LETTER 100

SLMateri@cs.com
06/29/03 09:08 PM

To: DesFlats_WYMail@blm.gov
cc:
Subject: Red Desert

Please adopt a conservation alternative to gas development in the Environmental Impact Statement for the Red Desert. This area should not be destroyed by wells, roads, power lines, and pipelines. I ask that the statement include the following: 1

Prohibit drilling in environmentally sensitive areas.
Protect all lands within the Adobe Town citizens proposed wilderness.
Provide a sufficient analysis of the impacts of the proposed project.
Mandate the least environmentally damaging types of drilling.

Thank you,

Sandra Materi
1600 W. Odell
Casper WY 82604

LETTER 101

RECEIVED
JUN 30 2003
BUREAU OF LAND MANAGEMENT
RAWLINS FIELD OFFICE

June 28, 2003

Dear Mr. Sachar:

I am writing to express my concern for the fate of the Desolation Flats Project Area. The pristine quality of this area is seriously threatened by the proposed drilling permitted by the BLM's draft plan.

Therefore, I join with the Wyoming Outdoor Council, the Conservation Alliance and other concerned citizens in requesting that you and your colleagues do all you can to help preserve our vanishing, irreplaceable wilderness. 1

We are asking that the BLM:

1. Initiate a conservation alternative in the FEIS that includes quality mitigation and monitoring gauges to maintain protection.
2. Prohibit drilling in environmentally sensitive wilderness quality lands, roadless lands and vital wildlife habitats. Nor should there be any "surface occupancy" in these areas.
3. Incorporate the 50,000 acres of wilderness into the existing Wilderness Study Area Adobe Town.
4. Mandate directional drilling in these areas.

Thank you, Mr. Sachar, for taking the time to read this. Hopefully we will not be swayed by those short-term interests

Two

that cause irreparable damage to our all-too-quickly disappearing wilderness.

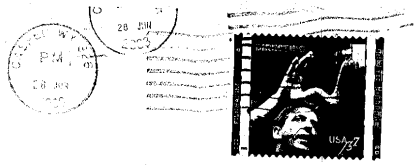
The awesome beauty of the natural places on this Earth is a gift, and we as humans have the tremendous capacity to protect, or to destroy, it.

Sincerely,

Mary W. Gay

1

Mary Gay
189 Garfield
Lander, WY 82520



Bureau of Land Management
John Spehar, Project Coordinator
P.O. Box 2407
Rawlins, WY 82301

82301#2407

LETTER 102

PETROLEUM ASSOCIATION OF WYOMING

951 Werner Court, Suite 100
Casper, Wyoming 82601
(307) 234-5333

fax (307) 266-2189
e-mail: paw@pawyo.org
www.pawyo.org

June 27, 2003

RECEIVED
JUN 30 2003
BUREAU OF LAND MANAGEMENT
RAWLINS FIELD OFFICE

Mr. John Spehar
Project Coordinator
Rawlins Field Office
BUREAU OF LAND MANAGEMENT
1300 North Third Street
Rawlins, Wyoming 82301

Re: Draft Environmental Impact Statement for the Desolation Flats Natural Gas Field Development Project in Sweetwater and Carbon Counties, Wyoming

Dear Mr. Spehar:

The Petroleum Association of Wyoming (PAW) would like to thank BLM for the opportunity to comment on the referenced document. PAW is Wyoming's largest and oldest oil and gas trade organization, the members of which account for over ninety percent of the natural gas and over eighty percent of the crude oil produced in the State. This project will directly affect members of PAW.

PAW has the following comments regarding the Draft Environmental Impact Statement (DEIS) for the above referenced document:

1. The Applicants have agreed to numerous "Applicant Committed Measures" which go beyond the required protective measures established in the current land management plan. The Applicants have demonstrated their willingness to work with BLM in protecting the effects on the environment and as a result, PAW believes that the proposed project has provided sufficient mitigation to protect the environment.

2. The "Applicant Committed Measures" are voluntary actions agreed to by the individual companies and should not establish the precedent for future projects that are similar in nature.

3. Page 2-35, Resource-Specific Requirements, Water Resources: ...All drainage crossing structures would be designed to carry a 50-year discharge event..."

1

LETTER 102 cont'd

PETROLEUM ASSOCIATION of WYOMING
951 Werner Court, Suite 100
Casper, Wyoming 82601

It is recognized that the mitigation measure is an "Applicant Committed Measure"; however, PAW questions the need to design all drainage crossing structures to carry the 50-year discharge event. The 25-year figure should be used for the intermittent streams and drainage structures should be appropriately constructed. However, ephemeral drainages' lack of water may not require the same costly drainage structures as the intermittent streams. PAW would request that BLM remain flexible when mitigating ephemeral drainage crossings. **1**

4. Page 2-37, Resource-Specific Requirements: "Invasive/Non-Native Species"

   PAW believes that consultation between the operator, BLM, and County Weed and Pest agencies should be encouraged to identify noxious weed outbreaks. Once identified, the appropriate control measures should be implemented.

5. Page 4-64, 4.7.3.1.3, Wild Horses: "...Implementation of the Proposed Action is not expected to significantly impact wild horses within the DFPA."

   PAW agrees with BLM and further stresses that the established population levels for wild horses must be determined by available forage. In addition, population levels must be managed by BLM for the benefit of other range resource users (i.e. livestock, grazing, wildlife, etc.). BLM must implement a strategy for controlling the growing wild horse herds and maintaining the herd numbers at the appropriate population levels. **2**

6. Page 4-65, 4.7.3.1.4, Wildlife, Upland Game Birds: "Greater Sage-grouse"

   BLM has significant flexibility in developing protective measures for BLM Sensitive Species and Wyoming Species of Concern such as the Sage Grouse. BLM has certain discretionary authority and should consider the effects of restrictions on the oil and gas operator as part of its adoption of reasonable and prudent mitigation measures necessary to minimize potential impacts on non-ESA listed Special Status Wildlife Species. **3**

7. Page 4-72, 4.7.5, Wildlife, Additional Mitigation Measures: "In areas of overlapping big game crucial winter range, the number of locations may be reduced (less than 4) in order to minimize habitat loss..."

   PAW opposes this extreme mitigation measure and does not believe that it is justified. BLM has failed to provide data that drilling on overlapping winter range at a density of greater than four creates impacts that are significantly greater than impacts from lesser well densities. Should BLM obtain documentation that **4**

PETROLEUM ASSOCIATION of WYOMING
951 Werner Court, Suite 100
Casper, Wyoming 82601

proves this determination, PAW would request that the information be forwarded to our office in Casper for review.

BLM should be required to monitor its mitigation measures in the field and quantify the effectiveness of the measure instead of continuing to implement unsupported restrictive stipulations on industry. Monitoring should become the basis for adjustments to the mitigation measures and not the result of a "best guess" measure that becomes the threshold that BLM rarely reduces, but often increases such as in this instance. Monitoring will require additional budget appropriations for manpower to avoid unfairly placing the burden on industry. **4**

8. Page 4-79 & 80, 4.8.1.4, Wildlife, Additional Mitigation Measures: "Mountain Plover"

   The status of the Mountain Plover as "proposed for listing" allows for a certain amount of flexibility in developing measures protective of the species. Unless the U.S. Fish and Wildlife Service determines that the Mountain Plover should be listed under the Endangered Species Act as threatened or endangered, BLM has certain discretionary authority and should consider the effects on the oil and gas operator as part of its adoption of reasonable and prudent mitigation measures necessary to minimize the impact on the species. **5**

9. Page 4-78, 4.8.1.4, Wildlife, Additional Mitigation Measures: "A plugged and abandoned well within ½ mile of the identified mountain plover occupied habitat area would be identified with a marker 4 feet tall with a perch inhibitor on the top of the marker."

   BLM has no authority to mandate this requirement. The Wyoming Oil and Gas Conservation Commission has the authority to set such standards. **6**

10. Appendix H, Wildlife Monitoring/Protection Plan

    Should all the provisions in this section be implemented, BLM will be overwhelmed with data such that there are neither dollars nor manpower to conduct meaningful analyses. Resource managers are faced with a difficult task in managing the complex interactions of biological, social, and physical components of an ecosystem. To that end, PAW recommends that BLM adopt as part of its plan, the identification of key indicators by which system changes can be monitored. For each key indicator, the Review Team should identify triggers at which time, if exceeded, additional investigations would occur. Monitoring will require additional budget appropriations for manpower to avoid unfairly placing the monetary burden on industry. **7**

PETROLEUM ASSOCIATION of WYOMING

951 Werner Court, Suite 100
Casper, Wyoming 82601

Mr. John Spehar
Desolation Flats Natural Gas Field Project DEIS
Page 4
June 27, 2003

11. PAW recognizes that the social and economic opportunities generated from the project would continue to benefit the residents of Wyoming and the participating counties by directly creating new jobs and producing additional revenues. Socio-economics are an important component to this cumulative analysis and were appropriately incorporated into the EIS. **8**

12. In a time of uncertainty and with the projection of natural gas production being unable to meet demand this winter and beyond, Wyoming has the opportunity to provide much needed natural resources to markets throughout the nation and this proposal has the potential to assist in that effort. At the same time, industry recognizes the importance of protecting the environment and will work to adequately address those concerns during the appropriate level of NEPA analysis. **9**

In conclusion, PAW supports the Proposed Action with the modifications outlined above and the Final EIS should be prepared without delay.

Sincerely,

Dru Bower

Dru Bower
Vice President

Cc: Steve Degenfelder
Curt Parsons
Dave Brown
Gene George
Renee Taylor
Dave Petrie
Todd Ennenga
Bruce Hinchey

LETTER 103

Dan and Janet W. Blair
P.O. Box 1640 (4514 US Hwy. 26)
Dubois, WY 82513-1640
email: danjanbee@wyoming.com

June 27, 2003

RECEIVED
JUN 30 2003
BUREAU OF LAND MANAGEMENT
RAWLINS FIELD OFFICE

Bureau of Land Management
Rawlins Field Office
John Spehar, Project Coordinator
PO Box 2407
Rawlins, WY 82301

COMMENTS RE: Proposed Desolation Flats Project

Dear Mr. Spehar:

Last March 18th we submitted comments to Kurt Kotter in your Field Office concerning the Great Divide long-term management plan. Included in those comments were some of the same matters we are going to repeat here, now relative to BLM's proposed Desolation Flats project, about which we are extremely concerned (particularly since it appears that BLM intends to go forward with the project before the management plan is completed; this is just wrong.)

As we commented in March, we believe that in the recent past the BLM has begun to place far too much emphasis on oil and gas development across the State of Wyoming, at the expense of enough protection for native wildlife and the wild and scenic places that BLM manages. In our March comments we frankly stated our desire to see the BLM put conservation **first** in the priority of uses for BLM lands; that the development of federal minerals must not take place at the expense of other critical resources: wildlife (some of which is unique to the West, such as the pronghorns) and scenic western landscapes (like the Red Desert). We expressed our understanding that in order to maintain our way of life we must be willing to accept some of the impacts put on the earth's condition and thus on our human condition, while expressing our fear that our choices and actions now may cause some irreversible change for the worse down the line.

Now comes the first evidence that our fear is justified: this seeming "end-run" around whatever the ultimate long-term management plan may be, in the form of the proposed Desolation Flats project (what a clever way to imply that there is nothing in the area worth worrying about from a conservation standpoint – it's just "desolation" in the eyes of the BLM!)

Specific to the proposed Desolation Flats project, we consider it imperative that BLM adopt a conservation alternative in its Environmental Impact Statement, to include: **1**

- **Protection of all lands within the Adobe Town citizens' proposed wilderness.** In the proposed project area almost 50,000 acres of wilderness-quality lands are adjacent to the existing Adobe Town Wilderness Study Area. These lands should be protected by incorporating them into the larger, existing WSA.

- **Sufficient analysis of the impacts of the proposed project.** The BLM has not given the public the detail needed to provide for a sufficient analysis of the impacts of the project. As an example, your agency states that there will be 385 wells drilled and about 500 miles of new roads constructed in the project. ***What are the locations of these wells? Where will the roads be constructed?*** These are crucial details, without which the impacts to wildlife, recreation, and visual quality of the area cannot be accurately analyzed.

- **Prohibition on drilling in environmentally sensitive areas such as wilderness-quality lands, roadless lands, and important wildlife habitats.** The BLM should withdraw from leasing or require "No Surface Occupancy" for oil and gas drilling on floodplains, roadless lands, and wilderness-quality lands, crucial elk and deer winter ranges, prairie dog colonies, mountain plover habitat, and within three miles of sage grouse leks and one mile of raptor nests.

And finally,

- **BLM must mandate the least environmentally damaging types of drilling**. As we indicated in our March 18th comments, minimum-footprint directional drilling should be required in any future BLM project in order to reduce impacts to wildlife, recreation, and landscapes. 1

At the time of our March comments to your Field Office, we had just returned from a two-day symposium in Pinedale that included tours of two Pinedale BLM Field Office lease sites: the Pinedale Anticline and the Jonah Field, both gas developments. We were absolutely appalled by the almost irreversible changes in the landscape, **and particularly by the number of variances to lease stipulations BLM is allowing**. This simply must not be allowed to happen at any other sites under BLM's management.

We say yet again to you, Mr. Spehar, as we said to Mr. Kotter: Wyoming's exceptional quality of life, exemplified by this state's vast areas of pristine and frequently unique habitat (whether BLM opts to refer to it as "desolate" or not), and its varied -- some of it rare -- wildlife, must be protected against the continually increasing pressures of the oil and gas and mineral extraction industries.

Thank you for giving our comments your thoughtful and serious consideration.

Very truly yours,

Dan Blair Janet W. Blair

LETTER 104

NORTHERN PLAINS
RESOURCE COUNCIL

RECEIVED
JUN 30 2003
BUREAU OF LAND MANAGEMENT
RAWLINS FIELD OFFICE

June 25, 2003

John Spehar
Bureau of Land Management
P.O. Box 2407
Rawlins, WY 82301

RE: Northern Plains Resource Council's comments on Desolation Flats Natural Gas Field Development DEIS

Dear Mr. Spehar:

I am writing on behalf of the Northern Plains Resource Council, a Montana family agriculture and conservation organization. Northern Plains' members live and work in Montana and are interested in protecting our water, farms and ranches, and way of life from irresponsible coal bed methane development in the Powder River Basin of Wyoming and Montana.

We are writing to protest the use of our organization's name in the Desolation Flats Natural Gas Field Development DEIS, Chapter 4, on page 4-7. Northern Plains did not evaluate or participate in the air quality assessment for this project. It is incorrect to list Northern Plains as having provided input in the project and to indicate that Northern Plains approves the air quality assessment methodology as technologically sound. 1

Please remove our name from any reference to the project and issue an errata sheet to correct your inaccuracy. Should we choose to comment on DEIS documents prepared by your agency, you will receive a written document outlining our concerns or approval. 2

Sincerely,
Dan Teigen, Chairman
Northern Plains Resource Council

CC Dan Heilig, Wyoming Outdoor Council, Jack Tuholske

2401 Montana Avenue, Suite 200, Billings, MT 59101
Tel: 406.248.1154 Fax: 406.248.2110 Email: info@northernplains.org www.northernplains.org

LETTER 105

DAVE FREUDENTHAL
GOVERNOR

THE STATE OF WYOMING

STATE CAPITOL
CHEYENNE, WY 82002

Office of the Governor

June 30, 2003

RECEIVED
JUN 30 2003
BUREAU OF LAND MANAGEMENT
RAWLINS FIELD OFFICE

United States Department of the Interior
Attn: John Spehar, Project Coordinator
Rawlins Field Office
P.O. Box 2407 (1300 North Third Street)
Rawlins, WY 82301-2407

Re: Desolation Flats Natural Gas Development Project - DEIS
State Identifier Number: 2000-068

Dear Mr. Spehar:

This office has reviewed the referenced Draft Environmental Impact Statement (DEIS) on behalf of the State of Wyoming. This Office also distributed the referenced document to all affected state agencies for their review, in accordance with State Clearinghouse procedures. Attached are comments from the Office of State Lands and Investments, State Engineer's Office and the Department of Environmental Quality (DEQ).

The State Historic Preservation Office has responded verbally that the BLM appears to have admirably considered cultural resource issues.

We ask that you review the amount of state acreage within the project area so as to have an accurate count. **1**

The Department of Environmental Quality (Air Quality Division) has provided you with extensive comments regarding the DEIS and the Air Quality Technical Report. Please feel free to contact DEQ personnel should you have questions regarding their comments. We ask that the attached State agency comments receive your due and favorable consideration.

Please continue to provide this office with either (4) four hard copies or electronic copy (submit to SPC@state.wy.us) of continued information for review and distribution to interested agencies. Thank you for the opportunity to comment.

Sincerely,

Tracy Williams

Tracy J. Williams
Policy Analyst

TJW
Enclosures: (3)

Office of State Lands and Investments
Department of Environmental Quality
State Engineer's Office

TTY: 777-7860 PHONE: (307) 777-7434 FAX: (307) 632-3909

Office of State Lands and Investments

Funding Wyoming Public Education

122 West 25th Street
Cheyenne, WY 82002
Phone: (307) 777-7331
Fax: (307) 777-5400
slfmail@state.wy.us

Dave Freudenthal
Governor

Lynne Boomgaarden
Director

June 23, 2003

State Planning Coordinator's Office
Herschler Building, 1East
122 West 25th Street
Cheyenne, Wyoming 82002

Re: SPCO ID# 2000-068
Desolation Flats Natural Gas Development Project
Draft Environmental Impact Statement

Dear Sir/Madam/Staff:

The staff of the Office of State Lands and Investments has reviewed the captioned Draft Environmental Impact Statement (DEIS) and offers the following comments relative to the proposed action insofar as it pertains to the mission of this office.

The proposed action articulated in the DEIS appears to be a well-balanced assessment of the environmental and economic issues surrounding the potential for development. However, review of the document and our records indicate that the State has significantly more acreage within the townships and ranges embracing the project boundary, most of which is TGA exchange acreage (no state surface), than enumerated in the document. **1**

Currently, the State has 21,320 acres under lease for oil and gas, 9% of the total project acreage. As such, we ask that (1) assessment for actions within the project area provide proportional deference to the State's desire to develop it minerals; and (2) cumulative actions under the ROD, insofar as federal development proceeds, do not collectively serve to impede development of State minerals within the project area. **2**

We appreciate this opportunity to comment. If we may be of further assistance, please do not hesitate to contact this office.

Very truly yours,

Lynne Boomgaarden

Lynne Boomgaarden
Director

LETTER 105 cont'd

State Engineer's Office

DAVE FREUDENTHAL
GOVERNOR

PATRICK T. TYRRELL
STATE ENGINEER

HERSCHLER BUILDING, 4-E CHEYENNE, WYOMING 82002
(307) 777-7354 FAX (307) 777-5451
seoleg@state.wy.us

June 20, 2003

To: Wyoming State Clearinghouse
State Planning Coordinator's Office
Herschler Building, 1 East
Cheyenne, WY 82002-0600

From: John W. Shields, Interstate Streams Engineer
For
Patrick T. Tyrrell, Wyoming State Engineer

RE: Desolation Flats Natural Gas Development Project
OFLP PROJECT ID#: 2000-068

The State Engineer's Office has conducted its review of the subject document referred to this agency for review and comment and does not have any comments to provide. Thank you for the opportunity to review this project. **3**

Surface Water (307) 777-7354 | Ground Water (307) 777-6163 | Interstate Streams (307) 777-6151 | Board of Control (307) 777-6178

The State of Wyoming

Dave Freudenthal, Governor

Department of Environmental Quality

Herschler Building • 122 West 25th Street • Cheyenne, Wyoming 82002

ADMIN/OUTREACH	ABANDONED MINES	AIR QUALITY	INDUSTRIAL SITING	LAND QUALITY	SOLID & HAZ. WASTE	WATER QUALITY
(307) 777-7758	(307) 777-6145	(307) 777-7391	(307) 777-7368	(307) 777-7756	(307) 777-7752	(307) 777-7781
FAX 777-3610	FAX 777-6462	FAX 777-5616	FAX 777-6937	FAX 777-5864	FAX 777-5973	FAX 777-5973

June 27, 2003

Through: Lynn Simons, State Planning Coordinator

Mr. John Spehar
Bureau of Land Management
Rawlins Field Office
1300 N. Third St.
PO Box 2407
Rawlins, WY 82301

RE: Desolation Flats Draft Environmental Impact Statement and Air Quality Technical Reports

Dear Mr. Spehar:

The Air Quality Division of the Wyoming Department of Environmental Quality has reviewed the Draft Environmental Impact Statement and the Air Quality Technical Reports for the Desolation Flats Natural Gas Development Project. The Air Quality Division has noted concerns regarding outdated information due to the extensive length of time between the air quality analysis and release of the DEIS for comment. Since the air quality analysis had been completed, the Air Quality Division issued ambient air quality standards for O_3 and $PM_{2.5}$. In addition, background concentrations for visibility and criteria pollutants disclosed in the "Affected Environment" section can be updated. Attached you will find the Air Quality Division's specific comments. **4**

During review of the DEIS and the Near-field and Far-field Air Quality Technical Report, the Division found inconsistencies between results reported in the two documents. Differences were found in the project specific results and the cumulative results for ambient NO_2 concentrations, visibility impacts and acid deposition impacts. These inconsistencies must be corrected for the FEIS and the Final Air Quality Technical Reports.

If you should have any questions regarding the comments, please feel free to contact this office.

Sincerely,

Darla J. Potter
Visibility, Smoke Management, & EIS Coordinator
Air Quality Division

Cc:Dan Olson, Air Quality Division Administrator
Cara Casten, Air Quality Division

Draft EIS Comments

General: Many areas of this document need to be revisited due to the extensive length of time between the Air Quality Analysis and DEIS completion and the release of the document for comment. 5

Chapter 1
Page 1-20, Table 1-6: The Air Quality Division actions are also required to implement the Desolation Flats Natural Gas Field Development Project, but are not listed in Table 1-6. Please add the Air Quality Division to this table with our Nature of Action to read "Issue New Source Review (NSR) permits to all stationary pollution emission sources, including compressor engines and portable diesel and gas generators." 6

Chapter 3
Page 3-19, Table 3-8 (1st occurrence – change throughout document): The listing of the Wyoming Ambient Air Quality Standards (WAAQS) is incomplete. Since these documents were written, the Division has updated the O_3 and $PM_{2.5}$ Standards. Please review the most current copy of the Wyoming Air Quality Standards and Regulations (WAQSR) to correct tables throughout the DEIS and Air Quality Technical Reports (AQTRs). A copy of the WAQSR is available electronically on our website (http://deq.state.wy.us/aqd/index.asp?pageid=72) 7

Page 3-19, Table 3-8 (1st occurrence – throughout document): The Division does not request that background concentration changes occur at this time, however the Division notes that several of the background criteria pollutant concentrations used in these documents are outdated. The following values are being used currently in Southwest Wyoming NEPA documents. 8
O_3: 1-hr. = 169 $\mu g/m^3$ (2nd high value of any year, 2000 used)
O_3: 8-hr. = 147 $\mu g/m^3$ (Average of 4th highest 8-hr average from each year)
O_3 source: WDEQ-AQD Green River Visibility Study Data June 10, 1998 to December 31, 2001
NO_2: annual = 3.4 $\mu g/m^3$ (average of all valid hours 2001)
NO_2 source: WDEQ-AQD Green River Visibility Study Data 2001
PM_{10}: 24-hr. = 40 $\mu g/m^3$ (99th percentile year 2001)
PM_{10}: annual = 16 $\mu g/m^3$ (arithmetic mean year 2001)
$PM_{2.5}$: 24-hr. = 13 $\mu g/m^3$ (98th percentile year 2001)
$PM_{2.5}$: annual = 5 $\mu g/m^3$ (arithmetic mean year 2001)
PM source: Emerson Building Cheyenne, Wy. Note: Data from the Cheyenne site has been compared by AQD with other sites that monitor "background" concentrations to confirm that these data are representative of "background" concentrations in the southern part of Wyoming.

Page 3-20, Paragraph 5: Please specify whether the data analyzed was IMPROVE aerosol data or IMPROVE transmissometer data. 9

Page 3-20 IMPROVE analysis: Due to the length of time between the air quality analysis and the release of this report, IMPROVE aerosol data has become available through 2001. Please update the visibility background data through the year 2001. 10

Page 3-21, Table 3-9 (1st occurrence – change throughout document): The term "baseline" has a specific definition associated with the Prevention of Significant Deterioration regulations that is not applicable in the context the term is used within the DEIS and AQTRs. The terms "baseline" and "background" are used interchangeably throughout the document, which is very confusing. In previous NEPA air quality analyses, incorrect used of the term "baseline" has resulted in misinterpretation of air quality impacts. Therefore, the Division would prefer that the term "baseline" be changed to "background" throughout the DEIS and AQTRs when discussing air quality. 11

Chapter 4

Page 4-13, Compression Emissions Section: Neither the DEIS nor the Emission Inventory AQTR provide enough information regarding the proposed compression sources for the Division to specifically evaluate emission rates used in the calculation of the compression emissions. This is of concern as the Best Available Control Technology (BACT) is a process not a number that is dependent on the technical and economic feasibility on control for a given compressor engine type. At the present time, the Air Quality Division's BACT process is resulting in emission rates that vary based on engine types that are controlled. Emission rates on average as a result of the BACT process for engines 100hp and greater are: 1.0 g/hp-hr NO_x, 0.5 g/hp-hr CO (lean burn), 2.0g/hp-hr CO (rich burn), less than or equal to 1.0 g/hp-hr VOC, and 0.07 g/hp-hr formaldehyde (lean burn) and 0.06 g/hp-hr formaldehyde (rich burn). Therefore, the emission rates used in the calculation of the gas compression emissions the CO is high and the VOC is low. Please specify the type and size of compressor engines assumed for this analysis. 12

Page 4-22, Project Near-Field Ambient Air Quality Impacts: There are inconsistencies between NO_2 results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 4-12 and 4-13 show results for Alternative A Near-Field Ambient Air Quality Impacts, the Total Project Impact concentrations are consistent with Tables 6-1 and 6-2 in the AQTR for all pollutants except NO_2. Please check these tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. 13

Page 4-25, Project Far-Field Ambient Air Quality Impacts: There are inconsistencies between NO_2 results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 4-14 and 4-15 show results for Alternative A Far-Field Ambient Air Quality Impacts, the Total Project Impact concentrations are consistent with Tables 6-3 and 6-4 in the AQTR for all pollutants except NO_2. Please check these tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. 14

Page 4-24, Visibility Impacts: Since the data set used for the visibility analysis differs from the data set reported in Chapter 3, an explanation should be added as to why the two different data sets are used. In addition, the source of the data needs to be cited in this paragraph (i.e. the mean of the 20% cleanest days from IMPROVE Aerosol data). **15**

Page 4-27, Predicted Visibility Impacts from the Project: There are inconsistencies between results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 4-16 shows results for Alternative A Predicted Visibility Impacts from the Project, the Maximum Visibility Impacts reported are inconsistent with Table 6-9 in the AQTR. Please check these tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **16**

Page 4-28, Potential Acid Deposition Impacts from the Project: There are inconsistencies between results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 4-17 shows results for Alternative A Potential Acid Deposition Impacts, the change in ANC and Percentage of LAC is inconsistent with Table 6-7 in the AQTR. Please check these tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **17**

Page 4-29, Additional Mitigation Measures, First sentence: The WDEQ-AQD is the regulatory authority regarding air quality within the State of Wyoming. Therefore, please add the following sentence to the first paragraph "The following potential mitigation measures could reduce impacts from emissions. The appropriate level of control will be determined and required by the WDEQ-AQD during the pre-construction permit process." **18**

Page 4-29, NO_x Mitigation, 1st bullet: The WDEQ-AQD is the regulatory authority regarding air quality within the State of Wyoming. Therefore, the BLM cannot restrict/place caps on the number of wells drilled based on air quality impacts and this bullet should be deleted from the DEIS. **19**

Page 4-29, NO_x Mitigation, 3rd bullet: Please modify this bullet to reflect that BACT is a process not a number. "In the permitting of compressor engines, the WDEQ-AQD always requires application of the Best Available Control Technology (BACT) process. Emission rates on average as a result of the BACT process for compressor engines 100hp and greater are: 1.0 g/hp-hr NO_x. With the application of non-selective catalytic reduction, NO_x emissions for some compressor engines can be reduced to 0.7 g/hp-hr." **20**

Page 4-30, Mitigation Monitoring, 2nd bullet: The WDEQ-AQD currently has an emission tracking agreement with the BLM within the project area. The *Letter of Agreement for Tracking Nitrogen Oxide Emissions* (June 1997) was a provision within the Moxa Arch and Fontenelle Environmental Impact Statements to track changes in total NO_x emissions within the airshed of the BLM Rock Springs District. In April of 2000 the agreement was amended. The *Amended Letter of Agreement for Tracking Nitrogen* **21**

Oxide Emissions called for annual reports tracking changes in NO_x emissions beginning January 1, 1996 to October 31 of the reporting year. **21**

Chapter 5

Page 5-6, 5.3.2.1 Cumulative Emissions Inventory, 1st Paragraph: The correct name for our agency is the Air Quality Division please remove the word "Control" from our name. **22**

Page 5-6, 5.3.2.1 Cumulative Emissions Inventory, 3rd Paragraph: Please add a sentence about the moderate and conservative RFD emissions scenarios and which results are reported as cumulative impact in the DEIS. **23**

Page 5-10, Cumulative Far-Field Ambient Air Quality Impacts: There are inconsistencies between NO_2 results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 5-3 and 5-4 show results for Cumulative Far-Field Ambient Air Quality Impacts, the Cumulative Impact concentrations are consistent with Tables 6-5 and 6-6 in the AQTR for all pollutants except NO_2. Both the conservative and moderate scenario results in the AQTR differ from the DEIS. Please check these tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **24**

Page 5-11, Section 5.3.2.3 Cumulative Visibility Impacts: There are inconsistencies between results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. The results disclosed in the paragraph differ from those written about in the AQTR on page 101. Table 5-5 shows the Summary of Cumulative Visibility Impacts, the days above a 0.5 and 1.0 change in deciviews and the maximum deciview change results are all inconsistent with Table 6-10 in the AQTR. Both the conservative and moderate results in the AQTR differ from the DEIS. In addition, the tables specifying days greater than 0.5 change in deciviews contain different results and a different number of days above the 0.5 change in deciviews (25 days in the DEIS versus 48 days in both scenarios in the AQTR). Please check these tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **25**

Page 5-13, Potential Cumulative Acid Deposition Impacts: There are inconsistencies between results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 5-7 shows a Summary of Potential Cumulative Acid Deposition Impacts; the change in ANC and Percentage of LAC is inconsistent with Table 6-8 in the AQTR. Please check these Tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **26**

Air Quality Technical Documents Comments

Emission Inventory

Page 6, 3 Phase Separator and Glycol Regeneration Heaters, 1st paragraph: Please document the source of the seasonal emission weighting factors (172% and 28%). **27**

Page 9, Section 2.3 Compression Emissions and Calculation #18, Gas Compression Emission and Processing: Neither the DEIS nor the Emission Inventory AQTR provide enough information regarding the proposed compression sources for the Division to specifically evaluate emission rates used in the calculation of the compression emissions. This is of concern as the Best Available Control Technology (BACT) is a process not a number that is dependent on the technical and economic feasibility on control for a given compressor engine type. At the present time, the Air Quality Division's BACT process is resulting in emission rates that vary based on engine types that are controlled. Emission rates on average as a result of the BACT process for engines 100hp and greater are: 1.0 g/hp-hr NO_x, 0.5 g/hp-hr CO (lean burn), 2.0g/hp-hr CO (rich burn), less than or equal to 1.0 g/hp-hr VOC, and 0.07 g/hp-hr formaldehyde (lean burn) and 0.06 g/hp-hr formaldehyde (rich burn). Therefore, the emission rates used in the calculation of the gas compression emissions the CO is high and the VOC is low. Please specify the type and size of compressor engines assumed for this analysis. **28**

Sub-grid Analysis Technical Report

Page 3, Table 1-1 (1st occurrence – change throughout document): The listing of the Wyoming Ambient Air Quality Standards (WAAQS) is incomplete. Since these documents were written, the Division has updated the O_3 and $PM_{2.5}$ Standards. Please review the most current copy of the Wyoming Air Quality Standards and Regulations (WAQSR) to correct tables throughout the DEIS and AQTR. A copy of the WAQSR is available electronically on our website (http://deq.state.wy.us/aqd/index.asp?pageid=72) **29**

Page 3, Table 1-1 (1st occurrence – throughout document): The Division does not request that background concentration changes occur at this time, however the Division notes that several of the background criteria pollutant concentrations used in these documents are outdated. The following values are being used currently in Southwest Wyoming NEPA documents. **30**

O_3: 1-hr. = 169 $\mu g/m^3$ (2nd high value of any year, 2000 used)
O_3: 8-hr. = 147 $\mu g/m^3$ (Average of 4th highest 8-hr average from each year)
O_3 source: WDEQ-AQD Green River Visibility Study Data June 10, 1998 to December 31, 2001
NO_2: annual = 3.4 $\mu g/m^3$ (average of all valid hours 2001)
NO_2 source: WDEQ-AQD Green River Visibility Study Data 2001
PM_{10}: 24-hr. = 40 $\mu g/m^3$ (99th percentile year 2001)
PM_{10}: annual = 16 $\mu g/m^3$ (arithmetic mean year 2001)
$PM_{2.5}$: 24-hr. = 13 $\mu g/m^3$ (98th percentile year 2001)
$PM_{2.5}$: annual = 5 $\mu g/m^3$ (arithmetic mean year 2001)

PM source: Emerson Building Cheyenne, Wy. Note: Data from the Cheyenne site has been compared by AQD with other sites that monitor "background" concentrations to confirm that these data are representative of "background" concentrations in the southern part of Wyoming. **30**

Page 8, paragraph 2, 1st sentence: Please replace the word "particular" with "particulate". **31**

Page 9, 1st sentence: Please replace the word "particular" with "particulate". **32**

Page 18, paragraph 3: Please document the reasoning or source behind the assumptions stated in this paragraph. **33**

Near and Far Field Air Quality Technical Report **34**

Page 2, report organization: For consistency, please change the reference to "Chapter 4" to "Section 4". **35**

Page 30, Section 3.6, bulleted counties: Uinta County is misspelled. **36**

Page 32, Figure 3-3: "Emission" is misspelled in the title. **37**

Page 80, Table 5-3: Please expand this table to show the same information as Table 5-2. **38**

Page 93, Project Near-Field Ambient Air Quality Impacts: There are inconsistencies between NO_2 results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 4-12 and 4-13 show results for Alternative A Near-Field Ambient Air Quality Impacts, the Total Project Impact concentrations are consistent with Tables 6-1 and 6-2 in the AQTR for all pollutants except NO_2. Please check these Tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **39**

Page 95, Project Far-Field Ambient Air Quality Impacts: There are inconsistencies between NO_2 results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 4-14 and 4-15 show results for Alternative A Far-Field Ambient Air Quality Impacts, the Total Project Impact concentrations are consistent with Tables 6-3 and 6-4 in the AQTR for all pollutants except NO_2. Please check these Tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **40**

Page 96, Cumulative Far-Field Ambient Air Quality Impacts: There are inconsistencies between NO_2 results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 5-3 and 5-4 show results for Cumulative Far-Field Ambient Air Quality Impacts, the Cumulative Impact concentrations are consistent with Tables 6-5 and 6-6 in the AQTR for all pollutants except NO_2. Both the conservative and moderate scenario results in the AQTR differ from the DEIS. Please check these tables **41**

LETTER 105 cont'd

for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR.

Page 98, Potential Acid Deposition Impacts from the Project: There are inconsistencies between results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 4-17 shows results for Alternative A Potential Acid Deposition Impacts, the change in ANC and Percentage of LAC is inconsistent with Table 6-7 in the AQTR. Please check these Tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **42**

Page 99, Potential Cumulative Acid Deposition Impacts: There are inconsistencies between results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 5-7 shows a Summary of Potential Cumulative Acid Deposition Impacts; the change in ANC and Percentage of LAC is inconsistent with Table 6-8 in the AQTR. Please check these Tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **43**

Page 100, Predicted Visibility Impacts from the Project: There are inconsistencies between results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. Table 4-16 shows results for Alternative A Predicted Visibility Impacts from the Project, the Maximum Visibility Impacts reported are inconsistent with Table 6-9 in the AQTR. Please check these Tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **44**

Page 5-11, Section 5.3.2.3 Cumulative Visibility Impacts: There are inconsistencies between results reported in the DEIS document and results reported in the Near-field and Far-field AQTR document. The results disclosed in the paragraph differ from those written about in the AQTR on page 101. Table 5-5 shows the Summary of Cumulative Visibility Impacts, the days above a 0.5 and 1.0 change in deciviews and the maximum deciview change results are all inconsistent with Table 6-10 in the AQTR. Both the conservative and moderate results in the AQTR differ from the DEIS. In addition, the tables specifying days greater than 0.5 change in deciviews contain different results and a different number of days above the 0.5 change in deciviews (25 days in the DEIS versus 48 days in both scenarios in the AQTR). Please check these tables for correctness, if there is a reason for the different results it needs to be clearly disclosed in the DEIS as well as the AQTR. **45**

LETTER 106

Kenneth Kreckel
Oil & Gas Geosciences

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Thursday, June 26, 2003

RECEIVED
JUN 30 2003
BUREAU OF LAND MANAGEMENT
RAWLINS FIELD OFFICE

Bureau of Land Management
Rawlins Field Office
John Spehar, Project Coordinator
PO Box 2407
Rawlins, WY 82301

Re:DEIS, Desolation Flats Natural Gas Exploration and Development Project

Dear Mr. Spehar :

After a careful review of the DEIS, Desolation Flats Natural Gas Exploration and Development Project, I have prepared the attached comments recommending deferring action at this time, or adopting Alternate B-No Action. These comments can be summarized as follows: **1**

- No plan was presented. There are no specific locations for any of the proposed wells, pipelines, producing facilities, etc. It is not possible to assess the environmental impacts of conceptual locations.
- A case by case consideration of this development is the only appropriate approach considering the geology and nature of the exploration and development for these tight gas sands.
- The use of multi-well pads should be required. This alternative is not adequately examined in the DEIS. Multi-well pads are technically and economically feasible and will significantly reduce the surface impacts of this development. A dubious estimate of higher costs, referencing examples based on shallower depths, is used to justify rejecting this technology. No cost/benefit analysis of lessening the surface impacts is presented.
- Current and emerging technologies, notably the hydraulic fracturing of horizontal wells, which have a high potential for reducing the impact of this

development, especially when considering the long time frames envisioned [20 to 40 years], were not adequately addressed.

- Directional and horizontal wells can be used to drain reserves under currently protected sites, as well as proposed NSO areas. The DEIS should specifically address this issue.

- Additional time to examine individual surface impacts, as well as the Proposed Adobe Town Wilderness, is necessary, especially in view of the factors above. 1

- Development of these gas sands can continue under existing decisions. Exploitation of this valuable natural resource will not be unduly impeded.

I am a geophysicist and former Exploitation Manager with thirty years experience in oil & gas exploration and development. [see attached resume] Much of this experience was gained in tight gas sand developments very similar to Desolation Flats. As Exploitation Manager of the Southern Region [Tyler, Texas] with Marathon Oil Company, I was directly responsible for the development of several tight gas sand fields analogous to the subject development, and have drilled and completed over a hundred wells in such sands. Several of these wells were drilled directionally and subsequently hydraulically fractured with great success. In addition, I have extensive experience with horizontal wells. My background includes several years of work in Wyoming as well, and I am very familiar with the geology of the Greater Green River Basin.

This DEIS is premature and ill defined. I urge any action be deferred at this time until a "clearer, more definable full field development scenario is presented by the Operators."

Sincerely,

Kenneth Kreckel

DESOLATION FLATS PROJECT AREA

Reasons in Support of Deferring Action, or Alternate B-No Action

The Desolation Flats DEIS is Only Conceptual

The proposal is a concept, not a plan. There are no specific locations for wells, pipelines or other facilities identified. The Desolation Flats DEIS states in Chapter 1:

> "This DEIS analyzes the effects of well pad locations, access roads, production facilities, pipelines, and other facilities associated with natural gas development on resources and land use within the project area."

> "Factors considered during the environmental analysis process regarding the natural gas development project include the following:
> • The location of environmentally suitable well pad locations, access roads, pipelines, and other production and ancillary facilities that best meet other resource requirements and minimize surface resource impacts yet honor the lease rights within the project area.
> • A determination of impacts resulting from the proposed action and alternatives on the human environment, when conducted in accordance with applicable regulations and lease
> stipulations, and the development of mitigation measures necessary to avoid or minimize these impacts."

Since the document fails to present any locations of environmentally suitable well pad locations, etc., and no definable plans for field development, the 'No Action' alternative should be adopted, or, in the words of the DEIS, to:

> "defer any action at this time until a clearer, more definable full field development scenario is presented by the Operators."

Geology of the Area Precludes All Alternatives Except B-No Action

The nature of the geology makes it impossible to locate the number of wells envisioned in the DEIS. Because production is controlled by stratigraphy [Hendricks, 1995], and the sandstone reservoirs occur as isolated, separate, overpressured compartments [Surdam, 1995], it is difficult to predict 'sweet spots' in these stratigraphic reservoirs except with nearby well control. The results of each new well will significantly impact the location of the subsequent wells. Hence, the development of these reservoirs will occur along trends which can only be defined on a well-by-well basis. It follows that any long range plan involving hundreds of wells cannot be specific.

Alternative B 'No Action' does allow the drilling of an estimated 57 development wells under existing decisions. Additionally the document estimates another 21 wells outside of these areas will be drilled. As stated in the DEIS:

"Additional infrastructure necessary to support existing wells within the DFPA and future wells drilled under the No Action Alternative would be considered on a case-by-case basis."

Obviously, the results of these wells will determine the course of future development. If such development is warranted, it can be considered at that time. Therefore, due to the geology of the area, a case-by-case consideration of wells and other facilities is the only appropriate alternative.

Alternatives for Multi-Well-Single Pad Were Not Adequately Addressed

The rejection of the multi-well well pad alternative, where 2 to 8 wells could be drilled per each surface location, was largely based on the experience of one operator in Wamsutter Field. The DEIS states that the technical limits of directional drilling were reached at about 50 degree deviation. Since the deviations drilled in the Wamsutter case ranged from 15 to 32 degrees, technical capability was not a limiting factor. Essentially the justification to reject this alternative was simply cost. Location costs were cited to be 10 to 20% higher and drill times 30 to 40% higher.

There are some problems with the Wamsutter case, especially the magnitude of the angles. The Wamsutter Field, located on the Wamsutter Arch, produces from significantly shallower depths, up to 5000' less than Desolation Flats [map, Surdam, 1995]. Due to its location near the deepest portion of the Washakie Basin, drilling depths at Desolation Flats range from 9000' to 14500'. Using the average vertical displacement of 1425' from the Wamsutter example, corresponding angles will range from 5 to 10 degrees at Desolation Flats, far less than the 15 to 32 degrees cited. Deviations of this magnitude are so small as to be considered near vertical, and should present no significant completion problems.*

Due to these lower deviations, any increase in costs associated with the use of multi-well pads will be significantly less than the undocumented 20% cited in the DEIS. Even if we assume the 20% increase is correct, this need not translate to a 20% in costs *over the life of the project.* Three other factors will lower costs:

- Considering the large number of wells envisioned in the DEIS, it is reasonable to assume economies of scale will reduce these costs.
- Given the project length, 20 to 40 years, it is extremely likely that these costs, over time, will further decrease as technology provides increased efficiency.
- The inevitable increase in the price of natural gas over this time frame, as the resource becomes more scarce, will also favorably impact the economics.

Therefore, in the Desolation Flats area, deviated 'slant' wells represent an economically viable means to produce reserves from under No Surface Occupancy leases. This also points the way for an economically sound utilization of multi-well pads.

In a study of the Almond Formation in Echo Springs Field in the Green River Basin, near Desolation Flats, Iverson et al [1995] concluded "With the confirmation of Standard Draw draining numerous stacked reservoirs, continued focus on vertical or slant hole completions may be justified." They go on to state "Considering the additional cost of horizontal drilling, economics likely favor vertical or slant hole completions." Note that vertical and slant holes are treated as equivalent, as distinct from horizontal wells. This study focused on the Amoco 254 B-2H well, comparing results from the slant hole portion of the well, which was hydraulically fractured, and the horizontal well, which in 1995, was not. In this case, artificially fractured slant wells were found to be economic.

Slant holes may be justified from a geologic basis as well. In this basin, production is controlled by stratigraphy [Henricks, 1995]. Surdam et al [1995] state: "Sandstone bodies within the overpressured shale section are subdivided stratigraphically and diagenetically into relatively small, isolated, gas saturated, anomalously pressured compartments." Economic production depends on intersecting as many as these 'sweet spots' as possible. These bodies may not vertically coincide. Therefore, slant holes hold the potential of intersecting more of these bodies, thereby increasing production from a single wellbore.

I recommend that the use of multi-well pads be mandated for this development. Assuming 640 acre spacing, a single well pad could service four wells, using deviated wells of about 2000' vertical displacement [10 to 16 degree deviations]. Obviously this would provide a large decrease in the number of locations, and a corresponding decrease in roads and pipelines, thereby drastically reducing the surface impacts. Even if this approach would result in some increase in *today's* costs, although the undocumented 20% cited is likely overstated, this consideration should not be the overriding determinant. The resultant large scale protection of the environment will justify those costs.

Current and Future Advances in Technology Have the Potential to Impact This Development

Because of the long time frame envisioned in this DEIS, it is reasonable to predict that advances in technology which can impact this development plan will occur. The spectacular advances in horizontal drilling, artificial fracturing, and seismic over the last twenty years are well known.

*Moreover, since the geologic dip on the flanks of the basin range from 8 degrees to 15 degrees [Love, 1970], even vertical wells will encounter similar angles relative to the stratigraphy. It is well understood in the industry that unsteered 'vertical' wells tend to drift updip, effectively reaching deviations up to the magnitude of the geologic dip. Hence, in these cases, even vertical wells are not truly vertical, but instead may naturally 'deviate' as much as the 5 to 10 degrees suggested for Desolation Flats.

LETTER 106 cont'd

Work continues in these and other fields which will have a direct impact on the development of this area. To quote an especially pertinent one:

Table Rock Field, Frontier Formation

"Union Pacific Resources' Rock Island 4-H well, located on the north plunge of Table Rock Field, Sweetwater County, Wyoming, was the culmination of a project with the US Department of Energy (DOE) Federal Energy Technology Center (FETC) and Gas Research Institute (GRI). The goal was to find technologies to produce significant tight gas resources from southwestern Wyoming.

Milestones of the project include:

Reducing the drilling time and cost for deep vertical wells by less than half.

Discovering one of the deepest horizontal tight gas sandstone wells in the world (14,950 ft TVD).

Reaching one of the world's deepest horizontal cores.

Maintaining one of the highest gas flow capacities in the tight-gas Frontier Formation in Wyoming.

Initiating future plans for a horizontal drilling effort.

Horizontal drilling for low permeability gas allows large well spacings, improving per well recoveries and reducing the environmental impact. The Rock Island 4-H horizontal well reached 16,784 ft (14,950 ft TVD) in the Frontier formation at 270° F and 10,000 psi."

Tight gas sands generally require artificial fracturing to be economically productive. The main objection to the use of horizontal wells is the difficulty of applying artificial fracturing. This case, completed in 1995, illustrates that it can be done:

Halliburton Fractures World Record Well For Mobil New Natural Gas In Germany

"The Soehlingen Z-10 horizontal well, located about 40 miles southwest of Hamburg, was drilled into an extremely tight sandstone in the Rotliegendes formation to a vertical depth of 15,688 feet -- a world record for horizontal wells -- where it was deviated horizontally for 2,066 feet into the natural gas reservoir. Including the horizontal section, the well was drilled to a total depth of 18,860 feet.

In addition to being the world's deepest horizontal well, the well set a world record for the deepest multiple fractures. Hydraulic fracturing was employed to improve the natural gas flow from the extremely low permeable rock. Halliburton's EuroFrac Team successfully completed a total of four hydraulic fractures along the horizontal section of the wellbore using a highly-efficient and environmentally- friendly fracturing system that included Halliburton's HyBor Gel fracturing fluids and its Liquid Gel Concentrate."

These two projects were successfully completed in onshore tight gas formations very similar in geology and depth to Desolation Flats. Together they illustrate that artificially fractured horizontal wells are technically feasible today. Moreover there is a high potential for advances in these technologies that will directly impact this area. Although the drilling and, more importantly, hydraulic fracturing of horizontal wells in tight gas sand formations are not yet commonplace, these two projects establish the likelihood that they will be more commonly utilized in the near future. As these, and other technologies, become generally available, the number of wells envisioned for Desolation Flats could be significantly reduced. It is imperative that decisions based on today's practices are not taken that effect the next 20 to 40 years. A case-by-case consideration of this development will allow for the consideration of these and other technologies as they become available, without unduly affecting the subject development. Indeed, the development of this area may ultimately benefit by the employment of more efficient technologies.

Directional Wells Can Be Used for the Protection of Currently Identified Sites

There are currently many areas proposed, for NSO status, crucial winter ranges and ACEC's, as well as mountain plover nesting concentrations. (please refer to the Biodiversity Conservation Alliance alternative for the Great Divide) In addition, 2-mile buffers for sage grouse leks and 1-mile buffers for raptor nests, (see DEIS pp 5-20--5-22) have been proposed.

As illustrated by the examples above, technology is available to drill and hydraulically fracture even horizontal wells in tight gas sands. Highly deviated and horizontal wells could be utilized to capture reserves under these protected areas. Horizontal wells have the potential to reach 2,000 to 4,000 feet from a surface location. Hydraulic fracturing of these wells can allow them to effectively drain a 640 acre area. Thus it is possible to produce reserves even under the two-mile buffers proposed. Although more costly, horizontal wells can achieve higher recoveries, so the economics regarding their use is not necessarily a prohibitive factor.

In addition, this area may be an excellent candidate for industry-government cooperative ventures, similar to the Table Rock example above. Working together, methods can be found to achieve the economic exploitation of the natural gas reserves without adversely affecting the environment.

Time for Study of Potential Protected Areas

The No Action alternative will allow further study of ongoing environmental protection efforts such as the Adobe Town Potential Wilderness. There are other efforts underway, for example, the Powder Rim ACEC and big game crucial ranges, seeking NSO strips on leases. It would be premature to allow a conceptual plan to interfere with these efforts. In any case, it is essential that specific locations be presented to allow their impacts to be accurately assessed, and suitable alternatives considered. Obviously one cannot assess the impact of a conceptual well location,

LETTER 106 cont'd

one that has no definition in space or time. This assessment needs to occur at the time the well locations are firm.

Development Will Continue Under the No Action Alternative

Deferring action will not preclude current development. As stated in the DEIS, up to 78 wells may be drilled under the No Action alternative. Hence, development of this valuable natural resource will not be impeded, and continued exploitation of these natural gas reserves can continue.

LETTER 107

bryan.wyberg@honeywell.com
06/30/03 03:59 PM

To: DesFlats_WYMail@blm.gov
cc: bryan.wyberg@honeywell.com
Subject: Conservation Must Be Better Integrated into Desolation Flats Project Area Plans

June 30, 2003

Bureau of Land Management
Rawlins Field Office
John Spehar, Project Coordinator
PO Box 2407
Rawlins, WY 82301
DesFlats_WYMail@blm.gov

Cc: Secretary Gale Norton
U. S. Department of the Interior
1849 C Street NW
Washington, DC 20240

Senator Craig Thomas
United States Senate
307 Dirksen Senate Office Building
Washington, DC 20510

Dear Mr. Spehar:

I am writing to provide official comments on the Draft Environmental Impact Statement for the Desolation Flats Project Area. I have visited this region of Wyoming, and so I am familiar with the type of landscape and lands contained in the Desolation Flats Project Area. I love the remoteness of the lands and the beauty of the landscape. I believe that this Project Area has a now-rare character which evokes the legendary Old West. It is my belief that future generations should also be able to experience this same sensation, and to feel the same awe at the open expanse of this section of the Great Divide.

However, the only way to ensure that those future citizens will be given this opportunity is if the BLM today chooses to manage these lands in a more protective manner. I am a supporter of the full 92,000+ acre Adobe Town Wilderness Study Area expansion proposal as put forward by citizen groups such as the Wyoming Outdoor Council. I know that the BLM is familiar with this proposal. I am very concerned that a portion of this expanded Wilderness Study Area proposal is included in the boundary of the Desolation Flats Project Area. My first and foremost request is that all lands within the full citizen's Adobe Town Wilderness Proposal be excluded from any and all forms of development and resource extraction. **1**

Second, the name given to the Project Area is a misnomer. These lands are not "desolate," but are in fact prime habitat for big game wildlife as well as the small, though very important species, prairie dogs. Wild animal range lands and migration corridors occur within the Project Area. I ask that the BLM be sensitive to the existence of the patterns of use by wildlife of these lands. Management of this area, and any development permitted, must fully account for the wildlife. Prairie dog colonies must not be disturbed, and should be used for introduction of endangered black-footed ferrets. Note that the long-term economic value of the big game herds and associated recreation far exceeds that of the short-term energy extraction profits. For the economic benefit of Wyoming citizens, the wildlife should come first. The BLM must place the continued viability of any wildlife habitat as its top priority, above resource extraction. **2**

It would be a travesty to learn that the extractive industries are given

free rein in the Desolation Flats Project Area, as they have been in other regions of Wyoming. The Great Divide region as a whole is being eyed greedily by the energy industry supporters of the Bush Administration. They wish for an unbalanced policy of lands-use management. Yet this is a region of wild beauty and wildlife habitat that many citizens want to see preserved for future generations. Thus the BLM is obligated to take a truly balanced management policy for this Project Area. 3

To be balanced, substantial portions of these lands must be preserved as wilderness, just as substantial areas will be given over to resource extraction. This region must be acknowledged by the BLM as special, and large portions be left free from devastation. I believe that the BLM should withdraw from leasing or require "No Surface Occupancy" for oil and gas drilling on floodplains. Also to be withdrawn from development are remaining roadless lands, wilderness quality lands, crucial elk and deer winter ranges, prairie dog colonies, mountain plover habitat, and land within three miles of sage grouse leks or within one mile of active raptor nests. In sum, the BLM plan must prohibit drilling in environmentally sensitive areas, including all wilderness quality lands, roadless lands, and important wildlife habitats. 4

The BLM plans should also outline how energy development will proceed on the lands in which it is allowed. There must be strict permitting and oversight controls. Environmental protection must be strong and enforced adequately in those areas under development. Drill pads must be concentrated so as to impact the least amount of acreage. Directional drilling techniques must be required, rather than a multiplication and concentration of the number of drill pads. I expect that the BLM will be a good steward of my lands when they are in the use of private interests for their economic gain. I expect the BLM will allow only the least damaging drilling techniques and development patterns. 5

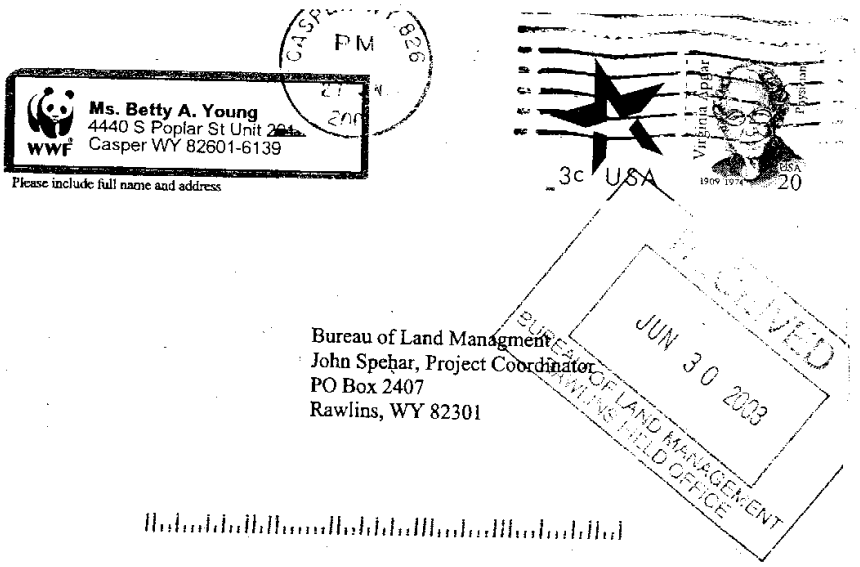
A major concern of mine is that the BLM preferred plan does not go into the detail needed to provide for a sufficient analysis of the impacts of extraction projects. For instance, the DEIS states that there will be 385 wells drilled and about 500 miles of new roads constructed under the preferred plan, but does not identify the locations of either the wells or the roads. Without these crucial details, impacts to wildlife, recreation, and visual quality of the area cannot be accurately described. The BLM must ensure limited impacts to wildlife and wilderness recreation resources by providing a sufficient analysis of the impacts of all proposed developments in the Project Area. 6

In summary, I believe that conservation principles must be better integrated into the final management alternative selected by the BLM. I support the development of a Conservation Alternative to be selected as the preferred alternative of the Final Environmental Impact Statement for the Desolation Flats Project Area. We need a new alternative designed to mandate a land management plan that has a balance of managed uses, and is not a sacrifice of this area to the extractive industries. It should focus on the conservation of the natural resources of the area, its wildlife, its beauty, and its wilderness characteristics. Only this will fulfill the goal that this area is passed to future generations untrammeled. This is what future generations deserve of us. 7

Sincerely,

Bryan Wyberg
12854 Raven Street NW
Coon Rapids, MN 55448
bryan.wyberg@honeywell.com

LETTER 108



Dear Mr. Spehar,

The Desolation Flats project area contains spectacular public lands. In order to ensure adequate protection for the magnificent scenic and recreational value of the area as well as its outstanding wildlife habitat, I ask the Bureau of Land Management to: 1

- **Avoid drilling in environmentally sensitive areas such as wilderness quality lands, roadless lands, and important wildlife habitats.** The BLM should withdraw from leasing or require "No Surface Occupancy" for oil and gas drilling on floodplains, roadless lands, wilderness quality lands, crucial elk and deer winter ranges, prairie dog colonies, mountain plover habitat, and within three miles of sage grouse leks and one mile of raptor nests.
- **Protect all lands within the Adobe Town citizens' proposed WSA.** In the project area there are almost 50,000 acres of wildnerness-quality lands adjacent to the existing Adobe Town WSA. These lands should be protected by incorporating them into the larger, existing Wilderness Study Area.
- **Adopt a Conservation Alternative in the FEIS.** The FEIS must not only have a conservation (or true no action) alternative, but also adequate mitigation and monitoring measures to ensure proper protection for the area's special values.
- **Mandate the least environmentally damaging types of drilling.** Directional drilling should be required in the Desolation Flats Final EIS to minimize impacts to wildlife, recreation, and landscapes.

Signature: Betty A. Young

LETTER 109

PAT Rollison
PO#1281
SARATOGA Wy 82331
Please include full name and address

Bureau of Land Managment
John Spehar, Project Coordinator
PO Box 2407
Rawlins, WY 82301

Dear Mr. Spehar,

The Desolation Flats project area contains spectacular public lands. In order to ensure adequate protection for the magnificent scenic and recreational value of the area as well as its outstanding wildlife habitat, I ask the Bureau of Land Management to:

- **Avoid drilling in environmentally sensitive areas such as wilderness quality lands, roadless lands, and important wildlife habitats.** The BLM should withdraw from leasing or require "No Surface Occupancy" for oil and gas drilling on floodplains, roadless lands, wilderness quality lands, crucial elk and deer winter ranges, prairie dog colonies, mountain plover habitat, and within three miles of sage grouse leks and one mile of raptor nests.
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Signature: Patrick Rollison

LETTER 110

Mr. Louis F. Barto
2132 Carson St
Rock Springs, WY 82901-6742
Please include full name and address

Bureau of Land Managment
John Spehar, Project Coordinator
PO Box 2407
Rawlins, WY 82301

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Signature: Louis F Barto