

1 Ekati mine.

2 The waste-rock overburden ore in stockpiles.
3 This cover for the waste dump, for rock overburden,
4 the ore stockpile, collection ponds A, B and C, for
5 temporary effluent water containment areas, various
6 discharge pipeline and ditches, Stream C1 diversion
7 and the mine pit area.

8 We have reviewed the foundation of the areas
9 where the waste-rock dumps and stockpiles will be
10 located. They are mostly on shallow bedrock and
11 will work with appropriate designs, such as
12 granular rockfill pads, impermeable burial for the
13 recovery plant rejects. There would not be any
14 stability and seepage problem.

15 We have also viewed the various design and
16 background information on the discharge pipeline
17 into any of the drainage ditches, collecting ponds
18 and efficient structures in the area. Stability
19 analysis has been carried out, and the slopes of
20 the structures generally will be built following
21 common engineering practice.

22 The mine pit will be excavated into the
23 overburden and continue in the bedrock with
24 excavation slopes will be frozen most of the time,
25 reducing any concern on stability and seepage.

26 An important issue for this mine area is

1 related to the actual performance and water quality
2 coming from these structures. Additional studies
3 and monitoring as the mine activities progress will
4 be important to ensure that effluent water quality
5 from this area is adequately addressed. If not,
6 contingency plans or remedial measure might need to
7 be implemented.

8 In general, the second -- the next one will
9 be the abandonment and the restoration plan. In
10 general, they are in -- our plan has addressed all
11 of the major issues which Tahera has currently
12 anticipated at the end of the mining operation.
13 The plan will need to be reviewed and revised and
14 updated during operation of the mine to effect
15 changes and problems at hand.

16 A few comments that we will need for the
17 consideration for the plan will include the cover
18 thickness and materials for the PKCA, waste rock
19 and waste-dump stockpiles.

20 The cover thickness requirements will need to
21 be reviewed, subject to the water quality which
22 come out of this area, and adjustment to be made as
23 required. Cover materials will need further study,
24 their durability, the sizes, their properties might
25 need to be further examined prior to the mine
26 closure.

1 The second thing is about the global warming
2 where more discussion should be included on global
3 warming issues, particularly as the mine will be
4 returned to their natural environment and will stay
5 that way for a long time after the mine operation
6 ceased.

7 Reclamation costs. A cursory review of the
8 reclamation cost indicates that the value appears
9 to be on the wide order of magnitude. It should be
10 clear that these costs is based on condition which
11 is anticipated now, which is preliminary. This may
12 change and may need to be reflected in the revised
13 plan closer to the end of the mine operation. We
14 feel that the present stage of contingency should
15 be higher to reflect some incident and variation of
16 designs and operational plans that Tahera has. But
17 this still need be finalized.

18 I don't think this number actually went to
19 change the final quantity considerably. The plan
20 appears to be complete and provides the basic
21 activities for mine closure, progressive
22 reclamation which Tahera promised must, however, be
23 stipulated as a condition for the water license,
24 and its implementation is crucial for the plan.

25 Now I am handing over our presentation to Dr.
26 Bryan Leece.

1 BRYAN LEECE: Good morning, Mr.
2 Chairman. Bryan Leece from Dillon Consulting.

3 We were asked on behalf of the Nunavut Water
4 Board to take a look at the submissions from Tahera
5 to determine what level of predevelopment
6 monitoring data was actually included in the
7 presubmission documents.

8 And if we spend just a minute or two just
9 sort of talking about why this is important and why
10 you need to get a good handle on what
11 predevelopment, or what we call background
12 considerations are. You need to know what
13 conditions are before you start so you can
14 determine what level of impact an operation has
15 actually had on the local environment. If you don't
16 know that before you start, it is much harder to
17 determine what impact the site has had after
18 operations have begun.

19 The primary use of background information is
20 towards closure and rec development -- closure and
21 reclamation plan. And in order to determine what
22 level of impact the facility has had, you need to
23 know what levels you started with. So if you are
24 looking at the concentrations of nickel and you
25 see -- if you don't know what the concentrations of
26 nickel are before you start, you can't really

1 determine if the facility has had an impact and
2 increased the levels of nickel. Nickel, as an
3 example, not to suggest that nickel is an issue in
4 this one.

5 It is also used when it comes time to set
6 clean-up targets at the time of closure. If you
7 have got concentrations that are above CCME
8 guidelines and you need to determine whether or not
9 there is an effect, you develop what are called
10 site-specific target limits. And in doing that,
11 you need to make sure that the limits that you set
12 aren't actually numbers that are lower than local
13 backgrounds. So you are not asking a proponent to
14 clean a site up to levels that are much cleaner
15 than it was before anybody was ever there and did
16 anything. Is important to have those at that start
17 of the program so you don't -- you aren't left in a
18 position about arguing on what effect the facility
19 has had.

20 Based on the review that we have done,
21 certainly that we can find, anyway, there certainly
22 doesn't appear to be any information on background
23 metal concentrations in the surface soils in the
24 area of the Jericho project.

25 It is our understanding from discussions with
26 the proponent that, in fact, a sampling program is

1 expected to happen in the next year to give us some
2 idea what the background concentrations are in the
3 surface soil. We haven't had an opportunity to
4 review that sampling plan yet, so we can't really
5 comment on the adequacy of it.

6 It shouldn't -- the lack of that plan really
7 shouldn't be viewed as something that's going to
8 delay acceptance of the license or issuance of the
9 license. That is something that can be sorted out
10 fairly quickly over the next few months before any
11 sampling would occur.

12 And I think at this point I will pass the
13 mike over to Bruce Bennett.

14 BRUCE BENNETT: Thank you, Bryan,
15 Mr. Chairman. Just the two main topics that I just
16 wish to speak about are site-water management,
17 followed by water quality.

18 In terms of site-water management, and just
19 to recap some of the information that you have
20 heard, and I'm sure it has been better presented
21 than what I am about to discuss is that Tahera,
22 proposing to manage the runoff and the seepage from
23 the various waste dumps and the process areas, they
24 will be collecting and directing the runoff to an
25 open pit by a series of ditches and sumps. This
26 will be discharged to the environment if

1 acceptable, meeting aquatic thresholds. Otherwise
2 it will be pumped to the PKCA for treatment prior
3 to release to the environment.

4 And, also, as a contingency, the site water
5 management plan provides for the provision of the
6 construction of three separate collection ponds, A,
7 B and C. These ponds would provide additional
8 attenuating water storage and/or water quality
9 monitoring prior to discharge to the environment,
10 if that takes place.

11 The one comment I just wanted to make, as far
12 as on a water quantity side, is that we feel that
13 the overall plan, including the location, size and
14 the various water-management facilities, meaning
15 the containment area, diversion ditches, et cetera,
16 it is consistent with standard hydrologic
17 engineering methods. And we consider it to be an
18 adequate approach to the management of the quantity
19 of the runoff that's being generated at the site,
20 or will be generated at the site, while minimizing
21 the potential of adverse surface water impacts to
22 the environment.

23 In terms of water quality, Tahera has
24 provided both best estimate and upper bound,
25 meaning 90th percentile concentrations of the
26 contaminants from the waste rock, overburden,

1 kimberlite ore and low-grade ore, and the coarse
2 processed kimberlite. The methods that they used
3 we feel were appropriate, and they are well
4 described, as per technical memorandum I, estimates
5 of source concentrations.

6 One of the key assumptions that I just wanted
7 to point out was that the soluble contaminants are
8 immediately available and removed from those
9 sources via its infiltration and runoff and that
10 they would persist through the operational period
11 of the mine.

12 As Tahera pointed out, the -- any buildup
13 over time would be minimal due to the low
14 concentrations of sulphide minerals in the sources,
15 and thus the negligible potential for acid
16 generation. And also the inability of the waste or
17 the ore sources to continue contributing to the
18 soluble contaminants due the freezeback, and that's
19 a point that I think is there. It has not been
20 belabored, and certainly it was ignored for the
21 purposes of the predictions, and that's a good
22 thing in terms of when you are looking for
23 worst-case conditions. But, in actuality,
24 freezeback will tend to serve to lock up the
25 contaminants over time.

26 The base-case information that was presented

1 by Peter McCreath, I just wanted to emphasize that
2 they were conservatively made and that they assume
3 that the waste-rock dumps and the ore stockpiles
4 would be fully in place starting in year one. In
5 actuality, the effluent would normally be expected
6 to kind of gradually increase over time as the
7 stockpiles and the ores build up, notwithstanding
8 my comment made about freeze back.

9 So, therefore, if the effluent quality
10 approaches the proposed discharge limits, this
11 outcome really isn't going to take place until the
12 latter operational period of the mine life. And,
13 in fact, in the early stages of the mine, you are
14 going to be looking at far lower concentrations.
15 And I will get back to this point in a minute.

16 One concern that we had, and I don't think it
17 was intentionally written this way, but it has been
18 pointed out that there is about two years worth of
19 storage in the containment facility. It read in
20 the document as if it were perhaps only available
21 at the beginning of the operational period of the
22 life, and that's been corrected through our
23 technical discussions, and they pointed out that it
24 is actually available at any time.

25 My concern initially was that if it wasn't
26 available at the end, and the effluent quality

1 started to approach your discharge limits, then, in
2 fact, you might not have that storage capacity
3 while contingency measures, which were proposed,
4 could be implemented. So I was pleased to hear
5 that storage capacity is there at any time, and
6 particularly towards the latter part of the
7 operational period of the mine.

8 They also, as a contingency plan, provided a
9 description, if treatment were required, they have
10 provided it for ammonia in a memorandum dated
11 October 12th, and for metals, in a memorandum dated
12 October 22. And, again, we are pleased to see that
13 those contingency plans are in place.

14 The proposed discharge limits were on the
15 bases of a ten times dilution factor, and so that
16 the release of the effluent from the PKCA would be
17 less than the aquatic thresholds that they have
18 proposed at the boundary of the 200-metre mixing
19 zone. They did provide rationale for lowering the
20 ten times dilution values for TDS, chloride and
21 zinc, and increasing the values for aluminum and
22 uranium.

23 They have committed to some acute toxicity
24 testing, and it is certainly the no net loss plan
25 is in place. So on that basis and with the
26 contingency plans, we are satisfied with the

1 aquatic thresholds and the proposed discharge
2 limits that are proposed. I do have one qualifier
3 to that, which I will make just at the end.

4 In terms of monitoring, and this is a
5 discussion that came up during the teleconference
6 meeting that we had, we did express a comment that
7 perhaps some baseline monitoring would be
8 appropriate outside the watershed area to the east
9 and the southeast. We still feel that it is
10 important. It is unlikely that effluent from the
11 mine area would go in that direction, nevertheless
12 we feel that -- and this kind of touches on what
13 Bryan has told you on the baseline information. We
14 do feel it is important to collect it initially
15 before the project starts.

16 In summary, we feel that the technical
17 documents in the addendum that's been provided
18 provides a very comprehensive plan for the mining
19 project. It builds on the previous environmental
20 impact statements that have been previously
21 submitted, and that we feel that overall they are
22 well-written documents, they are technically sound,
23 and that it shows a commitment to the mining
24 project while still minimizing a disturbance to the
25 environment while maximizing social and economic
26 benefits to the people of Nunavut.

1 We feel that the license should be granted,
2 obviously subject to a lot of conditions. As you
3 have heard in previous testimony, there is a lot of
4 studies to be carried out, a lot of plans that are
5 to be put into place. There is design work that is
6 still required. There is the adoption, the formal
7 adoption of the discharge limits and the thresholds
8 that you have to make, the adoption of the no net
9 loss plan and the implementation of the various
10 water quality monitoring programs.

11 That's my comments, Mr. Chairman, and I'm
12 sure all three of us would be pleased to answer any
13 questions that may come up.

14 CHAIRMAN: Thank you very much.
15 Are there any questions from DIAND? Pardon me, I
16 am a bit ahead of myself here. Are there any
17 questions from the applicant? I got a little ahead
18 of myself here.

19 GREG MISSAL: Mr. Chairman, I'm not
20 asking for an adjournment, but if I could just have
21 30 seconds just to check with my consultants, then
22 we don't need to take a break. Just 30 seconds,
23 please.

24 RAMLI HALIM: Mr. Chairman? Mr.
25 Chairman, Ramli Halim with Acres International.

26 One of our member team, Mr. Bennett, would

1 like to try to catch a plane, reasons because he
2 has another commitment with an environmental board
3 in Ontario tomorrow, so I guess probably if there
4 is a question that can be related into the water
5 quality hydrological aspect first that probably he
6 can answer so that he can probably catch a plane.
7 And I will, myself and Bryan, will be able to
8 answer the other issues related to the geotechnical
9 and the human health and ecological issue.

10 Thank you, Mr. Chairman.

11 LICENSEE QUESTIONS INDEPENDENT CONSULTANTS:

12 GREG MISSAL: Thank you, Mr. Chair,
13 Greg Missal with Tahera. We have no questions, but
14 I think we have one point that is a clarification
15 on I think something we saw in the presentation.
16 So if you don't mind, we would just like to very
17 quickly clarify our position on that, and then we
18 can move on to the next questioner.

19 Q BRUCE OTT: Bruce Ott with AMEC.
20 Are you aware that baseline monitoring has been
21 done on those lakes you referred to, Key, Ash and
22 Lynne Lake, both for water quality and sediments?
23 And if so, do you consider the baseline water
24 quality data that was collected adequate?

25 I should also indicate that there was some
26 biological monitoring done in that system as well.

1 A BRUCE BENNETT: Bruce Bennett from
2 Acres. No, I was not aware of that. It was my
3 understanding it, perhaps, hadn't been done, as per
4 the teleconference. But if it has, that's welcomed
5 news, and we are very appreciative of that fact,
6 and we think it is in the overall interest of the
7 project.

8 BRUCE OTT: Thank you, Mr. Chair.
9 I personally have no further questions.

10 GREG MISSAL: No more questions, Mr.
11 Chair. Thank you.

12 CHAIRMAN: DIAND, are there
13 water-related questions?

14 GLEN STEPHENS: Mr. Chairperson, Glen
15 Stephens. No, we don't have any questions. Thank
16 you.

17 CHAIRMAN: Thank you.
18 Environment Canada?

19 ANNE WILSON: No questions.

20 CHAIRMAN: DFO?

21 DERRIK MOGGY: No questions, Mr.
22 Chairman.

23 CHAIRMAN: NTI and KIA?

24 JOHN DONIHEE: No questions.

25 CHAIRMAN: Thank you. Hamlet of
26 Kugluktuk? That's it. Are there any questions

1 from the floor?

2 BILL TILLEMAN: I guess not.

3 CHAIRMAN: Are there any
4 questions from the floor? Dionne?

5 WATER BOARD STAFF QUESTION INDEPENDENT CONSULTANTS:

6 Q DIONNE FILIATRAULT: Actually, thank you,
7 Mr. Chairman. It is more of a point of
8 clarification. At one point you referred --
9 regarding the site hydrology and the hydrogeology
10 issues, you made reference to a couple of memos, I
11 think they were October 12th and October 22nd. And
12 I just want to confirm that they have been provided
13 to the Board and are on the public registry if we
14 need to make reference to them.

15 A BRUCE BENNETT: Bruce Bennett from
16 Acres. The two memos that I was referring to in
17 terms of effluent treatment as a contingency
18 measure were an AMEC memorandum entitled "Review of
19 Ammonia Treatment Alternatives" for the mine
20 effluent at Jericho that was dated October 12th,
21 2004. And the other memo that I was referring to
22 was, again, an AMEC memorandum entitled "Review of
23 Treatment Alternatives for Metals in Mine Effluent
24 at Jericho", and it was dated October 22nd, 2004.

25 Q DIONNE FILIATRAULT: Thank you, Mr. Chair.
26 One final question is in the operational

1 monitoring, you suggest to do the monitoring east
2 and southeast of the mining area, I'm just
3 wondering what your thoughts are on monitoring
4 west, south and southwest of the PKCA?

5 A BRUCE BENNETT: Bruce Bennett from
6 Acres. I just want to be clear, Dionne, when you
7 say this is additional monitoring beyond what is
8 being proposed south and southwest? I guess how
9 far, because the monitoring that, as I understand
10 it, would be on Stream C3, Lake C3, are you, in
11 fact, referring to further out again?

12 Q DIONNE FILIATRAULT: Past the control lake
13 and possibly south of the control lake.

14 A BRUCE BENNETT: Bruce Bennett from
15 Acres. I feel the surveillance program that they
16 have put into place, I think it is a pretty
17 appropriate program. Personal, myself, I don't
18 think it would be necessary to go that far out,
19 apart from perhaps some background information.
20 But I don't think it would be necessary for ongoing
21 monitoring.

22 DIONNE FILIATRAULT: Thank you, Mr. Chair.
23 I have no further questions. One question from
24 Steve.

25 Q STEPHEN LINES: Thank you, Mr. Chair,
26 one quick question. This is for Ramli. In your

1 assessment, did you assess the north dam as a
2 contingency measure or as part of the actual plan?

3 A RAMLI HALIM: It is my understanding
4 -- Mr. Chairman, Ramli Halim with Acres
5 International. The information that we obtained
6 from Tahera at the time we evaluated this, the
7 north dam is going to actually be built, but
8 initially there would be no access road, and it
9 became part of the north dam. So I think that's
10 the information that we have at this time. It is
11 still available. It was mentioned as a
12 water-retraining structure, although I have some
13 thought myself that this is a very low structure,
14 but Tahera made a commitment that it is going to be
15 a water-retaining structures with an added security
16 using geosynthetic composite liner or GCL.

17 STEPHEN LINES: Thank you.

18 CHAIRMAN: Any further questions,
19 staff? No. Thank you. Are there any questions
20 from the floor to be addressed to -- community
21 members, are there any questions from the community
22 members to be addressed to the independent
23 consultants? If not, thank you very much there,
24 gentlemen, for your presentation.

25 BRUCE BENNETT: Thank you, Mr. Chair.

26 CHAIRMAN: There has been a

1 suggestion here that we take a 15-minute break and
2 carry right on. Does anybody really need to have
3 lunch? That's the question, but we will take a
4 15-minute break and just carry right on. Thanks.

5 (BRIEF ADJOURNMENT)

6 CHAIRMAN: Okay. Welcome back.
7 I have been informed by local residents, Millie,
8 who wish to say a few words.

9 MILLIE: Good morning. I would
10 just like to share some comments that were made by
11 the late Sam Kiukpuk (phonetic) who perished a week
12 after he made his last public statement. And I
13 think that now is the time to share his words for
14 the benefit of Kugluktukmiut and having -- being a
15 community observer at these last two days, I left
16 here yesterday with Sam on my mind and his words,
17 so I would just like to share those.

18 And I would like to address it to everyone
19 here, Tahera, the Water Board, KIA, NTI, and all of
20 those interested parties that have to do with water
21 monitoring in Nunavut, and especially for
22 Kugluktuk.

23 A week before Sam perished, the Nunavut
24 Wildlife Management Board sat at the same table
25 where you are at, and this audience was full, much
26 more full than what it is today. Sam stood up at

1 the microphone, and he addressed three issues.
2 Number one, we must look after, monitor and protect
3 the caribou. The second is to monitor and protect
4 the fish, for those are the two main diets that our
5 generation and our ancestors have eaten. And he
6 addressed in his words that in the past or in the
7 future, our grandchildren and great-grandchildren
8 will continue to have caribou and fish as their
9 main diet. But first and foremost, which is the
10 third point, it is to protect the water, because
11 without the water, we cannot have healthy caribou,
12 we cannot have healthy fish, and we cannot have
13 healthy people.

14 But he also addressed in speaking that we
15 must continue to develop, so we can't say no to
16 industry. But we must protect those three, the
17 caribou, the fish and, first and foremost, protect
18 the water that we eat and drink off of, that
19 provides the life for the people here in Nunavut,
20 as well as for our food that we eat.

21 I think that it was important for me to share
22 that for Sam, and may he rest in peace, and may his
23 family have a merry Christmas. Thank you.

24 CHAIRMAN: Thank you very much
25 there, Millie, for your powerful statement on
26 behalf of Sam.

1 I do believe legal counsel had a comment to
2 make.

3 BILL TILLEMAN: Thank you, Mr.
4 Chairman. Just before we go to closing, in terms
5 of exhibits, I want to make sure the record is
6 complete. One such thing was the cost estimate
7 from Mr. Donihee on behalf of the KIA. The Board
8 has now received that, and we will mark it.

9 Another thing were a couple of responses
10 and/or documents from Tahera, and that included
11 their response from yesterday, and that I
12 understand will be forthcoming in their closing and
13 a list of plans and time lines and so on. And once
14 again I believe and can inform the Board that that
15 will become an exhibit, and we will get it here at
16 the end of the day.

17 (EXHIBIT TO BE MARKED WHEN RECEIVED)

18 BILL TILLEMAN: And if I am
19 missing any other exhibits, could anyone inform me
20 now in the audience. I don't see any hands being
21 raised. Anne Wilson did have one other thing, I am
22 sorry, from Environment Canada that she will bring
23 up in her closing. But apart from that, Mr.
24 Chairman, I think our record is complete and we can
25 move into closings.

26 EXHIBIT NO. 18:

KIA SECURITY ESTIMATE INFORMATION

VICE-CHAIRMAN: Mr. Chairman, if I could, are you talking about there was number 15 was a hard copy of the water policy by NTI, 16 was a nitrate report from Tahera, 17 was the electronic copy from Acres and Dillon, 18 was the hard copies from Acres and Dillon. And now I think 19 is the cost estimates from KIA, that's as far as I got, Mr. Tilleman. Are there any other ones that I don't have, that's number 19?

BILL TILLEMAN: I think we are complete, Mr. Vice-chair.

CHAIRMAN: Thank you, Mr. Tilleman. At this time I invite the intervenors and anyone who made a presentation to the Water Board to make their final closing remarks, if they wish to, in the same order of presentations. Tahera will be given the opportunity to make final closing statements.

Again, please restrict your closing remarks to the matters under consideration, and I will ask that you keep them to three to five minutes each. Beginning with DIAND, followed by Environment Canada, DFO, NTI and KIA, Hamlet of Kugluktuk. Independent consultants have already left, because they had a plane to catch. And finally the