

United States Environmental Protection Agency
Region 10 – The Pacific Northwest
1200 6th Avenue Suite 900
Seattle WA 98101

16 October 2009

Mr. Richard Albright, Director and
Ms. Suzanne Skadowski, Community Involvement Coordinator
Office of Air Waste and Toxics

Chukchi Sea Air Permit – Shell Gulf of Mexico, Inc.

Dear Mr. Albright:

I attended the public hearing for the referenced permit in Anchorage on 25 September 2009. I submitted oral testimony at that time. I would like to formalize my statement. I am submitting my comments as a concerned citizen. Furthermore, I am a registered professional chemical engineer in the State of Alaska. I have performed dispersion modeling work for both State and EPA air quality permits during my 37-year-long career.

I would like to summarize a few key points of what I believe that I had heard in presentations made in September, including those of your Environmental Engineer who has developed this permit for EPA, Mr. Pat Nair:

1. Shell's Project qualifies as a PSD major source.
2. The "Associated Fleet" of icebreakers, supply ship and oil response vessels are only considered contributory to the "OCS Source", when they are attached to the Frontier Discoverer which only occurs under infrequent, if any, conditions.
3. BACT only applies to the OCS Source, the Frontier Discoverer, when it is attached to the seabed.
4. Per paragraph 1, Section 2.2, page 13, titled, PSD, of Statement of Basis – Permit No. R10OCS/PSD-AK-09-01, "...The PSD program limits degradation of air quality to that which is not considered "significant". In addition, the PSD program includes a requirement for evaluating the effect that the proposed emissions are expected to have on air quality related values such as visibility, soils, and vegetation. The PSD program also requires the utilization of the best control technology (BACT) as determined on a case-by-case basis taking into account energy, environmental and economic impacts.", highlighting added for emphasis.

5. Maximum Project Impact in Project Vicinity and NAAQS for Particulate Matter 2.5 microns in diameter or less for the Highest Percent of NAAQS for all Time Periods is 96%.
6. Table 8, Representative Background Air Quality Data Measurements, Appendix B to the Statement of Basis, shows 24-Hour and Annual Average measured concentrations of PM_{2.5} were 8.00 and 4.00 micrograms per cubic meter, respectively, based on data collection taken at Wainwright Alaska between 6 Mar 09 and 30 June 09, meeting the conditions contained in the monitoring plan (CPAI 2008).
7. Tables 11, 12a and 12b Primary Operating Scenario #1, Secondary Operating Scenarios #1 and #2, and Secondary Operating Scenarios #3 and #4, Predicted Total Concentration Impact Comparison with NAAQS, Appendix B to the Statement of Basis, shows 24-Hour and Annual Average measured concentrations of PM_{2.5}, 8.00 and 4.00 micrograms per cubic meter, respectively, would increase to 33.60 and 5.70, micrograms per cubic meter, respectively, compared to NAAQS of 35 and 15, micrograms per cubic meter, respectively. In comparison to background plus modeled emissions of PM_{2.5}, the result is that 96% and 38% of the NAAQS increments for 24-Hour and Annual Averages, would be “consumed in all scenarios presented.
8. “Substantial New Information” was submitted by Shell on 18 September 09 as indicated by the EPA during the public hearing suggesting that new baseline monitoring data obtained at Wainwright showed a few new periodic measurements of PM_{2.5} of 14 micrograms per cubic meter, more or less, for this first PM_{2.5} monitoring station on the North Slope of Alaska.

Based on the aforementioned items, one could reasonably conclude that the 24-Hour NAAQS level of PM_{2.5} of 35 micrograms per cubic meter would be exceeded since the baseline increased from 8 to 14 micrograms per cubic meter since 96% of the NAAQS allowable impacted concentration was consumed when the baseline was at 8 micrograms per cubic meter. What was not mentioned earlier was **that the PSD source is located 70 miles (about 112 kilometers) offshore** and that this baseline ambient air quality data from Wainwright is apparently extrapolated over this entire area since there is no offshore monitoring data to confirm otherwise.

This presumption seems overly conservative, as noted by EPA, considering the lack of continuous man-made, onshore or offshore-producing particulate matter to contribute to such a baseline ambient air quality. The Significant

Impact Radius established by EPA was set at 50 kilometers from the Frontier Discoverer Drillship. The edge of this Significant Impact Radius is yet another 62 kilometers (almost 39 miles) to shore. Is it a reasonable assumption to extrapolate ground level concentrations of PM_{2.5} material produced onshore either by nature (wind-driven dust) or by man (e.g. home heating system exhaust, snow machine, or other source) offshore to such a distance?

At the Proceedings of Healthy Buildings in 2000, L.E. Burton, J.G. Girman and S.E. Womble of the Indoor Environment Division of the United States Environmental Protection Agency reported their findings about *Airborne Particulate Matter Within 100 Randomly Selected Office Buildings In The United States (BASE)*. Of the 453 PM_{2.5} samples taken inside and outside of the 100 randomly selected office buildings during the study in years 1994 through 1998, the indoor concentrations ranged from 1.3 to 24.8 and the associated outdoor concentrations ranged from 4.5 to 47.4 micrograms per cubic meter. This means that the ambient conditions at some of the randomly selected office buildings would have been in non-attainment areas by NAAQS (i.e. exceeded the 24-Hour NAAQS level of PM_{2.5} of 35 micrograms per cubic meter).

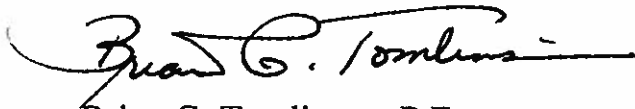
The report does not describe the location of these buildings other than 73% of the office buildings were located in urban, 24% in suburban and 4% in rural surroundings. These 100 randomly selected office buildings were located in 37 cities with populations of 100,000 or more in 25 States. In other words, these buildings were not likely located near industrial areas. Furthermore, the sampling was done under very controlled conditions by EPA-directed personnel. Is it not reasonable to assume that for simple reasons of comparison that a person working on the Frontier Discoverer Drillship, on one of the vessels in the “fleet”, or on land at Wainwright would be working in a healthier environment from a PM_{2.5} concentration viewpoint than people who were working in or around many of the office buildings in the EPA’s BASE Study?

In the list of items mentioned on page 1 of this letter, please refer to item no (4) and consider the nature of the operation proposed under the permit. A reasonableness test needs to be applied. As I mentioned in my oral testimony on 25 September 2009 in Anchorage, I was involved in the permitting process over 30 years ago for an air quality permit for an industrial facility located southeast of Fairbanks. It was interesting to note

that the ambient air quality monitoring results showed that ground level concentrations of hydrocarbons already placed this location in non-attainment status. There were not any industrial facilities contributing to this source of HC. The cause was due to the naturally occurring emissions of terpenes from coniferous trees!

Director Albright, I implore you to apply good common sense in your final review of this PSD permit request by Shell Gulf of Mexico Inc. and grant them this permit without further delay. Thank you.

Very truly yours,

A handwritten signature in black ink, appearing to read "Brian G. Tomlinson", with a long horizontal flourish extending to the right.

Brian G. Tomlinson, P.E.
13325 Mainsail Drive
Anchorage AK 99516

URL: <http://yosemite.epa.gov/R10/airpage.nsf/Permits/chukchiap>

Last updated on Friday, October 16th, 2009.

Region 10: the Pacific Northwest

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Chukchi Sea Air Permit

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OCS/PSD Permits

- Outer Continental Shelf (OCS) Air Permits
- New Source Review (NSR)/Prevention of Significant Deterioration (PSD) Construction Permits
- Terminated Shell Kulluk Vessel Drilling Permit
- Shell's Beaufort Sea OCS/PSD permit

Comment period on the proposed permit extended to October 20, 2009. Send your comments to:

Shell Chukchi OCS Air Permit
EPA Region 10
1200 6th Ave, Ste. 900
Mail Stop: AWT-107
Seattle, Washington 98101
Fax: 206-553-0110
R10ocsairpermits@epa.gov

Air Quality Permit Proposed for Shell Gulf of Mexico Inc. to Operate the Frontier Discoverer Drillship in the Chukchi Sea, Alaska

Public Comment Period Extended to October 20, 2009

Shell proposes to operate the Frontier Discoverer and its associated support vessels to explore for oil and gas within its current leases on the Chukchi Sea. The lease areas to be explored are all beyond 25 miles from Alaska's seaward boundary west of Wainwright (162 W longitude) and north of Point Lay (71 N latitude) (see [map of current Shell leases in the Chukchi Sea Lease Sale Area 193 \(PDF\)](#) (1 page 2MB)).

We are seeking public comment on a proposed Clean Air Act permit for Shell Gulf of Mexico Inc. (Shell), 3601 C Street, Suite 1000, Anchorage, Alaska 99503. The proposed permit will allow Shell to operate the Frontier Discoverer drillship and its fleet for a multi-year exploratory oil and gas drilling program within its current lease blocks from lease sale 193 on the Chukchi Sea outer continental shelf (OCS), beyond 25 miles from Alaska's seaward boundary. Because the drillship operations are a "major" source, the permit must ensure that the operations meet the requirements of the Prevention of Significant Deterioration (PSD) program. The proposed permit is based on non-guideline ISC3-PRIME modeling system used to predict air pollutant concentrations.

Send written comments to the mail or email addresses above, emailed or postmarked by October 20, 2009. For more information, contact Suzanne Skadowski, EPA Region 10, 206-553-6689 or 800-424-4372 or skadowski.suzanne@epa.gov. Public comments received on this proposed permit will be posted here as we receive them, through the end of the comment period.

Have questions about the proposed permit? Contact:

Pat Nair, Permit Writer
EPA Region 10
Phone: 208-378-5754
Fax: 208-378-5744
Email: nair.pat@epa.gov

WorkCentre 7328 Transmission Report

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SA: Send Again EN: Engaged

BC: Broadcast
RS: Relay Send
AS: Auto Send

MP: Multi Polling
BF: Box Fax Forward
TM: Terminated

RV: Remote Service
CP: Completed