

October 31, 2005

Jonne Slemons, Permitting Manager
Alaska Department of Natural Resources
Division of Oil and Gas
550 W. 7th Ave., Suite 800
Anchorage, Ak 99501-3510

RE: Healy Gas Exploration License Best Interest Finding

Dear Ms. Slemons,

I am submitting these comments on behalf of the Board of Directors and members of Denali Citizens Council (“DCC”). DCC, a community based public interest group with ~350 members, has worked since 1974 to raise awareness about issues affecting our livelihoods, lifestyles and the well being of Denali National Park and Preserve. Many of our members live or have lived in the gateway communities of Denali National Park. We are keenly aware of the importance of this park to the local community economically, socially and environmentally. Furthermore, we support careful development on lands adjacent to Denali National Park, realizing that these lands, although available for a greater number of uses, are universally known and valued as critical wildlife habitat and for wilderness recreation.

The Alaska Department of Natural Resources’ (“DNR”) mission to “*conserve, develop and enhance the natural resources of the state of Alaska,*” makes it the gatekeeper for protecting state lands. Thus, DNR must consider and protect resource values when considering resource development proposals in the Park gateway communities around Healy.

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In addition, DNR must protect the best interests of Alaska’s citizens when disposing of Alaska’s resources. The Preliminary Best Interest Finding for the Proposed Healy Basin Exploration License (“BIF”) states:

“The revenue stream to the state from the proposed exploration license and any downstream production is not expected to significantly impact the overall oil and gas revenue of the state of Alaska. The best interests of local residents is therefore of critical importance to the best interest decision.” (Preliminary BIF, p. 1-11)

DNR is also charged with constitutional obligations to: (1) “encourage the . . . development of its resources by making them available for maximum use consistent with the public interest;” (2) “provide for the utilization, development, and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people;” (3) “reserve[] to the people for common use” “fish, wildlife, and waters” “[w]herever occurring in their natural state;” and (4) not “dispos[e] or lease[] state lands . . . without prior public notice and other safeguards of the public interest as may be prescribed by law.” Alaska Const. art. VIII, §§ 1, 2, 3, and 10. As a result, comments from local residents regarding local impacts from CBM exploration and development activities must be given great weight since DNR acknowledges that the economic return for this exploration license may be insignificant.

On March 10, 2005, DCC submitted scoping comments to DNR, requesting that certain issues be addressed in the BIF. The BIF was released on August 31st, and inadequately addresses many of those concerns. Furthermore, the BIF does not adequately determine that gas exploration on the proposed 208,000 acres is in the best interests of the local community.

Please accept these comments and suggestions. We expect that the Final BIF will adequately address these concerns and result in a decision that protects the area’s natural resource values.

1. The Final BIF should lay out a specific plan for additional oversight, public notice and accountability when and if exploration converts to development.

The BIF opens the gate widely to gas exploration at a stage when the potential extent of the “find” is unknown. In addition, the BIF accepts that gas exploration and development activities will **not**

be environmentally damaging or can be mitigated, while expecting the public to meet a higher standard in demonstrating that license activities **will** be damaging. The BIF is therefore fundamentally flawed as a document, and does not protect the public interest. As the BIF points out, exploration converts to development without another best interest finding process. Granted, Plans of Operation are noticed and must be approved, but there is no further environmental review or public process for that approval or conversion of the license to a long-term lease. Instead, the public is asked to comment at this very early stage on the “reasonably foreseeable” impacts of this activity, a tall order. Not to mention that the license commits the State to allowing exploration and development activities because revocation of licenses and leases implicates the “taking” of private property under those clauses of the U.S. and Alaska Constitutions. In addition ordinary citizens are expected, over a long term of development, to navigate the complex world of agency permitting, keep track of public notices, attend to multiple permitting processes, and potentially negotiate surface use agreements. This is burdensome and costly in terms of time and money.

In order to address the problems above, the Final BIF should provide both a more detailed description of the affected environment and a more detailed cost-benefit analysis of this project-**now**. In addition it should stipulate that local citizens will have the opportunity to **reconsider** whether or not this activity, undertaken on all of these lands, is in their best interests at the time of future exploration and development activities as well as when the license is converted to a lease.

- 2. Although the BIF indicates that the best interests of local residents are of “critical importance” for approving the license, the identified benefits are highly speculative while the costs to residents are potentially huge and much more concrete.**

The BIF contains vague promises of increased employment and access to cheap gas for the community. However, there is no evidence provided for either claim, and our knowledge of the local community would indicate that neither benefit is likely to occur. Cheap gas would be predicated on building a delivery infrastructure, which seems unlikely given the small and dispersed nature of the community. Mitch Usibelli, a spokesman for Usibelli Coal Mine, confirmed during the October 6 public hearing in Healy that it is unlikely that gas would be delivered locally. Even if gas were provided locally, the American Gas Association Web site indicates that the average 2,000 square foot home would save only 16% by using gas instead of

heating oil. This savings is very small when compared to the potential loss of property value from nearby gas development, and makes this a poor deal for Healy-area residents. All of DCC's members would gladly continue to pay the extra cost for heating oil to avoid having natural gas infrastructure erected in their yards, surrounding greenspace, and recreation areas. We believe this element should be deleted from the BIF as a potential benefit. If you continue to list it as a benefit, then the BIF needs to at minimum include an analysis demonstrating the positive feasibility of providing gas locally at a price less than that of heating oil. Although even that analysis would be insufficient to demonstrate an actual benefit to local residents, without the analysis the claim is absurd and completely unsubstantiated.

In addition, if the employment benefits discussed in the BIF are to be realized, there is an assumption that underemployed locals would have the skills and interest to fill those jobs. In a small population pool where most of those who show up in the unemployed statistics actually have summer jobs in the tourism or other service industries, the odds of a significant number of them finding new employment opportunities seems small. As part of the BIF, DNR should do at least a cursory examination of whether local labor is really likely to be utilized. This is particularly important if employment is the only real benefit to be claimed by the project (once the myth of cheap gas is dispelled). If there is little or no local employment, there is no local benefit at all.

The most likely scenario under this license proposal is that the developer would hire skilled outside labor for the exploration and development of the project. Locals could conceivably benefit from the multiplier effect by setting up service businesses, but this has not happened during previous influxes of outside workers (for example, the construction of the Healy Clean Coal power plant). The outside workers leave on the weekends and do their shopping in Fairbanks or elsewhere, particularly since local residents are already disposed to shop in Fairbanks. Outside workers can also bring a host of new social problems to the community. For example, methamphetamine use has followed coalbed methane development in parts of the Western U.S. (High Country News, October 3, 2005). Methamphetamine use is already a growing problem along the Parks Highway corridor, particularly in the Matanuska-Susitna valley (see recent reporting in the Anchorage Daily News and the Mat-Su Valley Frontiersman).

While the alleged benefits of this project are unclear and poorly documented, the likely costs are much more readily documented through the experience of other communities with coalbed methane development. Some of the costs include:

- Loss of property values. In La Plata County, Colorado, a study found that property values declined 22% if a methane well was located on the property (BBC Research and Consulting, Measuring the Impact of Coalbed Methane Wells on Property Values, prepared for Greystone Environmental Consultants and La Plata County, Colorado, Nov. 12, 2001).
- Loss of non-economic values. Particularly in the Healy area, many residents and landowners have invested heavily in their properties for reasons that have no economic return: (1) they value the rural quality of life; (2) the quiet; (3) wildlife that ventures into their yards; (4) clean air; and (5) privacy. These are values consistently revealed at community planning events such as the Stampede Summits hosted by the Denali Citizens Council in 2004 and 2005 and the recent (October, 2005) Denali Borough Summit. Coalbed methane development is likely to disrupt all of these values for residents anywhere that the exploration activities progress to development activities, even if all the mitigation measures listed in the BIF are implemented and succeed to the standards indicated.
- Loss of recreation lands. Coalbed methane development is an inherently dispersed type of gas production. Even if all mitigation measures and best practices are implemented, there will still be a new network of roads, pipelines, well pads, compressor stations, and associated facilities that carve up the landscape wherever development occurs.
- Loss of tourism and tourism growth potential. The Healy area is increasingly important for small lodging facilities and guide companies catering to visitors who come to see Denali but who do not want to stay in the major hotels near the park entrance. Most of the Borough's bed and breakfasts are located within the lease area. As the Nenana Canyon area is more completely built out, Healy will be increasingly important as a destination for visitors seeking a more private and secluded place to stay near Denali. This growing and thriving industry will be entirely undercut if the open views near Healy are explored and developed for CBM, if the noise of compressor stations becomes commonplace. There would be local fiscal implications as well, especially since 85% of the Borough government's revenue is derived from an accommodations tax.

In short, the BIF offers residents many costs but no demonstrable benefits. The costs at least could be avoided if gas exploration and development were kept away from the places that most Borough residents live and where tourists visit. The BIF must provide more analysis of benefits to demonstrate that the proposal is in the best interest of local residents and the State as a whole, but it seems likely that there simply are no real benefits for most Borough residents.

3. The Final BIF must consider the primary value of wildlife and wild lands in the Healy area -- for individual quality of life, for tourism-based livelihoods and for the natural integrity of Denali National Park and Preserve.

- The Final BIF must fully consider the diversity of wildlife in the Healy area by collecting data from the National Park Service (“NPS”) as well as the State of Alaska Department of Fish and Game. NPS studies of caribou in the Wolf Townships – the notch in Denali National Park and Preserve west of Healy – are notably absent. The value of this habitat as winter range for the Denali Caribou herd (numbering approximately 2,000 animals) is well known and documented. In addition, wolves commonly follow the caribou and are present in the Wolf Townships during winter months. These animals are present inside Denali National Park during the summer months and are the reason that thousands of people visit the park every summer. However, the BIF does not even acknowledge that the park’s caribou and wolves – which are some of the most viewed wildlife in the world – even inhabit the license area. The BIF cites no studies related to small caribou herds that do not make long migratory journeys and are very different from the large migratory herd of the North Slope (see L. David Mech, Layne G. Adams, Thomas J. Meier, John W. Burch, Bruce W. Dale, *The Wolves of Denali*, University of Minnesota Press, 1998 for an explanation of the distinct ecology of Denali’s caribou). It cites no studies related to the effects of habitat fragmentation on wildlife. It offers no mitigation measures of relevance to the Denali caribou herd. In scoping comments, the public requested consideration of the special values of this area and its wildlife. This analysis is not in the BIF.

- The wildlife of Denali National Park and Preserve draws more than 400,000 tourists and recreational users from throughout the state, nation and world to the Healy area each year. The integrity and interest of the park's wildlife is strongly linked to broad protection provided to the ecosystem within most of the range. The State of Alaska has historically recognized the importance to the state of Denali's wildlife and its intact ecosystem by prohibiting caribou hunting in Game Management Unit 20C, and more recently, prohibiting wolf trapping west of the Savage River. We urge the DNR to continue that support by not granting an exploration license in that small portion of the proposed exploration area utilized by Denali's caribou and other wildlife, notably Fairbanks meridian townships T12S9W and T12S8W, and the portion of T11S8W west of the Nenana River. These areas also include other sensitive areas, such as 8-Mile Lake which is an important migratory bird stopping point on wet tundra.
- The Final BIF should also analyze data on moose density in the several areas of Game Management Units 20A and 20C, and recognize those trails and areas that are most often used for hunting. Use of these trails during gas exploration and development will no doubt change the patterns of human use, and in some cases will reduce access for these activities.

4. The Final BIF must provide a more detailed analysis of soil types throughout the license area, in order to reveal specific locations where wetlands, wet soils and permafrost will make road and pipeline construction both more expensive and more damaging.

Only after performing a detailed soil analysis from existing data and field inspections can DNR develop adequate knowledge of whether exploration and development in all parts of the defined license area is in the best interests of both state and local citizens. Burying pipelines in wet or boggy areas will be costly and much more potentially damaging, especially in the event of a spill. Roads constructed to support well pads or pipelines will have the same problem. Promises that roads will be reclaimed cannot be realized in areas of permafrost or wet soil. These roads inevitably leave permanent scars. Much of the eastern Wolf Townships have moist to wet soils and little vegetative cover, conditions that will make gas development more potentially damaging,

both in the short- and long-term. Again, using soil criteria to exempt certain wetlands and sensitive areas from gas development is appropriate before issuing an exploration license.

5. The Final BIF must provide assurance to local residents that their best interests will be protected by standards that recognize a rural baseline of residential density and noise.

The noise standards set out in the Preliminary BIF will not be sufficient to protect residential values in the Healy area, where residents appreciate open green spaces around their properties for their aesthetic, recreational, and wildlife habitat values. As such, the Final BIF should stipulate that gas exploration and development activities cannot exceed ambient noise levels at a property line. DNR should consider that recent measurements on a typical October day in the Panguingue Creek subdivision demonstrated ambient sound levels of 25-30 dBA. Before issuance of the Final BIF, DNR should conduct baseline measures of natural ambient sounds at various locations in the Borough and the criteria in the Final BIF should mandate that noise levels from all development activities should not exceed ambient noise levels at any residential property line. The noise mitigation required on page 7-5 at 1.8.a.ii implies that development activities can meet this standard.

Further, the small lot subdivision exclusion standard in the Preliminary BIF is inadequate for the Healy area. We understand that these standards were developed for the Matanuska-Susitna Borough, which is much more densely populated than the Denali Borough. The reason for the exclusion as we understand it is because it would be impractical to site gas facilities on small properties without consuming so much space that the value of the property would be entirely destroyed. Because of sparser vegetation, greater sight distances, and fewer barriers to noise in the Healy area, the standard must be more liberal. A more realistic standard should require that no drill pads, compressor stations, or access roads be located in any residential subdivision where the lots are 10 acres or less, without the consent of all of the landowners in the subdivision. In addition, there should be a minimum one-mile setback around the outside of subdivisions.

6. The Final BIF should stipulate that a landowner has the right to refuse entry upon his/her property if he/she so chooses.

The primacy of subsurface rights has been a problem in coalbed methane development throughout the American West and Alaska. As a way of guaranteeing the best interests of private property owners in the Healy area, the Final BIF should guarantee to the surface landowner the right to refuse entry onto his/her property for gas exploration and development. Unlike in the Mat-Su or Homer areas, the proposed license area is mostly in public ownership. Thus, DNR can afford to protect private landowner's rights. It is not sufficient for many people that activities on their lands would be bonded or that there would be compensation or mitigation.

7. The Final BIF should be more specific on how DNR will protect water quality and water wells Borough-wide.

There are basically three options available for the disposal of the water produced in the dewatering process: discharge it into existing drainages; put it in holding ponds and let it evaporate or seep into the ground; or re-inject it into the aquifer. All of these options have the potential for immediate and pervasive impacts to the natural resources and quality of life for local residents.

Though no discussion of this critical subject is included in the Preliminary Best Interest Finding, one of the overriding issues of production water disposal is that of poor water quality of CBM product water. At a minimum, CBM product water has a moderately high salinity hazard and often a very high sodium hazard. Water with high salinity and sodium levels, whether directed to a holding pond or disposed of directly into an existing stream channel, can have immediate and cumulative negative impacts to the health and condition of existing riparian and wetland areas. High salinity levels in product water may alter riparian and wetland plant communities by killing native salt intolerant species, and causing replacement with more salt tolerant species.

Additionally, water with high sodium concentrations, such as that typical of CBM product water, poses additional threats to certain soil resources. Sodic water can cause soil crusting and impair soil hydraulic conductivity, adversely affecting water availability and aeration and subsequent vegetation growth. Current research at Montana State University shows that water with sodium

levels equal to typical Montana CBM product water can degrade the physical and chemical properties of heavier, clay soils, making such soils completely unsuitable for plant growth.

Finally, other water quality parameters may be of concern when considering the disposal of deep groundwater into surface waters or shallow aquifers. Parameters may include the presence (or absence) of heavy metals, nutrients, or other minerals in concentrations significantly different from those of area surface waters. Deep water will likely have substantially lower levels of dissolved oxygen, compared to surface waters. Finally, the increased water temperature of deep groundwater may result in adverse effects to surface water systems.

In addition to the alteration and degradation of water chemistry, disposal of CBM product water can have other significant impacts. Such water, when disposed into an existing channel, can create significant changes to the morphology of the receiving stream channel. The shape of the cross-section of any stream channel is a function of the flow, the quantity and character of the sediment in motion through the channel, and the composition of both the bank material and the vegetation that lines the channel. As flow rates into a receiving channel are artificially increased through the addition of CBM product water, morphological changes in the channel can and will occur, including bed and bank erosion, loss of channel stability, and subsequent loss of aquatic habitat. Such effects to channel morphology are well-understood, and have been documented in numerous studies, both in Alaska and elsewhere.

In addition to the lack of discussion of these topics in Chapter 5 (Reasonably foreseeable effects of licensing and subsequent activity) of the DNR Preliminary Best Interest Finding, the total lack of description or discussion in Chapter 7 (Proposed Mitigation Measures and Licensee Advisories) of any mitigation measures for the disposal of CBM product water, for either the exploration or production phase of this proposal, is particularly alarming. There is no indication in this document of the method being contemplated or proposed by the Licensee for the disposal of product water. The Best Interest Finding should be modified to include the following information:

a. Which of the three methods of production water disposal (discharge into existing stream channels, holding ponds, re-injection) is being proposed or considered by the Licensee?

b. If discharge into existing stream channels is proposed, please provide the following information:

- How will the water be carried from the well sites to the stream channels (open ditches, closed pipes, other methods)?
- Which bodies of water will receive these product waters?
- What mitigation methods will be used to eliminate erosion, both in the conveyance channels, and in the receiving channels?
- What mitigation methods will be used to prevent winter icing and aufeis formation in the receiving channels during the winter months?
- What changes are expected to the receiving channels' water quality?
- What impacts to the receiving waters may be expected from the increased temperature of the disposed project water?
- Describe the mitigation measures to reduce the expected decrease of winter ice cover on the receiving water channels from the addition of warmer water.

c. If the use of holding ponds is being proposed or considered, please provide the following information:

- How large will the holding ponds be (what capacity)?
- Describe the mitigation techniques to prevent permafrost degradation and thermokarst erosion on areas adjacent to the holding ponds.
- To what design storm capacity will the ponds be constructed?
- What are the expected infiltration rates for settling ponds in the project area?
- Describe the mitigation techniques to prevent holding pond failures similar to the settling pond failures that have recently occurred in the Licensee's coal mining reclamation area.
- Describe the mitigation methods to be used to prevent the long-term erosion of materials excavated to create the holding ponds.

d. If re-injection is being proposed or considered, please provide the following information:

- How deep will the product water be re-injected?
- How will the re-injection of water affect the water quality of the receiving aquifer?

- Where will the product water be stored until it is re-injected?
- Describe mitigation methods to be used with re-injection.

Extraction of CBM involves pumping extremely large volumes of water from the saturated coal seam in order to release the water pressure holding the gas in the coal seam. The surface discharge of large volumes of marginal-quality CBM product water has resulted in significant environmental damage in other areas, and is a source of much debate. A proficient analysis of the least harmful technique to dispose of CBM product water requires a thorough study based on available science, knowledge gained from previous actions in other areas, and the collection and analysis of field data in the locations to be affected by this proposal.

The stated purpose of the Preliminary Best Interest Finding and the associated mitigation measures, developed by ADNR after consultation with other agencies and the public, and through a review of material facts and issues, including the reasonably foreseeable cumulative effects of exploration, development, production, and transportation on the proposed license area, is to “reduce or eliminate adverse effects, and to ensure that future exploration, development, production, and transportation activities, if pursued, will serve the best interests of the state.” However, this Preliminary Best Interest Finding is notable for the lack of any substantial discussion of how water produced during the exploration and production phases of this project will be disposed of, and the total absence in Chapter 7 of proposed substantial mitigation methods for the CBM product water disposal. As such, the document is incomplete and does not meet its own stated goal.

In view of the many potential impacts listed above, the Final BIF must prohibit surface disposal of produced water. The Final BIF must stipulate that re-injection is the only practicable method of disposal for this water, but must describe parameters for reinjection that address the issues in point “d” above. The Final BIF should stipulate that the contents of all drilling muds and fracturing materials will be available to the public, and prohibit toxic fracturing fluids.

In addition, the only mitigation proposed by DNR for impacts to wells in the license area is to monitor them. However, there is no requirement that anything be done if the volume of water

decreases in the well, if wells are contaminated by methane seeps, or if well water is fouled by substances introduced to groundwater as part of the extraction process. Since it is unlikely that many residents of the Denali Borough would be supportive of this project if their wells were to be rendered unusable for any of these reasons, the BIF must require much more stringent protections. The following two provisions are particularly important:

- If monitoring (or landowner experience) reveals impacts to wells that render them unusable or compromised, drilling and dewatering of coal seams must cease immediately until further investigation is completed and a plan is developed for avoiding conflicts with other users of the groundwater resource.
- If wells are inadvertently damaged despite the above precaution, the developer must provide replacement water to the affected properties in perpetuity, including any modifications necessary to homes or businesses to accommodate whatever delivery system substitutes for well water. If the developer defaults on its responsibilities, the State must assume responsibility for water supply to the affected properties. This mitigation is imperative, because of the importance of well water as a primary source of drinking water in the community and because the value of many properties would be severely reduced without access to well water.
- The State must provide directly to all landowners in the Borough a notice advising the recording of water rights and educational materials explaining the importance of recording water rights prior to the start of exploration.

8. The Final BIF must provide greater protection for air quality throughout the Denali Borough.

There are two concerns about air quality. The first is the exposure of residents to increased levels of air pollution from gas exploration and development activities. The second is the threat to Denali National Park and Preserve, which is designated as a Class I airshed under the Clean Air Act. The BIF states that “ADNR has not developed mitigation measures for air quality as they are covered under existing [federal and state] statutes and regulations.” This is a wholly insufficient response for protecting either residents or the park’s air quality.

The BIF does an adequate job of identifying the common sources and types of emissions from gas exploration and development activities, except that it fails to indicate that road dust is a potentially significant impact during some months (given new traffic and new roads). However, the BIF does not adequately identify the harm to local residents and communities. At present, the air quality in the Healy area is excellent, but the BIF notes that the air quality designation in the Healy area allows a “moderate incremental decrease” in the air quality of the area. This raises the following questions, which are not adequately answered:

- What happens if air quality does deteriorate to the worst conditions allowed under standards? The BIF makes no attempt to project the change in air quality from the project, nor to describe what the impacts would be in the worst case scenario, instead it acts as if meeting standards is essentially no change.
- What are the impacts to human health that are allowed within regulatory standards? Usually pollutants such as ozone and volatile organic compounds are not regulated to the point where no health impacts are anticipated, but where the rate is just very low. But there would still be impacts and costs above the levels at present.

Inevitable air quality impacts represent a cost to residents that should be counted as a reason this project is not in the best interest of the community.

Second, even when regulations and standards are in place, sometimes they are not adequate to protect health. Take for example the ozone that would be created by sunlight acting on the NO_x and VOC's that would be created by combustion and evaporative losses as part of the coalbed methane development process. The EPA's Web site provides the following information

Exposure to ozone for 6 to 7 hours, even at relatively low concentrations, significantly reduces lung function and induces respiratory inflammation in normal, healthy people during periods of moderate exercise. It can be accompanied by symptoms such as chest pain, coughing, nausea, and pulmonary congestion.... New scientific studies indicate that ozone causes adverse health and environmental effects at lower concentrations and longer periods of exposure than the current

standards. As a result, EPA is reviewing whether revisions to the current ozone standard are warranted.

Air quality impacts have been significant in other places that have high numbers of coalbed methane wells. The community needs to know how much additional exposure to harmful pollutants will occur if development proceeds, given the potential of hundreds if not thousands of new combustion sources operating up to 24 hours a day.

Third, sometimes even with regulations in place to protect air quality, standards are still exceeded or development allowed that would exceed standards. For example, several national and local organizations sued the Bureau of Land Management and the Department of Interior for approving coalbed methane development in Wyoming because the NEPA documentation showed that air quality would deteriorate in the Class I airshed sheds of Yellowstone and Grand Teton National Parks, among others. The EIS failed to show any way of correcting the predicted problem, which could be argued for this BIF as well except that it doesn't even speculate on how much air pollution the development could cause. As a state project, no NEPA analysis is required for exploration, conversion to leases, or plans of operation, so there is essentially no chance of detecting a threat to the park's airshed before it occurs. This is particularly troublesome because the BIF failed to look sufficiently at cumulative impacts to the park's airshed which would have necessitated researching likely pollutant levels from the Healy Clean Coal Project if it ever begins operation (Homer Electric is presently investigating the possibility of taking over the plant). The BIF must be more explicit about how it intends to limit air pollution.

Finally, there is no mention in the BIF of the extreme air quality problems that have occurred in some locations. For instance, dewatering of coalbeds can lead to spontaneous combustion of the coal and persistent, ongoing underground fires that are difficult if not impossible to extinguish and which emit noxious pollutants. This type of fire has occurred in the San Juan basin of Colorado. Second, releasing the methane to surface does not necessarily mean that it comes up the wellhead. It can migrate upward along other pathways and kill vegetation and burrowing rodents, or accumulate in people's homes to create a potentially explosive and hazardous situation. These effects have been observed in the dewatering of coal seams, for instance in the Rawhide

Subdivision just north of Gillette, Wyoming, which resulted in a complete buyout of all property owners.

To remedy these problems, the BIF should:

- specify not just that air quality will be kept within standards, but that emissions from all sources will be minimized using best available practices and technology.
- provide examples of what some of these technologies and practices are at present so that residents can judge whether they will be adequately protected
- identify declines in air quality as a cost to residents that could help lead to a conclusion that the project is not in the best interest of the local community.
- demonstrate the cumulative effects to air quality of full-scale coalbed methane development in the license area plus the increments added by other sources such as the Healy Clean Coal Project
- identify the risks of extreme problems such as methane migration and coalbed fires posed by the dewatering of coalbeds, assess the risk of these issues arising within this license area, and provide remedies. If more geologic information must be gathered to assess the risks, then the project should be put on hold while such information is obtained through primary research.

9. The BIF needs to address reclamation.

The BIF is notably silent on required reclamation at the end of the development process. The developer should be required to remove facilities from private and public property and to remove roads and drill pads. Bonding with the state should be required for the full amount necessary to remove improvements and plug abandoned wells.

10. In view of the many conflicts associated with gas development on sensitive lands in and around the Healy community: *DNR should declare it not in the best interests of the state or local citizens to explore for or develop gas in those parts of the license area west of the Nenana River.*

There are several features outlined above that make the situation in the Healy area unique and justify limiting the exploration license area to east of the Nenana River.

- First, the conjunction of superlative Denali National Park and Preserve resources that are dependent upon a portion of the proposed exploration area, the dependence of local tourism on these resources, and the dependence of the Borough government on tourism make this area too important to be explored and developed for CBM.
- Second, the conclusion that there is little statewide economic importance to this gas project weighs in favor of decreasing the license area. Local benefits are unlikely and certainly not demonstrable, but the costs to the community are very clear and dire. The vast majority of local residents are unlikely to benefit from the project, but many will bear the costs of the project if it is fully developed. However, with the exceptions of residences in the Ferry and Suntrana areas, almost all residential areas are west of the Nenana.
- Finally, it is worth noting that removal of the west side of the river from the license area does not preclude the project from going forward on the majority of the land in the license proposal.

In all areas east of the Nenana River where gas exploration and development could occur, the industry should be held to best practices, including use of best available technologies, such as recessed wellheads, directional drilling, capture or re-injection of gasses, re-injection of produced water, noise buffers, a fixed minimal density for well heads, lighting that has a Fixture Seal of Approval from International Dark Sky Association, residential setbacks and protection of private property where applicable, provision for safe animal movement across pipelines, retention of access for traditional hunting and other recreational activities, and a guarantee that the project will not create a permanent network of new roads that fragment habitat.

We appreciate the opportunity to comment on the Healy Exploration License proposal and are hopeful that DNR will include the recommendations we have made in the Final BIF. Our members consider the request to explore for gas in the Healy Basin a serious and important matter. The compromise suggested in #10 is worthy of serious consideration by both DNR and Usibelli Coal – it provides for economic growth, community development and continuation of the habitat and amenity values of this National Park gateway community.

We would be happy to provide citations and resources for any of the assertions in this letter if you require further documentation. If you would like to discuss any of these concerns, please call me in Anchorage at 277- 3825.

Sincerely,

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