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**BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

In re:)
)
Shell Offshore, Inc.)
)
Permit No. R10OCS-AK-07-01 (Revised))
)
_____)

PETITION FOR REVIEW

**ALASKA WILDERNESS LEAGUE, CENTER FOR BIOLOGICAL DIVERSITY,
NATURAL RESOURCES DEFENSE COUNCIL, NORTHERN ALASKA
ENVIRONMENTAL CENTER, PACIFIC ENVIRONMENT, RESISTING
ENVIRONMENTAL DESTRUCTION ON INDIAN LAND), A PROJECT OF THE
INDIGENOUS ENVIRONMENTAL NETWORK ("REDOIL")**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	FACTUAL BACKGROUND	2
III.	LEGAL BACKGROUND	6
IV.	PROCEDURAL HISTORY	12
V.	ARGUMENT	18
	<u>A. Standard of Review</u>	18
	<u>B. EPA's conclusion that each drill site is a separate source is erroneous</u>	19
	1. <i>Preservation of Error</i>	20
	2. <i>Subject to Appeal</i>	20
	3. <i>EPA's shifting rationale renders its conclusion unclear, arbitrary and subject to remand</i>	20
	4. <i>EPA's proximity analysis is erroneous</i>	24
	i. <u>Condition 16.1 – 1,000 meter separation</u>	24
	ii. <u>Inherent distance between drill sites</u>	27
	5. <i>EPA's "operational dependence" conclusion is erroneous</i>	31
VI.	CONCLUSION	41
	TABLE OF EXHIBITS	42

I. INTRODUCTION

Pursuant to 40 C.F.R. §§ 55.6(a)(3) and 124.19(a), Alaska Wilderness League, Center for Biological Diversity, Natural Resources Defense Council, Northern Alaska Environmental Center, Pacific Environment, and Resisting Environmental Destruction On Indian Land), a project of the Indigenous Environmental Network (“REDOIL”), hereby petition for review of Permit No. R10OCS-AK-07-01 (revised), issued to Shell Offshore, Inc. (“Shell”) on June 18, 2008 by the Environmental Protection Agency (“EPA”).

This petition is based on violations of fundamental provisions of the Clean Air Act. The Clean Air Act is intended to protect public health and welfare from the adverse effects of air pollution. Within the Clean Air Act is the Prevention of Significant Deterioration (PSD) program, which as its name suggests is intended to prevent existing air quality levels from deteriorating.

One of the aims of the PSD program is to ensure that a single enterprise cannot segment its operations into small enough increments that it then evades the protections afforded to air quality by the PSD program. This aim reflects EPA’s recognition that such a practice would fundamentally frustrate the basic purpose of the Clean Air Act—protecting existing clean air resources and human health.

Shell is planning on drilling exploration wells in the Beaufort Sea of the Arctic Ocean in anticipation of producing oil. Exploration drilling activities, like those proposed by Shell, may contribute considerable air pollution to the Beaufort Sea and adjacent marine and coastal areas. Given the aggressive leasing of the Beaufort Sea and Chukchi Sea in recent years, and the persistently high price of oil, proposals for

exploration drilling in the Arctic Ocean are likely to increase dramatically in coming years.

Through the air quality control permits originally granted to Shell for its exploration project, and through the permit appealed here, EPA, at Shell's request, segregated the potentially huge emission sources from the many potential wells in Shell's proposed exploration plan into multiple emission sources. Shell requested minor air quality control permits, which if granted would allow it to avoid the thorough and comprehensive procedural and substantive air quality protections of the PSD program.

Just as the Environmental Appeals Board ("The Board") rejected EPA's reasoning for segregating emission sources in the original permits, it should do so here. EPA's reasoning is erroneous that the separate drill sites that make up Shell's exploration plan are not part of the same source; the facts demonstrate that the drill sites should be treated as one source, both because of their relative proximity and interdependence.

For these reasons, the Board should accept this appeal, vacate Shell's permit and remand the permit decision to the EPA.

II. FACTUAL BACKGROUND

The Beaufort Sea off of the north coast of Alaska stretches from the Chukchi Sea boundary at Point Barrow east to the Canadian border. Vast expanses of this area are untouched by industrial activity and provide important habitat for thousands of species of animals, birds, and fish, including endangered and threatened species such as the bowhead whale, polar bear, and spectacled and Steller's eider.

Inupiat peoples have inhabited the coastal region of the Beaufort and Chukchi seas for millennia. Coastal villages in this area include Kaktovik; Nuiqsut; Barrow; Point Hope; Point Lay; and Wainwright. Residents of these villages rely for cultural and subsistence purposes on the resources of the nearby marine environment, and research suggests that the health of the Inupiat people may be more vulnerable impact from certain development activities than other populations in the United States. Letter from Edward Itta, Mayor, North Slope Borough, to Dan Mahar, EPA Region 10, April 1, 2008 (Exh. 1).¹

The eastern portion of the Beaufort Sea, including the area in which Shell plans to conduct some undefined portion of its drilling, is offshore of the Arctic National Wildlife Refuge. The Refuge provides habitat for the Porcupine Caribou Herd and polar bears, as well as stunning scenery and significant opportunities for wilderness experience including solitude, recreation, and scientific use.

Between 1979 and 2002, the federal government held a total of seven oil and gas lease sales for the Beaufort Sea OCS. See Final Environmental Impact Statement, Beaufort Sea Planning Area Oil and Gas Lease Sales 186, 195, and 202 (February 2003) ("Multi-Sale FEIS") at V-13, available at http://www.mms.gov/alaska/ref/EIS%20EA/BeaufortMultiSaleFEIS_186_195_202/2003_001vol1.pdf. While these lease sales led to the issuance of 660 leases, by early 2003 only 42 of these leases, covering 70,019 acres remained active. *Id.*; see also Active Lease Summary Table, available at <http://www.mms.gov/alaska/lease/hlease/ACTLEASE.HTM>. Between 1979

¹ This document, along with other record documents cited below, will be provided to the Board by EPA as part of the Administrative Record supporting this petition. With the exception of petitioners' comments to EPA on the revised permit, and documents concerning EPA's past PSD source determination practice and guidance, petitioners will not attach such record documents to this petition.

and 2002, roughly 30 exploration wells were drilled in the Beaufort Sea, with 9 wells determined to be producible. *See* Multi-Sale FEIS at V-13. All of those wells were abandoned for economic reasons. *Id.*

The situation on the Alaskan OCS, however, is changing. MMS has significantly accelerated oil and gas leasing in the Beaufort Sea over the past four years. Between September 2003 and April 2007, MMS held three lease sales on the Beaufort, and it plans to hold two more in the coming three years. *See* Alaska Lease Sales Schedules *available at* <http://www.mms.gov/ld/AKsales.htm>; Beaufort Sea - Multiple Sales 186, 195 and 202, *available at* <http://www.mms.gov/alaska/cproject/beaufortsale/index.htm>. More than 95% of the acreage currently under lease was sold during these lease sales. *See* Active Lease Summary Table, *available at* <http://www.mms.gov/alaska/lease/hlease/ACTLEASE.HTM> (showing that leases totaling 1,275,545 acres have been issued pursuant to Lease Sales 186, 195 and 202). MMS also held a lease sale on the Chukchi Sea OCS in February, 2008, resulting in oil companies bidding a total of over \$2.6 billion on 488 lease tracts, covering a total of over 2.7 million acres. *See* Chukchi Lease Sale 193 Sale Day Statistics *available at* <http://mms.gov/alaska/cproject/Chukchi193/193Saleday/Sale%20193%20Sale%20Day%20Stats.pdf>. MMS plans to hold two more lease sales on the Chukchi Sea OCS over the next four years. *See* Alaska Lease Sales Schedules *available at* <http://www.mms.gov/ld/AKsales.htm>.

Further, the price of crude oil has increased in the recent past and is projected to remain high. *See* Energy Information Administration, Weekly History of the Spot Price of Crude Oil *available at* <http://tonto.eia.doe.gov/dnav/pet/hist/wtotworldw.htm> (showing

that oil prices have remained above \$30/barrel since May 2004, above \$50/barrel since January 2006, above \$80/barrel since October 2007, and recently exceeded \$135/barrel). Given the aggressive leasing of the Beaufort Sea and Chukchi Sea in recent years and the persistently high price of oil, proposals for exploration drilling in the Arctic Ocean are likely to increase dramatically in coming years.

Exploration drilling activities, like those proposed by Shell, may contribute considerably to air pollution above the Beaufort Sea and adjacent coastal areas. Congress has noted that “[t]he construction and operation of OCS facilities emit a significant amount of air pollution which adversely impacts coastal air quality in the United States.” S. Rep. No. 101-228 (1989), *as reprinted in* 1990 U.S.C.C.A.N. 3385, 3462. “[D]rilling a single exploratory OCS well can cause emissions in excess of one hundred tons of NO_x. A major uncontrolled offshore oil project can emit pollution in a year which exceeds pollutants emitted by one hundred thousand automobiles (meeting 1988 California emission standards), each traveling 10,000 miles.” *Id.* Further, Shell estimates that each drill ship and its supporting vessels will burn more than 1.4 million gallons of diesel fuel per year. *See* Outer Continental Shelf Pre-Construction Air Permit Application, Shell Kulluk 2007 – 2009 Beaufort Sea Exploratory Drilling Program (Dec. 29, 2006) (“Kulluk Application”) at 7, Tables 3 & 4; Outer Continental Shelf Pre-Construction Air Permit Application, Frontier Discoverer, 2007 – 2009 Beaufort Sea Exploratory Drilling Program (Dec. 29, 2006) at 7, Table 2. Such operations emit criteria pollutants including nitrogen oxides, sulfur dioxide, carbon monoxide, coarse particulate matter, and volatile organic compounds, as well as the greenhouse gas carbon dioxide. *See* Kulluk Application at 7, Tables 1 & 2.

III. LEGAL BACKGROUND

In response to concerns about air pollution from sources on the OCS, Congress amended the Clean Air Act in 1990 to include a new provision, Section 328, which mandates “requirements to control air pollution from [OCS] sources.” 42 U.S.C. § 7627(a)(1). This provision defines an OCS source to include equipment and activities that emit any air pollutant, are regulated under the Outer Continental Shelf Lands Act, and are located on waters above the OCS, specifically including drill ship exploration. 42 U.S.C. § 7627(a)(4)(C). Section 328 requires EPA to promulgate regulations to ensure that OCS sources comply with the PSD provisions of the statute. *Id.* § 7627(a)(1) (requiring compliance with “part C of subchapter I” of the Act).

As its name suggests, the PSD program is intended to prevent existing air quality levels from deteriorating. Its provisions, therefore, seek to protect public health and welfare from the adverse effects of air pollution and “to insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources.” 42 U.S.C. §§ 7470(1), (3). Motivated by a concern that air pollutants could have serious harmful effects to health even at concentrations below primary ambient air quality standards, *see* H.R. Rep. 95-294, at 105-127 (1978) *reprinted in* 1978 U.S.C.C.A.N. 1077, 1183-1205, Congress adopted the PSD provisions, which embody “a policy of maximum practicable protection of health,” *id.* at 127 *reprinted in* 1978 U.S.C.C.A.N. at 1206. When adopting the PSD provisions, Congress made clear that practices that “squander[] finite air resources, thereby limiting the potential for long-term economic growth” are contrary to the national interest as reflected in the PSD program. *Id.* at 152 *in* 1978 U.S.C.C.A.N. at 1231. Thus, the PSD provisions also “assure that any decision

to permit increased air pollution . . . is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process.” 42 U.S.C. § 7470(5).

A central provision of the PSD program is the requirement that, prior to constructing any “major emitting facility,” an applicant must obtain a permit from EPA. *Id.* § 7475(a)(1). To obtain a PSD permit, the owner or operator of a proposed major emitting facility must demonstrate that emissions from construction or operation of the facility will not cause or contribute to a violation of any National Ambient Air Quality Standard (“NAAQS”) or other applicable emission standard and must conduct monitoring as necessary to determine the effect of emissions on air quality. *Id.* §§ 7475(a)(3), (a)(7). The proposed facility also will be “subject to the best available control technology for each pollutant subject to regulation . . . emitted from, or which results from, such facility.” *Id.* § 7475(a)(4). EPA has defined “best available control technology” to mean “an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation” 40 C.F.R. § 52.21(b)(12). Thus, effective implementation of the PSD provisions to protect air quality, health and ensure continued opportunities for long-term economic growth hinges on EPA’s properly identifying those sources that constitute “major emitting facilities.”

As relevant here, a “major emitting facility” includes “any . . . source with the potential to emit two hundred and fifty tons per year or more of any air pollutant.” 42 U.S.C. § 7479(1). Pursuant to Section 328 of the Clean Air Act, these provisions are applicable to OCS sources. *Id.* § 7627(a)(1). Thus, an OCS source, such as a drill ship, is a major emitting facility subject to the PSD requirements if it emits more than 250 tons

of an air pollutant in one year. To determine whether an OCS source exceeds the 250-ton limit, EPA calculates its "potential to emit," which is defined as "the maximum emissions of a pollutant from an OCS source operating at its design capacity." 40 C.F.R. § 55.2. Pursuant to Clean Air Act Section 328, "emissions from any vessel servicing or associated with an OCS source, including emissions while at the OCS source or en route to or from the OCS source within 25 miles of the OCS source, shall be considered direct emissions from the OCS source." 42 U.S.C. § 7627(a)(4)(C). EPA has interpreted this requirement to mean that those emissions are included in the calculation of an OCS source's potential to emit. *See* 40 C.F.R. § 55.2.

Under the Alaska PSD program, a stationary source that has the potential to emit more than 250 tons per year may avoid regulation as a major source by requesting the imposition of "Owner Requested Limits" ("ORLs") on the emissions. 18 AAC § 50.225; 50.508(5). The owner or operator must submit to the EPA a "statement that the owner or operator of the stationary source will be able to comply with the limit." *Id.* at § 50.225(b)(7). EPA must then make its own independent determination that "the stationary source is capable of complying with the limit" prior to issuing the minor permit. *Id.* at § 50.542(f)(8)(A). These requirements ensure that major sources do not evade the requirements of the PSD program by requiring a determination, on the record, that the source can comply with the ORL.

Multiple polluting activities that are of a like type and controlled by the same corporation, such as Shell's exploratory drilling activities, constitute parts of a single "major emitting facility" if they are "located on one or more contiguous or adjacent properties." *See* 40 C.F.R. § 51.166(b), (b)(6) (defining "building, structure, facility, or

installation”).² In 1980, EPA promulgated the regulatory definition of “building, structure, facility or installation.” 45 Fed. Reg. 52676 (Aug. 7, 1980). EPA stated in the preamble that the holding of the D.C. Circuit in *Alabama Power Co. v. Costle*, 636 F.2d 323 (D.C. Cir. 1979), required the definition of the term “source” for PSD purposes to approximate a “common sense notion of ‘plant.’” 45 Fed. Reg. at 52,694-95. As the Board stated in remanding the original Shell permits, it must “carefully scrutinize any proffered application of the term ‘property’ ... that would not approximate a common sense notion of ‘plant.’” *In Re Shell Offshore Inc.*, 13 E.A.D. Nos. 07-01, 07-02, Slip Op. at 38.

According to EPA, such aggregation of multiple sources involved in a joint enterprise “precludes a large plant from being separated into individual production lines for purposes of determining applicability of the PSD requirements.” 43 Fed. Reg. 26,380, 26403 (June 19, 1978). In this way, the aggregation principle embodied in EPA regulations prevents regulated entities from segmenting an integrated enterprise to elude the more stringent protections of air quality that Congress sought to ensure by enacting the PSD provisions.

While the decision whether to aggregate emissions into one source for PSD purposes is made on a case-by-case basis, EPA’s past practice is relevant to deciding when emissions are “located on one or more contiguous or adjacent properties” and therefore warrant treatment as a single source. 40 C.F.R. § 51.166(b)(6). EPA Region 10

² EPA regulations subject OCS sources within 25 miles of a state’s seaward boundary to federal requirements as well as the state requirements of the corresponding onshore area. *See* 40 C.F.R. 55.3(b). These requirements include the State of Alaska PSD program. *See id.* § 55.14(e)(2). The Alaska regulations thus apply here. As applied to Shell’s exploration drilling project, the Alaska regulations are substantially similar to the federal PSD regulations. *See* 18 AAC §§ 50.306, 50.040(h).

has previously recognized that the common meaning of "adjacent" is "near or close," Letter from Joan Cabreza, EPA Region 10, to Andy Ginsberg, Oregon Dep't of Env'tl. Quality (August 7, 1997) at 1 (Exh. 4 at 1). Consistent with this basic connotation of "adjacent," EPA has also recognized that proximity alone can render multiple sources contiguous or adjacent, regardless of the inter-relatedness of operations at those sources. See Letter from R. Douglas Neely, EPA Region 4, to C.H. Fancy, Florida Department of Environmental Protection (January 28, 2000) (Exh. 7) (noting that separate facilities can be considered a single source under the PSD program "strictly on the basis of proximity without regard to whether the facilities are dependent on each other or physically connected in some way"); see also Letter from Douglas M. Skie, EPA Region 6, to Cathy Rhodes, Air Pollution Control Division (Aug. 22, 1991) (Exh. 3) (same).

Moreover, EPA's past practice counsels that when two sources have a symbiotic relationship as part of a larger coordinated enterprise, such a relationship can expand the distance at which EPA would otherwise deem them contiguous or adjacent, sometimes by considerable distances. See Letter from Richard Long, EPA Region 8, to Dennis Myers, Colorado Dept. of Public Health and Environment (April 20, 1999) (Exh. 6) (mine and processing facility separated by 35-40 miles "need to be considered as a single stationary source" given the "integral connectedness" between the two facilities in producing an end product); Letter from Judith Katz, EPA Region 3, to James Salvaggio, Pennsylvania Dept. of Environmental Protection (Exh. 9) (finding that mining operations and salt plant separated by three miles should be considered a single facility for purposes of PSD applicability); Letter from Steven C. Riva, EPA Region 2, to John T. Higgins, New York State Dept. of Environmental Conservation (October 11, 2000) at 3-4 (Exh. 8 at 3-4)

(noting that EPA has made single source determinations in situations involving facilities separated by upwards of 6 miles where there is a “clear physical connection” between the two sources); *see also* Letter from Richard R. Long, EPA Region 8, to Lynne Menlove, Utah Division of Air Quality (May 21, 1998) at 3 (Exh. 5 at 3) (discussing the finding of EPA Region 5 that two facilities separated by 3.7 miles, an interstate highway, a lake and a river, constitute a single source because they are jointly engaged in the enterprise of producing steel).

Finally, when evaluating the inter-relationship between multiple facilities or operations of a larger coordinated enterprise, EPA’s practice focuses on whether the activities at the various facilities contribute a necessary element of the end product created by the overall enterprise. *See* Letter from Joan Cabreza, EPA Region 10, to Andy Ginsberg, Oregon Dep’t of Env’tl. Quality (August 7, 1997) (Exh. 4) (even though the activities carried out at the Main Plant and Plant 3 may function independently of one another, the two plants should be considered a single source because Plant 3 produces only intermediate products, so activities at both plants are needed to complete the company’s finished products); Letter from Richard R. Long, EPA Region 8, to Lynne Menlove, Utah Division of Air Quality (May 21, 1998) at 3 (Exh. 5 at 3) (focusing on the coordinated enterprise that produces steel at two locations separated by more than 3 miles); Letter from Richard Long, EPA Region 8, to Dennis Myers, Colorado Dept. of Public Health and Environment (April 20, 1999) (Exh. 6) (focusing on fact that intermediate product produced by a mine facility must undergo processing at another facility to create a marketable end product); Letter from Judith Katz, EPA Region 3, to James Salvaggio, Pennsylvania Dept. of Environmental Protection at 3 (Exh. 9 at 3) (salt

producer “would not have a viable operation at this location but for the existence of [a nearby facility to provide it with brine from which to produce salt]”); Memo from Douglas E. Hardesty, EPA Region 10, to Robert R. Robichaud, NPDES Permits Unit (Aug 21, 2001) at 6 (Exh. 10 at 6) (focusing on “marketable oil and gas” as the end product produced by activities of a joint enterprise at multiple locations).

Each of these principles aims to ensure that a single enterprise cannot segment its operations to evade the PSD program. These principles reflect EPA’s recognition that such a practice would fundamentally frustrate the basic purpose of the PSD provisions—protecting existing clean air resources and human health.

IV. PROCEDURAL HISTORY

Shell has plans to drill an undetermined number of wells in various locations in the Beaufort Sea, both offshore of the Arctic Refuge and further to the west in the Central Alaska Beaufort Sea. *See e.g.* Environmental Assessment and Finding of No Significant Impact (February 15, 2007) for Shell Offshore, Inc.’s Beaufort Sea Exploration Plan (OCS EIS/EA, MMS 2007-009, February 2007) at 2, *available at* http://www.mms.gov/alaska/ref/EIS%20EA/ShellOffshoreInc_EA/SOI_ea.pdf. In its initial year, Shell planned to drill four wells at the Sivulliq prospect in Camden Bay, offshore of the Arctic National Wildlife Refuge and is an important location for subsistence hunting activities of the Inupiat people of the North Slope. *Id.*

To conduct these exploration activities, Shell first planned to use two drilling vessels, the *Kulluk* and *Frontier Discoverer*, two large icebreakers, and “several ice-strengthened supply boats,” including at least three vessels for “ice management, anchor

handling, and supplies.” *Id.* at 2-3. All of these vessels would travel by sea to the Beaufort drilling locations.

On June 12, 2007, EPA issued two minor source air pollution permits to authorize Shell’s two drill ships to mobilize, operate and demobilize for exploratory drilling operations in the Beaufort Sea. *See Alaska Outer Continental Shelf Air Quality Control Minor Permit, Approval to Construct, Kulluk Drilling Unit (No. R10OCS-AK-07-01) (June 12, 2007); Alaska Outer Continental Shelf Air Quality Control Minor Permit, Approval to Construct, Frontier Discoverer Drilling Unit (No. R10OCS-AK-07-02) (June 12, 2007).* In issuing those permits, EPA determined that under Section 328 of the Clean Air Act, the “OCS Source” consists of a drill ship when it is attached to the seabed at a particular drill site, and that each time the drill ship detaches and moves to a new drill site, it becomes a new “OCS source.” *See 42 U.S.C. § 7627(a)(4)(C) (defining OCS Source).* EPA further determined that it would consider two OCS sources to be contiguous or adjacent when the drill sites are separated by 500 meters or less. *See 40 C.F.R. §§ 51.166(b)(5), (6) (instructing that a stationary source includes all pollution emitting activities that are under common control, share the same industrial code, and are “located on one or more contiguous or adjacent properties”); 18 AAC 50.040(h)(4)(B)(iii) (same); Statement of Basis For Air Quality Control Minor Permit No. R10OCS-AK-07-01 Approval to Construct, Shell Offshore Inc., The Kulluk Drilling Unit (March 30, 2007) (“Kulluk Statement of Basis”) at 10.* At Shell’s request, EPA issued minor source permits that imposed permit conditions that purported to limit NO_x emissions from the OCS source at each drill site to 245 tons per year.

Conservation and Native groups appealed those permits to the Environmental Appeals Board (“The Board”), arguing among other things that EPA arbitrarily determined that 500 meters separation was adequate to ensure that two OCS sources are not “located on one or more contiguous or adjacent properties,” 40 C.F.R. § 51.166(b)(6), and therefore do not constitute a single stationary source. The Board remanded the permits to EPA, finding that EPA “provided no record foundation for this determination other than a brief statement in the Response to Comments that is unsupported by facts or analysis in the record.” *In re Shell*, Slip Op. at 42. The Board explained that:

[W]e do not have the benefit of the Region’s reasoning for its apparent conclusion that a single drill ship and its support vessels located at one drill site does not share a physical connection with itself, or support itself, at a subsequent drill site, which could be in proximity to the original site. A single drill ship moving from site-to-site apparently does rely upon the same crew and may otherwise share common connections similar to those analyzed in previous PSD determinations.

In re Shell, Slip Op. at 45.

Finally, the Board stated that any party with standing may appeal the Region’s determination to the Board and that any appeal “shall be limited to the issue being remanded and issues arising as a result of any modification the Region makes to its permitting decisions on remand.” *In re Shell*, Slip Op. at 69.

Following the remand, Shell requested that EPA issue a permit for only one drill ship—the *Kulluk*—for operations during 2008 and beyond. On February 20, 2008, EPA issued a proposed revised minor source air permit for the *Kulluk*, along with a supplemental statement of basis, and provided an opportunity for public comment. Alaska Outer Continental Shelf Air Quality Control Minor Permit, Approval to Construct, Kulluk Drilling Unit, R10OCS-AK-07-01 (Revised) (Feb. 20, 2008) (“Proposed Permit”); Supplemental Statement of Basis For Air Quality Control Minor

Permit No. R10OCS-AK-07-01 (Revised), Approval to Construct, Kulluk Drilling Unit (Feb. 20, 2008) (“Supplemental Statement of Basis”).

The proposed permit embodied EPA’s earlier fundamental determination that the *Kulluk* constitutes a separate OCS source at each well site, and that no two well sites are contiguous or adjacent, although it recognized narrowly limited exceptions to this categorical rule.³ If there is a blowout of a well and Shell must drill an emergency “relief well” to regain control of that well and stem the flow of oil, such a “relief well” will be deemed adjacent to its associated planned well. *Id.* Nevertheless, EPA did not require Shell to demonstrate that it could complete such a relief well before the single source time limits in the permit expire, or require Shell to present data on emissions from that well. *See* Shell *Kulluk* Drilling Unit OCS Minor Permit No. R10OCS-AK-07-01 (Revised), Response to Public Comments (June 18, 2008) (“Response to Comments”) at 45.

The proposed permit also included a new condition prohibiting Shell from locating well sites within 1,000 meters of one another in a calendar year. *See* Supplemental Statement of Basis at 15; Proposed Permit at 22 (Condition 16.1). EPA explained that if operations occurred closer to one another, there could be a violation of air quality standards. Supplemental Statement of Basis at 15 note 13. The agency stated that this potential violation of air quality standards “is not a basis for setting a geographic limitation for the proximity determination.” *Id.*

³ If Shell is unable to complete a planned well in a given location, which can happen for a variety of reasons, Shell would then drill a “replacement” well, although it is under no time pressure to do so. In that circumstance EPA deems the replacement well adjacent to the original planned well that it replaces. Supplemental Statement of Basis at 10-11.

The petitioners submitted comments that raised the issues presented in this petition. *See* Exhibits 1 and 2.

On June 18, 2008, EPA issued a minor source permit for the *Kulluk* and released the agency's response to public comments. Alaska Outer Continental Shelf Air Quality Control Permit, Approval to Construct, Kulluk Drilling Unit, R10OCS-AK-07-01 (Revised) (June 18, 2008); Response to Comments. The permit contains the same basic source determination as was included in the proposed revised permit, albeit using different rationale than applied in the first permitting process, and changing its rationale as it proceeded through the revised permit process.

For example, in its Supplemental Statement of Basis issued with the draft permit, to support its conclusion EPA focused primarily on the interdependence of drill sites and whether the locations of the planned wells and the information collected from those wells are interrelated. Supplemental Statement of Basis at 13-14 ("EPA has historically stressed the significance of interdependence ... in which seemingly nearby activities operating simultaneously were deemed to be separate sources"). Faced with a refutation of its analysis in the comments, EPA shifted course in its final decision. In its response to comments, issued with its final action, EPA indicated that it evaluated proximity "as the most informative factor" in determining that planned well sites would not be contiguous or adjacent. Response to Comments at 59. EPA concluded that two planned wells would not be proximate because they must be separated by 1,000 meters or more and because of Shell's purported need to separate such wells by some unspecified distance so that they are "far enough apart to have distinct information gathering value." Response to Comments at 60-61.

Though EPA used interdependence as a back-up rationale in its final decision, it was unable to avoid the flaws in its first analysis and responded by shifting the question to whether planned wells are “operationally dependent,” and therefore are not adjacent or contiguous. *Id.* at 62. In reaching the conclusion that the wells were not interdependent, EPA focused narrowly on the operations at each site, rather than Shell’s overall exploratory enterprise. EPA recognized that Shell will use information obtained at one well site to select among other prospective well sites for its subsequent wells and to refine its drilling plan for those later wells. *Id.* However, EPA concludes that no two planned wells are “operationally dependent” because Shell *could* drill the latter well even if it does not first “receive[] information shared from another site.” *Id.* EPA had earlier noted that exploratory drilling involves different types of wells such as true wildcat exploratory wells (i.e., the first well drilled in a prospect) and delineation or step-out wells intended to test the boundaries of a known reservoir. *See Revised Supplemental Statement of Basis* at 6 (quoting *A Nontechnical Guide to Petroleum Geology* at 241). In reaching its conclusion that planned wells can never be operationally dependent, EPA did not distinguish between these different types of exploratory wells.

The permit does not limit the number of distinct OCS Sources that Shell may construct with the *Kulluk* in a given year. The permit only expires if Shell goes a period of 18 consecutive months without engaging in drilling operations with the *Kulluk*, and EPA does not grant Shell an extension. *Permit* at 24 (Condition 25).

A few days after EPA issued the revised permit allowing Shell to operate the *Kulluk*, Shell publicly announced that it had decided to forego its planned drilling operations during the summer of 2008, which in any event remain under injunction by the

United States Court of Appeals of the Ninth Circuit in a lawsuit challenging the adequacy of federal Minerals Management Service permitting of Shell's exploration plan. *See Alaska Wilderness League v. Kempthorne*, No. 07-71457 (9th Cir., filed April 16, 2007) (stay pending appeal granted July 15, 2007 and extended August 15, 2007).

V. ARGUMENT

EPA stretched the Clean Air Act PSD program beyond its limits in its attempt to assist Shell in avoiding PSD review for its Beaufort Sea exploration project. The revised permit should be vacated because EPA offers no consistent or permissible rationale for its decision that the drill sites that make up Shell's exploration program are not one "major emitting facility" because they do not occur on "contiguous or adjacent properties" due to a lack of proximity or interdependence.⁴

A. Standard of Review

The Board reviews a permitting authority's final permit decision if the decision is based on "either a clearly erroneous finding of fact or conclusion of law, or involves an important matter of public policy or exercise of discretion that warrants review." *In re Shell*, Slip Op. at 17 (citing 40 C.F.R. § 124.19(a)). As part of its review, the Board is to determine "whether the permit issuer 'duly considered the issues raised in the comments and whether the approach ultimately adopted by the [permit issuer] is rational in light of all information in the record.'" *In re Shell*, Slip Op. at 41 (quoting *In Re Gov't of D.C.*

⁴ Petitioners preserve, but do not re-argue here, the issues raised in the original appeal to the Board. *See In re Shell Offshore, Inc.*, Petition for Review, Permit Nos. R10OCS-AK-07-0, R10OCS-AK-07-02, filed by Resisting Environmental Destruction On Indigenous Lands, a Project of the Indigenous Environmental Network ("REDOIL"), Northern Alaska Environmental Center, Alaska Wilderness League, Center for Biological Diversity, and Natural Resources Defense Council (July 16, 2007) (e.g., argument concerning EPA permitting individual wells rather than the drill ships).

Mun. Separate Storm Sewer Sys., 10 E.A.D. 323, 342 (EAB 2002)). The rationale for the decision must be “adequately explained and supported in the record.” *In re Shell*, Slip Op. at 41 (citing *In re City of Moscow, Idaho*, 10 E.A.D. 135, 142 (EAB 2001); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998)). Furthermore, “two differing explanations” render the rationale for the permit determination unclear and subject to remand. *In re Austin Powder Co.*, 6 E.A.D. 713, 719-20 (EAB 1997) (citing *In re GSX Servs. of S.C., Inc.*, 4 E.A.D. 451, 454 (EAB 1992) (holding that the administrative record must reflect the “considered judgment” necessary to the support the permit determination)).

B. EPA’s conclusion that each drill site is a separate source is erroneous

In some situations EPA considers multiple sources as part of the same “major emitting facility. See 40 C.F.R. § 51.166(b) (defining “building, structure, facility, or installation” as “all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control)”). As noted above, in this instance, EPA found that Shell’s exploration drilling program meets two of the three requirements: the activities belong to the same industrial grouping and the entire project is under the control of the same person. Supplemental Statement of Basis at 5.

EPA concludes, however, that Shell’s exploration drilling activities are not located on contiguous or adjacent properties, and thus it declines to aggregate the sources. Response to Comments at 59-63. It relies on two factors to support this conclusion: proximity and interdependence. Supplemental Statement of Basis at 13-14; Response to Comments at 60-63.

There are three problems with EPA's conclusion that each drill site is a separate emissions source. First, EPA's rationale impermissibly changed over the course of the permitting process, undercutting its rationality and impermissibly barring the public from providing input on its final reasoning. Second, the EPA does not provide a rational and permissible justification for its conclusion that the wells are not proximate in location. Third, EPA's conclusion that each drill site is a separate source is based on an erroneous determination that each drilling effort is disconnected from other drilling efforts.

These issues are discussed, in turn, below, preceded by a discussion of *threshold* requirements to the Board's consideration of these issues on appeal..

1. Preservation of Error

Petitioners preserved this issue for appeal through their comments of April 1, 2008. *See e.g.*, Letter from Northern Alaska Environmental Center, et al. to Dan Mahar, EPA Region 10, at 2 (Exh. 2 at 2) ("By treating the ship as a different source at each location, EPA is improperly segmenting operations by the same source to allow it to avoid major source review.").

2. Subject to Appeal

This issue is properly subject to appeal because the issue of whether the separate drill sites that are part of Shell's one exploration project can be considered separate facilities is within the scope of the issues remanded to EPA. *In re Shell*, Slip Op. at 40-48, 69.

3. EPA's shifting rationale renders its conclusion unclear, arbitrary and subject to remand

In its Supplemental Statement of Basis issued with the draft permit for public comment, EPA noted that it "historically stressed the significance of interdependence" in

making its decision on whether different emission sources are part of the same facility. Supplemental Statement of Basis at 13-14; *see also id.* at 15 (EPA favorably citing EPA document stating that “[i]n most of the [cases] we reviewed, the *key factor* in deciding that separate facilities should be considered as one source was that the facilities were interdependent or linked in some sense”) (emphasis added). It then focused in analyzing interdependence on whether the locations of the planned wells and the information collected from those wells are interrelated. *Id.* at 13-16.

In particular, EPA focused initially on the information collected from the well as the “product.” Supplemental Statement of Basis at 14. EPA concluded that “each location at which drilling will occur during a single season . . . is picked for its independent value as a potential source of information on what is thought to be an independent accumulation of oil.” *Id.* at 13. EPA also stated that “because each well site provides a unique ‘product,’ each has independent utility. Here, the record shows that each drill site is a separate project that produces a unique product – information about the specific and unique potential for oil in a given location – and does so independently at each location regardless of the outcome at a prior location.” *Id.* at 14. “Thus, these well sites will not share any interdependence in the manufacture of a given ‘product.’” *Id.*

As will be discussed, information provided to EPA during the public comment period proved each of these conclusions to be incorrect and unsupported by the record. *See supra* at 34-26. After the public comment period, EPA shifted its focus and identified proximity as the “*key factor*” in its analysis. Response to Comments at 60 (emphasis added). EPA did not explain why it changed its focus to emphasize proximity

instead of interrelatedness, which was the primary criteria as set forth in the Supplemental Statement of Basis.

Although EPA did include an interdependency analysis in its Response to Comments accompanying its final decision, its analytical criteria underwent significant change in the process. EPA abandoned its approach of considering the information produced by exploration to be the “product” for purposes of determining interdependence. Instead, EPA announced for the first time that it defined interdependence as “when each activity relies on the other for its operation – i.e., the activities at one facility are required to support the operation at the other.” Response to Comments at 61. EPA for the first time set forth three criteria used to make this determination:

First, there is no tangible product produced by one well and then used by another. Second, the planned drill sites are sequential Third, there is no physical connection between the two exploratory well sites (such as a railroad or a pipeline).”

Id. at 62.

EPA never provided the public an opportunity to provide input to the agency regarding these proposed criteria, because EPA did not set forth this analysis in the Supplemental Statement of Basis. *See, e.g.*, 40 C.F.R. § 124.7 (requiring EPA to set forth “the derivation of the conditions of the draft permit and the reasons for them” in the Statement of Basis). EPA’s shift in rationale is especially confusing with respect to the first factor noted above, as it reflected an unexplained shift between information from wells as the product on which the analysis is to focus to one where interdependence would not exist without a “*tangible product*” exchanged between locations. *Compare* Supplemental Statement of Basis at 13-14 *with* Response to Comments at 62 (emphasis

added). Importantly, public comments established that the wells are interrelated for purposes of gathering information. *See supra* at __. EPA, once presented with that unrebutted evidence, changed its criteria instead of changing the outcome of its analysis. EPA's action is therefore arbitrary.

Furthermore, EPA cannot rely upon the fact that planned drill sites are sequential as a rationale for its aggregation decision, because at other places in the record EPA has already discounted this factor in making its aggregation determination. Supplemental Statement of Basis at 10. EPA determined that a relief well is adjacent to its associated planned well. In reaching this conclusion, EPA discounted the fact that the two wells would be drilled sequentially in determining adjacency because "they must necessarily occur sequentially and not simultaneously, given that the *Kulluk* can't be at two places at the same time." *Id.* The same rationale holds true for two planned wells. EPA has arbitrarily relied on this factor only with respect to planned wells and discounted this criteria with respect to relief wells.

Finally, EPA may not rely solely upon the lack of a physical connection in determining that well sites are not adjacent. EPA has previously determined that separate facilities can be considered a single source "without regard to whether the facilities are dependent on each other or physically connected in some way." Neeley Letter (January 28, 2000) (Exh. 7). The lack of a physical connection, alone, is not an adequate reason to find that a single drill ship is not the same source when it operates at multiple sites, planned in a coordinated fashion, using the same crew and the same support vessels. Furthermore, EPA has failed to demonstrate how it determined that the *Kulluk* does not share a physical connection with itself at different drill sites.

This shifting and contradictory rationale renders EPA's decision unclear, and thus subject to remand. *In re Austin Powder Co.*, 6 E.A.D. 713, 719-20 (EAB 1997) (citing *In re GSX Servs. Of S.C., Inc.*, 4 E.A.D. 451, 454 (EAB 1992)).

4. EPA's proximity analysis is erroneous

According to its final decision, the "key factor" in EPA's conclusion that the Shell drill sites are not contiguous or adjacent is the proximity of each site to the others. Response to Comments at 60. EPA supported its conclusion that there was a lack of proximity between drill sites on two factors: "the required separation of at least 1000 meters of open water between drill sites associated with different exploratory operations and the need to locate[] sites far enough apart to have distinct information gathering value" Response to Comments at 60-61. EPA's analysis of these factors is erroneous, and thus its conclusion is also erroneous.

i. Condition 16.1 – 1,000 meter separation

EPA modified the original permit to include Condition 16.1, which requires a 1,000 meter separation between drill sites in a 52-week rolling period.⁵ EPA states that locating drill sites closer than this is prohibited "due to air quality concerns." Response to Comments at 59; *see also* Supplemental Statement of Basis at 15, note 13 ("If the operations were to occur in closer proximity there could be a NAAQS exceedence."). EPA indicates that this separation serves as a "starting point" for EPA to determine if drilling sites beyond 1,000 meters should be aggregated into one source. Response to Comments at 59. It goes on to state that the facts of Shell's drilling operations,

⁵ In the draft permit, EPA allowed Drill Sites to be located within 1,000 meters of each other if the "previously occupied drill site was last occupied in a different calendar year." In the final permit, EPA amended this condition, and the condition now requires that a Shell "shall not have the Kulluk occupy a Drill Site within 1,000 meters of another Drill Site occupied less than 52 weeks prior" Condition 16.1; *see also* Response to Comments at 63-64.

“including ... the separation of at least 1,000 meters” support its finding that individual well sites are not “proximate” and thus should not be aggregated. *Id.* at 60-61; *see also id.* at 61 (“EPA’s decision was ... informed by the 1000 meter distance requirement placed in the permit for air quality concerns”); *id.* at 60-61 (same). At the same time, however, EPA also states that the “NAAQS issue is not a basis for setting a geographic limitation for the proximity determination.” Supplemental Statement of Basis at 15, note 13.

Remarkably, this is essentially the same argument that EPA made and the Board rejected in the first appeal with respect to the 500 meter separation condition. *See In re Shell*, Slip Op. at 46-48. In EPA’s original permits for Shell’s exploration drilling, EPA had included a 500 meter separation between drill sites, using an apparent air quality justification for doing so. *In re Shell*, Slip Op. at 46 (citing original permit Response to Comments at 60). Yet EPA changed its justification before the Board, arguing *post-hoc* that it was “an additional precautionary measure.” *Id.* EPA distanced itself from its original air quality justification for the 500 meter separation in the original appeal because, as EPA stated:

We have traditionally not considered emission impacts in doing the [proximity] analysis. It would be a departure from past agency practice on this issue to do so and would not necessarily comport with the intent of the regulatory definition of connoting what the common sense notion of a plant is.

In re Shell, Slip Op. at 47 (quoting oral argument transcript at 77-78).⁶

⁶ Considering the relative air quality impacts of two wells in close proximity is akin to looking at the cumulative impacts of these wells to air quality. EPA also stated to the Board in the original appeal that “relying on a cumulative impacts analysis has not traditionally been one of the factors considered in making the contiguity or adjacency determination. *In re Shell*, Slip Op. at 47 (citing oral argument transcript at 74-75).

The Board in that appeal found no rational or permissible explanation in the record for the 500 meter separation as a basis for EPA's source determination. *In re Shell*, Slip Op. at 46-48. It thus remanded the permit to EPA "to provide an explanation of its rationale, supported by record evidence, for establishing the 500-meter perimeter as defining the 'stationary source.'" *In re Shell*, Slip Op. at 48.

As it ultimately did during the first appeal, EPA is correct now to distance itself from an air quality justification for its consideration of the 1,000 meter separation in its proximity analysis. EPA states more clearly now, as noted above, that a 1,000 meter separation based on air quality provides no basis for the proximity analysis. EPA's only further justification, however, is that the 1,000 meter separation condition "acts as a practical constraint" to the siting of the wells. Supplemental Statement of Basis at 15, note 13. This vague statement offers no explanation why, separate and apart from air quality issues, the 1,000 meter separation is sufficient to support a break in the proximate link between well sites. EPA has provided no better explanation on this factor than it did in the previous permit decision already rejected by the Board.⁷

Without an analysis providing a permissible and rational justification for the 1,000 meter separation, this conclusion is not supported and is thus erroneous, and cannot be relied upon to support a determination that separate drill sites farther than 1,000 meters from each other are not proximate in location. *In Re Shell*, Slip Op. at 17 (citing *In re City of Moscow, Idaho*, 10 E.A.D. 135, 142 (EAB 2001); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998)).

⁷ Congress itself required that emissions from vessels up to 25 miles from the drill ship be included as emissions from the OCS source. 42 U.S.C. § 7627(a)(4)(C). Though this statement may not directly inform whether two sources are "contiguous or adjacent," it does evidence congressional intent that EPA should at least consider emissions from significantly farther apart than 1,000 meters. EPA has failed to explain why it has not here.

ii. Inherent distance between drill sites

EPA also based its conclusion that drill sites are not proximate on the argument that each well is intentionally located “far enough apart to have distinct information gathering value.” Response to Comments at 61. That wells will be separated enough to provide distinct information does not however, support a conclusion that the wells are not proximate. Indeed, the evidence in the record demonstrates the contrary.

To be sure, exploration wells are intended to gather information. That said, this fact alone does not support a conclusion that all drill sites will be located at a great distance from other drill sites. For example, “EPA’s ‘stationary source’ determination does not hinge upon each Planned Well being associated with a separate oil accumulation.” Response to Comments at 65. Rather, wells can also be drilled to delineate an oil reservoir. Such wells are, by necessity, clustered around the original discovery well:

As soon as possible after a discovery, the size of the field must be determined. ... If this is an offshore field or in a remote area ... the size of the field needs to be established to compute the amount of oil and gas that can be produced. This will determine if the field is large enough to economically justify further development. **Field size is determined by step out, delineation, or appraisal wells that are drilled to the sides of the discovery well. If the oil-water or gas-water contact can be located on all four sides of the discovery well, the area of the field can be determined.**

Statement of Basis at 6 (bold emphasis added, italics emphasis omitted) (quoting Nontechnical Guide to Petroleum Geology, Exploration, Drilling and Production at 241). Shell itself admits that it “[t]ypically need[s] several delineation (appraisal) wells to determine if an accumulation is large enough and has suitable properties to be economically produced.” Supplemental Statement of Basis at 7 (quoting Att. 11 at 2).

There is no stated minimum separation distance between these delineation wells – indeed, the record demonstrates that they are “step[ped] out” from the discovery well, on all four sides, until the edges of the reservoir are determined. Supplemental Statement of Basis at 6. EPA acknowledges that the distance between wells drilled on the same prospect is “likely to be much smaller” than the distance between wells drilled to target different prospects. Supplemental Statement of Basis at 12.⁸

Consequently, it is arbitrary for EPA to conclude that some separate “information gathering” nature of the wells necessitates a great distance in space between the wells, and thus that they are not on contiguous or adjacent properties. Supplemental Statement of Basis at 5-8. Indeed, common sense would seem to dictate that these “step[ped] out” wells on all four sides of a discovery well, drilled to determine the parameters and extent of a discovered reservoir and whether it is economically feasible to develop, are part of the same source. *See* Alabama Power Co. v. Costle, 636 F.2d 323, 397 (D.C. Cir. 1979) (“source” definition should be guided by common sense); 45 Fed. Reg. 52695 (August 7, 1980) (same); *see also* Letter from Joan Cabreza, EPA Region 10, to Andy Ginsberg, Oregon Dep’t of Env’tl. Quality, re: ESCO Corp. plants (August 7, 1997) at 1 (Exh. 4 at 1) (common meaning of “adjacent” is “near or close”). It would seem to offer the “substantial connectedness, proximity, or continuity,” *In re Shell, Slip Op.* at 39-40, that

⁸ EPA also states that previous delineation wells in the Beaufort Sea were no closer than .8 miles. Supplemental Statement of Basis at 12, referencing Table 1, *id.* at 9. Table 1 lists the proximate locations of five wells on two prospects, neither of which resulted in the production of oil. Five wells drilled on two prospects is not a meaningful sampling, and its relevance is further undercut by the fact that, as EPA emphasizes, the extent of a discovered reservoir must be determined on all four sides before its characteristics and economics can fully be understood. Supplemental Statement of Basis at 6. This clearly did not occur with the previous drilling efforts. Furthermore, EPA’s Table 1 appears to be incomplete as EPA selected only five of approximately 30 wells drilled in the Beaufort Sea. *See* Multi-Sale FEIS at V-13.

would dictate a conclusion opposite to that of EPA; that at least some of the drill sites are on contiguous or adjacent properties.⁹

EPA relied heavily on an EPA memorandum entitled Source Determinations for Oil and Gas Industries to support its conclusion that separate drill sites need not be treated collectively as one source. Supplemental Statement of Basis at 15, referring to Att. 23. This memo contains the sweeping generalization that “permitting authorities can consider oil and gas exploration and production activity located on a single surface site to be an individual stationary source,” and notes that some states have a general rule that separates activities outside of a ¼ mile radius. Supplemental Statement of Basis, Att. 23 at 5, note 16.

The overriding factor, however, as even this EPA memo acknowledges, is that source determinations are to be made on a case-by-case basis and must “approximate a common sense notion of a ‘plant’” *Id.* at 2 (“the unique geographical attributes of the oil and gas industry necessitate a detailed evaluation of whether the activities are contiguous or adjacent”); *see also* Letter from Richard Long, Director, EPA Region 8, to Lyn Menlove, Utah Div. of Air Quality at 1 (Exh. 6 at 1) (May 21, 1998) (Exh. 5), Supplemental Statement of Basis, Attachment 19 at 1 (“EPA is unable to say precisely at this point how far apart activities must be in order to be treated separately. The Agency can answer that question only through case-by-case determinations”) (citing 45 Fed. Reg. 52695 (August 7, 1980), preamble to promulgation of original PSD rules); Letter from

⁹ EPA also alludes to two other factors as possibly relevant to its proximity analysis: 1) the fact that Shell does not control the open water between drill sites; and 2) that there is no physical connection between drill sites. Response to Comments at 59. EPA offers no analysis supporting these factors, and they appear for the first time in the Response to Comments. The bald and tardy references to these factors violates the principle that the rationale for EPA’s decision must be “adequately explained and supported in the record.” *In re Shell*, Slip Op. at 41 (citing *In re City of Moscow, Idaho*, 10 E.A.D. 135, 142 (EAB 2001); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998)). Thus, they offer no support for EPA’s position.

Director, EPA Air, Pesticides & Toxics Division, to Allen Bell, Texas Air Control Board (Nov. 13, 1986) Supplemental Statement of Basis, Attachment 21 (same); Letter from Winston A. Smith, EPA Region 4, to Randy Poole, Mecklenburg County Department of Environmental Protection (May 19, 1999) (Exh. 11).

EPA tips its hat to the need to look factually at each situation by quoting favorably one of the EPA memo's few factual statements:

We do not believe it is reasonable to aggregate well site activities, and other production field activities that occur over large geographic distances, with the downstream processing plant into a single major stationary source.

Supplemental Statement of Basis at 15 (quoting Att. 23 at 3). Yet EPA's reliance on this factual quote to support its position is misplaced. By its own terms this example applies to the aggregation of production well sites with downstream plants. *See id.* This is not at all the situation present here, where for example, the single exploration project includes delineation well sites "step[ped] out" from the site of a discovery well. Supplemental Statement of Basis at 6. EPA's reliance on this memo is misplaced; its analysis simply does not address activities like delineation well drilling, which, of necessity, are located in a given area only because of their proximity to another of the activities, i.e. discovery well drilling.

There is no question that delineation wells are one type of well that Shell would be allowed to drill as part of its exploration program. *See* Response to Comments at 61-62. Consequently, EPA has articulated no "rational connection between the facts found and the choice made." *Sierra Club v. EPA*, 346 F.3d 955, 961 (9th Cir. 2003); *see also In re City of Moscow, Idaho*, 10 E.A.D. 135, 142 (EAB 2001) (rationale for conclusions must be adequately explained and supported in the record"); *In re Shell*, Slip Op. at 41

(citing *In re Dominion Energy Brayton Point, L.L.C.*, NPDES Appeal No. 03-12, slip op. at 133-34 (EAB Feb. 1, 2006), 12 E.A.D. ___ (remanding for failure to explain in the record why five days, rather than some other number of days, was selected as a permissible temperature exceedance frequency)). Thus, EPA's reliance on this factor to establish lack of proximity is erroneous.

5. *EPA's "operational dependence" conclusion is erroneous*

The other factor that EPA relied on to support its conclusion that separate drill sites are contiguous or adjacent is whether the wells are interdependent. *See e.g.*, Response to Comments at 61-63. In contrast to its original approach, in its final action EPA defines the interdependence question to turn on operational links, rather than on products: "[o]perational dependence is found when each activity relies on the other for its operation – i.e., the activities at one facility are required to support the operation at the other." *Id.* at 61. EPA found no operational dependence between the drill sites because 1) there is no "tangible product" produced by one well that is then used at another; 2) the planned wells are sequential and not concurrent; and 3) there is no physical connection between the drill sites. *Id.* at 62. EPA rejected the view that wells designed to delineate "the extent of a hydrocarbon reservoir so that a production platform can be properly constructed" necessarily leads to a conclusion that the wells are operationally reliant. Response to Comments at 62.

EPA's conclusion is erroneous. The record clearly establishes that Shell's exploration project is an enterprise designed not only to discover reservoirs of oil, but also to determine whether and how to produce oil from discovered reservoirs. *See e.g.* Response to Comments at 65 (explaining that Shell's plans include, but are not limited to,

drilling wells into the Sivulluq and Olympia prospects). As such the drill ship in its various locations under the plan comports with the notion of a "plant." EPA's past practice as applied to these facts firmly leads to the conclusion that Shell's exploration plan should be considered one stationary source, and EPA's analytical gymnastics to support a different result are unfounded in the facts or the law, and thus should be rejected.

That Shell's exploration enterprise is focused not on individual wells but rather on wells drilled in concert to provide Shell collective information cannot be disputed. The Borough provided to EPA the declaration of Ms. Susan Harvey, an engineer with twenty years of experience in the Alaska Oil and Gas Industry. Ms. Harvey specifically discusses Shell's planned operations at Sivulliq Prospect and stated that "Shell is proposing to drill three exploration wells into the Sivulliq Prospect to further delineate the lateral and horizontal extent of the hydrocarbons reservoir(s) to approximately size an offshore production platform and pipeline system." Harvey Dec. at 4.

As Ms. Harvey states, "these are not distant, unrelated wildcat wells, where data sharing would be much less likely. They are delineation wells that will be used to assess whether a single oil field can be economically developed." *Id.* Moreover, she states that the locations of the wells were "selected for drilling based on the results of previous seismic exploration and exploratory drilling on the Sivulliq prospect." *Id.* Shell therefore planned the location of the delineation wells to provide comprehensive information on the size and location of the reserve.

Furthermore, Ms. Harvey explained how data from one well is used in planning operations at subsequent wells on the same prospect:

Data collected in the first of the three Sivulliq delineation wells may provide important information to the Shell exploration team to determine how to proceed with the next two wells into that same prospect area. For example, if the first well is dry, or has unexpected stratigraphy, this could result in changes to the subsequent well plans. The second well may not be drilled if the risk level increases based on data obtained from the first well. The well route may be altered, the well may be drilled deeper, or additional data may be obtained

Id.

EPA itself admits that wells designed to “delineat[e] the extent of [a] hydrocarbon reservoir” have “a common operational goal.” Response to Comments at 62. It then goes on to acknowledge, as it must, that “Shell will most likely use information collected at one well to refine its exploratory drill plans for other locations” *Id.*

There is nothing in the record that rebuts these facts. After the public comment period closed, Shell submitted follow-up information to EPA responding to the comments of Ms. Harvey and the Borough. Letter from Susan Childs, Shell, to EPA (May 6, 2008) (with attachments) (“Childs Letter”). In a memo from Mr. Paul Smith attached to that submission, Shell purports to rebut this information by arguing that the wells at Sivulliq target reservoirs “that are the same geologic age but are separate by a major fault.” Memo from Paul Smith to Susan Childs at 3 (Attachment to Childs Letter). Mr. Smith therefore suggests that each well is being drilled into a “separate hydrocarbon accumulation.” *Id.* Mr. Smith, however, noticeably failed to respond to Ms. Harvey’s statement that the locations of the delineation wells are planned in a coordinated fashion to develop a single or unified production scenario.

Ms. Harvey then provided a second declaration to assist EPA in assessing this information. Attachment to Letter from Edward Itta, Mayor, North Slope Borough, to Dan Mahar, EPA (June 6, 2008) (“Second Harvey Declaraion”). As Ms. Harvey

explained, the simple fact that wells target areas separated by a fault has no bearing on whether the wells are related for purposes of delineating a prospect or developing a production scenario. Second Harvey Dec. at 1-2. "Most oil fields developed from hydrocarbon reservoirs contain multiple faults." *Id.* at 1.

The number and type of faults may impede or enhance flow or may cause pressure isolation. The number and type of faults in a prospect will have some bearing on the number of wells needed to prove the size and productivity of a prospect. But the presence of a fault does not by definition constitute a separate and distinct accumulation of oil. Rather, a fault merely contributes some uncertainty as to the sizes, contiguity and characteristics of the prospect's reservoir(s), and as a result requires the drilling of additional wells to prove the extent and move forward with production.

Id. at 2. Furthermore, Ms. Harvey documented that "a single production facility can target hydrocarbon reserves separated by faults." *Id.* at 3. "Production facilities frequently target reserves that are separated by faults, and Shell will almost certainly use the information gathered from all exploration wells at Sivulliq in a unified and interrelated manner to develop a production scenario." *Id.* at 4.

Shell even admits in its own documents that the operations at certain wells are interdependent. Letter from Keith Craik, Shell, to Daniel Meyer at 3 (February 6, 2008). Mr. Craik specifically stated that Shell plans the location of delineation wells to "determine reservoir extent and reservoir continuity." *Id.* at 2. He also goes on to state that the "locations to be drilled during the season are determined in advance of a given season" and that the "results of the season's drilling activity are analyzed and then any follow-up delineation wells are drilled in subsequent seasons." *Id.* at 3. Thus, delineation wells in subsequent seasons are planned together and in response to previous wells to provide follow-up information on the "reservoir extent and reservoir continuity." *Id.* at 2.

Finally, it is important to note that all the specific information relates only to the initial wells to be drilled at the Sivulliq prospect. The permit, however, does not place any limitations on how many wells can be drilled over what time frame or targeting which prospects. EPA, therefore, has inadequate information with respect to all other possible well locations to determine all operations to be conducted under this permit are not interdependent based on the coordinated nature of the information gathering activities for at least some types of exploration wells, even if, applying a more correct analysis, EPA were to determine that the few wells described by Shell are not.

The *Kulluk* therefore comports with a "common sense notion of 'plant,'" at the very least when operating at delineation wells at the same prospect. The same equipment, crew and support vessels are moved from one location to a related location to provide information in developing a production scenario. Particularly for delineation wells, each location is intricately related to the previous location so that the "product" or the information can be used to delineate the extent of the reservoir for purposes of determining whether and how to produce oil. Shell plans the locations ahead of time to produce information in a unified and coordinated fashion. Furthermore, information from one location can and often does influence operations of the same equipment and personnel at the next location in the same season. Thus, the overall enterprise is the connected series of wells, the combined product of which is the information that allows Shell to make determinations about potential oil development in the area of the plan. These wells are, therefore, interdependent and the various locations must therefore be treated as a single source. *See, supra*, pages 9-12.

EPA's past practice, as applied to these facts, supports the conclusion that interdependence exists when separate drill sites produce information used together to develop a production scenario. For example, EPA Region 10 found that while two plants may function independently of one another, they should be considered a single source because activities at both plants are needed to complete the company's finished products. Letter from Joan Cabreza, EPA Region 10, to Andy Ginsberg, Oregon Dep't of Env'tl. Quality (August 7, 1997) (Exh. 4). Like the plants in this example, information from each delineation well targeted at one oil accumulation is necessary for Shell to reach its final goal: preparation of a plan to produce oil from that oil accumulation. *See also* Memo from Douglas E. Hardesty, EPA Region 10, to Robert R. Robichaud, NPDES Permits Unit (Aug 21, 2001) at 6 (Exh. 10 at 6) (focusing on "marketable oil and gas" as the end product produced by activities of a joint enterprise at multiple locations).

Stated another way, Shell "would not have a viable [exploration] operation" but for the integral relationship between discovery and delineation wells. *See* Letter from Judith Katz, EPA Region 3, to James Salvaggio, Pennsylvania Dept. of Environmental Protection at 3 (Exh. 9 at 3) (salt producer "would not have a viable operation at this location but for the existence of [a nearby facility to provide it with brine from which to produce salt]"); Letter from Richard Long, EPA Region 8, to Dennis Myers, Colorado Dept. of Public Health and Environment (April 20, 1999) (Exh. 6) (focusing on fact that intermediate product produced by a mine facility must undergo processing at another facility to create a marketable end product); Letter from Richard R. Long, EPA Region 8, to Lynne Menlove, Utah Division of Air Quality (May 21, 1998) at 3 (Exh. 5 at 3) (discussing the finding of EPA Region 5 that two facilities separated by 3.7 miles, an

interstate highway, a lake and a river, constitute a single source because they are jointly engaged in the enterprise of producing steel).

Simply put, wells used to assist in crafting a production scenario are engaged in a single enterprise, and are thus related, and an EPA conclusion otherwise is erroneous. *In Re Gov't of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323, 342 (EAB 2002) (“the approach ultimately adopted by the [permit issuer must be] rational in light of all information in the record”).

The analysis conducted above is fully consistent with the way EPA initially set up the interdependence inquiry. EPA initially considered the information from each well to be the “product” but concluded erroneously that “these well sites will not share *any* interdependence in the manufacture of a given ‘product.’” Supplemental Statement of Basis at 14 (emphasis in original).

As discussed above, once the comments demonstrated that its conclusion, though not its framework, was erroneous, EPA switched courses. Instead of concluding based on the record that well sites are in fact interdependent, EPA instead changed the applicable criteria. *Id.* EPA discounted all the information provided by the public that spoke directly to the criteria initially set forth, explaining that “[h]aving a common operational goal, such as delineating the extent of the hydrocarbon reservoir, is not the same as” being interdependent. *Id.* EPA then shifted course and decided that a well site must produce a “tangible” product used by another in order to be operationally dependent. *Id.*

Exploration wells, by their very nature, do not produce a “tangible product” but rather information. EPA’s new criteria, set forth for the first time in the Response to Comments, would necessarily result in a determination that no two exploration wells

would ever be interdependent, which would eviscerate the operation of the criteria altogether and leave proximity as the sole factor. EPA's new analysis, developed to ignore the true interdependence reflected in the record, must be rejected as inconsistent with the facts and governing standards for this factor.¹⁰

To reach its contrary conclusion, EPA looked for guidance to previous PSD determinations and policy documents cited by the Board in its decision on the original permits. Supplemental Statement of Basis at 12-16, *In re Shell*, Slip Op. at 40, note 37. These sources do not, however, support EPA's position.

One of these documents includes questions that EPA applies to this case. This EPA Region 8 letter raises identifies several types of questions that might be posed to answer the question whether the utility trailers analyzed in that memo are "adjacent" and should thus be treated as one "source." See Supplemental Statement of Basis, Att. 19. EPA found that the answers to these questions, not all of which must be answered in the affirmative to conclude that separate activities should be considered one source, support its conclusion. Supplemental Statement of Basis at 13-14.

One question is as follows:

Was the location of the new facility chosen primarily because of its proximity to the existing facility, to enable the operation of the two facilities to be integrated? In other words, if the two facilities were sited much further apart, would that significantly affect the degree to which they may be dependent on each other?

¹⁰ EPA also argued in the Response to Comments that "this type of information sharing occurs in the course of normal operations for any business venture serving or operating in multiple locations. We decline to make interlinked computer systems and information sharing a basis for making a source determination, because such criteria could be applied broadly to find operational dependence in virtually any business operation." In making this argument, EPA has again ignored the proper standard, one that it came closer to in its initial criteria set forth in the Supplemental Statement of Basis. The question is not simply whether information is shared but whether the purpose of the activity was to produce interrelated information as the "product." The question is not whether the information would be shared by a linked computer system but whether Shell coordinates the activities of a single drill ship to collect interrelated information as the "product" of its operations. As discussed above, the answer to this question is yes.

Supplemental Statement of Basis, Att. 19 at 2. EPA answers this question in the negative based on its statement that each drill site here is picked “for its independent value as a potential source of information.” Supplemental Statement of Basis at 13. What EPA ignores in its answer is that drill sites intended to delineate a discovery are chosen precisely because of their proximity to the original discovery well and their ability to provide information to inform whether and how to produce oil from that discovery. EPA’s answer is therefore unsupported in the record.

Another question is whether

managers or other workers frequently shuttle back and forth to be involved actively in both facilities? Besides production line staff, this might include maintenance and repair crews, or security or administrative personnel.

Supplemental Statement of Basis, Att. 19 at 2. EPA acknowledges that here, “the same crew and equipment perform[] identical functions,” yet discounts those facts because “the operations themselves at each location are not dependent on each other.” Supplemental Statement of Basis at 14. Again, EPA ignores the fact that this same crew, equipment and function are aimed at the same goals: discovering or delineating an oil reservoir as part of a plan to develop a possible production scenario. *See e.g.*, Statement of Basis at 6; Second Harvey Dec. at 4.

Finally, EPA was clear that its “‘stationary source’ determination does not hinge upon each planned well being associated with a separate oil accumulation.” Response to Comments at 65. EPA thus found that specific well type and location information “is not necessary for EPA’s ‘stationary source’ determination.” *Id.* As the analysis presented above makes clear, this is untrue. Shell’s wells that are designed to determine whether and how to proceed with production, for example, are integrally related to the desired end

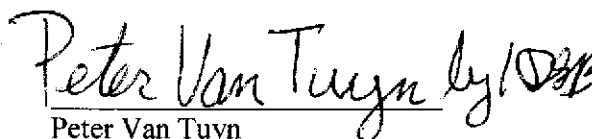
product of Shell's exploration program: a plan to produce of oil. EPA has no grounds to deny that they are connected emission sources without that information. *In re City of Moscow, Idaho*, 10 E.A.D. 135, 142 (EAB 2001) (The rationale for the decision must be "adequately explained and supported in the record"); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998) (same).

VI. CONCLUSION

EPA continues to bend beyond the breaking point the facts, precedent and the law to support its use of a minor air quality control permit for Shell's exploration project. Shell's exploration project will be a major source of air pollution, deserving of the strict procedural review and substantive requirements accorded by the full application of the PSD program. For EPA to conclude otherwise is arbitrary, capricious, and contrary to law. The Board should thus vacate the revised permit.

DATED this 21st day of July, 2008

Respectfully submitted,

A handwritten signature in cursive script that reads "Peter Van Tuyn" followed by a stylized set of initials "DJB".

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Attorneys for Petitioners Alaska Wilderness League, Center for Biological Diversity, Natural Resources Defense Council, Northern Alaska Environmental Center, Pacific Environment, and Resisting Environmental Destruction On Indian Land), a project of the Indigenous Environmental Network ("REDOIL"),

TABLE OF EXHIBITS

<u>Ex. No.</u>	<u>Description</u>
1	North Slope Borough Comment Letter re: Shell Offshore Inc. OCS Air Permit – Kulluk Drilling Operations EPA Permit No: R10OCS-AK-07-01 (Revised) (April 1, 2008) with Attachment - Declaration of Susan Harvey (March 31, 2008) and Appendix 1
2	Northern Alaska Environmental Center on behalf of: Native Village of Point Hope, Natural Resources Defense Council, Pacific Environment, REDOIL, Sierra Club, Center for Biological Diversity, and Alaska Wilderness League Comment Letter re: Shell Offshore Inc. OCS Air Permit – Kulluk Drilling Operations EPA Permit No: R10OCS-AK-07-01 (Revised) (April 1, 2008)
3	Letter from Douglas M. Skie, EPA Region 6, to Cathy Rhodes, Colorado Department of Public Health and Environment (August 22, 1991)
4	Letter from Joan Cabreza, EPA Region 10, to Andy Ginsberg, Oregon Department of Environmental Quality (August 7, 1997)
5	Letter from Richard R. Long, EPA Region 8, to Lynn Menlove, Utah Division of Air Quality (May 21, 1998)
6	Letter from Richard R. Long, EPA Region 8, to Dennis Myers, Colorado Department of Public Health and Environment (April 20, 1999)
7	Letter from R. Douglas Neeley, EPA Region 4, to C.H. Fancy, Florida Department of Environmental Protection (January 28, 2000)
8	Letter from Steven C. Riva, EPA Region 2, to John T. Higgins, New York State Department of Environmental Conservation (October 11, 2000)
9	Letter from Judith Katz, EPA Region 3, to James Salvaggio, Pennsylvania Department of Environmental Protection (No Date Listed)
10	Letter from Douglas E. Hardesty, EPA Region 10, to John Kuterbach, Alaska Department of Environmental Conservation (August 21, 2001) with attached memo from Douglas E. Hardesty, EPA Region 10, to Robert R. Robichaud, EPA Region 10 (August 21, 2001)
11	Letter from Winston A. Smith, EPA Region 4, to Randy Poole, Mecklenburg County Department of Environmental Protection (May 19, 1999)

INDEX TO ADMINISTRATIVE RECORD DOCUMENTS CITED BY PETITIONERS

Outer Continental Shelf Pre-Construction Air Permit Application, Shell Kulluk 2007-2009 Beaufort Sea Exploratory Drilling Program and cover letter from Susan Childs to Dan Mahar (December 29, 2006)

Outer Continental Shelf Pre-Construction Air Permit Application – Frontier Discover 2007-2009 Beaufort Sea Exploratory Drilling Program and cover letter from Susan Childs to Dan Mahar (December 29, 2006)

Shell Offshore Inc., Beaufort Sea Regional Exploration Oil Discharge Prevention and Contingency Plan (January 2007)

Kulluk, Beaufort Sea Exploratory Drilling Program, Modified Impacts Analysis Report, Approval to Construct (No. R10OCS-AK-07-01) and cover letter from Susan Childs to Dan Mahar (January 8, 2007)

Statement of Basis for Air Quality Control Minor Permit No. R10OCS-AK-07-01 Approval to Construct, Shell Offshore Inc., The Kulluk Drilling Unit (March 30, 2007)

Alaska Outer Continental Shelf Air Quality Control Minor Permit, Approval to Construct, Kulluk Drilling Unit (No. R10OCS-AK-07-01) (June 12, 2007)

Alaska Outer Continental Shelf Air Quality Control Minor Permit, Approval to Construct, Frontier Discoverer Drilling Unit (No. R10OCS-AK-07-02) (June 12, 2007)

Shell Offshore Inc. Letter from Keith Craik to Daniel Meyer Re: Phone Conversation of January 18, 2008 (February 6, 2008)

EPA Region 10 Staff Ambient Air Quality Impact Analysis Report (By Herman Wong) (February 13, 2008)

Alaska Outer Continental Shelf Air Quality Control Minor Permit, Approval to Construct, Kulluk Drilling Unit (No. R10OCS-AK-07-01 (Revised)) (Feb. 20, 2008)

Supplemental Statement of Basis for Air Quality Control Minor Permit No. R10OCS-AK-07-01 (Revised), Approval to Construct Kulluk Drilling Unit (Feb. 20, 2008)

Shell Offshore Inc. Letter Re: Proposed Alaska Outer Continental Shelf Air Quality Control Minor Permit Approval to Construct R10OCS-AK-07-01 (Revised) and Attached Memo from Air Sciences (May 6, 2008)

North Slope Borough Letter Re: Shell Offshore Inc. OCS Air Permit – Kulluk Drilling Operations EPA Permit No: R10OCSAK-07-01 (Revised) and Supplemental Affidavit of Susan Harvey in Support of North Slope Borough's Response to Shell Offshore Inc.'s May 6, 2008 Letter (June 6, 2008)

Alaska Outer Continental Shelf Air Quality Control Permit, Approval to Construct, Kulluk Drilling Unit (No. R10OCS-AK-07-01 (Revised)) (June 18, 2008)

Shell Kulluk Drilling Unit OCS Minor Permit No. R10OCS-AK-07-01 (Revised) Response to Public Comments (June 18, 2008)