

WYOMING AIR QUALITY ADVISORY BOARD MEETING

October 26 and 27, 2009

DEQ Casper Field Office

152 N. Durbin

Casper, Wyoming

Board Members Present: **Bill Boger, Ronn Smith, Darrell Walker, Tammie Archibald, and Jeff Snider**

Others Present: **Dave Finley, Administrator, Air Quality Division**
Nancy Vehr, Senior Assistant Attorney General
Tina Anderson, Air Quality Division
Jan Lydigsen, Air Quality Division
Chad Schlichtemeier, Air Quality Division
Darla Potter, Air Quality Division
Josh Nall, Air Quality Division
Cole Anderson, Air Quality Division
Stacey Frutiger, Air Quality Division
Mike Stoll, Air Quality Division
Cynthia Madison, Air Quality Division
Gina Johnson, Air Quality Division
Pat Shevlin, Chevron USA
Bruce Pendery, Wyoming Outdoor Council
David Hornbeck, McMurry Ready Mix Co.
Cathy Woollums, Mid American Energy
Bill Lawson, PacifiCorp
Nicholas Agopian, Devon Energy
Ted Rasmussen, Wyoming Machinery Co.
John Robitaille, Petroleum Association of Wyoming
Deb Thomas, Powder River Basin Resource Council
Tracey Kaness, Williams
Renee Taylor, Taylor Environmental Consulting

I. CALL TO ORDER

Bill Boger: The meeting was called to order by Bill Boger. He introduced himself being from Gillette and asked all AQAB members to introduce themselves. Darrell Walker, Pinedale; Ronn Smith, Sheridan; Jeff Snider, University of Wyoming, Laramie; Tammie Archibald, Star Valley; and Dave Finley, Division Administrator for the Air Quality Division. A couple of housekeeping items before we get started. Exits are out this door and to your left if you came through the double doors. There's also an exit if you take two rights here, it will get you outside, if there's a need for an emergency or something. In terms of ground rules, it's an open meeting. If you have questions or comments, please feel free to ask. Do identify yourself so you're part of the record. With that, I'll briefly review our agenda. We'll have an afternoon session and then open back up tomorrow morning. We'll start with an approval of the meeting minutes for

the June, 2008 meeting. We'll look at some old business, staff activity, program updates, and enforcement activities report. And then new business, there's a number of changes to the Air Quality Standards and Regulations that I assume Tina will be going through. And then an update on ozone that may or may not extend into tomorrow. Tomorrow we'll be looking at a briefing on revisions to the oil and gas permitting guidance. And then also the proposed revisions to the regional haze SIP. With that, I'll go ahead and is there a motion to approve the meeting minutes from June 5 of 2008?

II. APPROVAL OF MEETING MINUTES FOR JUNE 5, 2008 MEETING

Darrell Walker moved to approve the meeting minutes and Ronn Smith seconded the motion. The motion is carried. With that we'll move on to old business.

III. OLD BUSINESS

A. Staff Activity

Dave Finley: Thank you, Mr. Chairman, members of the Board. This is where I try to bring you folks up to date on what's going on with employment, really, in the Air Quality Division. Since it's been over a year since we last met, there's been quite a lot of things happening in the Division that impact our authorized staffing levels and our ability to hire. First of all, we did get a significant new position authorization with our 09-10 budget. We received approval to hire ten new staff members to do a variety of things. First of all, to improve our ability to monitor the quality of air in areas of the state that are, or potentially could be, impacted by energy development activities. That included positions to actually manage the siting of new ambient air monitor stations, to manage the data that's collected from the ambient air monitors around the state, and to track trends in air quality, again, in areas that are potentially impacted by energy development activities. We received authorizations for people to help design an air quality impact assessment system which would allow us to, for the first time, look forward and model the projected air quality impacts of development in general around the state of Wyoming. That's really important because without that kind of system we really have no way of looking forward and highlighting areas of the state where, if development happens as people intend for development to happen, we know we will see ambient air quality problems. Having that kind of system will allow us, I believe and I think the Legislature believes this as well, to be more proactive in looking at what kinds of air pollution controls are needed in order to preserve some of the air resource for future development activities. Each time we issue a permit for a new air pollution source, it in some small way consumes some level of allowable air pollution in our state. And we have a choice: we can require very stringent controls and preserve some of that increment for future development and growth, or we can have less stringent controls so that the current development consumes more of that air quality resource. And the challenge here is to have a balance between what kind of controls do we believe are necessary to preserve air quality in the face of that development and where or under what conditions is it really not that necessary to have very tight, expensive air pollution controls where it would not make a whit of difference on air quality. So we ran for about a year and a half with a number of vacancies, hovering between five and ten positions. This is before the economy went in the toilet and it was very difficult for us to find people to work in the Air Quality Division or work for state government. So over the past two years, I would say we have hovered between having three and eight vacancies in the Air Quality Division as people leave and as we are able to fill those positions. It got a little more stable about a year ago and we have been running with maybe two or three vacancies in our Division. But we're beginning to lose people again to

industry and who see other opportunities, I think perhaps as the economy shows minute signs of recovery. So we've lost a couple key people in the past couple months, senior permit engineer in Chad Schlichtemeier's program and the head of our Air Quality Planning Section has departed. So we have some challenges, I think, ahead, especially at the senior level in the Division. We really do need to recruit and find people with air quality experience. We really don't have the option, I think, for these kinds of positions of hiring somebody and training them, and bringing them up to speed. We need people that can contribute right away. We've also just completed a statewide reclassification system where all the job descriptions for every position in the state were analyzed by both the agencies and a group that's called the Administration and Information department. They're the people in charge of overall state employment practices and policies. We've gone now from a system where an environmental scientist could be working in the same or similar job classification as an engineer, depending on the position they occupy in the agency, and we have now redefined positions as either requiring an engineering degree or requiring some other kind of natural resource specialist degree. So there now are engineering positions in all of the divisions in DEQ and scientist positions. A scientist could be a biologist or an ornithologist. No, a soil scientist, or a hydrologist, or geologist. So we are the division that has the most engineers of any division in DEQ. I think we have 25 or so engineers, 25 or 30 engineers in the Air Quality Division. They are in our permitting programs. So when somebody comes to us with a permit application and describes the operation of the facility and the operation of pollution control systems, they're talking to an engineer. They're also in the compliance section. So when someone goes out from the Air Quality Division and conducts compliance oversight activities, that person is an engineer. As we went through the reclassification effort, the statewide effort, I think there was an unintended consequence from that effort. And that is that there are four engineering classifications in this new system. The upper three classifications require some form of registration and licensure with the Board of Professional Engineering in the state. So the bottom level, we can hire someone right out of college with no tests, no Engineer-in-Training exam required whatsoever. The next level has to have an Engineer-in-Training, which is the first of the two tests to get registered. And the second, the top two levels, have to be licensed professional engineers. That's a problem for us because we have not required engineers in the air quality division to be licensed in the past. So we have a range of people working in the Air Quality Division as engineers, some of which are, some of whom have the qualifications, the licensure qualifications, and some don't. All the new ones we hired have to be licensed engineers. So it's added two difficulties for us. First of all, we have to help our employees get licensed, because in order to advance in our organization they're going to have to have licenses. And it seems to me to make recruitment a little more difficult, if we now are limited to recruiting licensed professional engineers. So this is so new, that I can't really tell you if it's a critical fatal flaw or not. I think it really depends, in a large extent, on how long the economy takes to recover. If companies that are members of the Petroleum Association of Wyoming start to hire engineers, then we're in trouble. If the economy stays in the toilet, maybe there will be some qualified PE's out there that we can lure into a lifetime of servitude.

Tammie Archibald: I was just going to ask you what the lure was for them.

Dave Finley: It's servitude.

Tammie Archibald: What's the advantage?

Dave Finley: So.

Bill Boger: I vote for my 401K.

Dave Finley: You're not concerned about us being able to hire people, are you?

Tammie Archibald: It's all about you.

Dave Finley: All right. So the other difficulty, I think, is in an effort to be responsive and responsible, people in other agencies, the one I mentioned before, Administration and Information, have attached certain or have given us positions that we are able to hire that are temporary in nature. For example, we have a field inspector that is completely funded through the Pinedale Anticline Record of Decision. That position is supposed to be funded for a five-year period. So since it's temporary, it was classified as an At Will Contract Position. That doesn't make a whole lot of sense to you guys, but basically what that means is in order to hire on as an at will contractor with the Department, all you do is you get paid. You get salary—you don't get any benefits, you don't get any sick leave, you don't get any insurance. You don't get any of that stuff and you can be dismissed without cause at any time. It's kind of like my position. But we're having a great deal of difficulty finding people who are willing to take employment with those kinds of conditions. I'm not asking for, nor am I suggesting that you do anything as an Advisory Board about any of this stuff. I'm just passing it on to you.

Tammie Archibald: What are the qualifications for that position?

Dave Finley: They have to be a licensed professional engineer. And you know we have a couple of people from industry in the audience. We've made the call a long time ago in the Air Quality Division, way before I got here that it made sense to have engineers reviewing permit applications and dealing with companies about issues like what is the best achievable control technology to put on a particular air pollution source. And we've made that call a long time ago. I'm not trying to denigrate a soil scientist, but you can ask these folks out here if they're sitting down to negotiate permit conditions and requirements, what kind of qualifications do they want to see on DEQ's side of the table. And I can leave the room while you make that query of them if you like, but it's been my understanding that they want people with the technical capability and knowhow in those engineering fields that matter: mechanical, chemical, petroleum, civil, what have you. So that the person on the other side of the table understands the issue and they can communicate. So while we desire the people with the engineering training, I don't necessarily think that having a requirement that they be licensed as a PE adds a lot to this equation. But there you have it. We kind of got caught up in this statewide reclassification system, where someone decreed "everybody who has engineer in their job title requires an engineering degree, must also be a licensed professional engineer." And I can tell you that there are people who firmly believe that ought to be the case and people on the other side who think that's a ridiculous requirement. But, I'm not going to put anybody on the spot out here by asking them what do you want on our side of the table, but you can ask them later. Okay? That's about it for hiring status, unless you have any questions.

Bill Boger: Any questions?

B. Program Updates

Dave Finley: Okay. Program updates. We have a number of things that we're going to talk about throughout this session. And for the things we're going to talk about the remainder of the session, like regional haze, for example, I think I'm going to just skip that, if you don't mind. And we'll let the regional haze presentation take care of bringing you up to date on where we are and what we're doing on regional haze. There is some old activity that I want to bring to your attention from the last Board meeting and let you know where we stand on some of the issues that were raised at the last Advisory Board meeting. The first one is really simple. Wanda Burget came to us, on behalf of the Wyoming Mining Association, there's a proposed rule by EPA that would establish new pollution control requirements for coal preparation plants. And these are a family of facilities at coal mines where coal is handled in some form or fashion. It's taken off a conveyor belt and dumped into a facility, or taken off a truck and dumped onto a conveyor belt, or it's put through a crushing or drying plant. It's being physically handled. EPA had proposed to require that all of those transfer points be equipped with baghouses. And Wanda, again on behalf of Wyoming Mining Association, asked the Advisory Board or the Division to intervene, and to comment to EPA that's something we have tried in the past and we have moved beyond, in Wyoming. And the Wyoming Mining Association viewed that Federal requirement as a step backwards. There was a time, I understand, when those facilities were controlled by baghouses, and there would be some kind of enclosure at that transfer point. There would be a big vacuum cleaner on the inside of that point so that air would be sucked into that—the excess. The air would exit through a baghouse, which is like a filter bag on a vacuum cleaner. And then purportedly clean air would exit from the outlet of the baghouse. And there were, my understanding again, a ton of problems with the ability of those systems to control particulate emissions effectively. And so the coal mining industry, over a period of the last decade or so, had essentially invented new control techniques and strategies. A PEC, is an example of one of these control techniques and strategies that in everyone's view, operated more effectively than baghouses. So we concurred with that view of the Wyoming Mining Association. We commented to EPA and it resulted in a re-proposal of that rule. And I understand now, passive enclosures and other kinds of containment mechanisms are allowed, which is a positive thing, in my view. We also had people talking about ozone issues in the Upper Green. And again, I'm going to defer that because it's done here in new business and you're going to get an earful of what's going on with regard to ozone. I'm not sure that our ozone presentations will deal that much in the drill rig arena, so if you like, I'll talk a little bit about that. We talked to you again a year ago on how the Division can most effectively work with the natural gas production companies to get controls in place on drill rig engines. Drill rig engines occupy this no mans, this quasi no man's land. Depending on your point of view, they're either stationary sources or they're non-road sources or they're off road mobile sources, or they're something else. Each one of those different labels carries with it a set of regulatory requirements. Under the Clean Air Act, states generally are confined to the regulation of stationary sources. So those are facilities like power plants and compression stations. The Federal government is supposed to handle mobile sources, like cars, and establishing emissions limits for new cars, for trucks, for engines that go in trucks, and for establishing emission requirements for this category called non-road engines. It's not simple from the Federal perspective to put a drill rig into one of those categories. And it turns out to be almost fact specific. You have to look at the rig, how it's being used, how long is it sitting on the site, its usage pattern in order to put it into that category. It's not clear, by any stretch of the imagination. And there are certainly not a uniform set of requirements that could be applied across all rigs. We told you a little over a year ago that

drill rigs are a large source of NO_x in the Upper Green, especially when they are concentrated together in a tight area. We told you that NO_x is one of the two precursors to ozone formation, the other being volatile organic compounds. You have to control both of those precursors in order to control ozone formation. Rigs in the Upper Green are particularly difficult to control because there's a lot of pressure from the wildlife community in the Upper Green to concentrate drilling activities in as narrow a space as possible, to avoid disrupting migratory pathways for big game, and to avoid wildlife impacts. So there's on one side, a real incentive to bring all these rigs together and have them drill in a concentrated area. But they are large sources of oxides of nitrogen emissions and so they can cause ozone problems. So in the interim, we have been working with the exploration, or the drilling companies up there—the oil and gas production companies to institute a series of voluntary permits for rig engines. A permit would be considered to be voluntary in that the company is voluntarily applying for the permit. Once the permit is issued and it has emission limits or operating limits in it, those emission limits and operating limits would not be voluntary. They would be part of a permit that would get enforced the way we enforce permits issued to other facilities. The permits would cover really all of the drilling that is occurring in Jonah and Pinedale. So you wouldn't have to make a rig-by-rig or condition-by-condition analysis of is this particular rig being used in a stationary source application or a non-road source application. No matter what it was being used in, according to the Federal requirements, the company would say to us, I don't care, I'm going to control it using the control strategies described in this permit application, issue me a permit. So it has been a long time going through this negotiation and discussion period with each one of these companies. And there are five of them, right Chad, that do all of the drilling up there: Shell, EnCana, Questar, Ultra, Anschutz, and BP. Five of them, right?

Darrell Walker: Yates?

Chad Schlichtemeier: BP's not drilling right now, that's why you can take them off there.

Dave Finley: Thank you. So there's five of them. The difficulty, I think, is that really we haven't done this before—we haven't issued a permit for this application before. Companies have a number of concerns with regard to this type of emissions source that they don't have with other sources. You might otherwise think that a company might have a ten-year plan and it knows what holes it's going to put in the ground in year three, year four, year five, but it turns out that's not true. The planning period is very much shorter than that. The decision to drill here or drill there, or to not drill here or not drill there is made very close to when you need to be drilling. So it's hard to craft a permit that allows a company to see an opportunity to drill in a location where they have a permit to drill. A rig becomes available, the economic factors all line up, just like the stars, and in order to make that work they have to get in there and drill now. So they have a great deal of difficulty waiting for a year to get a permit from the Air Quality Division. So part of the issue and the concern, and the length of time it's taken for us to craft these permits is, how do you craft a permit that allows a company to know what the emission control requirements are, to be able to modify a rig if they need to, and get in and drill. We've sent out how many permits? Draft permits that are now under comment period, under the formal comment period, Chad?

Chad Schlichtemeier: Four of the companies have gone to notice. Questar's the only one that has not.

Dave Finley: Four of the five companies' permits have been sent out for public notice. The only one that has not been sent out for public notice is the Questar permit, which we anticipate going out.

Chad Schlichtemeier: Within the next month.

Dave Finley: Within a month. One of them went through the public comment period without a request for hearing, I think. Is that right?

Chad Schlichtemeier: Shell's came off last week.

Dave Finley: So, the Shell permit has been out for notice for comment and I don't know if we received comments. We might have gotten comments.

Chad Schlichtemeier: There were comments.

Dave Finley: We got some comments, but no request for hearing. Three of the others are currently out for public comment right now. And I think we have gotten requests for a hearing on at least one of them, so we will be up in Pinedale. I'm not sure when.

Tammie Archibald: November 19th, is that the one?

Dave Finley: November 19th?

Chad Schlichtemeier: 18th, actually.

Tammie Archibald: I just saw it today, actually.

Dave Finley: All right, with a hearing. So I think we've made substantial progress on getting those rigs under state regulatory control. Our difficulty I think with rigs, up until us taking this action is, really the only thing that seems to govern or limit drill rig engine emissions are analysis requirements in records of decision for these projects. The Jonah Infill Record of Decision. The Pinedale Anticline Supplemental Environmental Impact Statement Record of Decision. There are, I guess I would call them impact thresholds that kind of establish limits on rig emissions. But we don't enforce those and I don't know the degree to which they get enforced at the Federal level. I do know that we do enforce state permits. And so I think for the first time in that area we will have enforceable limits on emissions from rigs that operate in Jonah and or Pinedale. So I'm quite pleased with that. And we'll see how the public hearing goes.

Bruce Pendery: Dave, how many total permits are there?

Dave Finley: The question from Bruce Pendery was how many total permits. There are three currently in the public comment period. There's the fourth one, the Shell permit, which was in a comment period. The comment period ended. We got some comments on it. The fifth one is Questar and we have not yet issued the draft permit on Questar.

Bruce Pendery: Does each permit represent a drill rig or multiple drill rigs?

Dave Finley: The question is does each permit represent a single rig. No, they represent all the rigs that are allowed to be used in that company's fleet.

Chad Schlichtemeier: It's approximately fifty rigs. They're covered by five companies.

Dave Finley: What was that?

Chad Schlichtemeier: Approximately fifty rigs are covered by five companies.

Darrell Walker: Dave, are you requiring the same stipulations for EOG and Chevron and all that on the west side?

Dave Finley: We haven't yet done that for companies that operate outside of Jonah and Pinedale. So the answer is no, we are not. I personally think that we will be in a better position to answer that question of will we, as soon as we get our hands on a model that is capable of replicating the winter ozone problem that exists in the Upper Green. That will give us an opportunity to compare emissions with high ozone levels that occur in February and March, and it will give us an opportunity to adjust emissions inputs into that model to see what we have to do to lower the wintertime concentrations below the standard. I'm not sure, that's probably part of the ozone discussion.

Darrell Walker: No ozone exceedences in '09. So if they don't happen in '10, how will this affect your modeling?

Dave Finley: It won't, Mr. Walker.

Darrell Walker: So you'll use certain data for...

Dave Finley: Our conclusion, and I don't want to steal the thunder from the ozone presentation, our conclusion really is that you get really high ozone values in parts of the Upper Green River Basin if you have the four or five specific weather conditions that occur: a strong inversion, which holds air very close to the surface, so all the pollution that's emitted from surface sources is trapped in a very shallow layer. That's the first thing. If you don't have an inversion, you have vertical dispersion of air pollution and you don't have the buildup of pollutants. The second is that you have to have sunlight, so you have enough ultraviolet energy to cause the reaction to form ozone. The third is you have to have a fairly uniform snow cover, and the reason for that is the snow reflects the incoming sunlight and so each little ray of sunshine comes down and it goes through the air once, imparts UV energy, it reflects off the surface and it imparts the same amount of UV energy, so it doubles the UV energy that it imparts to the air. That's enough, even in winter, to form the ozone. You have to have very still winds, and am I missing one? You also have to have the ozone precursors. You have to have the emissions of VOC's and the emissions of NO_x. So the fact that we didn't have exceedances in '09 where we had the very large values in the winter of '08, we're trying to decide whether it's the result of the significant emission reductions strategies that were in place, or whether the atmospheric conditions were different in '09 than in '08. They were, with regard to the

snow cover. There was less snow cover in '09 than '08, so there was less UV energy available to form ozone. We're just having a hard time figuring out how much of the reduced ozone was the fault of emission reductions and how much was the fault of environmental conditions. That is going to be a very difficult question to answer.

Darrell Walker: The emissions of both of those, the NO_x and the VOC's...

Dave Finley: That's right.

Darrell Walker: They're way down, aren't they?

Dave Finley: Well, I don't know that they're quite that far down, but they were lower in '09 than they were in '08. Okay? We have a number of different things we want to talk to you about today, most of which are captured in the agenda. So there are some significant things we want to talk to you about with regard to the ozone. But again, that will take place later in the agenda. There are some significant things on the horizon with regard to electric generation utility-- EGU's. But again, that will take place later in your agenda. I don't really have anything else that I think rises to the top of my pile. But, Mr. Boger if you would give me the liberty of making some notes as we go through the rest of this meeting, I might come back to you with some things that I think you ought to hear about, just in terms of a briefing.

Bill Boger: Sounds good.

Dave Finley: Okay. So, I'm done with program updates, unless anyone has any comments or questions. I can tell you it's been a very challenging time for the Air Quality Division. It's challenging for us. I'm sure it's challenging for the public, trying to track all this stuff that's going on. We are trying our best to make information available to the public and to the regulated community to help them understand what we're doing, but it remains a challenging environment. Even though the economy appears to be in the toilet, the pace of permit applications has not diminished for the Air Quality Division. It's up this year versus last year. I don't know whether that reflects a company simply wanting to ensure that they have the right permits in place for when the economy comes back or what. But we are still struggling with very large permit workloads. Hopefully, we'll be able to meet those demands that are being placed on us by our friends in industry. Mr. Boger?

Bill Boger: Before we move on, just one more question, and maybe you answered this. Going back to the drill rigs. Talk about conditions on permits that are now enforceable through the permit process. How does that work in terms of the limits on these drill rigs? You talk about improvements. Has there been a ratcheting down of the limits that we're seeing being placed on the drill rigs from where they began?

Dave Finley: Yes, Mr. Boger. When we started this effort, the companies came to us and said "I want permits for the rig fleet that I have in place," which contained a whole range of engines and emission control technologies, ranging from Tier 0 diesel rigs. A Tier 0 rig is a rig that essentially has no pollution controls on it. Engines are regulated by tier at the Federal level. Tier 1 was in effect for a period of four or five years, ten years ago. Engines sold during that time had to meet Tier 1 emission standards. Tier 2 came into effect and replaced the Tier 1 standards. Tier 3 and Tier 4 are contemplated. They are not yet

available for engines in this particular class or category. A Tier 4 engine might emit a tenth or less the pollution of a Tier 0 engine. Is that about right, Chad?

Chad Schlichtemeier: Especially for the size and category that we're talking about with drill rigs. I think the Tier 4 engine, the size category will require SCR when those start to get manufactured.

Dave Finley: Right. But just a garden variety Tier 4 engine compared to a Tier 0 engine at the same size level, the emissions is ten to one, perhaps? Yeah. So when we started this effort we had a series of requests from companies to simply give us a permit for the fleet that we have out there right now. There were a substantial number of Tier 0 engines in those initial applications. Tier 1 engines, Tier 2 engines. Over the course of a year or a year and a half, there might be a Tier 0 engine left in one of those permit applications, but if there is, it has a significant hour operating limit placed on it, so it can't be used all year long. We believe we have successfully gotten the standard rig, if you will, out there to be either a natural gas rig or a diesel rig that's equipped with selective catalytic reduction emission control for NO_x. Both of those are a substantial improvement over the rigs that were in the field until very recently. So, yeah, I do think that this effort in getting these rig permits in place has resulted in a truly significant change in the rigs that are going to be and are currently being used out there.

Darrell Walker: Dave, do you have any electrical permits requested?

Dave Finley: I don't believe we have. I don't think that there's a system capable of supporting electric rig operation in either Jonah or Pinedale yet. But these are all diesel electric rigs or natural gas electric rigs. So if there was a sufficient supply of electricity, they could be operated without the diesel engine or the natural gas engine, but there isn't, to date, a sufficient supply of electricity. I'd also mention to you, that for diesel engines anyway, and for gas engines really, the technology for diesels to reduce NO_x using selective catalytic reduction was pretty much invented by these companies in the Upper Green. It didn't exist on these applications before we started on this. The technology to use natural gas engines was pretty much invented in this Upper Green area as well. You certainly could have attached a natural gas engine to a drilling rig before this technology was developed, but it turns out that it doesn't have the right torque characteristics. So you can't put your foot on the gas and get an immediate response from a natural gas engine, and the drillers want that. They want to be able to have an immediate response. For what reason, you'll have to ask one of these guys out here. I don't know. Maybe they're hot car freaks. I don't know. So EnCana coupled natural gas engines to something called a load bank, which allows the natural gas engine to run at full throttle all the time. That means that if it's running at full throttle even if you're not using all of the power, you can get that quick response just by stepping on the gas. So, I think that as a result of the efforts of the industry folks out there, and particularly the DEQ permitting people, we do have substantially different technology and will have going forward into the future. We'll see if people believe that that's enough or if it should be more.

Bill Boger: So from an emission inventory level, Dave, what are we seeing in terms of tons per year reduction? Is that something?

Dave Finley: Do we have that?

Chad Schlichtemeier: I don't have the numbers, but off the top of my head I can tell you one company, Shell. We used '06-'07 as our baseline for drill rigs. The permits require for each of their drill rigs to have SCR on all their diesel rigs with 90 percent control requirements. Looking at actual '06-'07 versus potential, it's about a 650-ton reduction in NO_x.

Dave Finley: From what to what? Do you know?

Chad Schlichtemeier: From 140, I guess add 650. So you're looking at about 790-800 tons.

Dave Finley: 800 tons down to what? 140 tons. So, there's much more than 800 tons of NO_x up there in the Upper Green. There's compression NO_x, NO_x from heaters and combustors and so on. So you shouldn't look at 800 down to 140 as giving you some idea of the magnitude of NO_x reduction we're getting in the Upper Green. This is only one component of the NO_x emissions in the Upper Green. It is the largest component, however. So those are fairly significant reductions from the largest component of NO_x up there.

Darrell Walker: Do you get NO_x from like, they used to flare? Now you've got the green time flares, closed flaring permits.

Dave Finley: NO_x is created anytime there's combustion of a material. So for a flare, there's NO_x associated with a flare. For an engine where the combustion is occurring, there's NO_x associated. For a coal powered plant, there's NO_x associated with that.

Darrell Walker: That's been a pretty good reduction of NO_x in that area too, hasn't it?

Dave Finley: The uncontrolled flaring? Yes, I believe it has. And there's been really significant NO_x reductions at Jim Bridger and shortly at Naughton. Couldn't hurt, right?

Bill Boger: Something like 43,000 tons across the board, from the EGU's.

Dave Finley: I don't know. We're going to tell you about that momentarily. Other questions about program updates? I did want to tell you also, we had intended to bring the Oil and Gas Presumptive BACT Guidance to you. It shows up tomorrow. We're not quite ready to do that. But we wanted to give you an update on where we are, and what the current presumptive BACT guidance document says and what we would like the revised guidance document to say. There are some pieces of that that we don't quite have enough information yet in order to give you a final recommendation, but we thought it would be useful for people to hear about where we stand as we sit right here.

Bill Boger: Thank you.

Dave Finley: So we could go to our favorite attorney.

Nancy Vehr: The one and only.

Dave Finley: Can anybody tell if we can pick up Nancy if she sits up there?

Gina Johnson: Yes.

Dave Finley: You can tell? And can we pick her up?

Gina Johnson: It's got a meter.

C. Enforcement Activities Report

Nancy Vehr: Back in June of 2008, we had 73 open enforcement cases. I don't know if you recall at that time, I'd reported that historically air quality opened about 20 to 30 enforcement cases a year. Year to date for 2009, they've opened 61 cases. So as they're hiring all these people, they really are out there enforcing and enforcement activities keep increasing. So much so, that over at the Attorney General's Office, they've had to start assigning these cases not just to me, but out to another Attorney General to help them so we don't get so backlogged. So the Enforcement program is alive and well and quite active. Since the last report, we've opened 96 total cases. We've closed 47 cases. So right now our docket is still increasing—we're up to 122 open right now. We do have some big ones that resulted in consent decrees over the past year. These were combination cases with EPA and the State of Wyoming, and in one situation, the State of Kansas was involved as well. These are with the refineries. Sinclair Refinery, I believe, had been entered into before our last meeting. Kansas is Frontier, and we have our Wyoming Frontier facilities, and then Wyoming Refining Company. So those are all operating under consent decrees right now for four marquee issues that EPA had brought forward. There are still underlying enforcement cases that go forward as well. We have one other open, non-refinery consent decree, and that's Wyoming Premium Farms. It's still open. I believe this is the last year of that consent decree. That's pretty much on the enforcement side of cases. If you have specific questions, they go across the board. There's asbestos, there's fugitive dust, there's oil and gas, EGU's, trona. There's a wide variety of both minor sources as well as major sources. Construction permits as well as Title V permits. Quite busy on that side. The other side that's also increased in activity has been permit appeals that have been filed. These go in front of the Environmental Quality Council. My understanding is historically there haven't been too many air quality permit appeals. That dynamic has changed over the last year. There's been several filed. Back in November of 2007 was the Basin Dry Fork case. This case was still open at their last June meeting. Following the June meeting there was a summary judgment hearing in front of the Environmental Quality Council. The case got decided, and it was appealed. Sierra Club appealed to the 1st Judicial District. It made its way up to the Wyoming Supreme Court and arguments were heard on that case in August. We're waiting on a decision from the Wyoming Supreme Court. Sometimes when they make decisions, it affects other program areas as well. So if that happens, I'm sure Dave will bring it back and let you know the impacts. Another case was Kern River. This one happened to be an appeal by the company for a permit. The company submitted a modified permit application and then withdrew their appeal, so that case ended without any decision by the Council. Another one that's active right now is the Medicine Bow coal to liquids facility. That was appealed by the Sierra Club. It's an active appeal right now. Originally, there were eight claims as part of that case. One of those got dismissed. It's set for hearing the first week in December, so we're in the discovery phase of that case. The last one is the Two Elk case. That one was filed in December of 2007, so before your last meeting. Following your last meeting there was a hearing in front of Judge Arnold in the First Judicial District. He upheld the decision.

I can't remember who the appellants were in that case, but it got appealed to the Wyoming Supreme Court and then the appellants dropped the case at that point, so that one is no longer an active case. So going from zero permit appeals when I first started to having more, they're quite time consuming cases. I do have to say it's a pleasure working with DEQ and Air Quality Division staff on these. They are document-intensive cases. The records easily surpassed 10,000 documents, plus electronic hard drives for modeling. That's kind of mind boggling when you realize how much work they put into processing the permit over a one to two year period of time. Other cases that I kind of follow or touch on air quality. In the summer, I believe it was, the Wind River tribes filed a treatment as a state application. So the State of Wyoming filed comments on that treatment as a state application. My understanding is that's still pending before the EPA. That's related to Clean Air Act tribal implementation. There was a citizen petition to the Environmental Quality Council for ozone rulemaking, and I believe Dave, air quality folks will touch on that a little bit later on. Other than mentioning that, that kind of just gives you an idea of what I get involved in. The State of Wyoming filed an amicus, which is a friend of the Court, we're not a party. That means we don't prosecute or defend the case, but we write to the Court to let them know how this might influence us in a case called *North Carolina v Tennessee Valley Authority*. It has to do with Clean Air Act in terms of nuisance. That's all the specifics I know on that particular case. On the *New Jersey v EPA* case, when we last reported in June, this is a MACT, maximum achievable control technology, the Clean Air Mercury Rule, which is a trading rule. It had been decided in February of 2008 and it was pending whether the United States Supreme Court would take that case or not. The United States Supreme Court turned that case down. So it stands on its own. It's anticipated that EPA will be issuing some further rules to address that decision. Another case that we've been involved in dealt with the Jonah appeal in front of the Interior Board of Land Appeals. After your last meeting that case was decided and it was upheld. I believe there's some other litigation going on in Federal District Court in relation to that, but I'm not involved in that aspect. I think it has to do with wildlife issues. On EPA rules challenges, and again this affects some of the timing of rules that come before you as well as some of the cases, but at the national level, rules that EPA promulgates are pretty routinely challenged. Currently there's two that impact air quality. One is particulate matter, PM_{2.5}, and then there's another one in relation to ozone. I believe Dave, when they do the ozone presentation, the presentation will update that. There's some citizen suits, and the citizen suit provision within the Clean Air Act allows citizens to stand in the shoes or act like private Attorneys General and bring enforcement cases against companies in Federal District Court. Wyoming's Environmental Quality Act also has a citizen suit provision for when they bring these cases in State District Court. In each of these cases the State is not a party, but a lot of times it's based on the records and documents and things that the State maintains. So a lot of times the State employees are called as witnesses. So we're indirectly involved. There's two citizen suit cases that we're aware of currently. One is the *Sierra Club v Two Elk*. That case was in front of Judge Downs in Federal District Court and I believe it was dismissed in August and is pending a decision whether it will be appealed or not. The second one is a citizen suit case. It's *Sierra Club versus PacifiCorp* in relation to the Jim Bridger facility. In that case, last time we met I believe the parties had filed motions for summary judgment, which is basically saying there's no dispute over the facts. This is trying to decide what the law is. Judge Johnson denied those. So they will be set for trial, probably sometime in 2010. That's kind of what occupies the AG representation for air quality.

Bill Boger: Thank you, Nancy. That moves us to new business. Do we want to break for five minutes or does everybody want to keep going here. I guess we're going. New business. Proposed changes to the Air Quality Standards and Regulations. I assume maybe, Tina?

IV. New Business

A. Rule Changes

Tina Anderson: I'm not going to project anything. These are rule changes, and they aren't any more fascinating up on the screen than they are on paper, so I'm just going to go through the pile. Anybody in the audience that would like a copy of these, they're on a table in the back, so feel free to wander back and get them. There is a new copy of Chapter 3 back there. I made some last minute revisions this morning, so you should have a 10/26 copy of Chapter 3. The changes are going to affect Chapters 2, 3, 5, 6, and 11. We actually advertised for Chapter 1, got into it and realized there were some issues with what we proposed. So we just pulled it. I couldn't take it off of the website because we'd already gone out for public notice. So you'll see it in the future, but we're not going to do anything with it today. I also want to mention that these rule changes are all part of the Wyoming Air Quality Standards and Regs, but some of them are part of our state implementation plan, our SIP. And because they're part of the SIP, I need to tell you that, because there's a lot of different public involvement with SIP items. SIP's involve Chapters 2, 3, not 5, it does involve 6, but not 11. So part of these are SIP changes and part are simply reg changes. So starting with Chapter 2, which is our ambient standards regulations, going on to page 2-1. The first thing that we're doing on that page is adding a line that allows us to incorporate by reference all references in this chapter that are from the Code of Federal Regulations or somebody outside of these regulations. You'll see me do this in the future as well. We've been advised to take this step for all of our chapters. It's pretty tedious to go through, but that way there's one spot in every chapter we're adopting, instead of doing it for every single incidence. So you're going to hear me say that with every one of these chapters I'm talking about today. Below that, under Section 2, in the Ambient standards for particulate matter, what we're doing here is basically splitting our state commitments from our Federal commitments. Last, I believe it was the year before, EPA actually dropped the annual PM₁₀ standard. Particulate matter, PM₁₀, is particulate matter ten microns. Ask me questions as we go along if you have any questions. So PM₁₀ annual was dropped by the Feds. We have decided to retain it. It's a useful tool for the State of Wyoming when we permit coal mines. It allows us to determine what impacts might come from new surface mining operations. So we have decided to keep that as a state standard as the Feds drop it. You will see in here under little Section 2(a)(i), you'll see the 24-hour and under Section 2(a)(ii) is the annual. Because the Feds dropped the annual standard, they also dropped the process by which you determine whether or not you're in compliance. So what we did was extract that from the Code of Federal Regulations and added it to this chapter. So at the back, under Appendix 1, you'll see a new Appendix, which actually shows you how you determine when you're in compliance and when you're not in compliance with the annual standard. If we didn't do this, the Federal one would have gone away and we would have had no method at all. So that is what that's all about. There's a goof in section 2(a)(i)(A) that says attainment of the 24-hour standard, there shouldn't be an "s" there. That was caught pretty quick by several people. So that's what's happening under (A). Any questions about (A)? Under, below, under (iii), we simply changed the order. So there's nothing new there, but a shuffling of the order. Under (b)...

Dave Finley: Is there some reason you've got standards in 2(a) also?

Tina Anderson: Well under 2(a) we truly have them. We have a 24-hour and an annual under (i) and (ii).

Ronn Smith: So it's attainment of the annual standards.

Dave Finley: No, the highlighted thing below your finger there.

Tina Anderson: Here?

Dave Finley: Is there any reason why we're talking about annual standards in that one also?

Tina Anderson: Nope, you're right. Good catch, Dave.

Dave Finley: Clearly demonstrating that Dave was following along.

Tina Anderson: Every time we open these up we make more mistakes than we fix. Under (b), what we're attempting to do is, first of all make the language compliant with the Federal language. These things get adopted over time and then the Feds will change a little bit here and there. So we've added primary and secondary. We've always had a primary and secondary in there, but we didn't have the words "primary" and "secondary" and the word "quality". So those are being inserted. Again, in the next statement, words that were missing out of our version. So those are not significant changes, in my opinion. On the next page, two, at the top. This is a significant change. This is to mirror the Federal change in the 24-hour $PM_{2.5}$. So it dropped from 65 to 35. The microgram per cubic meter is, again, an addition to make it compliant with the Federal language. So that's all we're doing under PM, the PM section of the ambient standards. I will tell you that back on page 2-1, there is an annual 15 micrograms per cubic meter. That is under consideration by the EPA right now and we'll probably see that drop as well. CASAC had recommended a 13-14 range there. I'm just guessing, but the way everything else is going, I expect EPA to open that back up and look at whether that should be 13 or 14. So you may see us back with that. But for the most part, we try to stay current with the Feds on the ambient standards. The next change, I believe is on page 2-5, and that is the ambient standards for lead. Again, the federal government changed this ambient standard for lead. This has been on the books for a long time. It's a huge drop here from 1.5 micrograms per cubic meter down to 0.15 micrograms per cubic meter. They've also changed the averaging period. It used to be a maximum arithmetic mean averaged over a calendar quarter, and now it's arithmetic mean averaged over a three-month period. So there's two changes there. And what you see underneath it are all of the methods that are required to actually make this ambient standard work. So that's what we're doing there. I will also tell you that the Governor just submitted his recommendation for the State of Wyoming on whether or not we meet the lead ambient standard. Every time the Feds change an ambient standard, the State makes a recommendation on whether or not we're meeting the standard. And for lead, we are pretty confident that we are meeting the standard. We don't do a lot of lead monitoring, but we did do some lead monitoring in Newcastle, Casper, Cheyenne, and Rock Springs. That data was not three year averages, but we had enough of it that we felt confident that it wasn't anywhere near the new standard. So we sent a letter up to the Governor to recommend that the State be classified as in attainment for lead. The Governor has sent that off and we'll hear in another six months or so on a reaction from the EPA on that. Then on page 2-6, as I said, we're simply adding a section for

incorporation by reference, and then Appendix 1 is attached on the back of that. So that's all we have to talk about in Chapter 2.

Darrell Walker: On section 6 on that ozone, is that .08 parts per million? Is that correct?

Tina Anderson: That's what the language says. That's what's in our regs right now. That's not the Federal level. The Federal level is .075. We are currently enforcing on .075 in the state. We'll talk about that more when we get to the ozone talk. But the bottom line is that a lot is changing on that right now and we're going to kind of wait for the Federal government to complete their process before we go any further. Okay?

Dave Finley: Is Appendix 1 simply the method of determining attainment for what is now a State standard?

Tina Anderson: Right. So it shows you how to actually take the data that you collect and average it, what to compare it to, how you can adjust it, and what kind of data recovery you can have. All important information when you're trying to determine compliance.

Darrell Walker: I have a question mark on that C, on that Appendix 1. It says all of the discussion in this Appendix focuses on monitored data and the same principles apply to modeling. I'm not sure I understand that.

Tina Anderson: Well we model PM_{10} , and we model it for permit applications. So they create a modeled number and you've got to have some way of comparing that to the number that you generate on the monitor. So if there's a question about how to deal with the modeled values, you would revert to this as a way to handle the data. Even though you don't collect it on a filter, you generate a number. Then you might want to average that number with another modeled number. It would give you some basis for dealing with the data you generate from the model.

Darrell Walker: What I had in mind on that was that if you had any models, and you set them all up and use that, then the monitoring data follows up. So then you compare the two together?

Tina Anderson: Well that's exactly...

Darrell Walker: Is that what this is saying?

Tina Anderson: That's one of the things you can do. So, there's lots of things you can do with the modeling. They will project into the future and...

Darrell Walker: Well that's my concern, is whether its backed up or not with actual. The actual data.

Tina Anderson: You know, most of that happens early on in the process, when you validate a model. So if you get a brand new model, like the models we're developing for ozone right now, you've got to do a lot of checking back with the monitored values. So that does happen, but it doesn't happen every time you

run the model. After a certain point you convince yourself that it's doing a fairly good job, or it isn't. Okay, so that's it for Chapter 2, unless there's any more questions. So that takes us to Chapter 3, which is again, part of our SIP. This is our general emissions standards. Some small changes in here. On page 3-11, well every time we bring you regulations, we update our definition for volatile organic compounds. What we do is simply go to the Federal Register and incorporate their definition. Their definition is a huge long list of chemical compounds that are not photo chemically reactive. And every once in a while they'll add to it. That's how they define VOC's. The only thing that we're changing in this proposal today is that in our previous language, we ignored this first paragraph, 51.100(s), and it's a very general paragraph that talks about what a VOC is in a very general sense. I should have brought it with me, but it's straight from the Federal regulation. It's just one small addition to what's in this long list. So that's all I'm proposing to add there. We're also adding (s)(5), which includes some kind of acetate.

Mike Stoll: I think its tertbutylacetate.

Tina Anderson: Tertbutylacetate. That's as good a guess as mine, but we're going to add that as well. It's a compound that's in paint. Paint manufacturers have called me repeatedly to make sure we include this. So we'll add that to the list as well. We don't manufacture paint in this state, so I think it was kind of a moot point. But we'll put it in there. So that's what we're doing under that one line. On page 3-50 under Section 9, this is an incorporation by reference section that's already in place, but we're simply bringing it up to speed with the CFR's through 2008, which are the last set that have been printed. That's all for Chapter 3. Chapter 5 is our national emissions standards and NSPS and NESHAPS. NSPS are new source performance standards for criteria pollutants. NESHAPS are national standards for air toxics. Once a year or once every other year, depending on how quickly we can get back to you, we go through and adopt new standards to be compliant with the Federal set. On page 5-2, you'll see that we've added Subpart Ja, which are standards for petroleum refineries. We already have, as you can see above, standards for petroleum refineries under subpart J. But these are specific to refineries which are constructed or modified after May 14, 2007. As far as I know, we don't have any. You haven't seen any in your shop come through, modifications under Ja? No? I know that none have hit Title V yet, but I wasn't sure if any applications have gone through NSR. The next one is subpart VV, which is chemical manufacturing. Again, we already have chemical manufacturing and leaks, but this is specific for a date, January 5, 1981 and November 7, 2007. Then under VVa, again, more chemical manufacturing standards. I believe that we have about seven under Subpart VV. Down under GGG, another petroleum refinery standard. I think we have about three that are going to fall under that category. And under that GGGa, another petroleum refinery. They're endless, and they cause a lot of review time because they're all very difficult to read and determine compliance with. So I can already hear the groaning in the back of the room. On page 5-8, there's more. These are internal combustion engines and stationary combustion engines. I believe we have about fourteen under the internal combustion engine spark ignition category. And stationary combustion turbines, I'm sure we have a few in that category too. So that takes us up to page 5-9. Under applicability at the bottom of the page, this is a correction which EPA asked us to make after we submitted our last update to this chapter. It used to say that this chapter was applicable for any facility that had constructed or modified after the effective date as designated in the standard. When you open up one of these standards, it will say the effective date is. We thought that was probably sufficient for figuring out what the effective date is. They wanted us to put in that it becomes applicable after the publication of the proposed standard as designated in the applicable subpart. They are the same date. They always set the

effective date on the publication of the post date. But this is one of these—it didn't seem like it was worth fighting over.

Dave Finley: Is it clear to you that this is the date of the publication of the proposed federal standard?

Tina Anderson: Um hm. Oh.

Dave Finley: Because we publish proposed standards, but at a later time than the Feds do. So is it clear in this sentence to you, that you're talking about the Federal publication of the proposed standard?

Tina Anderson: It says "and contained in 40CFR part 60." You know, this is the language that EPA suggested, but I suppose we could put in there, the publication of any proposed federal standard. Is that what you would like me to say?

Dave Finley: I don't know. I'm just asking the question. Is it clear to everybody here that that means Federal standard? If it does, never mind.

Tina Anderson: The next page is the exact same change under the definition of existing facility. These were both comments that EPA made and requested that we change when we updated this again. On page 5-41, I've simply put an asterisk under subpart HH because this is a standard. These are all major, major sources that are affected in this list, primarily. This particular one has added an area source component. So we're in the NESHAPS section here. So the area source is something that is under 10 tons of a particular air toxics pollutant or 25 tons of any combination of air toxics pollutants. EPA recently added this area source component so that smaller sources in the oil and gas production are a part of this subpart. I just wanted you to be aware of that. It's actually a huge revision that's in here. All of these...

Dave Finley: The footnote is a huge revision?

Tina Anderson: The fact that they added an area source component to Subpart HH is a big revision, and we're on top of it...

Dave Finley: We've picked that up by virtue of the reference to 40CFR as of June 1, 2008?

Tina Anderson: Correct. I don't normally mark all of the revisions with all of the subparts because they are huge. But this one is a big one, especially for our state. Again, on page 5-46, ZZZZ, stationary reciprocating internal combustion engines. There's an area source component to that as well. And then on page 5-48,BBBBBB. We're getting up there. So this one is bulk gasoline distribution, and I believe we have about three of those that will be affected. These are getting hard to remember and to say around the office. So that's what's going on with the list. At the bottom of the page, there's some small changes to this sort of supplementary list. There's one subpart that we've left in the Federal Register which is DDDDD, which affects boilers. This is a category which has been litigated heavily. It's been vacated on the Federal level. We elected to retain it on the state level because it's better than having nothing in its place so that allows the program to roll forward with some enforcement on boilers. Some permitting.

Dave Finley: Where are you?

Tina Anderson: I'm on the bottom of page 5-48. I can't put it up with the rest of them because it isn't in the 2008 CFR, because it's been vacated. So we're retaining a vacated standard as a way to regulate boilers.

Jeff Snider: Are you missing something after the "and"? The very last word on the page.

Tina Anderson: Oh. Yes. The problem here is that we've only printed out those pages which are changed. I guess we didn't notice that there's more in the title. Good catch. We should have put that in there.

Dave Finley: Tina, tell me again. Is this a change from what our current rule requires?

Tina Anderson: No.

Dave Finley: This is a cleanup for...

Tina Anderson: The reason that we're having to change the are's to is's is because we used to have several of them on there. Sometimes what happens is that EPA will propose a new standard in the Federal Register, and I'll get feedback from the permitting and compliance staff that you need to get that one adopted right away because we have a lot of sources on it. If I wait for a year or two years, then everything goes to EPA and it's very difficult for them to do their job. So instead of actually waiting for the EPA to print it up in the CFR, I can stick it in through the Federal Register. It's the same regulation but it hasn't actually been printed up in the CFR. It's in the Federal Register instead. So the Federal Register is this periodical that the Federal Government puts out on a daily basis where they show all regulation changes. The CFR is a compendium of all of those changes which they update annually. So if I waited until they updated, lots of people would be stressed out. So we do this to help our staff enforce some of these things. We have done that for this very category because we have a lot of boilers in this state. And then they got sued, and they vacated it. And we said, what do we do with all of these boilers? We just permitted them and we used Subpart DDDDD, so that's why we retained it. So that's the reason that those words in the text have changed is because some of the other ones have actually moved up into the upper list. Okay? Did I lose everybody in that fascinating....

Dave Finley: Mr. Chairman?

Bill Boger: Go ahead.

Dave Finley: So we have regulated emissions from boilers as if subpart DDDDD was still in effect, and we have done that for a number of years. Is that what I hear you saying? Okay. The clean up there is not to add this in, saying we're now going to begin to regulate boilers under a vacated DDDDD, it's that there were other things that were listed that you've removed?

Tina Anderson: Right. They have moved from this Federal Register list down below up to the big list up above.

Dave Finley: So why don't we see on page 5-49 a deletion of things? If they were in our rule and they don't need to be in there anymore because they're covered in one of these CFR's.

Tina Anderson: That's a good question.

Dave Finley: Or have you already done that, but when you did that, you failed to change the are to is?

Tina Anderson: That may be the case.

Nancy Vehr: Tina, that looks like what the case is, because that's the only one listed there.

Tina Anderson: All right.

Dave Finley: Okay.

Tina Anderson: The grammar is lagging.

Dave Finley: The what?

Tina Anderson: The grammar.

Dave Finley: It's the fault of the grammar?

Tina Anderson: The grammar was lagging behind.

Dave Finley: Oh, I've got you. Thank you, Mr. Chairman.

Tina Anderson: So that's what's going on. Eventually EPA is going to straighten this out.

Dave Finley: I don't think so.

Tina Anderson: In the interim, it's either regulate boilers or don't regulate boilers. I think the more responsible thing is to regulate boilers. It's not that it was vacated because there was something fundamentally wrong with the rule, it had to do with how you classify incinerators and boilers and overlap of the two categories. Pretty subtle, I thought, legal problem. But that's where we ended up.

Dave Finley: Mr. Chairman, in any event, we've been regulating using this strategy for a number of years. Is that correct, Chad? That's correct. Okay.

Tina Anderson: Okay. Then on page 126, simply bringing the incorporation by reference section up to 2008.

Dave Finley: It's a quarter to three? I thought I looked up there earlier and it was twenty after 4.

Tina Anderson: Time doesn't go by fast when you're not having fun? The next chapter is Chapter 6, which is the permitting requirements chapter. On the first page, the introduction simply points out some new sections. Eight is still being reserved for a general permit rule, which we haven't completed. Nine is our BART section, which is in there, but we haven't fixed the introduction. Ten incorporates a new section, which I'll talk about in a minute. Eleven is the incorporation by reference, another new section. That takes us to page 60. This is Section 4 of our regulations where you are, which is our PSD, prevention of significant deterioration. It deals primarily with large sources. It's a permitting program for large sources. The definition of "major stationary source", defines in these cases specific industries that have to follow this rule. EPA has made a distinction for primary aluminum ore reduction plants with thermal dryers, and they are now specifically listed. Before, it just said primary aluminum ore reduction plants. So that's a refinement on EPA's part. We don't have any primary aluminum ore reduction plants, but this is a chapter which they look at carefully to make sure we're compliant with what the Federal standard says, so that's what we're doing there. Along the same lines, on the next page, 61, EPA has actually excluded ethanol facilities that produce ethanol by natural fermentation. Before it just said chemical processing plants, and that implied ethanol facilities were covered. Then they went in and specifically excluded them. Everybody feeling better? I'll tell you that we've already heard that the ethanol production facilities is under a dispute and this may come back out, but it's in there now. This is what they want us to have, so, I wouldn't be surprised if the next time I see you that we're taking it out. If we don't make this match the Federal language, we can't get it approved in our SIP. If it's not approved in the SIP, it's hard to run the program. So that's the thinking there. On to page 6-65, under regulated NSR pollutants. NSR stands for new source review. We're in the same section here. I'm still talking about these large facilities, the PSD section of our permitting chapter. What they're doing here is, they used to say that a regulated pollutant under this program was any pollutant for which a national ambient air quality standard was promulgated, and any constituents or any precursors that the EPA determined should apply. They hadn't actually figured out what those were up until this change. Now they've figured that out and it's spelled out below. Precursors, if you don't already know, are those pollutants that will under certain atmospheric conditions combine and form other pollutants. Ozone is the result of precursor emissions. NO_x and VOC's are the precursors, and the resulting pollutant is ozone. So under (A), there you see, volatile organic compounds and nitrogen oxides are precursors to ozone in all attainment and unclassifiable areas. So that's one. Sulfur dioxide, they've listed as a precursor for $\text{PM}_{2.5}$. That's the fine particulate. So those two are pretty straightforward. They just say all those are precursors. But in (C) and (D), they start refining this and they say under (C) that nitrogen oxides are precursors unless the state determines to the EPA's satisfaction that they shouldn't be. Then on (D) they do the opposite and say that these are not precursors unless the state demonstrates that they are. So, it will just make things more interesting to try to figure out whether it's a precursor or not. So that's what's happening back in there. Any questions about that? Page 6-66, we're in the same chapter. Here we are adding $\text{PM}_{2.5}$ emissions and PM_{10} emissions to include condensable portions of those pollutants. In the past, they have only looked at what is directly emitted as particulate. So, let's say in a power plant, you have emissions coming out of your stack. Some of the particulate is directly emitted. Some of it comes out as maybe a precursor, and it doesn't become a particulate until it condenses. And once it condenses and becomes a particulate, EPA is saying now you need to count that. It wasn't counted before, for lots of reasons. We've always known about this. In the trona facilities, I

believe they've been doing this for a long time, counting the condensables. For sources now beyond that sector everybody is going to be counting condensables. So this is a significant change. I don't know whether the modeling has caught up with this yet. We have some issues with the modeling, and there's going to be lots more rolling out on PM_{2.5}. This is the newest of the particulate pollutants and this whole section, PSD, has a whole section that deals with increments and how you figure how polluted this area can get. They haven't even completed that yet, so we'll be back with the rest of the changes to the PSD. But these are the ones that have been completed.

Dave Finley: Mr. Chairman, so we've been doing this, really in trona, forever, pretty much. For a long time. But not in a power plant, for example. Is that correct?

Chad Schlichtemeier: We've quantified them, had some testing done, but we've never gone through the analysis like BACT or anything like that. But we've quantified them.

Dave Finley: You said we have some modeling problems. Did the modeling problems that we have preclude our ability to either count them or to establish limits on them? Let me say it another way. We're promulgating a rule here that says after a certain date, you have to account for them in applicability determinations, the condensables, and you have to establish limits for them, accounting for the condensables. You said we have modeling problems. Do the modeling problems preclude us from doing either of those two things?

Chad Schlichtemeier: The modeling, to me, is a separate issue. They'll be more like test methods covered to use for determining what your emissions actually are so that we can quantify what your condensable portion is and EPA is currently working on test methods for condensables. So the modeling would be determined by the NAAQS.

Dave Finley: Thank you. Mr. Chairman, I think I've got it. I could almost ask the same question with respect to monitoring, then, and the question would be, do we have adequate monitoring in order to be able to determine the condensables so we can account for them? We don't know that?

Bill Boger: Would a CEM pick up both?

Unknown Audience Member: Typically, you don't use CEMs for particulate. You can, and if you've got a condensable particulate that wasn't a particulate at the time it hit the monitor...

Nancy Vehr: Dave, EPA has proposed some, but they haven't finally adopted.

Unknown Audience Member: CEM or stack test method?

Nancy Vehr: On the monitoring, the test method.

Dave Finley: Mr. Chairman, I was just questioning the ability to carry out this requirement, and I think the answer I got was, if EPA delivers before January 1, 2011, the answer will be yes, we would have the ability to carry out the requirement. Fair?

Tina Anderson: This is not new. I mean EPA has been rolling out stuff that we didn't have the tools to follow through on for years.

Dave Finley: Okay. I don't have any further questions for the defendant.

Tina Anderson: The next thing is replacement unit. This is another item that EPA specifically asks that we put in here. This is the definition for, if you shut down a unit and you want to put in another unit. There is an enormous amount of litigation surrounding the whole replacement unit aspect to new source permitting. When we brought you the major changes to NSR in 2003, was it, 2004, somewhere in there, we didn't include any of the replacement unit language because it was vacated and litigated. There wasn't anything there. So we took it all the way through and this came back, not too long ago, that we hadn't put this definition in there. We said we didn't put the definition in there because there's no provisions for replacement units, so why do we need to define them? But the response I got back was that we still need the definition. So we're putting the definition in there. Maybe if it's resolved someday, it will be meaningful. I don't know if Chad has anything to add to that. So that's why we're putting that in there.

Dave Finley: Mr. Chairman, there's no comparable Federal definition for a replacement unit?

Tina Anderson: Oh, yeah. This is the Federal definition, but there's more to it than just defining it.

Dave Finley: There's litigating it?

Tina Anderson: They're still litigating. Yes. Probably will be until we're all dead.

Dave Finley: But, Mr. Chairman, this is the Federal definition, right now?

Tina Anderson: Yes.

Dave Finley: Okay.

Tina Anderson: Okay. Page 6-67, these are what we call significance levels. So there's lots of things that roll off of the definition for significance levels, but it helps you decide whether or not certain parts of regulations apply. They're just adding them for PM_{2.5}, which is our newest pollutant that we're adding to this program. So we've added 10 tons per year of direct PM_{2.5} emissions, 40 tons per year of SO₂ emissions, and 40 tons per year of NO_x emissions, unless it's demonstrated to be a PM_{2.5} precursor. So, if you'll recall, there's a difference between the precursors for SO₂ and NO₂. You have to do the demonstration for NO_x but not for SO₂. So, you could have no direct PM_{2.5}. You could have a case where you had no direct PM_{2.5}, but you had 40 tons of SO₂. You'd have to look at PM_{2.5}. These are new. On to the next page, ozone. It used to say only 40 tons per year of VOC's, and now we've added in NO_x. I think you guys have been using this for quite a while haven't you, even though we haven't gotten this into the rule? The last thing is solid waste landfill emissions. This is just a cleanup. All the ones above say megagrams per year followed by the tons per year. We're just making that consistent. That's all that is on that page. 6-73 and 6-74 are simply, instead of using the word above, things move around in regulations

and it's just a little cleaner to actually have the reference in there to the actual standard that you're talking about. It's not a big change; it's just to make it perfectly clear what we're talking about. So instead of saying "listed above" it says "listed in" and it cites the specific chapter, section, subsection. That's all we're doing there. And then on page 126, we're adding a Section 10, which is nonattainment regulations permit requirements. We've never had this in there before. Everything else that exists in the current PSD regulations refers to attainment situations. When you go nonattainment, it's a whole different ballgame and you have to follow a specific set of rules to do that. At this point we have decided to just pull the Federal set in by reference, incorporation by reference. I think we've talked about doing some customizing, but because of the ozone situation in the Pinedale area, we think we need this sooner rather than later. It takes a lot of time to customize these things. So in the interim, we've decided to pull this in, in its entirety, so that the Division is able to enforce and permit our sources in the nonattainment area. If we don't do this, all the permitting for PSD sources in the nonattainment area will happen down in Region 8 EPA, and I think we're reluctant to let that happen. So, that's what we're suggesting there. Now what does this mean for the State? There are some very strict regulations when they permitted new source. Instead of doing a BACT review they would be doing a LAER review. So instead of looking at the best available control technologies out there, you're looking at the lowest achievable emission rates. So that's much more stringent for new sources. Existing sources will have to comply with the RACT rule, which is reasonably achievable control technology. So we're looking at retrofits on existing major sources to comply. We're looking at offset programs. I know that some of you are aware that we already have some offsets going on over there, but this would be specific to major sources being offset. Applicability thresholds will change. So whether or not you're a major source, changes in a nonattainment area. So there's a whole set of regulations that will make it more difficult to permit in a nonattainment area. You'll have to comply with lower standards, which is the intent of it, so that you can try to bring the area back into attainment.

Dave Finley: Mr. Chairman, does 51.165 contain all of those requirements?

Tina Anderson: Yes.

Dave Finley: Could I suggest it might be a good idea to let the Board see what those are?

Tina Anderson: Well that was what I was just trying to list, but if you'd like to see them specifically, I brought a copy with me.

Dave Finley: Well I'm wondering about this business about customization. One of the obvious things to me anyway, is that if you incorporate 51.165 by reference, then a major source would have a much less stringent offset requirement than a minor source in Sublette County.

Tina Anderson: Well that's going to happen whether we customize or adopt by reference, because what we customize has to meet a Federal regulation. You're saying we could actually customize it to make it lower.

Dave Finley: A bigger offset.

Tina Anderson: A bigger offset, yeah. That would be an option. But, as I said, it's going to be difficult to pull that off between now and EPA designating the area and coming up with a new ozone standard here in 2010.

Dave Finley: I'm wondering if the recent announcement that they're delaying by one year consideration of our nonattainment petition because they're reevaluating the Federal ozone standard might give us time to do this or whether in your judgment it's better simply to have this in place in case we aren't able to get a customized version of nonattainment of NSR into our State rules. And of course, doing this wouldn't preclude us from coming back with you with a customized version. So this could be considered to be kind of a backstop move.

Dave Finley: Mr. Chairman...

Chad Schlichtemeier: It's still not going to relieve them of the requirement under Chapter 6, Section 2 to do the demonstration as in the interim policy today. But it seems like even though Section 4 might say less stringent requirements, under 2(c) in their demonstration, we can say no, you have to do this amount for it to be above and beyond Section 4 as part of the permitting action. So the two might not line up. I would propose going forward with the Federal regulations as they are today. Another point would be we don't know what's going to be happening down the road. I mean we're working on a model, we don't know what type of offset requirements will be necessary, so I think, at a minimum, we have to start here and maybe look at changing it down the road if we need to.

Dave Finley: Mr. Chairman, you know I see the value of having something in place, in our rules, so stuff does not default to EPA Region 8, but I also see some value in us making sure that this fits with what we want it to look like in any nonattainment area out there. So I would suggest that you consider adopting this, but ask us to take a look at getting the customized version back to you as soon as we can. I hadn't really felt that there would be a major permit that goes through us in the near future in Sublette County, but there's a potential change to how compression stations are being looked at that may result in this being triggered sooner as opposed to later. So I wouldn't object to doing this as a backstop. You should just direct us to do a tailored version post haste.

Chad Schlichtemeier: I think we need to watch the timeline expectations going forward, when we're going to customize this, because I think it could be some time before we get a model and know exactly where we stand, rather than just jumping in and automatically lining up with the interim policy.

Dave Finley: Mr. Chairman, again, I don't know how we would customize it, but I've heard that we would, so just tell us to do it quickly.

Tina Anderson: That was, I think, our original discussion, was to customize it. Then, I think when EPA decided to do the reconsideration, that's when we decided it might make more sense to speed this up. So I don't think we're in disagreement, there's just a lot of factors in play in this whole thing, trying to figure out how to make this work.

Dave Finley: Mr. Chairman, I think the takeaway message is that without that 51.165 as in effect, and we get a permit application for a major source, it gets reviewed by EPA under 51.165, and the question in front of you today is, should it be reviewed by EPA under those conditions or by us?

Tina Anderson: The other thing to consider is that, and we'll get there, but EPA is looking seriously at dropping the ozone standard. There may be other areas in the state that go nonattainment for ozone. So it's not just the Upper Green that we're looking at. So it could, in fact, be portions of the Powder River Basin and major sources located up there. So, I think it's still a safety valve that would affect a lot of major sources permitted in the state.

Darrell Walker: Are you proposing then, that Wyoming will have a nonattainment rule?

Dave Finley: Mr. Chairman, have we proposed that Wyoming should have a nonattainment area? Yes.

Darrell Walker: Well, this is what you're talking about here.

Dave Finley: Mr. Chairman, we have all of the permitting rules in place that we use to permit sources in attainment areas, but there's a different set of permitting requirements that apply in nonattainment areas, and we don't have those in our rules. So this would add that different set of permitting requirements for major sources in nonattainment areas.

Darrell Walker: That would be Wyoming standards, not EPA?

Dave Finley: It would allow Wyoming to issue permits for major facilities in a nonattainment area rather than have that permit application go down to EPA and have it permitted by EPA.

Darrell Walker: We're not in a nonattainment area now in Sublette County?

Tina Anderson: Not yet.

Darrell Walker: Are you saying they set that back a year? Is that what they're saying?

Dave Finley: Roughly.

Jan Lydigsen: It's about 18 months, the schedule slipped.

Tina Anderson: We only get the slop on the front end. The back end is still the same. So we're going to have to do a whole lot more as we get further into the process. We'll have to speed up as we get in here, because the SIPs are still due the same year. They're still due in 2013.

Dave Finley: What?

Tina Anderson: They're due a little later in 2013, but they're due the same year. So we're going to have our hands full doing things, and this just seems like the thing we could just get out of the way and at least be able to have the mechanism set for permitting major sources.

Bill Boger: And what, Tina, has actually delayed it? Is it the fact that they're looking at the standard again, revising the standard, or what?

Dave Finley: Mr. Chairman, yes, the EPA was sued and the claim was raised that the standard was not protective of public health as required under the Clean Air Act. I think the simple basis for that suit was that the Science Advisory Board recommended a standard between 60 and 70 ppb and EPA promulgated a standard of 75. So they were sued. The administration changed, and the administration elected to redo the standard. So they will re-propose a standard and promulgate a new standard. They have told the states that they will not review our nonattainment area designation packages until they issue a revised ozone standard. So yeah, the delay comes from EPA reconsidering whether 75 should continue to be the standard, or whether it should be lowered.

Tina Anderson: So we're looking at a proposal in December of this year, and a final in August of 2010. We'll give you more details on that schedule in the ozone presentation. All right, so the last thing on that page is Section 11, another one of these incorporation by reference, just like the other chapters. So that's all for Chapter 6. The last chapter is pretty quick. This is the acid rain program. The acid rain program is a big Federal program that we don't actually administer—the Feds do, but we were required to adopt it to make our Title V program whole and approvable. So we simply try to keep up with EPA's things for the acid rain program. Those acid rain permits that they issue get pulled into our Title V program, and that's a big SO_x and NO_x reduction program that is happening on a national level. That's it for changes.

Bill Boger: So Tina, with the exception of Chapter 2 and PM₁₀, which will be a State-retained standard, the rest of this is tied directly to Federal changes to come in conformance with the Federal rules.

Tina Anderson: That's true. Did you have another question.

Ronn Smith: How will the state determine PSD thresholds for particulates. Will that still be based on PM₁₀?

Tina Anderson: Chad and Darla, jump in there.

Chad Schlichtemeier: The significance level for PM_{2.5}.

Ronn Smith: So either, or?

Chad Schlichtemeier: That's my understanding.

Ronn Smith: Since the State's still enforcing PM₁₀ and both of those will include condensables?

Tina Anderson: That's an interesting question. Does PM₁₀ measurement include condensables? Yes, it does. It says PM emissions, PM_{2.5}. All right, so.

Bill Boger: Any other questions?

Dave Finley: Did you want to give us a break or do you want to have the public talk to you when you're tired and frustrated?

Bill Boger: I'm good for a five-minute break.

Bill Boger: I think everyone is back. I think before we go on with the presentation here, we'll open up the last subject on Chapter 6 and specific to the nonattainment. Any public comment on the nonattainment?

Dave Finley: Or they can really comment on any part of the rules we discussed.

Bill Boger: Or any part. No comments. Okay, we'll go ahead and go on with the ozone presentation.

B. Ozone Update

Jan Lydigsen: I'm Jan Lydigsen from the office in Cheyenne. I have a short overview of the status of the ozone in the Upper Green River Basin. In 2004, the DEQ began working with industry in southwest Wyoming to establish monitoring stations that would monitor the quality of the ambient air upwind and downwind of gas development. Monitors downwind of the Jonah and Pinedale development showed elevated ozone shortly after they began operation in 2005. This was highly unusual, because ozone was generally thought of as a summertime problem, when it is hot and sunny, and southern, western cities. DEQ then launched winter ozone studies to determine what was going on. In 2006, DEQ began to study the winter ozone phenomenon. In 2006 there was a repeat performance of 2005 with the elevated ozone concentrations. VOC sampling showed that VOC's had an oil and gas signature. That is that the VOC's in the ambient air were the type and proportions that one would expect from oil and gas development. In the winter of 2007, the DEQ was ready for a high level scientific study. This included placing several temporary ozone monitors all along the Upper Green River Basin and having specialized intensive sampling, including an instrumented airplane, balloon launches, canister sampling, and other specialized equipment. However, in 2007 the meteorological conditions weren't conducive to elevated ozone formation. Apparently, there wasn't enough snow cover and the inversions didn't develop that produce the high ozone. As you can see in 2008, that was different. Back in 2009 again, the meteorological conditions weren't conducive, with reduced snow cover which also contributes to inversions. We didn't see the high ozone again. The next slide shows the fourth high 8-hour values for the last five years. As you can see, the highest ones were seen in 2008 and they dropped again in 2009. That's just the first quarter data through 2009. But what we did learn during the studies—the ingredients for ozone formation, snow, low winds, sun, low level inversion, and the local precursor sources are present with NO_x and VOC's. Then the Department developed detailed wind fields to determine the appropriate nonattainment boundary. That's the red line. It's all of Sublette County and portions of Sweetwater and Lincoln County. The offending monitor, the only monitor that exceeded the standard, was the Boulder monitor, which is in north central Sublette County. But the wind fields indicated that there was potential for the sources in Lincoln and Sweetwater County to contribute precursors to the elevated ozone in Sublette County. One of

our other tools we used was backward trajectories. So February 20, 2008, was one of the days with the highest ozone levels. What this shows is that if you go backwards with the monitors at Daniel, Cora, the airport, Boulder, Jonah, LaBarge, that the precursors are staying pretty much in the same place as the monitors are. The winds are not clearing the area. The ozone precursors are staying in the same place as the monitors are. We also looked at forward trajectories to see if perhaps there were precursors or ozone coming from outside the proposed nonattainment area. This forward trajectory from Naughton pretty much shows that the air parcels moving from Naughton are not moving into the nonattainment area, which helped us draw the boundary where we did. This is another one. This is a forward trajectory from LaBarge. This indicates that there is a possibility that emissions from the LaBarge area would be affecting monitors in the nonattainment area.

Dave Finley: Can you see LaBarge there? That's the origin for all of this stuff.

Jan Lydigsen: It's a 24-hour trajectory, so one of those lines goes from 2 hours to 24 hours. One goes from 3 hours, etc. So they're not all the same length line. One of the things that the EPA uses to evaluate nonattainment boundaries are high split trajectories, so we looked at those too. The red dotted line is the high split which basically shows that the air coming into the Jonah monitor is coming from Idaho. The little green dot shows surface wind data, local at the Jonah monitor. It shows that the local wind patterns which are predominant during these inversions, the localized winds are what's driving the distribution of contamination in the area. In response to the elevated ozone, the Department did several things. Public ozone alerts. Before an elevated ozone episode in February of 2008, we issued an alert. Industry has committed to voluntary reductions. We've increased our inspection presence in Sublette County and we've instituted more stringent permit requirements for oil and gas production. We also have an interim permitting policy with offset options. Many of the companies have prepared contingency plans during times when elevated ozone is forecast. They voluntarily defer, reduce operations. We've held regular public meetings in the area to inform the people about the monitoring and the permitting policies that are ongoing. We established a permanent monitoring station in Pinedale. Mitigation requirements have been included in the RODs for Jonah and Pinedale. The NEPA mitigation efforts are in the RODs from March 2006 and September 2008. They include mitigation strategies such as liquids gathering systems, NO_x reductions, and the companies have agreed to funding for AQD staff and monitoring. We've also received legislative support for additional positions and funding to address some of these conditions. The legislative support has funded new positions and monitoring and model development. Additional funding support comes from partnerships with industry. The Pinedale Anticline Work Group has helped fund the ozone study. The University of Wyoming funded part of the work they did last winter in the Upper Green, and the Jonah Infill Office has provided support for ozone studies.

Dave Finley: That PAW is the Petroleum Association of Wyoming. They provided that funding, not the Pinedale Anticline Working Group.

Jan Lydigsen: Oh, I'm sorry. My apologies. Ongoing efforts: We have a continuing field presence through inspections. We funded another season of work with the University of Wyoming in the Upper Green. We do in-house forecasting during the ozone season so we can predict, based on meteorological conditions when we expect to have elevated ozone. As we talked about before, drill rig permitting, Sublette County is funding an air toxics study, we're tracking the air quality commitments in RODs.

Dave Finley: In the fall of 2009 we'll...

Jan Lydigsen: The next slide, ongoing monitoring. The ongoing monitoring has shown that our conclusions about what causes elevated ozone are correct. The area of elevated ozone is limited in extent and it's the local emissions sources that contribute to the elevated ozone. We're working on developing a model, a working model to predict, help us understand the development of elevated ozone so that we can understand its formation and then understand what mitigation requirements would be affected in controlling the ozone formation. The model development has been a very time and resource intensive effort because the places with conventional ozone, the big cities in the summertime, it doesn't seem to predict the ozone in the Upper Green. However, we do expect to have our working ozone model by the end of this year. In May of this year, CURED filed a petition with the EQC to reduce the ozone standard in Sublette County to 65 ppb. A hearing was held in June in Rock Springs. It began a comment period which ended in August of this year. The EQC unanimously decided not to honor the petition, and they had maybe nine or ten reasons, but these are just two of them. They knew that the EPA was thinking about reconsidering the standard in September so they thought that it might be a good idea to wait until then. They also thought that now the AQD would be revising our standard and that would be a better time to reconsider the standard. On September 16, 2009, the EPA did announce a stay of the standard and only for the purpose of the designation area. The 75 standard is still in effect, but not for designation areas. EPA's schedule is to propose a reconsidered ozone standard by December of this year (2010) and have the final decision by next August. They're not using new data; they're just using the existing data to reconsider the standard. They're going to reconsider both the primary and the secondary standards. The primary standard is protection of human health and the secondary standard is the protection of resources, plants basically. This is sort of small, but this gives you the whole schedule and how it was changed from the original nonattainment designation area time table. As Tina mentioned before, if you look at the right side for SIP submittal, in black is the old SIP submittal date as March of 2013. This doesn't delay it 18 months or two years, it basically only delays it 9 months. So the EPA is proposing that the nonattainment process be condensed. Right now the primary standard is 75 ppb. If EPA leaves the standard at this level, the Governor may recommend the same area. If the ozone in the winter of 2010 remains well below 75, as it was in 2009, the Governor may want to readjust the proposed nonattainment boundary. If the standard is lowered to 70 ppb...

Dave Finley: Can you back up one, Tina? If the fourth high ozone at Boulder is 57, the new three-year average will be less than 75. Does that mean that the three-year period shifts forward a year? Is that what is contemplated? Okay. So now we know what the goal is for 2010.

Jan Lydigsen: Yeah, but that is only if the standard stays at 75. I don't know if that is likely.

Tina Anderson: That's not likely, and 57 is kind of...

Jan Lydigsen: 57 is background.

Ronn Smith: You already show 0.06 at Boulder for 2009.

Dave Finley: The first quarter?

Ronn Smith: The average says 45. I don't think you could get to 57.

Dave Finley: Okay, never mind. It doesn't get lowered as you accumulate more data through the year.

Tina Anderson: So that's the theoretical.

Dave Finley: Never mind.

Jan Lydigsen: If it was lowered to 70 and we just considered the data that we used in the Technical Support Document that we sent to the EPA with our proposed nonattainment designation, Daniel, Boulder, and Jonah would all be out of compliance.

Darrell Walker: Is that retroactive? If you propose a new one now, and you bring it to 70, that applies back to 2009, 2008, 2007, 2006?

Jan Lydigsen: The standard is a three-year average, so it would be the latest three years.

Darrell Walker: When you make a new standard, can you go back the two years or the three years? Or is that grandfathered?

Tina Anderson: You always take your latest three years.

Darrell Walker: The latest three years.

Dave Finley: Two of which would be back in time. See this one. This is one three-year average, 2005. So if it takes another year, the next three-year period will be 2007, 2008, 2009 that's all there. 2007, 2008, 2009, and 2008 was a big year.

Tina Anderson: We've got to drop off that 2008.

Darrell Walker: 2008 was the big year. I was thinking 2007 was.

Dave Finley: 2008 was.

Tina Anderson: The only hope is for lots of litigation so that the standard never gets set and we end up rolling forward...

Dave Finley: Not that we're suggesting lots of litigation...

Darrell Walker: What's this going to do to the rest of country if they lower this value?

Dave Finley: What's it going to do to the what?

Darrell Walker: The rest of the country. We're looking at the Upper Green River now, but in Salt Lake and Tulsa and all these in the summertime.

Dave Finley: Hang on, we've got another slide here that might help.

Darrell Walker: You've got another one coming, okay.

Jan Lydigsen: A lot of this data isn't QC'd yet. It's what was available. But if the standard was lowered to .07 ppm and using 2007-2009 data, it looks like Boulder and South Pass would be the violating monitors.

Dave Finley: Now this is interesting because South Pass is nowhere near the development area. It's on the end of the winds, pretty much.

Jan Lydigsen: But this is preliminary data, too. If the standard was lowered to 65 ppb, Daniel, Boulder, South Pass, and Thunder Basin would exceed the standard. And we don't have a full year's data in Boulder and Jonah, it's usually the January through March data that are the highest. In other parts of the state, some of the summertime values are higher. So using a whole year's data, Yellowstone might get pulled into this too.

Dave Finley: Thunder Basin is considered by us to be a regional background site. It's not located to measure the impacts of any kind of industrial development on air pollution. So Thunder Basin is arguably background, whatever background is. The third bullet, Yellowstone National Park, would certainly not be considered to be downwind of industry. So if you get lower and lower, more of these monitors begin to show exceedances. That's the message here.

Jan Lydigsen: The secondary standard is protection of the environment, but basically plant life. In 2007 the options for the secondary standard were the same as the primary standard or a cumulative seasonal standard which would be only the ozone measured during the daylight hours. I think it was 8:00 am to 8:00 pm and then it's weighted and it's a three-month average. In 2008 the secondary standard was set as identical to the primary standard. In 2009, if the EPA in their reconsideration makes it the same as the primary standard, then it won't have any effect on this. If they decide to change it to a cumulative seasonal standard, we could have exceedances in other areas based on the secondary standard also. Oh, yeah. 8:00 am to 8:00 pm, and the maximum consecutive three-month period. In 2007 the proposed range was 7 to 21 and the units are ppm hours. So I just looked to see if the standard was 7 ppm hours, which was the lower end of the range, and it looks like pretty much all of our monitors would have exceedances. This is 2008 data. I looked at 2007 data. It looks like Thunder Basin, Wamsutter, the Campbell County monitor, South Pass, Jonah, Boulder, Daniel, OCI, Yellowstone, and Murphy Ridge would exceed the standard. But this is the lower range of the proposed standard. I also looked at the middle of the range, 15 ppm hours, and based on 2008 data, only Thunder Basin and Boulder would exceed the standard. Moving forward, the Air Quality Division is planning a technical forum December 8 and 9 in Cheyenne. We've invited industry, academic, and consulting groups to come and share what we know about ozone formation and winter ozone modeling.

Dave Finley: We've invited public interest groups as well.

Jan Lydigsen: Yes. It will be a combination of presentations, panel discussions, and break out groups. Our overarching goal is to develop an episodic ambient air model or models which can be used to evaluate the effects of alternate emission reduction strategies on winter ozone formation in the Upper Green. That's it.

Dave Finley: Mr. Chairman, if I might, we're working on this winter episodic stuff, first because that is the thing that we know we have a problem with. We have one monitor in the Upper Green that does not meet the 75, the current Federal standard. It has lead the state to propose a nonattainment area. One of the things that follows from that is the state's duty or obligation to prepare a state implementation plan which sets out a bunch of actions that we will take in order to bring that area back into compliance. In order to do that, we need to have an air quality model that tells us, what the relationship is between allowable emissions from all of these sources and ambient air quality during the period of time when the standard is exceeded. In other words, the dead of winter in the Upper Green. Conventional models don't tell us that. You run a conventional model in the Upper Green and it shows highest ozone values in the summertime, which is what it's really supposed to do because that is what ozone models expect. They expect that ozone will be controlled by higher temperatures in cities, which occur in the summertime. So we need this in order to begin to develop the mitigation strategies. Now as people begin to talk about changing the standard from 75 to some value lower than 75, to me what that means is we are likely to have other areas of the state that fail to meet that lowered standard, whatever it is. Those areas won't fail to meet the standard because they're high mountain valleys in the wintertime. Those areas will begin to fail to meet the standard in the summer, in the traditional ozone season. So we will need ambient models that work in that condition as well. But the first thing we need, I think is the model that helps us answer the question of what do we do about emissions levels in the Upper Green River Basin to ensure that if we have another winter of 2008, in terms of the environmental conditions out there, can we lower the emissions enough in order to not exceed the ambient air quality standard? So we've been doing a lot of work on that. And we're aware of others who have been doing work on looking at ozone formation and modeling in those kinds of highly specific, episodic conditions. So in December we'll get together with everybody and their brother and we'll all bare our souls and talk about what we've learned, hopefully here, what other people have learned and talk about what we should do going forward to get to the end here, which is give us a model that we can use to evaluate mitigation strategies. That will be useful for the Upper Green. Clearly, I think in about a year, we'll get some information which suggests to us how big the problem is in the rest of the state. And we'll have to begin working on that as well. So there's a great deal of work taking place within the Division and elsewhere concerning how to deal with the ozone problem in Sublette County. And that is skimming the surface. That is a really high level discussion. But if you have the time and or the energy, I would consider coming to the December 8 and 9 meeting. There will be quite a bit of information that's shared, both from us to the regulated community and the consultants of the world and vice versa. I think we hope to put most or all of that information up on our website as well. We will have an ozone technical forum website. So if you can't free up two days to go to a riveting discussion about ozone, in Cheyenne in December, at or shortly after the 8th or 9th, you can look at our website to see what other people are saying and what we're saying as well. I think there's a lot of fundamental research going on here that will provide not only answers for our unique conditions, but we think this is going on

anywhere in the country where there's a valley with some sources and snow in the wintertime. They just haven't found it yet. So that's what we're after. Do you have any questions for us?

Bill Boger: In terms of the model Dave, who is actually involved in developing that model? The Air Quality Division, I assume?

Dave Finley: Yeah, we've contracted with TRC and no one is actually developing a model. We're using an existing model. The model we happen to be using is CALGRID. And that model was chosen for a number of reasons. The biggest reason is that it's able to accept highly customized wind field information in the front end. And you remember that one of the key conclusions we reached here about what controls ozone formation is, there has to be almost no wind. Very, very low wind goes this way for a bit of the day and then it comes back. Other models that are available are more regional in nature. And they use met information that is developed from satellite soundings, satellite data. And it's wind field information that's constructed from one or two measurements a couple hundred miles apart. So it's really grossly averaged wind information. And so it doesn't replicate that very slow, almost stagnant, wind information. So it doesn't do very well predicting the winter ozone values. So we'll talk about why we chose what we chose and we're not done yet, by any stretch of the imagination. If somebody has other help for us, or a better idea on how to approach this, we're certainly open to it. We didn't choose CALGRID because it's necessarily better computationally than any of the other models. The primary reason was its ability to handle these very, very complex and slow speed wind conditions, which seems to be a key. So nobody's really developing a model. It's just that we're trying to nail down information to feed the model so that it more closely represents the conditions that we see out there when we have high ozone values. And this model happens to be able to use all of the hundreds of thousands of dollars of met data that we've collected over the past three or four years. I mean we have a huge amount of data. So we know a lot about the conditions that exist during these episodic formation events. So this particular model happens to allow us to use that data.

Bill Boger: Thank you.

Darrell Walker: Mr. Chairman, I have some questions. On page four of your outline there, the forward trajectories. Is that all modeling data? It must be isn't it? I couldn't...

Dave Finley: Yes it is.

Darrell Walker: It is. Okay. And then the next one down.

Dave Finley: The back trajectories and the forward trajectories are modeled from these wind fields that I was just telling you about. A real good example of the difference between a regional scale wind field and an actual wind field constructed from measured data in the Upper Green is on one of those slides. Which one is it?

Darrell Walker: It's the next one below the one I was talking about.

Dave Finley: The one that has the red dots.

Darrell Walker: The red dot and the green dots.

Dave Finley: Yeah, the red dot is a back trajectory that's calculated from one of these regional scale models.

Darrell Walker: That's the one you said came out of Idaho.

Dave Finley: Yes, so that model has a wind field in it that has been created over these huge distances. It doesn't really see, to any great extent, the Wyoming Range.

Tina Anderson: It's upper level. It's way above.

Dave Finley: It's averaged over long distances. Typically the wind speeds are higher.

Darrell Walker: Is this more upper air than lower air?

Dave Finley: No, it's the model as it's showing what the air movement ought to look like at the ground surface.

Darrell Walker: It's at the ground. Okay.

Dave Finley: It's just wrong.

Darrell Walker: It's just wrong?

Dave Finley: It's wrong. It comes from this big computer program that takes satellite data. It takes data from National Weather Service soundings in Riverton, Salt Lake City, and Denver. Those three places. And then it averages that stuff throughout that entire domain. And it's wrong.

Darrell Walker: I figured that. Next one down, response actions. I'm told that when you did issue a warning, a lot of those companies shut down certain wells and rigs. When they do that, when they start up again, and I don't understand all of it, there's probably some people here that do, you can actually lose more VOC's and all that than if they kept running. Some do and some don't. But that's just something to keep in mind. The hands out in the fields told me that.

Dave Finley: We asked companies, when we went out to develop these voluntary contingency plans, to please tell us what you can do if you have one day of notice that we're going to have these adverse ozone conditions. What can you do to reduce emissions of air pollution. And there were a lot of different things that companies could commit to doing. Some companies suggested to us that if they were in the middle of drilling, for example, that they would create more emissions by shutting that drill rig off, because they have to trip that bit all of the way out of the hole. So they made the case to us that they could continue drilling. They would slow drilling down, but leaving the bit in the hole made more sense than completely

shutting the rig down. So all of that stuff I think was considered, Darrell, when companies made these proposals to us. Things that cause increases in pollution were not done. They weren't done.

Darrell Walker: Well if they shut down and the guys go home, I'm trying to remember all of this, if they do it on a Friday, then you're going to be working about three days, 24 hours a day, to get everything fired back up. It's just some comments I heard. So I don't know. But I'm sure industry knows.

Dave Finley: Well what really happens is a production company makes a decision to not do a particular activity, or to slow that activity down during the one, or two, or three day period where we tell them we have conditions conducive for ozone. So they have a contingency plan. They look at the plan. It says well we get this notice from the Air Quality Division. What that means is we're going to look around and we're going to slow these activities down. So what then happens is they notify their contractors that are involved in those activities that they don't have to come to work today because the Air Quality Division has told them they can't do certain things. So those contractors tell their employees that they don't have to come to work today. And then they give the employees Dave Finley's phone number. No, I'm kidding. They don't. But I have received input.

Darrell Walker: Well sometimes if you get input from the field, it's good information to keep in mind.

Dave Finley: Okay, I'll keep it in mind.

Darrell Walker: With the guys that are doing it. Not the guys that are sitting in the office in town. And the other thing in here on the next one down is you're saying this ozone thing is entirely a consequence of local emission sources.

Dave Finley: That's what we're saying

Darrell Walker: Would you bet your bottom dollar on that?

Dave Finley: I would.

Darrell Walker: That's what I wanted to know.

Dave Finley: I would bet every buck on my person right now. Every single buck.

Darrell Walker: No, that's fine. I just didn't realize the data's out there.

Dave Finley: It is. It's a dead virtual certainty.

Darrell Walker: Okay. Everybody heard that.

Ronn Smith: He's talking about the spike, not the baseline.

Dave Finley: I mean, yeah. You guys would be at 30 or 40 if nothing was happening.

Darrell Walker: Yeah. Background's at about 42.

Dave Finley: I'm not talking about all of the background, as associated with local sources. There's global background for ozone. You're not responsible for all of that.

Darrell Walker: But it could have an effect, is what I'm saying. And you're saying it doesn't have anything...

Dave Finley: Is there money involved?

Darrell Walker: You brought it up, I didn't.

Dave Finley: No, the highest values are the result of local emissions, that's what I'm saying.

Darrell Walker: I noticed one other thing in here too. You noticed funding. There's a health risk assessment that's going on in Sublette County that's not included in any of this. You're part of that.

Dave Finley: Yes it is. It's not listed somewhere?

Darrell Walker: I didn't see it.

Jan Lydigsen: I think we call it air toxics.

Dave Finley: It's called air toxics. It's listed.

Jan Lydigsen: It's on the 17th slide. It's not on page 17. I have different page numbers. It's the sixth bullet down.

Tammie Archibald: Slide number 17, air toxics study.

Darrell Walker: That's an ongoing effort. I just didn't notice it up above in the funding. That's close to \$1 million for one year. You put your money in and the County put their money in.

Dave Finley: Yes, it is part of the deal, certainly. We're going to be going to a meeting of the air task group that reports to the Pinedale Anticline Work Group, PAWG. And we're going to lay out all of the monitoring that's going on in that area, from all of these studies. UW, the Sublette County effort, our effort in the special winter studies, our effort in the long-term monitoring area. We'll lay all that out and talk about how all that stuff relates and how that data is going to be used to meet all these different purposes. And we'll do that in November.

Darrell Walker: Is that the 18th of November?

Tina Anderson: 19th.

Darrell Walker: The 19th?

Dave Finley: Yes.

Darrell Walker: That's when you'll do that.

Dave Finley: And I still haven't called Joel Bausman yet, to see if he wants something special for just the Commission or whether the.....

Tammie Archibald: CLG?

Dave Finley: Well there's that too. We promised the southwestern council of local governments.....

Darrell Walker: CLG.

Dave Finley: We're going to let the CLG members know of this thing, but we're going to tell them, I hope, that they don't have to drive to Pinedale.

Darrell Walker: You'll come to Kemmerer?

Dave Finley: We will go wherever it is they have their next meeting and we'll give the same presentation to them.

Darrell Walker: I think it's in November about the same date you're talking about.

Dave Finley: Hey, swell.

Tammie Archibald: Well that's also the one I was looking at, November 19, that I thought you were referring to.

Darrell Walker: That's the CLG.

Dave Finley: What?

Chad Schlichtemeier: The EnCana public hearing is the 18th.

Dave Finley: EnCana public hearing? Now we're on something entirely different.

Tammie Archibald: Yes, two different meetings.

Dave Finley: When is the monitoring meeting?

Gina Johnson: That's the 19th.

Tina Anderson: In the evening, so there's the possibility that you could meet earlier in the day on the 19th and that would be good, right?

Dave Finley: In Kemmerer?

Tammie Archibald: The CLG meets...

Darrell Walker: It's on a Thursday, whatever it is.

Tammie Archibald: Is it at 10:00?

Darrell Walker: Yes. 19th, probably. Thursday.

Dave Finley: So we would go to Kemmerer and do a meeting.

Darrell Walker: That meeting possibly could be changed to Pinedale.

Dave Finley: If the Commissioners would go to that one, there would be more room in the room for that.

Darrell Walker: On the 19th.

Gina Johnson: Dave?

Dave Finley: I shouldn't be in charge of this.

Gina Johnson: On the 18th you have a meeting in Casper with the Contractor's Association. And you have the Air and Waste Management Meeting in Denver on the day before that.

Darrell Walker: He can handle it.

Gina Johnson: I'm just saying, you know, because you're driving, so.

Dave Finley: Could we perhaps negotiate privately and then come back with a proposal for the PAWG thing too or CLG? Is that a yes?

Darrell Walker: Sure we can.

Jeff Snider: Do I have to ask the chairman to ask a question? I notice Dave does that. I'm interested in this Thunder Basin. Dave made the comment, and I think you made the comment too, that it's background. It's a good reference. But at the same time when you're playing with different scenarios about the secondary standard, I believe you showed that Thunder Basin was exceeding the 15 ppm hour threshold.

Darrell Walker: It's the same as Boulder.

Jeff Snider: Maybe the other one there was Boulder. You probably took note of that. My question is just it seems like, is there a lack of knowledge or a bit of inconsistency with the one that's exceeding is a background site.

Dave Finley: Mr. Chairman? Historically, we've considered it to be a background site. I'm not sure it continues to be a background site. I'd have to consult with Cara Keslar. There is CBM development west of there.

Tina Anderson: I think what her response has been is we haven't been able to study this Thunder Basin situation very well yet. We've spent a lot of time and money on Sublette. And we have not done that in the Thunder Basin area. I think lack of knowledge might be...

Dave Finley: I can't, I don't have a picture in my mind of, you know, where's the CBM development, and where is Thunder Basin...

Jeff Snider: Where is Thunder Basin, if you could help me just with that?

Dave Finley: It's about 40 miles north of Gillette.

Darla Potter: It's in the northern unit of Thunder Basin National Grasslands.

Ronn Smith: Up by Weston.

Dave Finley: So it's north, the northern part of the mining district, right?

Ronn Smith: Up by Weston.

Dave Finley: So it's not in the mining district.

Jeff Snider: It's off Interstate 90? South of Interstate 90?

Ronn Smith: It would be east of the road that goes to Miles City.

Dave Finley: How about we can get you, for tomorrow, we can get you a map of the Thunder Basin site and perhaps the CBM activity.

Jeff Snider: I think that's just an interesting point. That when you start to play with these different scenarios, particularly with the secondary standard, which is the one that is maybe not so directly impacting human health, if I understand correctly. You said plants?

Jan Lydigsen: Right.

Jeff Snider: And it's an integrated quantity, just fascinating.

Dave Finley: Mr. Chairman, it makes sense to me that if that standard were adopted, it would be applied in areas where there are sensitive ecosystems, like National Parks. But I don't know how a secondary standard is applied. I don't know if we measure a value exceeding the secondary standard in downtown Cheyenne, and that secondary standard was, you know, put in place so that it preserved Pine Beetle habitat, why would you apply it in downtown Cheyenne?

Jeff Snider: Just to stay on the subject, the newsletter has nothing to do with ozone or nonattainment, but there's a graphic here that shows all of the areas in the United States. I hate to be like Joe McCarthy. I'll let you all see this. But all of California nearly is a nonattainment area as far as ozone. It would be interesting...

Dave Finley: For the secondary standard?

Jeff Snider: I don't know which one. So it would be interesting to see what tripped.

Tina Anderson: It's probably the primary because the secondary and the primary are the same right now.

Jeff Snider: Okay. Well then it would be interesting to see this map if somebody would consider that, not you guys, but just in general, on a national level, see how the number of nonattainment areas increases with the change in the standard, and does it say we're all really close to a threshold nationally, as far as ozone goes?

Dave Finley: Mr. Chairman, EPA has published such a map, but it only shows the impact in a county where there's a monitor. So the map looks like a big, broad area of the western area of the United States remains in attainment at 75. The same big, broad area remains in attainment at 70. The same big, broad area remains in attainment at 65. And there are only isolated areas that are not in attainment.

Jeff Snider: Yes, this one looks a little bit like that too. But you can see it's centered on the cities, because there's lots of monitoring.

Dave Finley: But it's only because it's only showing the counties where there's a monitor.

Jeff Snider: Well they must do a lot of monitoring in California, then. Because two thirds of the surface area is nonattainment.

Dave Finley: Good for them. Keeps the focus on California.

Darrell Walker: That's one of their minor problems.

Tina Anderson: Well, on the east coast, there were 28 states that became part of the ozone transport region. Because they couldn't sort out who was causing whose problem. In fact, many of them sued each other. So they formed an ozone transport region on the east coast. And something similar may happen with the west. When you get that many areas that have gone nonattainment, it gets confusing.

Dave Finley: It begins the fight among states about who caused it?

Jeff Snider: Looks like maybe Cheyenne is going to be suing the Front Range, because there's nonattainment areas just south of the border there.

Dave Finley: No, the border of that nonattainment area is straight. It doesn't show any impacts beyond the state line. And I think that's probably correct.

Jeff Snider: Yeah, you're right.

Dave Finley: Any more questions, Mr. Chairman.

Bill Boger: I have no questions. Bruce?

Bruce Pendery: If I could make some comments on this ozone issue, I would appreciate that. I've prepared these comments, Dave, this is your set. And this is for the board. The only reason they're so long is that I've included a copy of our petition. My actual comments are only two pages long. So I won't take up the rest of the afternoon. I'll just read my written comments here. It will track a lot of what has already been said, really. So I'll just go ahead and dive into it. As you know, last spring several citizens and organizations from the Upper Green River Valley in Sublette County submitted a petition for rulemaking to the Wyoming Environmental Quality Council, where they asked the EQC to establish a primary Wyoming ambient air quality standard for ozone that was more stringent than the national primary standard. I was the lawyer who represented those citizens and was the primary author of that petition. They asked that the primary eight-hour ozone Wyoming ambient air quality standard be set at 65 ppb rather than at the current national standard of 75 ppb. But on August 24, 2009 the EQC issued an order of denial that dismissed the petition. But it appears the question of what is an appropriate ozone standard is still alive given the EPA's apparent plans. In the notice that the EPA filed with the Washington, D.C. US District Court on September 16, 2009, EPA stated that it will provide a notice of proposed rulemaking by December 21, 2009 and will sign the final action on this proposed ozone rulemaking by August 31, 2010. It seems quite likely that the EPA will move toward adopting a stricter primary standard and it may well also move to adopt a secondary standard for ozone that is distinctly different than the primary standard. While the EPA has not stated what the level of the standard will be in its proposal, it seems very likely it will move toward a primary standard that is more stringent than the current 75 ppb. In its notice filed with the court, the EPA stated it "has concerns regarding what the revisions to the primary and secondary national ambient air quality standards adopted in the ozone NAAQS rule adopted in 2008 satisfied the requirements of the Clean Air Act." In a news article published in ENE news on October 12, it was reported that EPA Assistant Air Administrator Gina McCarthy "vowed to ensure the best science drives the reconsideration." Thus, it seems very likely that the current primary standard will be made more stringent. The science supporting a more stringent standard is overwhelming. This fact was discussed in detail in the petition for rulemaking we filed with the EQC and I've left a copy of that with you today. Most significantly, the EPA's own expert advisory committee, the Clean Air Scientific Advisory Committee, or CASAC, unanimously recommended that the primary standard should be set between 60 and 70 ppb in order to adequately protect the public health with the adequate margin of safety that the Clean Air Act mandates. As shown in our petition, and in another document that I have left with you, in

addition to the CASAC, other organizations supporting a standard that is more stringent than 75 ppb include the American Lung Association, the EPA's Children's Health Protection Advisory Committee, over 100 PhD and MD level scientists, the American Thoracic Society, the World Health Organization, the American Academy of Pediatrics, and the American Medical Association. Thus, when EPA's Gina McCarthy vows to use the best science in establishing a new rule, it is very likely, I would say almost a given, that EPA will move to set the primary standard at somewhere between 60 and 70 ppb, as recommended unanimously by the CASAC. I am betting on a primary standard of 70 ppb, slightly higher than the standard we petitioned the EQC to establish. I note that in dismissing our petition, the EQC did not do so because it disagreed with our claims that the science supported a more stringent standard. The dismissal occurred solely because the EQC concluded that others, including DEQ, industry, and the EPA were taking sufficient action to address ozone problems, and its dismissal was specifically partly predicated on a finding that "in the fall of 2009, the Department will propose an amendment to the ozone standard rule that will reduce the current state standard from 0.80 ppb, they should have said parts per million, to a lower standard, depending on the actions of the EPA and the US District Court of the District of Columbia. But in addition to establishing a more stringent primary standard, it seems likely EPA will move to establish a distinctly different secondary standard. While primary standards are set so as to protect the public health, secondary standards are set to protect human welfare. Currently, both the state and national secondary standards for ozone are set at the same level and in the same form as the primary standard. In its proposed rule during the last ozone rulemaking, EPA proposed two alternative secondary standards, one of which would have established a cumulative seasonal standard, expressed as an annual sum of weighted hourly concentrations between 7 and 21 ppm hours. And the other option was to set the secondary standard identical to the primary standard. In the final rule, EPA chose to set the secondary standard at an identical level and in an identical form to the primary standard, that is 75 ppb over the fourth highest eight-hour annual averaging period. The CASAC objected to this decision and stated "keeping the same form for the secondary ozone NAAQS as for the primary standard is not supported by current scientific knowledge indicating what different indicator variables are needed to protect vegetation in compared to public health." While some have said that the refusal to set the primary standard at a level between 60 and 70 ppb, as recommended by the CASAC was a political decision, the decision related to the secondary standard was clearly a nakedly political decision. In a remarkable exchange of memos between the Office of Management and Budget and EPA, in a decision ultimately made by the President himself, the OMB overrode the EPA's professionally stated view that "at this point the EPA believes that a secondary standard that is distinctly different in form and averaging time from the 8-hour primary standard is necessary." And EPA "believes the ozone related effects on vegetation are clearly linked to cumulative seasonal exposures and are not appropriately characterized by the use of a short-term 8-hour daily measure of ozone exposure." Thus, given EPA's commitment to basing the new rulemaking on the best available science, it seems likely that in addition to establishing a more stringent primary standard, it will also move to set a distinctly different secondary standard, so as to adequately protect human welfare. I'll close here. This brings me to the primary point I'd like to make today. The Wyoming Ambient Air Quality Standard for ozone is still set at 80 ppb a year and a half after EPA revised the rule setting the national standard at 75 ppb. Yet now EPA is going to again revise the standard. A new rule will be in place by next August. Thus, my request of the Air Quality Advisory Board and of the DEQ is this: this time let's make sure the State's rulemaking machinery is in sync with and timed to coincide with the national rulemaking. Let's make sure that when EPA sets the new standard next August, the State does the same thing at the same time, relative to the state standard or at least does so very shortly thereafter.

This is especially important as the State has requested the Sublette County area nonattainment with even the current standard, due to the high ozone levels in the area. Ozone has clearly become a significant problem in Wyoming. It is not acceptable in our view for the State rule to languish a year and a half behind the national rule. This should not happen this time around. Given the extraordinary ozone levels that have been seen in the Pinedale area due to the oil and gas development there and possibility that similar problems could develop elsewhere, it seems crucial to us to ensure that the state environmental regulatory standards are at least as stringent as the national standards. And this board and the DEQ should ensure this is the case. There is no doubt that ozone poses severe human health and welfare risks. So making sure we have appropriate standards in place in a timely basis must be assured. Thank you.

Bill Boger: Thanks Bruce. Further comment? No further comment.

Dave Finley: I wouldn't tell anybody if you adjourned ten minutes early.

Darrell Walker: I move we adjourn.

Ronn Smith: Seconded.

Bill Boger: So we'll reconvene tomorrow morning at 8:00 am.

October 27, 2009

C. Continuation of October 26 items

Bill Boger: Welcome to the second day of the Air Quality Advisory Board Meeting. Make sure everybody who wasn't here yesterday, I guess, does sign in on the sheet up front there. Before we go on with some of today's topics, I'd like to go back. We need to consider the recommendations to move the proposed rule changes onto the EQC and Governor's office. Before we do that though, I think there's some outstanding questions with respect to Chapter 6, one being Section 10, the nonattainment permit requirements, incorporation by reference. And then also in Chapter 6, there is a provision which is new that includes monitoring or considering condensable particulate matter to be accounted for in the applicability determinations, on or before January 1, 2011, and as of today, no way of measuring that. So as these go forward, just a recommendation to make the EQC aware of that fact through a statement of reasons for that provision.

Dave Finley: Mr. Chairman, we can put some language in the statement of principle reasons for adoption that recognizes that Chapter 6 has a rule that needs a corresponding test method in order to be implemented and that we should work with industry and EPA to ensure that there are methods available to implement that rule before we enforce it. And we can certainly do that.

Bill Boger: Thank you.

Dave Finley: If that would be part of your recommendation.

Bill Boger: The second item here is the incorporation by reference of the Federal nonattainment rules. I guess on that subject, maybe you could provide a little bit of clarification. We talked yesterday about customizing or tailoring the state rules or incorporating them possibly into this. So I guess, how do we want to proceed on that, in terms of the timing to put together a tailored, I mean do we want to consider holding back Chapter 6 at this time?

Dave Finley: Mr. Chairman, my recommendation would be that you would recommend that, to the Council, that we adopt the nonattainment NSR permitting rule as proposed. It's a verbatim adoption of the Federal nonattainment NSR permitting rule that's already in effect. So, for example, were EPA to change its apparent direction and say to the State of Wyoming, well we're going to act on your nonattainment petition, and yes, the entire Sublette County is a nonattainment area, then the outcome of that would be, the State doesn't have the set of permitting rules that apply to measure sources in nonattainment areas. So, while I don't see a major source being constructed tomorrow in Sublette County, adopting the rule as a state rule, I think, is a reasonable thing to do to preserve for the State the ability to consider an issue of a major permit in a nonattainment area, instead of having all other permits issued by the state, but the major permit issued by EPA Region 8. There was additional discussion yesterday about customizing the Federal rule. And let me speak a little bit about that. There are some places in the state's existing Chapter 6 section for permitting requirements for major sources that differ from the Federal major source permitting requirements. Those permitting requirements that are currently in effect right now in Chapter 6, Section 4 are attainment area permitting requirements. And for various reasons, when those rules were promulgated a number of years ago, they were tailored to fit Wyoming's circumstances. And I think we should look at the Federal nonattainment permitting rule, the one you have in front of you, 51.165. We ought to look at that and ask the question: Do we want to have that rule in effect exactly as written at the Federal level? Or are there some areas of that rule that we want to propose modifying for permitting of major sources in a nonattainment area in Wyoming, and do we want to customize that rule, I guess is the basic question. But we can certainly do that. And I think it would be responsible for you folks to recommend adoption of the federal rule, just to plug the hole, in case there is a major source that does apply for a permit in a non-attainment area in Wyoming. But in a similar manner, either you direct me or ask me to bring a custom rule or statement that we don't need to customize that rule, back to you as soon as we are able. But I do think that it's a good idea to plug that hole and get that rule into our state rules. So I would recommend that you forward that rule to the Environmental Quality Council. It was part of the package that was presented for public comment. And I don't think we got any comments on that. So, again, it's in effect now at the Federal level. If we had a nonattainment area and a major source wanted to build a facility in a nonattainment area in Wyoming, that rule would apply, except the State wouldn't implement it. EPA would implement it. And I do think it's a good idea to move that rule into the state rules, again, to fill the gap in our rule. We simply don't have the nonattainment NSR permitting requirements in our rules. We should. So I would recommend that you send it forward.

Ronn Smith: Mr. Chairman, I would move that we recommend approval of the proposed changes.

Tammie Archibald: I second.

Bill Boger: It's been motioned and seconded. So the proposed rules will move forward.

Dave Finley: Mr. Chairman, may I ask, does that motion cover all of the chapters presented to you yesterday?

Ronn Smith: Yes, the entire package.

Bill Boger: And then I would further ask, I guess, that the Division go back and maybe by the next meeting, determine whether or not we want to move forward with customizing the section 10, the nonattainment permit requirements with the State plan.

Tina Anderson: Can I comment on timing, there? We talked about coming back and commenting on where we are on oil and gas, coming back in January. That's only a couple of months from now. I don't know if we're going to have the whole picture, with the nonattainment.

Dave Finley: Mr. Chairman, could we provide a report to you at the next meeting, instead of providing the final finished product on our status?

Bill Boger: That sounds good. That sounds fine.

Tina Anderson: We can do that.

Dave Finley: Thank you. Did we get a vote, Mr. Chairman?

Bill Boger: We need to vote on this. All those in favor say aye. All those opposed? (No opposed). The motion carries. That moves us to the next agenda item. And that's a discussion of the status of the planned revisions to the Oil and Gas Permitting Guidance.

D. Status of Planned Revisions to Oil and Gas Permitting Guidance

Dave Finley: Mr. Chairman, Cynthia Madison is going to talk to you about where we are on revising the Oil and Gas Presumptive BACT Guidance. As you may know, we have a unique program in the State of Wyoming that applies BACT requirements, best available control technology requirements, to oil and gas production emission sources on a category-wide basis. So we do a BACT analysis for those sources and we publish guidance. We say here is our BACT determination for sources that fit within these categories of air pollution sources. And if companies choose, they may build those sources and comply with those BACT requirements, which are presumptive BACT requirements. They can always come in and get a permit from us on a well-by-well basis, if they don't agree with the presumptive BACT requirements, and we will review their permit application on a well-by-well basis. And we will apply BACT to that individual well and issue that permit. The benefit to companies under the presumptive BACT system is that if they agree to install the controls that are specified in the presumptive BACT guidance, they can build and operate the source and then follow up with a permit application confirming that they have constructed the source with the appropriate BACT controls on it. So it's an extremely valuable regulatory tool that we have. We started BACT back in, are you going to tell me...

Cynthia Madison: 1997.

Dave Finley: 1997. This approach, you need to know that BACT is not a standard. But it's a process by which an emission limitation is arrived at. It's an analysis that requires permit applicants and the Division to look at available pollution control equipment for sources. And to systematically go through a process to choose emission controls that apply to a particular source. Because control technology is always evolving, it's always getting better, the BACT process results in the selection of, I think everyone would agree, more stringent kinds of pollution control requirements. Because the technology changes, a BACT review that we do on a source today is probably different from the BACT review that we would have done on that source a year ago. So, in the area of oil and gas production facilities, we approach BACT the same way as we do for other sources in that we understand that technology changes and there are opportunities for more and better pollution control requirements. So we review our presumptive BACT guidance periodically. It turns out we've issued six, are we on our sixth or fifth?

Cynthia Madison: This will be the sixth change.

Dave Finley: So we are currently operating under the fifth revision to the presumptive BACT guidance document that was originally issued in 1997. The current version was issued in August of 2007. And shortly after that version was issued, we launched a subsequent BACT update review. And it's taken us a year and a half so far, I think, to get to this point where we are about to propose the sixth revision to the presumptive BACT guidance document. We typically work with permit applicants on establishing BACT requirements. So we have worked with industry on what is the cost of these requirements, what are the technical capabilities of pollution control systems. And we do that so that we can collect information to do a BACT analysis or to revise the BACT analysis that's present in the August 2007 guidance document. We're almost there, but I thought it would be an appropriate opportunity for this meeting for you to hear where we are with the revisions that we're talking about making. I'm very hopeful that we will finish the data collection and analysis part on the remaining pieces of this proposed revision in time to bring you a final BACT guidance revision document at your January meeting. And I'm looking at Chad to see...

Chad Schlichtemeier: That's our schedule right now.

Dave Finley: That's our plan. So you should see us back here in January with what we would recommend to you as a final version of this guidance document. And then at that point we would ask you to hold another hearing to receive comment on what we want to adopt as a final BACT guidance document. And to approve that document. But today, this is mainly a status update. I think if you chose, you could certainly open the discussion up for comments on what Cynthia is saying. But we'll have another opportunity for formal comments in your January meeting. With that, I would suggest we launch Cynthia.

Cynthia Madison: I think another important point that Dave would need to make is that with this proposed revision, we are considering adding areas of concentrated development, where the BACT requirements would be more stringent than they are for the rest of the state. And the reason we are doing that is to be proactive instead of reactive to issues like those in the Pinedale area, where infield drilling is causing some impacts, you might say. So what I'm going to show you up here is a comparison. On the left side of the slide, it details what the guidance says now, what it requires right now. And on the right side its proposed revisions. This is for the Jonah/Pinedale area, where in 2004, we added specific guidance for what we called the Jonah Pinedale Anticline Development Area. We have not proposed any

changes to requirements for flashing emissions, which currently all wells started up in the Jonah Pinedale area have to have emission controls on their tanks for flashing emissions upon start up. Currently, we allow removal of the controls on flashing emissions once the VOC emissions from flashing have declined to 15 tpy. We're proposing to lower that removal threshold to 8 tpy. Same for a modified facility, which is any facility where more production, more wells, more equipment is added. The tanks need to be controlled on start up. And we're proposing to change the removal threshold down to 8 from 15.

Darrell Walker: And that's feasible, according to the industry to reduce that 50 percent? I mean that's great if...

Cynthia Madison: Well it just means leaving the control on longer.

Darrell Walker: You're just leaving it on longer? Ok.

Dave Finley: Mr. Chairman, the wells typically in the Jonah Pinedale area don't decline to less than 15, so they're high production wells.

Darrell Walker: The equipment would be on them all the time.

Dave Finley: The equipment would be on whether, in my view, whether it's 15 or whether it's 8. We're really making the change to 8 because that's a change that we are proposing statewide. And it didn't make sense to have a less stringent requirement for the highest production wells in the state. So really...

Cynthia Madison: It's just to be consistent with the other thresholds.

Dave Finley: With the other thresholds.

Darrell Walker: But otherwise that's turned around in the rest of the state. Just the opposite if you go from Pinedale to somewhere else.

Dave Finley: Yes, unless we fix it.

Darrell Walker: Okay.

Cynthia Madison: For dehydration units in Pinedale currently, all dehydration units must be controlled upon start up at new and modified facilities. And we're not proposing any changes. Currently in Pinedale we require that all pneumatic heat trace pumps, and these are pumps that use gas to operate, natural gas, all of the gas used to operate the pump is vented to the air. And that gas contains the same emissions that the flashing emissions contain. So we do require that those be controlled on startup at new and modified facilities and we're not proposing any changes.

Dave Finley: These are like, picture a piston driven pump on a steam locomotive. Every time the pump cycles there's a puff of steam as it cycles. That's what these pumps look like.

Cynthia Madison: We are proposing changes to other pneumatic pumps. At a typical well site, the larger pneumatic pumps which require control now release a lot more VOC emissions than the other smaller pumps, because they're just larger pumps. Well the other smaller pumps that are used are for chemical injection or methanol circulation. And we have not required that these be controlled to date. We're proposing to change that, that the rest of the pumps on those sites be controlled upon startup of new and modified sites. Another alternative, which isn't something we're requiring, but which would solve the whole issue is that solar pumps be used. These are pumps that operate on solar energy rather than natural gas. Or that electric pumps be used. But in the Pinedale area there is no electricity, so that's probably not an option. There are solar pumps made right now that some people do use for methanol injection.

Dave Finley: This is one of the areas that we're trying to get additional data on.

Cynthia Madison: We've asked for additional information on what are the limitations of the solar pumps that are out there. Are there pumps big enough to do what needs to be done?

Dave Finley: The reason this factors into our BACT analysis is we could simply say, use solar pumps, but if it's a large pump and it takes a two acre solar array to run it, then that impacts the costs. And part of a BACT evaluation is, what are the costs of implementing these controls. So we really do need to get some information on, are there practical limitations on how many of these pumps can be run on solar power.

Cynthia Madison: Pneumatic controllers are different devices that are operated on natural gas to control things like temperature of vessels, pressure of vessels, fluid levels in vessels. And every site has quite a few pneumatic controllers. And these also operate on natural gas, venting all of the gas they use to make their operation occur. Well there are available, what they call low bleed, or no bleed pneumatic controllers. And obviously the emissions from those are lower than the standard pneumatic controller. So we are proposing to require low bleed and no bleed or air driven controllers be used in place of these older high bleed pneumatic controllers.

Dave Finley: I don't imagine that there are any of these left in Pinedale. Do you think?

Cynthia Madison: The high bleed?

Dave Finley: Or there are very few of them.

Cynthia Madison: I know that some of the operators in Pinedale are switching over to low bleed/no bleed to come up with VOC offsets that are required right now. But I don't know that they've all been replaced.

Dave Finley: Okay.

Cynthia Madison: Truck loading emissions are those emissions that come from the truck tanks as fluid fills the trucks, which are used to haul the condensate production away from the well sites to haul it to sales lines or sales stations. We initially were thinking of requiring that those truck emissions be

controlled. But we did get quite a bit of feedback on that and most of the feedback was that this would bring up some pretty severe safety issues. So we have decided not to propose that truck emissions be controlled, unless, and I'll get to this later, unless the total VOC emissions associated with that operation would exceed 8 tpy VOCs, which is pretty uncommon.

Bill Boger: Cynthia, currently though, there's no technology? It's a safety issue.

Cynthia Madison: There is technology and it's used mainly at large gasoline loading stations and refineries. But it's not really a portable technology. And you would be relying on truck drivers to be routing some explosive gases to a combustion source. And that's not something that the average truck driver is going to be too well trained in. It would require more supervision. And with all of the loading that goes on at some of those well sites, I don't know...

Unknown: Three or four trucks a day.

Dave Finley: The other thing that is happening in Jonah and Pinedale, in Pinedale in particular, liquids gathering systems are being installed. So truck loading is ceasing. In the Jonah field, EnCana is evaluating other means of controlling or handling liquids. So in the Jonah and Pinedale area, I think that truck loading emissions are going to be a diminishing source as we go forward.

Cynthia Madison: All right. Currently in the Pinedale area, since 2004, I think it was 2004. We began issuing permits to individual companies for all of their well completing operations. And we call them green completion permits. Right now the Jonah/Pinedale area is the only area in the state where the operators have those permits. We're not proposing to change that. But what we are proposing to do is require emission controls on the produced water tanks. There is condensate carry over into the produced water tanks because you can't always separate all the condensate out of the produced water. And so the same emissions end up coming off the water tanks that come off of the condensate tanks. These are flashing emissions, VOCs, and HAPs, hazardous air pollutants. Although the emissions from water tanks are a lot less than condensate tanks, they still are there. And we're currently seeking information from companies to get an idea on exactly how much, what the average condensate carry over in their fields is to help us determine whether it's mostly economically reasonable to replace the controls on these tanks, the same controls that are on the condensate tanks.

Dave Finley: This is one of the other areas that we have to have more information in order to nail down what our recommendation for BACT requirements are. This is a difficult area, I think, because the amount of oil that gets carried over into a water tank really depends on how effectively the separation equipment operates.

Cynthia Madison: It can depend on the operator. It can also depend on the well, because a lot of wells, don't just continually flow an even mixture of water, gas, and oil. They slug. So if a well is slugging a whole bunch of fluids, it might overwhelm the separation equipment and therefore, there's going to be more carry over into the tanks.

Dave Finley: So it's difficult to have a single equation that says this amount of oil goes into a water tank for every gallon of condensate that is produced. So that analysis isn't going to be straightforward.

Cynthia Madison: And what this would involve in the Pinedale area, and most other areas also, is at a well site facility, all of the water tanks and the condensate tanks are grouped together. When the condensate tanks have emission controls on them, they pipe the vents together and route those vapors to a combustion device. Controlling the water tanks would just involve connecting the water tank vent lines to the condensate tank vent lines and going to the combustor along with the flash emissions. This is another issue where we need to get some more information. There's a lot of reasons that operators will blowdown wells, or pipelines, or vessels. For wells, the two reasons to blow them down are to relieve, to push away ice blocks that accumulate in the lines. Or two, empty wellbores of fluids that build up. When the fluids build up the gas is not able to come to the surface. So they have to blow the well out. Other reasons to blowdown equipment or wells would be if a well was going to have some down-hole work done, they would want to get rid of all of the fluids and the gas in the wellbore. If there was going to be startup or shutdown of a facility, the pressurized vessels would need to be blown down. And blowdown happens quite a bit out in the field. I don't think anyone keeps track of just how much gas is blown down. But there are reports that quite a bit of it does go on. So we are proposing or considering proposing that either all, none, or some of these blowdown events be controlled by routing the blown gas to typically a combustor or flare, to burn it instead of vent it. Because when you burn this gas, the VOCs are essentially eliminated by about 98 percent. And the result is a little bit of NO_x and a little bit of CO, which is better than a whole bunch of VOCs. But again, there are safety issues here. When an operator needs to blow an ice plug out of a line, it needs to be blown down as quickly as possible and with no resistance. When you have 1,000 or so pounds blowing an ice block into a flare, that's going to cause problems. Some of the planned blowdowns, though, it would be more realistic to require that gas be flared because it could be a controlled venting situation. It's not a wild venting situation. But we're still waiting to gather information on what the operators feel, what blowdown operations could be safe to control. And also, how would those volumes be measured? How are they measured now and how would they be measured if we required that they be controlled. Who's going to say, well if you blowdown 500,000 cubic feet, you've got to put a flare on it. And how are you going to tell if it's that much or less?

Dave Finley: Mr. Chairman, do you understand what blowdown means? A blowdown is a rapid release to the air. It could be called blow venting, instead of blowdown. But that's what it is.

Cynthia Madison: Several years ago, right after the last guidance was revised, we began discussing areas of concentrated development. And with the last revision, we did not adopt any special requirements. But we did bring the topic up and we've been thinking about it for awhile. Well this time, we are proposing to go ahead and name some areas of concentrated development where emission control thresholds would be lower than for the rest of the state. The areas in Wyoming that are concentrated development are probably 99 percent gas development. And they're also located in the bottom southwest corner of the state and a little bit up around the Wind River Indian Reservation. We had initially drawn some polygons around the areas that would enclose fields where there's a lot of infill drilling going on and there is probably going to continue to be a lot of infill drilling. We haven't totally decided what areas we're going to be calling concentrated. But we've gotten some feedback that it would probably be easier for the operators and for the permitting engineers to just call this whole quarter of the state concentrated. So when we get permit

applications, we don't have to look at whether this well is 10 feet outside of the boundary that's concentrated. Because you can see, obviously, that there's concentration here, but what about that well? Is that not in the concentrated development area, or is it? So we're leaning towards including the five counties of the southwest corner and part of this area is concentrated areas. Now this is the requirements that we're proposing for concentrated versus the current requirements, which is currently the same as statewide. Unless you're in the Jonah/Pinedale area, right now, the left column here shows what BACT requirements are. For flashing emissions from a new facility, right now the control threshold is 20 tpy VOC. And the control must be installed within 60 days of startup. And removal can occur when VOC emissions decrease to 5 tpy. And the reason emissions decrease is because production decreases. Flashing emissions are proportional to production.

Ronn Smith: Is that 5 or 15?

Cynthia Madison: I'm sorry, it's 15. I did get your comments and I did change it in the notes. We're proposing to lower the control threshold to 8 tpy and that the controls must be in place within 30 days of startup and that removal can occur when emissions decrease to 8 tpy. So we're dropping the control level from 20 to 8 and the removal from 15 to 8. And the same requirements for a modified facility are proposed. For dehydration units, the current limits or current control thresholds are 5 tpy HAPs and 15 tons of VOC with controls in place within 60 days of startup. We are proposing to lower the control thresholds to 6 tons of VOC, not HAPs, but VOC. And that the control be installed within 30 days of startup. We are also seeking information from operators on the effectiveness of using glycol flash separators in addition to condensers to eliminate a certain percentage of emissions from all dehy's instead of using combustors. The emissions that you get from dehydration units are when the wet gas passes through a tower of glycol, the glycol sucks out the water which also brings with it VOC and HAP components. And then the glycol is regenerated in a reboiler. When it's heated up, all of the contaminants come out of the glycol so they can reuse it. And those contaminants come out through a reboiler still vent. Right now the most common way to control or eliminate those emissions is by putting a condenser on those hot vapors and then routing the non-condensable vapors to a combustor, which achieves 99 plus percent control. If we have several thousand combustors out there in the northwest corner of the state, that's probably not going to go over very well with certain groups.

Dave Finley: Me.

Cynthia Madison: You?

Dave Finley: I would be the group.

Cynthia Madison: So instead of sticking a combustor and a condenser out there, there are other ways to reduce emissions. And that would be to install a flash separator where that contaminated glycol passes through a vessel where the pressures drop that allows the contaminated gases to flash out of solution. Then you route those to the reboiler burner, use it as fuel, and then add a condenser to knock out a lot of the other vapors that weren't knocked out in the flash separator. Does that make sense to you?

Dave Finley: I think one of the issues here is that you probably can't get to 98 percent control.

Cynthia Madison: Not all of the time.

Dave Finley: So it may make sense for certain dehy's that operate that are projected to have a certain emissions grade to lower the destruction efficiency requirement to allow the use of this other kind of control technology, while retaining perhaps a combustor for the higher volume dehy's.

Cynthia Madison: And this equipment, the flash separator and the condenser are in general a lot easier to operate because the wind doesn't blow the flame out, and that does happen a lot on the combustor, as you know. It's kind of windy in Wyoming. It's hard to keep those things lit. Well these things don't have moving parts, so I think they would probably be more effective, overall, if they were used on a lot of dehy's as opposed to some dehy's with a condenser and a flare, which is probably blown out quite a bit of the time.

Dave Finley: If we stick with a rigid 98 percent control requirement, that means combustors. And there's a certain cost associated with a combustor. So when you try to do a BACT analysis and apply that cost to a very low rate dehy unit. It's not producing very much stuff. It's hard to conclude that a combustor is justified as a BACT requirement to control a small amount of VOCs or HAPs. But if you're open to allowing the use of this stuff for those smaller dehy's, this stuff costs less than a combustor, and so we can justify applying these kinds of controls to dehy's with lower emissions, than if we insist upon it's got to be 98 percent, no matter what. So we're trying to look at, is there a good break between the dehy's that should retain the 98% destruction efficiency requirement and dehy's that perhaps go to 90% to allow this kind of equipment to be used. And we'll answer those questions for you fully and completely by January.

Darrell Walker: This does not apply to that dehy unit like Exxon's west of Piney?

Cynthia Madison: No.

Darrell Walker: That's a total different thing?

Cynthia Madison: The big dehy's? No. This just applies to all the individual well site dehy's. Currently in the concentrated development areas and statewide there are no control requirements for any of the pneumatic pumps and we are proposing that at sites where the tank emissions are controlled, the pneumatic pumps be vented into the control collection lines. At sites where there are no tank emission or dehy emission controls, we are proposing they use solar pumps, electric pumps, or air driven pumps in lieu of the natural gas pumps. But again here, we're seeking information on what kind of pumps are available and will they do the job that needs to be done.

Darrell Walker: Did you look at a percentage of what you're going to reduce by, when you do this?

Cynthia Madison: These pumps each vent between 1 to 5 tpy, and there's thousands of them out there. And when they are routed to an existing control, you get 98 percent reduction of those emissions because you burn the vented gas.

Dave Finley: I have to interject here that based on some cooperation from the industry, I think this BACT revision that we're talking about today is much improved over previous BACT revisions because we now have tools to allow us to evaluate on a field-by-field basis what wells are producing in terms of VOC and HAP emissions. So when we propose, for example, 8 tons of VOCs as a control threshold, we can now look and see what percentage of new wells would be controlled if the threshold was 8 or if the threshold was 10. In previous BACT revisions we were pretty much looking at what I would characterize as a statewide average. As a result, there are some fields that have lots of controls because the average well in those fields produces more than the statewide average. If our control thresholds were based on a statewide average, more of those wells get controlled. There are some wells that produce less than the statewide average, so there are almost no controls in those fields. Looking at the fields on a field-specific basis allows us to get a lot more strategic in selection of these BACT limits. And I think that information is out on the web, so people who are looking at our proposed BACT also get to look at that analysis of, you know, how much VOCs and how much HAPs are produced on a field-by-field basis around the state. Again, I can't imagine any other state doing this. The Air Quality Division crew and the industry that are working on this are light years ahead of the rest of the West.

Cynthia Madison: The same proposal is in place for pneumatic controllers where we would like the use of low bleed or no bleed to be used in place of these high bleed ancient devices. And the costs involved with this aren't that great because I think a low bleed or no bleed device is about \$50 more than the old high bleed ones that are used now. For well completions, we are considering requiring that operators in the concentrated development areas submit applications for their well completion operations which would end up with a permit requiring that they use green completion systems instead of the non green completion. When wells are completed, they're fracked, cracked down the hole in stages. And every time they frack the wellbore, they need to release all the accumulation of dirt and contaminants down, so they blow the wellbore out again to atmosphere and burn and vent the gas that comes back. When you do a green completion, there's equipment in place that separates the four phases coming out of the completed well and that would be oil, gas, water, and BS, which is basic solids. By putting the four-phase separator on there you can take the gas and route it into a sales line and sell it rather than venting or burning it. But you can only do that when there is a sales line in place and if it's safe to do that. So the green completion permits we currently have in place require at least 90 percent reduction of the emissions associated with well completions by the use of best management practices, which is a four-phase separator, if it's safe and if there's a sales line in place. And it's a money making operation for the companies. They sell it rather than flare it. So we would like to see that expanded into the concentrated development areas. And again, with produced water tanks, we're looking for the same information that we were looking for in the Pinedale area. How much condensate carry over is there and what are the actual emissions from the water tanks. And does this make it technically or economically reasonable to require that those emissions be controlled? Planned blowdown, the same thing here as for the Jonah/Pinedale area. We're seeking information on whether or not it's feasible to require some or all of these blowdown events be eliminated or controlled, reduced. Truck loading, no new changes proposed. Then we move to the statewide. This is for every facility that does not lie in the defined Jonah/Pinedale area or whatever the proposed concentrated areas are going to be. Currently, flashing emissions that are 20 tpy require controlled at 60 days, with removal allowed at 15 tons. We would like to lower that control threshold to 10 tons and lower the removal threshold to 8 for new and modified facilities. For dehydration units, the current control threshold is 5 tons of HAPs and 15 tons of VOCs within 60 days of startup. We would like to lower the

control threshold to 8 tpy VOC within 60 days for new and modified sources. The same proposal for pneumatic pumps. We are proposing for sites that already have an existing emission control the pneumatic pump vent gas be routed into those controls. And again, are there solar pumps out there that can do the job that needs to be done, which is mostly methanol injection and chemical circulation. For pneumatic controllers, low bleed/no bleed is being proposed. And I already went through blowdown. No, I didn't. But it's the same requirements that are being looked at in the statewide areas. We are not proposing to issue green completion well completion permits. We are not proposing produced water tank emission controls. And we are not proposing any changes to truck loading in statewide areas. Currently, if there's any source of emissions at a site with greater than 15 tpy VOC emissions that's not covered by prescribed BACT, we require that a BACT analysis be submitted with an application. We would like to lower that from a 15 tpy VOC threshold to 8 tons. So if there's any source at a well site that's not covered by presumptive BACT that has 8 tons of VOC emissions, the application needs to include a BACT analysis that tells us that it's possible to get rid of or reduce those emissions and if it's economically reasonable to do so. Some of the sources that may have 8 tons per year could be truck loading. Because at some of these well pads with 32 wells or 48, or however many they're going to have, the truck loading emissions could actually get up there. I've never seen any other...

Dave Finley: How frequently does this happen under the current BACT?

Cynthia Madison: Hardly ever. Because we've pretty much covered everything with our presumptive BACT requirements. And that is the end of the proposed guidance changes.

Ronn Smith: I think you've done a good job there. I'm just curious with the BACT process, which is based on availability of a control technology and reasonable cost, how you justify differentiating one part of the state from another. Is the cost threshold lower if there's less of a problem?

Cynthia Madison: I think the answer to that is to be proactive with them instead of reactive to the issues we've had with air quality in Pinedale and these concentrated development areas. You could compare the cost per ton to other costs per ton from other sources around the state. And it usually ends up that the cost to control a ton of pollution from these oil and gas sources is well below what other industries pay.

Dave Finley: Mr. Smith, it also seems apparent to us that if you have one well in the middle of nowhere and you have to control it and you have to build pollution control systems and you have to maintain those systems, the cost of doing that is entirely attributable to one well. If you have a concentrated development area, and you can connect two wells for example to a pollution control system, or even if you have separate control systems you can operate those systems more effectively because you don't have to drive a hundred miles every day to maintain a single control system. You maintain two, or three, or ten control systems. The BACT analysis is different where wells are concentrated than where wells are out on their own in a statewide area. That's why we think it's justifiable to have different control thresholds, different control requirements for concentrated areas versus areas where there might be one well every section.

Cynthia Madison: And another thing is that most of the wells that are outside the concentrated development areas are oil wells as opposed to gas condensate wells. And the emissions from the oil wells

are generally quite low. So even if the concentrated revisions were by statewide, we probably wouldn't have that much of an effect. Because the wells that produce oil have emissions lower than the thresholds.

Jeff Snider: How is compliance evaluated? That seems, from a simple minded point of view, my own, you're shooting for 98 percent control. So does somebody go out in the field and turn the controls off and evaluate 100 tpy and then turn the controls on and see 2 tpy and say you're good to go, you're within compliance. Is that ever done?

Cynthia Madison: The systems that they're using now for controls are mainly combustors for tanks and condensers and combustors for dehyds. And the combustors have been engineered to achieve 98 percent control by stack height, retention height, and burner size. And they're also designed for the volumes of vapors that are going to be routed to them. And we did over the past several years require through permitting that these units actually be tested using EPA reference method tests.

Jeff Snider: Just once? Under field operating conditions?

Cynthia Madison: Yes, under field operating conditions and all of the test results came back that 99 plus percent control was being achieved.

Dave Finley: Jeff, we haven't tested every combustor in the field. But we have required tests of some of the combustors and have concluded that if those key design parameters are followed and the combustor is operated and is running, it will achieve the 98 percent destruction efficiency requirement. The compliance problems that we typically find are not with a combustor operating at 97 percent. We would really have no way of evaluating that.

Jeff Snider: I understand that. I wasn't trying to be nitpicky about the numbers. But I was just wondering if it's an on paper evaluation or an infield evaluation.

Cynthia Madison: Both.

Dave Finley: There are compliance problems out there. And we do find them too frequently, in my view. But they involve instances, for example, where vents on tanks become over pressured and the vent opens and releases VOCs to the air. It's not being captured and routed to a combustor—that's a violation. You're not getting 98 percent in that case. You're getting zero percent. There are connections, pipe connections. Some of those pipe connections are, and I don't know why these connections are used, the hammer unions, I don't know why they're simply not bolted together, but there are pipe connections that can come loose and you have venting through the connection. You can see those, you can hear those, you can smell those, and we can observe those with a FLIR camera. Our inspectors are equipped with a forward looking infrared camera, which makes methane visible. So you point the camera at it and you can see a cloud of methane coming from a leaking fitting. We go on a site, and for some reason someone has left a valve open and a tank may be venting through a valve that is used to reduce pressure on a tank when you want to do maintenance on it. And somebody did some maintenance, they opened the valve, lowered the pressure, and they finished the maintenance and went away but the valve is still open. And all of the

vapors are going out of the valve. Those are the kinds of problems that we see at these sites. Nancy mentioned we have a lot of enforcement action going on. And much of it is associated with equipment malfunctions or operator problems at these oil and gas sites. Not so much that the combustor is operating at 97 percent.

Jeff Snider: Thanks.

Cynthia Madison: A lot of issues, I think, stem from up until 97 I guess, for 50 years, storage tanks were meant to hold liquids. And the thief hatches on the tanks, which is the access into the tank, and the back pressure valves on the tanks are meant to vent. And now, we want them to contain the tank vapors. So we've been working long and hard with operators to find ways to make systems designed to release vapors instead, contain the vapors and hold them until they're routed to a combustion device.

Dave Finley: This is an area where technology is improving all of the time. I think fifty years ago, you could probably just get one or two varieties of thief hatches and if the tank got a little bit over pressured, it released so the tank wouldn't explode. You know today, there's a whole family of different kinds of safety valves that are positive actuating valves. If the tank is over pressured, for safety purposes, the valve opens, but instead of just falling back down and perhaps sealing or not sealing, it's gas actuated and it closes. And I think valve manufacturers have responded to the demands of industry that they have more effective systems so they don't get into compliance problems in places like Wyoming.

Cynthia Madison: Or use hatches and valves that were designed for tanks at other operations, like chemical tanks, where you don't want those vapors escaping.

Jeff Snider: So, if I understand correctly, then most of the non-compliance issues have to do with leaky equipment leading to a control device.

Cynthia Madison: Leaky equipment or left open, or under designed. When a combustor is ordered for a well that the operator says here is what our production rate is, and here's what we expect the vapor volume coming to the tank to be, then the well ends up being a slugger and it pushes a million mcf to a combustor designed for some other rating, it's overwhelmed.

Darrell Walker: Has there been any calculating on how much VOCs have been reduced in the Jonah and the Pinedale deals, with all the new BART and everything?

Dave Finley: I don't believe so. But I don't believe it would be a difficult calculation.

Cynthia Madison: Basically, 98 percent.

Dave Finley: For Jonah and Pinedale, whatever value we report for VOC emissions from the oil and gas production, you could multiply that by one over 98.

Cynthia Madison: One over one hundred minus 98.

Ronn Smith: That's assuming there was no control previously.

Dave Finley: Yes.

Cynthia Madison: Assuming everything is working.

Darrell Walker: That would just be good information to put out to the public, I think. To let people know. Because most people don't have any idea that's been done.

Cynthia Madison: Well just off the top of my head, if you took all the well sites in Pinedale and calculated the uncontrolled emissions based on the condensate production rate, there would be thousands and thousands of tons of VOC emissions.

Dave Finley: That would be interesting information, Mr. Walker. But I think the concern is what's the total emissions out there now and what can we do about those emissions, not so much...

Darrell Walker: That's true. But if the people knew what's been done, for you to let's say toot your own horn, about the job you've been doing. Do a lot of people know it? They'd appreciate it.

Cynthia Madison: Well I think we have, but it never hurts to toot a horn.

Darrell Walker: Well you won't hear it on something good like that. It'll be everything else, I know.

Dave Finley: Okay. Toot horn. I got it.

Cynthia Madison: Well the operators toot their horns because they put ads in the papers. There was just one in there the other day about their accomplishments.

Darrell Walker: Yeah, they'll believe DEQ see, if you put that out there.

Dave Finley: I'm not sure about that, but you know I think that's a good observation. When we started with this BACT control system in 1997, we started by specifying controls only on tanks. And we thought we were the cat's pajamas. And as time goes forward, we find out about different emission sources at these facilities. And it's not like somebody's hiding this information from us. It's simply that we gain a better understanding of what's going on and what are the sources of emissions from all of this equipment at a producing gas well. So as I said, in 1997, we established controls on tank emissions and we thought we had it, pretty much. That everything was cool. Until we discovered that dehy's also have emissions. And later discovered that pneumatic pumps have significant emissions. And water tanks potentially have significant emissions. And blowdowns and so on. So as we collectively, and by collectively, I mean we and industry, get a greater understanding of these emission sources, they can come into our BACT control programs. I could say to you that I think we've probably got everything under control in our BACT guidance document with this upcoming revision. But then tomorrow, somebody would raise their hand and say, what about the frammitz. And we would say what is a frammitz? Then they would tell us what a frammitz is and we would go oh, shoot. We have to establish control requirements for those. But I think

by and large, we have a fairly good handle on the emission sources at these facilities and our controlling them. I think the next big, unanswered question is fugitives and are we accounting for fugitives correctly. Those are all the tiny leaks from all the little fittings at these sites. They're calculated in our permit applications. And I think they're okay. But really that's the last, what's the Star Trek thing. That's the final frontier.

Jeff Snider: Dave, isn't there a way to know from industry how much comes up a well and how much is trucked off and how much is burned?

Dave Finley: Could we do a material balance?

Jeff Snider: A balance, yeah.

Darrell Walker: Plus or minus, what.

Jeff Snider: Well yeah, these are always complicated, but still this is a kind of overall quality control on the emission budget.

Dave Finley: Yeah, I'm not sure how well the vapors are sent to a combustor are measured. You know we have measurement requirements in the combustor line, but they are principally intended to make sure the combustor is functioning. I don't know that we have flow measurements.

Cynthia Madison: We don't. I mean they're out, available. But the other problem with that is, gas and oil production is so dynamic from one second to the next. One well is doing something different than it did before, and from day to day, and from year to year because of downstream conditions and just because the wells don't, the flow is not consistent. So I guess you could do a material balance for a longer period based on what we know is produced. Because everything that is produced is reported—water, gas, oil, condensates, all reported.

Ronn Smith: But the ability to measure accurately, I would think your emission would fall within the uncertainty of the measurements.

Dave Finley: That's a good thought. When we do enforcement settlements with people, one of the options we offer to them is to put money into the cooperative UW DEQ Environmental Engineering Intern Program. So there's a fund at UW that allows professors to go recruit masters candidates and to pay them a stipend out of that fund. And those candidates do projects for the Department of Environmental Quality. A material balance at one or more of these sites seems to me like a fine masters project. And there are funds to support a student to do that. So go find one.

Cynthia Madison: Generally, they want to do projects to enhance production, to enhance emission control.

Dave Finley: But that would be a very good project. It wouldn't be simple or straightforward, which means to me that it would be a good project for a student to take on.

Jeff Snider: It would be a good project in air analysis to come up with a number, but also come up with the uncertainty limits on the number and compare that to the uncertainty limits on taking every fitting and how many grams per second of a fitting of a various type and summing them all up, which seems like the only other way to get a handle on fugitives.

Dave Finley: It would be a fine project for a master's candidate. We'll put it on our list. You put it on your list.

Cynthia Madison: We did go talk to the University, a couple of times, to the gentlemen that were in charge of the Environmental/Chemical Engineering program. They just didn't show any interest.

Dave Finley: But, I mean.

Cynthia Madison: It doesn't mean you can't try again.

Jeff Snider: No, I understand.

Dave Finley: You've got to connect with the right professor.

Jeff Snider: The right people and so on. I view this as a much more serious issue than handing it off to a master's student. I work with master's students, so I know their qualifications. They want to get done and go to work and get beyond and get the good job and move beyond it. But it seems like, depending on how large the fugitive emissions are, this is maybe a bigger job than a master's student job.

Darrell Walker: What percentage do you think is fugitive? Do you have any idea or guess?

Dave Finley: Go ahead. Oh, yes we do.

Cynthia Madison: I don't think we do. We use emission factors from EPA that says every threaded connection that's in gas service leaks 0.008 pounds per day or whatever.

Jeff Snider: For a given pressurization.

Cynthia Madison: There are so many variables.

Dave Finley: It's not like we have no information about this and it's completely unknown and it could be a 100 tons per year from each of these sites. They are fugitives. They are very, very small emissions. When you point a FLIR camera at a fitting, for example, and it is leaking what we consider to be fugitive emissions, it's visually extremely low. It's like a wisp of something coming out of a flange or a fitting. When you point a FLIR camera at a thief hatch that's failed to seal properly after it's been open, it's like steam coming out of a steam kettle, high pressure gas that is being vented to the atmosphere. There are orders of magnitude of difference between fugitive sources and the sources that are covered under our BACT requirements and the malfunctions that occur resulting in enforcement actions. So it's not fair to

say we know nothing about fugitives. We know a lot about fugitives. They're very low in the range of 4 tons, per site?

Cynthia Madison: Calculated.

Jeff Snider: Per site? Per well pad? Per...

Cynthia Madison: It depends on the site. For a large site, yeah. For a large well pad. For the typical single well pad we calculate less than a ton per year.

Jeff Snider: And there's fifty well pads? Did I hear that yesterday?

Dave Finley: Oh, no there's a lot of well pads, more than fifty.

Jeff Snider: No, I'm talking in Jonah.

Cynthia Madison: There's fifty wells on a pad. I don't know what they go up to now.

Dave Finley: Those pads have common equipment, so the fugitives from a pad with fifty wells isn't fifty tons. So one well might be producing or five wells might be producing through one separator. So the fact that the separator is larger doesn't mean that it has fifteen times as many components in it and fifteen times the fugitive losses. I do agree that it's not something that we ought to shuttle off to the side and ignore. I told you it was the last frontier, which doesn't mean we're not going to explore the last frontier.

Jeff Snider: I don't want to dwell on the last frontier. I was just trying to get a way to explore it. I'm sure you've obviously thought about doing a mass balance for a whole operation.

Dave Finley: I have thought about how do you tackle the question of nailing down fugitive emissions besides, for example, putting a bubble over a production site and letting it run for a while and measuring the concentration of VOCs inside the bubble. That's not a practical approach. People have bagged equipment and we have access to that data. It varies a lot, depending on how, you know, how big is the fugitive emission from a particular flange. So again, I guess, it is something that we believe ought to be tackled, but I'm not exactly sure how to tackle it. The idea of a mass balance where you could perhaps average out the day-to-day variability. You could perhaps average across many facilities with facility-to-facility variability by doing mass balances. That's attractive.

Cynthia Madison: And then what do you do once you know?

Dave Finley: Thank you. You consider leak detection and repair requirements for these facilities.

Tammie Archibald: Do they have technicians for that purpose. I'm sure they do.

Cynthia Madison: The operators are responsible for maintaining the site equipment.

Darrell Walker: Give them all a camera.

Dave Finley: They're \$95,000 a pop.

Darrell Walker: Are they?

Cynthia Madison: But all of the companies in the Pinedale area are FLIRing their facilities.

Dave Finley: This is a serious effort to try and identify these leaks and fix them because we're out there looking at it seriously, they know we're out there looking at it seriously, so they're looking at it seriously. But I do agree that fugitive losses where there, deserve our attention. I'm just not exactly sure on how to tackle that. And when a member of my own Advisory Board makes a suggestion that sounds good, we'll follow that up.

Jeff Snider: Would the industry make available, or can they make available how much comes out of a well on a daily or weekly basis?

Unknown Audience Member: That's always reported to the Oil and Gas Commission.

Jeff Snider: And also how much is trucked off on a daily or weekly basis?

Cynthia Madison: Monthly.

Unknown Audience Member: That's a monthly reporting requirement.

Jeff Snider: Because it seems like those are the two important inputs and outputs, but it's not the only ones. We just have to start.

Dave Finley: There's the stuff that comes out of the bore, three phases, oil, gas, and water. And you need all three phases because if you're looking for VOCs there's some VOCs in the water. It's just a fact. There's some VOCs in the oil. And there are certainly VOCs in the gas. So you need to know what comes up and we know that. It's measured and reported to the Oil and Gas Conservation Commission. The gas that's sent off in a pipeline is measured, certainly. We know that. The oil that's trucked away is measured, because that's a product there's royalties on it. We know that. I'm not sure how much we know about the water.

Cynthia Madison: It's all recorded.

Dave Finley: It's all recorded? Okay. The water is recorded. The thing that is missing, to me, is the volume of VOCs that are being controlled and you know, to look at a mass balance, I don't think it's unreasonable to enlist the help of industry in putting some flow measurements on a couple sites and actually measuring what's being sent to a combustor to get the kind of critical fourth piece of information about what's leaving the site, and then the only thing that's left are the fugitives. And you get at that, of

course, through mass balance, which you suggested. I don't think this is an impossible approach. I think it would be a good thing to look at.

Jeff Snider: Yeah. Okay. Thanks.

Dave Finley: You didn't ask for comment?

Bill Boger: One other observation. You mentioned, Dave, that the AQD and industry partnership on this and that we're light years ahead of other areas. Is there a clearinghouse with respect to what's been done in terms of methods and procedures that can eventually be shared with other entities?

Dave Finley: A lot of information about these pollution control requirements is making it into the EPA's natural gas star site. Because in some areas where you have electricity at these fields, when you collect and contain the pollution that would otherwise be released, or in Wyoming, which would be sent to a combustor, in these other areas where you have electricity, those vapors are sent to a vapor recovery unit and they are captured and put into the pipeline and sold as product. And so they are considered efficiency improvements. And they're reported on EPA's gas star website. As to other information about pollution controls and states sharing that information, I think that happens more informally as the states in the west meet and as we talk about air pollution control requirements and these types of facilities. I know that WESTAR, the Western States Air Resources Council, meets periodically. They host day-long sessions on pollution control requirements for oil and gas.

Cynthia Madison: Well, and Dave, right now I'm working with them on creating a clearinghouse for all the western states and what is required for emission inventories.

Dave Finley: There you go.

Cynthia Madison: They've got it up on their website.

Dave Finley: What?

Nancy Vehr: Minor source versus major.

Dave Finley: And?

Nancy Vehr: Not all have a minor program.

Dave Finley: Oh. Yeah. That's another key. States are not required to regulate these facilities. They're only required to regulate major sources. And so many states don't have any regulations governing emissions from oil and gas production activities. So more and more states are beginning to seek authority to regulate these things and to actually move into this area. But you know it's not a given that in any state that you go to you have regulatory requirements for controlling this pollution. It's really only the states where significant gas development is occurring that regulations are occurring. You know, it's coming on line in Utah. It's certainly coming on line in Colorado. Because both those states have significant

development of natural gas. I don't think there are these kinds of requirements in Montana or in either of the Dakotas. But I'm not. They're not. So.

Bill Boger: I'll open it up to comments. Bruce?

Bruce Pendery: I have some comments again. I'm still hoarse. If I can do this the way I did it yesterday, I will. I'll give one copy to the Board and one copy to Dave. These are even shorter than yesterday. They're just one page, so they won't take long.

Dave Finley: That is more than one page.

Bruce Pendery: Oh well, it's also comments we sent in previously on these. My comments are only one page. But I've attached the additional comments we submitted on this proposal previously that's being reviewed today. So as I said these comments will be brief. The DEQ has posted proposed minor source BACT revisions for the oil and gas industry. On August 31, the Wyoming Outdoor Council and other groups submitted comments on these proposed revisions. I will highlight some of the principal points we made in those comments and ask that the Air Quality Advisory Board consider them as it councils the Air Quality Division. And I've provided you with a copy of those comments in what I just handed out. We strongly support two aspects of the proposed guidelines: the designation of concentrated development areas, where more stringent limitations similar to what apply in Jonah and Pinedale Anticline fields apply; and the requirement for green completions to be extended to concentration development areas. We urge the DEQ to maintain these changes. When the last round of the revisions were made a little over a year ago, these same changes were initially proposed, but they were dropped from the final guidelines. We urge that there not be a repeat of that. Concentrated development areas represent massive oil and gas developments and the potential for impacts to air quality is clear. Provisions should be made for recognizing additional concentrated development areas when later conditions warrant. We request that the concentrated development area designation be extended to the Powder River Basin and the Pavillion Muddy Ridge fields. The Powder River Basin is a concentrated development area by any practical measure, so more stringent measures for pollution controls should apply there. Even if the gas there has different characteristics than other areas, dry versus wet gas is what we understand, we do not feel the many thousands of wells in the Powder River Basin should escape more stringent regulation, even if accommodation is made for the wet versus dry gas issue. We also believe however, that the requirements for green completions should apply statewide, not just in Jonah and Pinedale Anticline and the concentrated development areas. In our view, green completions should be required in all fields. But if it is shown that there is insufficient infrastructure allowing green completions, then a provision for exemptions could be made. But the presumption should be for green completions in all areas. We also believe that considerations should be given to establishing the same, more stringent BACT requirements statewide and not creating different areas subject to different standards. As the EQC stated in its order of denial in the ozone petition that I mentioned in my prior comments to you yesterday, part of its basis for the denial was that "that the health and welfare of all people in Wyoming should be the focal point and not only a focus on one county out of 23." Equal protection from air pollution should apply everywhere. Currently the oil and gas BACT guidelines contain no limitations on greenhouse gas emissions, at least not explicitly, particularly methane, which escapes in significant quantities from gas fields, and which is an economically valuable product. The nation, either through EPA action or congressional action, is

moving toward regulation of greenhouse gases. So we think the DEQ should get out in front of this train now. We urge the DEQ to move forward with finalization of these new guidelines as soon as possible, adopting the recommendations we made in our comments. This revision was prompted due to the high ozone levels seen in the Pinedale area, which are a result of oil and gas development. So we feel putting these changes in place soon is needed to deal with the likely nonattainment status in this area, that it will soon be saddled with. Thank you.

Bill Boger: Dave, with respect to these comments, I guess, going forward here, Bruce has asked for consideration here. I guess I would like before the next meeting or during the next meeting to take a shot at addressing some of these comments.

Dave Finley: Certainly. We can be prepared to talk to you about all of these comments when we bring the proposed final document to you to the next meeting.

Bill Boger: Any other comments?

Dave Finley: You have an excited taker.

Deb Thomas: Thank you, Mr. Chair and members of the council. My name is Deb Thomas. I represent the members of the Powder River Basin Resource Council and our affiliate groups. I'd just like to add a little bit to what Bruce said. We want to applaud all that you're doing. And we really think that a lot of this is very important to the health and wellbeing of the state. However, we do have some concerns with the concentrated development areas. We'd like to see the Powder River Basin added to that list, and also the Pavillion Muddy Ridge field. On behalf of my members, specifically the Pavillion field is concentrated development where a lot of people live in very close proximity to a lot of development. And so that's our main point. We'd really like to see that addressed in that area and that added to the list of concentrated development areas. As well as cumulative effects considered for areas such as Pavillion, where many people are living. Public health is really at risk in some of those areas and we think we'd really like you to take a closer look. Thank you.

Bill Boger: Further comment? With no further comment, I'm going to suggest a five minute break.

Bill Boger: Okay, I think everybody's back. We'll go ahead and get started with the last item on the agenda. And that's the proposed revisions SIP for regional haze.

E. Proposed Revisions to the Wyoming State Implementation Plan – Regional Haze 309(g)

Dave Finley: Mr. Chairman, Tina Anderson is going to walk you through this and give you a history of where we are today and ask for your comments.

Tina Anderson: Not too much history, because we'll never beat the storm home. So we'll shorten up the history part. This is a project that we've worked on for multiple years. This Board has met numerous times on this, recommended approval of an earlier SIP. They've sat through I think a whole training session on the technical support system for this program, and with the exception of Tammie, most people on here have seen something on this before. But feel free to ask questions. So what I'm going to do is try

to refocus on what's the purpose of the rule, talk about what we've already done in a little more detail, give you an overview of what this SIP accomplishes, and by the way there's copies of this in the back. It's the thickest document back there if you want to grab one. It's over 200 pages long without the technical support. Feel free to grab one.

Dave Finley: Does the Board have copies of this?

Tina Anderson: The Board has copies, yes. And you need a copy. Do you want a copy?

Dave Finley: No, you're going to tell me all I need to know.

Tina Anderson: I'd like to tell you what the next planning activity involved is and then I'll take your questions. This is a map, obviously of the United States. The little red areas are all the Class I areas, the mandatory Class I areas. It is the only thing that's clear about the Regional Haze rule that I have found to date, is what are the mandatory Class I areas. But they are listed in Federal law. Most of them, as you can see, are in the West. There's 118 of them in the West. This is a western issue. The east coast doesn't care too much about regional haze. In Wyoming, we have 7, and if you look at the next slide you can see this is our seven areas. Even though we have seven areas, we only have three visibility monitors to cover the seven. So Yellowstone, Grand Teton, and Teton Wilderness are all covered by one monitor that sits in Yellowstone Park. The Bridger Wilderness and the Fitzpatrick are covered by one monitor that sits on the south side, about where that line is pointing in the Bridger. And then the North Absaroka and the Washakie have one monitor as well that sits up in the Northern Range. So what have we done so far? We've done this thing we call the 309 SIP, which was created to address SO₂. And it was an option that certain states had. Wyoming was one of those states. The idea was that an earlier commission that had been studying visibility in the Grand Canyon, the Grand Canyon Visibility Transport Commission, made some recommendations on how to save the Grand Canyon and the Class I areas around the Grand Canyon. The Grand Canyon is kind of the granddaddy of all Class I areas. So that's where the focus began. So they made these recommendations and when EPA wrote the Regional Haze Rule, they said, at the request of the states they pushed this, if you adopt those recommendations earlier than the Regional Haze Rule, we will exempt you from some of the provisions later. And Wyoming decided to go that route. We have significant SO₂ emissions in our state. The other piece that's big that's in the 309 SIP is smoke management. And Darla Potter should take a hand over there, because she put our smoke management plan together for our 309 SIP. It was a long and arduous task. We had to deal a lot with ag, and ag is pretty,

Dave Finley: Special.

Tina Anderson: A pretty special group. I was searching for the word. Thank you. So that was the focus of that. We had hearings in 2003 and 2008. That has been completed from our perspective, sent down to Region 8 and there it sits. So we are hoping for some feedback, but they haven't moved on it. So we are satisfied that most of the requirements of the SO₂ and smoke piece of Regional Haze have been met through that SIP submittal. So this SIP is the 309(g), or some people call it the 308 part, because it changes the focus from SO₂ to the nitrogen oxides and the particulate. There are other pollutants but those are the biggies. So the first part of that SIP, the first half of the 200 pages is sort of focused on problem

identification. And I'm not going to read all these to you because we're going to go through them one by one. But that's the first part. The second part has to do with solutions. And that includes BART, which is probably the big piece of our solution.

Unknown Audience Member: BART means?

Tina Anderson: BART means best available retrofit technology. It's a little bit like BACT except it's retrofit instead of new sources. And then the third piece deals with the business end of SIPs and I'm not going to spend much time. If you have questions, I'll be glad to answer them. But I don't think most of the people in this room are interested in how we're going to continue to collect data, how we're going to continue to update our plan, how we're going to continue to stay active and involved in other states. So the first chapter asks the question, what are the current visibility and natural visibility conditions. The SIP has many, many slides that you've probably looked at. I just threw this one up there as a representative one because our Class I areas look pretty much the same. In other states, you'll have very different profiles as you move from one Class I area to another. But because all of ours are stuffed up in that one corner of the state, they're generally getting the same impact. The most northern site up there in North Absaroka gets more impact from Montana. The Bridger site will get more impact from oil and gas. Yellowstone will get more impact from fires in Idaho. But they typically have the same kind of profile. So what you're looking at here and Board members, I think you've seen this, is extinction is measured on the Y axis, and that shows you how much light has been scattered, impaired, and the pollutant that's doing the most of that is organic carbon, which is that big green line on top. It comes primarily from wild fires. It's very erratic because it depends on a lot of the wildfire season. The yellow line in the middle is sulfate extinction. And that's coming primarily from anthropogenic sources such as power plants. And the bottom line is nitrate extinction and that's coming from, again, primarily industrial sources. And that's riding along as you can see, fairly low. Just in terms of priority, organic carbon is the number one hit for us. SO₂ is probably number 2, and then nitrates. So the rule requires that we look at these, this baseline data. And for the WRAP, the baseline is defined as 2000 to 2004. And that's those little dots right at the beginning here. You see one, two, three, four. That's 2000, 2001, 2002, 2003, 2004. No, it's 2001, 2, 3, and 4. Those four years. Then the straight line is the average of those four. And let me tell you that we switched metrics here. We were looking at extinction. You can look at extinction for individual pollutants, but when you're looking at the combined impact of all of those pollutants and there are seven or eight of them, you create a deciview value. It's a logarithmic function. It attempts to make extinction linear. So we've switched. You can see the overall impact of all pollutants. And those are measured on the left. So these are both worst case scenarios. So out of all the data that we have looked at, these are the worst, this is the worst data. And this is what we've measured in our baseline, around 11, in both of these Class I areas. And then on the far right, EPA also requires that we look at natural conditions. Because our goal is to reach natural conditions by 2064. And this is where Darrell groans.

Darrell Walker: I'm not going to say a word.

Tina Anderson: Because it's hard to even think about what's natural in 2064. It's hard to even imagine how we could calculate natural conditions. EPA did their best. This is not something that we did. But they have come up with what they think are natural conditions based on some early acid deposition data, some early research done by some scientists thirty to forty years ago. So they've come up with some numbers,

best guess. And then you draw a line in between your baseline and your natural conditions. And that gives you what's called a uniform rate of progress line, or URP. And the little line, the little dot that you see above the line there is what we are projecting for visibility, based on the modeling that the Western Regional Air Partnership has done, which is a collective western group, where we would be in 2018. So these are exercises that we had to go through for the rule, to find out where we were at. The pollutants that we're measuring are listed on the left. Nitrates, sulfates, the elemental carbon, the organic carbon. Both the carbons are primarily coming from fires. There's some industrial contribution there, but its dwarfed by the fire contribution. And then two, coarse mass and soil, both refer to the crustal material, but the soil refers to the 2.5 and smaller. And the coarse refers to everything that's between 2.5 and PM₁₀, so it's the larger piece. And sea salt. Everybody measures sea salt. We don't have a lot of sea salt in Wyoming, but it's part of what's called the IMPROVE monitoring network, which stands for Interagency Monitoring Protocol for...

Dave Finley: Really obscure visibility...

Tina Anderson: I don't think it—environmental areas, or something. But anyway it's a collaborative group of state agencies and primarily Federal agencies, FLMs, that collect the data. It's all monitored and downloaded the same way. It all goes to the same place and takes forever to get back. It's very tedious. All of our data that we're going to look at in here is no earlier than 2005-2006. So it's a slow process. Do you have a question? Okay. Go ahead. So looking at those pollutants in our Class I areas, you can see, and these are our three monitors, again representing the seven Class I areas, the green in the middle is organic compounds from fires, the yellow is the sulfates from industrial processes, EGUs and large boilers are the big culprits there. The little, red strip is your nitrates coming from the oil and gas industry as well as EGUs. The big, black strip is elemental carbon. As you can see, our Class I areas are not dissimilar. Yellowstone having the largest. Any questions about this? Okay, so this is to answer the question, what are the pollutants we're measuring and what are the pollutants that we're worried about in the state of Wyoming that impair visibility?

Unknown Audience Member: Excuse me. What is EGU?

Tina Anderson: Oh, sorry. Electric generating units—power plants. Terrible, we bureaucrats. Okay there's another way of looking at it. Same kind of slide, but we're looking at it over time. And what you notice is that over time we see an 8, which is August, we see a spike, and those are from fires. The big fire season is in August. And it is sort of telling the same story. So the next question you have to ask are what are the emissions? What source sectors are they coming from? We talked about them a little bit, but actually the WRAP splits them out into all the source sectors on the right there, everything from windblown dust down to point sources. Point sources are your industrial sources that are where the emissions are coming from (a stack) as opposed to fugitive emissions that we talked about earlier, where they're leaking from lots of different spots. But what you see here is for nitrogen oxides, point sources, and now you've got to rearrange the color coding because you just had organic carbon as green. Now we're looking at point source being green. Point sources are a big part of the nitrate. And on top, that's your fire component. Let's see, this is off road mobile. I'm sorry, fire is not very big for nitrates. These are mobiles. These are on road mobile. The two blocks you're looking at are, well first we model baseline and then we model a control scenario. So the control scenario on your right is as far as the WRAP was

able to take it. And I can't say it enough times, but that's not where we end up. Because there are a whole bunch of controls that we are proposing to adopt that are not in the picture on the right. But WRAP could not model them because we hadn't completed them yet. And we're not the only people in that position. It takes a while to go through the process. It takes a long time to get the modeling set up.

Dave Finley: Go back one. This is a problem, I think. You know this process of creating the 308 SIPs has taken so long and it involves operation of giant computer models, basically. So states go through these efforts of figuring out what the control strategies are for all these different source categories. What are the BART levels that are going to be applied to each individual large source of NO_x emissions? What are the likely NO_x emissions from the oil and gas sector, for example. Well, that's really an evolving thing. And it's the limits that are going to be applied to many of these regulated sectors that are changing as we go through time and as we issue BART permits, for example. Or as we revise the oil and gas BACT guidance. The problem that we have is that many of the slides that are contained in this SIP result from ambient air modeling efforts that were run a year ago or two years ago or three years ago. And because of the expense in running these models, they haven't been rerun with the current control strategies in place. So I can't tell you what that...

Tina Anderson: These were both done actually in June. They reran these in June of this year, but they don't include BART. And BART is huge. They do include anything that anybody had completed. They don't include our BART. Some states are a little further along than we are. They include some reductions, but not all of them.

Dave Finley: So this is really tough. Because you have this SIP and it has all this information in it. And you kind of have to suspend, you know, you have to put a footnote on that chart and say it doesn't reflect all of the control options in all the states that are subject to this set of requirements. It would have reflected that except EPA has cut off funding for the Western Regional Air Partnership and there's no more money left to rerun these models and redo all of these charts. And no single state, in my estimation, can afford to rerun these models on its own because of the significant cost of doing that. So this is going to be a problem, I think, where people want to see the results of all of the emission control strategies that states are committing to in these SIPs. And they're going to look at an illustration like this and there's going to have to be a little asterisk down there that says this doesn't reflect all of the controls. So that will be, I think, a difficulty in the SIP. But it's really a practical limitation. You know the states individually don't have the money to rerun these huge models. And EPA has said, we're done with funding the Western Regional Air Partnership and no more money is available. So we'll present the data we have in this SIP, but it will be difficult for people to review.

Tina Anderson: And yesterday I got a comment from EPA that said the state should consider remodeling with the BART numbers. So.

Dave Finley: I don't know what a model run at UC Riverside costs. \$250, \$300,000?

Tina Anderson: I think we're in the millions.

Darla Potter: \$200 to \$300,000 isn't going to probably even get you the model set up.

Dave Finley: So it's absolutely ridiculous to think that each of the states are going to do this, to rerun this model.

Tina Anderson: And I'm not sure we could. You have to do this collectively. Because you have to update everybody's inventories. The pollutants do not stop at the state borders. That's why we embarked on this whole regional effort in the first place.

Dave Finley: It's really disingenuous of EPA to make that suggestion that the states ought to remodel while at the same time saying, no WRAP, you're done. No more modeling.

Tina Anderson: This is similar, asking the same question but in relationship to organic carbon, which is the fire piece. These are all the states in the WRAP region, and you see both the baseline and 2018. And they don't change much because it's hard to project fire in the future. So we just held it steady. So if anybody has any brilliant ideas about how to do that, we would certainly entertain those. So the two bars don't mean much. But you can see that Wyoming, which is right here, our fire emissions are not as big as other states in the West. You know Oregon is a big one. California, of course, is a big one. Seems like it is always on fire. Washington. And this is all blowing typically west to east, so we're picking up a lot of fire emissions in our Class I areas. Sulfates, this is just Wyoming. This doesn't reflect all of the changes. And also the other thing that you can't see in here is that we've also got growth projected for SO₂ because the WRAP, when we started this process, we were trying to figure out how many new power plants we would have. How many new coal-fired plants we would have. And Wyoming got a huge share of the new power plants because that's where the power plants are. So he who has got more. And that was projected in the 2000 timeframe. This is 2009. I mean I think utility growth projections, I'm sure Nancy, you guys could probably answer that better than I could, but they're not on the same curve as they were in 2000. So we've got utility growth projections in here as well that are not accounted for. This is elemental carbon, which is another fire. You do see an off road, you do see, from the mobile side, you do see a reduction in the mobile. This is another question that we have to address in the SIP, which is where is it all coming from and what are we predicting for the future. Those are both, the two modeling exercises that we have to do in this SIP. These will show you on a very large scale where our emissions are coming from. The grey on the left, on all four of these circles, represents emissions outside our domain. Outside our domain is the other side of the planet. Our domain is everything that's listed above outside our domain. So we've already taken into account Mexico and Canada, the eastern United States, central United States, anything that's beyond that is what we're counting on the left side. So not insignificant. Our world is getting smaller and smaller. The part that we're kind of focused on is the WRAP piece, which is the light-colored tan piece, which is somewhere between two thirds to a half, typically. And so just kind of keep that in mind. The monitor is picking up everything, but our focus on control is the WRAP piece. This diagram on the top is what we call PSATS. These are another modeling tool to try to help you figure out where it's coming from. And we're broken down by state. I just picked on the Yellowstone monitor. Again, you see a huge component from outside the domain. Wyoming contributes point sources to the Yellowstone area, as does Idaho. Idaho contributes more, but they're upwind coming into Yellowstone. And Canada has a fairly sizable contribution. So just other ways of looking at where it's coming from. So the other half of the computer modeling that we have to do is what are we predicting for the future. I already showed you the uniform rate of progress lines. These are the same numbers, but they're in a table. So these are our

three Class I areas. This was our baseline, where we started. That's where you would be if you were on the line, the URP, so if you went down that line to 2018 and drew a dot, that's where you'd be. The 2018 projected visibility is where we are going to be. So you can see we're actually over those URP goals on the worst days. On the best days, which is the other thing that we have to look at in this is that we are better than the baseline. We don't have to do a URP for the best days. You only have to do it for the worst days. And we're under the baseline for all the best days. And that's good. EPA says if you're not on that line, you have to explain why you're not on that line. And so what we did, collectively through the WRAP is to break it down by the individual pollutants that we measured. What you just looked at on the slide before was the total deciview number. And if you break it down by the individual components, you can see these again are URP lines but by pollutant. And you see the dark green line is the line that is the steepest. It is driving why the numbers are not coming down. It's because primarily of organic carbon from the fires. So until we can eliminate natural fire, we are not going to be on that URP line. So as you can see, the sulfate, we're above on the sulfate. Not as bad as we are on the organic carbon. And the nitrates, we're actually at or below on all the nitrate numbers. So this was a big breakthrough for states to try to figure out why we weren't going to be on that line. That's not to say that you ignore the anthropogenic reductions that you make. You can at least explain in your SIP why you're not going to be on that line.

Darrell Walker: Do you include PM in any of this?

Tina Anderson: Yeah, go back a minute. I'm sorry. I should have talked about PM. The PM numbers are on the bottom. This number here is the coarse mass. And as you see, it actually goes up. The model is a really poor predictor for coarse mass. It's too big. These models do not predict the behavior of large particulate well. To tell you the truth, we have pretty much disregarded that information. We're required to look at it, but it's not a good predictor. The fine particulate we do a better job of predicting.

Darrell Walker: Yeah, because they're paving all the roads. They're putting mag chloride on all the roads. A lot of them in Lincoln, Sublette, Sweetwater. And so I just was wondering if that's all showing up here anywhere.

Tina Anderson: The monitor will pick up everything. It's going to pick up dust off of your roads. It's going to pick off some little particles that come all the way from China. It's going to pick up oil and gas contribution. It doesn't distinguish. So that's going to land on the monitor. And the monitor did show that we had a particulate contribution. But when you try to turn around and model that particulate piece, it's very difficult.

Darrell Walker: So it doesn't show you where it's coming from, then.

Tina Anderson: Again, the models do not predict well on that side. The big contributors for dust are the windblown dust component, where you just have wind blowing over exposed areas. You have the fugitive dust where you actively go in, and of course in this state coal mines are a perfect example because you're disturbing the soil. And then the wind blows over it. So that is what is considered fugitive dust. And then you have fine particulate that's at the very bottom there, which could come from combustion sources as well.

Tammie Archibald: I don't know if the EPA and the Forest Service are having conversations about regional haze and how the policies on the forest are impacting air quality.

Tina Anderson: You know, the WRAP...

Tammie Archibald: How is it directing any policy decisions on their part?

Tina Anderson: I hope so...

Tammie Archibald: It seems like we're kind of at their mercy on regional haze with forest fires. No way to control the haze that we're getting.

Tina Anderson: Is anybody here from the Federal Land Management sector? You know, I don't want to put words in their mouth. But I believe that their approach right now is to get as many controlled burns as they can going so that you eliminate the amount of wildfire. And I think that's their approach, that's a fair assessment.

Darla Potter: In general, if they can prescribe the burn, they can time it better. And they can employ emission reduction techniques to the burns that they do. In effect, they're minimizing the emissions from those prescribed burns that they do. Emissions from prescribed burning overall are much lower than if they have a wildfire. And both components of fire are accounted for within the modeling that the WRAP has done.

Tina Anderson: The anthropogenic piece is very small when compared to the wildfire piece. And things like drought, you know. That's a huge problem for creating forest fires that I'm not sure the Forest Service can even deal with either. So those are larger picture issues.

Darrell Walker: For instance, the New Fork fire. I don't know if it was two years ago or three years ago. That's the worst thing we ever had in Pinedale as far as air quality goes. But they pumped more propellants on that fire than they did water in order to try to get the bug infested trees in that whole area burned down. But if you get very much of that it's certainly going to affect...

Tina Anderson: All fire will affect the visibility monitor.

Darrell Walker: So I don't know how much coordination there is between the Forest Service and I'm sure they did get a smoke permit for that one.

Tina Anderson: We are trying to get better coordinated, and the WRAP created something we call the fire emissions tracking system. And all of that data is supposed to come in and then we can see where these fires are taking place in all the different states. It's hard enough to track in your own state, but we have other states to look at. And the FLMs have been involved in the WRAP. They know. They've seen these numbers. They know. So, solutions. I already talked about what we attempted to do in the 309 piece, which was SO₂. Also, organic carbon through everything we could do, at least from the state

perspective to minimize anthropogenic fires. The next big piece is BART, Best Available Retrofit Technology. I'll turn it over to Chad. I do want to recognize all the NSR staff people that are here: Darla Potter, Chad Schlichtemeier, Josh Nall, and Cole Anderson. They did a terrific job putting this together and this is definitely the heavy lifting in this SIP. So, with that go ahead.

Dave Finley: It might not look like it to you folks, but this is formal wear for Chad Schlichtemeier. He has his white cowboy boots on, which is a sign of true respect.

Darrell Walker: Where's his black hat?

Chad Schlichtemeier: Once again, I'm Chad Schlichtemeier. I'm the NSR program manager. What I want to do today is give you a quick overview of the BART process. In the beginning we started with the whole slate of sources in Wyoming. Then we culled that down based on the criteria of the BART regulation, which was when they went into operation and which source category they belonged to. To be a potential BART source, they had to be in operation between 1962 and before 1977. And they also had to belong to one of twenty six categories that are basically listed in the PSD rules.

Dave Finley: What are those?

Chad Schlichtemeier: I remember twenty five. It's the twenty sixth that escapes me. And after we get all that criteria, we went through some screening modeling. We came up with sources in Wyoming that are subject to BART. Basically, there were seven non-EGUs, which the EGUs are your electric generating units, which were all based at trona facilities. You'll see there were seven coal-fired boilers that were determined to be subject-to-BART based on the criteria in the rule. And then there are thirteen EGU sources that basically are subject-to-BART. A majority of those are PacifiCorp facilities. In determining what is BART, there's basically five statutory factors that we had to consider. Step 1, we went through and identified all the retrofit control technologies. This is similar to a BACT analysis. You basically take the source that you're looking at and you go through previous BACT determinations. EPA maintains a RACT, BACT clearinghouse. You can look there for control technologies. And other sources such as internet and things like that can determine what control technologies are available for the source I'm looking at. And then step 2, you go through that list and eliminate the technically infeasible options. This could be, there could be an ultra low NO_x burner out there for a coal fired units that requires dimensions X. Well, my boiler that I have in my EGU and it is dimension Y. And so in order to fit that new low NO_x burner in there, it would require a new boiler. So technology like that would be on the infeasible list category. Unless you've then developed a list of which control technologies are feasible, then you would go through and look and say what level can I get down to. And then if you look into the BART rules, they talk about most stringent control option. For example, with SCR, we looked at, well how low can you go with SCR on a retrofit. We looked at all of the available information we had and developed what we felt was the most stringent control level. And then once you have that evaluated, that basically looks at the impacts and documents the results. This is where you take in the impact of energy, environmental, and economics as well as the life of the plant. And you know it was kind of interesting to see what the life of some of these facilities are. A lot of these facilities that are subject to BART have been running for a number of years and have a lot of life, you know, that was basically presented in the application. And then we in step 5 we looked at evaluating the visibility impacts. Tina showed the Class I areas in Wyoming.

And there's also a map that showed them in the rest of the states. We identified, for each source, which Class I areas that they impacted, not only in the State of Wyoming, but also surrounding states. Some in the southwest part of the state looked at some areas of Colorado, as far as Class I areas that they impacted. And for each source we modeled them by themselves. We modeled baseline emissions, which was 2002, determined the visibility impact. And we modeled each of the control technologies. And we evaluated the effect of the control technology looking at from the baseline to each control technology. Then we also looked at the incremental change in visibility looking between the control technologies. For the higher emissions, we looked at the lower ones and said what's that incremental change in visibility and that was part of our evaluation also. The visibility impairing pollutants are sulfur dioxide, nitrogen oxides, and particulate matter, as Tina's already described. We are a 309 state for SO₂, so therefore the full-blown five-factor analysis for SO₂ was not conducted. This slide shows some of the control determinations that we made. For NO_x, with the exception of Naughton Unit 3, all the EGUs are still under review. We've gone to notice and everything, but those have not been finalized. So they're still proposed levels. What I'm showing when we went to notice are the proposed levels that we were requiring. For all the units except Naughton Unit 3, the BART determination was low NO_x burners and over fire air. For Naughton Unit 3, the BART determination was low NO_x burners, over fire air, plus selective catalytic reduction. For PM₁₀, when we did the modeling, we saw little impact from lowering PM emissions. All these units have controls on them today. And PacifiCorp, through their pollution control projects, was upgrading some of their controls. But when we got to doing the modeling, the BART results showed that the existing controls for the applicant committing controls all represented BART. And those represented either electrostatic precipitators or fabric filters or bag houses, or flue gas conditioning systems in addition to electrostatic precipitators. As part of the BART analysis, we also included some long-term strategy commitments. And some of the facilities had those and some of those were not targeted as being part of the first phase or the second phase. For Bridger, add on controls were selected for Units 3 and 4 by 2015 and 2016, respectively. Notice here that we have selective catalytic reduction listed there as being a technology that will be installed on those units. And they have a NO_x emission rate not to exceed .07 ppm Btu. Units 1 and 2 are slated to have additional add on NO_x controls by 2023. We did not specify the control technology for these units, nor did we specify the rate. We put a ceiling on .07, but we said we don't know what's going to be available in that timeframe. And we want the ability to review the technologies basically as well as emission rates and make a BART determination or not BART determination, a control determination at that point in time that reflects the technology available at that time. Laramie River Station is slated to have add on controls on one unit by 2018 and then the second unit by 2023. And that basically follows the same criteria I described for Units 1 and 2 for Bridger. And this kind of gives you a feel for the emissions reduction through the BART and long-term strategy controls that we're looking at. All of the BART permits have dates for when the controls have to be installed. By rule, they're going to have to be installed no later than five years after SIP approval. So by 2015, all the BART controls will be in place. And that will result in roughly a 41,000 ton reduction in NO_x emissions. Then the first phase of the long-term strategy, which goes through 2018, which will include two units at Jim Bridger and one unit at Laramie River Station, will get you another 13 plus thousand tons of reduction or around 54,000 tons total reduction. And then the next phase is for 2018 to 2023. We'll get the second part which will be two more units at Jim Bridger controlled, as well as another unit at Laramie River Station, which gets another 13,000 plus tons reduction for a total by 2023 of about 67,000 tons of reduction. And the baseline here is 2002 actual emissions. And to kind of just give you...

Dave Finley: Do you recall what that was, the baseline? The amount? Can you back up one slide?

Darla Potter: I don't know that we ever totaled that up across all the units. We went unit by unit, but I don't believe we ever totaled across all...

Dave Finley: So a reduction of, what did you say, 54,000?

Chad Schlichtemeier: 67,000 for all of it.

Dave Finley: Compared to what, we don't know. Compared to what number.

Chad Schlichtemeier: Whatever the actual total was in 2002. And I don't know if we can get that number if that's the question.

Dave Finley: I just wanted to...

Ronn Smith: It's probably 300,000. 2 or 300.

Chad Schlichtemeier: Yeah, I don't know.

Dave Finley: Okay.

Chad Schlichtemeier: And I can give you just an update where we're at today. For non-EGUs we went to notice with those back in August of 2008. We had public hearings for all of them in September. FMC Granger, which is two coal-fired units, they're smaller units. When we first did applicability, we did screening modeling. And based on that, it was over half a deciview, which is showing to contribute to visibility impairment, and therefore it was part of the BART analysis. When we refined the modeling, the modeling came back and showed that the visibility impact was less than 0.5, so therefore they fell out of being subject to BART, so no BART permit was issued for that facility for those two units. For Westvaco and General Chemical, we issued BART permits for those in July and August of 09, respectively. For the EGU facilities, we went to notice in June of this year for all of them. We had public hearings for all the facilities in the first part of August. We're in the process right now of responding to all the comments. And hope to get a BART decision out here in the near future. This is just a breakdown of the comments we've received on the EGU applications. In total, we have 747 comment letters. These came from the Forest Service, Park Service, EPA Region 8, State of Colorado. PacifiCorp submitted letters on all their facilities. Basin Electric, PRBRC, and then PRBRC et. al. And then we had thirteen letters that came in individually from the public. And then Sierra Club had two different submittals. One had letters with 89, actually had signatures on the comment letters. And then there was also a letter from Sierra Club that had 725 letters, which none of them had signatures on them. And they were all form letters, the 725. And that's pretty much all I have on the BART stuff.

Tina Anderson: And now we're leaving the world of something that's pretty easy to understand. Difficult to do, but easy to understand to an area that's much fuzzier. I'd like to recognize Stacey Frutiger who helped me with this. It's not such a fun project to take on, but she did it with great gusto. So, the

BART, of course, addresses all of the big stuff that's actually targeted by EPA. Then the rule says, what about everything else? And the rule is quite vague about everything else, but what it requires you to do is establish a goal for visibility over time. And in doing that, you estimate the baseline and the natural visibility—we talked about that earlier in Chapter 2. It says you determine that uniform rate of progress, that straight line between two things—the baseline and the natural visibility. You talk with other states, which we've been doing for ten, eleven years through the Western Regional Air Partnership, and also individual state dialogues. And then you do something called the four-factor analysis. And this is where this gets shaky. And after you've completed the four-factor analysis, you establish your goals, your actual deciview goals. You establish two for every Class I area in your state. One for the best days and one for the worst days. The four-factor analysis is very much like what Chad described for BART. You look at the cost. You look at the time it takes to bring about compliance. You look at the useful life left in the facility. You look at the non-air quality impacts. But it doesn't have the impact on visibility. It just has these four. These are what you apply to the "everything else." Why is this difficult? It's difficult, first of all, as I mentioned, because you don't know who to apply it to. It's everything else. There's a lot of stuff out there that's impacting visibility. The rule actually says, you'll do this for all affected sources. That's the language. And that's pretty vague. It doesn't work well with uncontrollable sources. It's hard to do a cost analysis on a natural wildfire, controlling it. It doesn't include what most of us consider the most important factor, which is the actual visibility impact. You go and look, for example, that it costs \$2,000 per ton to retrofit a given piece of equipment with such and such a control technology. But you have no idea what improvement you get from that piece of equipment. So it makes it very difficult to have a dialogue with a source without knowing what the impact is. And many states, including this state, don't have the authority right now to even follow through with retrofits on these non-BART sources. So those are the problems that we've had to deal with. We talked about those in the WRAP for a long time. And in the end, EPA said the rule still says you have to do it. So we've done it. And what we've done to figure out how to narrow down that all affected sources, we used a crude tool called Q over D, the Q being the quantity or tons of the pollutant over the distance to the closest Class I area. And you do the calculation and we set the cutoff at ten. Where did this idea come from? Well it actually came from the Federal Land Managers who have done some preliminary work on looking at this. It's a crude tool, but it's a tool none the less. It gives you a first cut. We looked at Q over D's smaller too. But the Q/D of 10 is what they started with. It captures about 80 percent of the WRAP emission inventory so it's quite a bit. We narrowed the focus to NO_x. We can't do anything about the uncontrollable. We've already addressed the SO₂. So we decided that we'd put most of our efforts into the NO_x. We hired a consultant through the WRAP to perform two four-factor analyses. One is specific and one is general. The specific one targets a couple of facilities that we identified through this Q/D process. The general analysis looks at all source categories in the West and does sort of a general overview of all of the four factors. The result of this review, the Q/D, every one of the BART sources ended up on the Q/D. So we did a pretty good job of identifying the big stuff right off the bat. It also identified BART-eligible sources. It also identified Dave Johnston Units 1 and 2 which are older sources, and I believe they're too old to be BART, is that why they're not BART? And then Mountain Cement has a cement kiln, has two kilns but one of those came up on the list. So we identified three sources. I'll talk more about what we're actually going to do with those sources in another slide here. The last thing that we're supposed to do in the reasonable progress demonstration is set the goals. These are goals that we have set in our SIP. Again, it's a worst and best for each of our Class I areas and these are the numbers that we are establishing for goals. For worst days, you have to show improvement. It has to be a lower number. And for best days, they have to be no worse

than, show no degradation. So they can be even like they are in North Absaroka. On the clean days, it gets harder and harder to get that number down, so that's why you don't have to show improvement. No degradation is good enough. So those are the goals that we are proposing. They are based on the last modeling run that we went through. It was in June. It does not include emission reductions from the BART so we fully expect to hit these goals, maybe do better. There's no penalty for doing better than the goal you set. But you have to have some basis for setting the goal. I can't just crank those numbers down because I think that we're going to get a better BART number. But over time, remember this is a long-term project, this goes out to 2064, and we can keep adjusting this as we go forward. So all the information that we get from the last SIP, the last model runs we pulled into the next one and make those projections.

Dave Finley: Is it possible to tell us where we are right now? Or with respect to meeting those goals on the worst days?

Tina Anderson: The actual monitoring data?

Dave Finley: Well, whatever, the model data.

Tina Anderson: The model data, those are the model data that we just looked at. What we had up on those very first slides were the baseline data. We could, we do have data that goes out to 2005. I don't think we've ever used this. 2006. We could give you 2006, but I can tell you it's not...

Dave Finley: We've introduced a new thing here, it seems to me. Can you back up one? The stuff we looked at with the line, that was the URP goal, right?

Tina Anderson: Right, so we looked at baseline conditions. That was those four dots, 2004. And then we project for 2018. We won't know until we get to 2018 whether we hit those goals. But we have some intermediate numbers. They bounce around. I can tell you the degree of variability between individual years in the baseline is equal to the amount that we are above the line. So there's a chance that we, that it will be there. I think what you're asking for is if I could show you a monitored line out to 2006 versus where we're projecting?

Dave Finley: No, I'm just, and you've answered this question for me before, and I apologize. Tell me what the difference between the uniform progress goal in 2018 and the reasonable progress goal in 2018 is.

Tina Anderson: Okay, so the uniform progress goal is on the line, so if you go out to 2018...

Dave Finley: Out to 2064...

Tina Anderson: Well, yeah. The uniform rate of progress is the line, we go to 2018 and go up and go to the dot on the line, that's the 2018...

Dave Finley: Uniform progress goal...

Tina Anderson: Yeah.

Dave Finley: That's the one we're not going to meet.

Tina Anderson: No.

Dave Finley: What's the reasonable progress goal?

Tina Anderson: That's the one that we have committed to meeting. Those are the goals we're setting.

Dave Finley: Okay. So we believe we're going to meet those goals.

Tina Anderson: Right, based on the modeling...

Dave Finley: Based on the strategies that are in place in the 308.

Tina Anderson: Well, that have been modeled so far.

Bill Boger: The reason for not meeting the uniform progress goal is a combination of the fire component and the regional, international or global impact?

Tina Anderson: Yeah, I mean this slide addresses that. So the EPA says, you don't have to be on the line. But if you're not on the line, you have to tell us why. And why what you're saying is reasonable. And these are the reasons, these are in the SIP, but I've summarized them here. Number 1, that natural sources like forest fires greatly affect our ability to get on the line. Emissions outside our domain affect our ability to be on the line. And nobody knew this when they wrote the Regional Haze Rule. The Regional Haze Rule was written in the 90's. And the WRAP is like state-of-the-art understanding of visibility. Nobody even knew that fire was going to be. I remember that Darla and I went to a meeting in Arizona. And they rolled out the fact that fire was a huge part of this. And we didn't even know this before. So the whole rule was written without any idea that fire was a player. So we've made good progress with SO₂. We think that's part of the reasons that this is justifiable, because I mean the numbers are coming down with SO₂. We've made significant reductions from BART and the long-term strategy, which I'll talk about more here shortly. And reductions from ozone, which we will get through our nonattainment program. We'll primarily address oil and gas. And we're not alone in setting reasonable progress goals that are not on that line. Nobody in the West is on the line. And there's going to be sixteen Regional Haze SIPs that have the same problem.

Ronn Smith: Tina, do the reasonable progress goals reflect the BART that Chad presented? You mentioned that hadn't been modeled...

Tina Anderson: No.

Ronn Smith: Because it seems conservative, really.

Tina Anderson: It is, but how do you set a goal lower?

Ronn Smith: Without some evidence that you can...

Tina Anderson: And it's very hard to connect what comes out of a stack with what shows up on that monitor. We know with the SO₂ we've made huge reductions. You know, hundreds of thousands of tons of SO₂. We got a half a deciview improvement shown through the modeling. So I think the problem there is not that we shouldn't make the reductions. I think everybody agrees that we need to make the reductions. The Federal Land Managers tell me that the monitors are beginning to show some sulfate reductions, but the models are not sensitive to these reductions. Hopefully, the models will catch up. It's the best tool we've got.

Darrell Walker: Tina, how will those ozone reductions, how will that work, you say in a nonattainment area? How will that function?

Tina Anderson: Can you hold that question, because we're going to talk about ozone. I wanted to put the NO_x reductions that Chad was talking about in perspective. In the SIP, you saw up through this, this little table is in the SIP we gave to the Federal Land Managers. And they, and rightly so, were confused because it didn't include the BART reductions. So, I'm bad. I should have included something like this in there. But this shows each consecutive step after that. So this is the baseline. These are the latest things that were actually modeled in the million dollar model run. That shows you the percent reduction, a fourteen percent reduction overall. Seven percent from point, that's prior to the BART. Then we put in the BART and we get fifteen percent reduction from BART. Then the next step is putting in the long-term strategy that goes out to 2018, which is the first planning period. And that's important to EPA because they're looking at planning periods. So that takes us out to a 26 percent reduction, just from the point sources from the state NO_x. We're only looking at tons per year here. And then the last step there is to add in the long-term strategy which are those SCR installations at four, three more SCR installations to bring the total NO_x inventory down for point sources by 38 percent. We think that's something to brag about, affecting the overall. The other thing in here you see is anthro fire, it does show a drop. And the on road and off road mobile.

Dave Finley: Talk a little bit about oil and gas.

Tina Anderson: Oil and gas. We're not ignoring oil and gas, obviously. We know that it's a big part of the inventory. It shows probably the biggest growth sector for our state for any of the source categories. The problem with the oil and gas piece is the timing. This Regional Haze SIP is already late. It was supposed to be submitted in 2007. EPA gave us 2008 and now it's 2009. So we're already running behind. They are threatening to FIP us if we don't get this in by January, which means they'll just take it over and create their own version of how to do this. We are working, as you can tell from earlier discussions about oil and gas, to address nonattainment issues from oil and gas in the Sublette County area. We are not ready to take emission control commitments and bring them into the SIP. But EPA wants our reductions, actual commitment reductions. And we have, we've said in there that we're going to do this. But what they want to see are the actual emission reductions. We've got to get our plan together for

ozone. The schedule here is the controversy over the standard. That's just delayed the process further. But at the point at which we are able to quantify those emission reductions and that they're enforceable at the state level, they will be rolled into the Regional Haze SIP, probably in the next update, we're committing to do that.

Tammie Archibald: The next update is when?

Tina Anderson: 2013. But that's when it's due. So we'll be working on it and this is almost 2010, so it's going to be just continuous work here. We'll be attempting to estimate visibility improvement that comes from these kinds of reductions. The ozone thing, of course, is focused on ozone, not visibility. But we're going to have to do some kind of other thing to address this issue with ozone.

Tammie Archibald: How do you model for increased development? I'm assuming that you do, that you take that into consideration with oil and gas.

Tina Anderson: That's a very good question. The early projections were based on the management plans of the BLM. And those tend to be pretty out there. Because they want to get the biggest sort of scenario that they possibly can and get that in place. So that's what we started with. Right now the WRAP is trying to refine those numbers to what's called a phase III oil and gas inventory work. And I don't know, John, are you involved in that? But it is running behind. The last time I talked to Tom Moore he said that they'll have some numbers by June. Don't hold your breath...

Dave Finley: I didn't realize that WRAP effort was refining 2018, also. I thought it was trying to bring the baseline up to date from 2005 and 2006.

Tina Anderson: I think they're also trying to refine the projections as well.

Dave Finley: Are they? Okay. The other question I have is, is utility growth included, point EGU growth included in that point source category?

Tina Anderson: Yes. If you took that out, we'd see a bigger drop. And again, when we do the next SIP revision, will we have the resources to do another utility projection, I don't know. WRAP funding right now is so precarious. As Dave pointed out, we just don't have any money to do another big effort. So, inventory work is one of the least expensive pieces here.

Dave Finley: Didn't PacifiCorp just announce it's not going to build any more coal?

Cathy Woollums: We have no plans in the immediate future.

Dave Finley: So that ought to be easy to back that out. I don't know how many tons are in that, of NO_x are in that.

Tina Anderson: I want to say there are three plants in there. That's a lot when you're shaving tons on the one end and we're magically growing them on the other end. But that was all done in a time period when we thought that we needed that.

Dave Finley: So this is another deal here where today's assumptions aren't really reflected in this table.

Tina Anderson: It's hard to make anything that's this large, that involves this many people, over this span of time to be really up to date. But it is...

Dave Finley: Tina has said that SIPs don't age well. If it takes you ten or fifteen years to write one, it's just like the Golden Gate Bridge. You have to keep painting it continuously. By the time you reach one end, the other end's ready for you to start again.

Tina Anderson: So we went over that. The long-term strategy. This is the other big piece. So BART is a whole chapter. And then there's a long-term strategy section. In there, we take credit for, and I think rightfully so, all of the programs that we have in place right now, like our PSD program we talked about yesterday, the new source performance standards we talked about yesterday. All those new standards that are coming out, controlling sources all the time, the operating permit program, and the minor source BACT program. The minor source and the PSD are very dynamic programs. We're always pushing those numbers down so we're going to continue to get reductions. The long-term strategy is the beyond BART piece. Chad talked about these additional, I guess Laramie River Station is one unit in 2018 and one unit in 2023. So we've got some significant reductions that we've listed in the long-term strategy that are not formally BART because they're not in that BART window. They're a little further out. But these are commitments that states and the utilities that are involved are making. And what we've also committed to do in there is to develop a rule to evaluate this non BART universe. We've got to put our thinking caps on and get organized about how to address that. The four-factor analysis needs some work, shoring it up, making it make sense for the picture that we have for visibility. And the big piece that we've also committed to doing is rolling in the oil and gas reductions that we will get from ozone nonattainment. And we're not going to wait until the ozone SIP is done. We'll wait until we have enforceable reductions at the state level. At that point they'll be ready for the Regional Haze piece. So that's kind of the long-term picture. So this brings us up to where the SIP is at right now. I got some great feedback from Jeff and Ronn, who caught a lot of my boobos. A lot of good questions. I'd like to fix some of those things up. Federal Land Managers get special treatment in the SIP. All of their comments get included in the technical support document in a special place because the rule says we will do that. So we'll put those in there along with our response to comments. I've got some larger clarifications that I'd like to address. The NO_x table you just saw—I'd like to work something like that in there, which explains the whole NO_x picture. I'd also like to try to work with, and this is a response to an EPA comment, are you comfortable about me talking about this?

Dave Finley: Yeah, go ahead.

Tina Anderson: EPA has looked at our SO₂ commitments and believes that we need to address more than what we've addressed in the Backstop Trading Program. They also say that we need to do a four-factor analysis on that. We have done a four-factor analysis. We contracted with the WRAP and did a

general analysis of all of the sources in the western regional area. It was done by ECR. What we will probably do is go back in there and probably reflect some of our comments on an analysis and draw some conclusions about what we can pull out of that analysis. I think it's safe to say that we are not going to end up in a different place than we are right now. Because we've actually done the review. We've just not shared that in our SIP. But at this point, what we probably need to do is clarify that review that we've done and put that into our SIP so that it's not a concern.

Dave Finley: I used the disingenuous word earlier—I'll use it again here. You know we were, we and other states on the Colorado Plateau, were presented with an option several years ago. Do you want to do something special for SO₂ controls that's different from the typical facility-by-facility BART approach that was employed for NO_x controls. And that something special was get all of the large SO₂ generators in the room and all of the other interested parties in the room and agree on emission reduction targets for SO₂ which would be implemented ahead of schedule, in essence. So we said, yup, that sounds like a good deal. And everyone's understanding I think at the time, was if you did that and if the largest generators instituted those controls and lowered SO₂ emissions, which has happened, then you won't have to go through a source-by-source, what's essentially a BART analysis for SO₂, as long as those sources can show that they are collectively below the SO₂ emission levels that were agreed upon in that 309 discussion. And I think we're getting pushed to try and kind of abandon that, really. And to go back to those sources and say what can you really do on a source-by-source basis. We'll resist that. We opted for 309. We opted for this Backstop Trading Program. The sources relied upon that. They instituted significant reductions. And we really do believe that we're entitled to simply fold those reductions into our SIP here and move on. So they'll be some discussion about whether that's the case or not. But there might be a fight about that as well.

Ronn Smith: Did EPA ever actually approve the 309 SIP?

Tina Anderson: No. It's still sitting down there.

Ronn Smith: So they could claim that we haven't approved it so we can require what we want.

Tina Anderson: Utah is another state that submitted their 309 and they haven't approved theirs either. New Mexico is waiting to submit theirs with this piece, as is Arizona. They're in a little different position. Our thinking was, let's get that one done and then let's focus on the NO_x. It made more sense.

Dave Finley: And like I said, SIPs don't age well. Well conditions have changed a lot since everybody got in a room and said, here's what we think we can do for SO₂ emissions going forward. So certainly, things have changed. But if you delay approval on a SIP and our original 309 SIP went in...

Tina Anderson: 2003, but the work was done in 2001, the negotiations.

Dave Finley: If you delay, six, seven, eight years, sure circumstances are going to change. But if that's the approach, simply don't take action at the Federal level, let circumstances change then force states to redo their work, we'll never get anywhere, seems to me. I think we've really achieved some significant SO₂ reductions here, some truly significant NO_x reductions are being achieved through application of the

BART controls for the larger sources. And through securing commitments to put additional controls on in that first planning period. So some really good pollution reductions are taking place under this program. Can EPA find reasons to reject any one of these SIPs? Probably. But my view is we need to get the SIPs in place and then move on. This thing does not go away after the first SIPs are approved. There's a five-year review period. Then every ten years a new SIP, right?

Tina Anderson: Well it depends on, you open these up, and it depends on where you're at. You do an adequacy determination. And if you need to address more then you address more.

Dave Finley: Yeah, so...

Tina Anderson: But we said different planning periods, once we get beyond 2008. So they go on until 2064. We're going to know more. The standards are going to drop for the ambient pollutants. It's a long-term planning...

Dave Finley: And frankly, I sense frustration on the part of states along the lines of, look we've worked forever on this stuff. If you really want us to, you can ask us to continue to work forever and never approve anything. At some point the states, I think, are going to simply say, if we can't do it to your satisfaction, here it is, you try. We're not at that point yet and I hope we don't get there, but again, I suggest that you should keep in mind that this does not end with the approval of these 308 and 309 SIP's. Okay?

Tina Anderson: That's all I have.

Bill Boger: So Tina, with these changes, what is the timing for submittal of the SIP to EPA?

Tina Anderson: Our goal at this point is to get this down there if we can, by January. They have what's called a SIP clock. So a Federal implementation plan—those are all established by the Clean Air Act. They will have to write a plan for us. And they've told us that if they don't have something to go with, they're going to have to start writing such a plan if we don't have something in by January. So that's kind of where we're at.

Dave Finley: So the process from this point forward is that we've gotten comments today. We have a set of comments, as Tina indicated, from consultation with EPA, and written comments from FLMs and the public. We'll respond to those comments, prepare a final SIP package, which will then go to Governor Freudenthal.

Tina Anderson: It will go to John Corra and then to Freudenthal.

Dave Finley: Well it goes through me. I've left me off. It goes up through the DEQ chain and then submitted to EPA.

Bill Boger: And the comment responses become part of the...

Tina Anderson: They become part of the record, yes. And that includes any comments that happen here today, too.

Bill Boger: I think we can open it up to comments.

Dave Finley: Hello, Cathy.

Cathy Woollums: Mr. Chair, Board members, Mr. Finley. My name is Cathy Woollums. I am with Mid-American Energy Holdings Company, which is the parent company of PacifiCorp. PacifiCorp does business in the state of Wyoming as PacifiCorp Energy, which is our generation branch of the organization and Rocky Mountain Power, which is the entity which brings the energy to your houses when you flip the switch on. In addition to today's oral comments, we already have submitted some written comments and would incorporate those, as if fully stated herein. I'll also provide you a couple of copies here this morning. We faxed those in, I believe, this morning. PacifiCorp operates in the state of Wyoming twelve coal-fired units in four locations. In Douglas, Gillette, Kemmerer, and in the Rock Springs area, about 4,800 megawatts of generation in that portfolio. Currently, ten of those twelve units that we're talking about are involved with installing significant pollution control equipment that will reduce SO₂, NO_x, and PM emissions, depending on the facility, but between 15 to 90 percent. And when Tina talked about the emission reduction plans that we have, that's part of a larger, broader emission reduction program that was started many years ago. And I think some of the Board members have heard about over a period of years. The projects that Tina talked about, however, amount to almost a billion dollars in NO_x reductions alone. So we're talking about a very significant expenditure here. For some, somewhat nebulous goals that we're having a little bit of difficulty quantifying. I think the other aspect that I want to make sure that you understand, and I think that was based on some of your conversation today, is circumstances change. And I think another take away from yesterday's discussion was sometimes Wyoming is a little bit different in the issues that it's trying to solve, whether that be on the ozone side and having winter ozone exceedances. All of those things require sort of a tailor made solution. And one of my concerns about the SIP, as it's currently drafted, is that I think it goes above and beyond what needs to be done in terms of the level of commitments that are made, primarily with respect to the dates that are imbedded within the SIP. PacifiCorp fully plans to execute on the emission reduction projects that have been identified here. The difficulty we have is when you put it in the SIP, and the SIP assuming it someday gets approved, right? But when you put it in the SIP, it becomes a Federally enforceable requirement. And we have every confidence that if we run into a road bump or we need to change plans because of a given circumstance that's created in 2023, for example, that the State will accommodate that situation. The problem is, EPA might not be so accommodating. And that's one of the primary basis for our concerns, is that once it's in the SIP, it's in there forever, unless you somehow can get EPA to agree to a change in that SIP. So that's one of the primary concerns, is as it's written, I think it goes a little bit above and beyond the timing requirements and you know cementing those rates and dates when they're several years out creates a little bit of concern on our part. Earlier today, Bruce Pendery mentioned the climate change issue. And believe me, that's an issue that we're monitoring very closely. Right now the pending Federal legislation could require us to look at CO₂ reductions at our power plants as early as 2012. And that's a lot earlier than a 2023 date as we go out in the Regional Haze SIP or the long-term strategy. And so we need to contemplate those types of things as we're cementing some of those dates moving forward. Because if I've got to make emission reductions for CO₂ purposes at one of

those plants, the economics of the NO_x reductions look very, very different than they do today, sitting here. They even look different in today's economy versus the economy and the economic factors that might exist five years down the road. So my cautionary statement, of course, is look out what you ask for and look out what you put in writing, even though we are committed to making those emission reductions. We want to make sure that we approach it in a logical fashion and that the State maintains the requisite degree of flexibility that I believe it has. And secondly, that I think it would be prudent to exercise in moving forward. One other, two other points. We would encourage, and maybe this will all shake out in the timing, but because the BART determinations are not yet final, as Chad went through his part of the presentation and talked about where those determinations are at and that they're not yet final. But a little difficulty commenting squarely on the SIP because those requirements are, they're referenced in there, but without final determinations we don't have a good sense of ultimately what we're going to have to do. And the last point is, as far as I know, Wyoming may, in fact, be the only state in the country that would require SCR as BART in that first period, at Naughton Unit 3. And take that for what it is. We disagree with that conclusion and we've raised comments throughout the BART determinations in that regard. There will be some people who tell you that SCR should be BART at every coal-fired generating facility. And I'll tell you that I don't believe that that's the case, first, and second, it can't be done in the timeframe that they believe it can and should be done. But secondly, because Wyoming is sort of setting the bar pretty high, I just ask you to think about that and whether or not that's the position the State wants to be in. I'd be happy to answer any questions if you have them.

Ronn Smith: So as I understand what you said, your concerned first about the long-term strategy and commitments being made in writing. And secondly you're concerned about the BART standards, and how they apply to your plants.

Cathy Woollums: Correct.

Ronn Smith: In reading through the BART permit applications a few months ago, it looked to me like PacifiCorp was basically willing to make all those improvements and not only NO_x reductions, but PM and SO₂ as well. Where exactly is the, you mentioned the Naughton plant, the focus of your disagreement?

Cathy Woollums: Well, primarily. I think you know, we are willing to make the emission reductions. The concern is, in, we believe that there are different reasons that PacifiCorp would like to make those emission reductions. We do not believe that a strict interpretation of the BART requirements in EPA's regulation would require or lead naturally to the conclusion that SCR would be required in that first BART determination. So while we're willing to do it, I think as a practical matter and a matter of regulatory interpretation and a matter of law, it is not required. And again, it comes down to that sort of precedent setting aspect and being the first state out there and then you know, what's next?

Ronn Smith: I can appreciate that. I think also that Wyoming can be commended for its progressive, all the way back to thirty years ago and the state legislature, Al Simpson and Malcolm Wallop, set standards for SO₂ that were five times as stringent as the national. And then you all went out and proved you could do it.

Cathy Woollums: And we wouldn't say we can't do it, obviously we can and we will. But the key is the regulatory driver for that.

Ronn Smith: I'm just curious, not to dominate, but what are your plans for SO₂ reductions. You mentioned you have some plans.

Cathy Woollums: Yeah, off the top of my head. Bill might be able to help me a little bit. We've got a number of scrubber updates in process as well.

Bill Lawson: Do you want me to run through the...

Cathy Woollums: Why don't you run through them.

Bill Lawson: Now I have come up here. We'll start at Kemmerer. Our Kemmerer plant, southwest Wyoming, we have three units, Naughton Units 1 and 2. We're in the process now of installing wet scrubbers on those two units. It will be 90 percent plus efficiency. Unit 3 is currently scrubbed on that unit. Then moving to the Jim Bridger plant, Units 1, 2, and 3 are currently meeting a 0.3 ppm Btu emission rate. Those units are being upgraded. We'll be able to achieve a 0.15 ppm Btu emission rate on those three units. Unit 4, which has a different type of stack, we're going to be able to achieve a lower rate there. And probably meet a 0.12 emission rate on Unit 4. Low NO_x burners on, oh, you just asked about SO₂.

Ronn Smith: Yes, I was just...

Bill Lawson: So, then at Dave Johnston Units 3 and 4, just down the road in Douglas, we're putting in dry scrubbers on those two units with baghouses. And the real purpose, I know that we've gone through descriptions here, under the BART review, where the baghouses, the State has said they're not cost effective. We get concerned about using the word "not cost effective." The real intent of those baghouses are to improve the SO₂ removal efficiencies.

Ronn Smith: That's what I figured. And so in combination it makes sense.

Bill Lawson: In combination it makes sense. But if you're looking at the facility at PM, it may appear not to be a cost effective process. But we are putting in dry scrubbers there with baghouse combinations that will be 90 percent removal. Then the Wyodak unit, which already is scrubbed, we're updating that scrubber. It will go to an emission rate of, currently the limit is 0.5 ppm Btu. Its future emission rate is 0.16 ppm Btu. All of these projects at this point have been permitted.

Ronn Smith: That's great to hear. I think, whether or not it's driven by regional haze, and in this case it's not, you should take credit for those plans.

Bill Boger: Cathy, I assume maybe your letter here. You mentioned it would be prudent to exercise flexibility. Do you provide some ideas?

Cathy Woollums: We do in a general sense. You know I think that you could, because of the language that's within the regulation, you can be a little less specific and suggest what your regional progress goal is going to be without specifically saying, you know, you need to install this equipment by this date. I think that's our primary concern because unfortunately, too, in the electric world, we sometimes have unexpected things happen, like outages, forced outages, which we try to prevent through maintenance programs but sometimes things happen that we don't anticipate. That sometimes will push out an outage by six months or a year. And having that, you know I have confidence again, that if I was presented with that situation, I could discuss it with Mr. Finley and his staff and come to a resolution of that issue. I can't necessarily go to EPA and say, hey, I have a little problem here. Can you help me out? So having the State have the flexibility, we're okay with maintaining through the permitting process some of those dates. The issue, I think is once you get it in that SIP, it's like concrete and it's really hard to remove. I think you can again, go back and make some of those things a little less specific, particularly as the years go out in that first planning period and then the second planning period.

Dave Finley: I'm sorry, I missed the first little part of that question.

Bill Boger: Well the question I had was, Cathy mentioned that it would be prudent to exercise some flexibility with respect to those dates for installing or doing the retrofits, because once it gets in Federal rule, they're locked in.

Dave Finley: Did you ask how we would do that and she was...

Cathy Woollums: He's trying to explain that.

Bill Boger: I was trying to explain that.

Dave Finley: Does that explain...

Cathy Woollums: It is to a certain degree and we would, you know, we would be more than happy to provide some additional detail if you've got some outstanding questions or some suggestions once you've had an opportunity to read through the comments, in the event that we haven't made that more clear.

Dave Finley: Okay. Thank you.

Bill Boger: I think it is a good question. And I looked at the dates for the retrofit and in a lot of cases, I mean they're in the real near term, 2010, 2011. So I think we need to give consideration to that comment.

Jeff Snider: A question, just about the obvious. 2023—can't you say in general that it becomes cheaper with newer technology and better ideas about how to do this in the out years, so the planning that's been done by Chad and the Air Quality Division is maybe conservative.

Cathy Woollums: That's certainly one approach to take. I would offer a differing perspective and say that we don't know what that technology is going to be and there's actually some language in the SIP that causes us a little bit of heartburn. It talks about, in that 2023 timeframe, getting to the lowest viable

emission rates. Today I can't identify that. We don't know what that lowest achievable or lowest viable rate is going to be in the future. And there might be some whiz technology that comes along that actually reduces all emissions. You know, I'd like to patent that. But we don't know what the costs are going to be either. Hopefully, technology advances will reduce the cost. But then we've got the CO₂ component that comes in, particularly in 2023, I don't know that that plant is going to be viable anymore if I've got to make CO₂ reductions. That's a pretty reasonable possibility at this point, given where the Federal legislation is at.

Dave Finley: Where is the language that you just read from? Is that in the SIP?

Cathy Woollums: It's in the SIP, yes.

Tina Anderson: It's also in the BART permits.

Ronn Smith: Are you concerned about the near-term commitments or more the long term?

Cathy Woollums: Yes.

Bill Lawson: I think for the near term, we know where we're at. We know where we're going. But as situations change, we talked about the four-factor test, the five-factor tests. There are presumptions made in those tests about plant utilization, about benefits that are going to be achieved. If we go out in the future, we talked about the modeling. Everything we're doing now is based on assumptions that are being made. It will be helpful to get down the future to see what kind of benefits actually happen, to have actual data. So all those things factored into the future commitments make them more questionable in our mind, making sure we have the right path outlined.

Ronn Smith: Yeah, that does seem to me to be more of a problem, almost a blank check 20 years out.

Cathy Woollums: Yeah, especially when we're already talking about a billion dollars in current dollars.

Bill Lawson: And that's just for that NO_x piece.

Cathy Woollums: The SO₂ is separate.

Bill Lawson: The SO₂ is separate. But you remember those charts where we showed the component of NO_x on visibility...

Cathy Woollums: The nitrates were that much, so we're talking about a pretty big chunk on PacifiCorp's shoulder.

Bill Lawson: A billion dollars is trying to address that small piece.

Tammie Archibald: I have a question about process. If we then try to be more flexible in our SIP, are we going to be less likely to get it approved by EPA?

Tina Anderson: We run a high risk. I mean EPA's comments are just the opposite nature, as you would expect. That we should have less in long-term strategy, more in the BART category.

Tammie Archibald: And they don't want the state necessarily to have more flexibility.

Tina Anderson: Never.

Tammie Archibald: And addressing it.

Tina Anderson: Never.

Tammie Archibald: But the State wants to have some.

Dave Finley: Well, the deal I think is that under the Clean Air Act, states are really charged with issuing permits and enforcing permits. Except for one narrow category at facilities, Title V facilities, states are pretty much in the driver's seat with respect to what goes in a permit and what kind of conditions and how is that permit interpreted and enforced. When a permit moves into a SIP, however, the SIP is directly enforceable by EPA. So I think, Ms. Woolum's comment that we do lose some degree of discretion in implementing specific permit terms and conditions when a permit is built into a SIP.

Tina Anderson: But Mr. Chairman, this program is set up to put rates and dates in the SIP. If we don't put them in there, I think we may err on the process side.

Dave Finley: Yeah, Mr. Chairman, I hear what PacifiCorp is suggesting. I'll be interested to look at what's the mechanism that they're proposing to achieve that. We're always open to looking at new information but, as Tina did mention, we're getting a lot of pressure from the Federal side, not only EPA, but the Federal Land Managers. These SIPs have to have rigid commitments. So we'll look at what got submitted today.

Bill Boger: Bruce?

Bruce Pendery: I'll speak again and I'll do the same format that I've done in the prior comments. I have one copy for the Board and one for Dave. And I'll read these comments. These are a little longer. I am sensitive to the snow storm that Tina pointed out. In the draft regional haze state implementation plan, or SIP, the DEQ plans to put in place air pollution controls that will lead to slight improvement in visibility conditions in Wyoming's Class I areas on the 20 percent least impaired days. It will also put in place a plan that will lead to slight improvement on the 20 percent most impaired days. However, the improvement of visibility on most impaired days will only average a little over 0.5 deciviews. And the stated reasonable progress goals that will be achieved are not levels that meet the uniform rate of progress goals that are needed to achieve natural visibility conditions by 2064, as required by the Regional Haze Rule. The needed rate of improvement will not be achieved on the most impaired days. Current baseline visibility conditions in Wyoming's Class I areas average 11.5 deciviews, but an average level of 10.3 deciviews is needed to meet the uniform rate of progress goal. Yet the reasonable progress goal that DEQ

plans for will lead to only an average visibility condition of 10.9 deciviews in the Class I areas. The planned reasonable progress goal is only, on average, 45 percent of the uniform rate of progress goal. An average improvement of slightly more than 0.5 deciviews is planned. But the improvement needed to stay on the glide slope to reach natural visibility conditions by 2064 is 1.2 deciviews. In our view, greater levels of visibility improvement are achievable and should be planned for. Again, DEQ is only planning to improve visibility conditions in the Class I areas on the most impaired days by an average of slightly more than 0.5 deciviews by 2018. As the DEQ points out in the SIP, visibility improvements of less than 1 deciview probably are not perceptible to most people, thus the DEQ's plan would likely lead to little or no perceptible improvement of visibility for most people. If the needed uniform rate of progress goal of 1.2 deciviews were met, visibility conditions would improve by an average of more than 1 deciview, which would be perceptible to most people. Thus, we urge the DEQ to modify the draft SIP so as to achieve the recognized uniform rate of progress visibility improvement of 1.2 deciviews on the most impaired days, a level of improvement that would be apparent and real to most people. Data in the SIP show that sulfate is a fairly significant contributor to visibility impairment on the most impaired days. Nitrates are also contributors. While the data show that much of this pollution comes from areas outside of Wyoming, they also show that fairly significant contributions are made by sources within Wyoming. This is true for the contributions of sulfates at the Bridger monitoring site on the most impaired days, and is especially true for nitrates on the most impaired days at the Bridger monitoring site. And importantly, the data show that these contributions of nitrates and sulfates to impairment could be substantial in the winter, when fire is not a likely or important contributor to the hazy conditions. Thus, even if it is true, as DEQ claims, that most of the visibility problems on the most impaired days are due to wildfires, it is also true that there can be visibility problems in the winter when fire is not a likely contributor. Thus, in order to achieve a reasonable progress goal that is more in line with the uniform rate of progress on the most impaired days, we recommend that DEQ focus greater attention on correcting haze during the winter, roughly October through March, when fire is not a likely or significant contributor. This is half of the year. We also recommend that attention be focused especially on the Bridger monitoring site. The Bridger and Fitzpatrick Wilderness areas which are clearly experiencing haze caused by Wyoming sources of nitrates and sulfates on the most impaired days. There are a number of means by which greater visibility improvement could be achieved. On August 4, 2009, the Wyoming Outdoor Council and several other groups submitted comments regarding the proposed BART permits for the five Wyoming coal-fired power plants, that was the PRBRC et. al letter mentioned in the slide show. In addition, on September 10 and October 17, 2008, the Wyoming Outdoor Council submitted comments on the proposed BART permits for the three trona plants in southwest Wyoming. Those comments proposed to DEQ a number of enhanced pollution control options beyond what is being currently planned that would achieve a reasonable progress goal that is more in line with the uniform rate of progress. And I've left a copy with you of all of those comments and what I submitted to you. With respect to the coal-fired power plants, those enhanced proposed controls include the following: selective catalytic reduction should be used as NO_x control. As we point out in the comments, very substantial visibility improvements in Wyoming's Class I areas could be achieved by requiring this as BART. In some cases, the DEQ is proposing NO_x controls that are less than the presumptive BART limit established by EPA. Selective catalytic reduction would ensure presumptive limits are met. This concern is especially important where DEQ does not plan to require any additional NO_x controls as part of its long-term strategy, which means that SCR or add on NO_x controls will be required at a later date on some plants. Only the Laramie River and Jim Bridger plants will be subject to these additional long-term strategies. Dave Johnston, Wyodak, and Naughton

escaped further controls. As we describe in our August comments, several of these plants are also acknowledged by the DEQ to be causing reasonably attributable visibility impairment. This means that in addition to causing visibility impairment that is subject to the Regional Haze Rule, these plants are also subject to Chapter 9 of the Wyoming Air Quality Standards and Regulations, the reasonably attributable or plume impairment regulations. Having recognized that these plants are causing visibility impairment far in excess of 1 deciview at various Class I areas, the DEQ should certify that impairment has occurred due to these plants and pursue the BART requirements that Chapter 9 provides for. As we point out, the BART limits under Chapter 9 are presumed to be at least the current new source performance standards for NO_x for coal-fired power plants, which EPA has established as 0.1 ppm Btu, considerably less than what DEQ is proposing. We also point out in the comments that DEQ's reliance on the regional SO₂ milestones in the Backstop Trading Program as BART relative to SO₂ is misplaced. The EPA has never approved Wyoming's section 309 backstop trading plan, thus it cannot be relied on as BART. And as we point out in the comments, the companies themselves proposed BART controls for SO₂ that would achieve far greater control than DEQ's backstop proposal. So those proposals should be adopted because they achieve greater reasonable progress than does application of the section 309 program. And last, in our comments we pointed out a number of ways in which enhanced particulate matter control could be achieved, usually with the installation of full scale baghouse technology or polishing baghouses. With respect to the three trona plants, additional haze reduction that would allow DEQ to better meet the uniform rate of progress on the most impaired days could be achieved as follows: the DEQ continues to take the position that the Granger facility will not be subject to BART at all, and thus requires no additional emissions controls on this facility. There is no BART for the Granger facility. We believe this decision is short sighted and illegal. As we pointed out in our October 17, 2008 comments, when considered with the other two trona plants, the DEQ's data show that there's a total combined impairment of 1.73 deciviews in the Bridger Wilderness. Under DEQ's Chapter 9, reasonably attributable impairment regulations, as opposed to the Regional Haze Rule, the BART is required when impairment can be reasonably attributed to a "small group of existing stationary sources." We feel that is the case here. DEQ has attributed visibility impairment to a small group of facilities, the three trona plants. Thus, in our view under Chapter 9 of the Wyoming Air Quality Standards and Regulations, DEQ must require BART for the three facilities because they are causing visibility impairment in the Bridger Wilderness Class I area. We raised this issue in our comments on the draft permits, but DEQ completely ignored it, claiming that the Regional Haze regulation does not require combining impacts, but completely ignoring its own Chapter 9 plume impairment regulations, which are what's at issue here. This is a missed opportunity and it is our intent to continue to raise this issue with EPA when the SIP is submitted to the EPA. In the SIP, DEQ attempts to justify not meeting the uniform rate of progress goals. On pages 124 to 126 it offers several rationales. These assertions are unpersuasive. DEQ claims that it can't do much about impairment on the most impaired days due to much of it being caused by natural fire. As mentioned above, the data in the SIP show that fire is likely only a cause of impairment about six months out of the year and the most intense fire season probably only lasts three to four months. Thus, in much of the year, fires are not the cause of visibility impairment. DEQ also claims that much of the impairment is due to sources outside of the area and beyond its control. Well there is certainly truth in this. As discussed above, the data show that there is a substantial local contribution to sulfate and nitrate pollution, two types of pollution subject to significant human control, especially at the Bridger monitoring station, which implicates the Bridger/Fitzpatrick Wilderness areas. The DEQ states that "the largest point sources of NO_x emissions is coal-fired power plants" and there are at least two coal-fired power plants that have significant impacts on the

Bridger and Fitzpatrick Wilderness areas, the Bridger and Naughton power plants. Thus, control at these plants could be a focus for DEQ because nitrate and sulfate from local sources is an important contributor to visibility impairment in these areas on the most impaired days. DEQ also points out that the second largest category of stationary sources in the West is oil and gas development. This emphasizes the need for DEQ to pursue regulation of the oil and gas industry, such as by adoption of the BACT requirements we have discussed here, codifying its current offsets policy, which it currently treats as guidance, and regulating drill rigs. If these actions were taken, the second largest source of emissions could be better regulated and greater visibility improvement achieved. DEQ also claims that its participation in the 309 Backstop Trading Program has reduced SO₂ emissions, but as pointed out in our August 4 comments, much greater reductions could be achieved if the measures the companies themselves proposed were implemented. DEQ claims that the air quality monitoring at the existing IMPROVE sites has not shown a trend toward degraded visibility due to anthropogenic sources. But at least at the Bridger IMPROVE site, it is widely recognized, especially by the Forest Service, that the site is not appropriately located to monitor the contribution of oil and gas emissions in this area and there is a need for visibility monitoring that reflects the impact of the gas fields. And finally, and on a personal note, DEQ claims that air quality is good in Wyoming, much better than in the East. The implication is that we should be happy with what we've got and not worry about Wyoming and making as much progress as the uniform rate of progress goal calls for. This is not comfort for the thousands of people who visit Class I areas hoping for the 100-mile view, but sometimes being treated to the 40-mile whiteout caused by haze. DEQ should drop any implications that our air quality is good enough and you should just be happy with what you've got and focus instead on the goal of the Clean Air Act, which is "the prevention of any future and the remedying of any existing impairment of visibility in Class I areas due to manmade pollution." And I'll wrap up now. DEQ's ultimate conclusion in the SIP is that its plan is "adequate to ensure reasonable progress" toward the goal of natural visibility conditions by 2064. It claims its failure to achieve the uniform rate of progress goal that is needed to achieve natural visibility conditions by 2064 as the Regional Haze Rule requires is due to sources from outside of Wyoming and wildfires, which it cannot control. But as we have discussed here, there are substantial contributors to visibility impairment that originate in Wyoming, probably during the winter when there are no fires and there are many options available to DEQ to allow it to meet the uniform rate of progress goals. We urge the DEQ to adopt these options before presenting this SIP to EPA and we urge the Air Quality Advisory Board to impress these needs on the DEQ. By pursuing a rate of progress now that is only 45 percent of the uniform rate of progress, DEQ is only pushing decisions into the future and making achievement of the needed levels of progress that much more difficult because even greater rates of progress will be required in the future. Thank you. If you have any questions, I'd be happy to try and answer them.

Ronn Smith: Bruce, did you understand, as I did, that PacifiCorp is going to implement their proposed SO₂ reductions?

Bruce Pendery: I certainly would not question what they said. If they're going to actively pursue emissions reductions, I don't doubt that for a minute.

Ronn Smith: That's probably the biggest single component of all those that you mentioned.

Bruce Pendery: And I appreciate what was said today about some of the, that the data presented in the SIP, which is what I relied on completely for this presentation, may not be completely in line with the real world data that hasn't been fully incorporated yet. And that's just an issue I couldn't take on. I just relied on the data in the SIP and I think I've accurately characterized it. But if BART is making much bigger contributions to NO_x reductions than is actually reflected, well that's an issue too. And it would be nice to clarify, you know, so that we know as much as possible the real improvements that will be achieved.

Tina Anderson: Without another model run it's hard to set that number emission reduction wise...

Bruce Pendery: Yeah. Well thank you.

Bill Boger: Thank you, Bruce. Open to other comments.

Cathy Woollums: Mr. Chairman, we do have some specific marked up language that I would like to give you as an addendum to the comments I provided earlier. I only have one copy.

Bill Boger: I think we can get a copy to Dave and the group too.

Dave Finley: That's okay. We can do that.

Bill Boger: I'll hold on to it.

Tina Anderson: Is it marked up with suggestions for language?

Cathy Woollums: Yes, suggested language.

Bill Boger: So where do we go from here? We have a January 2010 deadline for submittal of a SIP. And we've had some good comments today. In terms of the Board, we can recommend adoption of the SIP so that we can work toward that 2011 timeframe with the qualifier I guess that these weren't the only comments. There were a lot of written comments received too. I guess I would just ask that comments be evaluated and where things can be changed to allow some of these comments to become part of the SIP, I would think that the Air Quality Division should entertain that. You mentioned that EPA as part of the Regional Haze Rule, it requires rates and dates. Work with it, see if we can a little bit here.

Dave Finley: Our next step is to summarize the comments and to write a written response to them and to recommend adoption of a SIP up through the chain of command. We would certainly be pleased to come back to the Board and share with the Board the recommendations that we've reached based on all of the comments that were received. If we meet the January deadline we could certainly touch back with you folks and let you know what the Governor's decided on some of these key issues in our January meeting. Does that sound fair, Tina?

Tina Anderson: So you're talking about one of those concrete things here, closing the public comment period today?

Bill Boger: Yes.

Tina Anderson: Making a recommendation for approval with consideration of these comments.

Bill Boger: And all comments.

Tina Anderson: Making changes where we feel we can work with these comments. Sending it up through the chain of command and then getting back to you on the comments.

Dave Finley: Well, Mr. Chairman, we'll have to let Mr. Corra know about what all the comments were. We'll have to let the Governor know what all the comments were. We'll have to let both of those gentlemen know how we would propose to respond to the comments and or altering the SIP, if that's required to have an adequate response to one of the comments. And then really, under the process, the Governor decides what is the form and content of the SIP and he sends it to EPA and we're hoping that that will happen sometime in January.

Tina Anderson: Right. And then so that people don't think that that's the end of the story, then EPA will review it and they have a public comment period. So people can jump in again.

Dave Finley: So what I was suggesting was that you've heard comment here. We'll be analyzing all the comments we've heard today plus the comment that we've received in writing. We'll be preparing recommendations for Mr. Corra and for the Governor, hopefully by our January meeting the Governor will have decided. And I will simply offer to come back and give you an update on some of the key issues that got raised in the comment period and how they got decided by the Governor to kind of close the loop with you folks. We'd be happy to do that.

Darrell Walker: That would be after the Governor's already done it all?

Dave Finley: Yes. It would be after the Governor decided.

Tammie Archibald: It seems strange to take an action without resolution. That seems strange to me. We're moving something forward that's not final. Does that happen quite often?

Dave Finley: The purpose of this really is, under the Regional Haze Rule, we are required to have a public hearing on the proposed SIP. We could do that as a hearing in front of me, as the administrator, but we have chosen to ask you to conduct a public hearing, which you've done here today. So you have been used. Does that make you feel better?

Tammie Archibald: Oh, so much better.

Bill Boger: We've only heard a couple of the comments of the what, seven hundred?

Tina Anderson: Those are BART-specific. I only know of, I think three or four comments that have come in on the SIP. But I don't know what's happening in Cheyenne that's on the fax machine.

Tammie Archibald: What's the content of the comments? Who generated them?

Tina Anderson: The Environmental Protection Agency has sent comments. The Federal Land Manager, the National Park Service has sent comments. Those are the two sets that I have seen. Anybody else know of any other comments?

Gina Johnson: We did receive one comment from a private citizen regarding, it was mostly regarding PM issues in her area. And it seemed like we didn't address those enough for her. But we have that as well.

Dave Finley: We got written comments today from the Wyoming Outdoor Council on the SIP. We got comments from PacifiCorp on the SIP. Did we get other comments today?

Tina Anderson: The EPA's comments were along the line of more SCR and the National Park Service were similar. More SCR.

Dave Finley: So, in our discussions with the utilities, and I think we'll have to explain this in some of our responses to those comments, as you heard, PacifiCorp had I don't know many units in how many places, I can't...

Tina Anderson: I think they said 10 out of 12 of their units are going through this process.

Darla Potter: They have twelve electrical generating units in Wyoming. Of those, ten are subject to BART and have gone through that process.

Dave Finley: We have two options really here to impose controls for visibility improvement. The controls can be BART, best available retrofit technology, but we also have an opportunity to impose controls that the companies agree to and essentially the companies have agreed to these controls as part of what's called the long term strategy to reduce NO_x emissions, to help us achieve these visibility improvement objectives. BART's a onetime deal. But the long-term strategy stuff goes on into the future until we achieve these fairly ambitious visibility improvement goals. And long-term strategy is reconsidered periodically as we go through time, so we have an ability to add in additional controls to facilities as we do these long-term strategy reviews.

Darrell Walker: Can you change dates on those?

Dave Finley: I expect that we could. It would involve a revision to a SIP and EPA, of course, would say, how come you said you were going to do this in this long-term planning period last time but now this time you say you're not going to do it.

Darrell Walker: So it would have to be approved by EPA.

Dave Finley: But one of the difficulties with BART is if you make a BART determination that requires a specific control technology to be installed on a plant, then the rule, the Federal rule says it has to be installed within five years of...

Tina Anderson: Five years of SIP approval. So.

Bill Boger: And I see Dave, as part of their rewrite here, it says required initial performance tests as expeditiously as practical, no later than five years after approval of the implementation plan revision.

Dave Finley: We'll have to take a look at that. We've been in discussions with PacifiCorp for a long period of time on what can they do. We'll just have to see what's changed. But one of the difficulties of saying to somebody like PacifiCorp that you have to install SCR on ten units or twelve units under BART provisions, is that it's difficult to contemplate that there's enough technical capability, enough construction capacity, enough money, enough, to make those major pollution control retrofits all in the same five-year period. That was a factor, for us in saying we're only going to do this unit as BART and these other units we'll do in the first planning period. A BART decision carries with it a regulatory time requirement, so it's not us imposing the time limit on a BART installation, it's the rule. So I'll be interested in seeing what PacifiCorp has to say about how do we make that more flexible. This reminds me of a rock and a hard place.

Tammie Archibald: What flexibility will PacifiCorp or other power plants have if they are making significant progress toward the goals that are on their BART and on the state improvement plan. Can they say, well because of our limitations on funding or whatever, or power outages or whatever the emergency might be, will the EPA be satisfied if they're making significant improvement?

Tina Anderson: You mean if we submit this thing to EPA in its current form and then they have a crisis coming up?

Tammie Archibald: If they can't meet the goals, but they're making significant improvements, will the EPA be reasonable in dealing with them? I mean I don't know. I'm new to this process, so I know that's probably a stupid question. But can they appeal it?

Tina Anderson: The SIP is an agreement between the State and ...

Nancy Vehr: When it becomes approved by EPA and it's published in the Federal Register, it becomes law. So it's Federally enforceable as law. Which would mean if you need to make a change to a SIP, you're essentially having to change the law. So it is a much more cumbersome process.

Dave Finley: But the question really, is, does EPA directly enforce against a facility for failure to meet a SIP commitment or do they...

Tina Anderson: They will in these cases, it's because they're going to be BART permits which will be rolled into Title V. Title V are Federally enforceable.

Nancy Vehr: They can approach it from the state and the SIP commitment or they can approach it directly against the source.

Dave Finley: And from a practical perspective, if we have a requirement in a permit which gets, a BART permit which gets rolled into a Title V permit, which is embedded in a SIP, and it says, we're going to put an SCR on this unit by 2018, for example, and here we go marching forward in time and 2015 comes up, 2016 comes up and someone at the company says, uh-oh, I have a problem, I can't meet that deadline, the question is are the regulatory agencies, do they have sufficient flexibility to adjust that deadline that is embedded in the SIP and embedded in the permits and so on. And that's a highly speculative kind of question. And it's really, it really depends on the facts associated with the delay. If somebody says I need to slip this three months into the next calendar year, that's different than if someone says I need to delay this installation four or five years. So I think if the question is, if it were posed to us and the EPA along the first line, I need to slip something, it was planned for November and now it's going in in February, that's different.

Tammie Archibald: It's workable?

Dave Finley: I don't know if it's workable, I'm just saying it really does depend on the facts associated with how flexible do you want somebody to be? If the flexibility extends to a question like, well I had a commitment to install SCR in 2013 on this particular unit as part of a permit or long-term strategy or a SIP. 2013 now, and in 2012 the owner comes to the regulatory agency and says, ooh, I made a mistake. I don't want to install control equipment. Can you let me not install that equipment. So really...

Tammie Archibald: Well they have a different scenario where they say we're working on new technology that could be better than SCR. You know we can really perceive what's going to happen.

Dave Finley: Well again that's,

Tammie Archibald: Is there an appeal for them?

Darla Potter: Actually in those provisions that go out further beyond 2015 and 2016, it's not specific whether it's selective catalytic reduction. It's specified that it's additional add-on NO_x control. So we did not specify the technology.

Dave Finley: You know when we talked to the company about this and this conversation was had not only with PacifiCorp, but with Laramie River, and Black Hills, I think. You know one of the concerns was, hey, we're facing all this unknown having to do with CO₂ control. And that got mentioned today as well. And it's entirely possible that this is the company speak, that when we figure out how to control CO₂ the opportunity for NO_x control might be different on a plant without CO₂ controls. So we've tried to write those BART permits in a way that allows for a company to meet those NO_x controls in a number of different ways. So we tried to stay away from specified technologies because we really don't know what they're going to be, given that it's a long-term time out in the future and given that these plants are going to have systems that we don't know about today to control CO₂ emissions. They may have them, depending on the congressional action. So to the extent that we can retain some flexibility to account for

future unknowns that were raised to us as we were discussing these permits with the utility industry that that's been addressed, I think. Or built into the extent we can in those draft BART permits. But I'll be interested to read what additional flexibility Cathy is seeking.

Ronn Smith: I just want to acknowledge the tremendous effort and good intentions that has gone into this by DEQ. A lot of times that gets eclipsed by the comments. But whatever form it ends up, it's certainly light years better than we would have been without this.

Dave Finley: Before we leave we need to make sure we've got copies of everything to the right people.

Tammie Archibald: Did you get this one?

Tina Anderson: As long as Dave gets a copy. Did Dave get a copy?

Tammie Archibald: Are there two there?

Tina Anderson: We need to make a copy of that.

Bill Boger: They're on every page, so a copy of the entire thing. There's actually three documents here.

Dave Finley: I didn't get a copy of that.

Tina Anderson: So just as a point of clarification. The way we are set up for these, the actions that affect PacifiCorp, they are in BART permits. BART permits were written according to our BART Rule. Our BART Rule says that these BART permits will become Title V sources. Once they become Title V sources they enter a whole other layer of scrutiny and enforceability. And whatever PacifiCorp has recommended, it's going to be something that EPA is going to approve through the Title V program.

Dave Finley: Or not.

Tina Anderson: So they're not going to escape that, whether it says we'll do it whenever we want to do it or it's a specific date or time. It's going to go through EPA.

Darrell Walker: Were there ever any cost comparisons debated on these that you can look at and you can really apply that to match the nitrates and that with billions of dollars? I don't know if that's true for SO₂ or not. I'm just curious.

Dave Finley: My understanding is that the billion dollar figure is both SO₂ and NO_x controls, not just NO_x controls.

Ronn Smith: I believe you said just NO_x.

Dave Finley: I know what she said, but PacifiCorp has a list of pollution control projects that it committed to undertake when Mid-America Power was authorized by the public service commission to

acquire PacifiCorp. And that's the list that PacifiCorp has been working with since it acquired the old PacifiCorp. And there are both NO_x and SO₂ projects on that list. That list started out somewhere around \$980 million and it's crept up over a billion now. I believe that it contains projects to control both SO₂ and NO_x.

Darrell Walker: Is that anything to do with the 13.7 percent increase we just got on our power bills?

Dave Finley: That was to help pay for state salary increases and improved benefits in terms of paid vacations for state employees. (background laughter)

Darrell Walker: You're in the no spin zone, right?

Dave Finley: I assume the tape went off already? I have no idea why you got a 13 percent rate increase. I don't think anyone else in Sublette County did.

Darrell Walker: Well the whole state did. PacifiCorp. Not just me. But sometimes those things happen you know, and what I wanted to ask is that considered by the Public Service Commission when they ask for these increases, if they're telling that all this SO₂, NO_x, all this stuff has a big factor in all that and how is it looked at a cost comparison on these regulations?

Dave Finley: My understanding is that if a utility becomes required to make an expenditure for pollution control, the utility in Wyoming anyway, some of them, are allowed to go to the Public Service Commission of the state in which it serves and ask for that cost to be passed through. Laramie River Station is different. It's not a regulated utility-it's a co-op. So its rates are established by its members. And its members also have to agree to install pollution controls so they know what they're doing from the beginning what it will do to rates. But yes, the costs do get passed on to consumers.

Ronn Smith: We're all breathing the air and seeing the mountains so we should pay for it.

Dave Finley: All except those costs I mentioned earlier which there is a line item dedicated to state salaries and vacation benefits.

Darrell Walker: Well your point's well taken and whatever you call this, most people don't think they're paying for it.

Dave Finley: Someone somewhere pays for all air pollution control costs. Not only these, but all the others we've been talking about.

Bill Boger: I think we're ready to move on here. I'd like to also say thank you to the Air Quality Division. Looking at what it takes to put this information together—it's a massive undertaking. So good job. With that I think the Board will vote, put a recommendation out there for adoption to move forward with the next step here. Do we have a motion?

Ronn Smith: So moved.

Bill Boger: A second?

Tammie Archibald: Who's going to second this? I don't know if I should be a seconder as I have not been involved in the plan until today. I will second.

Bill Boger: A vote. All those in favor?
(All the Board said "Aye")

Tammie Archibald: Are we adjourned?

Dave Finley: Yes we are.