WORKGROUP FOR GLOBAL AIR PERMIT POLICY DEVELOPMENT FOR TEMPORARY OIL AND GAS DRILL RIGS

MEETING

May 20, 2014

Anchorage, Alaska

Present:

Gordon Brower
Alejandra Castano (telephonic)
Tom Chapple (telephonic)
Tom Damiana (telephonic)
Ann Danielson
Alice Edwards
Wally Evans (telephonic)
Dea Huff (telephonic)
Randall Kanady
Joshua Kindred
John Kuterbach
Ann Mason
John Neason
Mike Peters (telephonic)
Alan Schuler (telephonic)
Tiffany Samuelson (telephonic)

Jeanne Swartz
Brad Thomas
Barbara Trost
Tom Turner
Ben Wedin

P R O C E E D I N G S

(On record at 1:04 p.m.)

MS. EDWARDS: Well, it seems like we may have who we have here in the room. I know we have one more staff person coming over from DEC, but she was going to be a few minutes late so she'll be here shortly. This is Alice Edwards. This is the -- are we good to go?

THE REPORTER: Yeah. We're on record at 1:04 p.m.

MS. EDWARDS: Thanks. This is Alice Edwards. This is the eighth meeting of the workgroup working on the air permitting policy development for drill rigs. And the first thing we wanted to do was to go around the room and on the phone and do introductions and then we'll take a look at the agenda and then we'll go on from there. So why don't we go ahead and just start going around the table and I'll just -- I'll start again. I'm Alice Edwards with Department of Environmental Conservation, Division of Air Quality.

MR. BROWER: My name's Gordon Brower and I have a new title. So we had some -- little bit of changes and I've accepted the position as an assistant to the land management

administrator. So -- and I still represent the Borough on this team.

MS. EDWARDS: Great. Thanks, Gordon.

MR. KINDRED: Josh Kindred with the Alaska Oil and Gas Association.

MR. THOMAS: Brad Thomas with the Alaska Support Industry Alliance.

MR. KANADY: Randy Kanady with ConocoPhillips Drilling and Wells.

MR. KUTERBACH: John Kuterbach, DEC.

MR. TURNER: Tom Turner, DEC. And a general reminder, we have a transcriptionist so anyone who speaks on the phone or in person please identify yourself during the conference.

MS. EDWARDS: Thank you.

MS. MASON: Ann Mason, SLR.

MS. DANIELSON: Ann Danielson, SLR.

MS. SWARTZ: Jeanne Swartz, DEC.

MR. WEDIN: Ben Wedin, Nordic-Calista Services.

MR. NEASON: John Neason, Nabors Alaska Drilling.

MS. EDWARDS: And on the phone, I guess let’s start with -- is there anybody on the phone who’s actually in the Anchorage area?

MR. EVANS: Yes. This is Wally Evans with Hilcorp.

MS. EDWARDS: Hi, Wally.

MR. PETERS: Mike Peters, Doyon Drilling.

MS. EDWARDS: Hi, Mike. Anyone else from the Anchorage area? Do we have anybody from southeast Alaska?

MS. HUFF: Dea Huff with DEC.

MS. EDWARDS: Hi, Dea.

MS. HUFF: Hi.

MR. CHAPPLE: Tom Chapple with HMH Consulting.

MS. EDWARDS: Hi, Tom. Anyone else out of Juneau or southeast? Do we have anybody else on the line who hasn't introduced themselves?

MS. SAMUELSON: This is Tiffany Samuelson and Tom Damiana from AECOM in Fort Collins, Colorado.

MR. TURNER: Can you please repeat that?

MS. SAMUELSON: This is Tiffany Samuelson and Tom Damiana from AECOM in Fort Collins, Colorado.

MS. EDWARDS: Hi, Tiffany. Thanks. Anyone else? I think we might have had two people talk at once, so.

MS. CASTANO: Yeah. That was Alejandra Castano with BP Alaska. I'm on the North Slope.

MS. EDWARDS: Oh, hi Alejandra.

MS. CASTANO: (Indiscernible).

MR. SCHULER: Alice, this is Alan Schuler. (Indiscernible).

MS. EDWARDS: Hi, Alan. Is there anybody on the phone who hasn't introduced themselves? Alejandra and Alan, it was a little hard to hear you, so if you do have something to say just

speak up and we'll -- hopefully we'll catch it and make sure we hear it okay here in the room.

MS. CASTANO: Is this any better?

MS. EDWARDS: That is a little better. Thank you.

MS. CASTANO: Okay.

MS. EDWARDS: Want to introduce yourself?

MS. TROST: Barbara Trost, DEC Air Monitoring.

MS. EDWARDS: Great. So do we have anybody on the line at all now that hasn't introduced themselves? Great.

So looking at the agenda for today, I know there's a number of folks in this room that have been working on both the technical subgroups and the options subgroup which have met over the last several months. And so we have different people at different places as far as sort of their knowledge of what's been going on with the group. So some of this may be repeat for some of you, but I -- the plan today was to start out reviewing some of the work and ideas and conclusions and -- that have been coming out of the subcommittees since the last time we met in the middle of February. The -- so -- and in doing that we're going to look at -- have Barbara and others go through a presentation from the technical subgroup which everybody should be able to access online on the website.

UNIDENTIFIED FEMALE: Yes, correct.

MS. EDWARDS: And I believe Jeanne also sent that link out to all of you. And then once we go through that and talk a

little bit about what the technical workgroup -- or technical subgroup and the options subgroup have been working on we thought we'd have a little bit of discussion about sort of how the options and proposals that we've been looking at are fitting in with what we're seeing coming out of the -- out of those groups. And then following that we can start looking at sort of where we want to go next, what the schedule is for the subcommittees as they continue their work and any other action items that we may have. Is there anything that we missed on the agenda that folks would like, that workgroup members would like to update or change?

I will say I don't think that this is going to take us all afternoon to do, but we'll see how the discussion goes. Are we good with the agenda? Okay. Hearing nothing we'll go ahead and proceed with the agenda as planned. So first off what I think we'd like to do is take a look at this presentation from the technical subcommittee on findings and I think Barbara Trost from DEC was going to walk us through this.

MS. TROST: Okay. So I don't really have the dates exactly on how -- when we started and when we got to the point where we're at, but I think it took us most of the winter. The subcommittee looked at the 12 datasets that industry had provided. Most of those were on the North Slope and the datasets that were provided all were intended to shed some light on impacts of the drill rigs and their activity associated with

drilling on air quality.

To get a better handle on it we decided to sort them, the datasets that we've got, and focus mainly on the ones where we had -- the time periods that we had drill activity and then the ones where we could identify the type of activity we had in terms of we got additional information on fuel use which was really helpful. And so that narrowed it down to about seven time periods on I think five pads that we looked at and those were more shorter term periods. And just that was really important. In the end it turned out that the shortest period was 11 days and then the longest we looked at was 72 days. So that's -- and all that is in light of a standard that is based on three years of op -- three continuous years, calendar years. So to look at that to better understand what the impacts are we also divided the datasets, looked at them -- if the drill rigs were operated using line power or if they were off the grid.

And that is basically what you see in the table here. It basically has in the -- on the left hand side it has the pads and the type of drill rig and the drill rig and also the well information and then the periods that we've looked at. The number of drill rigs, we also looked to see whether that would make a difference. The rig hours which is -- and then, like I said, on grid or not. And the really important information was the max fuel used in gallons per day.

So out of that we then took the meteorological information

that we had and we created what is called a pollution rose and that is on slide three. We just, for example, have here the Liberty which we thought was a really good example. We did that for all of these seven scenarios or drill rig periods that we had, but this one, just to focus on that one. And what this shows is on the left hand side it's just the 11 days of when the rig was operated on the Liberty pad and it's maybe a little hard to understand at first. But -- so in the -- the circles show concentrations, so the further out you go on the -- off the center of the graph to the outside the higher your concentrations are. It also shows the wind sector of where those -- where the wind was coming from when that measurement was taken. So if you look at the right hand side there's the photo of the Liberty pad and you have the -- the northern end of the pad is where the met site, the meteorological monitoring site, is at and at the southern end is where the ambient monitoring station is. So the monitoring -- and in between is well the -- where the wells are. So what we would expect is if the wind is coming from the north there's -- which would catch at the meteorological site you would see effects of the drill pads -- the drill -- the well pads or the -- well, drill rig on the wells on the south side of -- at the monitoring station. And that's kind of what we're seeing when we're looking at the red dots. Again, back on the left hand side of that graph is that there are a lot of them in the center, but there's also

sort of a scatter around the northern, northwestern, northeastern sector. So -- and we have concentrations that go up to about 80 percent of the standard.

We also then compared that to the active -- when there's no activity on the drill -- on the pad, which is the graph on the right, and just to note that the scale is slightly different, so the outer circle doesn't have -- on the right hand side is not the same as on the left hand side unfortunately. But the main part on this one is, is that even without drill rig activity we can have some higher readings of NO2. During the time period they are more -- mostly either from the north or they're actually coming from the southwest. And so when we're looking and trying to understand impacts and how a standard would be triggered or not when -- during those activities we have to take two things into account, the actual emissions from the rig, but also anything that is already there in terms of background concentration. And we chose this example because it illustrates that even though we don't necessarily have very high concentrations coming from the rig if there already is a certain background there or a certain level of concentration at the pad then that could add towards getting us over the standard.

So all in all, I'm going to slide four, is there were no violations of the one hour NO2 standard which is what we had -- we knew already. And when looking at the data when we consider how the drill rigs were operated, what the typical weather

conditions were when we saw maximum impacts or the highest values of one hour NO2 readings, those were usually in sort of a -- under wind speeds of around five miles per hour. So not too high, but also not the calms. When we looked at the fuel use that was -- that we saw during those seven periods that we looked at and the duration of the activity we did not think that there was a reason to worry about exceeding the standard. At the same time seeing what we had seen in the data that we could not make that additional step to say under any potential scenario would we feel the same confidence. So in other words, there -- we could easily conceive of a scenario where we had either longer time periods, more fuel use, more rigs, different rig activity or any combination of that that could lead, potentially lead to exceedences and so could just not make a blanket statement.

Going to slide five and maybe I'll just let Brad talk about it, but we decided that maybe the better way forward is to try -- in terms of trying to capture what the actual activities look like is that we're looking at scenarios that we could better quantify. And AOGA and the Alliance came up with these preliminary five categories, scenarios.

MR. THOMAS: Do you want me to take it from here?

MS. TROST: Go for it.

MR. THOMAS: So where we're going now on the technical subcommittee is we're looking at five different scenarios that

cover all drilling in the state and they're on the back of the last page. We're going to look at these five scenarios and determine what guardrails, if any, we should build to -- to build the regulatory programs around. For example, the onshore routine infill drilling in an isolated pad, that's drilling that occurs at all the pads in the state that aren't collocated with a Title 1 facility. That'd be a PSD facility generally. That's most of the drilling. We think there that the minimum regulatory requirements ought to bear, so we're looking at what those would be and how that program would look.

Onshore developmental drilling on an isolated pad, also not difficult. Not a lot of drilling in that category, but we don't think that's going to be a difficult one to track either.

The collocated pads are a little bit different animal because, as Barbara mentioned, there are in those cases facilities nearby already emitting and, you know, causing impacts to the ambient air quality standards. So those we're still working on. The program for those might be a little tighter, might be a little more strict. Still developing those numbers though.

And then finally the offshore drilling which is the one that we've actually spent the least amount of time on, but we're going to work that piece as well.

So that's -- those are the five categories we're looking at (indiscernible).

MR. KANADY: Brad, could you clarify what the isolated pad versus collocated pad?

MR. THOMAS: Yeah. Collocated pad is just a pad that is connected to or on a -- the same pad that has a Title 1 facility, a PSD facility. An isolated pad is all the other pads. So that answer your question?

MR. KANADY: Yep.

MR. THOMAS: Okay. Examples -- and to follow up on that, some examples of collocated pads. CD-1 in Alpine, drill site 1-B in Kuparuk. Point Thompson would be a collated pad because they got their well lines on the same pad as the facility. The rest of them I'm not 100 percent sure if they're collocated or not. Guru (ph) maybe, is that collocated? Okay. But there's only a handful. We're talking like maybe, what, five or six in the state. So there's not many collocated pads. They're almost all isolated, in other words separated by distance from the Title 1 facilities.

So we're working on what would be -- so for example, fuel use limits that would satisfy everybody that the NOx won't be threatened if we stay within these fuel use ranges. And we're doing that -- you know, we're bringing a lot of modeling to bear to answer the question. So it's going to be -- I expect to have at least a preliminary proposal within the month, start working -- you know, we've been working this issue now for about 18 months, so we're all chomping at the bit to get through it and

try to get a credible proposal on the table by June, July.

UNIDENTIFIED MALE: Okay. When you say month, that's what I'm -- is it a month from today or within this month or.....

MR. THOMAS: It was actually a month from last week when we met last. But, you know, flexibility's going to be necessary because it -- the modeling could be intense and for you guys to review it's going to take some time as well.

MS. EDWARDS: Right. So once it -- once you get the modeling done on your side and bring it in then we're going to do some review of that.....

MR. THOMAS: Right.

MS. EDWARDS: .....so that's going to take some time to do as well.

MR. THOMAS: Right. Yeah.

MS. EDWARDS: So but.....

MR. THOMAS: So maybe by the end of the summer we could have something we all agree on.

MR. TURNER: So this is Tom. For the schedule then we would -- there would be a modeling proposal by the end of June?

MR. THOMAS: We're shooting for the middle of June, Tom.

MR. TURNER: Okay.

MR. THOMAS: We talked about the middle of June and it's really in Tom's court to pull all the modeling together, so.....

MR. TURNER: Tom Damiana.

MR. THOMAS: Tom Damiana.

MR. TURNER: Thank you.

MR. THOMAS: Yeah, so his resources are the constraining factor.

MR. TURNER: All right. So we'd be looking at sometime for the modeling by 6/15.....

MR. THOMAS: Yeah.

MR. TURNER: .....6/30 at the latest and then there would need time for DEC to review that.

MR. THOMAS: Right.

MR. TURNER: Okay.

MS. EDWARDS: Before we get too far along on schedule or the scenario category piece too far I want to make sure that there aren't any questions on the data piece. So the technical -- just to summarize, the technical subgroup went through all these datasets. They presented -- you know, in this report they presented sort of a summary of what they've done, but there's a lot of data that's sitting behind this. So I just want to make sure if anybody on phone. I know a lot of us have been through this at least once, but not everybody has and I don't know if Gordon has any questions, I don't know if anybody on the phone has any questions about the data process, what the technical subgroup did or has questions about what was presented because we just went through that pretty quickly. So I just wanted to open the floor up for questions first before we get too far into sort of where we're headed next. Is there anyone on the phone

that has a question? Okay.

MR. TURNER: Alice, I have a couple if you don't mind. So for the benefit of -- I appreciate everybody's work on the technical workgroup, but most of the people have been involved. Tom Turner. Most of the people involved with this, but for the benefit of everybody who was not there were some issues raised when I was going back to the past notes so I just -- a couple clarifying questions. And I was involved with some of the technical and option workgroups, so I have some familiarity with this. But one of the issues I understand was discussed was fuel usage and there was the original permit had a fuel use I believe of 14,000 gallons. The fuel use that you guys have found, what level?

MR. THOMAS: The fuel usage rates in actuality, what we've seen over the years, are well under 10,000, usually under 6,000.

MR. TURNER: So on average. So one thing to look at is an average fuel use would be around 6,000 to 8,000.

MR. THOMAS: I don't even think it's that high. No, it's probably more like 3,000 to 4,000.

MR. TURNER: Okay.

MR. THOMAS: Yeah.

MR. TURNER: Thank you. So.....

MS. EDWARDS: And this is on a daily basis.

MR. THOMAS: Right. Right.

MR. TURNER: Okay. Thank you. One of the things that was

discussed at the technical workgroup was there was concern about the higher fuel usage was set so that industry would have maximum flexibility to work within, up to that. So there was some concern that if they exceeded it for some type of emergency or need for drilling or some type of protection of staff or employees or the environment that that would be allowed and it was my understanding that there could be a intermittent or one time event.

MR. THOMAS: A category, intermittent category, yeah.

MR. TURNER: So can someone for the transcriptionist and the record explain that real quick?

MR. THOMAS: Well, what you're -- I think for -- this is Brad Thomas speaking. I think you're looking forward at what the -- what a program could be and what fuel limits, you know, could be imposed. And if those fuel limits or fuel ranges, if you will, become regulatory guardrails what happens if they're exceeded because of safety. Be health, safety, the need to, you know, preserve a well. That is an issue that we have to talk about and our proposal was to put that in the intermittent category because it's like an emergency generator. It only happens in the non-routine unforeseeable type events is our thought.

MR. TURNER: And just a clarification, Brad. I appreciate that to some degree, yes, I am looking forward, but there were these questions that were raised back in November that were

given to the technical workgroup and this is really the first summary we have of the whole group. And I'm so involved with this I understand that also, but I'd like to just have some of these questions that were raised back then just be clarified so we understand we're on the same page. Because otherwise we can get in that situation where we're making assumptions again and that would.....

MR. THOMAS: Right.

MR. TURNER: .....break down communication. The other thing we talked about quite a bit was whether or not a monitoring scheme could work and now it is my understanding that you would like to use a modeling method?

MR. THOMAS: Well, what we're looking at now is using modeling to answer questions, to identify guardrails within which operations could be assumed by all that the NOx won't be threatened. So it's not really a modeling scheme. It's a, you know, one time modeling event to answer specific questions and potentially to be used in a SIP submittal for a, you know, different drill rig regulatory program. So the -- scheme is not the word I'd use, but rather.....

MR. TURNER: You're correct.

MR. THOMAS: .....modeling approach.

MR. TURNER: A modeling approach which has been the standard method that -- how our permits have been set has always been to generally use a modeling approach to gather the data and

stuff. There was a suggestion from industry that we use a monitoring method, but what the discussion I have witnessed and now hearing is that we would like to use the monitoring method to establish the guidelines and parameters for.....

MR. THOMAS: Yeah.

MR. TURNER: .....a potential future method of setting (indiscernible).

MR. THOMAS: Well, to answer your question, this is Brad Thomas speaking again, we start off on the basis it was our view that the monitoring that has been conducted to date gives sufficient assurance that drilling doesn't threaten any ambient air quality standard. We still believe that, but as Barbara mentioned in her presentation there's not consensus that drill rigs don't threaten the NOx under any scenario. And just taking that, you know, we'll answer the questions then under, you know, how far can these scenarios we're talking about be extended and people will still be comfortable that the NOx aren't threatened. That's why we're going to use the modeling. So we haven't given up on the value of the monitoring that's been collected to date and we don't give up on its value in the future. But to address the concern about any scenario, that's why we're bringing the modeling to bear, just to answer those questions and to give comfort around, you know, what you've seen, how far can that be extended before you really need to develop concern that the NOx are threatened. Does that make sense?

MR. TURNER: Correct. So what we would look at is some type of approach that would satisfy the SIP because there is a potential to cause damage to air quality which has from the beginning been our request, to make sure we all protect air quality. And so doing some type of approach around that to satisfy the SIP is a possible way forward based on the data that was found through the technical review.

MR. THOMAS: Right.

MR. TURNER: Thank you. And then there was some discussion over time element and I was just curious. It sounds like all the rigs are operating on a very short time period, so I know industry had concerns about flexibility within certain time elements. Was that addressed at all on the technical issue? I missed some of those meetings.

MR. THOMAS: Brad Thomas speaking again. The time element, the one time element that was raised, you know, right at the very beginning was the desire to -- desire's not the right word, but the imposition that a rig had -- once it was on a pad and did its work that after it left it had to stay away for two years before it could return to that pad. That's a time element that we have severe discomfort with and in fact probably can't live with. That time element, we haven't really talked about it and it's perhaps a point that we'll have to work through, but the technical and options subgroups have not talked about that.

MR. TURNER: Okay. And then.....

MR. KUTERBACH: And just to be clear -- this is John Kuterbach. Just to be clear, that has never been a requirement. That is one approach.....

MR. THOMAS: Okay.

MR. KUTERBACH: .....to address the kind of ongoing degradation from multiple consecutive impacts of a rig returning to the same place with some frequency and that was one staff person's suggestion in how you could insure that air quality was not degraded. So it's -- the range in which you could deal with is from that only up to when rigs can move on and off day -- you know, right -- one right after the other.

MR. THOMAS: Yeah.

MR. TURNER: Okay. So I was just looking again through the notes that we had. So some of the discussion we had that the technical group looked at was there was earlier discussion about whether or not we could do a tier approach, whether or not it could break in categories. Some of what Gordon suggested was a registration program. So based on that it looks like industry's recommendation is we could have some type of combination of that. We are looking at collocated rigs where there could be other emission units on sites and then we'll also need to kind of pull out how the offshore stuff gets affected or the Cook Inlet. So is that correct?

MR. THOMAS: Uh-huh (affirmative). Yep.

MR. TURNER: Okay. And then the one other issue we looked at was that I was -- just had in my brain and lost. I have to look at my notes. I think that's it. Okay. Thank you, Alice.

MS. EDWARDS: You're welcome, Tom. So it seems like -- so the options group, just to kind of get back to the agenda for a second before we go too much farther. The options group has only met once since the last drill -- full drill rig meeting and that was this last week. We met twice in January and then we had this -- a full drill rig meeting and then we wanted to wait until we got some of the findings out of the technical subgroup. So we met last week and we discussed a lot of these same issues that we're discussing today. So we don't have a lot of new information coming out of the options subgroup at this point. And I think as we move through I guess one of the things I would set up is -- tee up as something maybe to talk about as we get a little further along is whether or not we need to continue having an options subgroup or whether we can -- given where the technical subgroup is going and headed whether we can just handle it with full -- handle sort of what the options subgroup was doing with the full workgroup or whether we want to continue to have a subgroup looking at options. But we -- I think it depends on whether we want to have -- continue to have a different group work through that and we can talk about that. I'm just teeing that up as a possibility. Since a number of us that are on this particular workgroup are also sitting on that

options group it may be something that we can consolidate and maybe save people some meeting time.

MR. THOMAS: Yeah.

MS. EDWARDS: But we can -- we don't have to go there right now. But I would say -- I mean we walked through this same presentation last week and talked about a few things as well and I think we've covered most of those topics already here. So the real question is sort of we've got this -- we've got several different sort of options or proposals that we've looked at. We have the original proposal which was a little more monitoring centric, but it had some other components to it as well. Now flowing out of the technical subgroup we're looking at modeling some configurations or scenarios of drill rig operations to -- that we think we can find -- hopefully the modeling will prove out that there are some combinations and -- with certain -- bearing certain assumptions that would show they're protective of the NOx and then we could build some options around those -- potentially around those scenarios. I know one of the things that the options subgroup talked about a little bit was sort of about how the translation's going to work into Cook Inlet. We talked a little bit about that. The data we have is centered on North Slope, obviously centered on the North Slope. The modeling is something that will help. I mean we can look at it from the Cook Inlet perspective as well as the North Slope perspective. We don't have as much monitoring data

to compare to down in the Cook Inlet area so we're a little bit hampered there. But we do know that in the end we'd like to try and find solutions that will work for Cook Inlet as well as for the Slope. I was trying to think if there's anything else that sort of came up in the options subgroup that maybe we didn't -- haven't talked about here that might be worth passing along to the bigger group. I think that was my primary -- well, I think that was my primary one that I wanted to -- that I was thinking about that I wanted to make -- insure that we sort of talked about it in this full group was that we are trying to figure out how and what's appropriate to translate from the work that's been done and is available out of the North Slope, the -- all the monitoring and all the effort that's happened over the years on the North Slope and how we translate that into something that may work for Cook Inlet. Obviously the offshore platforms in Cook Inlet are a little bit different beast. You've got an offshore concept or scenario that you're going to look at with the modeling. We have different meteorology in Cook Inlet. So we may end up with slightly different -- we'll have to see, I think we have to wait and see how the modeling looks to really understand, you know, what differences there might -- may show up between Cook Inlet and the North Slope for these five different categories that you're looking at.

MR. THOMAS: Yeah, that would be -- there's going to be at least three different scenarios I think. The isolated pad

scenarios, we might -- those might look the same in a regulatory program where there's developmental drilling and routine, at least based on what I know of the modeling so far. The collocated pad scenarios, maybe they'll look the same whether it's routine or developmental. And then the offshore drilling piece will -- it'll be its own beast, have its own characteristics.

MR. KUTERBACH: One of the things, this is John Kuterbach, that I guess I have a question in my mind not knowing independently all the air quality impacts at Cook Inlet is whether there's differences in background or mobile source contribution to the air quality in the area that would affect our conclusions from the modeling.

MR. THOMAS: Tom, can you -- Tom Damiana, do you know enough about the background concentrations between Cook Inlet and the North Slope that you can comment to John's question?

MS. SAMUELSON: Sorry Brad, Tom just dropped off. You missed him by like 30 seconds.

MR. THOMAS: Is he coming back?

MS. SAMUELSON: I'm sorry, I think he's out for the day now. I can go check though.

MR. THOMAS: Okay.

MS. EDWARDS: I wonder if Alan would have any perspective on that.

MR. THOMAS: Alan, do you know?

MR. SCHULER: This is Alan Schuler. (Indiscernible) does not have a whole lot of data (indiscernible) from the Cook Inlet area. There's efforts underway to collect (indiscernible).

UNIDENTIFIED MALE: Alan, you're going to need to speak up.

MR. THOMAS: Can you speak up some, Alan? We can't hear you very well.

MR. SCHULER: Yeah. Does this work better?

MR. THOMAS: It's not worse.

MR. SCHULER: Okay. Yeah, we did not have a lot of existing data for the Cook Inlet area, air quality pollutant data. It's fairly limited. And so there's several industries that are collecting data right now in various locations, but there's just not a whole lot of data around. Actually most of the data that we have is from the early -- mid 1990s from the Kenai Peninsula and -- which is very stale and old. And none of that actually even dealt with oil and gas (indiscernible). So we just don't have a lot of data down there is the bottom line.

MR. KUTERBACH: And this is John Kuterbach again. And then with Barbara knowing the impacts, would you like understand the primary impacts are near field to the sources, would that kind of mitigate the effect of the difference between the North Slope and Cook Inlet?

MS. TROST: Too bad that Tom Damiana is not here because he's actually looked -- probably looked at some modeling. It's

hard to say. We were not expecting when we looked at the data from the North Slope to see these higher concentrations at the low wind speeds. And comparing just the meteorology, when we looked at the Cook Inlet, and mainly that was the Kenai weather service station, there's a lot more calms and a lot more lower wind speeds in the Cook Inlet area, at least down there. That does not mean that every pad is experiencing the same thing or actually shouldn't say pad, every platform. But that way -- we definitely would have to look more at the data. We -- at this point we can't say that. We were surprised to see the impacts at the lower wind speeds. I think everybody sort of intuitively thought that we would say -- see downwash which we think is responsible for the near field impacts to be at higher wind speeds. So.....

MR. KUTERBACH: Okay. And then presumably since we're using modeling to kind of address the Cook Inlet area I would assume that would have separate modeling from the (indiscernible).

MR. THOMAS: It'd have its own meteorology. It would use Cook Inlet meteorology.

MR. KUTERBACH: Okay. All right. Thank you.

MR. TURNER: So just so I'm clear for the record, this is Tom. You would use North Slope data for the drill rig with Cook Inlet met data.

MR. THOMAS: This is Brad. No, we'd build -- we'd use

Cook Inlet rigs.

MR. TURNER: Okay.

MR. THOMAS: And the rigs between North Slope and Cook Inlet aren't a lot different, are they?

UNIDENTIFIED MALE: No.

MR. THOMAS: But we would -- you know, there's more heater boiler capability on North Slope rigs than on Cook Inlet, so we'd pick out for that probably. But there's not a big difference, but we -- the big difference is going to be in the meteorology.

MR. TURNER: So this is Tom again. Just -- so to help my lack of technical thing, those -- been a lot of issue about the additional heater units on all these -- on these drill rig sites, so Cook Inlet doesn't seem to have as much heater units on them, they have less?

MR. WEDIN: Yeah, that's probably true. This is Ben Wedin from Nordic. The Cook Inlet rigs would -- because the ambient temperatures are warmer. In the coldest part of winter the Cook Inlet rigs would have less heaters.....

MR. TURNER: Okay.

MR. WEDIN: .....on location.

MS. EDWARDS: Did the people on the phone hear that? So Ben was just saying that because Cook Inlet's a little bit warmer during the winter there's probably a little less heater use in the Cook -- on the Cook Inlet rigs or platforms than

there would be under a North Slope scenario.

MR. WEDIN: Yeah. For instance -- this is Ben Wedin again. For instance, the North Slope rigs employ boilers year round. The Cook Inlet rigs, I think they employ boilers in the winter. The air heaters aren't as necessary in the summer on the Cook Inlet rigs. We still use them primarily on cold days in the summer on the North Slope rigs. So there's just difference in the way that the Cook Inlet rigs are operated as far as the burning -- the fuel burning equipment.

MS. TROST: And I think what -- this is Barbara Trost. I think what the modeling probably will take into consideration as sort of the different source distribution on the limited footprint, but mainly I think the biggest component is going to be the fuel use and that is probably for an overall, the drill -- the platform or the pad and that includes obviously the heaters.

MR. KUTERBACH: Okay. And then -- this is John Kuterbach again. I know we're talking mainly about oil and gas drilling, but a certain type of gas drilling we haven't been doing which is the shale drilling which could go on which I would think would be -- have quite different characteristics both in the size of the drill and the location of the populations and depending on where the shale is.

MR. THOMAS: You want to handle that, Randy?

MR. KANADY: The unconventional shale gas?

MR. KUTERBACH: Yeah.

MR. KANADY: Yeah, I don't think there's any identified.....

MR. KUTERBACH: Well, I know.....

MR. KANADY: .....(indiscernible) on the table right now.

MR. KUTERBACH: Okay. I just want to know whether or not our solution here is going to address that or is that something that we need to look at in the future.

MR. THOMAS: This is Brad. I -- the solution I think that we're looking at would address that because one of the conclusions is that it's on pad fuel use that drives the ambient impacts. It's not the number of pieces of equipment and in a shale gas play because you're doing hydraulic fracturing you've got, you know, engines, other engines out there to get the horsepower for the pressure. So those would have to be -- you know, that fuel use would be included in the calculus. So as long -- so I think what we're going to show is that if you stay within these fuel use guardrails on a pad independent of how many engines you've got there you're okay, the NOx is okay. So the whole -- to answer your question in short, John, is that the -- or my belief is that the -- that type of drilling would be covered by this approach.

MR. KANADY: Yeah, I would agree with that. I mean it's not all that much different what they're doing in North Dakota than what we do on the Slope in that, you know, they actually

collocate or -- not collocating, but they are drilling multiple wells off of a single location, you know, up to eight to 10 wells off of a single location and then they move over to the next spot and do the same thing.

MS. EDWARDS: And then, Brad, this is Alice. Or maybe Brad or Randy and I don't know, maybe this is a modeling question. But we'd also have an idea of what the fence -- sort of what the fence line would be for a pad in the sense that I mean you're going to model a scenario -- I'm thinking of this in terms of what John was saying to say if you did some sort of a shale play. Depending on where it was and if you're thinking about proximity if you're not in a remote area, if you're in a more populated area maybe running those kinds of rigs I'm assuming that these scenarios are going to have some sort of a boundary where you consider ambient air. I don't know. I -- maybe that's a question for the technical group to think about when you're working through it. I don't know what you're using in your scenarios.

MR. KUTERBACH: And that is my concern with the drilling going on in Pennsylvania and I know it's, you know, less than 50 yards from my grandparent -- or my in-law's house.

MR. THOMAS: Yeah.

UNIDENTIFIED MALE: (Indiscernible).

MS. EDWARDS: So I guess the -- yeah, I guess so the question would be -- and I don't know if you guys have thought

about that in the.....

UNIDENTIFIED MALE: (Indiscernible).

MS. EDWARDS: .....context of what the technical group is doing is sort of maybe what would the -- or what's the area that that modeling represents. You know, how far away from the pad are you when you're looking at whether you're.....

MR. THOMAS: Yeah.

MS. EDWARDS: .....where you are in relation to the standard.

MR. THOMAS: This is Brad and this goes back to the question you asked earlier about whether or not the differences in background between Cook Inlet and North Slope would be mitigated by the fact that the impacts are very near field. And the modeling I've seen the highest impacts are right at the pad edge.....

MS. EDWARDS: At the pad edge.

MR. THOMAS: .....and as you move away from the pad edge the concentrations go down. But in fairness we haven't really talked about the potential of a, you know, developmental drilling in a populated area. Just haven't crossed that bridge, haven't thought about that.

MS. EDWARDS: Yeah. So maybe.....

MR. THOMAS: We've been thinking about drilling as it is in Alaska right now.

MS. EDWARDS: Right and I understand that and I think -- I

just think it's something maybe to put on the table as something to think about sort of in the thought process of how do we translate it into a more general policy, what sidebars would we have to put on it. So maybe you come up with a scenario, you figure out -- we figure out what those sidebars are, we figure out what the policy or the regulation or whatever it is or the permit or whatever it is for that scenario looks like, but it seems like that that fence line may be part of that equation because then maybe it doesn't translate into something where it's super close to a more populated area, maybe they need to do something special for that scenario to ensure that they're not creating a problem. But I don't pretend to know one way or another what that should look like. I just think it's something we should think about in the more global context of what could happen. I agree that this isn't happening today.

MR. THOMAS: Okay.

MS. EDWARDS: It might help position us better for the future if we could figure that out as well.

MR. THOMAS: This is Brad. Do we have shale gas in Alaska?

MR. KANADY: Yeah, we have source rock. We have source rock definitely in Alaska, absolutely. Now whether that's economic and.....

MS. EDWARDS: Right, it's a different question.

MR. KANADY: Yeah.

MR. BROWER: Yet to be determined.

MR. TURNER: What a good technical answer. Source rock, that's exact -- that's good.

MR. KANADY: Well, that's what it is. I mean.....

MR. TURNER: Yeah, I know. That's great. So yes, we have the potential of it.

MS. EDWARDS: Well, we know there's been some firms that have been exploring that concept, but.....

MR. KANADY: But is it the same -- is it the right age, is it the right -- has it, you know, geologically been to the right temperature sequence, is it overcooked.

MS. EDWARDS: What they're going to find is it again.....

MR. KANADY: Yeah.

MS. EDWARDS: .....whether they proceed. But that's something that could proliferate quickly if -- as we've seen in the lower 48, it could proliferate quickly if any found employ that was economical.

MR. KUTERBACH: Well, and there are differences. I mean the way they're doing it now it's kind of a once in -- I mean they're done. They're not going back to it after they've fracked it and drilled it and re-drilling them and side drilling them, at least not now. And in the -- at least not in the Marcellus shale. They're doing primary development and so maybe it's not something that's going to be a problem. It's -- I just know we've talked earlier and I know our DNR members were

interested in getting a solution that works for everything so that, you know, we wouldn't have to worry about it. And so I just wanted to make sure we considered the potential differences and addressed them if we could.

MR. BROWER: Seems to me they're looking at something that's not here, but we have a -- the current situation I think we're closer to achieving our goals. And it may be that you have two different regimes for -- and it might be better to look at that when it's time to -- when it is really time to look at that. It might be all together different type of regulatory matter than what we're addressing today. Might be more rigorous just from looking at the lower 48 and how they're dealing with that. I just don't know how you can be close to somebody's backyard and be able to accomplish that.

MS. EDWARDS: Fair enough. Other thoughts? We've kind of I think already moved into discussion, so.

UNIDENTIFIED MALE: We need a break.

MS. EDWARDS: Does anybody on the phone have any thoughts or want to raise anything at this point? I just -- I don't want to lose you guys on the phone if you have something you want to say.

MR. KANADY: I guess -- this is Randy Kanady. Alice, I mean getting back to your point. I mean would it be fair to say that in addition to, you know, sidebars on these categories that in addition to fuel use if we had a -- some type of pad geometry

that -- or a fence line? Would that be.....

MR. THOMAS: I think it would be -- this is Brad. It -- the concern is drilling activity effect on populations nearby. So there you're moving into how far away from the pad do the conclusions extend and that's what we're going to have to study.

MS. EDWARDS: I think the model -- it'll come out of the modeling I think.

MR. KUTERBACH: And how big the pad is assumed to be.

MR. THOMAS: Yeah.

MS. EDWARDS: Right.

MS. TROST: Well, I think that is a question that we would have to raise so that the modeling can look at it because right now I'm not sure that that's what you're doing. I think if you wanted to get an idea -- currently I think most of the modeling is done at existing pads, but if we wanted to get an idea of -- and it just -- from the modeling exercise that I've seen it usually excludes the pad because -- if that's industrial area. But if you wanted to get a better idea of where your maximum is you would probably have to look at different scenarios to see where you would find your maximum and how far you would want to go out to be protected.

UNIDENTIFIED MALE: What we're in.

MS. TROST: Right. Yes.

MR. THOMAS: You know, this is Brad. Actually listening to you it's maybe not pad geometry or distance from the pad that

the ambient impacts extend. Because we're looking at -- when we look at the modeling in our monitoring data conclusions we're drawing conclusions right at the pad edge and the modeling that I've seen is for a pad as small as Alpine's pads which are pretty small. And our goal is to show compliance at the pad edge. So if we're protective of the NOx at the pad edge with a pad as small as Alpine perhaps geometry.....

MS. EDWARDS: May not be.....

MR. THOMAS: .....size, distance from the pad become less important.

MS. EDWARDS: Well, it's sort of like the question on time, you know, how long. Well, if you're being protective and you're not approaching the standard then the time question may to some extent disappear. Because some of the time question is coming from okay, you've got this three year standard, how long -- you know, if you have drill rigs coming on and off and occasionally, you know, if -- so it depends on the regime that you set up and how comfortable people are with the level of impact that you're seeing for NOx, whether or not time becomes -- then becomes a real factor or not. Because if you're always below -- let's say you're always below 80 percent of the standard, which I don't know what it's going to show, but this is just theoretical. If you're always below 80 percent of the standard even if you ran it for three years you're never going to get a violation. So it's the excursions. Right? So the

real question is, is that's where the timing piece would come in and maybe that's -- maybe it's sort of also like the geometry of the platform or the distance from the platform, it sort of depends upon the impacts you're seeing, how far, how conservative we are in looking at compliance with the NOx. All those sorts of things would play in and maybe some of these points become moot once that level is sort of established for that scenario. If that scenario is protective then it may -- the time and the size of the pad may become less important.

MR. KUTERBACH: Well, you have to -- this is John Kuterbach again. The size of the pad and whether it's as small as Alpine, whatever, is important because that's where we have ambient air right now on the North Slope. If you had that size pad in the Mat-Su and you're drilling for something you'd have to have a fence around it to make sure that that was not ambient air. Right? Because you couldn't just leave it open. People would walk right on it.

MR. THOMAS: I don't know how that would work with a drill rig on it.

MR. KUTERBACH: (Indiscernible).

MS. EDWARDS: But anyway, I mean.....

MR. THOMAS: I hear what you're saying.

MS. EDWARDS: But I guess......

MR. KUTERBACH: But -- and the modeling that we're doing at the pad edge, I don't know whether the modeling would break

down if you got closer to the emission sources simply because the effects of the emission sources on the wind and how it blows. So the modeling would probably get less predictive. So I think the pad edge is probably the right spot to -- for the modeling to be as accurate as it could be, but that maybe while -- you're right, we may be able to say that because the impacts are there and they're always less than maybe -- that the distance doesn't really matter for that. But what I heard earlier was that as you get closer to the pad edge it -- the impacts are increasing. Right? And so at some point they're going to be at a maximum.

MR. THOMAS: You mean if you go closer to the edge of the pad from the middle of the pad the impacts -- I'm not sure I understood what you said.

MR. KUTERBACH: No, no, from the outside, in the ambient air as you're getting closer to the pad edge the impacts are increasing. Right?

MR. THOMAS: Yep.

MR. KUTERBACH: So if the pad was slightly smaller the impact would be higher than it is right.....

MR. THOMAS: Right.

MR. KUTERBACH: .....right there. And so there has to be something that.....

MS. EDWARDS: That distinguishes what the....

MR. KUTERBACH: Distinguishes.....

MS. EDWARDS: .....assumption is.

MR. KUTERBACH: What the assumption is and it may be that because of the rate of increase in concentration as you come in that we don't have to worry about it because it'd be such a small pad area that would still be protective and we wouldn't have to worry. But it should be something that we at least address.....

MS. EDWARDS: Address so we know.

MR. KUTERBACH: .....in the modeling.

MS. EDWARDS: Other thoughts? So we got into schedule a little bit earlier. It sounds like the technical group should have the first round of modeling results from -- for these five scenarios towards the middle to end of June and then they'll -- there'll be some further evaluation of those scenarios and I'm sure you all did talk about them and there's some work to do. So I think your projection about summertime is probably correct, that it will take a little bit of time to go through all of that. I guess on the options side we're going to need to wait at least a little bit to find out what those -- whether -- how that's coming together. And then do -- should -- I guess should the options group -- I guess I'm trying to frame the question. What we see the options group doing next. Should we -- do we need to wait for all this to be completed? Do we want to try and take concepts and start trying to work them through or combine them with other aspects of the proposal to see sort of

if we can start framing something or do we need to see the modeling results come out first? I know a bunch of you are on the options subgroup too, so I'm just kind of seeing what you guys think. I'm just trying to think in terms of schedule and when we might want to -- when the -- that group would want to meet again as well.

MR. THOMAS: This is Brad. I would say the options subgroup wouldn't have much to do until maybe July, August.

MS. TROST: Probably. I mean I -- this is Barbara. I think that once we get the modeling results there's -- you had -- Brad, you had suggested that there's going to be a presentation, so then we're going to be looking at the files to better understand it and there's probably going to be another meeting and then we'll have to figure out if there's any questions remaining. What I think is probably going to take a little bit more time is to actually phrase sort of these conditions or categories a little bit more so that they -- they're, for lack of a better word, water tight. Because right now we are basing them on the North Slope scenarios and we're then trying to basically transplant them anywhere in the state. And so we're going to have to think about various scenarios.

MR. KUTERBACH: I think in the context that we're talking about they should be airtight.

MS. TROST: Airtight. Point well taken.

MS. EDWARDS: And I will say in fairness to the Alliance

and AOGA and Brad and -- I mean these five scenarios are -- were proposed. They're definitely probably not completely -- may or may not be completely settled upon. I know you -- that there's work to do to kind of flush these out and get more -- see how they're going to work and that may take a little bit -- you know, a little bit too. So I just want to be on record noting that these aren't necessarily a done deal either, so.

MR. KUTERBACH: Right. Right.

MR. TURNER: So just so I'm clear also, that the goal then is to come back with the modeling, look at the modeling and currently to take the technical workgroup based on this modeling and look at how we can possibly create some categories that then could be put into some type of regulation scheme to pass the SIP.

MR. THOMAS: Yeah, this is Brad. The technical workgroup could present categories and I'm thinking this would be a good outcome. We could present categories that we could say within these guardrails this activity is protective of the NOx. And then the options group can then, you know, consider different regulatory programs to deal with that. Maybe a registration program (indiscernible). Maybe a generally allowed activity with recordkeeping, you know, whatever. For -- so we would -- we'd come with a conclusion in each of the categories along those lines. And again, you know, one of the categories or there may be two might require a little more rigorous regulation

than the others. That's just the way it may fall out.

UNIDENTIFIED MALE: Okay.

MS. EDWARDS: So maybe the options group would then get together after -- sometime after the technical group's had a few meetings, so probably look towards mid-summer.

MR. THOMAS: Yeah.

UNIDENTIFIED FEMALE: Yes.

MS. EDWARDS: Okay.

MS. SWARTZ: Mid-July probably or would you anticipate.....

MR. THOMAS: Well, technically -- this is Brad, mid-summer would be around what, the first, second week of August. Right?

MS. SWARTZ: Well, I was thinking more middle of July, but.....

MS. TROST: Well, I don't think that's a realistic timeframe because if we're getting the modeling results by the beginning -- middle of June, we'll sit there and we'll -- there's going to be some back and forth.

MS. SWARTZ: Yeah.

MR. THOMAS: Probably (indiscernible).

MS. TROST: Might be like a meeting.....

MR. THOMAS: Yeah.

MS. TROST: .....so by the time you want to -- we'll have to have some time to think about it and if there is -- if there are additional questions to be answered by modeling then that's

not something you turn around within a couple days.

MS. SWARTZ: No, I appreciate that. This is Jeanne. I was just saying for -- to provide us with the modeling results. That's actually what I was thinking and that would be.....

MS. TROST: Middle of June.

MS. SWARTZ: Middle of June. And then we'll wait until like the first of August.....

MS. EDWARDS: For the options group.

MS. SWARTZ: .....for the options group.

MR. THOMAS: Right.

MS. EDWARDS: So the technical group would have a couple months to go through it, look at it, review it, see.....

UNIDENTIFIED MALE: Come to a consensus on their conclusions.

MS. EDWARDS: .....see if they are feeling good about the scenarios and then we could pick -- then the op -- they can bring those into the options group and we can start pulling together ideas on options on trying to fit those into some sort of a program that.....

MR. THOMAS: Right.

MS. EDWARDS: .....hopefully meets everybody's needs.

MR. THOMAS: Right.

MR. TURNER: Sounds like we have a schedule.

MS. EDWARDS: So I think we've got a schedule.

MR. TURNER: Okay.

MS. EDWARDS: Are there other actions or work that we can undertake beyond what the technical group's doing? I'm trying to think if there's anything else on the table that we might want to work on in the interim that isn't reliant on the technical group, but I'm not sure there is. I'm just posing a general question there.

MS. TROST: The only thing I could think of, this is Barbara again, is that if -- right now we are concentrating on the North Slope and the Cook Inlet. If there are other regions of the state that we are supposed to be looking at then sooner than later would be good to know.

MR. THOMAS: I made myself -- this is Brad. I made myself a note to see if we can't find some Mat-Su or interior meteorology, so we may be calling you.

MS. TROST: Yeah, well we can help with that.

MS. EDWARDS: No, that's a -- yeah, that's a good idea.

MR. KUTERBACH: Well, the foothills.

MS. EDWARDS: Yeah.

UNIDENTIFIED MALE: Yeah, that.....

MS. EDWARDS: And I know Bill's not here today with us from DNR, but they may have some ideas of where those -- I mean you all probably know too, but they may have ideas of where those source rock -- the source rock might be for those types of development.

MR. THOMAS: (Indiscernible), do you know?

MS. EDWARDS: I mean I know some of it's on the Slope, but I don't know down in this area.

MR. BROWER: I thought there was drilling going on like Tanana Flats or.....

MR. THOMAS: To be honest I don't know.

MR. TURNER: There has been exploration in various parts of the state. We'd have to look at source rock. You know, one suggestion to the technical workgroup is can we do the categories based on region. We already have that based on latitude, longitude type of thing. Do we have it maybe based on the land base scenario. But we have a large state, you know, with a lot of land mass and we may need to look at various technical options based on where the drill rigs are located. But there is potential drilling in the interior. There is potential drilling in the foothills. There is potential drilling even, you know, in other offshore areas, but the only place I don't think there's oil is the southeast. You have other minerals down there. So if we're going to be all inclusive, you know, there's data that exists. It might be useful to do it while you're doing the exercise.

MS. EDWARDS: Would it help for us to check in with Bill and see if he's got any specific areas of the state beyond what we're looking at?

MR. THOMAS: Yeah, it would. This is Brad again. As well as if you could pull together the meteorology if you've got it

for the other areas that you want this program to extend to that would be helpful as well.

MS. EDWARDS: So Jeanne, can you check in with Jim and Bill on.....

MS. SWARTZ: (Indiscernible).

MS. EDWARDS: .....on sort of where source regions might be for other types of drilling like shale?

MS. SWARTZ: Sure. Just in the Cook Inlet area.

MS. EDWARDS: Well, wherever in the state.

UNIDENTIFIED MALE: Yeah, anywhere outside of the.....

MS. EDWARDS: If there are other places outside of Cook Inlet and North Slope where they feel that there's a potential for.....

UNIDENTIFIED MALE: Oil and gas development.

MS. EDWARDS: .....oil and gas development.

MS. SWARTZ: Okay. Sure.

MS. EDWARDS: So we'll take care of that, try and get that connection and getting that information.

MR. TURNER: Okay. Sounds like we got a schedule and a plan and.....

MS. EDWARDS: I was going to say is there anything else. Are we that speedy? Is it really only going to take us an hour to do this?

UNIDENTIFIED MALE: That's (indiscernible).

MS. SWARTZ: The main workgroup meeting, this group won't

convene again until the.....

MS. EDWARDS: Oh. That's a good point. So.....

MS. SWARTZ: Options.

MS. EDWARDS: Probably I would suggest that we bring this group together again before hunting season, fishing and hunting season. So maybe toward -- maybe later in August?

MR. THOMAS: Yeah.

UNIDENTIFIED MALE: Yeah.

MR. THOMAS: Yeah.

MR. BROWER: Yeah, that's a good time.

MS. EDWARDS: And just to -- and that way give everybody an update and if -- depending on where we're at we could either do that as a in person meeting or we can do it by phone depending on.....

MR. THOMAS: Okay.

MS. EDWARDS: .....the level of need for discussion. I hate to have everybody travel for an hour like we did today. We had other reasons to be here but, you know, it is a imposition on people's time. So if it looks like it's going to be relatively shorter we don't need -- necessarily all need to be in the same place. We can try and set it up that way too if it -- depending on where we're at, at that point. Hopefully we're far enough along that we could have a face to face. Great. Well, does anyone on the phone have any last thoughts, questions, anything for the greater good?

UNIDENTIFIED MALE: No.

MS. EDWARDS: Great. Well, we appreciate you guys taking the time. I hope you could hear us all right. Are there any other thoughts in the room? Well, thank you everybody. I appreciate the time. I'm sorry this is actually such a short meeting, but I think it was a good overview. I really want to thank the folks that have been working, especially on the technical workgroup. It was -- a lot of work's been done and to boil that down into five or six lines is difficult and doesn't capture the amount of effort that I know went into that. So thanks to all of you for the hard work on this and we'll look forward to seeing the modeling and moving forward across the summer. I think we've got a good path forward, so thanks everybody.

UNIDENTIFIED FEMALE: Thanks, Alice.

MS. EDWARDS: We're off record.

THE REPORTER: Off record, 2:09 p.m.

(Off record at 2:09 p.m.)

TRANSCRIBER'S CERTIFICATE

I, Nicolette Hernandez, hereby certify that the foregoing pages numbered 2 through 48 are a true, accurate and complete transcript of proceedings of the Workgroup for Global Air Permit Policy Development for Temporary Oil and Gas Drill Rigs, held May 20, 2014, in Anchorage, Alaska, transcribed by me from a copy of the electronic sound recording to the best of my knowledge and ability.

_____ _____

Date Nicolette Hernandez