EXHIBIT LIST

1	6 WAQSR §§ 2 and 4
2	EPA's NSR Manual (Draft 1990), Chs. B and C
3	Modeling Protocol (2/8/07)
4	Permit Application (12/31/07)
5	Permit Receipt Letter (1/7/08)
6	URS Letter w/ Application revisions (2/13/08)
7	AQD Completeness Determination (3/10/08)
8	DKRW letter to AQD (4/4/08)
9	URS Letter – coal emissions and SSEM (4/23/08)
10	URS letter to AQD w/ Application revisions (6/4/08)
11	Application Analysis (6/19/08)
12	AQD public notice letter to MBFP (6/25/08)
13	Legal Notice Affidavit (7/3/08)
14	URS letter w/ revision pages (7/31/08)
15	Permit Application (printed from CD 000078) (7/31/08)
16	DKRW Comments (7/31/08)
17	AQD Letter to MBFP – public comments (8/15/08)
18	AQD Letter to MBFP – ozone and startup (9/5/08)
19	DKRW Response to Comments letter (9/30/08)
20	DKRW Letter to AQD (10/14/08)
21	DKRW Letter to AQD (11/11/08)
22	AQD Letter to MBFP (12/29/08)
23	DKRW Letter to AQD (12/30/08)
24	DKRW to AQD – PM10 (2/3/09)
25	Decision (3/4/09)
26	Permit CT-5873 (3/4/09)
27	Initial and Final Invoices
28	AQD Letter to URS (1/10/08)
29	URS Letter to AQD (3/3/08)
30	DEQ Letter to URS (3/18/08)
31	EPA Comments (8/4/08)
32	AQD Letter to MBFP – HAP Health Risk (10/3/08)
33	DKRW Letter to AQD (11/5/08)
34	Wyoming Interstate Transport SIP – Declaration (12/2006)
35	Winborn Expert Report
36	Seitz Memo (10/23/1997)
37	Page Memo (4/5/2005)
38	Wyoming 2007 PM2.5 Recommendation (12/11/07)
39	AERMOD Implementation Guide (1/9/08)
40	Keyfauver Deposition Excerpts

41	Sahu Deposition Excerpts
42	Winborn Deposition Excerpts
43	DEQ Comment Letter – EPA-HQ-OAR-2006-0605
44	Sahu Initial Expert Report
45	Sahu Rebuttal Report
46	Permit App Analysis – AP-8749 – Bucknum Bentonite Plant, Natrona County (6/29/09)
47	Permit App Analysis – AP-4703 – American Colloid Colony East/West, Crook County (4/13/07)
48	Permit App Analysis – AP-5098 – PacifiCorp Dave Johnston Plant, Converse County (4/22/08)
49	EPA Protocol for Equipment Leak Emission Estimates, Chs. 2 and 5 (11/1995)
50	Respondent DEQ's Responses to Petitioner's First Set of Discovery Requests
51	EPA Letter to Senator Simpson (6/26/1996)
52	EPA – Wyoming MOU on PM10 NAAQS (1/24/1994)
53	PRB Coal Mine Permitting Guidance (5/4/2005)
54	PRB Coal Mine Permitting Guidance (2/27/06)
55	Sierra Club Comments (8/1/08)
56	AP-42 § 11.9
57	Keyfauver Deposition – additional excerpts
58	Carbon Basin Mines Permit No. CT-4136 (12/20/2005) and accompanying Application Analysis AP-2989 (11/9/05)

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

IN THE MATTER OF	)	
MEDICINE BOW FUEL & POWER	)	Docket No. 09-2801
AIR PERMIT CT-5873	)	

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY'S MEMORANDUM IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

Exhibit No. 57 – Keyfauver Deposition – Additional Excerpts

ANDREW KEYFAUVER,
called as a witness, being first duly sworn, testified as follows:
EXAMINATION
BY MS. ISSOD:
Q Good morning, Mr. Keyfauver.
A Good morning.
Q Can you please state your full name and address for the record.
A It's Andrew Keyfauver. My work address is 122 West 25th Street, Cheyenne, Wyoming 82002.
Q And you're currently employed by the Wyoming Department of Environmental Quality, correct?
A Correct.
Q And have you appeared at a deposition before?
A No.
Q This is your first. So let me go over some ground rules. I'm basically just going to ask you a few questions about your job and about the permit for the Medicine Bow facility, the Medicine Bow Fuel and Power facility. If at any time you don't hear me or if you don't understand the question, then just say so. Ask me to repeat the question or tell me that you don't understand it, and I will rephrase it.
Try to state your answers clearly. A nod of

the head doesn't work for the record. He's going to take down your response. If you need to take a break at any time, please just say so. If we have a question pending, I'll ask you to answer the question before we take a break, but whenever you need to.
If you ever realize that an answer you gave was inaccurate or you'd like to add something, just tell me you'd like to supplement an earlier answer, that you just remembered something.
If you don't remember the information necessary to answer the question, just say so, that you don't recall.
And please do not answer a question unless you're 100 percent sure that you understand it. Okay. Do you understand all those instructions?
A Yes, I do.
Q Okay. Is there anything I should know about your physical health or mental state today that will impair your ability to respond to questions?
A I'm perfectly fine.
Q Great. Okay. In preparation for this deposition, did you review any documents?
A These documents I have in this folder.
Q Okay.
A It's pretty much the application, the

public -- the application, the public notice, the decision document, some of the other -- I think -- the decision document, yeah. That's -- that's as best as I recall --
Q Great.
A -- is currently in here.
Q Great. So is everything in here, in this folder, in the administrative record?
A I believe all but the Deseret permit. I looked at that.
Q Okay.
A I don't have a decision document.
Q Okay. So in the notice of this deposition, we asked for you to bring certain documents with you, including correspondence and notes. Did you bring any correspondence with you today?
A No.
MS. VEHR: I brought all the admin record stuff and that.
MS. ISSOD: Okay.
Q (By Ms. Issod) Do you have any handwritten notes with you, outside of what is in the administrative record already?
A No, I do not.
Q Okay. Do you have any handwritten notes

regarding this matter since the administrative record was assembled?
A No, I do not.
Q Okay. So how long have you been working at the DEQ?
A I've been working for Air Quality Division for just over nine years.
Q Nine years. And what is your current job title?
A I believe it is currently program engineer. It's -- it's changed like four times in the last year and a half.
Q Oh.
A That job classification status.
Q Can you discuss your responsibilities as a program engineer?
A I am a senior permit engineer in Air Quality Division. Reviews permit applications. Typically, PSD or what they call more complex technical applications, such as coal mines or synthetic minor type of applications in regards to NSR.
Q Okay. Did you have primary responsibility at DEQ for review of Medicine Bow's prevention of significant deterioration permit?
A Yes.

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A I would look back at the appendices where the emission calculations and references are.
MS. ISSOD: Do you have a copy, Nancy, of the permit application?
MS. VEHR: I have the admin record.
MS. ISSOD: Can we get a copy of the permit application?
MS. VEHR: If you can tell me what Bates numbers and stuff. I've got the whole -- the whole record there.
MS. ISSOD: Okay. Well, let's do that after the next break, then.
MS. VEHR: Okay.
Q (By Ms. Issod) Would you prefer to see a hard copy or electronic copy? Which would be easier for you?
A Hard copy.
Q Move on to a different topic, then. I'd like to talk about the best available control technology analysis, or BACT analysis. It's my understanding that Wyoming has a BACT analysis that's different from the PSD's BACT analysis; is that correct?
MS. VEHR: I'm just going to object to in terms of PSD BACT analysis. Are you talking about Federal or State PSD?

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Q (By Ms. Issod) Okay. It's my understanding that Wyoming has a BACT analysis that differs from the Federal five-step top-down BACT analysis; is that correct?
A I'd say we typically follow the NSR puzzle book which describes the five-step analysis.
Q Is there another name for the NSR puzzle book?
A I do not recall the name of it. I was just using the -- the common language for that book.
Q Is it -- is it the 1990 New Source Review Draft Workshop Manual?
A I -- I believe that is correct. I'm not absolutely certain about it.
Q Okay. Does this EPA document describe the five-step top-down BACT analysis?
A Yes, it does.
Q Okay. So the Wyoming BACT analysis follows the EPA's five-step top-down BACT analysis?
A We typically follow the five-step process.
Q Okay.
A To the best of our ability, where it fits appropriately.
Q And what do you do where it doesn't fit?
A In those cases, we're usually going to the

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most stringent control technology.
Q So do you think the Wyoming BACT analysis and the top-down BACT analysis would typically yield the same results?
A I believe our Chapter 6, Section 4, and our Chapter 6, Section 2, BACT analysis would obtain the same control technology.
Q Did you review the best available control technology analysis for sulfur dioxide emissions from the Medicine Bow flare?
A The -- I guess, can you clarify, the flares are a control device for the emission units. So we -- we apply BACT for the emission units and not the control device. We can set emission limits where appropriate from the control device, but we do not do BACT on the control device. It is for the emission unit.
Q Okay. So the flares -- so you didn't consider the flares to be emission sources at the Medicine Bow facility.
A They are sources of emissions that can -- but they are control devices for process units.
Q So you didn't consider the flares to be emission sources for purposes of BACT.
A A top-down BACT analysis was not conducted for the flares, but was for the emission units at the

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facility.
MS. VEHR: When you finish this line, if we could take a lunch break.
MS. ISSOD: How many minutes are you looking for?
MS. VEHR: It's been about 40 minutes, so sometime in the next 10 minutes, 15 minutes.
MS. ISSOD: Okay.
MS. VEHR: Whenever you come to a breaking point.
MS. ISSOD: Okay. Yes.
MS. VEHR: Unless you needed to break earlier.
THE WITNESS: I'm fine.
MS. ISSOD: Yes. Let's try to finish this section.
MS. VEHR: Appreciate it. Thank you.
Q (By Ms. Issod) Did you consider any other control options for the flares, other than the startup/shutdown emission minimization, or SSEM plan?
MS. VEHR: And I'm just going to object on "control option." I'm not sure what you mean by "control option."
A I believe SSM plan is one of the options allowed under BACT for applying some sort of work

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practice standards.
Q (By Ms. Issod) Did you consider any other option for the flares?
A Not that I recall.
Q Did you consider strengthening the plan in any way?
A We reviewed that plan with our best engineering judgment. That plan could be addressed in the future, if a district engineer sees something, but that's beyond my expertise at this point in time.
Q Okay. Did you determine whether the plan was enforceable?
MR. COPPEDE: Objection. Foundation. But go ahead and answer.
A As part of reviewing that SSM plan, we reviewed it to ensure that there were areas where the district engineer could look at it and say, Did you meet the time frame in the SSM plan, or other thresholds that were established in the plan.
Q (By Ms. Issod) Did you consider making it more -- the plan more enforceable?
A I don't understand.
Q Okay. Did you consider limiting the number and durations of startups each year?
A As I understand it, that would be a judgment

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call for the district engineer. If it's -- if it's not as represented in the application. In the permit.
Q So is it your primary responsibility to review the control options and the BACT determination in the permit application?
A As part of my job duties is to go through and evaluate the BACT as proposed by Medicine Bow Fuel and Power.
Q Okay.
A And make a determination based on all available information.
Q And if you're satisfied that the BACT controls and the application is proper, the draft permit then goes to the permit engineer for review. Is that accurate?
A No. I would review the BACT analysis provided, make a determination, and then it would go to the program supervisor and manager for their review.
Q Okay. So if at some point in the process, you weren't satisfied with an aspect of the BACT analysis or the control chosen, what would you do?
A We would go back to the company with our comments and concerns, with their BACT analysis, whether they need to address additional control technologies or evaluate additional control thresholds with the chosen

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technologies.
Q Okay. So does part of your review of this SSEM plan includes a determination whether or not it was enforceable?
MS. VEHR: Objection as to the portion dealing with compliance. He's in permit, not in compliance.
A We reviewed the plan as provided by Medicine Bow Fuel and Power using our engineering judgment. And included that as part of our draft permit, which went to public notice. And as far as I recall, the district engineer did not make any comments regarding the startup/shutdown plan.
Q (By Ms. Issod) In terms of your responsibilities, is there something different about a work practice plan from a control -- from a BACT control option?
A It's just -- as far as I understand it, it is an available option under BACT if it's not feasible to establish an emission limit.
Q My understanding is, if there was a control technology chosen for BACT that you didn't think was a top control option, you would talk to the company about that; is that correct?
A We would ask them why they discarded that

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control technology under technical or economic feasibility.
Q So I'm curious. It seems that you're testifying there's a different level of review with respect to this work practices plan.
A I disagree.
Q Okay. So would you say that you do the same level review of this plan as you would a control technology?
A I would say any BACT determination undergoes the same scrutiny, whether it's subject to PSD or some other source.
Q Is that you? Are you the responsible DEQ official for reviewing this plan?
A I was one of the engineers who reviewed that plan prior to public notice and permit issuance.
Q Okay. But you didn't review it to determine whether it was enforceable.
A Could you repeat the question?
Q Did you review the plan to determine whether it was enforceable?
A Yes, we did.
Q Okay. Did you determine it was enforceable?
A To the best of our engineering judgment, there were set points that the district engineer could

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utilize for enforceability.
Q Okay. And did you consider any other option, like a permit condition that might limit the number of startups every year?
A I do not recall there being multiple startups in the application.
Q The purpose of this plan is to minimize emissions during startup, shutdown, and malfunctions, correct?
A Correct.
Q So my question was going to, did you consider any other option besides this work practice plan for limiting emissions from startup, shutdown, and malfunctions?
A Not as I recall.
MS. ISSOD: Should we break now? Because it's going to take a little bit longer.
MS. VEHR: Okay.
(Recess from 1:18 p.m. to 2:18 p.m.)
MS. ISSOD: Let's go back on the record.
Q (By Ms. Issod) Mr. Keyfauver, during the break, did you have a chance to review some documents to refresh your memory concerning the sulfur dioxide potential to emit for the Medicine Bow facility?
A Yes.

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Q Okay. So were sulfur dioxide emissions from malfunction events included in the potential to emit?
A Those emissions were included in the cold startup year emissions. The application represented those emissions as upset events during the cold startup year. In Appendix B of the application.
Q Okay. So are you saying that emissions from malfunctions were included in cold startup emission?
A They were reflected in the cold startup emissions as represented from Medicine Bow Fuel and Power.
Q Okay. So are you saying there's a table in the application that references emissions from cold start year that includes emissions from malfunction?
A That includes -- yes.
Q Okay.
A That includes that table that you were referencing.
Q Okay. My understanding was, there were two separate tables in the permit application, one referencing cold startup emissions and one that referenced malfunction. Is that true?
A I believe that's also on the application.
Q Okay. So are you saying that -- do you agree, there were two tables in the application: one

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for cold startup year emissions and one for malfunction emissions?
A Correct.
Q Okay. Are you saying that the cold startup year table includes malfunction emissions?
A From that table, correct.
Q Okay. So is the malfunction emissions table a subset, basically, of the cold startup year?
A Correct.
Q Okay. So does the application consider malfunctions to be a type of cold startup?
MS. VEHR: Objection. The application speaks for itself.
A It is representative, potentially occurring during a cold startup.
Q (By Ms. Issod) Okay. Were the emissions from cold startup included in the potential to emit for the Medicine Bow facility?
A The cold startup emissions were included in the ambient impact analysis for the facility, which should -- which is the highest emissions.
Q Okay.
A Demonstrate compliance with the WAAQS NAAQS.
Q Okay. My question is about the potential to emit. So let me try to define that further. We

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discussed the potential to emit is used to determine whether a source is a minor or a major source for PSD purposes, correct?
A Correct.
Q And you testified that for that determination, Medicine Bow sulfur dioxide emissions are approximately 36 tons per year, correct?
A Correct.
Q Okay. Were emissions from cold starts used in that potential to emit estimate?
A Those emissions were not considered part of the normal or routine emissions. They were only reflected in the cold startup year.
Q Can you give me a yes or no answer to the question?
A Could you repeat it?
MS. ISSOD: Okay. Mr. Court Reporter, could you repeat the question.
THE REPORTER: "Okay. Were emissions from cold starts used in that potential to emit estimate?"
A For establishing emission limits, I would say no. They were included in the WAAQS NAAQS analysis.
MS. ISSOD: Could we go off the record for a second?
(Off the record.)

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Q Okay.
A -- how he is -- how he does his compliance job.
Q But part of your job is to ensure that he can do his compliance job.
A I'd say that was part of my job, is to set conditions that he can enforce.
Q Okay. In the third bullet under Gasifier, it reads, A low pressure and normal operating pressure check are required. Do you see that sentence?
A Yes.
Q Is there any numerical specificity in the plan regarding this pressure check?
A I'd say no, there is not.
Q Okay. How are the pressure checks enforceable if there's no numerical specificity?
A I am not an expert, but I would -- I could only guess that the pressure checks are part of a safety procedure prior to sending the gas down to other units.
Q But if there's no limit on the outcome of those pressure checks, how is that -- is that an enforceable requirement of this plan?
A I believe the plan is to be reviewed in its entirety, not in pieces.
Q Okay.

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A To arrive at whether it's practically enforceable.
Q Okay. So some aspects of the plan might not be enforceable; some aspects might be enforceable.
MS. VEHR: Objection.
MR. COPPEDE: Misstates his testimony.
A When it comes to certain line items like this well pressure, probably say that would be hard to enforce.
Q (By Ms. Issod) Okay. Move on to another subject. How do you estimate emissions from fugitive component leaks?
A Using -- the applicant used AP 42 emissions -- either AP 42 emission factors or SOCMI, as they're sometimes referred to.
Q What does SOCMI stand for?
A Synthetic -- I do not recall exactly, but synthetic organic chemical manufacturing industry, or something like that.
Q Okay. So what -- what does the applicant do with these emission factors to estimate fugitive component leaks?
A Could you reword . . .
Q Okay. In order to calculate fugitive component leaks, don't you need a count of the number of

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components in the facility?
A As I recall, the applicant provided counts for components.
Q Is it true to estimate fugitive component leaks, you generally need three things: a component count; information about the design of each component; and emission factors for each component?
A I'd ask for clarification what you mean by "design."
Q Okay. Details about each component.
A I would say that there are multiple factors that go into fugitive emission calculations, such as the type of service that the component is in. Is it a valve, a flange. The emission factors is just one piece that comes in that AP 42.
Q Okay. So can you fully describe all the pieces that you need to calculate fugitive component leak emissions?
A I'll try and recall all of them. But you need a count of the equipment. Whether it be pumps. Need to know if it's a pump, a valve, a flange. What type of service it's in, whether it's gas service, liquid service, gas and liquid service. The VOC constituent. Based on the type of valve and service, you can use the AP 42 factors to arrive at emission

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factors -- or emissions based on counts.
Q Okay. Do you recall the number of components Medicine Bow used to estimate its fugitive component leaks?
A No, I do not.
Q Is there a document that you could quickly look through to refresh your memory?
A It would be in the application. Probably in Appendix B where all the emission calculations were.
Q Okay. Well, regardless of the number, how did you verify this number?
A I verified the emission factors that they used, based on what they say is the service and the EOC content and compared those with the known EPA factors.
Q How did you verify the number of components?
A That was provided to us by the applicant, based on their -- their latest design drawings.
Q Did they provide to you their latest design drawing?
A No.
Q Did you ask for their latest design drawings?
A No.
Q Okay. Are emissions from fugitive component leaks a large source of volatile organic -- strike that; start over -- volatile organic compounds?

Medicine Bow facility?
MR. COPPEDE: I object. The question lacks foundation. Go ahead and answer.
A Methanol emissions.
MS. VEHR: Is there something you need to --
A I just need to look where they came from. The majority of methanol emissions were from fugitive emissions, so they would follow the same methodology used to estimate the VOC estimate from emissions using the EPA's emission factors.
Q (By Ms. Issod) Okay. Would a minor change in any of the assumptions underlying this estimate increase methanol potential to emit over 10 tons per year?
MS. VEHR: Objection as to what you mean by "minor." Calls for speculation. Facts not in evidence.
A I don't know. It would depend on what has changed.
Q (By Ms. Issod) Are any of the assumptions underlying the emission calculation enforceable?
MR. COPPEDE: Object to form of the question. Vague and ambiguous.
MS. VEHR: I'll join in that.
A My guess is they could use Condition 2 of Exhibit 4.

Q (By Ms. Issod) Condition 2 of the final permit?
A Yes. It all has descriptions set forth in the application.
Q Okay.
A Then we also do have that Condition 19, of Exhibit 4, what I could verify.
MS. ISSOD: Okay. Can I take a short break?
THE WITNESS: Sure.
MS. VEHR: Yes.
(Recess from 3:18 p.m. to 3:33 p.m.)
Q (By Ms. Issod) Did you get a chance to review some documents during the break?
A (Shakes head.)
Q No.
A No.
MS. VEHR: He didn't come around to look at your computer. I'm sorry.
MS. ISSOD: Sure. Can we go off the record.
(Off the record.)
Q (By Ms. Issod) Did you have a chance to review documents during the break?
A Yes, I did.
Q Can you answer the question now? Did you account for HAP emissions from the flares during SSM

events?
A No.
Q Why not?
A The applicant didn't provide any emissions during those events.
Q Do you recall asking for emissions during those events?
A No. As far as I recall, we did not, because the gasifiers and stuff did not -- the syn gas had not made it down to the other processes, which would have gone back to the flares. As I recall.
Q Is the syn gas -- if it did make it down to the flares, does that mean there would be no HAP emissions?
A The syn gas hadn't made it through the process to BACT which -- say the MPG process or the methanol process, where it would be sent to the flares.
Q I'm just trying to understand the response, being a nonexpert myself. So if you could try to explain again why --
A As I recall -- as I recall during startup, syn gas from the gasifiers will go to the flares, until downstream units are able to accommodate the syn gas. And syn gas is primarily composed of CO and hydrogen. And possible amounts of hydrogen sulfide, but that's

not . . .
Q Okay. So are you saying that you didn't account for HAP emissions during the flares because you don't believe there will be any HAP emissions?
A I do not recall there being HAP emissions during startup and shutdown from those emission units.
Q And the reason you believe there's no HAP emissions is because of where the syn gas --
A Where the streams are coming from, the process streams.
Q So what stream is going to the flares during SSM events?
A I -- I would need to look at the simplified process flow diagram that was in the analysis. It was reflected there.
Q In the DEQ permit analysis?
A Yes, and the application.
(Deposition Exhibit 5 marked.)
Q (By Ms. Issod) Giving you a copy of Exhibit 5. Is that the DEQ permit application analysis?
A Correct.
MS. VEHR: Can I interrupt for just a second while Andrew is looking at this. In the back of this, Appendix A and Appendix B, and there's something that looks like Section 4? I don't know if that's part of

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the permit application or not.
MS. ISSOD: Okay. There might be some extra pages --
MS. VEHR: Okay.
MS. ISSOD: -- in the exhibits that correspond to the Bates numbers.
MS. VEHR: Okay.
MS. ISSOD: Yes.
MS. VEHR: I just wanted to reflect that on the question.
MS. ISSOD: Okay.
Q (By Ms. Issod) Did you have a chance to refresh your memory?
A Yeah.
MS. ISSOD: Could the court reporter read back the pending question.
(Testimony read.)
Q (By Ms. Issod) What streams are going to the flares during SSM events?
A As I recall, the streams from the GE gasification block and potentially the syn gas-up as it reflects acid and gas removal.
Q (By Ms. Issod) Does that change your previous understanding that there won't be HAP emissions from the flares during SSM events?

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A No.
Q Okay.
A No, it doesn't change my understanding.
Q Okay. So those streams don't contain HAP emissions?
A I do not know the exact composition of those streams, but those -- they primarily consist of carbon monoxide -- carbon monoxide, hydrogen, with some CO2 and hydrogen sulfide, and hydrogen sulfide is not considered a HAP.
Q Okay. Are VOCs a HAP?
A That is difficult to answer, because HAPs are a subset of VOCs.
Q Okay. That's a good answer. All right. Did you account for VOC emissions from the flares during SSM events?
A I do not recall.
Q Okay. And you would need to look --
A Appendix B.
Q -- Appendix B again. Okay. Are you aware of, Medicine Bow modeled short-term fugitive emissions of particulate matter?
A If we can go back to the previous one.
Q Sure.
A Because I'm looking at --

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Q Sure.
A -- the analysis. In the cold startup table with VOCs from the high pressure and low-pressure flare, so, yes, we did account for.
Q Okay. Did you account for VOC emissions from the flares in the potential to emit estimate?
A I'd say the VOC emissions are as reflected in the cold startup.
Q Okay. Are you aware if Medicine Bow modeled short-term fugitive emissions of particulate matter?
A To the extent of which I know of, they had fugitive emissions in the annual model.
Q And not in the short-term model.
A As far as I understand, but I would defer that to Josh Nall.
Q Do you know why they wouldn't model short-term fugitive emissions of particulate matter?
MS. VEHR: Objection. It's argumentative.
A I'd defer to Josh.
Q (By Ms. Issod) All right. Were you involved in the permitting process for the Dry Fork generating facility?
A No, I was not.
Q Okay. Does the record contain a BACT analysis of PM 2.5?

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A No, it does not, because we use a PM 10 surrogate policy.
Q Does the record contain a modeling analysis of PM 2.5?
A Not that I'm aware of, but you'd have to talk to Josh.
Q Does the record contain an analysis of why PM 10 is a reasonable surrogate for PM 2.5 at the Medicine Bow facility?
MS. VEHR: Objection. Modeling. He already said that he needs to talk to -- the question would have to be directed to Josh.
MR. COPPEDE: We will object on foundation grounds.
A I do not believe that it does, but I have to defer to Josh.
Q (By Ms. Issod) Okay.
A It's outside my area of expertise.
Q Did you conduct an analysis of why PM 10 is a reasonable surrogate for PM 2.5 at the Medicine Bow facility?
A No, I did not.
Q Did you review an analysis of why PM 10 is a reasonable surrogate for PM 2.5 at the Medicine Bow facility?

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A I do not recall that being in the application.
Q Okay. Did you analyze the relationship between PM 10 and PM 2.5 emissions from Medicine Bow?
A No, I did not.
Q Did you determine that the control technologies selected for PM 10 is at least as effective as the technology that would have been selected if a PM 2.5 BACT analysis were conducted?
MS. VEHR: Objection to form of the question.
A Would you repeat that? Was that "review" or "conduct"?
Q (By Ms. Issod) Okay. Well, let's say "conduct."
A No.
Q Did you review?
A No.
Q Can you explain why the PM 10 control at the Medicine Bow facility will control PM 2.5?
A I cannot.
Q Do you believe the PM 10 control at the Medicine Bow facility will control PM 2.5 emissions?
A I do not know.
Q Do you know of any controls that are available for PM 2.5 emissions at the Medicine Bow

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plant?
A I do not, because I'm not familiar with PM 2.5 controls.
Q Do you know whether PM 2.5 is a separate pollutant from PM 10 under the Clean Air Act?
A I know it has a separate NAAQS standard from PM 10.
Q Okay. Anything else?
A No.
Q Okay. Do you think there's technical impediments to conducting a PM 2.5 BACT analysis at the Medicine Bow plant?
A That, I don't know, because I'm not familiar with the controls or the emission estimates for the plant. So it would be guessing.
Q Do you know whether there's PM 2.5 monitoring stations currently in operation?
A In Wyoming, there is a PM 2.5 network. I do not know their precise locations. I'd have to defer to the monitoring program.
Q Do you know whether there's PM 2.5 measurement methods available?
A Not that I'm aware of. It's -- I have not done an analysis of PM 2.5.
MS. ISSOD: Okay. Take a quick break.

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(Recess from 3:52 p.m. to 3:56 p.m.)
MS. ISSOD: So I have no further questions, Mr. Keyfauver. Thank you for your time today.
THE WITNESS: Thank you.
EXAMINATION
BY MS. THRONE:
Q Mr. Keyfauver, I just have a couple of questions. I don't have this printed as an exhibit, but I'll represent to you that I'm showing him Section 3.1 of the decision document.
MS. ISSOD: I handed you that as an exhibit.
MS. THRONE: The decision document? I don't think so. You had the permit --
MS. ISSOD: I might have it, if you want it.
MS. THRONE: If you have a hard copy.
MS. ISSOD: It includes the public hearing in the front but then it has the decision document.
MS. VEHR: I don't think this one has the decision --
MS. THRONE: That's not the decision document.
MS. ISSOD: That's not the one you're talking about.
MS. THRONE: No, I'm talking about the March 12th, 2009 decision document that we issued with the

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permit.
MS. ISSOD: This (indicating).
MS. VEHR: Yes.
MS. ISSOD: Yes. Page 30. Not in the copy?
MS. VEHR: Not in this.
MS. ISSOD: Well, I have it. I have a hard copy, if you want to use it. Either way. I don't mind either way. If you want to show it on the computer screen.
MS. ISSOD: What page are we looking at?
MS. THRONE: I'm not sure of the page number. Page 37? No, that's not right. It's Section 3.1 of the decision document. P of FC, applicability for SO2.
Q (By Ms. Throne) Mr. Keyfauver, earlier in the deposition, you were asked to testify regarding what emissions were included in the potential to emit or PTE for sulfur dioxide. If I could just give a second to review this paragraph, then I'll ask you a few questions.
A (Examines a document.) Okay.
Q I believe earlier, you were asked about whether cold start emissions were included in the PTE for sulfur dioxide, and I believe your answer was no. Is that correct?
A Correct.

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

IN THE MATTER OF	)	
MEDICINE BOW FUEL & POWER	)	Docket No. 09-2801
AIR PERMIT CT-5873	)	

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY'S MEMORANDUM IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

Exhibit No. 58 – Carbon Basin Mines

Permit CT-4136 (12/20/2005)

Application Analysis AP-2989 (11/9/2005)

Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

December 20, 2005

Mr. Stephen C. Skordas
Mine Manager
Arch of Wyoming, LLC
P. O. Box 460
Hanna, WY 82327

Permit No. CT-4136

Dear Mr. Skordas:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Arch of Wyoming, LLC's application to establish a 2.1 million ton per year surface and underground coal mine known as the Carbon Basin Mines, located approximately four (4) miles north of Elk Mountain, Wyoming.

Following this agency's proposed approval of the request as published November 17, 2005 and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a 30-day period in which to submit comments concerning the proposed modification, and an opportunity for a public hearing. No public comments have been received. Therefore, on the basis of the information provided to us, approval to modify the Carbon Basin Mines as described in the application is hereby granted pursuant to Chapter 6, Section 2 of the regulations with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.

2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. That a permit to operate, in accordance with Chapter 6, Section 2(a)(iii) of the WAQSR, is required after a 120 day start-up period in order to operate this facility.

4. That all notifications, reports and correspondences associated with this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 152 North Durbin Street, Suite 100, Casper, WY 82601.

5. That written notification of the anticipated date of initial start-up, in accordance with Chapter 6, Section 2(i) of the WAQSR, is required not more than 60 days or less than 30 days prior to such date. Notification of the actual date of start-up is required 15 days after start-up.

6. That the date of commencement of construction shall be reported to the Administrator within 30 days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within 24 months after receipt of such approval or if construction is discontinued for a period of 24 months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.

Carbon Basin Mines

7. That Arch of Wyoming, LLC shall comply with the following requirements for the fogger units at Carbon Basin Mines:

   a) That the opacity from the fogger units shall be limited to a maximum of 20 percent as determined by Method 9 of 40 CFR, Part 60, Appendix A.

   b) That the fogger units shall be operated during all times that the respective coal processing facility is operating including loading of the crusher feed hopper.

   c) Weekly inspections of the fogger systems shall be conducted by Arch of Wyoming to determine any repair measures necessary to minimize fugitive dust emissions and maintain proper operation of the control system. Corrective action and repair measures must be initiated in an expeditious manner when the control device is determined to be improperly maintained or operated.

8. That the crusher feed hopper shall be limited to less than 20 percent opacity, per the requirements of Subpart Y. Compliance with the 20 percent opacity limit at the crusher feed hopper will be determined by Method 9 of 40 CFR, Part 60, Appendix A.

9. Topsoiled areas shall be stabilized as soon as feasible after topsoil laydown. When appropriate, topsoiled areas shall be chiseled to roughen the surface to lessen wind erosion potential. Backfilled and regraded areas that will not be topsoiled or seeded for an extended period of time and are subject to wind-blown erosion shall be ripped to roughen the surface to help reduce wind erosion.

10. That all haul roads and stockpiles within the Carbon Basin Mines shall be treated with suitable chemical dust suppressants and/or water to control fugitive dust emissions. All treated road surfaces shall be maintained on a continuous basis to the extent that the surface treatment remains a viable control measure. Records of the number and size of water trucks, water truck operations, water usage, roads watered, roads treated, length of roads treated, and other operational parameters shall be maintained such that an annual report on dust control measures can be filed with the Division in order to assess compliance with this condition. The report shall include a map showing which roads were treated and what treatments were used on road segments. The annual report shall be submitted to the Division by April 1st of each year.

11. The maximum coal production by year shall not exceed the production rate of 2.1 million tons per year as described in the mine plan contained in the application. Annual coal and overburden production rates shall be reported with the annual report required for dust control measures by Condition 10.

12. That a maximum of 120,000 tons per year of coal may be processed through the in-pit crusher at the Carbon Basin Mines. Annual coal throughput through the in-pit crusher shall be reported with the annual report required for dust control measures by Condition 10.

13. That Arch of Wyoming, LLC will limit public access to the lands defined by the Administrator as necessary to conduct mining operations. All fencing of the Lands Necessary to Conduct Mining boundary shall be equipped with locked gates and signs posted at fixed intervals identifying the enclosed area and prohibiting access.

14. That Arch of Wyoming, LLC shall comply with the requirements of 40 CFR, Part 60, Subpart Y for the coal handling system at the Carbon Basin Mine.

15. That Arch of Wyoming, LLC will adhere to their program to mitigate coal fires that result from spontaneous combustion. All fires are to be extinguished within 24 hours unless operational safety issues are present. A production supervisor will document extinguishing measures utilized when fires are considered significant. All documentation shall be maintained and made available to the Division upon request.

16. That Arch of Wyoming, LLC's shall operate, in accordance with the requirements of 40 CFR, Parts 50 and 58, an approved ambient particulate monitoring program that includes an ambient particulate monitoring network, with wind speed and direction instruments at the Carbon Basin Mines. The data generated by the network shall be submitted in an approved format on a quarterly basis, within 60 days following the end of the quarter. Arch of Wyoming, LLC shall maintain a quality assurance plan for the monitoring network, as required by 40 CFR, Part 58 and shall be approved by the Division.

17. That the ambient monitoring program required in Condition #16 shall be operational prior to Arch of Wyoming, LLC producing more than 200,000 tons of coal from the Carbon Basin Mines. Arch of Wyoming, LLC shall submit for approval the locations of the ambient monitor(s) prior to start-up of the monitoring program.

18. That Arch of Wyoming, LLC shall maintain a meteorological station at their Carbon Basin Mines acceptable to the Division. Surface air meteorological data measurements shall be collected at the Carbon Basin Mines, as specified in the EPA document: Meteorological Monitoring Guidance for Regulatory Modeling Applications. The meteorological data measurements shall consist of hourly observations of:

    a. Wind speed using an anemometer height of 10 meters
    b. Wind direction
    c. Ambient temperature

19. The meteorological data specified in Condition #18 shall be submitted in an electronic format on a quarterly basis and shall be compiled in a joint frequency distribution (JFD) utilizing the modified sigma theta method for stability. The meteorological station required in Condition #18 shall be operational prior to Arch of Wyoming, LLC producing more than 200,000 tons of coal from the Carbon Basin Mines.

Seminoe II Processing Area

20. That Arch of Wyoming, LLC may only process run-of-mine coal at the Seminoe II Processing Area.

21. That the water sprays shall be operated during all times that the respective coal processing facility is operating.

22. That all haul roads/stockpiles within the Seminoe II Processing Area shall be treated with suitable chemical dust suppressants and/or water to control fugitive dust emissions. All treated road surfaces shall be maintained on a continuous basis to the extent that the surface treatment remains a viable control measure. Records of water truck operations, water usage, chemical usage, roads watered, roads treated, length of roads treated, and other operational parameters shall be maintained such that an annual report on dust control measures can be filed with the Division in order to assess compliance with this condition. The annual report shall be submitted to the Division by April 1st of each year.

23. That Arch of Wyoming, LLC shall comply with the requirements of 40 CFR, Part 60, Subpart Y for the coal handling system at the Seminoe II Processing Area.

Haul Roads from Carbon Basin Mines to Seminoe II

24. That all unpaved portions of the haul route from the Carbon Basin Mine to Highway 72 utilized during the calendar year shall be treated with suitable chemical dust suppressants and/or water to control fugitive dust emissions. At a minimum, two (2) applications of dust suppressant shall be applied for each calendar year. All treated road surfaces shall be maintained on a continuous basis to the extent that the surface treatment remains a viable control measure. Records of the number and size of water trucks, water truck operations, water usage, roads watered, roads treated, length of roads treated, and other operational parameters shall be maintained such that an annual report on dust control measures can be filed with the Division in order to assess compliance with this condition. The report shall include a map showing which roads were treated and what treatments were used on road segments. The annual report shall be submitted to the Division by April 1st of each year.

25. That all unpaved portions of the haul route from Highway 30 to the Seminoe II Processing Area utilized during the calendar year shall be treated with suitable chemical dust suppressants and/or water to control fugitive dust emissions. At a minimum, two (2) applications of dust suppressant shall be applied for each calendar year. All treated road surfaces shall be maintained on a continuous basis to the extent that the surface treatment remains a viable control measure. Records of the number and size of water trucks, water truck operations, water usage, roads watered, roads treated, length of roads treated, and other operational parameters shall be maintained such that an annual report on dust control measures can be filed with the Division in order to assess compliance with this condition. The report shall include a map showing which roads were treated and what treatments were used on road segments. The annual report shall be submitted to the Division by April 1st of each year.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with conditions 3, 5, and 6. Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,

Dan Olson
Administrator
Air Quality Division

John V. Corra
Director
Dept. of Environmental Quality

cc: Chris Hanify

DO/cs

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

Permit Application Analysis
AP-2989

November 9, 2005

NAME OF FIRM:	Arch of Wyoming, LLC
NAME OF FACILITY:	Carbon Basin Mines (Elk Mountain Mine - surface) (Saddleback Hills Mine - underground)
FACILITY LOCATION:	Various Sections of T21N, R80W & T20N, R80W Approximately 3 miles north-northeast of Elk Mountain
TYPE OF OPERATION:	Surface & Underground Coal Mine
RESPONSIBLE OFFICIAL:	Steve Skordas, Mine Manager
MAILING ADDRESS:	P.O. Box 460 Hanna, WY 82327
TELEPHONE NUMBER:	(307) 325-6581 ext. 101
REVIEWING ENGINEER:	Andrew Keyfauver, Air Quality Engineer

PURPOSE OF APPLICATION:

On February 9, 2005, Arch of Wyoming, LLC submitted an application to establish a 2.1 million ton per year surface and underground coal mine known as the Carbon Basin Mines. The Carbon Basin Mines will consist of the Elk Mountain Mine which is a surface mine that uses mobile equipment to remove overburden, mine coal, and backfill mined pits, and the Saddleback Hills mine which is an underground mine that uses continuous mining equipment. Approximately 1.6 million tons per year of coal is expected to come from surface mining operations. Arch of Wyoming, LLC has proposed two options for coal mined from the Carbon Basin Mines; either all run of mine coal will be hauled to the existing Seminoe II processing area for crushing and load-out through rail cars, or a portion (120,000 tons per year) of the mined coal will be run through an in-pit crusher and crushed coal will be loaded out by highway haul trucks. The Seminoe II processing area is located on the northern outskirts of Hanna and Elmo.

The life of the Elk Mountain Mine is projected to be ten (10) years while the life of the Saddleback Hills Mine is projected to be eleven (11) years. Arch of Wyoming, LLC expects that the initial phase of mining at the Carbon Basin Mines will last approximately five (5) years in which the Seminoe II processing area will be used and an in-pit crusher may be installed to allow the loading of highway haul trucks. During the next phase of mining at the Carbon Basin Mines Arch of Wyoming anticipates constructing a new coal handling and load-out facility, including an on-site railroad spur capable of higher throughput. This application will only address the initial phase of mining at the Carbon Basin Mines.

PROCESS DESCRIPTION:

Mine Plan

The Elk Mountain Mine will use front end loaders and highway haul/end-dump trucks to remove coal from surface mining operations. Mining at the Elk Mountain Mine will consist primarily of three pits. Activities would alternate between the pits consisting of top soil removal/replacement, overburden removal/backfilling, and coal removal. Arch of Wyoming, LLC has designated three sites where the pits would be located. Site 1 is located on the west side of the mining area and will progress from north to south. Site 2 is on the south side of the mining area and will progress from west to east. Site 3 is located on the east side and will progress from east to west and then toward the northeast. Underground activities at the Saddleback Hills Mine are expected to coincide with operations at the Elk Mountain Mine.

Coal Handling

Carbon Basin Mines

Coal mined from the underground mine will be transported via a conveyor to a radial stacker where it will be dumped on a stockpile with an estimated size of up to 35,000 tons. An underground tunnel with a conveyor will take coal from the stockpile to load-out bins where highway haul trucks will be loaded for transport to the Seminoe II Processing Area. Surface mined coal will be loaded into highway haul trucks for transport up to the Seminoe II Processing Area.

If highway haul trucks are loaded for sale at the Carbon Basin Mines there will be a crusher located in-pit. This crusher could be fed by either end-dump trucks from surface mined coal or fed by a front-end loader from the underground mine coal stock pile.

Seminoe II Processing Area

The Seminoe II Processing Area will only take run-of-mine coal from the Carbon Basin Mines. Haul trucks would belly dump coal into a primary crushing loading hopper. Once coal has passed the primary crusher it is sent on to a secondary crusher. From the secondary crusher it is conveyed to stacker tubes which create stockpiles around the tubes. Beneath the stacker tubes are reclaim tunnels which collect the coal and send it to a load-out bin for rail-car loadout.

The Seminoe II Processing Area is currently permitted under Air Quality Permit CT-579, which has a limit of 2.1 MMTPY for coal crushing and loadout.

Equipment

The following is the list of mining equipment that will be used at the Carbon Basin Mines:

Table 1. Carbon Basin Mines – Mining Equipment

Equipment	Class/Size	Number of Units
Front End Loader	23 Cubic Yard	1
	15 Cubic Yard	1
	7.5 Cubic Yard	1
Trucks	End Dump Truck/200 ton	3
	Highway Haul Trucks/35 ton	15
	Bottom Dump Truck/200 ton	2
	Fuel Truck	1
	Service Truck	1
	Lowbed Tractor Trailer/85 tons	1
Grader/Dozers/Scrappers	Grader 275 hp	1
	Crawler Tractor 850 hp	1
	Crawler Tractor 570 hp	2
	Scraper 450/490 hp	1
Water Truck	20,000 gallon	1
Drill	Blast Hole Drill	1
Miscellaneous	Light Plant	3
	Hydraulic Crane/15 ton	1
	Utility Backhoe/2 Cubic Yard	1

Disturbed Acreage

Arch of Wyoming, LLC has estimated that there will be 7.3 acres of disturbed area within the Carbon Basin Mines. This is based only on actives during one year. If reclaimed areas and stockpiles are factored in on a two year basis, the disturbed area is estimated to be double that of one year or 14.6 acres.

ESTIMATED EMISSIONS CARBON BASIN MINES:

Particulate emissions (PM_{10}) from the Carbon Basin Mines were estimated using approved Air Quality Division emission calculations developed for coal mines in the Powder River Basin based on mining 2.1 MMTPY of coal. Haul road emissions from the mine to paved surfaces and from paved surfaces to the Seminoe II processing area along with fuel burning equipment were based on AP-42 emission factors.

Table 2: Carbon Basin Mines PM_{10} Fugitive Emissions (tpy)					
Source	Year 1	Year 2	Year 3	Year 4	Year 5
Scraper Operation	2.6	2.6	2.6	2.6	2.6
Overburden Removal	23.6	19.9	22.9	24.7	19.2
Coal Removal	0.5	0.6	0.5	0.5	0.6
Truck Dump	3.1	3.4	3.1	3.1	3.4
Wind Erosion [2]	22.4	22.4	22.4	22.4	22.4
Coal and OB Blasting	0.1	0.1	0.1	0.1	0.1
Dozers	9.8	9.8	9.8	9.8	9.8
In-Mine Coal Haul Roads	6.0	8.3	8.0	8.7	10.2
Overburden Haul Roads	2.9	3.1	4.2	4.6	4.2
Haul Road Repair	3.4	3.4	3.4	3.4	3.4
Haul Road from CBM to Paved Road (Hwy 72)	128.4	128.4	128.4	128.4	128.4
Haul Road from Paved Road (Hwy 30) to Seminoe II	86.8	86.8	86.8	86.8	86.8
Coal Crushing (Optional Crusher)/Conveying	1.4	1.4	1.4	1.4	1.4
Total	**291.0**	**290.2**	**293.6**	**296.5**	**292.5**

[1] Based on the use of the Seminoe II processing area.
[2] Wind erosion based on 14.6 acres or two years.

Table 3: Other Pollutant Emissions Carbon Basin Mines (tpy)					
	NO_x	CO	PM_{10}	VOC	SO_2
Gasoline & Diesel Fired Equipment [1]	238.2	200.4	4.6	10.7	4.1
Blasting	0.5	--	--	--	--
Totals	**238.7**	**200.4**	**4.6**	**10.7**	**4.1**

[1] Each year was assumed to have the same amount of fuel consumption.

Table 4: Seminoe II Processing Area – Crushing/Stockpiling/Loadout	
PM_{10} (tpy) CT-579	74.0

BEST AVAILABLE CONTROL TECHNOLOGY (BACT):

Haul Roads

- Carbon Basin Mines

Arch of Wyoming, LLC has proposed to use water on the roads within the Carbon Basin Mines to minimize fugitive emissions. In addition they have also proposed to use magnesium chloride if it is determined that the application of water isn't sufficient to minimize fugitive emissions. The overall effectiveness of fugitive emission control relies on the assessment of current conditions and the flexibility to react to changing conditions. The Division considers the use of water and chemical dust suppressants as representing BACT for roads within the Carbon Basin Mines.

- Carbon Basin Mines to Highway 72

Arch of Wyoming, LLC has proposed a minimum of two applications of magnesium chloride along the road from the Carbon Basin Mines to Highway 72. In addition water is to supplement the application of chemical dust suppressants as necessary to minimize fugitive dust emissions. The Division considers two applications of chemical dust suppressant along with water as representing BACT for controlling fugitive dust emissions from this road.

- Highway 30 to Seminoe II Processing Area

Arch of Wyoming, LLC addressed two options along this portion of the haul route. They looked at paving a 6,700 ft section of the road that passes near Elmo in addition to their assumed base case of a gravel road along with the application of chemical dust suppressant (at least two applications) and water. The cost of paving the 6,700 foot section of road was estimated at approximately $119,000 with a cost to control of $1,372 per ton of PM_{10} (99% control efficiency). Based on the expected use of the Seminoe II Processing Area for only the first phase of operations of the Carbon Basin Mines (5 years), the Division will consider the use of a gravel road with the use of water and chemical dust suppressant as representing BACT.

Coal Handling

- Carbon Basin Mines

Arch of Wyoming, LLC has proposed to use foggers at the Carbon Basin Mines at each transfer point along the conveyor system. The fogger system uses atomized water to help particulates drop out of the air and also wets the coal to hinder particulates from getting airborne. The fogger system will also use a surfactant with the water which helps as a wetting agent. The Division considers the use of a fogger system as being representative of BACT for this type of operation.

Fugitive dust at the crusher will be minimized with the use of foggers. Use of the fogger systems when the crusher is in operation is considered to be representative of BACT. The feed hopper to the crusher shall be limited to less than 20 percent opacity, per the requirements of Subpart Y. Compliance with the 20 percent opacity limit at the crusher feed hopper will be determined by Method 9 of 40 CFR, Part 60, Appendix A. Arch of Wyoming, LLC shall conduct, at a minimum, quarterly visual observations of the feed hopper using Method 9 to measure the opacity of any fugitive emissions when the crusher is in operation. The Method 9 observations are to be conducted by a qualified observer and shall follow the requirements and procedures of Method 9.

The applicant also addressed BACT regarding the use of an open stockpile versus the use of a coal storage silo. The estimated annualized cost of a storage silo for a period of five (5) years was estimated at approximately $1,060,000. This equates to a cost to control particulate emissions of approximately $93,100 per ton of PM_{10} assuming a 99 percent control efficiency. Based on the cost to control of a storage silo the Division will consider the use of an open stockpile with the use of water and chemical dust suppressants as representing BACT.

Weekly inspections of the fogger systems shall be conducted by Arch of Wyoming to determine any repair measures necessary to minimize fugitive dust emissions and maintain proper operation of the control system. Corrective action and repair measures must be initiated in an expeditious manner when the control device is determined to be improperly maintained or operated.

The dump pad in front of the crusher feed hopper has been identified as sources of fugitive dust as pulverized material that accumulates on pads due to spillage is easily disturbed by traffic. Cleaning practices at the Carbon Basin Mine need to be adequate to control dust problems in this areas.

Conveyors that are above ground are to be partially covered, which is similar to the current conveyor system at the Seminoe II Processing Area.

- Seminoe II Processing Area

Arch of Wyoming, LLC has proposed to use water spray at the Seminoe II Processing Area at each transfer point along the conveyor system. The Seminoe II Processing Area was permitted under CT-579, and Arch of Wyoming, LLC has no changes proposed for the processing area. Therefore, the Division will consider use of water sprays at the Seminoe II Processing Area as representative of BACT for this type of operation.

Miscellaneous

The Division considers acreage within the mine boundary that is subject to wind erosion as disturbed acreage. Contemporaneous reclamation helps minimize wind erosion from mined areas. Reclaimed lands are to be seeded during the first favorable planting conditions. Windrows are to be bladed in pit areas where topsoil has been stripped. Topsoil stockpiles and sediment control structures are to be seeded during the first normal period favorable for planting.

Topsoiled areas shall be stabilized as soon as feasible after topsoil lay-down. When appropriate, topsoiled areas shall be chiseled to roughen the surface. Roughened surfaces have less wind erosion potential because the rougher surface reduces wind shear at the ground level. Backfilled and regraded areas that will not be topsoiled or seeded for an extended period of time and are subject to wind-blown erosion should be ripped to roughen the surface to help reduce wind erosion.

CHAPTER 6, SECTION 3 APPLICABILITY:

The Division determines major source applicability based on point sources and includes fugitive emissions from sources which are subject to new source performance standards. There are no point sources proposed at the Carbon Basin Mines; however, the coal handling systems at the Carbon Basin Mines and the coal handling system at the Seminoe II Processing Area are subject to a new source performance standard (Subpart Y); therefore emissions from the coal handling are counted toward major source applicability. Emissions from the Seminoe II Processing Area are 74 tpy of PM_{10} (Table 4) and emissions from the coal handling system at the Carbon Basin Mines are 3.4 tpy of PM_{10}. Since the Seminoe II and Carbon Basin Mines are considered separate facilities, the emissions from each facility are not aggregated and total emissions from each facility are less than 100 tpy. Therefore, the Seminoe II and Carbon Basin Mines are not considered major sources as defined in Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations (WAQSR).

CHAPTER 5, SECTION 2 – NEW SOURCE PERFORMANCE STNADARDS (NSPS):

All coal preparation facilities, existing and proposed, are subject to Subpart Y of Chapter 5, Section 2, New Source Performance Standards. Subpart Y limits opacity from any coal processing and conveying equipment, including coal crushers and breakers, coal storage systems, and coal transfer and loading systems to less than twenty percent (20%) opacity.

CHAPTER 6, SECTION 4 – PREVENTION OF SIGNIFICANT DETERIORATION (PSD):

Since fugitive emissions are not counted toward applicability under Chapter 6, Section 4 of the WAQSR, the Carbon Basin Mines are not considered a "major emitting facility", and a PSD analysis is not required.

AMBIENT AIR QUALITY:

The Division has typically modeled coal mines of considerably larger size in the Powder River Basin (PRB) for compliance with the WAAQS standards for PM_{10} and NO_x. Based on the size of the Carbon Basin Mines the Division believes that the Carbon Basin Mine will show compliance with the WAAQS standards based on its experience with coal mines in the PRB.

PROPOSED PERMIT CONDITIONS:

The Division proposes to issue an Air Quality Permit to Arch of Wyoming, LLC to establish the Carbon Basin Mines with the following permit conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.

2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. That a permit to operate, in accordance with Chapter 6, Section 2(a)(iii) of the WAQSR, is required after a 120 day start-up period in order to operate this facility.

4. That all notifications, reports and correspondences associated with this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 152 North Durbin Street, Suite 100, Casper, WY 82601.

5. That written notification of the anticipated date of initial start-up, in accordance with Chapter 6, Section 2(i) of the WAQSR, is required not more than 60 days or less than 30 days prior to such date. Notification of the actual date of start-up is required 15 days after start-up.

6. That the date of commencement of construction shall be reported to the Administrator within 30 days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within 24 months after receipt of such approval or if construction is discontinued for a period of 24 months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.

Carbon Basin Mines

7. That Arch of Wyoming, LLC shall comply with the following requirements for the fogger units at Carbon Basin Mines:

   a) That the opacity from the fogger units shall be limited to a maximum of 20 percent as determined by Method 9 of 40 CFR, Part 60, Appendix A.

   b) That the fogger units shall be operated during all times that the respective coal processing facility is operating including loading of the crusher feed hopper.

   c) Weekly inspections of the fogger systems shall be conducted by Arch of Wyoming to determine any repair measures necessary to minimize fugitive dust emissions and maintain proper operation of the control system. Corrective action and repair measures must be initiated in an expeditious manner when the control device is determined to be improperly maintained or operated.

8. That the crusher feed hopper shall be limited to less than 20 percent opacity, per the requirements of Subpart Y. Compliance with the 20 percent opacity limit at the crusher feed hopper will be determined by Method 9 of 40 CFR, Part 60, Appendix A.

9. Topsoiled areas shall be stabilized as soon as feasible after topsoil laydown. When appropriate, topsoiled areas shall be chiseled to roughen the surface to lessen wind erosion potential. Backfilled and regraded areas that will not be topsoiled or seeded for an extended period of time and are subject to wind-blown erosion shall be ripped to roughen the surface to help reduce wind erosion.

10. That all haul roads and stockpiles within the Carbon Basin Mines shall be treated with suitable chemical dust suppressants and/or water to control fugitive dust emissions. All treated road surfaces shall be maintained on a continuous basis to the extent that the surface treatment remains a viable control measure. Records of the number and size of water trucks, water truck operations, water usage, roads watered, roads treated, length of roads treated, and other operational parameters shall be maintained such that an annual report on dust control measures can be filed with the Division in order to assess compliance with this condition. The report shall include a map showing which roads were treated and what treatments were used on road segments. The annual report shall be submitted to the Division by April 1st of each year.

11. The maximum coal production by year shall not exceed the production rate of 2.1 million tons per year as described in the mine plan contained in the application. Annual coal and overburden production rates shall be reported with the annual report required for dust control measures by Condition 10.

12. That a maximum of 120,000 tons per year of coal may be processed through the in-pit crusher at the Carbon Basin Mines. Annual coal throughput through the in-pit crusher shall be reported with the annual report required for dust control measures by Condition 10.

13. That Arch of Wyoming, LLC will limit public access to the lands defined by the Administrator as necessary to conduct mining operations. All fencing of the Lands Necessary to Conduct Mining boundary shall be equipped with locked gates and signs posted at fixed intervals identifying the enclosed area and prohibiting access.

14. That Arch of Wyoming, LLC shall comply with the requirements of 40 CFR, Part 60, Subpart Y for the coal handling system at the Carbon Basin Mine.

15. That Arch of Wyoming, LLC will adhere to their program to mitigate coal fires that result from spontaneous combustion. All fires are to be extinguished within 24 hours unless operational safety issues are present. A production supervisor will document extinguishing measures utilized when fires are considered significant. All documentation shall be maintained and made available to the Division upon request.

16. That Arch of Wyoming, LLC's shall operate, in accordance with the requirements of 40 CFR, Parts 50 and 58, an approved ambient particulate monitoring program that includes an ambient particulate monitoring network, with wind speed and direction instruments at the Carbon Basin Mines. The data generated by the network shall be submitted in an approved format on a quarterly basis, within 60 days following the end of the quarter. Arch of Wyoming, LLC shall maintain a quality assurance plan for the monitoring network, as required by 40 CFR, Part 58 and shall be approved by the Division.

17. That the ambient monitoring program required in Condition #16 shall be operational prior to starting any mining activities. Arch of Wyoming, LLC shall submit for approval the locations of the ambient monitor(s) prior to start-up of the monitoring program.

18. That Arch of Wyoming, LLC shall maintain a meteorological station at their Carbon Basin Mines acceptable to the Division. Surface air meteorological data measurements shall be collected at the Carbon Basin Mines, as specified in the EPA document: Meteorological Monitoring Guidance for Regulatory Modeling Applications. The meteorological data measurements shall consist of hourly observations of:

    a. Wind speed using an anemometer height of 10 meters
    b. Wind direction
    c. Ambient temperature

19. The meteorological data specified in Condition #18 shall be submitted in an electronic format on a quarterly basis and shall be compiled in a joint frequency distribution (JFD) utilizing the modified sigma theta method for stability.

Seminoe II Processing Area

20. That Arch of Wyoming, LLC may only process run-of-mine coal at the Seminoe II Processing Area.

21. That the water sprays shall be operated during all times that the respective coal processing facility is operating.

22. That all haul roads/stockpiles within the Seminoe II Processing Area shall be treated with suitable chemical dust suppressants and/or water to control fugitive dust emissions. All treated road surfaces shall be maintained on a continuous basis to the extent that the surface treatment remains a viable control measure. Records of water truck operations, water usage, chemical usage, roads watered, roads treated, length of roads treated, and other operational parameters shall be maintained such that an annual report on dust control measures can be filed with the Division in order to assess compliance with this condition. The annual report shall be submitted to the Division by April 1st of each year.

23. That Arch of Wyoming, LLC shall comply with the requirements of 40 CFR, Part 60, Subpart Y for the coal handling system at the Seminoe II Processing Area.

Haul Roads from Carbon Basin Mines to Seminoe II

24. That all unpaved portions of the haul route from the Carbon Basin Mine to Highway 72 utilized during the calendar year shall be treated with suitable chemical dust suppressants and/or water to control fugitive dust emissions. At a minimum, two (2) applications of dust suppressant shall be applied for each calendar year. All treated road surfaces shall be maintained on a continuous basis to the extent that the surface treatment remains a viable control measure. Records of the number and size of water trucks, water truck operations, water usage, roads watered, roads treated, length of roads treated, and other operational parameters shall be maintained such that an annual report on dust control measures can be filed with the Division in order to assess compliance with this condition. The report shall include a map showing which roads were treated and what treatments were used on road segments. The annual report shall be submitted to the Division by April 1st of each year.

25. That all unpaved portions of the haul route from Highway 30 to the Seminoe II Processing Area utilized during the calendar year shall be treated with suitable chemical dust suppressants and/or water to control fugitive dust emissions. At a minimum, two (2) applications of dust suppressant shall be applied for each calendar year. All treated road surfaces shall be maintained on a continuous basis to the extent that the surface treatment remains a viable control measure. Records of the number and size of water trucks, water truck operations, water usage, roads watered, roads treated, length of roads treated, and other operational parameters shall be maintained such that an annual report on dust control measures can be filed with the Division in order to assess compliance with this condition. The report shall include a map showing which roads were treated and what treatments were used on road segments. The annual report shall be submitted to the Division by April 1st of each year.