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

In re:	)
Shell Gulf of Mexico Inc. Permit No. R10OCS/PSD-AK-09-01	)
and	)
Shell Offshore Inc. Permit No. R10OCS/PSD-AK-2010-01	)

PETITION FOR REVIEW
SUBMITTED BY NATIVE VILLAGE OF POINT HOPE, RESISTING ENVIRONMENTAL DESTRUCTION OF INDIGENOUS LANDS, ALASKA WILDERNESS LEAGUE, CENTER FOR BIOLOGICAL DIVERSITY, NATURAL RESOURCES DEFENSE COUNCIL, NORTHERN ALASKA ENVIRONMENTAL CENTER, OCEAN CONSERVANCY, OCEANA, PACIFIC ENVIRONMENT, SIERRA CLUB, and THE WILDERNESS SOCIETY

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INTRODUCTION

Pursuant to 40 C.F.R. §§ 55.6(a)(3) and 124.19(a), the Native Village of Point Hope, Resisting Environmental Destruction of Indigenous Lands ("REDOIL"), Alaska Wilderness League, Center for Biological Diversity, Natural Resources Defense Council ("NRDC"), Northern Alaska Environmental Center, Ocean Conservancy, Oceana, Pacific Environment, Sierra Club, and The Wilderness Society ("Petitioners") petition for review of Outer Continental Shelf Prevention of Significant Deterioration Permit to Construct No. R10OCS/PSD-AK-2010-01, Shell Offshore Inc. (Ex. 1) (Sep. 19, 2011) ("Beaufort Permit"), and Outer Continental Shelf Prevention of Significant Deterioration Permit to Construct No. R10OCS/PSD-AK-09-01, Shell Gulf of Mexico Inc. (Ex. 2) (Sep. 19, 2011) ("Chukchi Permit"), which were issued to Shell Offshore Inc. and Shell Gulf of Mexico Inc. (together "Shell"), respectively, by Region 10 of the United States Environmental Protection Agency ("the Region"). These two multi-year permits allow Shell's *Noble Discoverer* ("*Discoverer*") drillship and associated vessels to emit significant amounts of harmful air pollution during proposed exploratory drilling operations beginning in July 2012.[1]

The Outer Continental Shelf ("OCS") provisions of the Clean Air Act require that the Environmental Protection Agency ("EPA") control air pollution from OCS sources like the *Discoverer* drillship. 42 U.S.C. § 7627(a)(1). New major OCS sources in the Arctic, like their onshore counterparts, may only be constructed in compliance with the Act's Prevention of Significant Deterioration ("PSD") requirements. *See id.*[2] In these permitting actions, however, the Region ignored a key requirement that prohibits new sources from causing or contributing to

[1] *See* Beaufort Permit (Ex. 1) at 25; Chukchi Permit (Ex. 2) at 18.
[2] Section 328(a)(1) of the Act, 42 U.S.C. § 7627(a)(1) states that OCS sources shall "comply with the provisions of part C of subchapter I of this chapter," which is a reference to the PSD program requirements set forth in sections 160 through 169, 42 U.S.C. §§ 7470-7479.

pollution above a pollutant's "maximum allowable concentration." Specifically, these permits authorize Shell to emit nitrous oxides in quantities that will result in exceedances of the "maximum allowable concentration" for nitrogen dioxide (NO_2) that EPA recently promulgated to protect public health. Further, the Region made arbitrary and unlawful decisions with respect to a modeling method and a key modeling assumption which result in an understatement of true air quality impacts.

In light of these fundamental deficiencies, the Region's decisions to issue the Beaufort and Chukchi Permits were clearly erroneous. Petitioners respectfully request that the Environmental Appeals Board ("Board") review these permitting decisions and remand the permits to the Region for analysis and revision consistent with PSD program requirements.

BACKGROUND

The two PSD permits challenged herein authorize Shell's *Discoverer* drillship and associated vessels to emit air pollution in the Beaufort and Chukchi seas.[3] These seas are located in the Arctic Ocean off of the northern coast of Alaska. The Beaufort Sea stretches from the United States-Canada border to Point Barrow,[4] and the Chukchi Sea stretches from Point Barrow to the Bering Strait.[5] These seas are home to a large number of marine mammals, birds, and fish that are essential parts of the subsistence way of life of regional Alaska Native communities.[6] Some animals, like bowhead whales, polar bears, and certain species of eider (large sea ducks) are already threatened or endangered.[7] Greenhouse gas emissions are causing the Arctic region to heat twice as fast as anywhere else, and the rising temperatures have severely diminished the

[3] *See* Beaufort Permit (Ex. 1); Chukchi Permit (Ex. 2).
[4] *See An evaluation of the science needs to inform decisions on Outer Continental Shelf energy development in the Chukchi and Beaufort Seas* (Ex. 3) at 30, 41 (Leslie Holland-Bartels & Brenda Pierce, eds., 2011).
[5] *Id.*
[6] *See id.* at 1, 52-57, 61, 67-68.
[7] *Id.* at 52, 57, 62.

extent and thickness of the region's ice coverage on which several species depend for survival.[8] Industrialization is further straining Arctic ecosystems and the delicate balance maintained by the region's web of life. The changes in the Arctic ecosystem are already adversely affecting Alaska Native people and cultures and industrial activity in the Arctic only exacerbates these impacts.

The permits issued for the *Discoverer*'s proposed operations authorize Shell to emit large quantities of air pollution between July 1 and November 31 of each year while it performs exploratory drilling operations on lease blocks covering vast, pristine areas of the Arctic Ocean. Under these permits, the *Discoverer* is expected to emit, annually, tens of thousands of tons of greenhouse gases, hundreds of tons of NO_2, and tens of tons of other pollutants including carbon monoxide (CO) and volatile organic compounds.[9] This pollution will affect ambient air quality on the ocean, use of which is a critical part of the way of life of people in the region, and in the nearest coastal communities.[10] These coastal communities already exhibit markedly higher rates of pulmonary disease than the general population, making them especially vulnerable to morbidity and mortality from air pollution.[11] Further, air pollutants like NO_2 are eventually deposited in aquatic and terrestrial ecosystems, including habitat of rare and endangered species,

[8] *See* Anne E. Gore and Pamela A. Miller, *Broken Promises: The Reality of Oil Development in America's Arctic* (Ex. 4) at 40-41 (2009).

[9] EPA Region 10, Technical Support Document, Review of Shell's Supplemental Ambient Air Quality Impact Analysis for the Discoverer OCS Permit Applications in the Beaufort and Chukchi Seas (Ex. 5) at 8 (June 24, 2011) (detailing criteria pollutant emissions); EPA Region 10, Supplemental Statement of Basis for Proposed Outer Continental Shelf Prevention of Significant Deterioration Permits Noble Discoverer Drillship, Shell Offshore Inc., Beaufort Sea Exploration Drilling Program, Permit No. R10OCS/PSD-AK-2010-01, Shell Gulf of Mexico Inc., Chukchi Sea Exploration Drilling Program, Permit No. R10OCS/PSD-AK-09-01 (Ex. 6) at 28-30 (July 6, 2011) ("Supplemental Statement of Basis") (addressing greenhouse gas emissions).

[10] Supplemental Statement of Basis (Ex. 6) at 53.

[11] Supplemental Statement of Basis (Ex. 6) at 65.

resulting in acidification and nutrient enrichment that degrades these ecosystems and affects biodiversity. *See* 76 Fed. Reg. 46,084, 46,103-05 (Aug. 1, 2011).

These permits for the *Discoverer* also mark the beginning of a wave of potential offshore industrial activity in the Arctic. In addition to the *Discoverer*, the Region recently issued an air permit to Shell for exploratory drilling in the Beaufort Sea using the *Kulluk* drill rig as well as a draft air permit to ConocoPhillips for similar drilling operations in the Chukchi Sea.[12] On the eve of a potentially massive influx of oil company development, the decision the Board reaches here will have lasting and far-reaching effects on the Arctic, making it imperative that the Beaufort and Chukchi Permits be held to the exacting, protective requirements of the Clean Air Act's PSD provisions.

This is the second time that the *Discoverer* permits have been presented to the Board for review. The Region originally issued the Chukchi Permit on March 31, 2010, and the Beaufort Permit on April 9, 2010. *In re Shell Gulf of Mexico Inc.*, OCS Appeal Nos. 10-01 – 10-04, 15 E.A.D. __, 3-4 (Dec. 30, 2010). Several Alaska Native and conservation groups challenged these permits before the Board. *Id.* at 4-5. On December 30, 2010, the Board remanded the permits to the Region, holding that the Region failed to provide an adequate basis for its definition of "OCS source" and clearly erred by failing to address in its environmental justice analysis the newly promulgated but not yet effective (as of then) national ambient air quality standard for 1-hour concentrations of NO_2. *Id.* at 2-3.[13]

[12] EPA Region 10, Shell Kulluk Air Permit – Beaufort Seas, Final air permit issued (Ex. 7); EPA Region 10, ConocoPhillips Air Permit – Chukchi Sea (Ex. 8). ConocoPhillips withdrew its permit application following public comments, indicating that it intends to perform a new ambient air quality analysis and submit a revised application.

[13] Later, on March 14, 2011, the Board also determined that the Region failed to explain why no modeling of Shell's contribution to secondary fine particulate matter pollution ($PM_{2.5}$) formation

The Board also clarified that, after the Region completes its analysis on remand and issues its final permit decisions, parties dissatisfied with any revised analysis or decisions may file a new petition for review. *In re Shell Gulf of Mexico Inc.*, 15 E.A.D. at 82 (Dec. 30, 2010). The Board limited the second round of review to issues pertaining to the Region's resolution of the clear errors identified in the remand as well as any other issues newly addressed on remand. *Id.* Of particular importance to this appeal, the Board also indicated that, on remand, the Region must apply "all applicable standards in effect at the time of issuance of the new permits on remand," *i.e.*, new Clean Air Act requirements that post-date issuance of the initial permits in early 2010. *Id.*

The 1-hour national ambient air quality standard for NO_2 is one such newly applicable standard that the Region addressed because it became effective in the interim between issuance of the original and revised Beaufort and Chukchi Permits. Published on February 9, 2010, and made effective on April 12, 2010, this new standard limits 1-hour concentrations of NO_2 to 100 parts per billion ("ppb"). 40 C.F.R § 50.11(b); 75 Fed. Reg. 6,474 (Feb. 9, 2010). According to EPA, "[t]his level defines the maximum allowable concentration anywhere in an area."[14] In its rulemaking, EPA set the level of this standard based upon scientific evidence demonstrating that the previous annual standard for NO_2 was insufficient to protect human health. *See* 75 Fed. Reg. 6,479-81. Short-term spikes in NO_2 concentrations are associated with a range of negative human health effects, including breathing problems and even death. *Id*. at 6,480-81. The new, hourly 100 ppb standard is intended to prevent these dangerous health consequences.

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was necessary, and remanded the issue. *In re Shell Gulf of Mexico, Inc.*, OCS Appeal Nos. 10-01 – 10-04, 15 E.A.D. __, 2 (Mar. 14, 2011).

[14] EPA, Fact Sheet, Final Revisions to the National Ambient Air Quality Standards for Nitrogen Dioxide (Ex. 9) at 1 (undated) ("1-hour NO_2 Fact Sheet").

In addition to setting the maximum allowable concentration at 100 ppb, the new 1-hour NO_2 standard also includes a related component known as the "form". The form is "the air quality statistic" that EPA uses to aggregate and adjust long-term ambient air monitoring data to compare to the 100 ppb level and "determin[e] whether an area attains the standard." *Id.* at 6,477 n.5. In making this comparison, the "form" disregards the seven most heavily polluted days of each year and averages values across a three-year period. *Id*. at 6,477/2, 6,491 n.11.[15] Stated in the more technical terminology of the form itself, an area meets the 1-hour standard "when the three-year average of the annual 98th percentile of the daily maximum 1-hour average concentration is less than or equal to 100 ppb, as determined in accordance with Appendix S of this part for the 1-hour standard." 40 C.F.R § 50.11(f).

In a motion filed shortly after the Board's decision to remand the initial Beaufort and Chukchi Permits, Shell sought a ruling from the Board declaring that the new, strict national ambient air quality standard for NO_2 should not be applied to the *Discoverer*.[16] The Board denied this motion.[17] Accordingly, the *Discoverer*'s projected impacts on hourly ambient concentrations of NO_2 in the Beaufort and Chukchi seas became an important focus of the Region's analysis and decision on remand,[18] and issues relating to the standard fit squarely within the category of matters the Board has stated are appropriately raised in a petition for review on remand. *In re Shell Gulf of Mexico, Inc.*, 15 E.A.D. at 82 (Dec. 30, 2010).

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[15] Citations to the *Federal Register* in this Petition, where applicable, indicate both the page number and column (page number/column) for ease of reference.
[16] *See* Request of Shell Gulf of Mexico Inc. and Shell Offshore Inc. for Partial Reconsideration and for Clarification of Order Denying Review in Part and Remanding Permits at 2-3, *In re Shell Gulf of Mexico, Inc.*, OCS Appeal Nos. 10-01 – 10-04 (Jan. 21, 2011).
[17] *In re Shell Gulf of Mexico, Inc.*, 15 E.A.D. __, at 2 (Feb. 10, 2011).
[18] Supplemental Statement of Basis (Ex. 6) at 21-25.

Before issuing the Beaufort and Chukchi Permits, the Region required Shell to demonstrate compliance with the 1-hour national ambient air quality standard for NO_2, as measured by the adjusted, three-year average form. That might be sufficient to meet the requirements of compliance with any "national ambient air quality standard" established in section 165(a)(3)(B) of the Act. 42 U.S.C. § 7475(a)(3)(B). The Region erred, however, by failing to ensure that Shell's emissions also comply with the separate requirement of the Act, set forth in section 165(a)(3)(A), that emissions not exceed the 1-hour "maximum allowable concentration" for NO_2. *Id*. § 7475(a)(3)(A). Additionally, the Region erroneously allowed Shell to conduct its modeling using an approach that EPA has deemed insufficient to protect air quality, and required no analysis of ambient air impacts whatsoever—for NO_2 or any another pollutant—within a 500 meter radius of the ship.

Petitioner Native Village of Point Hope is a federally recognized tribal government located in northwestern Alaska, on the coast of the Chukchi Sea. The village is the oldest continuously inhabited village in all of North America. Village residents are concerned about the effects Shell's operations will have on local air quality, human health, and subsistence resources. Petitioner REDOIL is an organization of Arctic residents devoted to empowering indigenous peoples to protect health and the environment, and to influencing policies that affect indigenous peoples on a local, tribal, state, regional, national and international level. Petitioners Alaska Wilderness League, Center for Biological Diversity, NRDC, Northern Alaska Environmental Center, Ocean Conservancy, Oceana, Pacific Environment, Sierra Club, and The Wilderness Society are conservation groups that work to protect the Arctic environment.

THRESHOLD PROCEDURAL REQUIREMENTS

Petitioners satisfy the threshold requirements for filing a petition for review under 40 C.F.R. § 124.19(a):

1. Petitioners filed comments on the draft permits and, in some cases, participated in the public hearings.[19]

2. The issues raised herein by Petitioners were raised during the public comment period.[20]

3. This petition is timely filed pursuant to the Regional Administrator's notice of decision, which established October 24, 2011, as the filing deadline.[21]

Additionally, the issues raised in this petition concern wholly new analysis undertaken by the Region on remand. Accordingly, Petitioners' claims are consistent with the scope of review following remand that the Board established in its December 2010 decision. *In re Shell Gulf of Mexico, Inc.*, 15 E.A.D. at 82.

STANDARD OF REVIEW

The Board's review of PSD permitting decisions is governed by 40 C.F.R. § 124. *In re Prairie State Generating Co.*, PSD Appeal No. 05-05, 13 E.A.D. __, 13 (EAB 2006). The Board will review a permitting authority's decision to issue a PSD permit if "the decision is based on either a clearly erroneous finding of fact or conclusion of law, or involves an important matter of policy or exercise of discretion that warrants review." *Id.* "The burden of demonstrating that review is warranted rests with the petitioner challenging the permit decision." *Id*. Here, the Region's decisions are premised upon clearly erroneous interpretations of statutory PSD requirements and implementing regulations. Review here is particularly appropriate because this

[19] *See* Alaska Wilderness League, et al., Comments on Revised Draft Air Permits for Shell's Proposed Oil and Gas Exploration Drilling in the Beaufort Sea and Chukchi Sea, Alaska (Ex. 10) (Aug. 5, 2011) ("Comments"); EPA, Public Hearing, Shell Discoverer revised PSD air permits for oil and gas exploration in Beaufort Sea and Chukchi Sea, Barrow, Alaska (Ex. 11) (Aug. 4, 2011) (testimony of Earl Kingik, tribal liaison officer for Alaska Wilderness League); Pacific Environment, Comments on Revised Draft Air Permits for Shell's Proposed Oil and Gas Exploration Drilling in the Beaufort Sea and Chukchi Sea, Alaska (Ex. 12) (Aug. 5, 2011).

[20] *See* Comments (Ex. 10) at 4-7.

[21] *See*, EPA Region 10, Shell Discoverer Air Permit, Beaufort Sea, Final air permit issued (Ex. 13); EPA Region 10, Shell Discoverer Air Permit, Chukchi Sea, Final air permit issued (Ex. 14).

matter is among the first implicating the intersection of PSD requirements and EPA's relatively new 1-hour national ambient air quality standard for NO_2. For the foregoing reasons, the Board should accept review. For the reasons set forth below, the Board should remand the permits.

Neither the Region's interpretation of the Clean Air Act nor its interpretation of regulatory requirements is entitled to deference. *In re Lazarus, Inc.*, 7 E.A.D. 318, 351 n.55 (EAB 1997). As the final decision maker for EPA, the Board performs its own "independent review and analysis of the issue." *In re Ocean State Asbestos Removal, Inc.*, 7 E.A.D. 522, 543 n.22 (EAB 1998) (quoting *In re Mobil Oil Corp.*, 5 E.A.D. 490, 508-09 & n.30 (EAB 1994)). Where a Region has based a permit decision on an erroneous interpretation of the Clean Air Act, the permit must be remanded. *See In re Hadson Power 14—Buena Vista*, 4 E.A.D. 258, 273-75 (EAB 1992).

When interpreting a statute, the Board begins by reviewing the plain meaning of the statutory language, in order to "'give effect to the unambiguously expressed intent of Congress.'" *In re Ocean*, 7 E.A.D at 542 (quoting *Chevron U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837, 843 (1984)). "An agency is given no deference at all on the question whether a statute is ambiguous . . . ." *Old Dominion Elec. Coop. Inc. v. FERC*, 518 F.3d 43, 48 (D.C. Cir. 2008). To determine Congress's intent, the Board uses "traditional tools of statutory construction, which include examination of the statute's text, legislative history, and structure." *In re Ocean*, 7 E.A.D at 542 (citing *Southern Cal. Edison Co. v. FERC*, 116 F.3d 507, 515 (D.C. Cir. 1997)). "If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Chevron*, 467 U.S. at 843.

"When construing an administrative regulation, the normal tenets of statutory construction are generally applied," including the rule that "[t]he plain meaning of words is ordinarily the guide." *In re Bil-Dry Corp.*, 9 E.A.D. 575, 595 (EAB 2001) (citations omitted). In addition, a "regulation must . . . be 'interpreted so as to harmonize with and further and not to conflict with the objective of the statute it implements.'" *Id*. (quoting *Sec'y of Labor v. W. Fuels-Utah, Inc.*, 900 F.2d 318, 320 (D.C. Cir. 1990)).

Agency action is arbitrary and capricious if, *inter alia*, "the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, [or] offered an explanation for its decision that runs counter to the evidence before the agency." *Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983). Further, an agency "must cogently explain why it has exercised its discretion in a given manner" or its actions will be deemed arbitrary. *Id*. at 48; *see also In re Port Authority of New York and New Jersey*, 10 E.A.D. 61, 91 (May 30, 2001) (agency must provide a "a reasoned explanation of the basis for the conclusion").

ARGUMENT

I. THE REGION CLEARLY ERRED BY FAILING TO REQUIRE SHELL TO DEMONSTRATE THAT THE *DISCOVERER*'S OPERATIONS WILL NOT CAUSE POLLUTION IN EXCESS OF THE 1-HOUR "MAXIMUM ALLOWABLE CONCENTRATION" FOR NO_2.

The Region's failure to require Shell to demonstrate that its emissions will not cause pollution in excess of the 100 ppb maximum allowable concentration level of the 1-hour national ambient air standard for NO_2 is clearly erroneous. The unambiguous language of Section 165(a)(3) of the Clean Air Act requires a PSD applicant to demonstrate compliance not only with the national ambient air quality standards overall, but also with a separate, stricter standard for each pollutant which is a component of the overall national ambient air quality standard: the

"maximum allowable concentration." 42 U.S.C. § 7475(a)(3). While it may be permissible for the Region to use the more lenient "form" to gauge whether Shell's pollution would lead to a violation in an air quality region of the overall 1-hour NO_2 standard pursuant to section 165(a)(3)(B), section 165(a)(3)(A) makes plain that Shell also must demonstrate compliance with the 100 ppb "maximum allowable concentration." 42 U.S.C. §§ 7475(a)(3)(A), (B). Here, the Region has clearly erred because it failed to require Shell to demonstrate compliance with the "maximum allowable concentration" for NO_2. This error is not harmless because the record indicates that Shell's proposed operations will, in fact, violate the 1-hour "maximum allowable concentration" of 100 ppb.

The Region defends its decisions by arguing that it has ensured compliance with the 1-hour national ambient air quality standard for NO_2 because Shell has met the requirements of the "form."[22] But this argument misses the point entirely, as the agency completely ignored its separate obligation to ensure compliance with the "maximum allowable concentration."

A. Clean Air Act Section 165(a)(3)(A) unambiguously requires a PSD permit applicant to demonstrate that it will not cause pollution in excess of the "maximum allowable concentration" for each pollutant subject to PSD requirements.

Pursuant to Clean Air Act section 165, the Region may not issue a PSD permit to Shell or any other source proposed within a "clean air area" like the Arctic unless the permit applicant demonstrates that its emissions will not exceed certain statutory and regulatory limits intended to

[22] Strictly speaking, Shell did not demonstrate compliance using the 1-hour NO_2 form, which requires three years of ambient air monitoring data. 40 C.F.R. §50.11(f). Instead, Shell paired one year's worth of projected emissions from its operations with historic background data (adjusted to reflect the 98th percentile) and then disregarded the 7 highest concentrations. *See* EPA Region 10, Supplemental Response to Comments for Outer Continental Shelf Prevention of Significant Deterioration Permits Noble Discoverer Drillship, Shell Offshore Inc., Beaufort Sea Exploration Drilling Program, Permit No. R10OCS/PSD-AK-2010-01, Shell Gulf of Mexico Inc., Chukchi Sea Exploration Drilling Program, Permit No. R10OCS/PSD-AK-09-01 (Ex. 15) at 70 (Sep. 19, 2011) ("Response to Comments").

prevent the significant deterioration of ambient air quality. More specifically, section 165(a)(3) states that no "major emitting facility" may be constructed unless:

> the owner or operator of such facility demonstrates[] . . . that emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of any (A) maximum allowable increase or maximum allowable concentration for any pollutant in any area to which this part applies more than one time per year, (B) national ambient air quality standard in any air quality control region, or (C) any other applicable emission standard or standard of performance under this chapter.

42 U.S.C. § 7475(a)(3) (emphasis added). Of the foregoing PSD permit prerequisites, two are of particular importance in assessing Shell's impact on ambient air quality: a source may not cause pollution in excess of any "maximum allowable concentration" or of any "national ambient air quality standard." *Id.* §§ 7475(a)(3)(A), (B). These requirements are given further meaning in sections 109 and 163 of the Act.

One category of standard referred to in section 165(a)(3), the "national ambient air quality standards," is promulgated pursuant to section 109 of the Act. 42 U.S.C. § 7409. These standards set permissible concentrations of six air pollutants for different periods of exposure—NO_2, CO, sulfur oxides (SO_x), particulate matter (PM), and lead. *See Ala. Power Co. v. Costle*, 636 F.2d 323, 346 (D.C. Cir. 1979) (citing 42 U.S.C. § 7409). Primary national ambient air quality standards are promulgated to "protect the public health" while secondary standards specify the level of air quality necessary to "protect the public welfare from any known or anticipated adverse effects." 42 U.S.C. § 7409(b). A given pollutant is typically subject to a suite of standards establishing different permissible concentrations for different but overlapping periods of exposure. *See, e.g.*, 40 C.F.R. §§ 50.4, 50.5 (establishing primary and secondary standards for SO_x).

The second key standard referred to in Section 165(a)(3)—namely, the "maximum allowable concentration" for any pollutant—is defined in section 163 of the Act. Per section 163(b)(4), the "maximum allowable concentration" of any pollutant "shall not exceed a concentration for such pollutant for each period of exposure equal to . . . the concentration permitted under the [primary or secondary national ambient air quality standard], whichever concentration is lowest for such pollutant for such period of exposure." 42 U.S.C. § 7473(b)(4). In other words, while a suite of overlapping standards may define different permissible levels for a given pollutant, with some standards stricter than others, the "maximum allowable concentration" bars a new source in a clean air area from causing pollution in excess of the "lowest" established concentration for a given period of exposure. 42 U.S.C. §§ 7473(b)(4), 7475(a)(3)(A).

The plain language of section 165(a)(3) of the Act demonstrates unambiguously that Congress intended for a PSD applicant to demonstrate compliance with each of these two distinct requirements. The "starting point for interpreting a statute is the language of the statute itself." *Consumer Prod. Safety Comm'n v. GTE Sylvania, Inc.*, 447 U.S. 102, 108 (1980). Here, section 165(a)(3)'s listing of the "maximum allowable concentration" and the "national ambient air quality standard" as separate limits on a PSD applicant's future pollution indicates that Congress meant the two requirements to be different and not interchangeable. It is "an endlessly reiterated principle of statutory construction . . . that all words in a statute are to be assigned meaning, and that nothing therein is to be construed as surplusage." *Qi-Zhuo v. Meissner*, 70 F.3d 136, 139 (D.C. Cir. 1995). Any interpretation that failed to recognize a distinction between section 165(a)(3)(A) ("maximum allowable concentration") and section 165(a)(3)(B) ("national ambient air quality standard") would render one of the two provisions meaningless surplusage.

Interpreting the two provisions as identical would be even more clearly erroneous here, as one "cannot assume that Congress intended two separate provisions in the same sub-section to have the same meaning." *Padash v. INS*, 358 F.3d 1161, 1171 (9th Cir. 2004) (emphasis added).

Further, section 165(a)(3) does not command that a PSD applicant demonstrate compliance with a single standard, but rather with "any … maximum allowable concentration for any pollutant . . . [or] national ambient air quality standard." *Id.* (emphasis added). Congress's choice of the word "any" to describe each of the standards with respect to which compliance must be demonstrated is significant. "Read naturally, the word 'any' has an expansive meaning, that is, 'one or some indiscriminately of whatever kind.'" *United States v. Gonzales*, 520 U.S. 1, 5 (1997); *see also New York v. EPA*, 443 F.3d 880, 885 (D.C. Cir. 2006) (noting that the Supreme Court "has read the word 'any' to signal expansive reach when construing the Clean Air Act.") The expansive reading that must be applied to this word choice, and that is compelled by the fact that "any" modifies both section 165(a)(3)(A) ("maximum allowable concentration") and section 163(a)(3)(B) ("national ambient air quality standard") leaves no doubt that a PSD applicant must demonstrate that it will not "cause, or contribute to, air pollution in excess" of either standard, and not just one. 42 U.S.C. § 7475(a)(3).

The legislative history associated with adoption of sections 163 and 165 confirms that Congress regarded the "maximum allowable concentration" and the "national ambient air quality standard" as distinct requirements. The starting point for this historical analysis is the regulatory framework in place at the time of the 1977 amendments, because Congress was building on a framework in then-existing regulations; the amendments "follow the outline of the pre-existing regulations, but are in general more comprehensive and stringent." 43 Fed. Reg. 26,388/2 (June 19, 1978); *see also Ala. Power Co.*, 636 F.2d at 350 ("Section 165 of the Act tightens the

requirement[s] . . . for the PSD preconstruction review and permitting of major new sources to be located in clean air areas.") A brief look at the EPA standards that had been promulgated prior to the amendments, therefore, gives content to the language Congress used.

Parallels in relevant statutory and regulatory language indicate that Congress modeled the "maximum allowable concentration," defined in section 163(b)(4) and listed as an additional requirement for PSD applicants in section 165(a)(3)(A), on similar components of then-existing national ambient air quality standards. The original national ambient air quality standards for both SO_x and PM, promulgated in 1971, contained multiple standards. 36 Fed. Reg. 8,186, 8,186-87 (Apr. 30, 1970). Not only were both primary and secondary standards established for each pollutant, but each primary and secondary standard was further divided into an annual arithmetic or geometric mean as well as specific concentration limit(s) applicable to one or more shorter periods of exposure (*e.g.*, 3 hours or 24 hours). For example, the 1970 national ambient air quality standard for SO_x stated:

> The national secondary ambient air quality standards for sulfur oxides … are: (a) 60 micrograms per cubic meter (0.02 p.p.m.) – annual arithmetic mean[;] (b) 260 micrograms per cubic meter (0.1 p.p.m.) – maximum 24-hour concentration not to be exceeded more than once per year . . . [; and] (c) 1,300 micrograms per cubic meter (0.5 ppm) – maximum 3-hour concentration not to be exceeded more than once per year."

36 Fed. Reg. 8,187/2 (Apr. 30, 1970).

Significantly, for shorter periods of exposure, the original SO_x and PM standards used the words "maximum" and "concentration" and specified that the maximum concentration is "not to be exceeded more than once per year." 36 Fed. Reg. 8,187/2 (setting forth 42 C.F.R. §§ 410.4(b), 410.5(c), 410.6(b), 410.7(b)). This same, specific language is repeated in section 163(b)(4)'s formulation of the "maximum allowable concentration." 42 U.S.C. §§ 7473(a), (b)(4).

Congress's formulation of the "maximum allowable concentration," as established in section 163(b)(4) and patterned after the then-existing national ambient air quality standards for SO_x and PM, is telling in two respects. First, it is plain that at the time Congress developed sections 163 and 165 and the Act's other PSD provisions, it had before it multi-faceted national ambient air quality standards: *i.e.*, overlapping primary and secondary standards, with concentration levels set both for an annual mean as well as shorter-term standards defined with respect to an absolute concentrations level. Second, and more significantly, Congress's formulation of section 163(b)(4) highlights that Congress chose to focus the provision on a specific component of the then-existing national ambient air quality standards and not others. That component is the requirement that PSD applicants demonstrate compliance with the absolute "lowest" "concentration" set among the various standards.

Finally, Congress's insistence that PSD applicants demonstrate compliance with a stringent "maximum allowable concentration" is consistent with the overarching purpose and structure of the 1977 amendments. Congress was not satisfied with the then-existing PSD program instituted administratively by EPA and therefore developed statutory provisions that were further-reaching and more stringent. *See* 43 Fed. Reg. 26,388. In particular, Congress was motivated "to protect public health and welfare from any actual or potential adverse effect" caused by increases in air pollution from new, individual sources, even where an area might otherwise be "attain[ing] and maintain[ing]" national ambient air quality standards. 42 U.S.C. § 7470(1). Congress viewed area-wide compliance with the national ambient air quality standards as necessary but not by itself sufficient and endeavored to develop more rigorous requirements for new sources, requiring them—as a condition requisite for construction—to prove that their emissions would not cause a violation of the most stringent of the standards. Congress was

mindful that stringent PSD requirements like the "maximum allowable concentration" would add additional costs for new sources, but also "recognized that building control technology into new plants at time of construction will plainly be less costly then [sic] requiring retrofit when pollution control ceilings are reached." *Wis. Elec. Power Co. v. Reilly*, 893 F.2d 901, 909 (7th Cir. 1990) (internal quotation and citation omitted).

B. The Region unlawfully issued the Beaufort and Chukchi Permits without requiring Shell to demonstrate compliance with the 1-hour "maximum allowable concentration" for NO_2.

As detailed above, Clean Air Act section 165 requires a PSD permit applicant like Shell to demonstrate that its emissions will not cause pollution in excess of two independent requirements: the "maximum allowable concentration," and the "national ambient air quality standard." 42 U.S.C. § 7475(a)(3)(A), (B). The Region has clearly erred in issuing the Beaufort and Chukchi Permits to Shell because Shell has failed to demonstrate that its proposed operations will not violate the 1-hour "maximum allowable concentration" for NO_2, set at the level of 100 ppb. Not only has the Region failed, wholesale, to address this distinct requirement of section 165(a)(3), the record demonstrates that Shell's operations will result in pollution that exceeds this limitation.

1. The Region unlawfully failed to address section 165(a)(3)(A)'s "maximum allowable concentration" requirement.

As set forth above, the plain language of Clean Air Act section 165 unambiguously requires a PSD permit applicant to demonstrate that its projected emissions will not cause pollution that exceeds "any" one of several applicable limits, including the "maximum allowable concentration for any pollutant." 42 U.S.C. § 7475(a)(3). Although the statute commands that Shell demonstrate—and the Region corroborate—that the *Discoverer*'s emissions will not cause pollution levels that exceed any "maximum allowable concentration" for any pollutant, including

NO_2, the Region does not mention this requirement anywhere in the two Statements of Basis, Supplemental Statement of Basis, or Response to Comments, let alone require Shell to demonstrate compliance. In other words, the Region has simply ignored this standard altogether. This is clear legal error. In addition, where, as here, an agency has "neglected to consider a statutorily mandated factor," the agency's decision is arbitrary and unlawful and must be set aside. *Pub. Citizen v. Fed. Motor Carrier Safety Admin.*, 374 F.3d 1209, 1216 (D.C. Cir. 2004); *see also Natural Res. Def. Council v. EPA*, 638 F.3d 1183, 1190 (9th Cir. 2011) ("[W]e must set aside an agency's action where it failed to consider mandatory factors set forth by statute or in a regulation.")

In an attempt to justify its decision to allow Shell to demonstrate compliance with regard to the form the of 1-hour NO_2 standard only, the Region, in the Response to Comments, argues that its decision is consistent with PSD regulation 40 C.F.R. § 52.21(k).[23] It points to the language in 40 C.F.R. § 52.21(k) that refers to "a violation of" any national ambient air quality standard, and not "an exceedance," arguing that this language necessitates that the "form", and not the "maximum allowable concentration" be used to assess PSD compliance.[24] This is a distinction without meaning because section 165(a)(3) itself refers to "air pollution in excess" of applicable requirements, 42 U.S.C. § 7475(a)(3), leaving no doubt that emissions "in excess" of a standard—*i.e.*, exceedances—must constitute a "violation" pursuant to 40 C.F.R. § 52.21(k).

[23] 40 C.F.R. § 52.21(k) states:

> The owner or operator of the proposed source or modification shall demonstrate that allowable emission increases from the proposed source or modification . . . would not cause or contribute to air pollution in violation of: (1) Any national ambient air quality standard in any air quality control region; or (2) Any applicable maximum allowable increase over the baseline concentration in any area.

[24] Response to Comments (Ex. 15) at 68-69.

More fundamentally, exceedances of the "maximum allowable concentration" violate section 165(a)(3)(A) in the same way the Region agrees that exceedances of the national ambient air quality standard, as determined by the form, violate section 165(a)(3)(B).

In any event, nothing in the plain language of 40 C.F.R. § 52.21(k), or the agency's description of it in the rulemaking process, prevents the Region from requiring Shell to comply with section 165(a)(3)(A)'s "maximum allowable concentration" requirement. It is not clear that the regulation is intended to address all requirements of section 165(a)(3), as it fails also to address explicitly section 165(a)(3)(C). Even if 40 C.F.R. § 52.21(k) was intended to address the whole of section 165(a)(3), the "maximum allowable concentration" requirement fits squarely within the regulation's requirement to comply with "any" ambient air standard because it is a component of such a standard. Any application of the regulation by the Region that precludes enforcement of the "maximum allowable concentration" requirement would be unlawful, and the "regulation must . . . be 'interpreted so as to harmonize with and further and not to conflict with the objective of the statute it implements.'" *In re Bil-Dry Corp.*, 9 E.A.D. at 595 (quoting *W. Fuels-Utah, Inc.*, 900 F.2d at 320); *see also Emery Mining Corp. v. Sec'y of Labor*, 744 F.2d 1411, 1414 (10th Cir. 1984) (stating that a regulation must be "construe[d] . . . in light of the statute it implements").

Because Petitioners' challenge is not to 40 C.F.R. § 52.21(k) but to the Region's failure to comply with section 165(a)(3)(A) in issuing these permits, the Region's suggestion in the Response to Comments that the argument is time-barred pursuant to section 307(b) of the Act, 42 U.S.C. § 7607(b), is misplaced.[25] As explained above, 40 C.F.R. § 52.21(k) is not in any way inconsistent with the statute's command to impose a separate "maximum allowable

[25] *See* Response to Comments (Ex. 15) at 69.

concentration" requirement. Moreover, the Supreme Court has recognized the distinction between an as-applied challenge that advances a "reading of [a] regulation adopted to bring it into harmony with the . . . statute" and a facial challenge that seeks "a determination that the regulation as written is invalid." *Envtl. Def. v. Duke Energy Corp.*, 549 U.S. 561, 573 (2007). Challenges to a specific and unlawful application of a regulation, to the extent the Region in fact bases its failure to comply with section 165(a)(3)(A) on the requirements of its regulation, are proper even in instances where jurisdiction no longer exists for a facial challenge to the regulation. *See, e.g.*, *1000 Friends of Md. v. Browner*, 265 F.3d 216, 223-24 (4th Cir. 2001) (holding that section 307(b) does not bar challenge where petitioners' "real argument is not that the . . . regulations are illegal in and of themselves, but that the EPA in this case acted contrary to the dictates of the Clean Air Act"); *Puerto Rican Cement Co., Inc., v. EPA*, 889 F.2d 292, 298-99 (1st Cir. 1989) (addressing merits of challenge to EPA's interpretation of PSD regulations while declining to review challenge to lawfulness of regulations).

2. The Discoverer's projected emissions unlawfully exceed the 1-hour "maximum allowable concentration" for1-hour NO_2 of 100 ppb.

The Region's failure to address the 1-hour "maximum allowable concentration" for NO_2 is not harmless error. The record establishes that emissions from Shell's proposed operations in the Beaufort and Chukchi seas will result in unhealthy ambient NO_2 concentrations that exceed the "maximum allowable concentration."

The "maximum allowable concentration," for a particular period of exposure, is equal to "whichever concentration is lowest for such pollutant" among the applicable national ambient air quality standards. 42 U.S.C. § 7473(b)(4). The components of the national ambient air quality standard for NO_2 include: a primary annual standard and secondary annual standard, both set at the identical level of 53 ppb average annual concentration; a primary 1-hour standard set at the

level of 100 ppb; and a so-called "form" which states that an area meets the primary 1-hour standard "when the three-year average of the annual 98th percentile daily maximum 1-hour concentration is less than or equal to 100 ppb." *See* 40 C.F.R. §§ 50.11(a)-(c), (f).

Among these components, the 1-hour standard set at 100 ppb is plainly the 1-hour "maximum allowable concentration." The 1-hour standard of 100 ppb was set to "protect against adverse health effects associated with short-term exposure to NO_2, including respiratory effects that can result in admission to a hospital."[26] The longstanding annual standard did not prevent the health consequences associated with short-term spikes. *See, e.g.*, 75 Fed. Reg. 6,483/1, 6,484/1-2, 6,489/1.[27] Significantly, the rulemaking for the 1-hour NO_2 national ambient air quality standard itself declares that 100 ppb is the "maximum allowable concentration" for a 1-hour period of exposure. On no less than 29 occasions, the *Federal Register* preamble to the final 1-hour NO_2 standard references the 100 ppb level as the "maximum allowable concentration" or "maximum allowable NO_2 concentration."[28] Moreover, an accompanying fact sheet prepared by the agency stated it quite plainly: "EPA is setting a new 1-hour NO_2 standard at the level of 100 parts per billion (ppb). This level defines the maximum allowable concentration anywhere in an area."[29]

The "form", in contrast, offers no basis for establishing a "maximum allowable concentration." The form is not a "concentration" applicable to a particular "period of exposure," as required by section 163(b)(4). 42 U.S.C. § 7473(b)(4). Instead, the form is an "air

[26] 1-hour NO_2 Fact Sheet (Ex. 9) at 1; *see also* 75 Fed. Reg. 6,480.
[27] Although the concentration level set by the annual standards is lower, at 53 ppb, this standard is measured using annual average concentration and therefore poses no limit on pollution during a particular hour.
[28] *See* 75 Fed. Reg. 6,477/2, 6,493/1, 6,493/2 (two mentions), 6,494/1 (two mentions), 6,495/1, 6,495 (five mentions), 6,496/2, 6,497/1, 6,497/2, 6,498/1, 6,499/3 (three mentions), 6,500 (four mentions), 6,501/2 (two mentions), 6,501/3, 6,502/1, 6,502/3.
[29] 1-hour NO_2 Fact Sheet (Ex. 9) at 1 (emphasis added).

quality statistic" used to arrive at area-wide attainment classifications.[30] EPA plainly stated in the 1-hour NO_2 rulemaking that probabilistic standards, including the adopted form, "reflect the allowable area-wide NO_2 concentrations, not the maximum allowable concentrations." 75 Fed. Reg. 6,482/3 (emphasis added). The form was selected primarily for reasons of administrative expedience. *See* 75 Fed. Reg. 6,492-93 (noting form was selected because it is "reasonably stable and insulated from the impacts of extreme meteorological events" allowing EPA to avoid "areas shifting in and out of attainment"); *id*. at 6,493 (stating "there is not a clear health basis for selecting one specific form over another.")

Because the form is calculated using the three-year average of the 8th highest daily maximum 1-hour NO_2 concentration for each year, the form itself places no limit on allowable NO_2 concentrations for a particular 1-hour period of exposure. Indeed, pursuant to the form, the seven highest daily 1-hour maximum concentrations for each year are disregarded, no matter how high the values. 75 Fed. Reg. 6,491 n.11, 6,492/3. For these reasons, the 1-hour "maximum allowable concentration" for NO_2 is plainly not the form, which excludes the seven highest concentrations, but is the 100 ppb level, which the agency itself identified as the "maximum allowable concentration."

Shell's proposed operations in both the Beaufort and Chukchi seas will cause pollution levels in excess of this 1-hour NO_2 "maximum allowable concentration" of 100 ppb (also sometimes expressed as 188 $\mu g/m^3$).[31] As the Region was forced to acknowledge in the Response to Comments: "[i]t is true that the modeling showed individual 1-hour impacts higher

[30] 1-hour NO_2 Fact Sheet (Ex. 9) at 1; *see also* 40 C.F.R. § 50.11(f).
[31] The standard may be expressed in parts per billion (ppb) or micrograms per cubic meter ($\mu g/m^3$). *See* Supplemental Statement of Basis (Ex. 6) at 49 (listing the standard as 100 ppb and 188 $\mu g/m^3$).

than the 100 ppb (188 µg/m^3) level" of the 1-hour NO_2 standard.[32] Modeling files submitted by Shell indicate that, on at least two occasions, its operations in the Beaufort will exceed 188 µg/m^3. The two highest projected 1-hour concentrations predicted as a consequence of Shell's operations in the Beaufort Sea are 198.77 µg/m^3 and 192.83 µg/m^3, both of which exceed the limit of 188 µg/m^3.[33] Projected exceedances of the "maximum allowable concentration" are even greater for Shell's proposed operations in the Chukchi Sea. There, without even accounting for background pollution levels, the maximum projected impact of Shell's operations is a 1-hour NO_2 concentration of 318 µg/m^3. Accounting for background, at least four exceedances of the standard are projected (333.4 µg/m^3, 251.8 µg/m^3, 246.6 µg/m^3, and 202.5 µg/m^3).[34]

As required by the plain language of Section 165(a)(3)(A), Shell has failed to demonstrate that its emissions "would not cause or contribute to air pollution in excess of . . . the maximum allowable concentration" for 1-hour NO_2 "more than one time per year." 42 U.S.C. § 7475(a)(3)(A). The Region's decision to issue PSD permits to Shell when Shell's emissions are projected to exceed 100 ppb on more than one occasion violates section 165 of the Act and, therefore, is unlawful. An agency "does not have the power" to make a decision "that directly conflicts with its governing statute." *Maislin Indus. v. Primary Steel, Inc.*, 497 U.S. 116, 134-35 (1999).

[32] Response to Comments (Ex. 15) at 68.
[33] EPA Region 10, Results_Disco_Iter01e_NO2_BS09B, Calc Sheet (Ex. 16) (Apr. 22, 2011).
[34] EPA Region 10, Shell reanalysis with 2010 met.xlsx, 2009b_raw tab (Sep. 8, 2011); *see also* Email from Julie Vergeront, EPA Region 10, to David Hobstetter and Colin O'Brien, Earthjustice, Discoverer 1-hour NO2 Impacts Question, attachment pic01278.gif (Ex. 17) (Sep. 30, 2011).

II. THE REGION CLEARLY ERRED BY ACCEPTING AIR MODELING THAT ARBITRARILY AND UNLAWFULLY UNDERSTATES THE COMPANY'S MAXIMUM 1-HOUR NO_2 IMPACTS.

Even if the Region were not required to demonstrate compliance with the 1-hour, 100 ppb "maximum allowable concentration" for NO_2, it clearly erred in the way it allowed Shell to determine compliance with the form of the more general 1-hour national ambient air quality standard.

The form of the 1-hour NO_2 national ambient air quality standard requires that the 98th percentile impact (or 8th highest) of 1-hour daily maximum impacts not exceed 100 ppb. 75 Fed. Reg. 6,474. But to demonstrate compliance with the form, Shell altered the cumulative impacts from which it selected the 98th percentile 1-hour daily maximum. More specifically, Shell used background values that were already adjusted to the 98th percentile, instead of basing its calculations on the full distribution of background values.[35] The Region clearly erred by accepting these calculations, because EPA determined previously that this method fails to demonstrate compliance with the form of the 1-hour standard.

In a memorandum dated June 29, 2010, EPA rejected the method Shell used to demonstrate its compliance with the 1-hour NO_2 national ambient air quality standard.[36] In that memorandum, EPA stated that use of 98th percentile background measurements "could result in a value that is below the 98th percentile of the combined cumulative distribution and would, therefore, not be protective of the [national ambient air quality standard]."[37] Instead, this

[35] Response to Comments (Ex. 15) at 69-70.
[36] Memorandum from Stephen D. Page, Director, Office of Air Quality Planning and Standards, Re: Guidance Concerning the Implementation of the 1-hour NO_2 NAAQS for the Prevention of Significant Deterioration Program (Ex. 18) at 18 (June 29, 2010).
[37] *Id*. (emphasis added).

memorandum recommended use of the unadjusted, "overall highest hourly background NO_2 concentration" to demonstrate compliance.[38]

In subsequent guidance, issued March 1, 2011, EPA stated that the approach it recommended in June 2010—namely, using the overall highest background concentration—might be too conservative in some circumstances and recommended that this too-conservative approach should not be used.[39] The guidance did not, however, recommend a new approach. Rather, it advised that permitting authorities could adopt the 98th percentile background approach even though the agency previously rejected it in June 2010 as insufficient to protect the 1-hour NO_2 standard. EPA provided no analysis or explanation for this choice in light of its previous finding; EPA's new guidance simply asserted the method rejected in its June 2010 guidance could be used under certain circumstances.[40]

In reliance on the March 2011 guidance from EPA headquarters, the Region allowed Shell to demonstrate compliance with the form of the 1-hour NO_2 standard by combining the 98th percentile monitored background values with Shell's modeled impacts.[41] But the Region likewise failed to offer any analysis to refute EPA's initial conclusion that this approach does not ensure compliance with the national ambient air quality standard.[42]

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[38] *Id.* The memo also stated that with justification and documentation, additional refinements could be made based on the temporal pairing of monitored background and modeled levels, but it never indicated that the use of 98th percentile monitored background values would be justified.
[39] Memorandum from Tyler Fox, Leader, Air Quality Modeling Group, Re: Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard (Ex. 19) at 17-20 (Mar. 1, 2011) ("March 2011 Guidance Memorandum").
[40] *Id.* at 19.
[41] Response to Comments (Ex. 15) at 69-71.
[42] According to the Region, Shell's modeling includes several conservative assumptions. *Id.* at 75-76. This may be true but it is beside the point, as the Region does not argue—let alone establish with analysis—that the conservative elements of Shell's approach are sufficient to

Because neither EPA nor the Region provided any explanation about whether and, if so, how, its earlier conclusion that the use of 98th percentile background values is "not protective of the [national ambient air quality standard]" was incorrect, EPA's new guidance and the approach taken by the Region here in reliance on it are arbitrary.[43] Section 165(a)(3)(B) states that no new major source may be constructed "unless" the source "demonstrates" that its emissions "will not cause, or contribute to, air pollution in excess of any . . . national ambient air quality standard." 42 U.S.C. § 7475(a)(3)(B). Having used an approach that "is not protective" of the 1-hour NO_2 standard, Shell has failed to make the demonstration required of all new sources by section 165(a)(3)(B), and the Region has issued the permits in contravention of section 165. U.S.C. § 7475(a)(3)(B).

While an agency is entitled to change course, "an agency changing its course by rescinding" a prior action or determination "is obligated to supply a reasoned analysis." *State Farm*, 463 U.S. at 42. But "an agency may not . . . depart from a prior policy *sub silentio*." *FCC v. Fox Television Stations, Inc.*, 129 S. Ct. 1800, 1811 (2009). Further, "a more detailed justification than what would suffice for a new policy created on a blank slate" is required where an agency's "new policy rests upon factual findings that contradict those which underlay its prior policy." *Id*. Here, EPA has failed even to make new factual findings to explain its departure from its prior analysis. The Board "cannot gloss over the absence of a cogent explanation by the agency," *Humane Soc. of the U.S. v. Locke*, 626 F.3d 1040, 1049 (9th Cir. 2010), and the Beaufort and Chukchi Permits must be remanded.

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overcome EPA's previous finding that the use of 98th percentile background values does not protect the standard.

[43] *See* March 2011 Guidance Memorandum (Ex. 19) at 17-20.

III. THE REGION CLEARLY ERRED IN ITS DECISION TO EXCLUDE AIR WITHIN A RADIUS OF 500 METERS FROM THE *DISCOVERER* FROM THE DEFINITION OF "AMBIENT AIR."

The Clean Air Act regulates the concentration of air pollution in the "ambient air." *See* 42 U.S.C. § 7409. Because areas not included within the definition of "ambient air" are not protected by provisions of the Act, the Region's delineation of where the ambient air begins in relation to Shell's proposed operations is of great importance. If ambient air—and, therefore, the point of Clean Air Act compliance—is determined to begin at a point far away from the *Discoverer*, Shell will be authorized to emit more pollution, perhaps with fewer controls, than would be lawful otherwise.

The Beaufort and Chukchi Permits exclude air within a radius of 500 meters from the center of the *Discoverer* from the definition of "ambient air."[44] In other words, a circular area with a diameter of one kilometer will become an unregulated pollution zone. This delineation is based upon an assumption that Shell will request, and the United States Coast Guard will establish, a safety zone restricting the passage of other vessels within this radius.[45] As a consequence, Shell has not undertaken—nor has the Region required—any analysis of air quality impacts within this radius.[46] This omission is significant, as both Shell and the Region acknowledge that maximum air quality impacts from the *Discoverer*'s proposed operations are likely to occur within the 500 meter boundary.[47] Given that Shell's proposed operations already

[44] Beaufort Permit (Ex. 1) at 12; Chukchi Permit (Ex. 2) at 10; Supplemental Statement of Basis (Ex. 6) at 26-27.
[45] Response to Comments (Ex. 15) at 38-40. Shell's ambient air quality analysis assumes that company's request for a safety zone will be granted. Supplemental Statement of Basis (Ex. 6) at 26-27. The Beaufort and Chukchi Permits require, as a condition for operating the Discoverer, that the safety zone be established. Beaufort Permit (Ex. 1) at 12; Chukchi Permit (Ex. 2) at 10.
[46] Supplemental Statement of Basis (Ex. 6) at 26.
[47] *See* Supplemental Statement of Basis (Ex. 6) at 59; *see also* Shell, Outer Continental Shelf Pre-Construction Air Permit Application, Frontier Discoverer, Beaufort Sea Exploration

exceed the "maximum allowable concentration" and, within the Chukchi Sea, barely comply with other applicable standards at a radius of 500 meters, violations are possible if not likely within the 500 meter radius.[48]

The Region's decision to establish the ambient air boundary at a radius of 500 meters from the *Discoverer* is clearly erroneous because it contravenes both EPA's definition of "ambient air" as well as EPA's longstanding interpretation of that regulation. As defined at 40 C.F.R. § 50.1(e), "ambient air" is "that portion of the atmosphere, external to buildings, to which the general public has access." 40 C.F.R. § 50.1(e). The Region "agrees" that "EPA's longstanding interpretation" of this regulation affords an "exemption from ambient air . . . only for the atmosphere over land owned or controlled by the source and to which public access is precluded by a fence or physical barrier."[49] The *Discoverer*'s 500 meter ambient air boundary is arbitrary and unlawful because Shell does not "own[] or control[]" the area within the 500 meter boundary and "public access is not precluded."

Shell plainly does not "own or control" the surface of the ocean within 500 meters of the *Discoverer*. Unsurprisingly, the Region concedes that "Shell does not 'own' the areas of the Beaufort and Chukchi Seas on which the Discoverer will be operating."[50] But the Region maintains that the Coast Guard safety zone amounts to a form of control. *See id*. Critically,

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Program (Ex. 20) at 166 (Jan. 2010) ("peak Project contribution . . . occurs only 80 meters downwind of the drill site").

[48] *See* Supplemental Statement of Basis (Ex. 6) at 58 (noting that in the Chukchi Sea, the Discoverer's total impact will amount to 93% of the 1-hour NO_2 national ambient air quality standard, 67% of 24-hour $PM_{2.5}$ standard, and 60% of the 24-hour PM_{10} standard). Owing to different meteorological conditions, *see id.* at 51, project ambient air impacts are lower in the Beaufort Sea. *Id.* at 53.

[49] Response to Comments (Ex. 15) at 39 (citing Letter from Douglas M. Costle, EPA Administrator to The Honorable Jennings Randolf, Re: Ambient Air (Ex. 21) (Dec. 19, 1980) ("Letter Costle to Randolf")).

[50] Response to Comments (Ex. 15) at 40.

EPA's interpretation of 40 C.F.R. § 50.1(e)—accepted by the Region as controlling—does not merely require that an area be under control of some authority generally; rather, it requires that the "source" control the area.[51] Here, it is undisputed that authority to establish and enforce the safety zone does not rest with Shell (the "source"), but with a third party, the Coast Guard. 43 U.S.C. § 1333(d). The Region has determined previously that where a lessee does not control access to its leased property and must rely upon a third party to limit public access, as is the case with the safety zone here, the leased area must be considered ambient air.[52] An agency decision is arbitrary when, as here, its explanation "runs counter to the evidence," *State Farm*, 463 U.S. at 43, and "the agency offer[s] insufficient reasons for treating similar situations differently." *Transactive Corp. v. United States*, 91 F.3d 232, 237 (D.C. Cir. 1996).

The area within the 500 meter ambient air boundary also fails to satisfy the second criterion for an exemption from "ambient air," namely, that "public access is precluded."[53] According to the Region, the Coast Guard safety zone "establishes legal authority for excluding the general public from the area inside the zone." Notably, in the onshore context, this criterion is unrelated to "legal authority to exclude the public," as property owners generally have authority to determine who enters their property; rather, the question is whether barriers exist that actually preclude access. Whether viewed from a legal or practical standpoint, the safety zone fails to effectuate a barrier that "precludes" public access. The authority both to establish and enforce the safety zone entirely belongs to the Coast Guard, which in any case retains discretion over whether vessels may enter and leave the zone. *See* 33 C.F.R. § 147.5; *id*. at §

[51] Letter Costle to Randolf (Ex. 21) at 1; Response to Comments (Ex. 15) at 39.
[52] *See* Letter from Nancy Helm, EPA, to John Kuterbach, Re: Determining the Ambient Air Boundary for Potential Permit Application in Support of Alaska Industrial Development and Export Authority's Restart of Healy Clean Coal Project (Ex. 22) at 2-3 (Sept. 11, 2007).
[53] *See* Letter Costle to Randolf (Ex. 21) at 1 (stating that exemption from ambient air is available only where "public access is precluded by a fence or other physical barriers.")

147.T001. Under the governing statute and regulations, the Coast Guard must base its decisions—with respect to both establishing and enforcing a safety zone—solely upon factors "relating to the promotion of safety of life and property," 43 U.S.C. § 1333(d); 33 C.F.R. § 147.1, and not upon "air quality considerations."[54] The Beaufort and Chukchi Permits themselves recognize that the Coast Guard will be able to authorize non-Shell vessels to enter the safety zone.[55]

Because Shell does not "own or control" the area within the 500 meter ambient air boundary, it must rely upon the Coast Guard to preclude public access. But the Coast Guard safety zone merely limits access, and for reasons other than air quality. Accordingly, neither Shell nor the Region can be certain that the Coast Guard will, in fact, preclude access. Because the safety zone limits but does not "preclude" public access, the Region's exemption of this area from the "ambient air" is contrary to 40 C.F.R. § 50.1(e) and EPA's longstanding interpretation of that regulation. Having offered an explanation that "runs counter to the evidence" and departs from previous application of the law, the Region has clearly erred. *State Farm*, 463 U.S. at 43; *see also Transactive Corp.*, 91 F.3d at 237.

CONCLUSION

For the foregoing reasons, Petitioners respectfully request that the Board grant review of the Beaufort and Chukchi Permits and remand the decisions to the Region because of its failure to require Shell to comply with Clean Air Act section 165's PSD permitting requirements as well as the Region's arbitrary departure from previous determinations regarding the appropriate

[54] Response to Comments (Ex. 15) at 42.
[55] Beaufort Permit (Ex. 1) at 12 (stating that safety zone "prohibits members of the public from entering this area except for . . . vessels authorized by the [Coast Guard]"); Chukchi Sea Permit (Ex. 2) at 10 (same).

methodology for projecting 1-hour NO_2 concentrations and delineating the "ambient air" boundary.

Respectfully submitted,

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DATED: October 24, 2011

STATEMENT OF COMPLIANCE WITH WORD LIMITATION

Pursuant to the Environmental Appeals Board's Order Governing Petitions for Review of Clean Air Act New Source Review Permits, dated April 19, 2011, I certify that the foregoing PETITION FOR REVIEW does not exceed 14,000 words. As calculated by Petitioners' word processing software, this petition contains 9,844 words, excluding the parts of the petition exempted by the Board's Order.

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CERTIFICATE OF SERVICE

I hereby certify that on October 24, 2011, copies of the foregoing PETITION FOR REVIEW in the matter of *Shell Gulf of Mexico Inc., Permit No. R10OCS/PSD-AK-09-01 and Shell Offshore Inc., Permit No. R10OCS/PSD-AK-2010-01,* were served by U.S. First Class Mail on the following persons:

Dennis McLerran, Regional Administrator
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Additionally, courtesy copies were mailed by U.S. First Class Mail to the following persons:

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TABLE OF EXHIBITS

12 Pacific Environment, Revised Draft Air Permits for Shell's Proposed Oil and Gas Exploration Drilling in the Beaufort Sea and Chukchi Sea, Alaska (Aug. 5, 2011)

13 EPA Region 10, Public Notice, Shell Discoverer Air Permit, Beaufort Sea, Final air permit issued.

14 EPA Region 10, Public Notice, Shell Discoverer Air Permit, Chukchi Sea, Final air permit issued.

15 EPA Region 10, Supplemental Response to Comments for Outer Continental Shelf Prevention of Significant Deterioration Permits, Noble Discoverer Drillship, Shell Offshore Inc., Beaufort Sea Exploration Drilling Program, Permit No. R10OCS/PSD-AK-2010-01, Shell Gulf of Mexico Inc., Chukchi Sea Exploration Drilling Program, Permit No. R10OCS/PSD-AK-09-01 (Sept. 19, 2011) (excerpts)

16 Region 10, Results_Disco_Iter01e_NO2_BS09B, Calc Sheet

17 Email from Julie Vergeront, Region 10, to David Hobstetter and Colin O'Brien, Earthjustice, Discoverer 1-hour NO2 Impacts Question (Sep. 30, 2011)

18 Memorandum from Stephen D. Page, Director, Office of Air Quality Planning and Standards, Re: Guidance Concerning the Implementation of the 1-hour NO_2 NAAQS for the PSD Program (June 29, 2010)

19 Memorandum from Tyler Fox, Leader, Air Quality Modeling Group, Re. Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard (Mar. 1, 2011)

20 Shell, Outer Continental Shelf Pre-Construction Air Permit Application, Frontier Discoverer, Beaufort Sea Exploration Program (Jan. 2010) (excerpts)

21 Letter from Douglas M. Costle, EPA Administrator, to The Honorable Jennings Randolf, Re: Ambient Air (Dec. 19, 1980)

22 Letter from Nancy Helm, EPA, to John Kuterbach (Sept. 11, 2007)