's probably going
8 to be a need for a lot of water for the road
9 construction.

10 One of our questions was:

11 "Where are some of the water sources
12 that Canadian Zinc is proposing on
13 using for the construction and
14 maintenance of the road?"

15 The response was Mosquito Lake and
16 numerous water courses. I guess, my questioning goes
17 along with, I guess, Mosquito Lake. There wasn't a whole
18 lot of information about Mosquito Lake in terms of the
19 bathymetry and how deep that lake may be. We do have a
20 water withdrawal protocol, which does include lakes. And
21 so along with that and one of the requirements under the
22 water withdrawal is to have a good understanding of -- of
23 the lake and the size of the lake which includes
24 bathymetry.

25 So we were just wondering whether or not

1 Canadian Zinc would be doing some work around Mosquito
2 Lake and capacity or -- or how much -- how much capacity
3 Mosquito Lake has in order to be used for -- for the
4 road?

5 MR. DAVE HARPLEY: Dave Harpley. It's in
6 our IR response, which says that we intend to do further
7 assessment of Mosquito Lake in the early part of road
8 construction when we can do that assessment from the ice
9 on top of the lake.

10 MS. SARAH OLIVIER: Well, would it be
11 possible to provide DFO with that information when it is
12 available?

13 MR. DAVE HARPLEY: Obviously, yeah.

14

15 --- UNDERTAKING NO. 16: For Canadian Zinc to provide
16 DFO with the further
17 assessment done of Mosquito
18 Lake when it is completed.

19

20 MS. SARAH OLIVIER: Great. And the other
21 question I have is for the water courses that will be
22 used for the -- for the road. We would be interested in
23 knowing locations, but it's also worth pointing out that
24 our water withdrawal protocol does not include water
25 courses, so those would have to be looked at on an

1 individual basis and, again, assess the capacity of that
2 water course to be used for -- for the construction and
3 maintenance of the road.

4 MR. DAVE HARPLEY: Dave Harpley. Again,
5 also as described in our IR response, we recognize that
6 withdrawal from water courses has potentially issues in
7 terms of impacts and base flow. And we noted that, if
8 indeed we were going to consider using water courses, we
9 recognized that we would have to determine what flows are
10 and consider what those impacts might be and consult DFO
11 before we went ahead and took out water.

12 MS. SARAH OLIVIER: Yes, because it's
13 very important, from our perspective, to have a good
14 understanding of how much water is taken out and what the
15 potential impacts could be on fish and fish habitat, both
16 at the location of withdrawal as well as downstream.

17 I also had another question about borrow
18 sites, or aggregate sources. And I know we discussed it
19 and I -- you had mentioned that none of the borrow sites
20 would be within alluvial fans. But, I guess, just to --
21 to clarify one more time: According to some of the maps
22 there are some borrow sites or aggregate sources that are
23 located directly within some of the water courses.

24 And I guess I just wanted to confirm that,
25 I guess, those maps are maybe not accurate or are they

1 just not well placed on the map?

2 MR. DOUG PELLY: Doug Pelly with Canadian
3 Zinc. The borrow sources that are identified on the map
4 are just possible borrow sources. This is -- this has
5 just been identified from a geological perspective, it's
6 not necessarily ones that would be chosen by Canadian
7 Zinc to actually go ahead and -- and do it. It's just
8 basically putting out a suite of possibilities that would
9 then be filtered by the other criteria as to where you
10 can and cannot permit the actual borrow.

11 MS. SARAH OLIVIER: We also noticed that
12 some of the borrow sites also would require some extra, I
13 guess, length of road to access them and in some cases
14 there may or may not be water crossings.

15 So we would also have an interest in, once
16 those final locations are determined, whether or not
17 there will be any water crossings and how those are
18 proposed to be crossed.

19 MR. ALAN EHRLICH: Can we get a response
20 from Can. Zinc, please.

21 MR. DAVE HARPLEY: Dave Harpley. As far
22 as locations of the sources, it's likely a dot on a map
23 that's either a big dot or not exactly in the right
24 place. But, as we noted yesterday, we have no intention
25 of borrowing alluvial material.

1 In terms of water sources, I'm not aware
2 of any at this point that we're contemplating that would
3 involve stream crossings that might be fish bearing, but
4 if we did then we recognize we have to follow the right
5 operational statement or make other arrangements.

6 THE FACILITATOR: Thanks very much. And
7 with that, we'll take a fifteen (15) minute break. Oh,
8 okay.

9 MR. PETER REDVERS: Peter Redvers, Naha
10 Dehe Dene Band. David, in -- back in June in the meeting
11 -- one (1) of the meetings held with the community there
12 was discussion about the location of the Liard Highway
13 Transfer Facility.

14 The community indicated the place that you
15 were looking at was a -- was a wet area, and that just a
16 little ways along the road was an old -- I believe it was
17 a borrow pit or some sort of a site that had been used
18 that was relatively hard ground. And there was going to
19 be an exchange, I think, of maps and looking at that as a
20 possible location. And I'm just -- I asked Fred
21 yesterday where that was at and he wasn't too sure.

22 So I'm just wondering where that is at, or
23 if there's still consideration given to the possibility
24 of relocating; and it wasn't a very long distance, but it
25 was to a site that the community thought would be more

1 suitable and stable.

2 MR. DAVE HARPLEY: Dave Harpley. I'm not
3 sure where it's at either. But I believe it was noted at
4 the time that the distance from the highway was
5 approximately a kilometre and at that time we noted that
6 if that was all it was, then we didn't see there would be
7 a problem in that.

8 THE FACILITATOR: Thanks very much. And
9 since we have one or two (2) more questions on the access
10 road, we will finish that off.

11 MS. SHARON SMITH: Hi. It's Sharon Smith
12 here from NRCan.

13 THE FACILITATOR: Please proceed.

14 MS. SHARON SMITH: Yeah, we had a couple
15 questions about the road as well, so I'm not sure whether
16 you're going to address that after your break, or...

17 THE FACILITATOR: We've -- I've changed -
18 -

19 MS. SHARON SMITH: -- things here.

20 THE FACILITATOR: You're free to proceed
21 with questions regarding the road right now. We will do
22 the break afterwards to try to separate the two (2)
23 subjects; we feel that's preferable.

24 MS. SHARON SMITH: Okay. So could --
25 could I go ahead and ask a couple of questions now then?

1 THE FACILITATOR: Please.

2 MS. SHARON SMITH: Okay. Sorry. It's a
3 little hard when you're not in the room and following
4 things.

5 We had a couple of IRs related to the road
6 and mostly to do with the analysis of the terrain's
7 sensitivity. And I just had a couple additional
8 questions and maybe just really wanted to get some
9 clarification.

10 The additional information that was
11 provided and the new map of the geology was quite helpful
12 to us. And we'd also asked about the types of
13 investigations that might be done to get a better idea of
14 the sub-surface materials because it seemed that most of
15 the -- the work that had been done so far was more of a
16 desktop study and a reconnaissance -- aerial
17 reconnaissance and that kind of thing. And in Appendix D
18 in the Golder report there were proposed geo-technical
19 investigations.

20 And I'm just wondering if maybe the
21 proponent, Canadian Zinc, could clarify what their
22 intention is in doing these more detailed geo-technical
23 investigations.

24 MR. DOUG PELLY: Doug Pelly with -- with
25 Canadian Zinc. With respect to further -- let me back up

1 a bit. The -- the work to date, as -- as you've said, is
2 -- is primarily based on existing -- sorry, existing
3 information and reconnaissance, we have been on the
4 ground in a few places and have been up and down the --
5 the route quite a lot. I think it's kinda burned into my
6 memory at this point.

7 There is a need for -- for additional
8 information, but more to go to the issue of -- of
9 engineering design as opposed to understanding where an
10 appropriate place to -- appropriate place to put the road
11 is concerned. And when -- when that stage comes along,
12 the intent is to -- is to look at the -- with -- with
13 additional investigation is to -- is to look at the areas
14 that potentially are -- would -- would affect
15 construction, have some outstanding engineering questions
16 and I'm thinking specifically around the -- the Polgy
17 Creek bridge, for instance, there might be a need for
18 additional information there.

19 There may be some other need to
20 investigate borrow areas that ultimately are chosen so
21 that they're characterized properly, so you know what
22 you're actually getting into when -- when you start to
23 use that. And those would be the fo -- that would be the
24 focus of further investigation.

25 THE FACILITATOR: Thank you for that

1 response. A further question from NRCan on the
2 teleconference, please.

3 MS. SHARON SMITH: Yeah, I'm just
4 wondering whether those investigations would involve
5 drilling boreholes to get a better idea of what the
6 ground ice conditions are, the material properties,
7 whether there would be any installation of thermaster
8 cables, because these were the kinds of things that were
9 suggested by Golder.

10 MR. DOUG PELLY: The -- the techniques
11 that would -- that would be used as -- as proposed now
12 would in -- would include -- would include drilling. One
13 has to understand that most of the areas of concern of
14 permafrost would be purely a winter road. And, at this
15 point, there's not an intent to -- to further
16 characterize that because the access to that is purely in
17 the winter, in -- in any event.

18 There may, nonetheless, be some areas
19 along the road, again, that go in and around where --
20 where Polgy Creek is. And one (1) of the things that
21 would need to be characterized there is, are there issues
22 with respect to the -- the ground ice or permafrost in
23 that area that would affect the design or construction of
24 the permanent abutments for the bridge, for instance.
25 And -- and understanding the nature of that and the

1 temperature would -- would be a piece of that work.

2 MS. SHARON SMITH: I guess part of the
3 reason why I was asking that question is there are going
4 to be areas where you get -- you're going to have to
5 remove the vegetation, which could -- even though it's a
6 winter road, in the summertime could result in some
7 warming of the ground and you could get some
8 instabilities in those areas.

9 And I guess the -- the point would be, you
10 know, are you going to do those investigations to better
11 characterize the terrain sensitivity and the impacts of
12 the road construction itself?

13 MR. DOUG PELLY: At -- again, Doug Pelly
14 here. At the level of -- of engineering design, those
15 questions would be -- would be answered. Generally, what
16 you were saying earlier about -- about wanting -- or
17 stripping vegetation in areas where there -- where
18 there's likely to be permafrost, the intent at this point
19 is to avoid that. That's why this is going to be a snow
20 and ice road in -- in the -- and winter road only access
21 point.

22 As you get into the -- the mountain end,
23 like west of the ca -- what's called the Cat Camp area,
24 areas along there are primarily granular and rock, and
25 we're not particularly concerned at this point about it

1 being sensitive land as far as -- as far as permafrost is
2 concerned.

3 Nonetheless, I mean, as one gets into it
4 in more detail, there may be a need to -- to characterize
5 some areas locally, and -- and the method to doing so
6 would be to drill a hole and in -- and install
7 thermasters. You need to understand what you're dealing
8 with.

9 MS. SHARON SMITH: Now, one (1) of the
10 other questions that -- that came up earlier was about
11 the opening and closing days of the winter road, and
12 that's going to depend on when you have frost penetrating
13 deep enough to create that firm surface or when the
14 active layer freezes back.

15 And I don't know -- or wasn't clear from -
16 - again, because these -- these investigations were only
17 suggested, and I know Golder suggested installing
18 temperature cables, but that could give you an idea of
19 what the rates of freezing are and give you a better idea
20 of what -- when the road might actually be ready. And I
21 was just wondering if there was any intention to monitor
22 the thermal condition of the ground as a means to -- to
23 determine when the road should be open and closed.

24 MR. DOUG PELLY: Doug Pelly speaking.
25 After I make a comment I'd like to pass on to the people

1 that are dealing with the construction logistics here, as
 2 well. But from a -- from a -- from a ground perspective,
 3 from a training perspective, absolutely you could -- you
 4 could do that, but I guess I would say there's a fairly
 5 well-established practice of building winter roads that -
 6 - that don't involve an array of thermasters that -- that
 7 in -- that involve basically judgment from how the ground
 8 performs to the equipment that is -- that is being
 9 brought onsite.

10 MR. BYARD MACLEAN: Yes, this is Byard
 11 MacLean. And I think his answer was correct. We don't
 12 have any plans to monitor the ground temperature. We'll
 13 just use the practices of building winter roads that are
 14 practised elsewhere north of 60, and that is to monitor
 15 the conditions. And when it's -- when it's making ice
 16 and making snow, you get at it.

17 THE FACILITATOR: Thank you. Thank you
 18 for those questions and responses. I believe we have a
 19 question from the floor here, NRCan, as well.

20 MR. FONS SCHELLEKENS: Okay, this is Fons
 21 Schellekens, from Natural Resources Canada. Yeah, again,
 22 I -- I want to echo what Sharon just said, that, yeah,
 23 you provided the proposed routing. We have a photo, and
 24 the geo hazards on the -- the photo, as well, and that
 25 was very helpful, so thank you.

1 But it would be nice to know what parts of
2 the road will be snow road and ice and where gravel is
3 required, and say when you use gravel and water, where --
4 where you are sourcing that from. And I -- I know you
5 have provided some information in response to Information
6 Requests, as -- as we heard, from Mosquito Lake and some
7 numerous water courses.

8 But for us to have a good handle on the --
9 the environmental -- the potential environmental effects
10 or how potential effects could be mitigated, we kind of
11 need to know where water is being put on the road and
12 where that could be a potential for erosion and -- and
13 what the mitigation measures are that you intend to use.

14 So in -- in other words, it would be
15 helpful for us to have kind of a toolbox and decision
16 tree, if -- if you can call it that, and so that we have
17 a better -- better idea that you have a strong handle on
18 the potential environmental effects and -- and the
19 mitigation measures.

20 THE FACILITATOR: Can the developer
21 provide a response to that, please?

22 UNIDENTIFIED SPEAKER: We have made some
23 proposals as in terms of a right-of-way, but I don't
24 think we're at a level of detailed design to pick at this
25 stage the components of the road. I mean, we -- we know

1 where we have a reasonably good roadway close to the mine
2 because we're going through the mountains and those roads
3 have been there since 1982. But I think as the designers
4 pick the right of way and as we see where we're going
5 we'll be in a better position to say -- to -- to be able
6 to provide you with a design to -- to look at. And when
7 -- of course, when we provide that design we'll be
8 providing, you know, the methodology and -- and the
9 mitigation strategies, et cetera, et cetera.

10 So that's -- I haven't answered your
11 question, but I -- we're -- we're not able to at this
12 time.

13 MR. DOUG PELLY: Doug Pelly speaking.
14 Just to add to that a little bit. I guess I would direct
15 your attention to a number of -- that the route has been
16 divided in -- in our piece of the submission, into --
17 into various sections that are identified on the plans in
18 there.

19 And in accompanying tables that go along
20 with that that was submitted with the original submission
21 there are -- there is language in there, there is a
22 description in there of -- of issues that need to be
23 addressed.

24 Now bear in mind that these thing -- these
25 are being put forward, again, from a -- from a geological

1 perspective as opposed to -- to any kind of final
2 engineering design on the -- on the road itself. They're
3 factors to consider.

4 And so reading through that would still,
5 nonetheless, give you an idea in an -- in an overview
6 sense as to how extensive some of these issues might be
7 and how far along the line they might be. And I guess I
8 -- like I say, I'd draw your attention to some of that
9 information that -- that does exist right now.

10 MR. DAVE HARPLEY: Dave Harpley. I think
11 we can talk some more specifics about the road with
12 reference to a figure here. And Byrod has already
13 mentioned that section of the road from the mine to
14 approximately kilometre 40 is fairly firm ground, so I
15 don't think we're concerned about that stretch of the
16 road.

17 If I can find the right map. That's this
18 section of the road here to approximately this location.
19 From this location we start to get into softer ground.
20 And this particular inset here is the Polgy realignment.
21 And there certainly is a spot here, and probably on the
22 other side as well, where there may be permafrost and
23 we'll have to give some additional consideration to in
24 terms of further investigation and design.

25 We have also proposed some new alignments

1 in this location and along this front range. Both of
2 these we think are going to be superior to the old
3 alignments, which are through wetlands and in softer
4 material.

5 We had a road engineer out along the
6 alignment this summer with Doug doing studies. And apart
7 from this particular section here, and also the Silent
8 Hills Pass area right there, which I'll come back to in a
9 second, his comment in general -- and he's a road
10 builder, this fellow. He -- his comment in general for
11 the rest of this road section through here was that it
12 was, quote, "typical winter road construction," so, in
13 other words, no significant issues in terms of building
14 it, operating it, and maintaining it.

15 I'm just going to come back to this
16 particular location here. This is the Silent Hills area,
17 and the road comes here from the west and it goes through
18 currently a sequence -- sequence of switchbacks climbing
19 up to the pass, and then down the other side.

20 We have proposed to do a realignment that
21 would bring the road across the wetland in this location,
22 and then climb gradually up the slope. This summer we
23 determined -- or rather, Doug and the -- the construction
24 engineer determined that this part of the slope was
25 unstable and too unstable to consider that realignment,

1 so we essentially abandoned it.

2 What they did, however, scope out here is
3 a modification of this particular section which
4 eliminates these switchbacks and provides -- this is the
5 steady climb around this way, and then cutting back in a
6 broad arc here, and then it cuts out those switchbacks.

7 This section of the range appears to be
8 stable, and so the modification's been confined to that
9 area, but there is still more investigation work needed
10 in this particular spot to finetune the design.

11 THE FACILITATOR: Thank you. Any
12 additional questions from NRCan?

13 MR. FONS SCHELLEKENS: Yeah, tha -- thank
14 you for that answer. I -- I did, just like Peter, some -
15 - some calculations, the same truckloads and so on, so I
16 think those things are -- have been dealt with. I also
17 calculated the -- the amount of water that would be
18 required for the road that -- and I arrived at 20,000
19 cubic metres. Is -- is that about right?

20 MR. DAVE HARPLEY: What's that estimate
21 based on?

22 MR. FONS SCHELLEKENS: It's based on what
23 you provided, say, a common ice road practice in Fort
24 Nelson and, say, construction maintenance.

25 MR. DAVE HARPLEY: Yeah, we kind of -- I

1 mean, we -- we included that as a guideline. I don't for
2 one (1) minute think that we're going to be requiring
3 that much water for the whole stretch of the road. It's
4 kind of an up -- upper bound and would consider that very
5 conservative.

6 MR. FONS SCHELLEKENS: And then, finally,
7 I have one (1) comment to make about the environmental
8 management of the road. Oh, yeah, I think also where the
9 -- the speed limit, or the speed that you mentioned, 40
10 kilometres an hour, I know that, from my own experience
11 with winter roads, that that is -- that's an excellent
12 target and that's very, yeah, all -- used all around at
13 winter roads.

14 Yeah, from the environmental management I
15 want to perhaps point you at -- we have here in Canada
16 probably the busiest winter road in the world close by,
17 the Tibbitt to Contwoyto winter road, and I think that is
18 a model probably worldwide as how to do a very good
19 environmental management of a winter road.

20 And that is perhaps something that you can
21 keep in -- in your mind and in consideration when -- when
22 you are operating your winter road. Since -- yeah, they
23 -- they are using a GIS system and wildlife is
24 incorporated, spill plans, and all kinds of elements, I
25 think, that may be very useful. And I think a lot of it

1 is accessible or so to other people, so, yeah, I just
2 wanted to mention that.

3 MR. BYARD MACLEAN: It's Byard MacLean.
4 We have opened a dialogue several years ago with the DOT
5 in Fort Simpson, and they have been very helpful in
6 helping us with information regarding just the things
7 you've talked about. We have a full file on it. We --
8 we keep in touch with them about anything new that's
9 coming up. Thank you.

10 THE FACILITATOR: Okay, just one (1)
11 comment. We have to get through wildlife this afternoon,
12 which is -- and vegetation, which are both important
13 topics, and I'd like to see if we can have some concise
14 questions and wrap up this topic, take a very short
15 break, and then move on to wildlife. Go ahead.

16 MR. CHRIS AGUIRRE: Chris Aguirre,
17 Transport Canada. I'm just looking -- we're going -- for
18 our -- TC's review of the project, we're going to need a
19 finalization on the cross instructor at Sundog Creek.

20 There's two (2) options proposed, which is
21 a snow fill or I guess a clear span. I'm just wondering
22 which of the two (2), or has it been finalized on which
23 one will be put in place or constructed?

24 MR. DAVE HARPLEY: Dave Harpley. Right
25 now it's snow fill. We have not done enough work to move

1 forward with a proposal for a span at this point.

2 MR. CHRIS AGUIRRE: And my other comment
3 is -- is that I was looking at the permits required for
4 the project, and an NWPP (sic) authorization wasn't
5 included. This is for any works or constructions built
6 or placed over, through, or across navigable water. I
7 was just wondering if that was going to be included in
8 the permits, a part of -- which is part of the DAR?

9 MR. DAVE HARPLEY: Dave Harpley, simple
10 answer is I'm not sure at this point. I don't believe
11 any of the streams we're crossing are navigable apart
12 from Liard. So I don't know how that comes into play,
13 but we'll have to look at it.

14 MR. DOUG SOLOWAY: It's Doug Soloway,
15 Transport Canada, as well. And just to add to what Chris
16 was saying, I just have a couple of very quick questions.
17 But what I understand, are there going to be any -- any -
18 - any in water works at all?

19 MR. DAVE HARPLEY: Can you clarify what
20 you mean by "in water works"?

21 MR. DOUG SOLOWAY: In water works at the
22 crossings, due to the works involved with installing the
23 crossings?

24 MR. DAVE HARPLEY: The Polgy Creek
25 crossing would be a span crossing, so the intent is to

1 avoid the -- the water course, so that one's out. The
2 Liard crossing is an ice bridge, so I'm assuming the
3 answer to your question is no.

4 MR. DOUG SOLOWAY: The -- the other I
5 wanted just basically for information. When -- when
6 applying for the NWPA approvals, certain information will
7 be required, and some of that would probably encompass
8 the use of the water bodies to determine it navigability.
9 That could be recreational or traditional use.

10 That would be required for the
11 determination of navigability. Some of the information
12 you gath -- gathered from your Dillon study provides some
13 of the pertinent information, but still the -- the water
14 body usage would -- would also be required.

15 MR. ALAN EHRLICH: Thanks, Doug. The
16 last question that we're going to take on roads is from
17 Parks Canada.

18 MR. JAMIE VANGULCK: Jamie VanGulck,
19 Parks Canada. I'd just like to move back to my initial
20 line of questioning with the Information Request Number
21 10 from Parks Canada. One (1) of the items that weren't
22 addressed in the responses was item 'D', related to
23 typical cross-sections of the road for different types of
24 terrain environment.

25 I heard from the engineer or geologist

1 that that sort of information is likely easy to pull
2 together, but I didn't hear whether or not we'd be able
3 to obtain a copy of some typical cross-sections for
4 different terrain environments.

5

6 (BRIEF PAUSE)

7

8 MR. ALAN TAYLOR: It's Alan Taylor here.
9 I don't fores -- yeah, I don't foresee a problem in
10 getting some sections. I'm not sure exactly where we'd -
11 - where we'd get them from and how many you'd need --
12 need, and what -- why you require them, but yeah, that is
13 a possibility.

14

15 --- UNDERTAKING NO. 17: Canadian Zinc to provide a
16 response to IR Number 10,
17 item 'D', related to typical
18 cross-sections of the road
19 for different types of
20 terrain environment

21

22 (BRIEF PAUSE)

23

24 MR. ALAN EHRLICH: Okay. We're going to
25 indulge Parks Canada in one (1) last thirty (30) second

1 question.

2 MR. MIKE SUITOR: Thank you very much.
3 Mike Sutor, Parks Canada. I just wanted to make a
4 comment. We talked about the active period of the road
5 and going to mid-April, potentially. I'd just like to
6 comment that when we start getting towards the end of
7 shoulder seasons, as well as some weather environmental
8 events that could happen midwinter, there's a possibility
9 for melt to occur and have free water moving around.

10 As you're doing your risk assessment of
11 spills, I would -- I would ask that you please consider
12 that in your assessment of consequences and likelihood of
13 -- of cleanup options.

14 MR. ALAN TAYLOR: It's Alan Taylor here.
15 We'll consider.

16 THE FACILITATOR: Okay. Thanks. With
17 that, we'll wrap up our questions on access -- the access
18 road, and then we'll take a, between three (3) and five
19 (5) minute break at the outside, and get on with the
20 wildlife and vegetation. See you then.

21

22 --- Upon recessing

23 --- Upon resuming

24

25 MR. ALAN EHRLICH: Who ha -- who would

1 like to start the questions related to wildlife? I
2 notice that ENR was in the room in greater numbers a
3 moment ago. I see two (2) other ENR people still in the
4 room. Do you think that Gavin and Amy are coming back?
5 I'll ask Gavin if he plans to come back.

6

7 (BRIEF PAUSE)

8

9 MR. ALAN EHRLICH: So the question is:
10 Are there any questions that pertain to wildlife that
11 parties would like to put to Can Zinc or to any other
12 party?

13 Gavin and Amy, you're both here and from
14 an organization that has a wildlife mandate. Do you have
15 any questions for Can Zinc?

16 The response that was -- that will soon be
17 in a microphone was, no, they're here to respond to other
18 questions. Does anyone else? Does Parks Canada have any
19 questions related to wildlife?

20 MR. MIKE SUITOR: And I suppose by
21 wildlife you also mean vegetation included in there. I
22 think I'll start off with vegetation if you guys don't
23 mind.

24 MR. ALAN EHRLICH: If it's on the agenda,
25 then that's what I mean. Yeah --

1 MR. MIKE SUITOR: Excellent, okay.

2 MR. ALAN EHRLICH: Wildlife and
3 vegetation will be fine.

4 MR. MIKE SUITOR: Mike Sutor, from Parks
5 Canada. We had a number of vegetation requests earlier
6 on. Can Zinc endeavoured to complete a bunch of those
7 and we were fairly happy with the work that has been done
8 do date. You know, we -- we're waiting on the final
9 report from that work. I -- I guess just a commitment
10 that would be followed up with would be great.

11 The secondary question I have with
12 vegetation, we -- we had a request with regard to design
13 of reclama -- or design of a study that would assess
14 reclamation rates and practices and -- and an assessment
15 of -- of different types of techniques that might be used
16 to help us understand what -- what improvements might be
17 there for reclaiming -- reclaiming areas.

18 So, in essence, can we identify what
19 detriments there are to revegeta -- what -- what
20 detrimental -- what -- check, check -- what barriers
21 there might be to vegetation reclaiming, in particular,
22 types of ve -- vegetation in eco type communities.

23 And, basically, what we were hoping to get
24 out of that was some sort of study on the ground in the
25 future before the road became operational. So we were --

1 we were hoping to have a commitment from Canada Zinc to
2 work collaboratively on that -- that type of program
3 before operations.

4 So I guess, first, just a commitment that
5 a final report is forthcoming on the vegetation work
6 that's been conducted, and then, secondarily, a
7 commitment to work colla -- collaboratively on a
8 reclamation study, as I've outlined in my request and
9 here to...

10 MR. DAVE HARPLEY: Dave Harpley. I
11 believe a vegetation report is in the works. Timeline?
12 Timeline? End of November.

13 MR. MIKE SUITOR: That's fine.

14 MR. DAVE HARPLEY: As far as car -- the -
15 - the reclamation collaboration as I understand it,
16 you're proposing a student or other interested researcher
17 to undertake the work in the field, and you're looking
18 for support from Canadian Zinc, whether it be
19 accommodation and meals and assistance of transport to
20 the road alignment. And that form of collaboration is
21 acceptable to us.

22 MR. MIKE SUITOR: Okay, thank you. Yeah,
23 that's exactly what we are looking for. And we -- we
24 work together obviously to -- to move forward on that
25 proposal, I guess, at the -- the conclusion of the EA

1 process.

2

3 --- UNDERTAKING NO. 18: Canadian Zinc to work
4 collaboratively with Parks
5 Canada in a study that would
6 assess reclamation rates and
7 practices and an assessment
8 of different types of
9 techniques that might be used
10 to help Parks Canada
11 understand what improvements
12 might be there for reclaiming
13 areas

14

15 MR. MIKE SUITOR: I guess for me for
16 vegetation, that -- that does it. I don't know if other
17 parties had something to address on vegetation or...

18 Okay, at that point, I'll move into
19 wildlife if there's no objections. Parks Canada review
20 of the wildlife data as presented assessed all the
21 information that had been provided to date, including
22 past reports, most -- more recent surveys. We looked at
23 it from the perspective of looking at our valued
24 components, moose -- moose, sheep, caribou, and -- and
25 trying to determine what seasons were of particular

1 importance to us.

2 And -- and those seasons tended to be the
3 -- the migration periods and sensitive periods such as
4 calving or lambing, and then the post-calving/lambing
5 congregational periods. And then finally the winter
6 period.

7 The data that's been presented to date is,
8 from the view of Parks Canada, insufficient for us to
9 have an assessment of -- of -- of the possible
10 significance of any impacts on those species during those
11 periods. We -- we've had numerous conversations to this
12 effect with -- with Canada Zinc.

13 And what I would like to propose is, given
14 the deficiencies and -- and operational requirements of
15 Canada Zinc, looking at the shoulder seasons first, so
16 that would be the migration periods, as well as the
17 calving/lambing, post-calving, post-lambing
18 congregational periods that along the road, at the very
19 least, a no activity mitigation be put in place, given
20 the absence of data for us to assess impacts and to
21 determine mitigations.

22 Is that something Canada Zinc would be
23 willing to -- to commit to?

24

25 (BRIEF PAUSE)

1 MR. MIKE SUITOR: Sorry, I caught you
2 with a mouthful there.

3

4 (BRIEF PAUSE)

5

6 MR. DAVE HARPLEY: Dave Harpley. I -- I
7 -- I believe you're referring to the times of the year
8 when we could avoid any activity on the road. Just
9 perhaps for the benefit of everybody, you could be more
10 specific to the particular periods.

11 MR. MIKE SUITOR: Yeah, so we'd be
12 looking for migration periods. So let's start -- let's
13 just start in the spring. We'd be looking for periods
14 beginning in -- probably in April, at some point,
15 probably the latter part of April, moving through May.
16 And -- and then of course, at the end of May we're
17 starting to deal with lambing and calving, so that pushes
18 us into -- into June, and -- and probably early July at
19 the latest, for the -- the post-calving, post-lambing
20 periods along the access road.

21 That -- that would suffice for that
22 period. And then in the fall time we have rut that
23 occurs, starting in mid-September through to -- and
24 migration that would occur in -- in coordination with
25 that or shortly thereafter in October.

1 Our -- our sense of it based on
2 information provided by outfitters is that there probably
3 isn't a significant migration that occurs in September,
4 or rut activities that occur adjacent to the road, and --
5 and that probably is sufficient to -- to allay my fears
6 there.

7 However, with the October period, we -- we
8 have less information, so I'd be asking for a -- a no
9 activity period associated with that time. Does that
10 suffice?

11 MR. DAVE HARPLEY: After the middle of
12 April we don't foresee that we're going to be active on
13 the road after operations cease. And the only interest
14 we have for the kind of open water period, if you like,
15 is a period in the summertime when we might be able to
16 use the firm bed from the mine to do maintenance along
17 the roadway as far as we can progress down Sundog before
18 we get to a -- a point where we can't cross a fish
19 bearing stream.

20 Typically, that stretch in Sundog crosses
21 a number of scree slopes and requires usually, or will,
22 or may well require some annual maintenance in terms of
23 removal of material or preparation of the bed. We
24 believe we can do that in approximately a two (2) month
25 window between, what did you say, middle of July to --

1 through to maybe middle of September?

2 MR. MIKE SUITOR: I had -- for -- from
3 the species I'm speaking to, and -- and like I've
4 suggested prior in our conversations, there's other area
5 agencies that will speak to their requirements, but my
6 requirements would be probably into, I'd say, the first
7 or second week of July and then we'd be looking at
8 October at some point.

9 And I think those dates need to be firmed
10 up a little bit based on some evidence, but I -- I think
11 we can generally speak that that'd be the period of -- of
12 interest for Parks Canada.

13 MR. DAVE HARPLEY: Dave Harpley. Well, I
14 -- I believe that that window is good enough for us to do
15 kind of the summer work that we might contemplate, so I
16 don't believe that will be an issue. We would like to be
17 able to start using the -- the road from the mine again
18 sometime in October, as -- as early as possible probably
19 just to get a bit of a jump on starting to prepare the
20 road for the -- the early winter period. But we can see
21 what kind of dates and implications we're discussing at
22 that point.

23 MR. MIKE SUITOR: Okay. So, in
24 conclusion, I -- I guess can we -- can we a firm
25 commitment on -- on those periods that I've -- I've

1 outlined?

2 MR. DAVE HARPLEY: We can have a
3 commitment that we can have a window when Canadian Zinc
4 would consider doing summer work without interfering with
5 those sensitive times of the year, or potentially
6 sensitive.

7 So we'll commit to isolating our work to
8 that summer period. As far as the October timing, we'll
9 have to be a little more specific in terms of the -- the
10 actual date we're talking about because we do want to get
11 started on that road as early as winter conditions will
12 allow.

13 MR. MIKE SUITOR: Mike Sutor, Parks
14 Canada. Do you have an idea of when in October you'd be
15 expecting activities to begin? And, sorry, I should
16 clarify, as well, timing and then also the extent, so
17 where -- where in particular on the road you'd be doing
18 that work that early in the season.

19 MR. DAVE HARPLEY: We'd be starting in --
20 probably in around and about the middle of October, and
21 we would start from the mine, and we would expect to -- I
22 mean, we'd be travelling to Sundog, upper Sundog very
23 readily because there's no -- will be no stream crossing
24 obstacle.

25 The first obstacle would be approximately

1 kilometre 25 when we hit the first bearing -- fish
 2 bearing -- potentially fish bearing stream on Sundog, so
 3 -- providing we have the ability to make a crossing. And
 4 -- and/or there's -- well, in addition to consideration
 5 of no significant flow in Sundog at that point, then we
 6 would start to progress at that point. And if those
 7 conditions weren't there, then we would have to delay.

8 MR. MIKE SUITOR: Okay, I'm happy with
 9 that. Moving on to the next period, the --

10 MR. DAVE HARPLEY: Sorry, Mike, let me
 11 just add one (1) more thing.

12 MR. MIKE SUITOR: Certainly.

13 MR. DAVE HARPLEY: Sorry to interrupt,
 14 but I just want to point out and have on the record that
 15 we're making this commitment now because -- partly
 16 because we can. It doesn't prevent us from doing the
 17 activities that we want to do for this kind of operation.

18 But I guess the commitment is also based
 19 on the -- the fact that you've -- you've indicated that
 20 there could be a potential for impacts in these shoulder
 21 periods in these areas. And while we could further
 22 investigate that pential -- potential and con -- and
 23 consider whether it's necessary, we choose not to at this
 24 point because there's no real need for us to do so.

25 MR. MIKE SUITOR: Mike Sutor, Parks

1 Canada. Yes, I -- I would agree with that synopsis and -
2 - and I would add that, in the future, if we wanted those
3 windows to change and there was sufficient work that was
4 carried out to determine the types of information, such
5 as distribution abundance and key movements during those
6 periods and a determination of whether or not those --
7 those effects would be adequately mitigated, then there
8 would be opportunity there to work together, as well.

9 But, again, in -- our Parks Canada
10 perspective is in the absence of data. Those timing
11 windows will work for us to allay our concerns with
12 regard to those species during those sensitive periods we
13 indicated.

14 Mike Sutor still, of Parks Canada.
15 Moving on to the next section, winter range is a --
16 winter -- the winter period is a period of specific
17 interest to Parks Canada primarily because most
18 activities that are going to occur within Nahanni
19 National Park will occur during that period.

20 As I -- as I stated earlier, we -- in --
21 in review of the data, we felt the data was insufficient
22 for the purposes of understanding impacts to wildlife,
23 and, therefore, insufficient for us to determine
24 appropriate mitigations to reduce impacts. The -- the
25 data, as -- as presented, was largely data that was -- is

1 thirty (30) years dated now and considerable -- some
2 change has happened to that landscape that may have
3 altered things, as well as it was mostly from a single
4 winter.

5 With regard to ungulate winter range, it's
6 something that changes through time. It can change
7 seasonally. It can change within season depending on
8 environmental conditions.

9 Our concern is that the data as presented,
10 it's being dated, being narrow in scope, and that it was
11 solely collected along the road, and also being data that
12 will only readily identify animals seen rather than
13 indications of animals in an area. In other words,
14 animal sign tracks and trails probably had a very poor
15 detectability and -- and made it very challenging for
16 observers to determine the relative density of animals
17 within the area or possible winter ranges that are used
18 year-to-year as well as possible movement corridors.

19 Because of that, Parks Canada finds itself
20 in a position where we -- we feel that new information is
21 -- is required to determine where species aggregate
22 during winters, what ranges there are, what movements
23 might occur. And -- and specifically with regard to
24 caribou, caribou are a species at risk on the Schedule 1
25 -- Schedule 1 of SARA.

1 And because of that, Parks Canada, as a
2 responsible minister, has an obligation to ensure that
3 any activities that occur within the species range have
4 the full assessment of impacts as well as the full suite
5 of mitigations that might be required to reduce those
6 impacts and additionally monitoring.

7 And I might note that, as I understand,
8 the similarly responsibility is placed upon the Board of
9 -- of this environmental impact review.

10 So Parks Canada, at this time, is -- is
11 requesting that Canada Zinc conduct multiple surveys over
12 the winter period in lieu of the -- the absence of data
13 to -- to provide Parks Canada with a sense of where
14 animals are, specifically caribou, during the winter
15 period, where they might move, and any -- obviously
16 stemming from that, any possible mitigations that might
17 be required.

18 MR. CHRIS SCHMIDT: Yeah, it's Chris
19 Schmidt, biologist for Canadian Zinc. As you're aware,
20 we've had a number of discussions between ourselves,
21 Canadian Zinc, the various government agencies, and a
22 number of contacts that we've established over the last
23 little while to get a handle on what the probability is
24 for caribou wintering in that particular area.

25 There is actually some useful data from

1 the early 1980 studies. There were a number of surveys
2 flown in the mine site area, and there was one (1) survey
3 flown, in March I believe, for the entire corridor. And
4 that particular survey didn't just include the -- the
5 road itself. It also included some of the adjacent
6 uplands along -- along the road.

7 There were very limited caribou sightings
8 made. In fact, the only substantial sighting was on the
9 east side. I think I'll move. Excuse me. The only sub
10 -- substantial sighting was made on the east side of the
11 Nahanni range, and those were more than likely boreal
12 caribou.

13 We also have some anecdotal information
14 through conversations with guides, with other persons
15 that have some knowledge of the area. And the
16 implication is that they're -- they're more than likely
17 not to be a population of caribou in that particular
18 area, but there's certainly no -- no certainty of that.

19 We've also had discussions with people who
20 are knowledge in this field with respect to the kind of
21 mitigation options that could be put forward for managing
22 any potential impact if there were caribou in that area.
23 And we've had these discussions, and there are -- are
24 some options that are available that would address the
25 potential for disruption of caribou if they happened to

1 be along the road.

2 Yeah, also I should point out that there -
3 - in addition to the earlier survey, there was a survey
4 in April 2007, yeah, April 7, 2007, during which there
5 were limited sightings along the road. Admittedly, the
6 -- the survey was not carried out under ideal conditions
7 but it still provided a decent picture of what -- what
8 was transpiring along the road.

9 So there is some background information.
10 And we're certainly willing, and I believe Canadian Zinc
11 is interested in pursuing some additional work, which
12 would include a survey along the road alignment fairly
13 soon. And those discussions have taken place with Parks
14 Canada.

15 THE FACILITATOR: Thank you. Does that
16 response address Parks Canada's question?

17 MR. MIKE SUITOR: Mike Sutor, Parks
18 Canada. While I will agree that surveys have been
19 conducted along the road like you said, they've been
20 largely limited in scope. As I pointed out early --
21 earlier, the work from 1980/1981 involved observations of
22 animals only. The data is poorly georeferenced along the
23 access road, which is the part with -- that is within
24 Nahanni National Park. The surveys were only conducted
25 along the road from what I can tell.

1 Again, the data is poorly spatially
2 referenced so it's challenging to -- to make a
3 determination on that and there's no survey effort that's
4 been presented so far to me.

5 The April survey, I agree it was conducted
6 in a reasonable manner. Although, again, the scope of
7 the survey was directly on the road. It didn't include
8 areas immediately adjacent to. And sightability probably
9 was somewhere in the order of 100 or 200 metres at most
10 on either side of the road. I think that's probably
11 fairly accurate based on my experience, my personal
12 experience on this landscape and that of my -- my
13 experience doing surveys.

14 And the type of -- in broken types of
15 terrains similar to what's along the access road tells me
16 that spotting wildlife is extremely difficult and that's
17 one (1) of the reasons we would not suggest using a -- a
18 method that actually sought to spot animals as an
19 indicator of density or presence. And rather, we suggest
20 that using something like tracks in a relatively open
21 forest where sightability is challenging is probably the
22 best option.

23 I -- I commend Canada Zinc for wanting to
24 participate in -- in the further surveys. I -- I would
25 continue to iterate though that ungulate winter range is

1 something that's transitional year-to-year. In an ideal
2 world what we would have seen leading up to this EA is
3 two (2) or three (3) winters worth of surveys to
4 determine what winter distribution was given a variety of
5 environmental conditions and, you know, specifically
6 significant adverse conditions for caribou, although you
7 can't guarantee that, of course, within your period of
8 interest.

9 And at the stage we find ourselves now, I
10 think the bare minimum that Parks Canada can request is
11 that at -- at the -- the very -- very bare minimum that
12 three (3) surveys are conducted during the winter period
13 prior to a hearing, where we can have all information
14 present to us so that we can make a determination of the
15 significance of impact on caribou, and other species I
16 might add, which, again, we don't have adequate
17 information for, and come up with appropriate mitigations
18 and monitoring programs as required by the Species at
19 Risk Act and -- which is a requirement for Parks Canada
20 to follow, and any -- any type of environmental
21 assessment process.

22 MR. DAVE HARPLEY: Dave Harpley. We've
23 noted Parks Canada's concerns. I won't say that we
24 completely agree with them. As Chris Schmidt here has
25 noted, all indications are that the numbers of animals,

1 particularly caribou, along and in proximity to the
2 winter road alignment are low. It's not typical caribou
3 range. It's not utilized by significant numbers.

4 So the information historical, recent,
5 anecdotal, all points in that direction. And I think
6 even Parks Canada will accept that the information does
7 point in that direction, so that the probability of there
8 being significant numbers of caribou in proximity to the
9 winter road is limited.

10 Having said that and having expressed that
11 we feel that the database is fairly good in that respect,
12 we acknowledge that there are caribou in the region.
13 There's always -- there's always a small chance that
14 conditions are different than we expect. And we also
15 recognize that we're going to be operating the road
16 through the region and through the park, so I've taken
17 the decision that we're prepared to do more surveys, and,
18 also, to do them in collaboration with Parks Canada.

19 So, at this point, we are going to commit
20 to -- to do three (3) additional surveys for baseline
21 purposes, the first one (1) of which will be hopefully
22 sometime in November depending on the conditions being
23 suitable. And then the latter two (2) surveys would be
24 in the February and March period.

25 In addition to that, Canadian Zinc is

1 proposing to assume a number of different outcomes from
2 the later two (2), March and -- February and March
3 surveys, and commit to appropriate mitigation
4 requirements for those variety of outcomes that may
5 result from the later surveys.

6 And, in that respect, at this point in
7 time, we don't agree that there is a necessity to delay
8 the EA schedule because we've essentially addressed the
9 requirement for the data, and we've also addressed the
10 potential outcome of the -- the surveys being undertaken.

11

12 --- UNDERTAKING NO. 19: Canadian Zinc is proposing to
13 assume a number of different
14 outcomes from the later two
15 (2), February and March
16 surveys, and commit to
17 appropriate mitigation
18 requirements for those
19 variety of outcomes that may
20 result from the later
21 surveys.

22

23 MR. MIKE SUITOR: Mike Sutor, Parks
24 Canada. Parks would like to acknowledge your commitment
25 there. That's -- that's terrific to hear. I stand by my

1 -- my suggestion earlier as what is required and what
2 Parks will require to meet our SARA obligations as well
3 as what, while I can't speak for the Board, what the
4 Board will likely require for their determination.

5 I will also point out that the conclusion
6 that there is not a lot of caribou out there is not
7 supported because the -- the data is insufficient at this
8 time. We -- I can recap the survey data. It's January
9 1981 and it's March 1981. It's using observations only
10 of -- of caribou. And, as I've stated, that is very
11 unlikely to occur.

12 While I -- I will concede that it's
13 unlikely that there's extreme high densities of caribou
14 out there, we don't know that for certain. The surveys
15 would have failed to detect a herd of five hundred (500)
16 caribou that were about 10 kilometres north or 5
17 kilometres north of that road, in the car -- in the Ram
18 Plateau area. That's extremely likely.

19 It's not unconceivable to think that a
20 weather event will push those animals south along the
21 road where they'd be impacted directly by activities. So
22 I -- I think at this point we probably won't resolve our
23 differences on -- on what is required, but I think we've
24 -- we've both said what we need to with regard to caribou
25 and -- and what surveys are required to -- to move

1 forward.

2 THE FACILITATOR: Thanks very much for
3 the question and the response. And -- and we did record
4 the commitment for three winter season caribou surveys to
5 be done in collaboration between Parks Canada and
6 Canadian Zinc. So that's recorded.

7 Do I have any further questions on
8 wildlife?

9 MR. JOE ACORN: It's Joe Acorn, Dehcho
10 First Nations. Just before you go on there, I think I --
11 we need some direction and input from the Review Board
12 representatives who are here because Parks Canada just
13 requested a delay in the environmental assessment until
14 after these reviews are done in the spring. So how are
15 you going to handle this?

16 THE FACILITATOR: I have that request.
17 We'll have it on our transcripts. And I will -- we will
18 bring that before the Board, and the Board will make a
19 determination on that. Thank you.

20 MR. JOE ACORN: No, what I'm looking for
21 is are you going to seek comments on a request for ruling
22 formally, or is -- are you just expecting people to stand
23 up and put their hands up here one (1) way or the other?

24 MR. ALAN EHRLICH: Hi, Joe. It's Alan,
25 with the Review Board. Putting hands up here wouldn't

1 achieve much. Depending on what the Board wants to do
2 with what it's heard here, Parks is free to request a
3 ruling. If it does request a ruling, then the Board is
4 required to give ten (10) days for other parties to
5 comment on that request for ruling before it formally
6 decides.

7 Not every request like that requires --
8 not every -- not every need of parties necessarily
9 requires a formal request for ruling. I think the -- the
10 reasonable first step is for Parks to see what the Board
11 comes up with as a reaction to -- to what we've heard
12 here today.

13 MR. JOE ACORN: Rather than making the
14 Board hear an issue twice, why not just simply accept the
15 request that's on the transcript now as a request for
16 ruling and then set out the process?

17 MR. ALAN EHRLICH: If Parks Canada wishes
18 to submit a formal request for ruling it's encouraged to
19 use the format that's laid out on our website at the end
20 of rules of procedure, hopefully accompanied with some of
21 the -- a letter that details the rationale just so that
22 their -- the Board itself is not reliant only on
23 transcripts of a technical session.

24 THE FACILITATOR: Thanks very much. Does
25 that clarify that? Okay.

1 MR PETER REDVERS: Peter Redvers, Naha
2 Dehe Dene Band. In the Golder Associates' report, the
3 one that was tabled as a part of the -- one (1) of the IR
4 response, the author alludes in that report to a Canadian
5 Zinc commitment to develop a wildlife management plan
6 before commencing operations, and I'm just wondering if -
7 - if there is a formal commitment to do that.

8 And we're -- we're not talking prior to
9 the EA assessment, but prior to the commencement of
10 operations.

11 MR. DAVE HARPLEY: Dave Harpley. Yes.

12

13 (BRIEF PAUSE)

14

15 MR. PETER REDVERS: Peter Redvers, Naha
16 Dene Band. Would -- would that include, just for clarity
17 -- because I think my understanding is, and clarify if
18 it's wrong, that under the land use permit that would be
19 issued by Parks Canada, they're -- Parks Canada can ask
20 for specific conditions set up to protect wildlife
21 habitat. And, obviously, the SARA commitment is -- is
22 specific or has a strong focus on habitat protection.

23 The GNWT, through ENR, I think, at this
24 point is tabling modifications to the Wildlife Act but
25 that would require wildlife -- wildlife management plans,

1 but that hasn't been gone through yet and it might be a
2 long consultation process.

3 So I guess, simply put, would that
4 wildlife management plan include the entire access road,
5 including both the Parks and the non-Parks areas?

6 MR. DAVE HARPLEY: Dave Harpley. The
7 wildlife management plan would be applicable to the
8 entire road length, yes. Just for clarity, I'm wondering
9 whether Parks Canada will comment on what a licence --
10 I'm sorry, a permit might consist of in terms of
11 conditions with respect to SARA. And I'm not a wildlife
12 person, but my assumption was SARA applies to animals,
13 not to habitat.

14 MR. PETER REDVERS: Where's the -- Peter
15 Redvers. We're the Environment Canada people who are
16 responsible for SARA. A critical habitat is one (1) of
17 the key features of elements of SARA, so I'll pass that
18 on from there.

19 MR. ALAN EHRLICH: Chuck, can I just
20 point backward towards James from Environment Canada who
21 was gesticulating helpfully a moment ago? You might want
22 to give him a microphone.

23 MR. JAMES HODSON: James Hodson, from
24 Canadian Wildlife Service. Yeah, that is correct about
25 critical habitat. That would be the only habitat that

1 falls under SARA protection. I guess, if that answers
2 your question for now. I don't know if Mike has anything
3 to add.

4 MR. MIKE SUITOR: Mike Sutor, Parks
5 Canada. Actually, an important clarification is required
6 there because I think David's leaping out of his chair.
7 Critical habitat actually only applies to endangered and
8 threatened species, of which mountain caribou within --
9 within the -- the mountain parks -- or within the
10 national park is not. It's a special concern species.
11 Critical habitat does not apply.

12 Boreal caribou, as I understand, and I'm
13 not the expert on boreal caribou, they are a threatened
14 species and critical habitat would apply; however,
15 critical habitat for bor -- boreal caribou has not been
16 defined as yet. Maybe Gavin Moore could comment on that
17 a little better since it does fall within GNWT, largely
18 speaking, and his understanding of -- of what that means
19 to -- to him from a GNWT perspective and -- and their new
20 Species at Risk Act.

21 MR. GAVIN MOORE: Yeah, two (2) -- two
22 (2) points. Gavin Moore, GNWT/ENR. A couple of points.
23 I always like people to keep clear of the national
24 recovery strategy which is being developed under the --
25 the requirements of Environment Canada. The Government

1 of Northwest Territories participates in that process.

2 And like the other jurisdictions, the
3 information that's collected within each jurisdiction is
4 what is used in that recovery strategy. Right now,
5 Environment Canada is going through a consultation
6 process with aboriginal communities, and I believe they
7 intend to try to come up with a draft of the national
8 recovery strategy sometime in 2011.

9 In the meantime, the GNWT has developed
10 its action plan for boreal caribou and recently released
11 its five (5) year plan for activities it will take. In
12 the GNWT, we believe we have a slightly different
13 circumstance as compared to the southern jurisdictions
14 where we believe we have contiguous boreal caribou range
15 as compared to separate herds.

16 In our action plan, we will be moving
17 forward with the Dehcho caribou working group to help
18 look at definition of ranges and requirements for ranges
19 in the NWT. We also believe that in the NWT right now
20 boreal caribou is not considered a threatened species in
21 the same way that it is down south.

22 Our work and our preferred approach is to
23 actually look at -- at habitat, not necessarily defining
24 critical habitat, but in our research we've developed a
25 resource allocation study or model which allows us to try

1 to define which particular types of habitat at -- and
2 particularly the sensitive times of year for -- for that
3 species are our most concern.

4 And our preference in this project would
5 actually be to have that considered as people start
6 working on the detailed design for the road alignment.
7 At this time, we actually don't know the -- the western
8 extent of boreal caribou, so we're not sure whether
9 boreal caribou were in the area or not.

10 And from our point of view the preventive
11 way is to actually work with habitat rather than worrying
12 about having seen actual animals. If the habitat doesn't
13 demonstrate that it supports or could support boreal
14 caribou it's obviously a less of concern.

15 I would also caution people as they start
16 saying we're going to survey for caribou, please be very
17 specific; you're starting to talk about mountain caribou
18 versus boreal caribou, because the two (2) actually have
19 quite different ecological requirements, and behaviour,
20 timing concerns, that sort of thing.

21 The one (1) thing that we have not seen
22 yet that we know is -- is coming out, and our regional
23 biologist in Dehcho will be able to provide it to the --
24 to the company to work with, and that is we've done a lot
25 of analysis of -- from the various telemetry work that's

1 gone on -- both on mountain caribou but also boreal
2 caribou to try to define the periods of sensitivity with
3 greater accuracy.

4 And part of that's because in our work we
5 find that, from our perspective, the time periods when
6 caribou tend to -- particularly the female start to not
7 move, those are the -- the actual, the critical windows
8 and they do seem to vary, even for mountain caribou,
9 between herds and the -- the timing is definitely
10 different for boreal caribou compared to mountain
11 caribou.

12 So those -- I guess our recommendation
13 would be to start -- is to -- is to work quite closely
14 with our regional biologists, start working with some of
15 our unpublished data to determine where -- where, when
16 things are sensitive. But from our perspective, coming
17 up with -- with the incorporation of -- of the best
18 preventative information in the road alignment, starting
19 to work on a wildlife protection plan for both road
20 construction and then moving on to operations is -- is
21 our preference at this time.

22 We believe that it's not really necessary
23 to do an assessment as -- as necessarily required today
24 by Parks Canada. We think there's sufficient information
25 to come up with a -- a protection plan that people will

1 work with. We also advise using the input from the
2 community because one (1) of the things that -- that we
3 have been trying to work with now is what community
4 mapping or information that we've been doing or getting
5 as we've developed -- been working on important wildlife
6 maps for the NWT.

7 And in reviewing that information, to date
8 we didn't see any particular designation or interest of
9 the communities in that particular area. It may that the
10 questions weren't asked in the right way, but as we --
11 you get close to working with Nahanni Butte, from our
12 point of view those folks have a lot of on the ground
13 observations and can probably add their perspective to
14 whether they think caribou are in the area, are
15 important.

16 And I know we did pursue and ask the
17 outfitters to provide -- provide some of their
18 observations because, again, lacking people out on the
19 land we were looking for the people who are on the land
20 and can give some advice. And so that's one (1) of the
21 things I know the company's been able to pursue with
22 those outfitters to get a bit of -- better handle on
23 observations that they've seen.

24 So from -- from our perspective, we -- we
25 do believe there is the ability to use preventative

1 planning and to apply what we know about the two (2)
2 species, and we can use that in a very proactive way to
3 develop appropriate plans, and in starting with the
4 design all the way through to -- to operations.

5 THE FACILITATOR: Thank you. Mr.
6 Redvers...?

7 MR. PETER REDVERS: Peter Redvers, Naha
8 Dehe Dene Band. Just a few things. There has been some
9 traditional knowledge gathered to date, and, as you are
10 aware, Gavin, a number of the First Nations including
11 Naha Dehe do work through the regional wildlife forums,
12 et cetera, to generate some information.

13 Having said that, just to go back to maybe
14 a couple of quick questions. On the -- given that there
15 is the commitment to develop that wildlife management
16 plan, would there or could there also be a commitment to
17 ensure that the Naha Dehe Dene Band is engaged in some
18 way in the development of that?

19 We would probably suggest, depending on
20 how the discussions go tomorrow afternoon, that perhaps
21 the Naha Dehe Dene Band could be involved through a
22 revamped technical committee or oversight committee so
23 that it could be -- basically, participate, I guess, in -
24 - in that process.

25 So I guess I would ask here if -- if there

1 would be a commitment from Canadian Zinc to find a -- to
2 involve the Naha Dehe Dene Band in the development of
3 that plan.

4 MR. DAVID HARPLEY: Dave Harpley. What I
5 would envisage would happen is that our consultant would
6 develop a draft of the plan in consultation with folks
7 that could provide input on specific valuable components.
8 And then the draft will be circulated to all interested
9 parties for comment, which would include local
10 communities, as well.

11 MR. PETER REDVERS: Peter Redvers, Naha
12 Dehe Dene Band. And perhaps I'm -- I'm hoping with the
13 discussion of the technical committee and the role of the
14 Naha Dene Band in that, that that's fairly critical and
15 important to the Naha Dehe participation in this, given
16 that in that instance, perhaps that committee might be
17 one of the -- the -- the bodies that would provide an
18 overview or review of that.

19 And if the Naha Dehe Dene Band is engaged
20 in that committee, then that's a -- a good opportunity to
21 -- to have a collaborative approach to that.

22 With respect to -- and it appears to be a
23 commitment to do some further baseline work this winter,
24 that would certainly be supported. Any new information
25 is certainly relevant, and that would add to and

1 complement some of the traditional knowledge information
2 that is available.

3 I would have to consult with -- with Fred,
4 and if it comes to that, through a -- through a request
5 for a -- if there was an application for an extension of
6 the EA or requiring that information prior to the
7 conclusion of the EA, I'm -- I -- I -- I don't think the
8 Na -- Naha Dehe Dene Band would support that.

9 I think that if there was a commitment to
10 be involved in the wildlife management plan, a commitment
11 to generate that information over this winter, that the
12 appropriate planning could be done prior to commencement
13 of operations.

14 So just for Parks' information, that would
15 be a very hard sell for the Naha Dehe Dene Band, and the
16 preference would likely be to certainly have that work
17 done, but to utilize it or apply it with respect to the
18 development of the wildlife management plan, assuming
19 that Nahanni has some collaborative role or engagement in
20 that process.

21 MR. DAVID HARPLEY: Dave Harpley. Just
22 to confirm, we've always taken the collaborative approach
23 on our activities, and so I wouldn't consider the
24 development of a wildlife plan being any different.

25 MR. PETER REDVERS: Peter Redvers, Naha

1 Dehe Dene Band. Then I -- then I will take that as a
2 commitment to involve the Band in that process.

3

4 --- UNDERTAKING NO. 20: Canadian Zinc commits to
5 involve the Naha Dehe Dene
6 Band in the development of a
7 wildlife management plan

8

9 THE FACILITATOR: Thanks very much. It's
10 about 4:30. Do we have further wildlife questions?
11 Sorry, I was looking the wrong way.

12 MR. JAMES HODSON: James Hodson from the
13 Canadian Wildlife Service. I just want, for vegetation
14 clearing and brushing along the access road, the exact
15 timing of those activities and, as well, timing for any
16 vegetation clearing involved with the transfer facilities
17 in the waste rock pile.

18 And then I have a follow-up question about
19 maintenance activities in the summer.

20

21 (BRIEF PAUSE)

22

23 UNIDENTIFIED SPEAKER: As far as the
24 timing on the clearing of the vegetation along the access
25 road, yeah, as long as we don't leave a footprint behind,

1 we can move ahead on whatever scale we wish. But if it -
 2 - if it involves heavy equipment and such as big slashers
 3 and -- and grinders and what have you, then we have to be
 4 careful that we work off of a frozen base. And is that
 5 what you're looking for?

6 MR. JAMES HODSON: Well, I guess I'm
 7 wondering would any activities occur during the spring or
 8 summer with respect to any kind of vegetation clearing
 9 for the existing or proposed realignments.

10 MR. STEVE MOORE: Steve Moore, Canadian
 11 Zinc. The clearing of the vegetation would have to occur
 12 outside the CWS's mandate of breeding birds nesting
 13 timelines. It would not happen when birds are on nest or
 14 -- or fledgling from nests. It would happen during the
 15 wintertime. And if there's any critical habitat, like
 16 owl habitat, that would have to be looked at, as well.

17 MR. JAMES HODSON: Okay. I guess my
 18 second question is related to the maintenance of sections
 19 of the road. He said that it might occur in mid-July to
 20 mid-September. And the common nighthawk was one (1) of
 21 the bird species at risk that was identified in the
 22 report. And you said that it's generally nesting in open
 23 areas, gravel beaches, rocky outcrops, and that it might
 24 also occur along the road between the airstrip and the
 25 mine site.

1 So given that the spi -- species might
2 occur in the areas where you're going to be doing summer
3 maintenance activities, are you proposing any kind of
4 surveys to determine whether they're in the area before
5 you start these activities? And what kind of mitigation
6 would you take to avoid disturbing any nesting
7 individuals?

8 MR. STEVE MOORE: Steve Moore here,
9 Canadian Zinc. We did look for common nighthawks this
10 past summer within the mine site region. We did not see
11 any. I don't see a need for clearing much vegetation
12 around the mine site other than the Harrison Creek area
13 there. And that area is not -- it's not utilized by
14 nighthawks. It's not even the right type of habitat in
15 there for common nighthawks.

16 The areas that might be used potentially
17 for common nighthawks would be at the other end, over by
18 the airstrip, and that stuff does not need to be cleared
19 at all. I don't foresee any clearing going on during the
20 summer months in the areas where common nighthawks are
21 going to be.

22 But you guys may have additional comments.

23 MR. ALAN TAYLOR: Alan Taylor. Just one
24 (1) comment. We've been working towards maintaining that
25 road section for many years now under our existing land

1 use permit, and we have similar thoughts to what Steve
2 was saying about we've never encountered a nighthawk
3 issue there, and it's just -- it's just a basic care and
4 maintenance program.

5 MR. JAMES HODSON: I have one (1) more
6 question. I guess my last question was -- in our
7 Information Request we had asked about toxicity levels in
8 the water storage pond because you had indicated that
9 waterfowl are using the storage pond in spring and
10 summer.

11 And you had mentioned that you would look
12 into looking at deterrent methods to keep birds off the
13 pond should they occur. And I'm just wondering if you're
14 also looking into any kind of monitoring activity to
15 monitor toxicity levels to identify when deterrent --
16 deterrence would need to be used and sort of what your
17 plan was to do this monitoring.

18 MR. CHRIS SCHMIDT: It's Chris Schmidt,
19 Canadian Zinc. The Information Request responses have
20 indicated that there would be monitoring going on with
21 respect to waterfowl and other water bird use of the
22 facility, so that's a commitment that's been made.

23 There are some options if birds do occur
24 in the area that can be applied, various scare tactics
25 that can be implemented. With respect to water quality,

1 my understanding is that the water quality will be
2 monitored. And I'll -- I'll let Dave Harpley speak to
3 that.

4 MR. DAVE HARPLEY: I -- I suspect the --
5 the pond water will be included in the SMP program, so
6 there would be frequent sampling determination of water
7 quality.

8

9 (BRIEF PAUSE)

10

11 MR. MIKE SUITOR: Mike Sutor, Parks
12 Canada. One (1) additional followup to -- with the last
13 suite of questions that we had. At the -- at the end
14 point of collecting the -- the data that's been requested
15 by Parks Canada, we'd just like to also hear a commitment
16 that we'd -- we'd also identify any adverse effects, any
17 possible mitigations of monitoring that would be required
18 pending that data. Just looking for a commitment from
19 Canada Zinc on that.

20 MR. DAVE HARPLEY: Dave Harpley. Yeah.
21 As I mentioned, our intention is to provide details of
22 our mitigation strategy for the range of possible
23 outcomes of the later winter surveys depending on what we
24 find, whether it be no animals, few animals, or
25 considerable numbers of animals.

1 MR. MIKE SUITOR: Okay. Thank you.

2

3 --- UNDERTAKING NO. 21: Canadian Zinc to commit to
4 identify any adverse effects,
5 any possible mitigations of
6 monitoring that would be
7 required pending after data
8 has been collected for Parks
9 Canada

10

11 MR. MIKE SUITOR: Moving on to the next
12 part, baseline data collection and monitoring. The --
13 the terms of reference is fairly clear that baseline data
14 was -- was required to be collected prior to project
15 commencement or prior to the EA, I should say, and be
16 compared with existing data from the '80s to assess any
17 vital changes or -- or what have you between the thirty
18 (30) year period since the -- the last set of data was
19 collected and -- and today, and to also have that data
20 provide a -- some sort of a baseline for on -- for
21 proposed monitoring.

22 Parks Canada is looking for a commitment
23 from Canada Zinc to work collaboratively again to develop
24 a -- a good strong baseline data collection approach --
25 or sorry, I should say, a good strong design of several -

1 - a good design of studies that would allow us to collect
2 information on baseline vital rates or distribution or
3 abundance, as -- as we see necessary, and ongoing
4 monitoring activities.

5 And we -- we would be looking for that
6 commitment to -- to be in place -- we -- we would ask
7 that the committed response would be -- at least the
8 baseline data and the design would be in place prior to
9 any regulatory activities.

10 MR. DAVE HARPLEY: Dave Harpley. Yeah.
11 We've -- we've committed to collect additional baseline
12 data even though we believe there's a suitable baseline
13 already in existence. So we're comfortable with the idea
14 that we will have a suitable baseline before the
15 regulatory phase if you -- as you mentioned.

16 And we're, as I mentioned also, happy to
17 collaborate with Parks Canada in terms of the design of
18 those surveys. In terms of monitoring requirements for
19 the operation, the additional surveys will -- and it's
20 partly factored into our decision is the additional
21 surveys will give that greater confidence to determine
22 what appropriate monitoring is required for the
23 operational phase.

24 And that will also be considered further
25 at the regulatory phase before operations.

1 --- UNDERTAKING NO. 22: Canadian Zinc to commit to
2 work collaboratively with
3 Parks Canada in the design of
4 additional surveys in terms
5 of monitoring requirements
6 for the operation
7

8 MR. MIKE SUITOR: I might point out --
9 Mike Sutor from Parks Canada. I might point out that
10 the surveys that are conducted during winter will be one
11 (1) aspect of it, but there might be other aspects of
12 baseline monitoring that will be required.

13 So say for example monitoring of sheep in
14 and around the mine site might be one (1) of those -- one
15 (1) of those baseline monitoring -- or baseline data
16 collection and monitoring activity.

17 So there -- there is a host of -- of
18 requirements that will be place for -- for species. It
19 could have to do with carnivores, what have you, not, but
20 as I said Parks Canada is looking for a commitment for
21 new baseline data collection.

22 The reason I'm saying that is the existing
23 baseline, as we see it, the only detection and change
24 that would be likely is the -- if that species was
25 totally removed from the study area. So in essence, to

1 actually be able to detect any changes in species through
2 time and actually come up with adaptive management
3 strategies as suggested by Canada Zinc in their DAR,
4 would require adequate baseline data that's statistically
5 sound and adequate monitoring techniques that are also
6 statistically sound to actually give us a meaningful
7 assessment of change that would alternatively be turned
8 into appropriate mitigations to reduce impacts on species
9 during the operation of mine activities.

10 So I guess the -- the final point to that
11 is, will Canada Zinc commit to what I've basically just
12 said in terms of the design, data collection, prior to
13 the regulatory fees as well as -- as having an outline of
14 what monitoring activities will be in place prior to the
15 regulatory stage?

16 MR. CHRIS SCHMIDT: Chris Schmidt,
17 Canadian Zinc. We -- we don't necessarily agree that
18 there's a -- a lack of -- of relevant baseline data with
19 respect to other species. The emphasis will be, as we
20 discussed previously, with respect to caribou along the -
21 - the access road.

22 When it comes to the mine site area there
23 is a pretty decent record of -- of observations that have
24 been made at the camp, again somewhat anecdotal, but
25 there's a good record of -- of data there. The personnel

1 on site have been observing the sheep at the camp and
2 near the airstrip for quite some time.

3 Also, there's going to be an environmental
4 monitor present at the mine site who will be undertaking
5 observations on a regular basis and specifically with
6 respect to sheep at the mine site and at the airstrip to
7 document what the potential impacts are of the activity.

8 Also, we did undertake a -- a survey in
9 2006 which documented sheep distribution in the mine site
10 area. Again, that's a survey that was attended by the
11 Dehcho regional biologist, and it's only four (4) years
12 ago. So that -- that's fairly recent. There's no
13 indication that information would have changed
14 dramatically from that point in time.

15 MR. MIKE SUITOR: Mike Sutor, Parks
16 Canada. If that's the case then could you please outline
17 what that baseline data will tell us as it stands, and
18 what -- give me a sense of what sorts of changes will be
19 required to actually detect a change in those species or
20 those vital rates, whatever it is that you're monitoring,
21 through time, how often those surveys would need to occur
22 and -- and what it would endeavour -- what would be in --
23 what would be required to actually collect that data?

24

25 (BRIEF PAUSE)

1 MR. CHRIS SCHMIDT: Chris Schmidt,
2 Canadian Zinc. As we discussed previously, there is
3 quite a good record of -- of observations of sheep in the
4 area. There isn't a -- at the present time a proposed
5 program to do any detailed inventory studies. What we
6 talked about is having a monitor onsite who will record
7 observations of sheep and other wildlife in the area,
8 including moose. There is a move-through, wolves,
9 wolverines, birds onsite and we'll document that in a --
10 in a regular database which will be GIS compatible.
11 That's a commitment that the company has made.

12 And we feel that based on our assessments
13 and our previous experience with mining projects it's
14 part of operational continual baseline data gathering if
15 you like, and part of ongoing monitoring.

16 MR. DAVE HARPLEY: Dave Harpley. Sorry.
17 Dave Harpley. I just wanted to add to that.

18 I -- I think what's also applicable here
19 is we need to recognize the fact that we've been through
20 part of this assessment already fairly recently, with the
21 phase 3 drilling project, and although the mine project
22 would be larger in scope and more activity onsite, it's
23 still activity.

24 And we went through the phase 3 drilling
25 assessment, and that was the reason we undertook the May

1 '06 survey, specifically for sheep. And part of that
2 survey conclusion was that the overall distribution of
3 sheep in the area was similar to what was documented
4 before in the '80s, except that the number of locations
5 where they were present were fewer, and also the numbers
6 were fewer.

7 What we also see at the mine site is that
8 we have a fairly healthy resident population that li --
9 like to hang out on the slopes. And we think the reason
10 they do that is because it -- it's a relatively safe area
11 and free -- free of predation. So, in a sense, you could
12 consider that mine activity is actually a benefit to the
13 sheep rather than a negative impact. So we -- we don't
14 really see impact on sheep.

15 Another thing I might add is one (1)
16 concern that was raised in the phase 3 assessment was
17 impact from flights in and out of the airstrip. And a
18 flight impact management plan was developed at that time,
19 and we've already undertaken to revisit that plan and
20 consider, you know, modifications for the operating
21 period.

22 MR. MIKE SUITOR: Thank you for that
23 response. I'd be curious to understand how you define
24 healthy in this case. And I also heard you state that
25 sheep distribution has actually decreased and there's

1 fewer animals. So, from that, what are you suggesting
2 based on your monitoring to date? Is there actually a
3 decline in sheep at -- at that location right now?

4 MR. CHRIS SCHMIDT: Chris Schmidt,
5 Canadian Zinc. We have information from the local guide
6 outfitter to suggest that sheep populations had declined
7 since the 1980s, 1990s, but that from his understanding
8 and from what they're seeing locally on the ground, that
9 the populations are increasing somewhat again.

10 And, again, he's -- you know, this is a
11 person that's there on a regular basis with his crews and
12 -- and getting -- that's one (1) of their target species,
13 so they obviously keep a -- keep a good on them.

14 MR. MIKE SUITOR: Okay, thank you. Mike
15 Sutor, Parks Canada. So stepping back for a second
16 here, ultimately what Parks Canada is asking for is some
17 sort of means of establishing baseline data and a
18 monitoring program, that we have some sort of confidence
19 in terms of detecting any sorts of changes in whatever
20 that -- that indicator might be so that we can adaptively
21 manage, as you've suggested within your -- your DAR
22 document.

23 We -- we need to ensure that the data
24 that's being collected is being done appropriately. I --
25 I'm not debating the point that environmental monitoring

1 onsite is not appropriate. That's -- that's a very
2 strong possibility. I'm not debating the point that the
3 data that you might have collected to date on sheep is
4 not appropriate.

5 But what I'm saying is we want a
6 commitment to ensure that you have a strong program
7 that's put in place prior to the regulatory phase and any
8 appropriated baseline data that needs to be collected for
9 that program has been collected prior to the regulatory
10 phase.

11 Can we have a commitment from Par -- from
12 Canada Zinc (sic) on that?

13 MR. CHRIS SCHMIDT: Chris Schmidt,
14 Canadian Zinc. Perhaps you could elaborate on the
15 regulatory framework for why this information would be
16 necessary as part of an operating mine given that your
17 focus is on -- on SARA listed species, and we've agreed
18 to address those.

19 MR. MIKE SUITOR: Mike Sutor, Parks
20 Canada. The baseline monitoring -- baseline
21 establishment and monitoring has to do with the species
22 at risk, that is correct. That's one (1) component of
23 it. However, we're not only concerned about caribou in
24 this country. We're also concerned about other species,
25 such as moose, such as sheep. And, as such, we require

1 information to be able to effectively manage those
2 species.

3 In the absence of data that's going to do
4 that, then we are unable to make informed decisions about
5 this program and how it's moving forward. And within the
6 regulatory phase we will require that that design is in
7 place, or we, as Parks Canada, as an authoriser of a land
8 use permit, will not authorize the activity.

9 MR. CHRIS SCHMIDT: Chris Schmidt,
10 Canadian Zinc. Could you elaborate whether that's with
11 respect to the mine site or the -- the access road?

12 MR. MIKE SUITOR: I can only speak for
13 Parks Canada interest. Parks Canada interest obviously
14 is within the mine and in areas immediately adjacent to,
15 where species that might come in and out of the mine
16 might -- might -- sorry, in and out of the Park I mean to
17 say. We can only specify for those area -- areas in
18 particular. If the Government of the Northwest
19 Territories is also interested in collecting similar
20 types of information in collaboration with Parks Canada
21 and Canadian Zinc, we'd be more than happy to participate
22 in that.

23 But my request would be to collect data on
24 species that are in the Park or immediately adjacent to
25 that and use the Park as well. For example, with sheep,

1 sheep use the mine site are, but they probab -- those
2 same sheep probably also use the National Park at some
3 point or another. So we, of course, would be interested
4 to understand what sheep populations are doing.

5 And in fact, to have an effective
6 monitoring program for species like sheep, you're going
7 to have to look at a larger area than -- than just a
8 postage stamp like the mine site.

9

10 (BRIEF PAUSE)

11

12 MR. DAVE HARPLEY: Dave Harpley. We'll
13 consider these comments and reply at a later date. We're
14 not going to make a commitment right now.

15

16 --- UNDERTAKING NO. 23: For Canadian Zinc to commit
17 to ensure that they have a
18 strong program that's put in
19 place prior to the regulatory
20 phase and any appropriated
21 baseline data that needs to
22 be collected for that program
23 has been collected prior to
24 the regulatory phase. (UNDER
25 CONSIDERATION)

1 MR. MIKE SUITOR: Mike Sutor, Parks
2 Canada. I acknowledge that. Can you give me an idea of
3 when you would make a decision; will it be within the EA
4 process?

5 MR. DAVE HARPLEY: Yeah, I don't expect
6 it's going to be very long here.

7 MR. MIKE SUITOR: Does anybody else have
8 anything to add or should I move on to my next question?

9
10 (BRIEF PAUSE)

11
12 MR. PETER REDVERS: Peter Redvers, Naha
13 Dehe Dene Band. Just for clarification in terms of the
14 comments about Naha Dehe engagement in development of a
15 wildlife monitoring, or management plan, it -- that was
16 given on the assumption that there would be some form of
17 -- of monitoring beyond just the use of sightings.

18 Sightings themselves are -- are an element
19 of monitoring, but there would certainly be the desire to
20 have some level of broader monitoring that would allow
21 for a better understanding of impacts and movement of
22 animals. And if -- from a -- as a -- as a learning
23 device, the -- the nature of that, and extent of that is
24 something that would be subject to discussions as a part
25 of that collaborative process.

1 But certainly, the assumption has been
2 that there would be more than just sightings, that there
3 would be some -- some form of active or proactive
4 monitoring approach. Again, the extent of which is
5 certainly subject to considerable discussion involving,
6 we would assume, the Band, and perhaps ENR, and the
7 wildlife bio -- biologists if they choose to participate,
8 and Parks Canada as well.

9 So just -- I wanted to provide that
10 clarification in -- in light of the discussion that's
11 taking place.

12 MR. ALAN EHRLICH: Thanks, Peter. It is
13 5:00 -- no, it's very nearly 5:00. If there are more
14 wildlife questions or comments, we're going to reserve
15 them until tomorrow. We're starting at nine o'clock.
16 Right, Chuck, 9:00?

17 Starting at nine o'clock the shuttle will
18 pick up at the Explorer at 8:30. Just before closing,
19 brief closing comment. Dave from Can. Zinc would like to
20 say something.

21 MR. DAVE HARPLEY: I'm just wondering if
22 there's an impediment to continue, because our wildlife
23 consultant will not be here tomorrow.

24 MR. ALAN EHRLICH: Who still has wildlife
25 comments, please raise your hand? How long do you think

1 they will take? How many are we talking about?

2

3 (BRIEF PAUSE)

4

5 MR. ALAN EHRLICH: Okay. Let's go for it
6 now. I urge you to try to be concise. Chuck, the
7 microphone is by Peter there.

8

9 (BRIEF PAUSE)

10

11 MR. MIKE SUITOR: Mike Sutor, Parks
12 Canada. Carnivores are of particular interest to Parks
13 Canada for a number of reasons. Their protection --
14 they're a sensitive species and they're -- they're prone
15 to be impacted by developments for numerous reasons,
16 including attraction.

17 We've noted, within Parks Canada -- or
18 Canadian Zinc's development assess -- assessor's report
19 with the Wildlife Management Plan and -- and some of the
20 responses, that this is something that Canadian Zinc has
21 considered to date. There's a number of other things
22 we'd like Canadian Zinc to consider as we move forward in
23 -- in this process. For example, when we start
24 considering infrastructure development, we'd like to
25 ensure that -- or have a commitment from -- from Canadian

1 Zinc that any infrastructure that is developed will be
2 done so to consider best practices in terms of carnivore
3 avoidance.

4 That might be something like how you
5 handle your waste water, as well as fencing around the --
6 the bottom of -- of buildings. And management of food
7 waste and other attractants, such as gasoline, et cetera.
8 All these sorts of things need to be appropriately
9 handled, and -- and I noted that Canadian Zinc has a good
10 plan in terms of remo -- getting rid of waste.

11 However, I'm still a little bit unclear in
12 terms of the -- what happens to that waste in -- in
13 transit sometimes. So say, for example, waste that might
14 be stored at the Tetcela transfer facility temporarily,
15 prior to transport, ensuring that infrastructure that is
16 in place is sufficient to deter wolverines or -- or bears
17 that might be out in the early season.

18 So I -- I -- I guess that's my first --
19 just asking if Canadian Zinc could commit to working
20 together to ensure that carnivore resistant or
21 mitigations are in place to deter attractants of -- of
22 carnivores at their facilities, as well as along the
23 road?

24 MR. DAVE HARPLEY: Dave Harpley. I think
25 we have a good track record of managing attractants at

1 the mine site. Certainly we've had no issues from --
2 with bears to this point in time and we're intending that
3 that will continue. I don't think it'll be any different
4 during the mine operating phase. We will revisit our
5 health and safety plan, the component of which is bear
6 awareness, and related issues.

7 As far as offsite construction, the -- the
8 Tetcela transfer facility is -- is literally a -- a
9 stopping point, and it's -- it's -- nobody stays there.
10 It's basically day use. There -- there might be a single
11 drum full of waste, but material would be removed and
12 taken to the mine site. So very, very limited
13 opportunity for attraction to that location.

14 There would be more utilization of the
15 Liard transfer facility in terms of attraction, but then
16 that's pretty close to Laird Highway, and I would suggest
17 the opportunity for attraction would be considerably less
18 in any event.

19 That material would also go to a suitable
20 disposal location. If necessary, it would be taken back
21 to the mine for incineration. So we -- we commit as a,
22 you know, company to continue those activities and we'll
23 welcome any advice on how we can improve them as we move
24 forward.

25 MR. ALAN EHRLICH: Parks...?

1 MR. MIKE SUITOR: Mike Sutor, Parks
2 Canada. Yeah, specifically what I'm looking for is I --
3 I understand there will be temporary use at -- at
4 something like the Tetcela, a little more use at the
5 Laird. However, the facilities that are in place to --
6 to hold those wastes, I would suggest that those should
7 be carnivore proof facilities, so -- just a container
8 that basically doesn't allow carnivores to get into, and
9 that would sufficiently address my concern with -- with --
10 - in terms of carnivores actually getting into
11 attractants at those locations.

12 And I'd also like to point out that food
13 wastes are one (1) part of that equation. Carnivores are
14 attracted to a whole host of other types of antifreeze,
15 or gasoline, those -- all sorts of things will attract
16 carnivores, and we would like to see a commitment and --
17 for the Wildlife Management Plan to ensure those sorts of
18 considerations are -- are brought into the -- the plan
19 itself.

20 MR. DAVE HARPLEY: Yeah, we commit.
21 That's -- that's fine.

22

23 --- UNDERTAKING NO. 24: For Canadian Zinc to commit
24 that the Wildlife Management
25 Plan ensure those sorts of

1 considerations such as
2 gasoline or antifreeze are
3 brought into the plan itself.
4

5 MR. MIKE SUITOR: Other concerns that we
6 had was just ensuring that -- in particular, you had --
7 we had talked earlier about -- or through the -- the Irs,
8 as well as through some personal conversations, about
9 timing activities along the road.

10 As I understand it, there will be no
11 activities east of, I can't remember what it was,
12 kilometre 25, prior to October. Is that correct?

13 MR. DAVE HARPLEY: Middle of October.

14 MR. MIKE SUITOR: Middle of October,
15 thank you. In lieu of that, then my other comments may
16 or may not apply. We -- we were just concerned in terms
17 of human wildlife conflict, and ensuring if you had any
18 crews, and this could be research crews as well, that
19 appropriate mitigations are put in place in terms of
20 handling or storing food if overnighting along the road,
21 and ensuring that appropriate training is in place for
22 any staff that might be working along the road.

23 MR. DAVE HARPLEY: Yeah, that's what we
24 do as a matter of course currently anyway, so that's
25 fine.

1 MR. MIKE SUITOR: Okay. Thank you very
2 much.

3 I guess the only other area of comment was
4 just about design of infrastructure, will Canadian Zinc
5 ensure that design of buildings and such, especially
6 pertaining to attractants such as greywater or other
7 chemical attractants, along with food, will ensure --
8 will ensure that carnivores are -- carnivore attraction
9 is minimized, and actual -- the -- the potential for --
10 for obtaining those attractants is taken care of?

11 MR. DAVE HARPLEY: That's correct.

12 MR. MIKE SUITOR: Thank you very much.
13 That's it for me.

14 MR. ALAN EHRLICH: Okay. Thanks for --
15 for keeping it brief. We appreciate everyone's efforts
16 today. We know it's been a pretty long day. A look
17 around the room, everyone looks a little burnt out. I'd
18 also like to thank John Gon for our sound services, our
19 caterer, who's not here to hear the appreciation, and the
20 shuttle will leave in five (5) minutes.

21 It will pick up at the Explorer at 8:30 or
22 8:35 tomorrow. I think that pretty much sums it up. I
23 won't be here tomorrow, so thank you everyone from me
24 anyway, and you'll be in Chuck's hands.

25 If there are any wildlife issues that you

1 realize tonight you didn't have a chance to raise, you'll
2 have an opportunity first thing tomorrow. Thanks. Bye-
3 bye.

4

5 --- Upon adjourning

6

7 Certified Correct,

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12 _____
Wendy Warnock, Ms.

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