

Attachment 1

AR-EPA-SSS-4

U.S. Environmental Protection Agency 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)

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
SEATTLE, WASHINGTON**

**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**

Table of Content

I.	INTRODUCTION.....	6
A.	CATEGORY – COMMENTS OF GENERAL SUPPORT	8
B.	CATEGORY – COMMENTS RECOGNIZING IMPROVEMENTS TO PERMITS	8
C.	CATEGORY – COMMENTS OF GENERAL OPPOSITION	9
D.	CATEGORY – GENERAL COMMENTS OF QUALIFIED SUPPORT	10
E.	CATEGORY – PUBLIC COMMENT PROCESS	10
F.	CATEGORY – DEFINITION OF OCS SOURCE.....	16
G.	CATEGORY – APPLICATION OF BACT TO THE ASSOCIATED FLEET	21
H.	CATEGORY – USE OF ICEBREAKER #1 FOR SETTING ANCHORS.....	22
I.	CATEGORY – DURATION OF OPERATIONS	22
J.	CATEGORY – OPERATIONS IN SAME SEA	24
K.	CATEGORY – OWNER REQUESTED/POTENTIAL TO EMIT LIMITS	25
L.	CATEGORY – ULTRA LOW SULFUR DIESEL FUEL	30
M.	CATEGORY – ELECTRICAL POWER OUTPUT LIMITS FOR ICEBREAKER # 2....	31
N.	CATEGORY – MONITORING REQUIREMENTS	31
O.	CATEGORY – REPORTING REQUIREMENTS	35
P.	CATEGORY – COMPLIANCE MONITORING AND ENFORCEMENT	36
Q.	CATEGORY – AMBIENT AIR BOUNDARY	38
R.	CATEGORY – GENERAL COMMENTS ON AMBIENT AIR QUALITY ANALYSIS AND SUPPORTING DATA.....	43
S.	CATEGORY – CHOICE OF MODEL	45
T.	CATEGORY – PRORATING IMPACTS	51
U.	CATEGORY – METEOROLOGICAL DATA.....	52
V.	CATEGORY – BACKGROUND AIR MONITORING DATA	63
W.	CATEGORY – AIR QUALITY ANALYSIS FOR 1-HOUR NO ₂ NAAQS	67
X.	CATEGORY – AIR QUALITY ANALYSIS FOR PM _{2.5} NAAQS	85
Y.	CATEGORY – AIR QUALITY ANALYSIS FOR OZONE NAAQS	91
Z.	CATEGORY – CUMULATIVE IMPACTS	95
AA.	CATEGORY– PM _{2.5} INCREMENT.....	98
BB.	CATEGORY – ENVIRONMENTAL JUSTICE	102
CC.	CATEGORY – BASELINE DATA.....	110

5 USC § 552. In some instances, Region 10 may withhold all or a portion of inspection reports and other information in accordance with FOIA, 5 USC § 552(b).

Comment P.2: A group of commenters states that if Region 10 does not have the requisite resources to dedicate to the arctic OCS, Region 10 should coordinate with BOEMRE or other federal agencies to ensure compliance with air permit conditions.

Response: Region 10 will coordinate with other federal agencies as necessary and appropriate to ensure appropriate oversight of Shell's operations under the permits.

Comment P.3: Several commenters request that Region 10 promptly share the records, reports, and information gained from physical inspections of the Discoverer and Associated Fleet with the public and establish methods to communicate results of compliance with the permit conditions and monitoring requirements. The commenters would like to know whether the applicant is within limits, exceeding limits with plans for correction, and/or in-between when it comes to air quality. The commenters state that this of this information will be useful to North Slope Borough staff as well as its residents when reviewing future proposals for offshore activities. Other commenters ask that the Iñupiat Community of the Arctic Slope be copied on all construction reports, monitoring reports, and air pollution emission reports.

Response: This comment was addressed in issuance of the 2010 Permits and was not the subject of a petition. The underlying basis of this issue is not affected by any revisions to the permits or analysis for the 2011 Revised Draft Permits. As such, it is beyond the scope of the remand and a response is not necessary. 2010 Chukchi Response to Comments at 79-81; Remand Order I at 82.

As discussed above, key compliance information will be available via EPA's ECHO website. <http://www.epa-echo.gov/echo/> The public also has a right to request this information under FOIA. See also response to comment P.1.

Comment P.4: A commenter states that the local community wants to see equal enforcement of the laws on the oil companies and that the local community does not have the staff and feel intimidated by the oil companies.

Response: Region 10 shares the commenter's interest in ensuring that laws are enforced in a fair manner. See response to comment P.1 for a discussion of Region 10's enforcement authorities and mechanisms in place to help assure permit requirements are met and violations are detected.

Q. CATEGORY – AMBIENT AIR BOUNDARY

Comment Q.1: Commenters contend that Region 10's decision to set the ambient air boundary at 500 meters from the center of the Discoverer is arbitrary and unlawful and conceals the true maximum impacts of Shell's emissions. The commenters state that, to comply with EPA's longstanding policy on ambient air, Region 10 must set the ambient

air boundary at the hull of the Discoverer, noting that EPA has defined “ambient air” as “that portion of the atmosphere, external to buildings, to which the general public has access.” The commenters state that, under EPA policy, an exemption from ambient air is available only for the atmosphere over land owned or controlled by the source and to which public access is precluded by a fence or other physical barriers, and that Shell does not own or control the area within the 500 meter radius and it cannot effectively prevent public access. The commenters continue that Shell’s proposal to implement a public access control program to “locate, identify and intercept the general public” does not constitute the fence or other physical barrier excluding the public that EPA’s policy requires.

Response: Ambient air is defined as “...that portion of the atmosphere, external to buildings, to which the general public has access.” 40 CFR § 50.1(e). Region 10 agrees with the commenters that EPA’s longstanding interpretation is that “exemption from ambient air is available only for the atmosphere over land owned or controlled by the source and to which the public access is precluded by a fence or physical barrier.” See Letter from Administrator Douglas M. Costle, EPA, to Senator Jennings Randolph, Chairman, Environment and Public Works Committee, re: Ambient Air, dated December 19, 1980. EPA has observed that “control” under this criteria means that “the source has certain rights to use of the land/property, including the power to control public access to it.” Memorandum from Steven D. Page, Office of Air Quality Planning and Standards (OAQPS), re: Interpretation of “Ambient Air” in Situations Involving Leased Land under the Regulations for Prevention of Significant Deterioration, Attachment at 3, dated June 22, 2007 (Leased Land Guidance). Region 10 believes that excluding the area within a safety zone established by the United States Coast Guard from ambient air is consistent with this interpretation.

As discussed in the Supplemental Statement of Basis (at 26), Shell modeled emissions from the Discoverer beginning 500 meters from the center of the Discoverer and assumes that the Coast Guard will impose a safety zone of this distance around the Discoverer to exclude the public from the area in which the Discoverer’s anchor array will be deployed and in which Shell will be conducting its main operations. Shell therefore agreed that Region 10 would require as a condition of operation under the permits that Shell have in place at all times of operation as an OCS source a safety zone of at least 500 meters within which the Coast Guard prohibits public access.¹² See 2011 Revised Draft Beaufort Permit at 12; 2011 Revised Draft Chukchi Permit at 12.

The conditions of the permit provide sufficient assurance that the general public will not have access to the area inside the safety zone, consistent with the two primary criteria EPA has used to determine when such an exclusion may apply. Given that the permitted activities occur over open water in the Arctic, these criteria must be adapted to some

¹²Shell had previously applied for and obtained a Coast Guard Safety Zone for its operations in the Beaufort and Chukchi Seas for the 2010 drilling season. See 75 Fed. Reg. 19404 (April 12, 2010), but had withdrawn its request that the safety zone be used as the ambient air boundary in issuance of the 2010 permits. See response to comment Q.2. Thus, Shell must apply for and the Coast Guard must establish a safety zone for operation under these permits. The Coast Guard establishes safety zones on the OCS pursuant to 33 CFR § 14710.

extent when applied to this environment, but they are still satisfied in this instance in a manner sufficient to effectively preclude public access from the safety zone.

Region 10 recognizes that Shell does not “own” the areas of the Beaufort and Chukchi Seas on which the Discoverer will be operating as might be the case for a stationary source on land. Shell has a lease authorizing the company to use these areas for the activities covered by the permits. The Coast Guard safety zone establishes legal authority for excluding the general public from the area inside the zone. EPA has previously recognized a safety zone established by the Coast Guard as evidence of sufficient ownership or control by a source over areas over water so as to qualify as a boundary for defining ambient air where that safety zone is monitored to pose a barrier to public access. Letter from Steven C. Riva, EPA Region 2, to Leon Sedefian, New York State Department of Conservation, re: Ambient Air for the Offshore LNG Broadwater Project, dated October 9, 2007 (Broadwater Letter).

To meet the second of the criteria applied by EPA and ensure the source actually takes steps to preclude public access, Shell proposed and Region 10 required as a condition of operation under the permits that Shell develop in writing and implement a public access control program to locate, identify, and intercept the general public by radio, physical contact, or other reasonable measures to inform the public that they are prohibited by Coast Guard regulations from entering the area within 500 meters of the Discoverer. Region 10 believes that, for the overwater locations in the arctic environment at issue in these permitting actions, such a program of monitoring and notification is sufficiently similar to a fence or physical barrier on land such that the area within the Coast Guard safety zone qualifies for exclusion from ambient air. See Broadwater Letter at 2.

Shell therefore appropriately excluded the area within 500 meters of the center of Discoverer from the source impact analysis it conducted to meet the requirements of the PSD regulations.

Comment Q.2: Some commenters contend that Region 10 has taken an inconsistent approach in setting the ambient air boundary. The commenters state that, when Shell initially applied for the air permits, the company’s application materials included an ambient air boundary of 900 meters and that Shell assumed that the ambient air would begin at this distance because it had “submitted a request to the US Coast Guard, for issuance of a safety exclusion and equipment protection zone surrounding the Discoverer” Nevertheless, the commenters state, in issuing the 2010 Permits, Region 10 required Shell to model impacts from the hull of the Discoverer, outward, yet Region 10 is now indicating that it will allow Shell to model impacts starting 500 meters from the center of the Discoverer. The commenters allege that if Region 10 were to recognize that the edge of the hull is the appropriate boundary, Shell has not demonstrated that its operations will not cause a violation of air quality standards in the “ambient air” and that Shell has in fact stated that maximum impacts occur only a short distance from the drillship (citing to Shell statements that “at all receptors, the cumulative concentrations were less than the peak Project contribution alone, which occurs only 80 meters downwind of the drill site”).

Response: The commenters are correct that Shell’s February 2009 application for an OCS/PSD permit for operations in the Chukchi Sea did request an ambient air boundary based on a Coast Guard safety zone. See Shell February 2009 Application at 63. Shell later withdrew that request. Email from Roger Steen, Air Sciences, to Janis Hastings, EPA, re: Discoverer - Notification of Elimination of the Ambient Air Boundary Based on a Safety Zone, dated April 29, 2009. The 2010 Permits issued by Region 10 therefore did not base the ambient air boundary on a Coast Guard safety zone, but instead assumed that ambient air began at the hull of the Discoverer. 2010 Chukchi Statement of Basis at 99. As discussed in the Supplemental Statement of Basis, the supplemental application materials submitted by Shell to support its revised air quality analysis modeled emissions from the Discoverer beginning 500 meters from the center of the Discoverer and assumes that the Coast Guard will impose a safety zone of this distance around the Discoverer to exclude the public from the area in which the Discoverer’s anchor array will be deployed and in which Shell will be conducting its main operations. Supplemental Statement of Basis at 26; Shell March 18, 2011 Submittal at 38, fn. 15. The permits therefore authorize operation only if the Discoverer is subject to a currently effective safety zone established by the Coast Guard. Because the area within the safety zone is not considered ambient air, demonstrating compliance with the NAAQS and PSD increments within that zone is not required. Thus, Region 10 acted consistently with Shell’s application materials, legal requirements, and EPA guidance in determining the ambient air boundary based on a Coast Guard safety zone. See also response to comment Q.1.

Comment Q.3: Commenters are concerned that Shell plans to allow marine mammal observers and subcontractors, who the commenters contend are not Shell employees but are instead members of the public, onto and near Shell’s vessels within the 500 meter boundary. One commenter states that many observers are Alaskan Natives and must take sometimes scarce job opportunities in their rural villages and he hopes that the observers are informed of and understand the risks they are taking to support their families.

Response: Region 10’s understanding is that Marine Mammal Observers will be employees of Shell or Shell contractors. 2012 Revised Camden Bay Exploration Plan at 11-4 (Marine Mammal Observers provide an opportunity for local hire). Under established EPA policy, contractors, subcontractors, and employees that are expressly granted access to a site by the entity with control over the site are not considered the general public vis-à-vis that entity, but instead are considered “business invitees.” See Leased Land Guidance Attachment at 5. Their presence within the Coast Guard safety zone thus does not deprive that area from qualifying for exclusion from ambient air.

Comment Q.4: Commenters contend that allowing OCS sources to establish ambient air boundaries in the Arctic based on safety zones raises concerns regarding the cumulative impacts to offshore air quality that several such operations with ambient air quality boundaries would have on air quality. The commenters cite to a Government Accounting Office Report, GAO, EPA’s Ambient Air Policy Results in Additional Pollution, July 1989 (available at: <http://archive.gao.gov/d26t7/139340.pdf>) and assert that that EPA has been subject to scrutiny for creating ambient air boundaries in the first instance because they allow for

greater air quality deterioration. The commenters ask Region 10 to explain why this boundary works in the Arctic and how Region 10 arrived at the decision to allow more pollution instead of less, particularly in light of the heavy use of offshore areas by subsistence communities. Commenters expressed concern about what Region 10's decision means for air quality on the OCS where people hunt and fish.

Response: Safety zones are established by the Coast Guard based on safety considerations, not air quality considerations. See, e.g., 75 Fed. Reg. 803 (January 6, 2010) ("The purpose of the temporary safety zone is to protect the DRILLSHIP from vessels operating outside normal shipping channels and fairways. Placing a temporary safety zone around the DRILLSHIP will significantly reduce the threat of allisions, oil spills, and releases of natural gas, and thereby protect the safety of life, property, and the environment")(capitalization in original). However, because such a safety zone combined with Shell's public access control program has the effect of restricting the general public's access to the relevant area, as discussed in response Q.1, Region 10 believes the presence of a safety zone supports excluding the area inside the zone from ambient air for air quality purposes consistent with prior EPA interpretations of its regulations. The GAO report cited by the commenters focused primarily on concerns with land acquisition to increase the size of the ambient air boundary and thus as a pollution control technique, which is not implicated in the application for and the establishment of a Coast Guard safety zone based on safety considerations. As discussed above in response to comment Q.1, EPA has previously determined that a Coast Guard safety zone is an appropriate basis for establishing an ambient air boundary within which demonstration of compliance with the NAAQS is not required. As discussed in Sections 5 and 6.4 of the Supplemental Statement of Basis and the Region 10 Technical Analysis, emissions under these permits are not expected to cause or contribute to violations of the NAAQS in any area that constitutes ambient air, including in areas where local communities regularly conduct subsistence activities. With respect to cumulative impacts, please see the response to comments in Category Z.

Comment Q.5: Commenters request that, if the ambient air boundary remains in place, Region 10 examine options for requiring monitoring at 500 meters from the Discoverer for the first two weeks of the drilling season. The commenters state they are not aware of any reasons why it would not be technologically feasible to operate monitoring equipment from a moored vessel.

Response: Region 10 believes that the background monitoring data that have been collected in conjunction with the air quality modeling conducted to support these permit actions adequately demonstrate that emissions under the permits will not cause or contribute to a violation of the NAAQS. The emission limits and associated monitoring, recordkeeping, and reporting requirements in the permits are adequate to verify that the NAAQS will not be exceeded and Region 10 therefore does not believe the additional monitoring requested by the commenters is warranted.

The permits do require post-construction monitoring for PM_{2.5}. See Discoverer Beaufort Final OCS/PSD Permit, Condition S; Discoverer Chukchi Final OCS/PSD Permit,

Condition R. Given the challenges of conducting ambient air monitoring in harsh, remote arctic conditions, Region 10 does not believe it is appropriate to require that this monitoring be conducted on a vessel at the ambient air boundary. In addition, Region 10 believes collection of background air quality data within a closer proximity to a community provides more beneficial information on potential health-based exposure than a monitor located well offshore.

Comment Q.6.: A commenter states that the ships in question here are large and produce large amounts of exhaust. The commenter contends that moving the location where the standards had to be met half a kilometer away was done to accommodate, or perhaps hide, the amount of emissions that will occur and that it will result in heavy pollutants in a very sensitive area.

Response: Permitted emissions have been significantly reduced under the 2011 Revised Draft Permits as compared to the 2010 Permits. For a discussion of the basis for considering a Coast Guard safety zone as an appropriate basis for an ambient air boundary, please see response to comment Q.1.

R. CATEGORY – GENERAL COMMENTS ON AMBIENT AIR QUALITY ANALYSIS AND SUPPORTING DATA

Comment R.1: One commenter states that Shell will emit large amounts of fine particulate matter which can cause breathing problems, heart disease, and even death and that, according to a panel of experts from the American Heart Association, there is no safe level of fine particulate matter exposure.

Response: Emissions of fine particulate (PM_{2.5}) have been reduced by more than 60% in the 2011 Revised Draft Permits as compared to the 2010 Permits, from 52 tons per year in the Chukchi Sea and 57 tons per year in the Beaufort Sea to 21 tons per year in each Sea. Region 10 Technical Analysis at 8. Moreover, the air quality analysis demonstrates that the 24-hour PM_{2.5} NAAQS will be attained at all areas that constitute ambient air, with an impact, including background, at the modeled location of maximum impact of 67 % of the PM_{2.5} NAAQS in the Chukchi Sea and 52% of the PM_{2.5} NAAQS in the Beaufort Sea. Supplemental Statement of Basis at 57- 58. Onshore impacts from PM_{2.5} emissions from Shell’s operations are predicted to be substantially lower. The NAAQS are health-based standards, set at a level to protect public health with an adequate margin of safety, including sensitive populations such as children, the elderly, and asthmatics.

Comment R.2: Commenters note Region 10’s statement that “Shell submitted a single analysis for operation in both the Beaufort and Chukchi Seas, using the Associated Fleet to be authorized under the Beaufort 2011 Revised Draft Permit.” The commenters ask Region 10 to verify that the use of the Associated Fleet for the Beaufort Sea is sufficient to capture the impacts from the fleet in the Chukchi Sea, where higher air quality impacts are predicted to occur.

Attachment 2

AR-EPA-QQQ-3

U.S. Environmental Protection Agency 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
(July 6, 2011)

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
SEATTLE, WASHINGTON**

**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**

Date of Proposed Permit: July 6, 2011

TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS	5
UNITS AND MEASUREMENTS	6
POLLUTANTS	6
1 Background/History	7
1.1 Introduction	7
1.2 Past Permitting Actions and EAB Remand.....	8
1.3 Supplemental Application Materials	10
1.4 Key Changes in 2011 Revised Draft Permits	10
1.5 Public Participation.....	12
1.5.1 Opportunity for Public Comment	12
1.5.2 Public Hearing and Informational Meetings.....	14
1.5.3 Administrative Record	14
2 Regulatory Applicability.....	15
2.1 Introduction	15
2.2 The “OCS Source”	18
2.2.1 Statutory and Regulatory Framework.....	18
2.2.2 OCS Source Determination in Prior Permit Proceedings for the Discoverer	20
2.2.3 The Discoverer’s Anchoring Process at a Drill Site	21
2.2.4 Region 10’s Proposed Determination of When the Discoverer Becomes an OCS Source	22
2.3 Applicability of Requirements that Became Effective After Issuance of the 2010 Permits	25
3 Changes in Project Emissions and Permit Terms and Conditions	26
3.1 The OCS Source	26
3.2 Coast Guard Safety Zone.....	26
3.3 Drillship Name Change	27
3.4 Drill Site Notification	27
3.5 Restrictions on Duration of Exploration Operations.....	27
3.6 Limits on Potential to Emit/Owner Requested Limits.....	28
3.6.1 Sulfuric Acid Mist.....	28

3.6.2	Greenhouse Gases	28
3.6.3	PTE Designations	31
3.7	Other Emission Limit Changes.....	31
3.7.1	1-hour NO _x Emission Limits.....	31
3.7.2	24-Hour PM ₁₀ and PM _{2.5} Emission Limits	31
3.8	Discoverer Emergency Generator and Seldom Used Sources	31
3.9	Shallow Gas Diverter System.....	32
3.10	Associated Fleet Seldom Used Sources	32
3.11	Icebreaker #1	32
3.12	Icebreaker #2	33
3.13	Supply Ship in Dynamic Positioning Mode	33
3.14	Cuttings/Mud Disposal Barge.....	34
3.15	Icebreaker Stack Height And Capacity Limits	34
3.16	Associated Fleet Location Restrictions	35
3.17	Monitoring of SCR and OxyCat Operation	35
3.18	Test Methods for PM ₁₀ and PM _{2.5}	36
3.19	Corresponding Onshore Area (COA) Requirements	36
3.19.1	COA Marine Vessel Visible Emission Standards	36
3.19.2	COA Assessable Emissions.....	36
3.19.3	Other COA Requirements	37
3.20	Operating Report.....	37
4	BACT	37
5	Air Quality Analysis.....	38
5.1	Introduction	38
5.2	Air Quality Model.....	39
5.3	Meteorological Data	40
5.4	Shell Operating Scenarios.....	40
5.5	Receptor Grid, Source Locations, and Source Parameters	42
5.6	Background Monitoring Data.....	45
5.7	Modeling Results.....	49
5.7.1	New 1-Hour NO ₂ NAAQS	49
5.7.2	New 1-Hour SO ₂ NAAQS.....	52
5.7.3	Secondary PM _{2.5}	54

5.7.4	Other Pollutants and Averaging Periods	56
5.7.5	Offsite Impacts	58
5.8	Conclusion	59
6	Other Requirements	60
6.1	Endangered Species Act and Essential Fish Habitat of Magnuson-Stevens Act.....	60
6.1.1	Essential Fish Habitat Requirements of Magnuson-Stevens Act	61
6.2	National Historic Preservation Act.....	62
6.3	Coastal Zone Management.....	62
6.4	Executive Order 12898 – Environmental Justice.....	62
6.4.1	Environmental Justice in PSD Permitting.....	63
6.4.2	Northern Iñupiat Communities.....	64
6.4.3	Community Outreach	66
6.4.4	Air Impacts of Proposed Operations	66
6.4.5	Conclusion	69
6.5	Executive Order 13175 – Tribal Consultation.....	69
6.6	National Environmental Policy Act	70

List of Tables

Table 1.	Maximum Daily Emissions Rates (lb/day)	44
Table 2.	Ambient Air Monitoring Sites, Pollutants, and Years of Record for Chukchi Sea Operations.....	46
Table 3.	Ambient Air Monitoring Sites, Pollutants, and Years of Record for Beaufort Sea Operations.....	46
Table 4.	Background Values for Use with Modeled Impacts at Offshore Locations Near Shell Lease Blocks for the 2011 Revised Draft Permits	47
Table 5.	Background Values for Use with Modeled Impacts at Onshore Locations	48
Table 6.	1-hour NO ₂ Modeled Impacts at Various Locations	53
Table 7.	1-hour SO ₂ Modeled Impacts at Various Locations	53
Table 8.	Maximum Modeled Impacts in the Beaufort Sea.....	57
Table 9.	Maximum Modeled Impacts in the Chukchi Sea.....	58

5. The Board acknowledged that Region 10 had not asked the Board to decide the issue of the sufficiency of the preconstruction monitoring data and stated that the sufficiency of the preconstruction monitoring data is included within the scope of its general remand of the 2010 Permits (Clarification Order at 11-12).

With respect to the scope of review following issuance of revised permits in response to the EAB Orders, the Board stated that anyone dissatisfied with the revised permits must file a petition seeking the Board’s review pursuant to 40 CFR § 124.19(f)(1)(iii). The Board limited the scope of petitions on the revised permits to be issued on remand “to issues addressed by the Region on remand and to issues otherwise raised in the petitions before the Board in this proceeding but not addressed by the Region on remand.” The Board specifically stated that “No new issues may be raised that could have been raised but were not raised in the present appeals [of the 2010 Permits]” (Remand Order I at 82).

1.3 Supplemental Application Materials

Shell has submitted the following supplemental application materials and requests for changes to the 2010 Permits since issuance of the EAB Orders: ⁸

June 10, 2011	Supplemental Permit Application Materials
June 22, 2011	Shell Alaska Exploratory Drilling Program Air Quality Permit Application Air Quality Modeling Files for Analysis of Anchor Handler Operations During open Water Conditions
June 23, 2011	Greenhouse Gas Calculation Information

1.4 Key Changes in 2011 Revised Draft Permits

In addition to changes made in response to the EAB Orders, Region 10 is also proposing changes in response to additional information and requests from Shell. The key changes to the 2011 Revised Draft Permits, both in response to the EAB Orders and in response to additional requests and information from Shell, are as follows:

- A determination that the Discoverer is an OCS source when attached by at least one anchor at a drill site.

⁸ The Administrative Record also contains numerous emails and correspondence between Shell and its consultants and EPA clarifying aspects of these materials.

- A condition based on Shell's permit application for a Coast Guard Safety zone prohibiting public access to areas within 500 meters of the Discoverer and a public access control program.
- A reduction in the total days of operation under each permit from 168 days during any rolling 12-month period to 120 days during the drilling season, with a maximum of 20 days (in hours) of that time drilling mud line cellars (MLCs) and 48 days of that time (in hours) drilling wells.
- A reduction of the drill season from July 1 through December 31 to July 1 through November 30.
- An increase from 10 days to six months in the time required for prior notification before locating at a new drill site.
- A limit on emissions of GHGs to ensure such emissions from the Discoverer and the Associated Fleet remain below the major source thresholds for GHGs and that the Discoverer does not trigger PSD permitting requirements for that pollutant.
- Substantial reductions in emissions from the main propulsion engines and generators on Icebreaker #1 through the installation of selective catalytic reduction (SCR) and oxidation catalyst (OxyCat).
- An increase of annual NO_x emissions from Icebreaker # 2 to reflect emission rates assumed in Shell's supplemental modeling analysis. The amount of this increase is substantially less than the decrease in NO_x emissions resulting from the installation of controls on Icebreaker #1.
- 1-hour NO_x limits to ensure that emissions from the Discoverer and the Associated Fleet do not cause or contribute to a violation of the new 1-hour NO₂ standard.
- Additional monitoring requirements for the SCR and OxyCat pollution control systems.
- Revisions to the 24-hour PM₁₀, and PM_{2.5} emissions limits to reflect Shell's supplemental air quality modeling to assure NAAQS and increment protection.
- The option of resupplying the Discoverer with the Supply Ship operating in the dynamic positioning (DP) mode in addition to resupplying by attaching the Supply Ship to the Discoverer (as was already authorized under the 2010 Permits). This results in an increase in emissions from the Supply Ship when operating in this mode as compared to the 2010 Permits.
- Replacement of the emergency generator on the Discoverer with a larger generator, but subject to additional restrictions on hours of operation and emissions as compared to the 2010 Permits.
- Identification of and fuel limits on seldom used engines on the Discoverer, Icebreaker #1 and #2, the Nanuq, and, for the Beaufort permit, the Point Class Tug (previously referred to as the Point Barrow Tug).

- Removal of several restrictions on the relative positions of vessels of the Associated Fleet with respect to the Discoverer based on Shell’s supplemental air quality modeling showing such restrictions are not needed to assure compliance with the NAAQS.
- Removal of a condition limiting visible emissions from the Associated Fleet based on Region 10’s determination that such requirement does not apply to vessels that are not an OCS source.
- A requirement to include in the operating report information required to be recorded under the permit, such as all emission calculations.

The 2011 Revised Draft Permits are supported by supplemental technical support and analyses that includes:

- A revised air quality analysis and supporting modeling, focusing in particular on the new 1-hour NO₂ and SO₂ NAAQS.
- A demonstration that the 2011 Revised Draft Permits meet all NAAQS, increments, and other applicable standards in effect at the time of proposal of the 2011 Revised Draft Permits.
- Supplemental information on and an analysis of secondary PM_{2.5} formation.
- An analysis of air monitoring data collected since issuance of the 2010 Permits.
- A Supplemental Environmental Justice Analysis addressing the Board’s concerns and demonstrating that the 2011 Revised Draft Permits will not have a disproportionately high and adverse human health or environmental effects on minorities or low income populations.

Overall, emissions of all regulated PSD air pollutants allowed under the 2011 Revised Draft Permits will decrease substantially in comparison to the 2010 Permits, largely as a result of the additional controls on Icebreaker #1 and the shortened operating season. Overall, annual emissions of key pollutants will decrease by more than 50%, with a small increase in ammonia as a result of the installation of SCR on Icebreaker #1.

1.5 Public Participation

1.5.1 Opportunity for Public Comment

The OCS regulations state that issuance of both OCS and PSD permits are governed by 40 CFR Part 124, Subparts A and C. See 40 CFR § 55.6(a) (3) and 124.1. Accordingly, Region 10 has followed the procedures of 40 CFR Part 124 in issuing the 2011 Revised Draft Permits.

Region 10 is seeking public comment on the provisions of the 2011 Revised Draft Permits that have been changed since issuance of the 2010 Permits and the information and analysis added to the record to support those changes. The public comment period runs until August 5, 2011 and all written comments must be emailed or postmarked by that date.

other technical analyses and resulted to changes in numerous permit conditions. Given the extent of these changes, Region 10 believes it is appropriate to require that the 2011 Revised Draft Permits meet all new requirements that have come into effect since issuance of the 2010 Permits. As discussed in more detail below, the 2011 Revised Draft Permits meet these requirements.

3 CHANGES IN PROJECT EMISSIONS AND PERMIT TERMS AND CONDITIONS

3.1 The OCS Source

As discussed in Section 2.2 above, Region 10 proposes that the Discoverer be considered an OCS source when attached by at least one anchor at a drill site. The 2011 Revised Draft Permits have been revised accordingly.

This change does not increase the PTE of the Discoverer and the Associated Fleet because the total number of operating days has been reduced from 168 to 120 and the anchor setting and retrieval is counted in that 120 day period. Total emissions under the 2011 Revised Draft Permits have been reduced significantly as compared to the 2010 Permits. Emissions during anchor handling have been modeled and determined to be less than the worst case operating scenario, which occurs during MLC drilling.

Note that, as under the 2010 Permits, Condition D.1 prohibits operation of the Propulsion Engine (FD-7) while the Discoverer is an OCS source.

3.2 Coast Guard Safety Zone

The air quality analysis submitted by Shell modeled emissions from the Discoverer beginning 500 meters from the center of the Discoverer and assumes that the Coast Guard will impose a safety zone of this distance around the Discoverer to exclude the public from the area in which the Discoverer's anchor array will be deployed and in which Shell will be conducting its main operations. See Shell March 18, 2011 Submittal at 38, n. 15. Shell has agreed that Region 10 will include in the 2011 Revised Draft Permits a requirement that Shell have in place during all times of operation as an OCS source a safety zone of at least 500 meters within which the Coast Guard prohibits public access. Shell has also stated in its application materials that Shell will develop in writing and implement a public access control program to locate, identify and intercept the general public by radio, physical contact, or other reasonable measures to inform the public that they are prohibited by Coast Guard regulations from entering the area within 500 meters of the Discoverer. Region 10 has included these provisions as consistent with Shell's demonstration that emissions from their exploratory operations will not cause or contribute to a violation of the NAAQS or applicable increment in any location that constitutes ambient air.

Thus, Shell’s permit application demonstrates that it complies with the PSD regulations, regardless of EPA’s ultimate decision about the point of compliance.¹⁵

3.3 Drillship Name Change

Due to a change in ownership of the Discoverer in the summer of 2010, the name of the vessel changed from the Frontier Discoverer to the Noble Discoverer.¹⁶ As a result, Region 10 made several changes though out the draft permits to change the name of the drillship from Frontier Discoverer to Noble Discoverer.

3.4 Drill Site Notification

Region 10 has increased the time for giving prior notice of the location at a drill site from 10 days to six months. Although there are currently no other permitted exploratory drilling operations in the OCS north of Alaska, Region 10 is aware of additional permit applications for activity that could potentially operate in the Beaufort or Chukchi Seas. Region 10 intends to require all permitted operations to notify Region 10 regarding their anticipated drilling locations far in advance of each drilling season (six months) so that Region 10 can evaluate whether there is a need for additional air quality impact analyses.

3.5 Restrictions on Duration of Exploration Operations

Shell requested a reduction in the number of days the Discoverer is authorized to operate as an OCS source from 168 days during any rolling 12-month period to 120 days during any drilling season, as well as a one-month reduction in the drilling season (from July 1 to November 30). Shell based its air quality analysis on the 120-day limit on OCS activity and its requested drilling season. This reduction in the duration of exploration operations results in a substantial overall decrease in air pollutants authorized under the permit. Because this restriction is designed to ensure compliance with the NAAQS and because the annual NAAQS are set based on calendar years, the restriction can similarly apply on a calendar year basis (or, in the case of these permits, a drilling season which is limited by the permit to a specific 5 month period out of any calendar year). The decrease in the duration of exploration operations has resulted in a reduction in the annual NO_x emission limits for most sources.

Shell also requested restrictions on the type of activity conducted during the 120-day period of operations. Emissions are highest during the drilling of MLCs and Shell’s air quality analysis is

¹⁵ Ambient air is defined as “...that portion of the atmosphere, external to buildings, to which the general public has access.” 40 CFR § 50.1(e). Ambient air does not include atmosphere over land owned or controlled by a source and to which the public access is precluded by a fence or physical barrier. See Letter from Douglas M. Costle, EPA Administrator to The Honorable Jennings Randolph, re: Ambient Air dated December 19, 1980; Letter from Steven C. Riva, EPA Region 2, to Leon Sedefian, New York State Department of Conservation, re: Ambient Air for the Offshore LNG Broadwater Project, October 9, 2007.

¹⁶ Noble Corporation Press Release. Noble Corporation Closes Acquisition of Frontier Drilling. July 28, 2010. <http://phx.corporate-ir.net/phoenix.zhtml?c=98046&p=irol-newsArticle&ID=1453351&highlight>

based on the limited duration of this activity. Shell therefore requested an operational limit on “MLC activity” to 480 hours during any drilling season. “MLC activity” is defined as any time any MLC engine (FD-9 – 11) or hydraulic power unit (HPU) engine (FD-12 – 13) is operating. The draft permits also prohibit operation of the cementing and logging winch engines (FD-17 – 20) during “MLC activity.”

Shell’s air quality analysis is also based on limiting the duration of total “drilling activity” to 1,623 hours during any drilling season and the draft permits therefore also contain this restriction. Drilling activity is defined as any time when the top drive is engaged and turning the conventional rotary bit, as well as any period of MLC activity. This ensures that, to the extent MLC activity is less than 480 hours during the drilling season, the remaining time can be counted toward the overall limit on drilling activity.

3.6 Limits on Potential to Emit/Owner Requested Limits

3.6.1 Sulfuric Acid Mist

The 2010 Beaufort Permit imposed an Owner Requested Limit (ORL) under the COA regulations and a limit on PTE in all areas of the Outer OCS to limit the PTE for sulfuric acid mist so as to avoid PSD applicability for this pollutant. The 2010 Chukchi Permit has a similar limit, but it was erroneously characterized as a limit on PTE for SO₂ rather than for sulfuric acid mist. This error in the Chukchi permit has been corrected.

3.6.2 Greenhouse Gases

Beginning January 2, 2011, greenhouse gases (GHGs) are subject to regulation under the PSD permitting regulations if:

1. The stationary source is a new major stationary source for a regulated NSR pollutant that is not GHGs, and also will emit or will have the PTE 75,000 tpy CO₂e or more; or
2. The stationary source is an existing major stationary source for a regulated NSR pollutant that is not GHGs, and also will have a significant and net significant emissions increase of a regulated NSR pollutant that is not GHGs, and an emissions increase of 75,000 tpy CO₂e or more.

Beginning July 1, 2011, GHGs are also subject to regulation:

1. At a new stationary source that will emit or have the PTE 100,000 tpy CO₂e or more; or
2. At an existing stationary source that emits or has the PTE 100,000 tpy CO₂e, or more when such stationary source undertakes a physical change or change in the method of operation that will result in a significant and net significant emissions increase of 75,000 tpy CO₂e or more.

Attachment 3

Letter from Julie Vergeront, U.S. Environmental Protection Agency
Region 10, to David Hobstetter, Earthjustice, Re: Supplemental Freedom
of Information Act Request Number 10-FOI-00313-11
(Sept. 28, 2011)



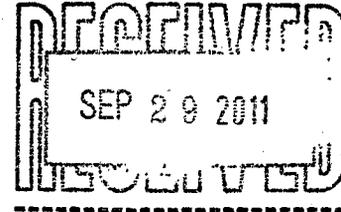
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
REGIONAL COUNSEL

September 28, 2011



Mr. David Hobstetter
EarthJustice
441 West 5th Avenue, Suite 301
Anchorage, Alaska 99501-2340

Re: Supplemental Freedom of Information Act Request Number 10-FOI-00313-11

Dear Mr. Hobstetter:

In letters dated July 6 and 7, 2011, Region 10 transmitted to you compact discs that contained an initial response to your Freedom of Information Act (FOIA) request for records related to applications submitted by Shell Gulf of Mexico Inc. for two Clean Air Act Permits for exploration drilling in the Beaufort and Chukchi Seas using the *Noble Discoverer* drillship. These initial responses consisted of records contained in the Administrative Record supporting revisions for the draft permits following the Environmental Appeals Board's remand of the permits to Region 10 in December 2010.

Enclosed as a further interim response is a compact disc with records that are contained in the Administrative Record for the final revised permits issued by Region 10 on September 19, 2011.

Pursuant to 40 C.F.R. § 2.107(1), the fee for responding to your FOIA request is waived and the records are provided without charge. The Region is continuing to work on its response to the remainder of your request.

Sincerely,

A handwritten signature in cursive script, appearing to read "Julie Vergeront".

Julie Vergeront
Assistant Regional Counsel

Cc: Compact disc: Documents Included in the Administrative Record for the 2011 Final Revised Shell Discoverer Permits

Shell Discoverer Index of Documents Included in the Administrative Record¹

- AAA.** **Supplemental Application Materials**
- BBB.** **Supplemental Guidance, Background Information, and Technical Analysis**
- CCC.** **Supplemental Correspondence and Communication between EPA and Shell (including Shell contractors)**
- DDD.** **Supplemental Other Correspondence**
- EEE.** **Supplemental Endangered Species Act/Essential Fish Habitat**
- FFF.** **Supplemental Environmental Justice**
- GGG.** **Supplemental Government-to-Government Consultation**
- OOO.** **2011 Revised Draft Permits**
- RRR.** **Public Comments on 2011 Revised Draft Permits**
- SSS.** **Final 2011 Revised Permits**

¹ Note that this is not the certified index to the administrative record.

AAA. Supplemental Application Materials

EPA Exhibit Number	Date	Document Description
	2010-12-01	Evaluation of the COARE-AERMOD Alternative Modeling Approach Support for Simulation of Shell Exploratory Drilling Sources In the Beaufort and Chukchi Seas, Prepared by ENVIRON
	2011-06-10	<p>Shell Discoverer June 10 Submittal Compilation – Cover Letter from Susan Childs, Shell, to Doug Hardesty, EPA, RE: Discoverer Permits R10OCS/PSD-AK-2009-01, issued March 20, 2010 for the Discoverer Drillship to operate in the Chukchi Sea, Alaska and R10OCS/PSD-AK-2010-01, issued on April 7, 2010 for the Discoverer Drillship to operate in the Beaufort Sea, Alaska</p> <p>Attachments:</p> <ul style="list-style-type: none"> – Shell_Discoverer_June_10_submittal_compilation_Table_of_Contents.pdf – Shell Discoverer 3-09-11 Submittals <ul style="list-style-type: none"> • Remand_Order_response_03_09_11.pdf – Shell Discoverer 3-18-11 Submittals <ul style="list-style-type: none"> • Discoverer Drillship Impact Evaluation for SO2 and NO.pdf • Discoverer_AERMOD_modeling_letter.pdf • GHG_assurance_memo_1.pdf – Shell Discoverer 4-07-11 Submittals <ul style="list-style-type: none"> • Beaufort_Leases_Ownership_32x17_v2a.pdf • Detailed_Beaufort_Lease_Map.pdf • Detailed_Beaufort_Lease_Map.msg • Shell_Action_Item_Submittals.msg • Shell_OCS_Air_Permit.zip – Shell Discoverer 4-08-11 Submittals <ul style="list-style-type: none"> • memo_calpuff.pdf • RE_calpuff_files_for_DISCO.msg – Shell Discoverer 4-12-11 Submittals <ul style="list-style-type: none"> • Discoverer_PermitLimitsCompare_20110412.pdf • FW_Working_comparison_of_emissions_Discoverer.msg – Shell Discoverer 4-15-11 Submittals² <ul style="list-style-type: none"> • Shell_OCS_Air_Permit-0415.zip – Shell Discoverer 4-19-11 Submittals <ul style="list-style-type: none"> • FW_Shell_Items_from_April_7th_Modelers_Call.msg • To_EPA_04_19_11.zip – Shell Discoverer 4-22-11 Submittals <ul style="list-style-type: none"> • anchor_handling_2_final.pdf • CIA_Discoverer_R1_2MJS_Final.pdf • ADDITI~1.msg – Shell Discoverer 4-29-11 Submittals <ul style="list-style-type: none"> • Alternate_NO2_Modeling_Disco_04_29_11.pdf • Alternate_NO2_modeling_for_Discoverer.msg – Shell Discoverer 5-10-11 Submittals <ul style="list-style-type: none"> • Discoverer_Associated_Fleet_Source_Tests_2010.pdf • Discoverer_Source_Tests_2010.pdf

² The email from Pauline Ruddy referenced on page 30 of the Supplemental Statement of Basis is erroneously identified as dated April 11, 2011.

EPA Exhibit Number	Date	Document Description
		<ul style="list-style-type: none"> • FW_Access_to_File_Transfer_Portal_at_ENVIRON_Corp.msg - Shell Discoverer 5-19-11 Submittals <ul style="list-style-type: none"> • AERMOD_Impacts_Disco_05-19-11.pdf • Discoverer_EI_5_17_11_GHG_Only.pdf • AERMOD_Air_Quality_Impact_Analysis_Shell_Discoverer.msg • FW_Discoverer_Emission_Inventory.msg • FW_response_to_EAB_comment_on_BOEMRE_regulations.msg - Shell Discoverer 5-20-11 Submittals <ul style="list-style-type: none"> • Discoverer_EI_20110519-H2SO4-100ppm.pdf • FW_H2SO4_emissions_at_100_ppmw.msg • FW_Point_Lay_Ambient_Air_Quality_Data.msg • Pt_Lay_Data_June_Nov_2010.zip - Shell Discoverer 5-25-11 Submittals <ul style="list-style-type: none"> • Revised_Beaufort_Permit_05_25_11.pdf • FW_Proposed_Beaufort_PSD_permit_changes.msg - Shell Discoverer 5-27-11 Submittals <ul style="list-style-type: none"> • DISCOV~1.pdf • FW_Mooring_Process_for_Noble_Discoverer_Drillship.msg - Shell Discoverer 6-02-11 Submittals <ul style="list-style-type: none"> • Discoverer_EI_Chukchi_06_02_11_D.xlsx • FW_Discoverer_Chukchi_allowable_emissions.msg - Shell Discoverer 6-08-11 Submittals <ul style="list-style-type: none"> • Shell_Response_to_questions_from_R10.msg - Shell Discoverer 6-09-11 Submittals <ul style="list-style-type: none"> • FW_Permit_Conditions_for_Discoverer.msg - Shell Discoverer 6-10-11 Submittals <ul style="list-style-type: none"> • Seldom_Used_Sources_BACT_06_10_11.pdf • Shell_Response_to_Verbal_Requests_from_EPA_on_6_9_11.pdf
	2011-06-22	Shell Discoverer June 22 Submittal - Letter from Kirk Wings, ENVIRON, to Andy Hawkins, EPA, RE: Modeling Files
	2011-06-23	Shell Discoverer June 23 Submittal – Letter from Pauline Ruddy, Shell, to Doug Hardesty, EPA, RE: GHG Calculation Information
	2011-07-06	Disco Air Quality Impact Modeling Files (Identifying Files on File at Region 10), Prepared by EPA

BBB. Supplemental Guidance, Background Information, and Technical Analysis

EPA Exhibit Number	Date	Document Description
	1980-12-19	Letter from Douglas Costle, EPA, to Jennings Randolph, Committee on Environment and Public Works, RE: Ambient Air Definition
	1989-06-13	Memorandum from Terrel Hunt, EPA, to John Seitz, EPA, RE: Guidance on Limiting Potential to Emit in New Source Permitting, transmitting "Limited Potential to Emit in New Source Permitting," dated June 13, 1989
	1995-01-25	Memorandum from John Seitz, EPA, to Director, Air, Pesticides and Toxics Management Division, Regions I and IV, RE: Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Act)
	1995-11-14	Memorandum from John Seitz, EPA, to Director, Office of Ecosystem Protection, Region I, RE: Calculating Potential to Emit (PTE) and Other Guidance for Grain Handling Facilities
	1997-03-01	Prudhoe Bay Air Quality Monitoring Program Quality Assurance Plan, Prepared by ENSR
	1997-03-19	Letter from Vincent Scheetz, ENSR, to Richard Heffern, ADEC, RE: Quality Assurance Manual – Prudhoe Bay Monitoring Program
	1997-09-24	Memorandum from Richard Heffern, ADEC, to Jim Baumgartner, ADEC, RE: BP Prudhoe Bay Ambient Air QA Monitoring Plan Review
	1999-01-01	Black's Law Dictionary, Seventh Edition (Various Terms: constitutum debiti-construction, erase-error)
	1999-11-01	The Plume Volume Molar Ratio Method for Determining NO ₂ /No _x Ratios in Modeling - Part 1: Methodology, Prepared by Patrick Hanrahan, EPA, Journal of the Air & Waste Management Association
	1999-11-01	The Plume Volume Molar Ratio Method for Determining NO ₂ /No _x Ratios in Modeling - Part 2: Evaluation Studies, Prepared by Patrick Hanrahan, EPA, Journal of the Air & Waste Management Association
	2000-02-01	Meteorological Monitoring Guidance for Regulatory Modeling Applications, Prepared by EPA
	2003-09-02	The TOGA-COARE Bulk Air-Sea Flux Algorithm, Prepared by C.W. Fairall, NOAA, and E.F. Bradley, CSIRO Land and Water
	2004-02-10	ADEC Modeling Review Procedures Manual
	2004-08-25	Standard Operating Permit Condition VI - Good Air Pollution Control Practices; Permit Condition for Air Quality Permits, Adopted by Reference in 18 AAC 50.346, Prepared by Department of Environmental Conservation
	2004-09-01	Sensitivity Analysis of PVMRM and OLM in AERMOD, Alaska Contract No. 18-8018-04, Prepared by MACTEC
	2005-06-01	Evaluation of Bias in AERMOD-PVMRM, Alaska DEC Contract No. 18-9010-12, Prepared by MACTEC

EPA Exhibit Number	Date	Document Description
	2005-11-09	Federal Register [70 FR 68218-68261], Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions, Final Rule
	2007-04-26	Letter from Alan Schuler, ADEC, to Alison Cooke, BPXA, RE: Tentative Approval of Modeling Protocol Submitted by BP Exploration (Alaska), Inc.
	2007-05-24	Letter from Walter Gray, MACTEC, to Alan Schuler, ADEC, RE: QAPP Review Support for BP Exploration Alaska (BPXA) Ambient Air Monitoring Program – Liberty Project (Attachment: QAPP review)
	2007-06-01	Prudhoe Bay Unit Ambient Air Quality Monitoring Network Quarterly Data Report – January through March 2007, Prepared by RETEC
	2007-06-22	Memorandum from Stephen Page, EPA, to Regional Air Division Directors, EPA, RE: Interpretation of "Ambient Air" in Situations Involving Leased Land Under the Regulations for Prevention of Significant Deterioration (PSD)
	2007-06-23	Particulate Sampler Field Envelope, Prepared by IML Air Science
	2007-07-13	RETEC Horizontal Wind Direction Calibration/Audit Form
	2007-07-25	Ambient Air and/or Meteorological Monitoring Quality Assurance Project Plan (QAPP) Review Checklist, Prepared by ADEC
	2007-10-09	Letter from Steven Riva, EPA, to Leon Sedefian, DEC, RE: Ambient Air for the Offshore LNG Broadwater Project
	2007-11-01	Quality Assurance Project Plan for the Liberty Project Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
	2007-11-01	Prudhoe Bay Unit Ambient Air Quality Monitoring Network Quarterly Data Report – April through June 2007
	2007-11-01	Prudhoe Bay Unit Ambient Air Quality Monitoring Network Quarterly Data Report – July through September 2007
	2007-11-05	Letter from Al Trbovich, Hoefler, to Alan Schuler, ADEC, RE: BP Exploration (Alaska) Inc. Liberty Development Project Ambient Air Monitoring Program Quality Assurance Project Plan
	2008-02-01	First Annual Data Report – Liberty Development Project Ambient Air Monitoring Program – Prudhoe Bay, Alaska, Prepared by Hoefler
	2008-02-01	Prudhoe Bay Unit Ambient Air Quality Monitoring Network Final Data Report – January through December 2007
	2008-02-13	Department Review of BPXA's 2006 A-Pad/CCP Ambient Pollutant/Meteorological Data
	2008-03-01	Quality Assurance Handbook for Air Pollution Measurement Systems; Volume IV: Meteorological Measurements, Version 2.0, Prepared by EPA
	2008-12-01	Appendix D – Method Specific Validation Tables and Audit Forms, Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.4, Prepared by SLR
	2009-01-05	Meteorological and Pollutant Data Review - BPXA 2007 Prudhoe Bay Unit Data, Prepared by Enviroplan Consulting

EPA Exhibit Number	Date	Document Description
	2009-01-05	Email from Alan Schuler, ADEC, to Alison Cooke, BPXA, RE: Findings re 2007 Prudhoe Bay Met/Pollutant Data
	2009-10-13	Technical Analysis Report: Air Quality Control Minor Permit AQ0166CPT04 and Air Quality Control Construction Permit AQ0270CPT04, Prepared by Alaska Department of Environmental Conservation - Air Permits Program
	2009-11-01	2008 Annual Data Report – Prudhoe Bay Unit, Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
	2010-01-27	Letter from John Kuterbach, ADEC, to James Pfeiffer, BPXA, RE: Construction Permit AQ0170CPT01 revised Technical Analysis Report (TAR) and Response to Comments (RTC) for BP Exploration (Alaska) Inc. (BPXA) for the Seawater Injection Plan East (SIPE) Main Injection Pump Bundle Replacement Project
	2010-02-01	Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
	2010-02-09	Federal Register [75 FR 6474-6537], Primary National Ambient Air Quality Standards for Nitrogen Dioxide, Final Rule
	2010-02-26	Memo from Tyler Fox, EPA, to Erik Snyder, EPA, RE: Model Clearinghouse Review of Modeling Procedures for Demonstrating Compliance with PM2.5 NAAQS
	2010-03-01	Badami Ambient Air Quality and Meteorological Monitoring Station Data Summary Report – October 1 through December 31, 2009, Prepared by AECOM
	2010-03-01	Wainwright Near-Term Ambient Air Quality Monitoring Program Annual Data Report – November 2008 through November 2009, Version 2, Prepared by AECOM
	2010-03-01	Wainwright Near-Term Ambient Air Quality Monitoring Program Annual Data Report – November 2008 through November 2009, Prepared by AECOM
	2010-03-01	Wainwright Permanent Ambient Air Quality Monitoring Program Fourth Quarter Data Report – September through December 2009, Prepared by AECOM
	2010-04-01	Badami Ambient Air Quality and Meteorological Monitoring Station Data Summary Report – January 1 through March 31, 2010, Prepared by AECOM
	2010-04-07	Letter from Al Trbovich, Hoefler, to Alan Schuler, ADEC, RE: BP Exploration (Alaska) – Revised Prudhoe Bay Unit 2008 Annual Data Report for the Ambient Air and Meteorological Monitoring Program
	2010-04-12	Federal Register, Final Rule - Safety Zone; FRONTIER DISCOVERER, Outer Continental Shelf Drillship, Chukchi and Beaufort Seam Alaska, 75 FR 18404-18407
	2010-05-01	Cover Page – Wainwright Ambient Air Quality and Meteorological Monitoring Station Quality Assurance Project Plan, Prepared by AECOM
	2010-05-01	Signature Page - Wainwright Ambient Air Quality and Meteorological Monitoring Station Quality Assurance Project Plan, Prepared by AECOM

EPA Exhibit Number	Date	Document Description
	2010-05-01	Wainwright Ambient Air Quality and Meteorological Monitoring Station Quality Assurance Project Plan, Prepared by AECOM, Revision 1
	2010-05-01	Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.1, Prepared by Hoefler
	2010-05-25	Letter from Tom Damiana, AECOM, to Herman Wong, EPA, RE: Quality Assurance Project Plan for the Wainwright Ambient Air Quality and Meteorological Monitoring Site – Permanent Station
	2010-06-01	Wainwright Permanent Ambient Air Quality Monitoring Program First Quarter Data Report – January through March 2010, Prepared by AECOM
	2010-06-28	Memorandum from Tyler Fox, EPA, to Regional Air Division Directors, EPA, RE: Applicability of Appendix W Modeling Guidance for the 1-hour NO ₂ National Ambient Air Quality Standard
	2010-08-01	Badami Ambient Air Quality and Meteorological Monitoring Station Data Summary Report – April 1 through June 30, 2010, Prepared by AECOM
	2010-08-17	Wainwright Ambient Air Quality and Meteorological Monitoring Station Quality Assurance Project Plan, Prepared by AECOM
	2010-08-23	Memorandum from Stephen Page, EPA, to Regional Air Division Directors, EPA, RE: Guidance Concerning the Implementation of the 1-hour SO ₂ NAAQS for the Prevention of Significant Deterioration Program
	2010-09-01	2009 Annual Data Report – Prudhoe Bay Unit, Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
	2010-09-01	July 2010 Monthly Data Deliverable – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
	2010-09-01	August 2010 Monthly Data Deliverable – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
	2010-09-27	Standard Permit Condition III - Excess Emissions and Permit Deviation Reports; Permit Condition for Air Quality Permits, Adopted by Reference in 18 AAC 50.346, Prepared by Department of Environmental Conservation
	2010-09-27	Standard Permit Condition XV - Emission Inventory Reporting; Permit Condition for Air Quality Permits, Adopted by Reference in 18 AAC 50.346, Prepared by Department of Environmental Conservation
	2010-09-27	Standard Permit Condition XVI - Emission Inventory Reporting Form; Permit Condition for Air Quality Permits, Adopted by Reference in 18 AAC 50.346, Prepared by Department of Environmental Conservation
	2010-10-01	Badami Ambient Air Quality and Meteorological Monitoring Station Data Summary Report – July 1 through September 30, 2010, Prepared by AECOM
	2010-11-01	Deadhorse PM _{2.5} Monitoring Program Data Report 4 th Quarter 2009, Prepared by AECOM

EPA Exhibit Number	Date	Document Description
	2010-11-01	Wainwright Permanent Ambient Air Quality Monitoring Program Second Quarter Data Report – April through June 2010, Prepared by AECOM
	2010-11-01	Wainwright Permanent Ambient Air Quality Monitoring Program Third Quarter Data Report – July through September 2010, Prepared by AECOM
	2010-11-01	Quarter A Data Summary – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by SLR
	2010-12-01	Badami Ambient Air Quality and Meteorological Monitoring Station Annual Data Summary Report – August 15, 2009 through September 30, 2010, Prepared by AECOM
	2010-12-01	Deadhorse PM _{2.5} Monitoring Program Data Report 2 nd Quarter 2010, Prepared by AECOM
	2010-12-21	Email from Alan Schuler, ADEC, to Alison Cooke, BPXA, RE: Revised Findings Report for 2008 and 2009 Prudhoe Data
	2010-12-21	Final Findings Report (Revised) - Pollutant and Meteorological Data Review and Annual Report Review for the BP Exploration Alaska Prudhoe Bay Unit Data for the Period January 1, 2008 through December 31, 2008, Prepared by Enviroplan Consulting
	2010-12-21	Final Findings Report (Revised) - Pollutant and Meteorological Data Review and Annual Report Review for the BP Exploration Alaska Prudhoe Bay Unit Data for the Period January 1, 2009 through December 31, 2009, Prepared by Enviroplan Consulting
	2011-01-01	Deadhorse PM _{2.5} Monitoring Program Data Report 1 st Quarter 2010, Prepared by AECOM
	2011-01-01	Quarter B Data Summary (September – November 2010) – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by SLR
	2011-02-01	Deadhorse PM _{2.5} Monitoring Program Data Report 3 rd Quarter 2010, Prepared by AECOM
	2011-02-22	Letter from Al Trbovich, SLR, to Alan Schuler, ADEC, RE: BP Exploration (Alaska) – Prudhoe Bay Unit, Ambient Air and Meteorological Monitoring Program Quality Assurance Project Plan (Attachment: Quality Assurance Project Plan)
	2011-03-01	Memorandum from Tyler Fox, EPA, to Regional Air Division Directors, EPA, RE: Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO ₂ National Ambient Air Quality Standard
	2011-03-01	Badami Ambient Air Quality and Meteorological Monitoring Station Data Summary Report – October 1 through December 30, 2010, Prepared by AECOM
	2011-03-01	Deadhorse PM _{2.5} Monitoring Program Data Report 4 th Quarter 2010, Prepared by AECOM
	2011-03-01	Wainwright Permanent Ambient Air Quality Monitoring Program Fourth Quarter Data Report – October through December 2010, Prepared by AECOM
	2011-03-01	Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.4, Prepared by SLR

EPA Exhibit Number	Date	Document Description
	2011-03-01	Appendix A – Program References, Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.4, Prepared by SLR
	2011-03-01	Appendix B – Monitoring Program Supporting Documents, Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.4, Prepared by SLR
	2011-03-01	Bureau of Ocean Energy Management, Alaska OCS Region - Detailed Active Leases
	2011-03-01	PSD and Title V Permitting Guidance for Greenhouse Gases, Prepared by EPA
	2011-04-01	Wainwright Permanent Ambient Air Quality Monitoring Program Annual Data Report – January through December 2010, Prepared by AECOM
	2011-04-01	Quarter C Data Summary (December 31, 2010 – February 28, 2011) – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by SLR
	2011-04-01	Memorandum from Herman Wong, EPA, to Tyler Fox, EPA, RE: COARE Bulk Flux Algorithm to Generate Hourly Meteorological Data for Use with the AERMOD Dispersion Program; Section 3.2.2.e Alternative Refined Model Demonstration
	2011-04-19	Email from Kwame Agyei, ADEC, to Al Trbovich, SLR, RE: Approval of PBU QAPP Version 1.1
	2011-04-19	Prudhoe Bay Unit QAPP Version 1.1 Approval Signatures
	2011-05-01	Revised Outer Continental Shelf Lease Exploration Plan - Camden Bay, Beaufort Sea, Alaska - Flaxman Island Blocks 6559, 6610 & 6658, Beaufort Sea Lease Sales 195 & 202 (Including Attachments: Appendices A-M), Prepared by Shell ³
	2011-05-01	Revised Outer Continental Shelf Lease Exploration Plan - Camden Bay, Beaufort Sea, Alaska - Burger Prospect: Posey Area Blocks 6714, 6762, 6764, 6812, 6912, & 6915, Chukchi Sea Lease Sale 193 (Including Attachments: Appendices A-M), Prepared by Shell
	2011-05-01	Kaktovik Ambient Air and Meteorological Monitoring Program – Quality Assurance Project Plan, Prepared by SLR
	2011-05-01	Appendix C – Standard Operating Procedures (SOPs), Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.4, Prepared by SLR
	2011-05-01	Summary of Changes to the Quality Assurance Project Plan for the Shell Point Lay and Meteorological Monitoring Project, Version 1.4
	2011-05-06	Memorandum from George Bridgers, NCDENR, to Herman Wong, EPA, RE: Model Clearinghouse Review of AERMOD-COARE as an Alternative Model for Application in an Arctic Marine Ice Free Environment

³ The reference in footnote 7 to the Supplemental Statement of Basis to May 4, 2011 refers to the certification date of the submitted plan. The cover page of the plan is dated May 2011.

EPA Exhibit Number	Date	Document Description
	2011-05-08	Email from Herman Wong, EPA, to Andy Hawkins, EPA, RE: Approval Request for Non-Guideline Modeling - Shell Disco and Kulluk Dispersion Modeling
	2011-05-23	Memorandum from Chris Hall, EPA, to Air Quality Modeling Permit Team, EPA, RE: Wainwright Air Monitoring Data Review - 09/13/09 through 12/31/10
	2011-06-01	Arctic Permits Newsletter, Prepared by EPA
	2011-06-20	Memorandum from Paul Boys, EPA, to Natasha Greaves, EPA, RE: Review Comments on the Shell Supplemental BACT Analysis for Seldom Used Engines
	2011-06-23	Memorandum from Chris Hall, EPA, to David Bray, EPA, RE: EPA Region 10 Determination of Appropriate Background Values for the Chukchi Sea and Beaufort Sea OCS Permits
	2011-06-23	Memorandum from Chris Hall, EPA, to Air Quality Modeling Permit Team, EPA, RE: Badami Air Monitoring Data Review - 12/01/09 through 12/31/10
	2011-06-23	Memorandum from Chris Hall, EPA, to Air Quality Modeling Permit Team, EPA, RE: Deadhorse Air Monitoring Data Review - 1/1/10 through 12/31/10
	2011-06-23	Memorandum from Chris Hall, EPA, to Air Quality Permit Modeling Team, EPA, RE: Point Lay Air Monitoring Data Review - 6/01/10 through 2/28/11
	2011-06-24	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, Prepared by EPA
	2011-06-24	ADEC QAPP & Data Review Project List without Cost Info, Prepared by AES
	2011-07-06	Offshore Drilling: Interior Starts Clock on Shell Arctic Proposal, Prepared by Phil Taylor
	2011-07-12	Executive Order: Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska
	2011-07-18	Technical Support Document - Review of Shell's Ambient Air Quality Impact Analysis for the Kulluk OCS Permit Application, Permit No. R10OCS030000, Prepared by EPA
	2011-07-22	Statement of Basis for Draft Outer Continental Shelf Title V Air Quality Operating Permit No. R10OCS020000 - ConocoPhillips Company Jackup Drill Rig Chukchi Sea Exploration Drilling Program, Prepared by ConocoPhillips
	2011-07-22	Statement of Basis for Draft Outer Continental Shelf Permit to Construct and Title V Air Quality Operating Permit No. R10OCS030000, Shell - Conical Drilling Unit Kulluk, Beaufort Sea Exploration Drilling Program
	2011-07-22	Outer Continental Shelf Title V Air Quality Operating Permit Draft - Permit No. R10OCS020000, ConocoPhillips Company, Prepared by EPA
	2011-07-22	Attachment A - Technical Support Document - ConocoPhillips Company Outer Continental Shelf Exploratory Drilling Program in the Chukchi Sea

EPA Exhibit Number	Date	Document Description
	2011-07-22	Outer Continental Shelf Permit to Construct and Title V Air Quality Operating Permit - Permit No. R10OCS030000, Shell Offshore Inc., Prepared by EPA
	2011-08-30	Beaufort Sea - Outer Continental Shelf Lease Ownership Map
	2011-08-30	Chukchi Sea - Outer Continental Shelf Lease Ownership Map
	2011-08-31	NOAA Website: Nitrogen Dioxide 2004-2009 Description and Notable Features
	2011-09-02	Statement by the President on the Ozone National Ambient Air Quality Standards, Prepared by The White House Office of the Press Secretary
	2011-09-02	Letter from Cass Sunstein, Office of Management and Budget, to Administrator Jackson, EPA, RE: Reconsideration of the 2008 Ozone Primary and Secondary National Ambient Air Quality Standards
	Undated	Badami site-AQ Data (Attachments: Badami Validated met data Jul thru Sep 2010, Badami Validated met data Oct thru Dec 2010(3-3-11), and Validated met data 8-15-09 through 9-30-10(12-3-10))
	Undated	Deadhorse site-AQ Data (Attachments: Deadhorse Hourly Data Quarter1 2010, Deadhorse Hourly Data Quarter2 2010, Deadhorse Hourly Data Quarter3 2010, Deadhorse Hourly Data Quarter4 2009, Deadhorse Hourly Data Quarter4 2010, Deadhorse Disk File Data 102309-123110, Deadhorse FEM PM25 Data 102309-123110, and Nov 2009 through Aug 2010 Deadhorse FEM-FRM)
	Undated	Endicott SDI site-AQ Data (Attachments: BPXA Liberty 1-8, BPXA Liberty First Year Data, Endicott Findings Report, Liberty Ambient Pollutant Data, Response to ADEC Liberty SDI Monitoring Questions, and Transmittal Letter)
	Undated	Prudhoe Bay CCP & A Pad sites-AQ Data (Attachments: 2006, 2007, 2008, 2009)
	Undated	Pt Lay site-AQ Data (Attachments: 1007PTL, 1008PTL, PTL 100601 100831, PTL 100901 101130, and PTL 101201 110228)
	Undated	Wainwright site-AQ Data (Attachments: Zero Air Background Test Results April 2010, WPS 0410, WPS 0510, WPS 0610, WPS 0710, WPS 0810, WPS 0909, WPS 0909 Rev 4 22 2010, WPS 0910, WPS 1009, WPS 1009 Rev 4 22 2010, WPS 1010, WPS 1109, WPS 1109 Rev 4 22 2010, WPS 1110, WPS 1209, WPS 1209 Rev 4 22 2010, WPS 1210, WPS 0110, WPS 0210, WPS 0310, and WPS 2010)
	Undated	Merriam-Webster's Collegiate Dictionary, Tenth Edition (Various Terms: bughouse-bulletin, constative-consult, equivalent-erica)
	Undated	Lease Map - Beaufort Sea, Post-1995 OCS OPD Grid, Prepared by Shell
	Undated	Appendix A – Terms, Definitions, Abbreviations
	Undated	Appendix B – Program References and Citations
	Undated	Appendix C – Supporting Documents
	Undated	Appendix D – Standard Operating Procedures, Prepared by SLR
	Undated	Kaktovik Aerial Site Photo

EPA Exhibit Number	Date	Document Description
	Undated	Appendix A – Data Processing Specifications and Statistical Formulae, Version 1
	Undated	Appendix A – Data Processing Specifications and Statistical Formulae, Version 2
	Undated	Appendix B – Precision Data
	Undated	Appendix C – Accuracy Data
	Undated	Appendix D – Validated Continuous Data Summaries, Version 2
	Undated	Appendix D – Validated Continuous Data Summaries, Version 1
	Undated	Appendix E – Validated Manual Particulate Data
	Undated	BPXA Prudhoe Bay Monitoring Map
	Undated	EPA's Endangerment Finding - Frequently Asked Questions
	Undated	AERMOD files for Disco RTC (Attachments: 2009a, 2009b, 2010a, 2010b, readme, shell reanalysis with 2010 met)

DRAFT

Attachment 4

U.S. Environmental Protection Agency Region 10,
Submission of Revised Certified Index to the Administrative Record
(Nov. 16, 2011)

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

In re:)	
)	
Shell Gulf of Mexico, Inc.)	
OCS Permit No. R10 OCS/PSD-AK-09-01)	
)	OCS Appeal Nos.
)	11-02, 11-03 & 11-04
)	
Shell Offshore, Inc.)	
OCS Permit No. R10 OCS/PSD-AK-2010-01)	
)	
Frontier Discoverer Drilling Unit)	
)	

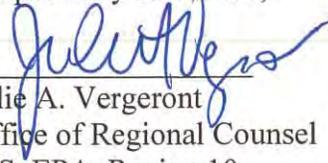
**SUBMISSION OF REVISED CERTIFIED INDEX TO
THE ADMINISTRATIVE RECORD**

EPA Region 10 (Region 10) hereby notifies the Board that Region 10 is submitting a revised Certified Index to the Administrative Record, which was originally dated November 4, 2011 and filed with the Board on November 7, 2011.

Region 10 has discovered clerical errors in certain entries toward the end of Categories CCC and DDD (documents identified with the wrong date in the index). A Revised Certified Index to the Administrative Record is attached. Note that the errors are limited to the index and not to the documents identified in the index that were contained on four copies of two DVDs filed with the Board and the copies of two DVDs sent to all parties on November 7 and 8, 2011.

Dated: November 16, 2011

Respectfully submitted,



Julie A. Vergeront
Office of Regional Counsel
U.S. EPA, Region 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101
Telephone: (206) 553-1497
FAX: (206) 553-1762
Vergeront.Julie@epa.gov

Alexander Fidis
Assistant Regional Counsel
U.S. EPA, Region 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101
Telephone: (206) 553-4710
FAX: (206) 553-1762
Fidis.Alexander@epa.gov

David Coursen
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW (2322A)
Washington, DC 20460
Telephone: (202) 564-0781
FAX: (202) 501-0644

**CERTIFICATE OF SERVICE AND
CERTIFICATE FOR REVISED CERTIFIED INDEX IN PAPER FORMAT**

I hereby certify that the attached Submission of Revised Certified Index to the Administrative Record in re: Shell Gulf of Mexico, Inc. and Offshore, Inc., OCS Permit Nos. R10OCS/PSD-AK-09-01 and R10OCS/PSD-AK-2010-01, OCS Appeal Nos. 11-02, 11-03 & 11-04, was filed with the Clerk of the Environmental Appeals Board electronically through CDX.

Pursuant to the Environmental Appeals Board Order Authorizing Electronic Filing in Proceedings before the Environmental Appeals Board not Governed by 40 C.F.R. Part 22, dated January 28, 2010, I further certify that I cause to be delivered to the Board at the hand delivery address below a paper copy of the above-described document that is an identical copy of the document filed through CDX.

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board
Colorado Building
1341 G Street, N.W., Sixth Floor
Washington, D.C. 20005

I also certify that an electronic copy of the Submission of Revised Certified Index of the Administrative Record of OCS Permit Nos. R10OCS/PSD-AK-09-01 and R10OCS/PSD-AK-2010-01, OCS Appeal Nos. 11-02, 11-03 & 11-04, was sent to each of the persons identified below via email:

Counsel

Tanya Sanerib
Christopher Winter
Crag Law Center
917 SW Oak Street, Suite 417
Portland, OR 97205

Colin O'Brien
Eric Jorgensen
Earthjustice
325 Fourth Street
Juneau, AK 99801

David Hobstetter
Eric Grafe
Earthjustice
441 W 5th Avenue, Suite 301
Anchorage, AK 99501

Duane A. Siler
Sarah C. Bordelon
Tony G. Mendoza
Crowell & Moring LLP
1001 Pennsylvania Ave. N.W.
Washington, DC 20004

Daniel Lum
P.O. Box 70169
Fairbanks, AK 99707

Dated: November 16, 2011

Service e-mail

tanya@crag.org
chris@crag.org

cobrien@earthjustice.org
ejorgensen@earthjustice.org

dhobstetter@earthjustice.org
egrafe@earthjustice.com

dsiler@crowell.com
sbordelon@crowell.com
tmendoza@crowell.com

eskimo.whaler@yahoo.com



Julie A. Vergeront
Assistant Regional Counsel
U.S. EPA Region 10
1200 6th Avenue, Suite 900
Seattle, WA 98101
Telephone: (206) 553-1497
Fax: (206) 553- 1762
Vergeront.julie@epa.gov

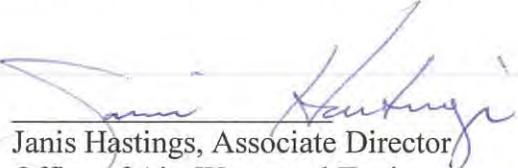
**BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

In re:)	
)	
Shell Gulf of Mexico, Inc.)	
OCS Permit No. R10 OCS/PSD-AK-09-01)	
)	OCS Appeal Nos. OCS
)	11-02, 11-03 11-04
)	
Shell Offshore, Inc.)	
OCS Permit No. R10 OCS/PSD-AK-2010-01)	
)	
Frontier Discoverer Drilling Unit)	
)	

**REVISED CERTIFIED INDEX TO
THE ADMINISTRATIVE RECORD**

As the Associate Director in the Office of Air, Waste and Toxics for the United States Environmental Protection Agency, Region 10, I hereby certify that the attached index constitutes the combined and consolidated revised Certified Index to the Administrative Record forming the basis for EPA' Region 10's decision to issue the above-captioned revised Outer Continental Shelf permits to Shell Gulf of Mexico, Inc. and Shell Offshore, Inc. This revises and replaces the Certified Index to the Administrative Record dated November 4, 2011, which contained clerical errors in the date column for some entries.

Dated: November 16, 2011



Janis Hastings, Associate Director
Office of Air, Waste and Toxics
Environmental Protection Agency,
Region 10

Administrative Record Index

OCS PSD Permit R10OCS/PSD-AK-09-01 And OCS PSD Permit R10OCS/PSD-AK-2010-01¹

Table of Contents: Supplemental Documents in the Administrative Record²

[AAA. Supplemental Application Materials](#)

[BBB. Supplemental Guidance, Background Information, and Technical Analysis](#)

[CCC. Supplemental Correspondence and Communication between EPA and Shell \(including Shell contractors\)](#)

[DDD. Supplemental Other Correspondence](#)

[EEE. Supplemental Endangered Species Act/Essential Fish Habitat](#)

[FFF. Supplemental Environmental Justice](#)

[GGG. Supplemental Government-to-Government Consultation](#)

[QQQ. 2011 Revised Draft Permits](#)

[RRR. Public Comments on 2011 Revised Draft Permits](#)

[SSS. Final 2011 Revised Permits](#)

Table of Contents: Documents in the Administrative Record as of June 4, 2010³

[A. Permit Application Documents and Supplemental Application Materials](#)

[AA. Permit Application Documents and Supplemental Application Materials \(cont.\)](#)

[B. Guidance, Background Information and Technical Analysis](#)

[BB. Guidance, Background Information and Technical Analysis \(cont.\)](#)

[C. Correspondence and Communication between EPA and Shell \(including Shell contractors\)](#)

¹ This permit is erroneously identified in OCS Appeal Nos. 10-01 through 10-04 as OCS PSD Permit R10OCS/PSD-AK-10-01. The permit number on the permit issued by Region 10 on April 9, 2010 for Shell's operations with the Discoverer in the Beaufort Sea and the revised permit covering the same operations issued by Region 10 on September 19, 2011 are both identified as R10OCS/PSD-AK-2010-01. The permit number is correct in the current appeal, OCS Appeal Nos. 11-02 & 11-03.

² The identified documents have been added to the Administrative Record since the Certified Index to the Administrative Record was filed by Region 10 on June 4, 2010 in OCS Appeal Nos. 10-01 through 10-04.

³ These documents are identified in the Certified Index to the Administrative Record filed by Region 10 on June 4, 2010 in OCS Appeal Nos. 10-01 through 10-04.

CC. Correspondence and Communication between EPA and Shell (including Shell contractors)
(cont.)

D. Other Correspondence

DD. Other Correspondence (cont.)

E. Endangered Species Act/ Essential Fish Habitat

EE. Endangered Species Act/ Essential Fish Habitat (cont.)

F. Environmental Justice

G. Government-to-Government Consultation

GG. Government-to-Government Consultation (cont.)

H. Initial Proposed Chukchi Permit (proposed August 20, 2009)

I. Public Comments on August 2009 Initial Proposed Chukchi Permit

J. Modified Proposed Chukchi Permit (proposed January 8, 2010)

K. Public Comments on January 2010 Proposed Chukchi OCS/PSD Permit

L. Final Chukchi Permit

MM. ADEC Rules/Regulations

NN. Proposed Beaufort Permit

OO. Public Comments on Beaufort OCS/PSD Proposed Permit

PP. Final Beaufort Permit

Supplemental Documents in the Administrative Record⁴

Section AAA: Supplemental Application Materials

EPA Exhibit Number	Date	Document Description
AAA-1	12/1/2010	Evaluation of the COARE-AERMOD Alternative Modeling Approach Support for Simulation of Shell Exploratory Drilling Sources In the Beaufort and Chukchi Seas, Prepared by ENVIRON
AAA-2	6/10/2011	Shell Discoverer June 10 Submittal Compilation – Cover Letter from Susan Childs, Shell, to Doug Hardesty, EPA, RE: Discoverer Permits R10OCS/PSD-AK-2009-01, issued March 20, 2010 for the Discoverer Drillship to operate in the Chukchi Sea, Alaska and R10OCS/PSD-AK-2010-01, issued on April 7, 2010 for the Discoverer Drillship to operate in the Beaufort Sea, Alaska (Including Attachments)
AAA-3	6/22/2011	Shell Discoverer June 22 Submittal - Letter from Kirk Winges, ENVIRON, to Andy Hawkins, EPA, RE: Modeling Files
AAA-4	6/23/2011	Shell Discoverer June 23 Submittal – Email from Pauline Ruddy, Shell, to Doug Hardesty, EPA, RE: GHG Calculation Information (Attachments: EPA drill mud gas volume, Methane calc20101022)
AAA-5	7/6/2011	Disco Air Quality Impact Modeling Files (Identifying Files on File at Region 10)

[Return to Section AAA](#)

[Return to Table of Contents](#)

⁴The identified documents have been added to the Administrative Record since the Certified Index to the Administrative Record was filed by Region 10 on June 4, 2010 in OCS Appeal Nos. 10-01 through 10-04.

Section BBB: Supplemental Guidance, Background Information, and Technical Analysis

EPA Exhibit Number	Date	Document Description
BBB-1	12/19/1980	Letter from Douglas Costle, EPA, to Jennings Randolph, Committee on Environment and Public Works, RE: Ambient Air Definition
BBB-2	6/13/1989	Memorandum from Terrel Hunt, EPA, to John Seitz, EPA, RE: Guidance on Limiting Potential to Emit in New Source Permitting, transmitting "Limited Potential to Emit in New Source Permitting," dated June 13, 1989
BBB-3	1/25/1995	Memorandum from John Seitz, EPA, to Director, Air, Pesticides and Toxics Management Division, Regions I and IV, RE: Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Act)
BBB-4	11/14/1995	Memorandum from John Seitz, EPA, to Director, Office of Ecosystem Protection, Region I, RE: Calculating Potential to Emit (PTE) and Other Guidance for Grain Handling Facilities
BBB-5	3/1/1997	Prudhoe Bay Air Quality Monitoring Program Quality Assurance Plan, Prepared by ENSR
BBB-6	3/19/1997	Letter from Vincent Scheetz, ENSR, to Richard Heffern, ADEC, RE: Quality Assurance Manual – Prudhoe Bay Monitoring Program
BBB-7	9/24/1997	Memorandum from Richard Heffern, ADEC, to Jim Baumgartner, ADEC, RE: BP Prudhoe Bay Ambient Air QA Monitoring Plan Review
BBB-8	1/1/1999	Black's Law Dictionary, Seventh Edition (Various Terms: constitutum debiti-construction, erase-error)
BBB-9	11/1/1999	The Plume Volume Molar Ratio Method for Determining NO ₂ /No _X Ratios in Modeling - Part 1: Methodology, Prepared by Patrick Hanrahan, EPA, Journal of the Air & Waste Management Association
BBB-10	11/1/1999	The Plume Volume Molar Ratio Method for Determining NO ₂ /No _X Ratios in Modeling - Part 2: Evaluation Studies, Prepared by Patrick Hanrahan, EPA, Journal of the Air & Waste Management Association
BBB-11	2/1/2000	Meteorological Monitoring Guidance for Regulatory Modeling Applications, Prepared by EPA
BBB-12	9/2/2003	The TOGA-COARE Bulk Air-Sea Flux Algorithm, Prepared by C.W. Fairall, NOAA, and E.F. Bradley, CSIRO Land and Water

EPA Exhibit Number	Date	Document Description
BBB-13	2/10/2004	ADEC Modeling Review Procedures Manual
BBB-14	8/25/2004	Standard Operating Permit Condition VI - Good Air Pollution Control Practices; Permit Condition for Air Quality Permits, Adopted by Reference in 18 AAC 50.346, Prepared by Department of Environmental Conservation
BBB-15	9/1/2004	Sensitivity Analysis of PVMRM and OLM in AERMOD, Alaska Contract No. 18-8018-04, Prepared by MACTEC
BBB-16	6/1/2005	Evaluation of Bias in AERMOD-PVMRM, Alaska DEC Contract No. 18-9010-12, Prepared by MACTEC
BBB-17	11/9/2005	Federal Register [70 FR 68218-68261], Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions, Final Rule
BBB-18	4/26/2007	Letter from Alan Schuler, ADEC, to Alison Cooke, BPXA, RE: Tentative Approval of Modeling Protocol Submitted by BP Exploration (Alaska), Inc.
BBB-19	5/24/2007	Letter from Walter Gray, MACTEC, to Alan Schuler, ADEC, RE: QAPP Review Support for BP Exploration Alaska (BPXA) Ambient Air Monitoring Program – Liberty Project (Attachment: QAPP review)
BBB-20	6/1/2007	Prudhoe Bay Unit Ambient Air Quality Monitoring Network Quarterly Data Report – January through March 2007, Prepared by RETEC
BBB-21	6/22/2007	Memorandum from Stephen Page, EPA, to Regional Air Division Directors, EPA, RE: Interpretation of "Ambient Air" in Situations Involving Leased Land Under the Regulations for Prevention of Significant Deterioration (PSD)
BBB-22	6/23/2007	Particulate Sampler Field Envelope, Prepared by IML Air Science
BBB-23	7/13/2007	RETEC Horizontal Wind Direction Calibration/Audit Form
BBB-24	7/25/2007	Ambient Air and/or Meteorological Monitoring Quality Assurance Project Plan (QAPP) Review Checklist, Prepared by ADEC

EPA Exhibit Number	Date	Document Description
BBB-25	10/9/2007	Letter from Steven Riva, EPA, to Leon Sedefian, DEC, RE: Ambient Air for the Offshore LNG Broadwater Project
BBB-26	11/1/2007	Quality Assurance Project Plan for the Liberty Project Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
BBB-27	11/1/2007	Prudhoe Bay Unit Ambient Air Quality Monitoring Network Quarterly Data Report – April through June 2007
BBB-28	11/1/2007	Prudhoe Bay Unit Ambient Air Quality Monitoring Network Quarterly Data Report – July through September 2007
BBB-29	11/5/2007	Letter from Al Trbovich, Hoefler, to Alan Schuler, ADEC, RE: BP Exploration (Alaska) Inc. Liberty Development Project Ambient Air Monitoring Program Quality Assurance Project Plan
BBB-30	2/1/2008	First Annual Data Report – Liberty Development Project Ambient Air Monitoring Program – Prudhoe Bay, Alaska, Prepared by Hoefler
BBB-31	2/1/2008	Prudhoe Bay Unit Ambient Air Quality Monitoring Network Final Data Report – January through December 2007
BBB-32	2/13/2008	Department Review of BPXA's 2006 A-Pad/CCP Ambient Pollutant/Meteorological Data
BBB-33	3/1/2008	Quality Assurance Handbook for Air Pollution Measurement Systems; Volume IV: Meteorological Measurements, Version 2.0, Prepared by EPA
BBB-34	12/1/2008	Appendix D – Method Specific Validation Tables and Audit Forms, Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.4, Prepared by SLR
BBB-35	1/5/2009	Meteorological and Pollutant Data Review - BPXA 2007 Prudhoe Bay Unit Data, Prepared by Enviroplan Consulting
BBB-36	1/5/2009	Email from Alan Schuler, ADEC, to Alison Cooke, BPXA, RE: Findings re 2007 Prudhoe Bay Met/Pollutant Data
BBB-37	10/13/2009	Technical Analysis Report: Air Quality Control Minor Permit AQ0166CPT04 and Air Quality Control Construction Permit AQ0270CPT04, Prepared by Alaska Department of Environmental Conservation - Air Permits Program

EPA Exhibit Number	Date	Document Description
BBB-38	11/1/2009	2008 Annual Data Report – Prudhoe Bay Unit, Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
BBB-39	1/27/2010	Letter from John Kuterbach, ADEC, to James Pfeiffer, BPXA, RE: Construction Permit AQ0170CPT01 revised Technical Analysis Report (TAR) and Response to Comments (RTC) for BP Exploration (Alaska) Inc. (BPXA) for the Seawater Injection Plan East (SIPE) Main Injection Pump Bundle Replacement Project
BBB-40	2/1/2010	Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
BBB-41	2/9/2010	Federal Register [75 FR 6474-6537], Primary National Ambient Air Quality Standards for Nitrogen Dioxide, Final Rule
BBB-42	2/26/2010	Memo from Tyler Fox, EPA, to Erik Snyder, EPA, RE: Model Clearinghouse Review of Modeling Procedures for Demonstrating Compliance with PM2.5 NAAQS
BBB-43	3/1/2010	Badami Ambient Air Quality and Meteorological Monitoring Station Data Summary Report – October 1 through December 31, 2009, Prepared by AECOM
BBB-44	3/1/2010	Wainwright Near-Term Ambient Air Quality Monitoring Program Annual Data Report – November 2008 through November 2009, Version 2, Prepared by AECOM
BBB-45	3/1/2010	Wainwright Near-Term Ambient Air Quality Monitoring Program Annual Data Report – November 2008 through November 2009, Prepared by AECOM
BBB-46	3/1/2010	Wainwright Permanent Ambient Air Quality Monitoring Program Fourth Quarter Data Report – September through December 2009, Prepared by AECOM
BBB-47	4/1/2010	Badami Ambient Air Quality and Meteorological Monitoring Station Data Summary Report – January 1 through March 31, 2010, Prepared by AECOM
BBB-48	4/7/2010	Letter from Al Trbovich, Hoefler, to Alan Schuler, ADEC, RE: BP Exploration (Alaska) – Revised Prudhoe Bay Unit 2008 Annual Data Report for the Ambient Air and Meteorological Monitoring Program
BBB-49	4/12/2010	Federal Register, Final Rule - Safety Zone; FRONTIER DISCOVERER, Outer Continental Shelf Drillship, Chukchi and Beaufort Seam Alaska, 75 FR 18404-18407

EPA Exhibit Number	Date	Document Description
BBB-50	5/1/2010	Cover Page – Wainwright Ambient Air Quality and Meteorological Monitoring Station Quality Assurance Project Plan, Prepared by AECOM
BBB-51	5/1/2010	Signature Page - Wainwright Ambient Air Quality and Meteorological Monitoring Station Quality Assurance Project Plan, Prepared by AECOM
BBB-52	5/1/2010	Wainwright Ambient Air Quality and Meteorological Monitoring Station Quality Assurance Project Plan, Prepared by AECOM, Revision 1
BBB-53	5/1/2010	Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.1, Prepared by Hoefler
BBB-54	5/25/2010	Letter from Tom Damiana, AECOM, to Herman Wong, EPA, RE: Quality Assurance Project Plan for the Wainwright Ambient Air Quality and Meteorological Monitoring Site – Permanent Station
BBB-55	6/1/2010	Wainwright Permanent Ambient Air Quality Monitoring Program First Quarter Data Report – January through March 2010, Prepared by AECOM
BBB-56	6/28/2010	Memorandum from Tyler Fox, EPA, to Regional Air Division Directors, EPA, RE: Applicability of Appendix W Modeling Guidance for the 1-hour NO ₂ National Ambient Air Quality Standard
BBB-57	8/1/2010	Badami Ambient Air Quality and Meteorological Monitoring Station Data Summary Report – April 1 through June 30, 2010, Prepared by AECOM
BBB-58	8/17/2010	Wainwright Ambient Air Quality and Meteorological Monitoring Station Quality Assurance Project Plan, Prepared by AECOM
BBB-59	8/23/2010	Memorandum from Stephen Page, EPA, to Regional Air Division Directors, EPA, RE: Guidance Concerning the Implementation of the 1-hour SO ₂ NAAQS for the Prevention of Significant Deterioration Program
BBB-60	9/1/2010	2009 Annual Data Report – Prudhoe Bay Unit, Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
BBB-61	9/1/2010	July 2010 Monthly Data Deliverable – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler
BBB-62	9/1/2010	August 2010 Monthly Data Deliverable – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by Hoefler

EPA Exhibit Number	Date	Document Description
BBB-63	9/27/2010	Standard Permit Condition III - Excess Emissions and Permit Deviation Reports; Permit Condition for Air Quality Permits, Adopted by Reference in 18 AAC 50.346, Prepared by Department of Environmental Conservation
BBB-64	9/27/2010	Standard Permit Condition XV - Emission Inventory Reporting; Permit Condition for Air Quality Permits, Adopted by Reference in 18 AAC 50.346, Prepared by Department of Environmental Conservation
BBB-65	9/27/2010	Standard Permit Condition XVI - Emission Inventory Reporting Form; Permit Condition for Air Quality Permits, Adopted by Reference in 18 AAC 50.346, Prepared by Department of Environmental Conservation
BBB-66	10/1/2010	Badami Ambient Air Quality and Meteorological Monitoring Station Data Summary Report – July 1 through September 30, 2010, Prepared by AECOM
BBB-67	11/1/2010	Deadhorse PM2.5 Monitoring Program Data Report 4th Quarter 2009, Prepared by AECOM
BBB-68	11/1/2010	Wainwright Permanent Ambient Air Quality Monitoring Program Second Quarter Data Report – April through June 2010, Prepared by AECOM
BBB-69	11/1/2010	Wainwright Permanent Ambient Air Quality Monitoring Program Third Quarter Data Report – July through September 2010, Prepared by AECOM
BBB-70	11/1/2010	Quarter A Data Summary – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by SLR
BBB-71	12/1/2010	Badami Ambient Air Quality and Meteorological Monitoring Station Annual Data Summary Report – August 15, 2009 through September 30, 2010, Prepared by AECOM
BBB-72	12/1/2010	Deadhorse PM2.5 Monitoring Program Data Report 2nd Quarter 2010, Prepared by AECOM
BBB-73	12/21/2010	Email from Alan Schuler, ADEC, to Alison Cooke, BPXA, RE: Revised Findings Report for 2008 and 2009 Prudhoe Data
BBB-74	12/21/2010	Final Findings Report (Revised) - Pollutant and Meteorological Data Review and Annual Report Review for the BP Exploration Alaska Prudhoe Bay Unit Data for the Period January 1, 2008 through December 31, 2008, Prepared by Enviroplan Consulting

EPA Exhibit Number	Date	Document Description
BBB-75	12/21/2010	Final Findings Report (Revised) - Pollutant and Meteorological Data Review and Annual Report Review for the BP Exploration Alaska Prudhoe Bay Unit Data for the Period January 1, 2009 through December 31, 2009, Prepared by Enviroplan Consulting
BBB-76	1/1/2011	Deadhorse PM2.5 Monitoring Program Data Report 1st Quarter 2010, Prepared by AECOM
BBB-77	1/1/2011	Quarter B Data Summary (September – November 2010) – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by SLR
BBB-78	2/1/2011	Deadhorse PM2.5 Monitoring Program Data Report 3rd Quarter 2010, Prepared by AECOM
BBB-79	2/22/2011	Letter from Al Trbovich, SLR, to Alan Schuler, ADEC, RE: BP Exploration (Alaska) – Prudhoe Bay Unit, Ambient Air and Meteorological Monitoring Program Quality Assurance Project Plan (Attachment: Quality Assurance Project Plan)
BBB-80	3/1/2011	Memorandum from Tyler Fox, EPA, to Regional Air Division Directors, EPA, RE: Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard
BBB-81	3/1/2011	Badami Ambient Air Quality and Meteorological Monitoring Station Data Summary Report – October 1 through December 30, 2010, Prepared by AECOM
BBB-82	3/1/2011	Deadhorse PM2.5 Monitoring Program Data Report 4th Quarter 2010, Prepared by AECOM
BBB-83	3/1/2011	Wainwright Permanent Ambient Air Quality Monitoring Program Fourth Quarter Data Report – October through December 2010, Prepared by AECOM
BBB-84	3/1/2011	Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.4, Prepared by SLR
BBB-85	3/1/2011	Appendix A – Program References, Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.4, Prepared by SLR
BBB-86	3/1/2011	Appendix B – Monitoring Program Supporting Documents, Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.4, Prepared by SLR

EPA Exhibit Number	Date	Document Description
BBB-87	3/1/2011	Bureau of Ocean Energy Management, Alaska OCS Region - Detailed Active Leases
BBB-88	3/1/2011	PSD and Title V Permitting Guidance for Greenhouse Gases, Prepared by EPA
BBB-89	4/1/2011	Wainwright Permanent Ambient Air Quality Monitoring Program Annual Data Report – January through December 2010, Prepared by AECOM
BBB-90	4/1/2011	Quarter C Data Summary (December 31, 2010 – February 28, 2011) – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Prepared by SLR
BBB-91	4/1/2011	Memorandum from Herman Wong, EPA, to Tyler Fox, EPA, RE: COARE Bulk Flux Algorithm to Generate Hourly Meteorological Data for Use with the AERMOD Dispersion Program; Section 3.2.2.e Alternative Refined Model Demonstration
BBB-92	4/19/2011	Email from Kwame Agyei, ADEC, to Al Trbovich, SLR, RE: Approval of PBU QAPP Version 1.1
BBB-93	4/19/2011	Prudhoe Bay Unit QAPP Version 1.1 Approval Signatures
BBB-94	5/1/2011	Revised Outer Continental Shelf Lease Exploration Plan - Camden Bay, Beaufort Sea, Alaska - Flaxman Island Blocks 6559, 6610 & 6658, Beaufort Sea Lease Sales 195 & 202 (Including Attachments: Appendices A-M), Prepared by Shell
BBB-95	5/1/2011	Revised Outer Continental Shelf Lease Exploration Plan - Camden Bay, Beaufort Sea, Alaska - Burger Prospect: Posey Area Blocks 6714, 6762, 6764, 6812, 6912, & 6915, Chukchi Sea Lease Sale 193 (Including Attachments: Appendices A-M), Prepared by Shell
BBB-96	5/1/2011	Kaktovik Ambient Air and Meteorological Monitoring Program – Quality Assurance Project Plan, Prepared by SLR
BBB-97	5/1/2011	Appendix C – Standard Operating Procedures (SOPs), Quality Assurance Project Plan – Point Lay Comprehensive Ambient Air and Meteorological Monitoring Program, Revision 1.4, Prepared by SLR
BBB-98	5/1/2011	Summary of Changes to the Quality Assurance Project Plan for the Shell Point Lay and Meteorological Monitoring Project, Version 1.4

EPA Exhibit Number	Date	Document Description
BBB-99	5/6/2011	Memorandum from George Bridgers, NCDENR, to Herman Wong, EPA, RE: Model Clearinghouse Review of AERMOD-COARE as an Alternative Model for Application in an Arctic Marine Ice Free Environment
BBB-100	5/8/2011	Email from Herman Wong, EPA, to Andy Hawkins, EPA, RE: Approval Request for Non-Guideline Modeling - Shell Disco and Kulluk Dispersion Modeling
BBB-101	5/23/2011	Memorandum from Chris Hall, EPA, to Air Quality Modeling Permit Team, EPA, RE: Wainwright Air Monitoring Data Review - 09/13/09 through 12/31/10
BBB-102	6/1/2011	Arctic Permits Newsletter, Prepared by EPA
BBB-103	6/20/2011	Memorandum from Paul Boys, EPA, to Natasha Greaves, EPA, RE: Review Comments on the Shell Supplemental BACT Analysis for Seldom Used Engines
BBB-104	6/23/2011	Memorandum from Chris Hall, EPA, to David Bray, EPA, RE: EPA Region 10 Determination of Appropriate Background Values for the Chukchi Sea and Beaufort Sea OCS Permits
BBB-105	6/23/2011	Memorandum from Chris Hall, EPA, to Air Quality Modeling Permit Team, EPA, RE: Badami Air Monitoring Data Review - 12/01/09 through 12/31/10
BBB-106	6/23/2011	Memorandum from Chris Hall, EPA, to Air Quality Modeling Permit Team, EPA, RE: Deadhorse Air Monitoring Data Review - 1/1/10 through 12/31/10
BBB-107	6/23/2011	Memorandum from Chris Hall, EPA, to Air Quality Permit Modeling Team, EPA, RE: Point Lay Air Monitoring Data Review - 6/01/10 through 2/28/11
BBB-108	6/24/2011	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, Prepared by EPA
BBB-109	6/24/2011	ADEC QAPP & Data Review Project List without Cost Info, Prepared by AES
BBB-110	7/6/2011	Offshore Drilling: Interior Starts Clock on Shell Arctic Proposal, Prepared by Phil Taylor
BBB-111	7/12/2011	Executive Order: Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska

EPA Exhibit Number	Date	Document Description
BBB-112	7/18/2011	Technical Support Document - Review of Shell's Ambient Air Quality Impact Analysis for the Kulluk OCS Permit Application, Permit No. R10OCS030000, Prepared by EPA
BBB-113	7/22/2011	Statement of Basis for Draft Outer Continental Shelf Title V Air Quality Operating Permit No. R10OCS020000 - ConocoPhillips Company Jackup Drill Rig Chukchi Sea Exploration Drilling Program, Prepared by ConocoPhillips
BBB-114	7/22/2011	Statement of Basis for Draft Outer Continental Shelf Permit to Construct and Title V Air Quality Operating Permit No. R10OCS030000, Shell - Conical Drilling Unit Kulluk, Beaufort Sea Exploration Drilling Program
BBB-115	7/22/2011	Outer Continental Shelf Title V Air Quality Operating Permit Draft - Permit No. R10OCS020000, ConocoPhillips Company, Prepared by EPA
BBB-116	7/22/2011	Attachment A - Technical Support Document - ConocoPhillips Company Outer Continental Shelf Exploratory Drilling Program in the Chukchi Sea
BBB-117	7/22/2011	Outer Continental Shelf Permit to Construct and Title V Air Quality Operating Permit - Permit No. R10OCS030000, Shell Offshore Inc., Prepared by EPA
BBB-118	8/30/2011	Beaufort Sea - Outer Continental Shelf Lease Ownership Map
BBB-119	8/30/2011	Chukchi Sea - Outer Continental Shelf Lease Ownership Map
BBB-120	8/31/2011	NOAA Website: Nitrogen Dioxide 2004-2009 Description and Notable Features
BBB-121	9/2/2011	Statement by the President on the Ozone National Ambient Air Quality Standards, Prepared by The White House Office of the Press Secretary
BBB-122	9/2/2011	Letter from Cass Sunstein, Office of Management and Budget, to Administrator Jackson, EPA, RE: Reconsideration of the 2008 Ozone Primary and Secondary National Ambient Air Quality Standards
BBB-123	Undated	Badami site-AQ Data (Attachments: Badami Validated met data Jul thru Sep 2010, Badami Validated met data Oct thru Dec 2010(3-3-11), and Validated met data 8-15-09 through 9-30-10(12-3-10))

EPA Exhibit Number	Date	Document Description
BBB-124	Undated	Deadhorse site-AQ Data (Attachments: Deadhorse Hourly Data Quarter1 2010, Deadhorse Hourly Data Quarter2 2010, Deadhorse Hourly Data Quarter3 2010, Deadhorse Hourly Data Quarter4 2009, Deadhorse Hourly Data Quarter4 2010, Deadhorse Disk File Data 102309-123110, Deadhorse FEM PM25 Data 102309-123110, and Nov 2009 through Aug 2010 Deadhorse FEM-FRM)
BBB-125	Undated	Endicott SDI site-AQ Data (Attachments: BPXA Liberty 1-8, BPXA Liberty First Year Data, Endicott Findings Report, Liberty Ambient Pollutant Data, Response to ADEC Liberty SDI Monitoring Questions, and Transmittal Letter)
BBB-126	Undated	Prudhoe Bay CCP & A Pad sites-AQ Data (Attachments: 2006, 2007, 2008, 2009)
BBB-127	Undated	Pt Lay site-AQ Data (Attachments: 1007PTL, 1008PTL, PTL 100601 100831, PTL 100901 101130, and PTL 101201 110228)
BBB-128	Undated	Wainwright site-AQ Data (Attachments: Zero Air Background Test Results April 2010, WPS 0410, WPS 0510, WPS 0610, WPS 0710, WPS 0810, WPS 0909, WPS 0909 Rev 4 22 2010, WPS 0910, WPS 1009, WPS 1009 Rev 4 22 2010, WPS 1010, WPS 1109, WPS 1109 Rev 4 22 2010, WPS 1110, WPS 1209, WPS 1209 Rev 4 22 2010, WPS 1210, WPS 0110, WPS 0210, WPS 0310, and WPS 2010)
BBB-129	Undated	Merriam-Webster's Collegiate Dictionary, Tenth Edition (Various Terms: bughouse-bulletin, constative-consult, equivalent-erica)
BBB-130	Undated	Lease Map - Beaufort Sea, Post-1995 OCS OPD Grid, Prepared by Shell
BBB-131	Undated	Appendix A – Terms, Definitions, Abbreviations
BBB-132	Undated	Appendix B – Program References and Citations
BBB-133	Undated	Appendix C – Supporting Documents
BBB-134	Undated	Appendix D – Standard Operating Procedures, Prepared by SLR

EPA Exhibit Number	Date	Document Description
BBB-135	Undated	Kaktovik Aerial Site Photo
BBB-136	Undated	Appendix A – Data Processing Specifications and Statistical Formulae, Version 1
BBB-137	Undated	Appendix A – Data Processing Specifications and Statistical Formulae, Version 2
BBB-138	Undated	Appendix B – Precision Data
BBB-139	Undated	Appendix C – Accuracy Data
BBB-140	Undated	Appendix D – Validated Continuous Data Summaries, Version 2
BBB-141	Undated	Appendix D – Validated Continuous Data Summaries, Version 1
BBB-142	Undated	Appendix E – Validated Manual Particulate Data
BBB-143	Undated	BPXA Prudhoe Bay Monitoring Map
BBB-144	Undated	EPA's Endangerment Finding - Frequently Asked Questions
BBB-145	Undated	AERMOD files for Disco RTC (Attachments: 2009a, 2009b, 2010a, 2010b, readme, shell reanalysis with 2010 met)
BBB-146	1/1/2011	USGS, An Evaluation of the Science Needs to Inform Decisions on Outer Continental Shelf Energy Development in the Chukchi and Beaufort Seas, Alaska
BBB-147	3/18/2011	Report to Congress on Black Carbon, External Peer Review Draft, Department of the Interior, Environment, and Related Agencies - Appropriations Act, 2010

EPA Exhibit Number	Date	Document Description
BBB-148	2/25/2011	ConocoPhillips, Outer Continental Shelf Air Permit Application Amendment Volume I, Chukchi Sea, Devil's Paw Prospect
BBB-149	3/11/2011	Letter from Zeena Siddeek, ADEC, to Robert Brown, Usibelli Coal Mine, Inc., RE: Usibelli ADEC TV Permit
BBB-150	9/14/2011	2011 ADEC Modeling Review Procedures Manual, Prepared by ADEC
BBB-151	3/11/2011	Federal Register, Final Rule - Utah Sulfur Dioxide Plan, 50 FR 7057
BBB-152	4/30/1987	Memorandum from G.T. Helms, EPA, to Steve Rothblatt, EPA, RE: Ambient Air
BBB-153	6/29/2010	Memorandum from Stephen D. Page, EPA, to Regional Air Division Directors, EPA, RE: NO ₂ Guidance

[Return to Section BBB](#)

[Return to Table of Contents](#)