

Petitioner's Exhibit 9

May 11, 2007

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Re: **Shell Offshore Inc. OCS Air Quality Comments**
2007-2009 Exploration Plan for an OCS Operation in the Beaufort Sea
30 CFR Part 250 (Minerals Management Service)
40 CFR Part 55 (Environmental Protection Agency)
11 AAC 110, 11 AAC 112, and 18 AAC 50 (State of Alaska)

Dear Ms. Greaves, Mr. Meyer, Mr. Mendivil, Mr. Walker, Mr. Chapple, Dr. Greene and Mr. Grass,

The North Slope Borough (NSB) provides the following comments on the Shell Offshore Inc. (Shell) OCS Air Permit Applications that were submitted to the Environmental Protection Agency on December 29, 2006, and supplemented on March 26, 2007, for the Beaufort Sea 2007-2009 OCS Exploration Drilling Program for the Shell Kulluk and Frontier Discoverer drilling units.

While EPA has issued the Shell Offshore Air Permit application for public comment, requesting input on compliance with EPA's regulations for OCS air emission sources under EPA's regulations at 40 CFR 55, the NSB is also providing comments on the air permit to MMS and ADEC to address compliance with MMS's federal regulations at 30 CFR Part 250, and the State of Alaska's regulations at 11 AAC 112, 11 AAC 110, and 18 AAC 50 for OCS air emission sources. EPA and MMS both have an obligation to meet the 1994 Executive Order 12898 on Environmental Justice. These comments have been submitted to EPA and MMS to address the NSB's Environmental Justice concerns as well.

All four agencies that have regulations that apply to the review and approval of OCS air pollution. Each agency is responsibility for specific actions. The NSB has provided its comments to all four agencies, because there is a need for a coordinated effort for this air permit review. The NSB has found a number of areas in which one agency assumes that another is addressing their requirements, or interpreting their regulations correctly, but they are not. The NSB requests a coordinated review take place, and each agency ensure that their statutory and regulatory obligations are met on this project.

Summary of NSB's Comments

Overall, the NSB finds that Shell's air permit application does not meet EPA's, MMS's or ADEC's OCS air emission regulations, nor does it meet the obligations of the Clean Air Act. The NSB's key concerns are summarized in the list below, followed by a more detailed explanation.

1. MMS, ADEC and EPA did not hold a meaningful public process to obtain input from residents to meet their Environmental Justice, tribal, government-to-government and Coastal Zone Management Act obligations.
2. The permit application is based on scant data and models which have not been validated under arctic conditions, with no monitoring data whatsoever in the area of concern.
3. The lack of site specific monitoring and meteorologic data requires state and federal agencies to use conservative assumptions in permitting this project to ensure human health and the environment are protected; however, conservative assumptions have not been used introducing risk and concern. A conservative and regulatory sound approach would be to permit this project as a major source of air pollution, adhering to the rigors of the Clean Air Act.
4. The operations proposed by Shell will produce substantial air pollution, close to population centers such as Kaktovik, Nuiqsut and Barrow, and within very commonly used subsistence corridors. Air pollution in the Arctic is much more significant than in a more temperate region. The arctic region is subject to extreme atmospheric inversions, which results in the pollution being trapped in a mixing layer only a few feet above the surface. The health impact is thus likely to be much more substantial in the Beaufort Sea even at much lower levels of pollution than urban areas.
5. Shell's definition of an OCS source is not consistent with the Clean Air Act. The OCS source is the drill ship, not the drill site. Nothing in the Clean Air Act (CAA) defines an OCS source as a single exploration well site.
6. Nothing in state or federal law defines an OCS source as a drill site.

7. Shell has applied for a minor source air permit for each and every drill site they plan to explore over the next three years (2007-2009), to avoid the rigors of obtaining a major source air permit for each drilling ship. Shell should be applying for a major source air permit for each OCS source (drill ship).
8. Shell's exploration operations meet the definition of major source of air pollution under 40 CFR 55.2, which defines an OCS source as any equipment, activity, or facility which (1) emits or has the potential to emit any air pollutant, (2) is regulated or authorized under the OCS Lands Act, and (3) is located on the OCS or in or on waters above the OCS.
9. All of Shell's proposed operations meet the definition of a major source of air pollution because they are located on one or more of their contiguous or adjacent OCS leases, are under the control of the same company, and fall under the same Standard Industrial Code.
10. Shell proposes to avoid major source review to avoid baseline air quality monitoring data collection. The lack of baseline data collection adversely impacts the air pollution modeling results.
11. Shell proposes to avoid major source permitting to avoid the requirement to review and install the best available air pollution control technology on its OCS air pollution sources. This circumvents the fundamental goal of the Clean Air Act, which is pollution prevention.
12. Although seeking to avoid a "major source" designation may be expeditious for Shell from a business perspective, it is a flagrant and grievous violation of the principles of environmental justice. Given the already distressing increases and alarmingly high rates of pulmonary disease and cancer, our population warrants a particularly cautious regulatory approach to prevent further incremental degradation of our health.
13. Alaska State regulations for portable oil and gas operations were developed to permit land based oil and gas drilling rigs mounted on wheels to be driven from one well site to another on the North Slope. Nothing in the background for developing the portable oil and gas operations contemplated applying these regulations to drill ships or major OCS sources of air pollution.
14. EPA's public notice states that Alaska Regulations at 18 AAC 50.502(c)(2) require OCS sources to obtain a minor permit from EPA before commencing operation. Nothing in 18 AAC 50.502(c)(2) address an OCS drill ship or specifically states that an OCS drill ship is required to obtain a minor source permit.
15. EPA's January 12, 2007 EPA Guidance Memo directs air permitting authorities to begin their analysis by evaluating whether each individual surface site qualified as a separate stationary source. In Shell's case, each individual surface site does not qualify as a separate source, because the OCS source is the drill ship.
16. EPA's January 12, 2007 EPA Guidance Memo directs air permitting authorities to use a major source determination for oil and gas operations that (1) reasonably carries out the purposes of PSD, (2) approximates a common sense notion of a plant, and (3) avoids aggregating pollutant-emitting activities that as a groups would not fit in the ordinary meaning of building, structure, facility, or installation.
17. Shell should revise its air permit applications to include all of the drill ship emissions (and associated support vessels and equipment) into a single major source permit application to

reasonably carry out the purposes of PSD, and ensure best available pollution control equipment is installed when operating in the Beaufort Sea.

18. A drill site does not approximate a common sense notion of a plant. A plant is the combustion source, which is the drill ship. A drill site itself is not a “plant;” it is a location.
19. The emissions from a drill ship fit in the ordinary meaning of structure, facility, or installation. A drill site does not. A drill site is a location on a lease. A drill site is not a structure; it is not a facility; it is not an installation.
20. There are a number of areas in which one agency assumes that another is addressing the requirements or interpreting the regulations correctly, but they are not. A coordinated review should be carried out so that each agency is accountable for assuring regulatory compliance.
21. MMS’ air pollution control regulations at 30 CFR 250 are not equivalent to EPA’s regulation at 40 CFR 55. MMS has not demonstrated that the requirements of 30 CFR 250 have been met.
22. EPA’s regulations at 40 CFR 55 do not relieve MMS of its obligation to address air pollution under 30 CFR 250.
23. MMS’ regulations at 30 CFR 250.218(a)(1) require Shell’s Exploration Plan to include the: projected peak hourly emissions; total annual emissions in tons per year; emissions over the duration of the proposed exploration activities; frequency and duration of emissions; and total of all emissions. This information is not found in the EPA air permit, nor has MMS evaluated it during the NEPA review, or during approval of Shell’s Exploration Plan.
24. MMS’ federal regulations 30 CFR 250 still exist and apply to OCS sources in the Beaufort Sea. MMS’ regulations at 30 CFR 250.218 were not repealed when the EPA issued OCS regulations at 40 CFR 55.
25. Nothing in federal or state air pollution law or regulation establishes a 500 meter distance for aggregating or not aggregating pollution from OCS sources. The EPA’s proposed use of 500 meters in determining whether air pollution must be aggregated for the purpose of major source classification is arbitrary and capricious. The Clean Air Act defines an OCS source as a drill ship and all other OCS support activities within a 25 mile radius. EPA can not redefine Congressional intent through a single permitting action.
26. Shell asserts in its permit applications at Section 3.2 that ADEC has no direct authority over the review and approval of the Shell project and its air permit. This is incorrect.
27. Shell’s proposed project does not meet the requirements of 11 AAC 110 and 112, because it does not comply with all federal and state air quality laws and regulations.
28. In 1993, the Kulluk was determined to be a major OCS source, under the EPA’s PSD regulations and MMS’ OCS exploration approvals. ARCO was the operator of the Kulluk, and was required to complete a comprehensive major source air permit application, ambient air quality modeling assessment, BACT evaluation and human health impact assessment.
29. In 1993, ARCO estimated 120 days of Kulluk operation, along with its support vessels, would produce over 2,300 tons of NO_x and over 260 tons of Carbon Monoxide (CO) Both pollutants exceeded the 250 ton PSD permit threshold for a major source. Surprisingly, Shell estimates the Kulluk drill ship emissions at 245 tons of NO_x and over 82 tons of

Carbon Monoxide (CO). It is not reasonable for one operator, ARCO to be required to permit the Kulluk as a major source of air pollution in 1993, and later to permit the Kulluk as a minor source of air pollution for a very similar Exploration Plan in 2007.

30. The scope of Shell's air permit approval and application is not clear. Site specific data is missing for most years, and it is unclear if Shell is requesting a three (3) or five (5) year permit.
31. There are a number of deficiencies in Shell's emission inventory which are listed below:
 - Shell's emission inventory does not meet MMS' regulations at 30 CFR 250, because it does not include the total emissions over the duration of the proposed exploration activities, examine the impacts of small particulate matter, or does it examine particulate emissions at 2.5 microns or less (PM_{2.5}).
 - It is not clear if Shell is proposing to conduct well tests flow back oil or flare gas.
 - The emission inventory does not address sources of emission that vent directly to atmosphere.
 - Shell has not included the emissions from a potential relief well.
 - It is unreasonable to issue a permit for 59 days of operation when the applicant clearly has stated that drilling could continue for 75 days or more per well if ice conditions or unanticipated drilling issues arise.
 - Shell has not estimated the potential to emit (PTE) for the ice breaker combustion sources assuming heavy ice conditions which can reasonably be expected during later September, October, and November in the Beaufort Sea. Shell bypassed the PTE requirements and immediately sought to avoid the rigors of a PSD major source permit, by proposing to reduce operating hours on units on an "assemblage of reasonable maximum activity levels."
 - Shell's emission inventory for the Kulluk drill ship and its associated support vessels of 245 tons of oxides of nitrogen (NO_x), just barely falls below the PSD threshold for a major source permit of 250 tons. There is little room for error in this emission estimate. The total emissions can easily exceed 250 tons, at any single well if it takes longer than 59 days to drill, heavy ice conditions are encountered, if any of Shells operating restriction assumptions are incorrect, or if a relief well is required.
 - Shell's emission inventory for the Kulluk drill ship and the Discoverer Drill Ships should include a cumulative total of all emissions required to drill the exploration wells planned on a calendar year. Total drill ship emissions for each ship, on a yearly basis, exceed the PSD threshold for a major source permit of 250 tons by several magnitudes. A minor source permit is inappropriate for these large industrial sources of air pollution.
 - Shell's application excludes emissions from the Bow Thruster Diesel engine when it is used to move the supply boat (Jim Kilabuk) next to the drill ships. However, this clearly contradicts the CAA requirement to include all support vessel emissions in the emission inventory if they are operating within 25 miles of the OCS source.
 - Shell does not provide a historical operating basis for the operating hours or equipment use assumptions used in its application. The NSB requests that agencies require Shell to provided operating records for the Kulluk and Discoverer to verify combustion source usage requirements in similar previous exploration wells, so that the agencies and public

can determine if the operating hours and usage restrictions proposed by Shell are realistic and appropriate.

- Shell has not properly inventoried or modeled carbon monoxide emissions for units that will be operated at low loads, where carbon monoxide emissions will be elevated.
- Shell's emission estimates for 2007 are inconsistent with the emission estimates for 2008 and 2009. While Shell purports that its operating hour estimates are realistic for 2007 based on a maximum operating timeframe of 60 days at a drill site, it does not provide any technical rationale to support the proposed reduction to 43 days per drill site in 2008 and 2009.
- Shell's ambient air quality analysis is not site-specific, does not include the maximum potential to emit for all combustion sources included in the OCS source definition, does not use appropriate background monitoring data for all OCS source locations, does not use an EPA approved meteorologic data set, and is based on a simple single pollution stack screening model, rather than a site specific, multiple stack emission model.
- Shell's air pollution modeling approach is not site-specific and does not meet the technical quality required by the EPA or MMS on past OCS exploration projects in the Beaufort Sea using the Kulluk.
- Shell's application lacks data to adequately assess human health impacts to our coastal communities, and to subsistence hunters and subsistence resources that will be located downwind of Shell's large industrial pollution source.
- Shell's application does not include all required supporting technical information.
- Shell's application estimates hazardous air pollutants at a drill site level, but not at an OCS source level. In addition to this error, Shell's application does not provide hazardous air pollutant emission estimates for sources vented to atmosphere; Shell only provides estimates for combustion sources.

Attached are NSB's detailed comments supporting these conclusions.

To discuss these comments, please contact Gordon Brower (907) 852-0440, or in his absence during whaling season, please contact Martha Falk at the same number. The NSB requests a written response to our comments and concern by each agency addressed on this letter, and an opportunity for the NSB to review the responses and discuss them prior to any permits or approvals being issued on this project.

Sincerely,

Johnny Aiken
Director

Enclosure: Attachment No.1; NSB's Detailed Air Quality Comments

Cc: NSB Mayor Edward S. Itta
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Native Village of Barrow Inupiat Traditional Government
Native Village of Nuiqsut
Native Village of Kaktovik
Village of Wainwright
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Attachment No.1
NSB's Detailed Air Quality Comments

Shell Offshore Inc. 2007-2009 Exploration Plan
OCS Operation in the Beaufort Sea

Clean Air Act

Shell's air permit application for its 2007-2009 Exploration Plan does not comply with the Clean Air Act (CAA).

Clean Air Act Section 328(a)(4)(C); [42 USC 7627(a)(4)(C)] The OCS Source Definition has been Wrongly Applied

Shell's air permit application for its 2007-2009 Exploration Plan does not comply with Section 328(a)(4)(C) of the Clean Air Act (CAA), because Shell proposes to define an OCS source as a single drill site, whereas the CAA defines an OCS source as the drill ship itself. The drill ship is the OCS source, including the support vessels for the drill ship within 25 miles of the exploration site.

Nothing in Section 328(a)(4)(C) of the Clean Air Act (CAA) defines an OCS source as a single exploration well site. The law is clear that the OCS source is the drill ship itself not the drill site:

“...any equipment, activity, or facility which- (i) emits or has the potential to emit any air pollutant, (ii) is regulated or authorized under the Outer Continental Shelf Lands Act, and (iii) is located on the Outer Continental Shelf or in or on waters above the Outer Continental Shelf. Such activities include, but are not limited to, platform and drill ship exploration, construction, development, production, processing, and transportation. For purposes of this subsection, emissions from any vessel servicing or associated with an OCS source, including emissions while at the OCS source or enroute to or from the OCS source within 25 miles of the OCS source, shall be considered direct emissions from the OCS source.” (Emphasis added.)

Attempting to define an OCS source as a single drill site, clearly contradicts the statute.

Clean Air Act Section 328(a)(1); [42 U.S.C. 7627] Compliance with the PSD Program is Required

Shell's air permit application for its 2007-2009 Exploration Plan does not comply with Section 328(a)(1) because Shell's permit application does not comply with the provisions of the CAA at Title I, Part C, Prevention of Significant Deterioration (PSD).

Section 328(a)(1) of the CAA requires Shell's OCS exploration operations to attain and maintain Federal and State ambient air quality standards, and to comply with the provisions of the CAA at Title I, Part C, Prevention of Significant Deterioration (PSD). The CAA at Title I, Part C, PSD was established by Congress to protect the quality of an airshed, like the Beaufort Sea region, from becoming polluted. Congress established certain criteria to prevent “significant deterioration” of these healthy, clean airsheds.

More specifically, at Section 101 of the CAA, Congress found that the growth in the amount and complexity of air pollution brought about by industrial development has resulted in mounting dangers to the public health and welfare, including injury to agricultural crops and livestock, damage to and the deterioration of property, among other adverse affects. In the Arctic, EPA should consider that subsistence resources such as wild herds, and wild plant resources are the equivalent to the term used by EPA to describe domesticated crops and livestock found in the

Lower 48 states. Congress established the PSD program to protect and enhance the quality of the nation's air resources to promote the public health and welfare and the productive capacity of its population; to achieve the prevention and control of air pollution, among other goals. Furthermore the CAA at Title I, Part C, states that a primary goal of the act is pollution prevention:

“A primary goal of this Act is to encourage or otherwise promote reasonable Federal, State, and local governmental actions, consistent with the provisions of this chapter, for pollution prevention.” 42 USC 7401(c).

Shell's applications, by evading the rigors of the PSD review process, does not ensure pollution is prevented and human health, food sources, and the environment are adequately protected.

Shell proposes to avoid PSD review by applying for a minor air permit to be issued at each drill site. Shell incorrectly asserts that an OCS source is defined by drill site. This is incorrect, because the Clean Air Act defines the OCS source as the drill ship itself not the drill site.

By proposing to permit each individual drill site, rather than the drill ship or the collective Exploration Plan, Shell seeks to avoid Best Available Control Technology (BACT) review required for major sources of air pollution.

By avoiding a major source review, Shell achieves a cost and application time savings. Shell's proposal seeks to avoid baseline data collection, comprehensive site-specific air pollution modeling, best available technology review, among other standards that apply to a major source of air pollution, and not to a minor one.

Furthermore, Congress also required under Section 328(a)(1) of the CAA that OCS air emission sources located within 25 miles of the State of Alaska seaward boundary meet federal and state air pollution control and permitting requirements. Therefore, this letter is addressed to the State of Alaska to ensure that all state requirements are also met for this OCS source.

CAA Section 302; [42 U.S.C. 7602]

CAA Section 501; [42 U.S.C. 7661a]

Shell's OCS Operation Meets Major Source Definition

Shell's air permit application, for its 2007-2009 Exploration Plan, does not comply with Sections 302 and 501 of the CAA because Shell proposes to define its Exploration Plan as a series of concurrently operating "minor sources" of air pollution rather than a single group of stationary sources located within a contiguous area and under common control.

Under Section 302 and 501 of the Clean Air Act, a major source of air pollution means: "...any stationary source (or any group of stationary sources located within a contiguous area and under common control)... "major stationary source" and "major emitting facility" mean any stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant."

CAA Section 504(e); [42 USC 7661c]

Compliance with the Title V Permit Program is Required

Section 504(e) of the Clean Air Act allows the EPA to issue a single Title V operating permit to an OCS Source authorizing emissions from similar operations at multiple temporary locations. The Title V Operating Permit must be issued to the OCS Source, which is the drill ship. Nothing in Section 504(e) of the CAA specifies a Title V operating permit should be issued for a single drill site. Furthermore, nothing in Section 504(e) supports Shell's proposal to permit each drill site as a separate OCS Source to avoid major source classification.

EPA OCS Regulations (40 CFR 55)

Shell's air permit application for its 2007-2009 Exploration Plan does not comply with the EPA's OCS Regulations at 40 CFR 55.

40 CFR 55.2

EPA Regulations Define the OCS Source as the Vessel, Not the Drill Site

40 CFR 55.2 defines an OCS source as any equipment, activity, or facility which (1) emits or has the potential to emit any air pollutant, (2) is regulated or authorized under the OCS Lands Act, and (3) is located on the OCS or in or on waters above the OCS. **Vessels** are included in this definition when they are permanently or temporarily attached to the seabed during exploration. The regulations clearly define the OCS source as the drill ship, not the drill site. It is the vessel that is included in the definition. The **vessel** is subject to the OCS source definition. Nothing in 40 CFR 55.2 speaks to a drill site as being a relevant factor in defining an OCS source.

Based on the CAA at Section 328(a)(4)(C) the OCS source is the drill ship:

"...any equipment, activity, or facility which- (i) emits or has the potential to emit any air pollutant, (ii) is regulated or authorized under the Outer Continental Shelf Lands Act, and (iii) is located on the Outer Continental Shelf or in or on waters above the Outer Continental Shelf. Such activities include, but are not limited to, platform and drill ship exploration, construction, development, production, processing, and transportation. For purposes of this subsection, emissions from any vessel servicing or associated with an OCS source, including emissions while at the OCS source or enroute to or from the OCS source within 25 miles of the OCS source, shall be considered direct emissions from the OCS source."(Emphasis added.)

EPA's regulations require OCS drill ships to compute their potential to emit air pollution from the drill ship, itself, and all its support vessels within 25 miles when the vessel is actively conducting exploration drilling.

40 CFR 55.2

Potential Emissions for Each Drill Ship are not Computed Correctly

40 CFR 55.2 requires Shell's air permit application to provide the OCS source's "potential emissions," which are defined as the maximum emissions of a pollutant from an OCS source operating at its design capacity. Shell's application for each drill ship does not provide potential

emission estimates for the OCS source, that is, drill ship. Instead, Shell has only provided emission estimates for each drill site.

Shell has requested the EPA look at the amount of emissions that are emitted while drilling a single well, ignoring the fact that the OCS source is the drill ship, rather than the drill site. And, even at the drill site level Shell has not correctly computed the “potential emissions.” Instead, Shell proposes to only operate some of the drill ship emission sources some of the time, to avoid triggering major permit status even at a drill site level. Shell’s application fails to meet the EPA regulatory requirement to estimate potential emissions from the OCS Source (the drill ship) at its design capacity. EPA requires the applicant to compute the “potential to emit” or PTE.

While, the EPA’s regulations do allow for Shell to propose to reduce its air pollution by reducing the number of combustion sources and times they operate, Shell must first calculate a PTE without operating restrictions and place that information in the permit applications, and as a second step, provide specific information on how it proposes to restrict the OCS source operations. Shell has not met this regulatory standard.

40 CFR 55.13 and 40 CFR 52.21 Prevention of Significant Deterioration (PSD) of the Beaufort Sea Air Shed Must be Achieved

40 CFR 55.13 requires OCS sources to comply with EPA’s PSD regulations at 40 CFR 52.21 for major stationary sources of air pollution. At 40 CFR 52.21(b)(5) a stationary source is defined as a structure or installation, among other things, that meets three criteria:

- (1) Belongs to the same industrial grouping (the same Standard Industrial Classification (SIC) Code);
- (2) Is located on one or more contiguous or adjacent properties; and
- (3) Is under the control of the same person.

Shell’s drill ships meet all three criteria. All of Shell’s proposed operations are under the same SIC code. Shell’s exploration activities are located on one or more of their contiguous or adjacent OCS leases; and Shell’s operations are under the control of the same company (Shell).

EPA’s regulations clearly require Shell’s exploration project to be permitted as a single major stationary source of air pollution. The regulations do not provide that a stationary source can be defined at a single drill site level. Nor do the regulations allow an applicant to carve up an OCS source into individual drill sites to evade the rigors of major air pollution source review.

500 meter vs. 25 mile Aggregation

Nothing in federal or state air pollution law or regulation establishes a 500 meter distance for aggregating or not aggregating pollution from OCS sources. In fact, just the opposite: the Clean Air Act is very clear that all sources within a 25 mile radius of the OCS Source must be included in the emission calculation. By reducing the aggregation distance from 25 miles to 500 meters (0.31 miles), the Clean Air Act is ignored.

Using a 500 meter distance in determining whether air pollution must be aggregated for the purpose of major source classification is arbitrary and capricious. The Clean Air Act defines an OCS source as a drill ship and all other OCS support activities within a 25 mile radius. EPA

cannot redefine Congressional intent through a single permitting action. This is a substantive standard, which is elsewhere addressed by regulation; EPA should conduct a formal rulemaking process to implement such an interpretation.

EPA Memo Regarding Source Determinations for Oil and Gas Industries dated January 12, 2007)

The NSB has reviewed the January 12, 2007, EPA Guidance Memo referenced by Shell in the air permit applications. This memo is not applicable to Shell's proposed operation.

The memo starts by directing air permitting authorities to begin their analysis of by evaluating whether each individual surface site qualified as a separate stationary source. In Shell's case, each individual surface site does not qualify as a separate source, because the OCS source is the drill ship.

EPA's memo reinforces the requirement to aggregate industrial activities according to proximity and ownership, which indicates that each Shell OCS source (Kulluk drill ship and Discoverer drill ship) should be aggregated into one single permit since both ships are required to complete Shell's 2007-2009 Exploration Plan, will be operated by Shell and will be drilling exploration wells close to each other.

EPA confirmed a major source determination for oil and gas operations must (1) reasonably carry out the purposes of PSD, (2) approximate a common sense notion of a plant, and (3) avoid aggregating pollutant-emitting activities that as a group would not fit in the ordinary meaning of building, structure, facility, or installation. As a result: Shell should revise its air permit applications to include all of the drill ship emissions (and associated support vessels and equipment) into a single major source permit application to reasonably carry out the purposes of PSD, and ensure best available pollution control equipment is installed when operating in the Beaufort Sea. A drill site does not approximate a common sense notion of a plant. A plant is the combustion source, which is the drill ship. A drill site itself is not a "plant," it is a location. The emissions from a drill ship fit in the ordinary meaning of structure, facility, or installation. A drill site does not. A drill site is a location on a lease. A drill site is not a structure, it is not a facility, it is not an installation.

EPA's memo points out that the definition of a major source under Section 112 of the Clean Air Act for the Air Toxic Program limits the aggregation of oil exploration well equipment with other wells. However, as EPA points out, Section 112 of the Clean Air Act does not apply to OCS sources for the purposes of making a major source decision under the PSD Construction Permit Program or Title V Operating Permit program. And, while Shell uses the Section 112 argument to defend its permit application, it is not a relevant legal position. Nothing in the EPA memo suggests that a single PSD or Title V air permit should be issued for each OCS drill site

Rulemaking Required

Because the January 12, 2007 memo was not adopted through rulemaking procedures and contradicts the statute, it is arbitrary and not entitled to deference. *See Gen. Dynamics Land Sys., Inc. v. Cline*, 540 U.S. 581, 600 (2004) (courts will not defer to agency interpretation that is inconsistent with statute); *League of Wilderness Defenders*, 309 F.3d at 1183 (same); *Thomas Jefferson Univ. v. Shalala*, 512 U.S. 504, 512 (1994) (court will not defer to agency interpretation that contradicts agency's intent at the time it promulgated regulation); *Alaska Trojan P'ship v.*

Gutierrez, 425 F.3d 620, 631 (9th Cir. 2005) (same); *Hillsborough County*, 471 U.S. at 714-16 (agency’s clear statement in Federal Register “dispositive” of agency’s intent at the time it adopted the rule); *Christensen v. Harris County*, 529 U.S. 576, 587 (2000) (interpretations not subject to notice-and-comment rulemaking are merely entitled to “some deference” or “respect” and “only to the extent that those interpretations have the power to persuade”).

Alaska State Law (Alaska Statutes, Title 46, Chapter 14)

Alaska law, AS 46.14.130, requires a major source of emissions to obtain a PSD Construction Permit and Title V operating permit. Shell’s drill ships have the potential to emit air pollution above the PSD threshold while operating in the Beaufort Sea during the 2007-2009 Exploration Plan. The drill ships are major sources of OCS air pollution, requiring major New Source Review (NSR) under the Clean Air Act.

Alaska State Regulations (Alaska Administrative Code, Title 18, Chapter 50)

Alaska regulations, 18 AAC 50.990(55), define a marine vessel as a ship. Shell is proposing to bring a fleet of vessels, including a drill ship to the Beaufort Sea for the purposes of oil and gas exploration. The drill ship is a marine vessel that explores for oil and gas, it is not the same as land based oil and gas exploration rigs used on the North Slope mounted on wheels and driven from one well site to another.

Alaska state regulations at 18 AAC 50.990(124) define a portable oil and gas operation as an operation that moves from site to site to drill or test one or more oil or gas wells, and that uses drill rigs, equipment associated with drill rigs and drill operations, well test flares, equipment associated with well test flares, camps, or equipment associated with camps. The basis for this definition and regulations for portable oil and gas operations was to permit **land based drilling rigs** (oil and gas drilling rigs mounted on wheels) to be driven from one well site to another on the North Slope. Nothing in the background for developing the portable oil and gas operations contemplated applying these regulations to drill ships or major OCS sources of air pollution. (see 18 AAC 50 Rulemaking History and revised State Implementation Plan).

Alaska’s rules, specifically developed to address land-based drilling rigs, should not be applied to OCS drill ships. OCS drill ships have different combustion equipment and air pollution sources than a land-based drilling rig. The number and type of engines are different, and land based drilling rigs are not supported by a fleet of ice breakers and support vessels which add a substantial amount of pollution to the drilling process. Such an interpretation would contravene federal and state law, and the federal OCS regulations at 40 CFR 55, and would arbitrarily and capriciously attempt to apply land based drilling rig rules to an OCS exploration drill ship equipped with multiple support vessel emission sources. Application of portable land based drilling rig rules to OCS drill ships is illogical, and clearly was never contemplated in the regulatory record or by the technical support documents for these regulations.

Furthermore, Shell’s proposed project is located right in a subsistence use area, where humans will be conducting subsistence activities, and communities downwind of the operations will be exposed to substantial air pollution. It is critical the subsistence hunters and the subsistence resources themselves are not exposed to high levels of air pollution.

EPA's public notice states that Alaska Regulations at 18 AAC 50.502(c)(2) require OCS sources to obtain a minor permit from the EPA before commencing operation. Nothing in 18 AAC 50.502(c)(2) addresses an OCS drill ship or specifically states that an OCS drill ship is required to obtain a minor source permit.

Minerals Management Service Regulations (30 CFR 250)

MMS regulations at 30 CFR 250.218(a)(1) require Shell's Exploration Plan to include the: projected peak hourly emissions; total annual emissions in tons per year; emissions over the duration of the proposed exploration activities; frequency and duration of emissions; and total of all emissions.

MMS regulations, 30 CFR 250.218(2), require the operator to base the projected emissions on the maximum rated capacity of the equipment on the proposed drilling unit under its physical and operational design.

While MMS' approvals and analysis all defer to the EPA's air permit approval process under 40 CFR 55 for an OCS air pollution source, MMS does not explain how its requirements under 30 CFR 250 for OCS Air Pollution are met. Federal regulations at 30 CFR 250 (MMS) and 40 CFR 55 (EPA) are not equivalent. While MMS claims that the EPA's regulations at 40 CFR 55 relieve MMS of its obligation to address air pollution under 30 CFR 250, this assertion is not based on regulation or law. The NSB has discussed this concern with EPA, and EPA confirmed MMS's regulations were not equivalent to EPA's, nor is EPA responsible for meeting the criteria of 30 CFR 250.¹ Thus, the requirements of 30 CFR 250 have not been fully met, and this obligation remains a MMS responsibility that has not been satisfied.

MMS' regulations 30 CFR 250 still exist and apply to OCS sources in the Beaufort Sea. MMS regulations at 30 CFR 250.218 were not repealed when the EPA issued OCS regulations at 40 CFR 55. MMS regulations at 30 CFR 250.218 require different analysis and technical data than required by the EPA; therefore, merely deferring to the EPA's regulations is inadequate. For example, MMS' regulations require the applicant to report total emissions over the duration of the proposed exploration activities, and examine the impacts of small particulate matter, 2.5 microns or less, among other things. The amount of fine particulate matter emitted by this project, for example, is important to the residents because they have noticed a significant increase in respiratory distress in their communities coincident with increased industrial activity. Fine particulate matter is a well-known respiratory aggravant.

Alaska Coastal Management Program Regulations (11 AAC 112, and 11 AAC 110)

Shell incorrectly concludes in their application, at Section 3.2 that ADEC has no direct authority over the review and approval of the Shell project and its air permit. This is incorrect.

Under the Alaska Coastal Management Program (ACMP), the ADNRC and ADEC are required to ensure that Shell's Exploration Plan, permits, and authorization meet the ACMP statewide and local standards. Shell's proposed project does not meet the requirements of 11 AAC 110 and 112 because it does not comply with all federal and state air quality laws and regulations.

¹ April 6, 2007 meeting between Dan Meyer EPA and NSB.

Past OCS Air Permitting Precedent

Shell's application does not conform to federal and state requirements, as described above; nor does it conform to previous permitting of the Kulluk drill ship.

In 1993, the Kulluk was determined to be a major OCS source, under the EPA's PSD regulations and MMS' OCS exploration approvals. ARCO was the operator of the Kulluk, and was required to complete a comprehensive major source air permit application, ambient air quality modeling assessment, Best Available Control Technology (BACT) evaluation and human health impact assessment. ARCO's Kulluk application included:

- (1) A best available control technology (BACT) evaluation;
- (2) Dispersion modeling of emissions to determine compliance with PSD increments and state and federal ambient air quality standards;
- (3) Analyses of the project's impact on associated air quality-related values such as regional population growth; and
- (4) A human health risk assessment for the community of Kaktovik (which is the closest community to the exploration location).

ARCO's 1993 application for the Kulluk clearly shows that the Kulluk drill ship was considered the OCS source when estimating emissions for a PSD determination. ARCO's BACT determination proposed spark retardation on the Kulluk's main engines.

EPA's regulations (40 CFR 55) were promulgated September 4, 1992. Arco Alaska, Inc. (ARCO) submitted an air permit application for the Kulluk in February 1993 which requested approval to operate a major source of air pollution under a PSD permit. ARCO stated that drilling a single well would "result in emissions of criteria pollutants above the significant levels specified in the Prevention of Significant Deterioration (PSD) rules." Furthermore, ARCO clarified that this OCS project was subject to review under MMS's OCS air permitting rules and EPA's PSD air permitting rules.

In compliance with MMS and EPA regulations, ARCO provided total project emissions for the entire Exploration Plan period. All major combustion source emission estimates were computed assuming 100% operating time at full operating load. In 1993, ARCO estimated that 120 days of Kulluk operation, along with its support vessels, would produce over 2,300 tons of NO_x and over 260 tons of Carbon Monoxide (CO). Both pollutants exceeded the 250 ton PSD permit threshold for a major source.

Surprisingly, in the current application, Shell only estimates the Kulluk drill ship emissions at 245 tons of NO_x and over 82 tons of carbon monoxide (CO). It is not reasonable for one operator to be required to permit the Kulluk as a major source of air pollution in 1993, and for another to be allowed to permit it as a minor source of air pollution for very similar exploration operations in 2007. If anything, the age of the ship and the quality of the air should support the application of stricter standards now than 14 years ago.

Shell's application for the very same drill ship, the Kulluk, should not warrant a minor air permit for 2007-2009, given the fact that both MMS and the EPA found that the Kulluk met the definition of a major OCS and PSD air pollution source in 1993.

NSB Tribal and Resident Concerns

On April 5-6, 2007, public hearings were held in Nuiqsut and Kaktovik by the State Department of Natural Resources, for the consistency determination on Shell's Exploration Plan. During those hearings many residents expressed grave concern about air quality and the potential impacts to human health and subsistence resources from large industrial sources of air pollution operating in the OCS. The impact of industrial air pollutants on the arctic environment, its residents, and its resources as discussed by those in attendance are outlined below.

While Shell characterizes its operations as being far from resident and tribal impact areas, residents disagree. As one resident said, "They want to start right away... ten miles from Barter Island. Flaxman Island is near our hunting ground."

- Residents expressed concern about air pollution and said air pollution from other countries was already a problem in the Arctic, emphasizing the need for appropriate baseline ambient air pollution data gathering to understand the true background pollutant levels before embarking on adding more pollution to the air shed.
- Residents characterized increased human health and respiratory issues associated with air pollution as a "big problem" (families of asthma victims versus a time of very few asthma cases) and called for human health assessments to protect residents from the human health impacts of industrial air pollution.
- Residents pointed out that marine mammals, especially whales, are very sensitive to smell, and asked what was known about the impact of industrial air pollution in the OCS on subsistence resources.
- Residents expressed concern about the yellow haze west toward Prudhoe Bay, Alpine and other developed areas and wonder if Shell's operations will make that worse.
- One resident stated that "air pollution from Prudhoe Bay was already making Nuiqsut residents sick."
- Many people testified about the psychological effects on residents of stress and loss of cultural identity, as well as health concerns from air, terrestrial and water pollution from discharges and contaminants associated with industry practice.

EPA held one public hearing in Nuiqsut on May 8, 2007. Hearings in Barrow and Kaktovik were not held due to direct conflict with subsistence activities. Although the NSB requested EPA to either prepone the air permit hearings into April to avoid the subsistence conflict. EPA ignored this request. When EPA set the hearings in May 2007, NSB again formally requested the hearings to be deferred until after the traditional spring subsistence activities were concluded in the first week of June. EPA again ignored this request, and it was not until May 8th the date of the Nuiqsut hearing that EPA final provided a written response to NSB's April 18, 2007 letter.

EPA clearly failed to meet its tribal and government-to-government responsibilities on this air permit, and hearing process, thwarting meaningful public participation. While the May 8th hearing was held in Nuiqsut and residents had to stop their spring subsistence activities to

participate. Barrow and Kaktovik residents were unheard because attendance at the hearing would have required them to place a lower priority on subsistence. NSB residents were extremely dissatisfied with the EPA public process for this air permit. MMS and ADEC provided no public process at all for input on the air permit.

The lack of site specific monitoring and meteorologic data requires state and federal agencies to use conservative assumptions in permitting this project to ensure human health and the environment are protected; however, conservative assumptions have not been used introducing risk and concern. A conservative and regulatory sound approach would be to permit this project as a major source of air pollution, adhering to the rigors of the Clean Air Act.

Scope of Air Permit Approval & Application

The scope of Shell's air permit approval and application is not clear. Site-specific data is missing for most years, and it is unclear if Shell is requesting a three (3) or five (5) year permit.

Shell's applications to MMS, ADEC, and ADNOR all state that Shell plans to conduct a three (3)-year drilling program. Shell's application to the EPA states that it may continue drilling for five (5) years. Is Shell requesting a three year permit approval to construct? Or a five year approval?

Shell's application to all agencies provides some site-specific detail on 2007 operations, but no site specific detail for 2008, 2009, or 2010-2011 (assuming Shell is seeking a five year air permit to construct from the EPA).

Shell's applications state that it expects drilling to last for 45 days per well for deeper wells, but under "ideal ice conditions and unanticipated drilling issues the drilling program could possibly continue for up to 75 days." Shell simply does not address the additional time required when "non-ideal" ice conditions are encountered, which could add up to 75 days.

Emission Inventory

There are a number of deficiencies in Shell's emission inventory which are listed below:

1. Shell's emission inventory does not meet MMS' regulations, because it does not include the total emissions over the duration of the proposed exploration activities, examine the impacts of small particulate matter, or examine particulate emissions at 2.5 microns or less (PM_{2.5}). See 30 CFR 250.
2. It is not clear if Shell is proposing to conduct well tests to flow back oil or flare gas.
3. The emission inventory does not address sources of emission that vent directly to atmosphere.
4. Shell has not included the emissions from a potential relief well, which Shell is proposing to drill to aid in well control, should a blowout occur. The time required to drill relief wells varies widely, but may reasonably be assumed to exceed 59 days of drilling time. The 1987 Steelhead platform well blowout in Cook Inlet, Alaska, took 6 months to bring under control.
5. Shell's application requests a minor source permit, based on a maximum of 59 days of operation. The NSB is opposed to the EPA issuing a permit on this basis when the

applicant states that drilling could continue for 75 days or more per well if ice conditions or unanticipated drilling issues arise.

6. Shell has not estimated the potential to emit for the ice breaker combustion sources, even though heavy ice conditions can reasonably be expected during later September, October, and November in the Beaufort Sea. Shell has estimated air emissions for ice breaker operations based on average ice conditions, yet heavier ice conditions will result in higher engine load factors and higher emissions, which could easily exceed the 250 tons per year PSD threshold. Shell, by its own admission, concluded that heavier ice conditions will result in more emissions. Shell's application states: "SOI believed the emissions from the Shell Kulluk drilling vessel will not be as dependent on open water/ice conditions except in the case of very heavy ice that the ice breaker vessels cannot safely and effectively manage and thus forces the drilling vessel off the drill site." Shell's application goes on to say: "...ice management vessel use might be below expectation."

Contrast the representations made by Shell in its revised application to the US Coast Guard for safety zones: "Ice conditions during 2006 were such that the areas of drilling interest were ice covered the majority of the period between July and October. If ice conditions are similar during 2007, then each drill rig will be constantly ice managed within its anchor array." (Emphasis added.) Shell is clearly not acting in good faith when downplaying what is represented to be the reasonably expected use of the ice-breakers

7. Shell did not estimate the potential to emit (PTE) for all OCS source combustion units. The Shell EPA permit application states "...maximum emissions are based on an assemblage of reasonable activity level assumptions, none of which are absolute maxima." This approach is inconsistent with the Clean Air Act (CAA). The CAA requires the applicant to first submit a PTE estimate providing a detailed description of all combustion sources operating at full load, 24 hours per day. As a second step in the analysis, the CAA does allow the applicant to propose federally enforceable operating restrictions and emission control obligations to allow the applicant to reduce the total amount of pollution from its operation. Shell has not provided the PTE values for either the Kulluk or Discoverer or any of the associated OCS support vessels. Rather, Shell bypassed the PTE requirements and immediately sought to avoid the rigors of a PSD major source permit, by proposing to reduce operating hours on units on an "assemblage of reasonable maximum activity levels."
8. Shell's emission inventory for the Kulluk drill ship and its associated support vessels of 245 tons of oxides of nitrogen (NO_x), barely falls below the PSD threshold for a major source permit of 250 tons. There is little room for error in this emission estimate. The total emissions can easily exceed 250 tons at any single well if it takes longer than 59 days to drill, heavy ice conditions are encountered, if any of Shells operating restriction assumptions are incorrect, or if a relief well is required.
9. Shell's emission inventory for the Kulluk and the Discoverer drill ships should include a cumulative total of all emissions required to drill the exploration wells planned in a calendar year. Total drill ship emissions for each ship, on a yearly basis, exceed the PSD threshold for a major source permit of 250 tons by several magnitudes. A minor source permit is inappropriate for these large industrial sources of air pollution.
10. Shell's application excludes emissions from the bow thruster diesel engine when it is used to move the supply boat (Jim Kilabuk) next to the drill ships. This clearly violates the CAA requirement to include all support vessel emissions in the emission inventory if they are operating within 25 miles of the OCS source.

11. Shell does not provide a historical basis for the operating hours or equipment use assumptions used in its application. Shell should be required to provide operating records for the Kulluk and Discoverer to verify combustion source usage requirements in previous similar exploration wells, so that the agencies and public can determine if the operating hours and usage restrictions proposed by Shell are realistic and appropriate. For example:
- a. Shell estimates the Kulluk will only operate one of the main engines for 24 hours/day for a 60 day period. It assumes that the second engine will only be operated for 23 days, and the third engine will not be operated at all; however, Shell provided no historical operating records to demonstrate that this is a realistic set of operating and equipment usage assumptions for drilling a well in the Arctic, at the depths and conditions Shell is planning.
 - b. Shell assumes that the emergency generator is never run at all. All other North Slope air permits are required to assume at least a minimum amount of emergency power use in remote locations. Shell also assumes that only one of the boilers and hot water heaters will be operated for a 60 day period, but assumes the other boiler and hot water heater will not be run at all.
 - c. Shell assumes the ice breakers' main engines will operate 6-38 days each. There is not a scrap of justification provided for this assumption: No ice data, and no equivalent historical operating records for similarly situated exploration sites.
 - d. Shell assumes that its Oil Spill Response (OSR) fleet main engines will only be run for 36 hours each, which is not realistic. The fleet should be used to practice and train for oil spill response while on standby at the location which will require engine power. The OSR fleet may also be called upon to support oil spill prevention activities, to boom vessels during fuel oil transfers, and to respond to oil spills.
12. Shell has not properly inventoried nor modeled carbon monoxide emissions for combustion sources that will be operated at low loads, where carbon monoxide emissions will be elevated. Rather, Shell provides very low operating hour estimates, assuming it can run many units at low loads, but illogically does not address the fact that at low loads carbon monoxide emissions will be substantially higher than its estimates.
13. Shell's emission estimates for 2007 are inconsistent with the emission estimates for 2008 and 2009. While Shell asserts that its operating hour estimates are realistic for 2007 based on a maximum operating timeframe of 60 days per drill site, it does not provide any rationale whatsoever to support the proposed reduction to 43 days per drill site in 2008 and 2009.

In 2007, Shell proposes to use the Tor Viking II for icebreaking. The Tor Viking II is equipped with some enhanced NO_x emission control equipment, which barely allows Shell to avoid PSD review at 245 tons per year (based on the flawed assumption that a single drill site is an OCS source). In 2008 and 2009, the Tor Viking II is not available, and an alternative ice breaker will be used (either the Nordica or the Fennica) neither of which is equipped with enhanced NO_x emission control equipment. Shell estimates NO_x emissions from the Tor Viking II are 21 tons per drill site, whereas either the Nordica or the Fennica emissions are much higher at 83 tons.

A 62 ton increase in NO_x emissions makes it impossible for Shell to remain below 250 tons at a single drill site in 2008 and 2009 using the same operating assumptions that are used in 2007. To avoid PSD, and attempt to remain below the 250 ton PSD threshold, Shell arbitrarily cuts back on the operating hours for the Kulluk Rig and the Vladimir Ignatjuk. In 2007, Shell assumes the Kulluk operates for 60 days at each drill site, in 2008 and 2009 Shell assumes the Kulluk only operates 43 days to reduce its potential NO_x emissions from 49 tons in 2007 to 36 tons in 2008 and 2009. Similarly, Shell arbitrarily reduces the operating hour assumptions for the Vladimir Ignatjuk from 38 days to 27 days to reduce NO_x emissions from 163 tons to 117 tons. Shell has provided no explanation for these significant changes in operating assumptions for 2008 and 2009. This information is inadequate and does not provide a sufficient basis for the issuance of these proposed permits.

Ambient Air Quality Analysis

Shell's ambient air quality analysis is seriously inadequate. It is not site-specific, does not include the maximum potential to emit for all combustion sources included in the OCS source definition, does not use appropriate background monitoring data for all OCS source locations, does not use an EPA approved meteorologic data set, and is based on a simple single pollution stack screening model, rather than a site-specific, multiple stack emission model.

Shell's application initially relied on an extremely simplistic screening model (SCREEN3), and was recently supplemented with ICS-PRIME analysis. Shell's air pollution modeling approach is not site-specific and does not meet the technical quality required by the EPA or MMS on past OCS exploration projects in the Beaufort Sea using the Kulluk. For example, the EPA and MMS required ARCO to use EPA's approved Industrial Source Complex Short-Term (ISC2) air dispersion model, complemented by MMS' Offshore Coastal and Dispersion (OCD) model for its 1993 air permit application for operation of the Kulluk to drill an exploration well in the OCS of the Beaufort Sea. The EPA and MMS held ARCO to high standards of technical care and analysis in 1993 for exploratory drilling using the Kulluk; it is only reasonable that Shell be held to this standard of technical analysis in 2007.

The EPA required Shell to submit an ambient air quality analysis to demonstrate compliance with all applicable air quality standards. Shell's ambient air quality analysis, which purports to conservatively represent operations of all OCS sources 24 hours per day over a 60 day period, does not meet this standard.

First, the model does not include all OCS combustion sources operating 24 hours per day for 60 days. For example, the air model only included 2 engines and 1 boiler, when there are actually 3 main engines and 2 boilers on the Kulluk.

Second, the model is not based on representative meteorological data collected in the region of operation and approved by the EPA. Section 4.3 of Shell's application states: "it was determined that representative meteorological data meeting U.S. EPA's requirements is not available for the project location."

Third, lacking representative meteorological data, Shell used a less sophisticated air pollution model to estimate emission impacts. Shell selected the EPA's SCREEN3 model that does not include site-specific meteorologic data and is only capable of simplistically estimating one (1) hour air pollution concentrations from a single source at a time. The EPA's SCREEN3 model²

² EPA SCREEN3 Model User's Guide, September 1995, EPA-454/B-95-004.

cannot explicitly determine the maximum impacts from multiple sources. North Slope air pollution sources are typically modeled using ISC, a much more sophisticated, site-specific, multiple source air pollution modeling tool, which can examine maximum impacts over various time intervals at various distances from the source. The EPA does not recommend use of SCREEN3 for computing seasonal or annual emission estimates.

Fourth, no site-specific emissions data was collected to establish ambient background concentrations. Rather than collecting background data, Shell used BP's Arctic North Slope Easter Region monitoring program data from 1999. While Shell asserts this data has been reviewed and approved by ADEC for use on this project, there is no evidence of any ADEC approval for use of this data at all of the exploration sites planned during the 2007-2009 exploration period. Background data east of BP's Badami facility, certainly would not be representative of Shell's proposed exploration sites planned north and west of Prudhoe Bay. Throughout Shell's application for this project, Shell seeks approval for either a 3 or a 5-year exploration period, but only provided data for 2007 and ignored site-specific issues associated with exploration in 2008 and 2009 and later years.

Human Health & Subsistence Impact Assessment

The NSB has been disappointed in both the state and federal agency's lack of response to the comments and concerns submitted by NSB, ICAS, Alaska Inter-Tribal Council, and individual NSB residents on the very important issue of the impact of air pollution on the health of our residents and subsistence resources. MMS and the EPA, in particular, have a responsibility to consult with the tribes and the NSB on air pollution impacts to human health and subsistence resources, and a federal trust responsibility to ensure that development in the region does not harm our health, our resources, or our way of life. Shell's application lacks data to adequately assess human health impacts to our coastal communities and to subsistence hunters and subsistence resources that will be located downwind of Shell's large industrial pollution source.

After more than 30 years of gradually expanding oil and gas development, North Slope residents have grown increasingly concerned about the impacts of oil and gas activities on every aspect of our health and well-being, and about the lack of attention to this issue in regulatory and permitting decisions. For years, for example, residents of Nuiqsut have testified to marked increases in pulmonary disease since the onset of operations at the Alpine Central Processing Facility. Yet to date, regulatory decisions are still based on scant data and models which have not been validated under Arctic conditions, with no monitoring data whatsoever available for some of the most concerning pollutants – namely PM2.5 and the hazardous air pollutants commonly associated with oil and gas operations.

The operations proposed by Shell will produce substantial air pollution, close to population centers such as Kaktovik, and within very commonly used subsistence corridors. It is important to note that the impact of air pollution in the arctic is much more significant than in a more temperate region. The arctic region is subject to extreme atmospheric inversions, which results in the pollution being trapped in a mixing layer only a few feet above the surface. The health impact is thus likely to be much more substantial in the Beaufort Seas even at much lower levels of pollution than urban areas.

We have a right to accurate information, based on monitoring and modeling which has been validated under Arctic conditions, regarding our current (baseline) and expected exposure to pollutants from Shell's operations, and the potential impacts on our subsistence resources as well.

The recent trend in applications seeking PSD avoidance permits by proposing to disaggregate their sources has created this air quality problem, because operators have been allowed to divide up their facilities into smaller and smaller units. As a result, they stay below the threshold for pollution control requirements established in the Clean Air Act and avoid the rigors and requirements of Prevention of Significant Deterioration, National Emission Standards for Hazardous Air Pollutants, and New Source Performance Standards.

Avoiding major source review under the PSD program undermines the goals and intent of the Clean Air Act and may result in public health consequences.

In making this permitting decision, it is important for EPA to recognize that the North Slope Inupiat population has particular vulnerabilities due to both our dependence on subsistence activities and wild foods, and due to the substantial baseline health disparities between our population and the general U.S. population.

Overall mortality rates on the North Slope are roughly 1.5 times the rate in U.S. whites. Chronic pulmonary disease mortality rates in Alaska Natives have climbed 192% since 1979, and North Slope residents have the highest mortality in the State from chronic lung diseases, at nearly 3 times the mortality rate for the U.S. (130/100,000 compared with 45/100,000). Cancer rates have also climbed substantially over the last 30 years, and North Slope residents now suffer the highest incidence of cancer in Alaska (at 579/100,000, compared with 461/100,000). North Slope Alaska Natives have the highest incidence of cancer in Alaska, at 579/100,000, compared with 461/100,000 for the U.S. general population. Cancer mortality rates for Alaska Natives, including North Slope residents, are also significantly higher than the US – 303/100,000 on the North Slope, compared with 163/100,000 – a disparity of great concern to health care providers in the state³. Finally, many health professionals working in our region have noted that the North Slope community appears particularly vulnerable to respiratory infections. This observation has been made in other coastal Alaska Native populations as well⁴.

It is in this context – that of a community with substantial health disparities and baseline vulnerability – that the significance of Shell’s plan must be evaluated. We would ask, then, that you evaluate this permit request with a strong emphasis on the principles and requirements of Environmental Justice. Although seeking to avoid a “major source” designation may be

³ Day G, Provost E, Lanier A. 2006. Alaska Native Mortality Update 1999-2003. Alaska Native Epidemiology Center, ANTHC. Anchorage, Alaska 2006.

Lanier, A, Ehram G, Sandidge, J 2002. Alaska Native Mortality 1979-2002. Alaska Native Epidemiology Center, ANTHC. Anchorage, Alaska 2002

Lanier A, Kelly J, et al. Cancer in Alaska Natives 1969-2003: a 35 year report. Alaska Native Tribal Health Consortium. Anchorage, AK 2003.

Goldsmith et al 2004. *The Status of Alaska Natives Report 2004*. University of Alaska, Anchorage Institute for Social and Economic Research. Anchorage, Alaska. 2004. Accessed online on August 9, 2006 at <http://www.iser.uaa.alaska.edu/Home/ResearchAreas/statusaknatives.htm>.

⁴ Singleton R, Bruden D, Blukow L, Varney G, Butler J. 2006. Decline in respiratory syncytial virus hospitalizations in a region with high hospitalization rates and prolonged season. *Pediatric Infectious Disease Journal*. 25(12):1116-22.

expeditious for Shell from a business perspective, it is a flagrant and grievous violation of the principles of environmental justice. Given the already distressing increases and alarmingly high rates of pulmonary disease and cancer, our population warrants a particularly cautious regulatory approach to prevent further incremental degradation of our health.

Finally, we wish to draw your attention to what may in the end be among the most significant impacts of actions which appear to us to show a deep disregard for our health. The stress, fear and tension caused by multiple, simultaneous, and increasingly frequent proposals for development in the heart of our subsistence region are in and of themselves among the most difficult health problems we face, made worse by regulatory decisions that appear to value industry convenience over the well-being of our communities. These effects and the tension and emotion caused by this proposed permitting decision were made crystal clear in the public meeting and hearing conducted by EPA in Nuiqsut, May 8. Rates of suicide, domestic violence, and other social pathology are epidemic on the North Slope. It is precisely the type of concern represented by this permit application – that of actions that threaten not only to directly harm our health but to contaminate our subsistence resources as well – that leads to feelings of desperation, anxiety, helplessness, and anger among our residents. Sincere efforts by regulators to protect our health would go a long way toward preventing this problem.

Supporting Technical Information

Shell's application does not include all required supporting technical information. As detailed above, for example, there is no information on the Jim Kilabuk, fuel tanks, or other emission sources that vent to atmosphere or on the well testing plans, baseline emission monitoring, site specific meteorology, and fuel source and compositional analysis, among other required items.

Hazardous Air Pollution Estimates

Shell's application estimates hazardous air pollutants at a drill site level, but not at an OCS source level. In addition to this error, Shell's application does not provide hazardous air pollutant emission estimates for sources vented to atmosphere; Shell only provides estimates for combustion sources.

USCG Safety Zone Exclusion

The USCG has not approved Shell's request for a safety exclusion zone.