BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

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

ATTACHMENT A TO DEQ'S MOTION IN LIMINE

09-2801

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BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
OF THE STATE OF WYOMING

IN THE MATTER OF:	)	
MEDICINE BOW FUEL & POWER, LLC	)	PROTEST AND PETITION
AIR PERMIT CT-5873	)	FOR HEARING
	)	
	)	

Pursuant to the Department of Environmental Quality's General Rules of Practice and Procedure, Chapter 1, Sections 3 and 16, Sierra Club protests the Director's approval of Medicine Bow Air Permit CT-5873 and requests a hearing before the Environmental Quality Council ("Council"). This protest is timely filed within 60 days of the Director's issuance of the permit pursuant to Section 16(a).

PROTESTANTS

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STATEMENT OF FACTS

I. The Medicine Bow Plant and Coal Mine

1. On December 31, 2007, Medicine Bow Fuel & Power, LLC's ("Medicine Bow" or "Applicant") submitted an Application for a Prevention of Significant Deterioration Permit for an underground coal mine and industrial gasification and liquefaction plant that will produce transportation fuels (hereafter "liquid coal plant").

2. On June 19, 2008, the Wyoming Department of Environmental Quality ("WYDEQ") released an analysis of the Medicine Bow Permit ("Permit Application Analysis") and a draft permit.

3. Many interested parties submitted comments and attended public hearings on the proposed Permit, including the Sierra Club and the United States Environmental Protection Agency ("EPA") (hereinafter referred to as "Sierra Club Comments" and "EPA Comments.")

4. On March 4, 2009, the WYDEQ approved Medicine Bow's application to construct by issuing Air Quality Permit CT-5873 ("Permit"). WYDEQ issued a decision document in response to public comments the same day (hereinafter "Response.")

5. The liquid coal plant will consist of a coal preparation and handling system; five coal gasification units; syngas conditioning; acid gas removal; methanol synthesis; methanol to gasoline process; CO2 recovery and production; sulfur recovery and production; power generation and an air separation unit. The underground coal mine will have a maximum production rate of 8,700 tons per day of coal or approximately 3.2 million tons per year. The project will be located in Section 29, t21N, R79W, approximately 11 miles southwest of Medicine Bow, in Carbon County, Wyoming.

6. The Medicine Bow project will produce approximately 198 Million Standard Cubic Feet per Day ("MMscfd") of carbon dioxide, or 2.5 million to 3 million tons per year. Carbon dioxide is a greenhouse gas that contributes to global warming.

7. WYDEQ's Permit authorizes the Medicine Bow liquid coal facility to emit more than 175 tons of nitrogen oxides ("NOx"), 36.6 tons of sulfur dioxide ("SO_2"), 310 tons of particulate matter ("PM"), 176 tons of carbon monoxide ("CO"), 188 tons of volatile organic compounds ("VOCs"), and 23.6 tons of hazardous air pollutants ("HAPs") per year.

II. Environmental Impacts from Medicine Bow Liquid Coal Facility.

8. Emissions from the Medicine Bow liquid coal facility will contribute to increased health risk in the area, especially for the young, elderly, and those with respiratory illness or heart or lung disease. For example, Medicine Bow liquid coal facility will emit significant amounts of particulate matter and its precursors. Inhalation of PM has been linked to aggravated asthma, chronic bronchitis, heart attacks, and premature death in people with heart or lung disease.

9. Particulate matter is the term for solid or liquid particles found in the air. PM with a diameter of 10 micrometers or less is referred to as "PM10," and PM with a diameter of 2.5 micrometers or less is referred to as "PM2.5." Breathing PM10 or PM2.5 at levels above existing ambient air standards may increase the chances of premature death, cancer, respiratory disease, and lung damage. EPA has found that PM2.5 poses even greater health risks than PM10. The elderly, children, and people with chronic lung disease, influenza, or asthma, are especially sensitive to the effects of PM2.5 and PM10. PM may also exacerbate the effects of acid deposition.

10. Emissions of nitrogen oxides ("NOx") contribute to the production of ground-level ozone, also known as smog, which causes a variety of health problems. Exposure to ozone smog can

cause severe health problems in humans, including breathing constrictions and lung damage in healthy persons and dangerous aggravations of severe respiratory diseases such as asthma, emphysema, and chronic bronchitis. NOx emissions are also transformed into nitrogen dioxide ("NO2"). Exposure to NO2 can cause constriction of breathing passages, weakening of the immune system, and increased susceptibility to pulmonary and other infections. Smog also contributes to haze and reduces visibility.

11. Emissions of SO2 and NOx lead to the creation of fine nitrate and sulfate particles. Inhalation of these acid particles is associated with respiratory distress, cardiovascular disease, and premature mortality. Emissions of SO2 and NOx interact in the atmosphere with water and oxygen to form sulfuric and nitric acids, commonly known as acid rain. Acid rain and other acid deposition can impair the water quality of freshwater bodies, rendering them uninhabitable for aquatic life, both by directly acidifying the water body and by increasing the bioavailability of mercury, lead, and other toxic metals. Acid deposition also contributes to the damage of trees and accelerates the decay of buildings and other outdoor structures.

12. The Medicine Bow liquid coal facility will contribute millions of tons of greenhouse gases to the atmosphere each year, contributing to global warming. The U.S. Environmental Protection Agency has recently confirmed reports from the Intergovernmental Panel on Climate Change ("IPCC") and numerous other scientific studies "unequivocally" declaring that global warming is occurring and humans are contributing to global warming in a significant way. Coal plants are one of the largest sources of CO_2 emissions and therefore one of the primary contributors to global warming. Global warming will have serious environmental, health, economic and ecological impacts including increased drought and flooding, extreme weather events, spread of infectious disease and pests, and species extinctions.

13. The Medicine Bow plant will also emit significant quantities of methanol, a hazardous air pollutant. Methanol is highly toxic to humans through ingestion, inhalation, or absorption through the skin. Exposure can cause headache, dizziness, nausea, lack of coordination, confusion, drowsiness, and with sufficiently large doses, unconsciousness, blindness, and death.

III. Adverse Impacts to Sierra Club

14. Pollution from the Medicine Bow facility will adversely affect the interests of Sierra Club and its members.

15. The Sierra Club is the nation's oldest grassroots environmental organization and has more than 750,000 members nationwide, including more than 1,000 in Wyoming. The Sierra Club is dedicated to protecting the earth's ecosystems and resources and educating the public about its mission. The Wyoming Chapter of the Sierra Club works to protect the air, public lands, and wildlife in the state for the citizens of Wyoming. Curbing global warming emissions is one of the Sierra Club's top priorities. The organization champions clean energy alternatives in the face of an unprecedented rush to build new coal plants throughout the country. As part of these efforts, the Sierra Club has taken the lead in fighting numerous proposed coal plants in the U.S. that threaten to degrade air quality and contribute to global warming.

16. With respect to the Medicine Bow liquid coal facility, Sierra Club has led efforts to inform the public, elected officials, and WYDEQ about less polluting alternatives to building the proposed liquid coal plant. At every opportunity in the environmental review and permitting process, the Sierra Club has submitted comments and testimony urging responsible officials to deny the application as proposed and urged reductions in emissions that threaten the public health and contribute to global warming. Sierra Club submitted comments on the draft air

permit. Sierra Club members and supporters also testified at the public hearing prior to WYDEQ's final approval of the air permit.

17. Sierra Club members' health, environmental, recreational, aesthetic, and other interests will be impaired by emissions from the liquid coal facility. An order from the Council to comply with applicable regulations would redress the harm to Sierra Club members. Members who live, work, or recreate near the proposed facility and in areas where the facility emissions have their highest impacts on air quality, will suffer heightened exposure and risk of, or actual, injury and economic harm due to emissions. Sierra Club members include elderly, asthmatics, and others who are especially vulnerable to increased air pollution. Sierra Club members who utilize and enjoy forest, fish, wildlife and water resources in the vicinity will experience heightened losses to recreational values due to the effect of the plant's pollution on sensitive ecological systems in those areas. Members regularly visit and recreate near the site and in the Savage Run Wilderness Area and Medicine Bow National Forest, which will be negatively impacted by the Medicine Bow facility. Emissions from the Medicine Bow facility will contribute to decreased visibility in these areas, which harms the members' interests in recreation and sightseeing. Additionally, the sight of the large facility itself in this undeveloped area will cause members a direct aesthetic harm.

18. By definition, hazardous air pollutants are hazardous to human health – and thus Medicine Bow's discharges of hazardous air pollutants in quantities greater than that which would be allowed through the application of MACT will be harmful to Sierra Club members.

19. Furthermore, the Medicine Bow facility will contribute to global warming, which has been linked to drought, less snowfall, earlier annual snowmelt runoff, and increased wildfires. Climate change will harm Wyoming's wildlife species, and thereby harm Sierra Club members'

enjoyment of wildlife-viewing. Climate change is also expected to eliminate trout stream habitat in the state. Sierra Club members who fish will be harmed by decrease in trout habitat.

PREVENTION OF SIGNIFICANT DETERIORATION PERMITTING REQUIREMENTS

20. In 1977, Congress added the Prevention of Significant Deterioration ("PSD") program to the Clean Air Act to maintain air quality in areas that were still unspoiled by air pollution. The program was intended "to protect public health and welfare from any actual or potential adverse effect which . . . may reasonably be anticipate[d] to occur from air pollution or from exposures to pollutants . . . notwithstanding attainment and maintenance of all national ambient air quality standards." 42 U.S.C. § 7470(1). Accordingly, the PSD program prevents polluters from driving air quality down to the level of the national ambient air quality standards ("NAAQS"), which set the minimum requirements for maintaining air quality under the Act.

21. A "major emitting facility" such as the Medicine Bow liquid coal plant is required to obtain a PSD permit. 42 U.S.C. § 7475. The facility must demonstrate that emissions from the facility will not cause or contribute air pollution in excess of either the NAAQS or allowable PSD increments. *Id.* § 7475(a)(3). It must also utilize the Best Available Control Technology ("BACT") for each pollutant subject to regulation. *Id.* § 7475(a)(4); *see also* 40 CFR §§ 52.21 & 51.66.

22. Under the Clean Air Act's framework of cooperative federalism, states may take responsibility for administering the Act if they have an EPA-approved State Implementation Plan ("SIP"). 42 U.S.C. §§ 7401(a)(3) & (4), 7410; 40 C.F.R. § 51.166. State requirements must be at least as stringent as any relevant federal requirements. 42 U.S.C. § 7416.

23. Wyoming has an EPA approved SIP that includes PSD regulations. 40 C.F.R. §§ 52.2620, 52.2630. Under state law, WYDEQ is authorized to promulgate air quality standards and emission control requirements pursuant to Wyo. Stat. § 35-11-202. This includes authority to promulgate PSD regulations. *Id.* § 35-11-202(b)(iii). The relevant air quality regulations are found at WYDEQ, Air Quality Division, Standards and Regulations ("WAQSR"), Chapter 6—Permitting Requirements. Chapter 6, Section 2 specifies the general permitting provisions; Chapter 6, Section 4 spells out the PSD requirements.

24. Under Wyoming regulations, any new facility that will cause an increase in air contaminants must obtain a construction permit from WYDEQ. 6 WAQSR § 2(a)(i). WYDEQ may not issue a construction permit unless the Administrator finds that the facility will (1) not prevent attainment or maintenance of any ambient air quality standard for criteria pollutants, (2) not cause significant deterioration of existing ambient air quality in the Region, and (3) will utilize the Best Available Control Technology ("BACT") for each pollutant. 6 WAQSR § 2(c)(ii), (iii), (v).

25. PSD permitting requirements apply to sources, *inter alia*, with the potential to emit ("PTE") criteria pollutants over numerical limits called "significance thresholds." These "significance thresholds" are defined as: 100 tons per year ("tpy") of carbon monoxide, 40 tpy of sulfur dioxide, 40 tpy of ozone precursors (volatile organic compounds and nitrogen oxides), 15 tpy of PM10, and "any emission rate" of any other "NSR regulated pollutant."40 C.F.R. § 52.21(b)(23); *see* 6 WAQSR § 2(a) ("Significant") (uses phrase "pollutant subject to these regulations" instead of "NSR regulated pollutant").

26. "Regulated NSR pollutant" is defined as, *inter alia*, "any pollutant that otherwise is subject to regulation under the Act." 40 C.F.R. § 52.21(b)(50); 6 WAQSR § 2(a) ("Regulated NSR pollutant").

27. BACT is defined as:

> an emission limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under the Standards and Regulations or regulation under the Federal Clean Air Act, which would be emitted from or which results for any proposed major stationary source . . . which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source . . . through application o[f] production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

6 WAQSR § 4(a); *see also* 40 C.F.R. § 52.21(b)(12).

MAXIMUM ACHEIVABLE CONTROL TECHNOLOGY PERMIT REQUIREMENTS

28. Hazardous air pollutants are regulated under Section 112 of the Clean Air Act, 42 U.S.C. § 7412. "Hazardous air pollutants" are those pollutants that "present, or may present, through inhalation or other routes of exposure, a threat of adverse human health effects (including, but not limited to, substances which are known to be, or may reasonably be anticipated to be, carcinogenic, mutagenic, teratogenic, neurotoxic, which cause reproductive dysfunction, or which are acutely or chronically toxic) or adverse environmental effects whether through ambient concentrations, bioaccumulation, deposition, or otherwise." 42 U.S.C. § 7412(b)(2). Section 112(b) of the Clean Air Act contains a list of "hazardous air pollutants" ("HAPs") including, but not limited to, carbonyl sulfide, benzene, and methanol. 42 U.S.C. § 112(b).

29. Wyoming has established a MACT program. Chapter 5 and Chapter 6, Section 6 of the Wyoming Air regulations contain MACT requirements.

30. If the total annual tons of HAPs emitted from a listed source exceeds 25 tons/year, or if one of the individual HAPs exceeds 10 tons/year, it is considered a major source of hazardous air pollutants and is regulated under section 112 of the Clean Air Act and Wyoming rules. 42 U.S.C. § 7412(a)(1); 40 C.F.R. § 63.41; 6 WAQSR § 6(f)(iv).

31. A source's "potential to emit" HAPs is "the maximum capacity of a stationary source to emit a pollutant under its physical and operational design." 40 C.F.R. § 63.2. A source's potential to emit may reflect physical and operational limitations, but only if those limits are "federally enforceable." *Id.* Limitations must also be enforceable as a practical matter. Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act, Memorandum from John S. Seitz (January 25, 1995).

32. Section 112(d) of the Clean Air Act and Wyoming rules require regulated sources to control and limit emission of HAPs by utilizing the maximum achievable control technology ("MACT") prior to commencement of construction of the source. 42 U.S.C. § 112(d); 40 C.F.R. § 63.43; 6 WAQSR § 6(h). "[N]o person may begin actual construction or reconstruction of a major source" without a "final and effective case-by-case [MACT] determination." 40 C.F.R. § 63.42 (c).

33. "The MACT emission limitation...shall not be less stringent than the emission control which is achieved in practice by the best controlled similar source." 40 C.F.R. § 63.43(d)(1); *see also* 6 WAQSR § 6(f)(ix).

34. MACT is defined as:

> [T]he maximum degree of reduction in emissions of hazardous air pollutants (including a prohibition on such emissions, where achievable) that the permitting authority, taking into consideration the cost of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements, determines is achievable . . . .

40 C.F.R. 63.55(a)(2); *see* 42 U.S.C. § 7412(d)(2); 6 WAQSR §§ 6; 6(f)(ix) & (h)(iii)(B).

ISSUES PRESENTED FOR REVIEW—VIOLATIONS OF THE PSD AND MACT PERMITTING REQUIREMENTS

35. In permitting the Medicine Bow plant, WYDEQ failed to comply with Wyoming's PSD and MACT requirements and the Clean Air Act.

I. WYDEQ Failed to Consider Significant Sulfur Dioxide Emissions from Flares in Determining the Source's Potential to Emit and Failed to Apply BACT to Flares

36. The Medicine Bow project design includes construction of a high pressure and lower pressure flare. The purpose of flares is to release and combust syngas at startup, shutdown and upset events when the downstream units cannot accommodate the gas. Normal operation of the flares is defined as including operation in connection with startup, shutdown and maintenance ("SSM") events.

37. The Application acknowledges that the flares are emission sources. However, neither the Application submitted by Medicine Bow to WYDEQ nor the Permit issued by WYDEQ properly account for all of the project's air emissions because they exclude flaring emissions from the source's potential to emit.

38. Refinery flares have consistently proven to be an enormous source of air pollution emissions. At refineries in the San Francisco Bay Area, where great attention has been paid to the problem of flaring emissions, SO2 emissions at refineries studied frequently exceeded 10,000 pounds, and were as high as 70,000 pounds, in a single day.

39. A substantial percentage of refinery flaring emissions result from SSM events. In a recent study of 37 facilities conducted by the Washington DC-based Environmental Integrity Project,

SSM upset emissions of at least one pollutant actually exceeded the annual emissions that the facility reported to the state for that pollutant, in one case by a factor of three.[1]

40. The final Permit does not include a BACT determination for sulfur dioxide emissions because SO2 emissions are estimated under the 40 tpy major source significance threshold at 32.9 tpy, excluding SO2 emissions from flares. If flare emissions were considered, SO2 emissions would exceed the PSD major source significance threshold.

41. The Application and WYDEQ's Permit Application Analysis estimated SO2 emissions of 256.9 tpy from cold starts, yet did not consider these significant emissions in the source's potential to emit. These documents also show the flares will emit 3.9 tpy VOCs, 82.3 tpy CO, and 10.5 tpy NOx. Cold starts are a routine, predictable event associated with the operation a liquid coal plant.

42. The Application also estimated SO2 emissions of 150.16 tpy from anticipated malfunctions and other events.

43. Medicine Bow acknowledged in a letter to WYDEQ that SO2 emissions are above the major source threshold and that SO2 emissions must undergo PSD review.

44. WYDEQ failed to define Medicine Bow as a major source of SO2 emissions. WYDEQ acknowledged it did not set emission limits for the flares. WYDEQ stated in its Response that emission limits would not be practically enforceable as these units "cannot be tested using traditional EPA reference methods to determine compliance with emission limits." This is incorrect. Exclusion of flaring emissions from the project's potential to emit is unlawful. The definition of "potential to emit" includes startups and malfunctions. It is "the maximum capacity of a stationary source to emit a pollutant under its physical and operational design." 40 C.F.R. §

[1] Kelly Harrigan, "Report: Gaming the System," Environmental Integrity Project, August 18, 2004, *available at* http://www.environmentalintegrity.org/pub240.cfm

52.21(b)(4). The maximum capacity to emit includes a number of planned and unplanned emission events. Medicine Bow acknowledged the liquid coal plant will have a number of annual startups and malfunctions, itself estimated the associated SO2 emissions that will be emitted with these events, and acknowledged that it is a major source of SO2 emissions.

45. WYDEQ failed to apply BACT to all sources of SO2 emissions. In its Response, WYDEQ maintained that the SSM plan, and monitoring and recording requirements, is BACT for the flares. Yet WYDEQ did not complete any BACT analysis before reaching this conclusion. WYDEQ did not evaluate all available control options in the five-step BACT process that it utilized for making other BACT determinations. WYQDEQ failed to evaluate other options for limiting SO2 emissions, including those that were suggested in Sierra Club's comments. Options for limiting SO2 emissions include, *inter alia*, permit conditions requiring work practice standards, minimum loads for the gasifier during startup, and permit limits on the maximum duration of startup, and the maximum number of startup events per year. WYDEQ also did not respond to the examples of BACT application to flares in other permits.

46. The Permit also acknowledged that emissions of VOCs, CO and NOx exceed the PSD significance threshold, and the Permit acknowledged these pollutants are emitted by the flares, yet WYDEQ did not apply BACT to emissions of any pollutants from the flares.

47. Failure to conduct BACT review and set BACT limits violates 6 WAQSR §§ 2(c)(ii), (iii), (v) & 4(a); 40 CFR § 52.21(b)(12).

II. WYDEQ Improperly Quantified HAP Emissions from Fugitive Component Leaks, and Failed to Apply BACT to VOC Emissions from Fugitive Component Leaks

48. Fugitive component leaks from valves, pumps, compressors, and connectors in the Medicine Bow facility are a source of VOC emissions, which include HAPs such as methanol.

49. The permit Application improperly calculated emissions from fugitive sources, including tanks, valves, pumps, compressors, and connectors, using outdated and inaccurate emission factors. Moreover, the Application did not even contain a final count of components.

50. Reliance on inaccurate, unreliable and biased emission factors in calculating a source's potential to emit is improper and unlawful.

51. Neither the Applicant nor WYDEQ conducted a proper BACT analysis to control VOC emissions from fugitive component leaks. The Applicant and WYDEQ concluded that the only available control technology for addressing fugitive component emissions is a Leak Detection and Repair ("LDAR") Program, as defined by the New Source Performance Standard requirements of Subpart VVa of 40 CFR part 60.

52. The facility is subject to the New Source Performance Standards, but New Source Performance Standards are a starting point for a BACT analysis, not BACT itself. 6 WAQSR § 4(a); *see also* 40 C.F.R. §§ 52.21(j) & (b)(12). The science and engineering of LDAR programs has advanced significantly in recent years and the facility must employ the best available LDAR standards.

III. WYDEQ Erroneously Concluded that Medicine Bow is a Minor Source of Methanol and Failed to Conduct a Case-by-Case MACT Determination to Control Methanol and other HAP Emissions.

53. As detailed in the previous claim, WYDEQ did not properly estimate methanol emissions from fugitive component leaks. Allegations in Claim II are incorporated herein.

54. Even applying outdated and inaccurate emission factors, the Application and WYDEQ's Application Analysis estimated that methanol emissions would exceed the 10 tpy major source

limit and acknowledged that Medicine Bow is a major source of Hazardous Air Pollutants ("HAPs").

55. Maximum Achievable Control Technology ("MACT") requirements apply to "major sources" that have the potential to emit 10 or more tons per year of any one HAP or 25 or more tons per year of a combination of HAPs. 42 U.S.C. § 7412(a)(1); 40 C.F.R. § 63.41; 6 WAQSR § 6(f)(iv).

56. EPA's comments stated that WYDEQ must conduct a case-by-case MACT analysis before commencement of construction.

57. In its Response, WYDEQ stated that, after a "reevaluation" of information, it determined that the Medicine Bow will emit only 9.2 tpy of methanol, and is therefore a minor source of HAPs. WYDEQ did not justify this new conclusion. The improper emission factors already significantly underestimate methanol leaks from fugitive components, and even this inaccurate methanol emission estimate is almost 10 tpy.

58. In order to limit potential-to-emit to render Medicine Bow a "minor" or "area" source for MACT purpose, WYDEQ must issue a "federally enforceable" permit containing practically enforceable conditions limiting HAP emissions. There are no practically enforceable conditions in the Permit limiting methanol emissions.

59. Medicine Bow is a major source of HAPs as defined in 42 U.S.C. § 7412(a)(1); 40 C.F.R. § 63.41; and 6 WAQSR § 6(f)(iv). WYDEQ must conduct a case-by-case MACT analysis for all HAPs emitted by the facility according to 42 U.S.C. § 7412(g)(2); 6 WAQSR § 6(g).

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IV. WYDEQ Improperly Dismissed Coal Cleaning as BACT for Mercury and Particulate Matter.

60. As stated in Sierra Club Comments, neither WYDEQ nor the Applicant considered coal cleaning and drying processes in the BACT analysis for mercury and particulate matter.

61. WYDEQ stated in its Response that coal cleaning would redefine the source. WYDEQ's explanation is illegal and improper, and the agency must evaluate coal cleaning as BACT under 42 U.S.C. § 7479(3); 40 C.F.R. § 52.21(b)(12); 6 WAQSR § 4(a).

V. WYDEQ Failed to Model Impacts of Fugitive Emissions of Particulate Matter

62. Neither WYDEQ nor the Applicant modeled impacts of fugitive emissions of particulate matter.

63. EPA's Comments stated that fugitive PM emissions must be included in the modeling analysis. The Response stated that there are uncertainties in the performance of the models. This reasoning is improper.

64. The vast majority of major sources of new source review applications in the country include modeling of fugitive particulate emissions. WYDEQ did not justify the Applicant's failure to model these emissions.

65. A permit cannot be issued unless the source demonstrates that it will not cause or contribute to NAAQS or increment violations. 42 U.S.C. § 7475(a)(3). Neglecting to model fugitive emissions fails to demonstrate compliance with the law.

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VI. WYDEQ Failed to Conduct Proper BACT Analysis of PM Control Options for Coal Pile Storage.

66. WYDEQ chose stacker tubes in-pit as the top control technology for controlling particulate matter emissions from the coal storage pile. WYDEQ improperly eliminated covered storage as the top control option based on incremental cost. The covered storage would result in zero particulate matter emissions, in contrast with the stacker tubes in-pit, which would result in 60 TPY of PM.

67. Cost effectiveness is the dollars per ton of pollutant emissions reduced. Incremental cost is the cost per ton reduced and should be considered in conjunction with total average cost effectiveness.

68. EPA Comments stated that WYDEQ must include a more detailed description of cost effectiveness and other factors that form the basis for the rejection and selection of control options. WYDEQ failed to provide further explanation of its failure to evaluate cost effectiveness in its Response.

69. WYDEQ's failure to justify elimination of the top control technology is a violation of state and federal regulations including 6 WAQSR § 4(a) and 40 C.F.R. § 52.21(b)(12).

VII. WYDEQ Failed to Regulate PM2.5 Emissions.

70. PM2.5 is comprised of tiny solids or liquid droplets less than 2.5 micrometers in diameter that can lodge deep into the lungs and cause serious health problems.

71. Over the past ten years, nearly 1,000 peer-reviewed studies have documented the causal link between short-term inhalation of PM2.5 and premature death, heart attacks, and respiratory diseases, including lung cancer and asthma. This extensive body of medical research convinced EPA to adopt more stringent regulations limiting PM2.5 emissions. On October 17, 2006, EPA

finalized a new NAAQS for PM2.5, revising the former 24-hour standard of 65 micrograms per cubic meter to 35 micrograms per cubic meter. 71 Fed. Reg. 61,144 (Oct. 17, 2006).

72. WYDEQ has access to readily available data on existing ambient concentrations of PM2.5, as well as monitoring, modeling and analytical tools to determine the impacts of PM 2.5 emissions from the Medicine Bow plant on air quality.

73. WYDEQ cannot issue a PSD Permit unless Medicine Bow has demonstrated that its proposed facility will not cause or contribute to PM2.5 pollution in violation of NAAQS or of an applicable PSD Increment in any area. 42 U.S.C. § 7475(a)(3); WAQSR § 2(c)(ii). Medicine Bow failed to make either demonstration.

74. WYDEQ must evaluate and require PM2.5 emission limits in the PSD permit that correspond to the limits achievable with the best available control technology for PM 2.5. 42 U.S.C. § 7475(a)(4); 40 CFR §§ 52.21 & 51.66; WAQSR § 2(c)(v), 4(b)(ii). WYDEQ failed to conduct a BACT evaluation or set BACT-based emission limits for PM 2.5.

75. WYDEQ's reliance on the "surrogacy policy" memorialized in a Memorandum from John S. Seitz, Director of EPA's Office of Air Quality Planning and Standards, to Regional Air Directors, entitled "Interim Implementation of New Source Review for PM2.5" (Oct. 23, 1997) and EPA's PM2.5 New Source Review Implementation Rule (73 FR 28321, May 16, 2008) is unlawful because the surrogacy policy and EPA's PM2.5 Implementation Rule are unlawful.

76. Alternatively, WYDEQ's reliance on the "surrogacy policy" and EPA's PM2.5 New Source Review Implementation Rule is unlawful because the Rule has been remanded by EPA Administrator Lisa Jackson, who stated in an April 28, 2009 letter to Paul Cort of Earthjustice that the use of the surrogacy policy in EPA-lead jurisdictions will be repealed "in light of the

resolution of the technical issues with respect to PM2.5 monitoring, emissions estimation and air quality modeling that led to the PM10 surrogacy policy in 1997."

77. Alternatively, WYDEQ's reliance on the "surrogacy policy" and EPA's PM2.5 New Source Review Implementation Rule is unlawful because the Rule requires that, in all cases, permitting agencies must still ensure that a proposed facility will not cause or contribute to PM2.5 pollution in violation of NAAQS or of an applicable PSD increment. 42 U.S.C. § 7475(a)(3); WAQSR § 2(c)(ii). WYDEQ failed to comply with this obligation in the face of evidence that PM2.5 emissions from Medicine Bow will violate PM2.5 NAAQS and the PSD Increment.

VIII. WYDEQ Failed to Consider Greenhouse Gas Emissions.

78. Although the Medicine Bow liquid coal plant will emit millions of tons of greenhouse gases each year, WYDEQ ignored this important issue during the air permitting process.

79. Under the federal Clean Air Act, no new major emitting facility may be constructed in any area subject to PSD requirements unless "the proposed facility is subject to [BACT] for each pollutant subject to regulation under [the Clean Air Act]." 42 U.S.C. § 7475(a)(4) (emphasis added). This requirement is included in Wyoming's regulations, which define BACT as "an emission limitation . . . based on the maximum degree of reduction of each pollutant subject to regulation under the Standards and Regulations or regulation under the Federal Clean Air Act." 6 WAQSR § 4(a) (emphasis added).

80. WYDEQ cannot approve a permit unless the "proposed major stationary source . . . would meet an emission limit(s) or equipment standard(s) specified by the Administrator to represent the application of [BACT] for each pollutant regulated" under the Regulations or the federal Clean Air Act. *Id.* § 4(b)(ii). The regulations go on to define "regulated [new source review]

pollutant" to include "[a]ny pollutant that otherwise is subject to regulation under the Federal Clean Air Act." *Id.* § 4(a) (emphasis added). Pollutants "subject to regulation" include those that the Clean Air Act already regulates, and those for which the Act requires regulation, but for which EPA or a State has not yet exercised its regulatory authority. For example, the EPA may regulate air pollutants from sources when the pollutants "may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. §§ 7411(b)(1)(A), 7521(a)(1).

81. As the U.S. Supreme Court has affirmed, CO_2 and other greenhouse gases are "pollutants" that are subject to regulation under the Clean Air Act. *Massachusetts v. EPA*, 127 S.Ct. 1438 (2007) ("[G]reenhouse gases fit well within the Clean Air Act's capacious definition of 'air pollutant.'"). The definition of pollutant is applicable to all Clean Air Act programs. 42 U.S.C. § 7602.

82. Following up on the *Massachusetts* decision, on April 17, 2009, EPA issued a draft endangerment finding for carbon dioxide and other greenhouse gases. EPA, Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, ("Endangerment finding"), *at*

http://epa.gov/climatechange/endangerment/downloads/GHGEndangermentProposal.pdf

EPA has now indicated its intent to declare that carbon dioxide and other greenhouse gases are air pollutants that "may be reasonably anticipated to endanger public health and welfare," as defined under the Clean Air Act. Although CO2 is already regulated under other parts of the Clean Air Act, after this proposed endangerment finding is finalized, EPA will be obliged to begin the process of regulating global warming pollution from motor vehicles. Clean Air Act Section 202 specifically states that EPA "shall" (i.e. must, not may) regulate dangerous pollutants once they are found to endanger public health or welfare.

83. In fact, CO_2 has been subject to regulation under the Clean Air Act's acid rain program for well over a decade. In 1990, Congress directed EPA to "promulgate regulations to require that all affected sources subject to Title [IV][2] of the Clean Air Act shall also monitor carbon dioxide emissions." Pub. L. 101-549, Title IV, § 821, 104 Stat. 2699 (Nov. 15, 1990) (notes for 42 U.S.C. § 7651k). EPA's regulations, finalized on January 11, 1993, require CO_2 emissions monitoring. *See, e.g.*, 40 C.F.R. §§ 75.1, 75.13, 75.57(e).

84. The Delaware SIP approval also demonstrates that CO2 is subject to regulation under the Clean Air Act for purposes of triggering the BACT requirements. 73 Fed. Reg. 23,101 (April 29, 2008); 40 C.F.R. § 52.420(c). Those amendments establish CO2 emission limits and operating requirements, record keeping and reporting requirements, and CO2 emissions certification, compliance, and enforcement obligations for new and existing stationary electric generators. Del. Admin. Code 7 1000 1144. U.S. EPA's approval was made "in accordance with the Clean Air Act," 73 Fed. Reg. 23,101, and by approving inclusion of these provisions into Delaware's SIP, the agency confirmed that CO2 is "subject to regulation" under the Act, as SIPs are developed pursuant to Sections 110 and 113 of the Act, 42 U.S.C. §§ 7410, 7413, and become federally enforceable parts of federal law upon approval.

85. Because CO_2 and other greenhouse gases are "subject to regulation" under the CAA and Wyoming's PSD regulations, WYDEQ should have required the Applicant to conduct a BACT analysis and set an emissions limit that reflects the best available control technology for these gases.

86. Wyo. Stat. § 35-11-213 is inapplicable to PSD permitting of coal plants. Moreover, even if it were applicable, it is preempted by the Clean Air Act.

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[2] According to the Reporter's notes, the references to Title V are meant to refer to Title IV, the acid rain program.

87. By failing to consider greenhouse gases, WYDEQ violated its own governing regulations and failed to provide interested parties with a meaningful opportunity to comment on alternatives and control technology requirements.

RESERVATION OF RIGHTS

88. Sierra Club reserves the right to raise any issue set forth in public comments to WYDEQ on the Permit in this Protest and Petition for Hearing.

89. Sierra Club reserves the right to amend this Protest and Petition for Hearing to clarify, amend, or supplement the existing objections to the Permit or to add new objections.

90. Sierra Club reserves the right to later file a legal memorandum of points and authorities in support of their Protest and Petition for Hearing.

REQUEST FOR HEARING

91. Pursuant to WYDEQ's General Rules of Practice and Procedure, Chapter 1, §§ 3 and 4, Sierra Club requests that the Council hold a hearing in this matter in accordance with WYDEQ's Rules of Practice and Procedure Applicable to Hearings in Contested Cases, Chapter 2.

REQUESTED RELIEF

Based on the foregoing legal violations, Sierra Club requests that the Environmental Quality Council vacate and remand the Permit for the Medicine Bow facility to WYDEQ pending compliance with all applicable laws and regulations; and provide any and all other relief the Council determines appropriate.

Respectfully submitted May 1, 2009,

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(representing the Club as full-time staff
according to EQC rule 6(a))

CERTIFICATE OF SERVICE

I, Andrea Issod, hereby certify that on this 1st day of May, 2009, a true and correct copy of the foregoing document was served via registered mail, return receipt requested to the following addresses:

Dennis M. Boal, Chairman
Environmental Quality Council
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John Corra, Director
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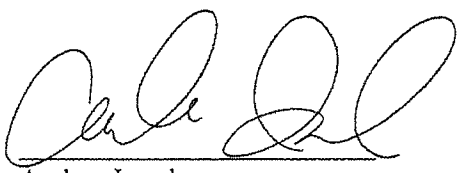

Andrea Issod
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