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Chairs of Arctic Council
Working Groups (CAFF, EPPR,
PAME, SDWG), and the Chair
of SAO.

Your ref.	Our ref.	Date
		oktober 2, 2003

The assessment of 'Petroleum Hydrocarbons in the Arctic' to be delivered to the Arctic Council Ministerial meeting in 2006.

Arrangement for cooperation.

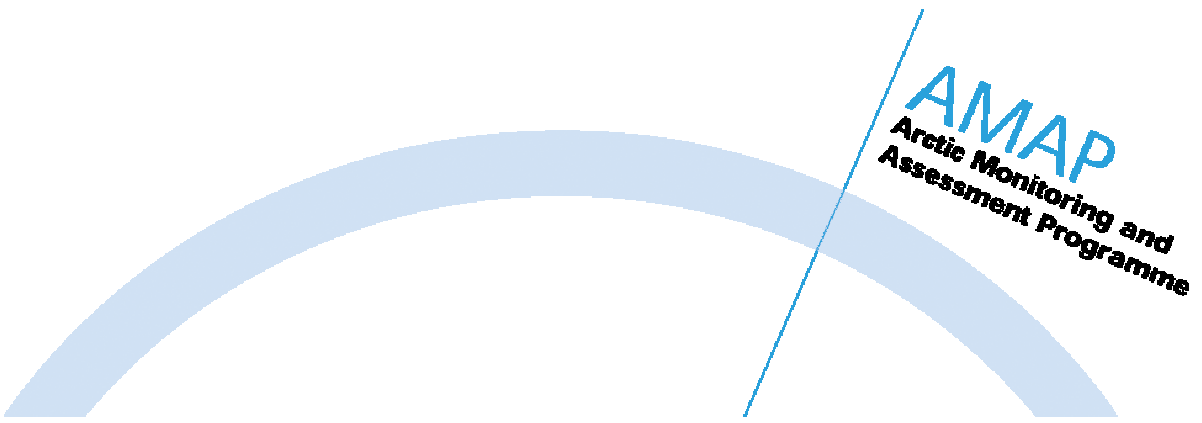
Dear colleagues,

The main part of this letter, below, outlines the consideration within the AMAP WG of the proposed assessment of 'Petroleum Hydrocarbons in the Arctic' to be delivered in 2006. I would like to stress that what is presented below is a draft proposal only. This letter is to invite your comments on the AMAP proposals, and at the same time, to invite you to consider the possible participation of your WGs in different parts of the assessment.

This letter is also sent to the Chair of the SAOs as several items may require SAO decision regarding certain parts of the planned assessment.

At its WG meeting in Boulder, USA, in May 2003, the AMAP Working Group held extensive discussions on plans to deliver an update assessment of Petroleum Hydrocarbons in the Arctic to the Arctic Council in 2006. For further information please consult the AMAP WG17 Meeting Minutes (distributed printed copy or available as an electronic document from the AMAP website, www.amap.no).

Under the lead of Norway and Russia, which together with the USA are the lead countries under AMAP for the preparation of this assessment, an expert group have developed a proposal for the content of a comprehensive and wide-ranging *'Assessment of the environmental impacts of oil and gas developments in the Arctic, and of pollution of petroleum hydrocarbons and PAHs from other sources, including possible effects on human health …'*



Following a request presented at the last SAO meeting, the planned assessment was expanded to also cover '*social and economic consequences of petroleum development in the Arctic'*.

The resulting proposed draft outline for the assessment, and the proposed timetable for the assessment activities are detailed in Annexes A and B, respectively. The proposed assessment includes the following eight chapters:

1. Introduction
2. Oil and gas developments in the Arctic, ongoing activities and future plans for exploration, exploitation and transportation.
3. Sources and inputs of petroleum hydrocarbons and PAHs in the Arctic.
4. Concentrations and fate of petroleum hydrocarbons and PAHs in the Arctic environment.
5. Biological effects, including human health effects.
6. Environmental status and impacts on habitats and ecosystems in the Arctic.
7. Social and economic consequences of petroleum development in the Arctic.
8. Conclusions and recommendations.

From the outset, it has been envisaged by AMAP that production of a comprehensive assessment of Petroleum Hydrocarbons in the Arctic will be a joint activity involving collaboration with other Arctic Council Working Groups. A clear priority in the development of a proposal for the work was, therefore, to take this aspect into consideration. In its discussions, the AMAP WG identified several specific areas of proposed cooperation.

It was generally agreed by the AMAP WG that chapters 3-4 of the proposed assessment fall largely within the existing AMAP mandate and, together with chapters 1 and 2 could therefore be produced by AMAP – with collaboration with other Arctic Council WGs. Chapters 5 and 6 of the proposed assessment, however, would require full-participation of other Arctic Council WGs, primarily CAFF, in the assessment, and also possibly EPPR in connection with their activity on vulnerability mapping, etc. AMAP would be able to make significant contributions to the assessment of biological effects, and the parts dealing with human health effects, but by no means the wider ecosystem/habitat issues addressed in these chapters. As such, chapters 5 and 6 of the assessment could only be contemplated if the WGs concerned, in particular CAFF, were prepared to undertake these parts of the assessment, and received the necessary mandate from SAOs.

Of particular concern during the AMAP WG discussions, was the proposal that the assessment address 'social and economic consequences of petroleum development in the Arctic'. The proposal by the AMAP expert group was that this chapter should:

> "assess the impacts and benefits of petroleum developments in the Arctic from human, social, and economic perspectives. Economic aspects could include infrastructure developments (roads, housing, public services, etc.) related to the petroleum development and the economic consequences for local communities in the Arctic and for the wider economy. Also the sustainability aspect and the interaction with other economic sectors should be addressed, as well as costs of cleanup and remedial actions."

As stated above, these issues were included in the proposed assessment at the request presented at the last SAO meeting . The AMAP WG considered these issues to be outside the competence and mandate of AMAP, and probably also outside that of the other Arctic Council WGs, with the possible exception of SDWG. Completing these parts of the assessment will, in the opinion of the AMAP WG, require access to a level of competence/expertise which is not readily available within the existing Arctic Council WG

structures. This part of the assessment will be both politically sensitive, and expensive/time-consuming to prepare, however, if these issues are neglected, the assessment maybe considered to be incomplete. Consequently, the AMAP WG concluded that the SAOs should be consulted to reconsider whether this part of the assessment is required, and if so provide the necessary direction on how this part of the assessment should be prepared (e.g. by SDWG and others), including allocation of necessary resources, etc.

One option, suggested by Canada, was that the proposed assessment content be considered as a framework for a series of assessments where volume I (chapters 1-4) could be prepared by AMAP together with other relevant WGs; volume II (chapters 5-6) could be prepared jointly by AMAP and CAFF, and volume III (chapter 7) might be prepared partly by SDWG and/or others. This proposal was widely supported within the AMAP WG, however the group fully recognized that it is the SAOs and not AMAP that should decide on the roles of the other WGs in the assessment, that this was an issue that would need further consideration, and should therefore be raised with the SAOs when the views of the other WGs were available.

Finally, an important component of the proposed assessment process is a conference on oil and gas developments in the Arctic - to review new results on industry developments, plans and future scenarios, including technological aspects, regulations, emergency contingency planning, environmental impacts and risks, and social and economic consequences. This conference should involve all stakeholders, including industry, permanent participants, Arctic Council WGs. Within the proposed timetable for the assessment, this conference was provisionally scheduled for summer 2005.

With that summary of the views of the AMAP WG, I would kindly request you, as Chairs of the other Arctic Council groups, to comment on these ideas, the proposed assessment outline and timetable, the suggestions for collaboration, etc., with a view to further consideration of this issue at the SAO meeting in October. I would welcome if you could give a response at the upcoming SAO meeting.

To the Chair of the SAOs, I would kindly ask you to consider in consultation with the other SAOs as necessary, some of the points raised by the AMAP WG relating, in particular to the proposed chapter 7 of the assessment.

Best regards

Helgi Jensson

Chair of the AMAP Working Group

Cc AMAP HoDs

ACs Secretariats

Annex A:

DRAFT PROPOSAL FOR:

Outline of the 2006 assessment of petroleum hydrocarbons

Assessment of petroleum hydrocarbons and PAHs in the Arctic

(Assessment of oil and gas developments in the Arctic)

SCOPE:

Assessment of the environmental impacts of oil and gas developments in the Arctic and of pollution of petroleum hydrocarbons and PAHs from these and other sources. The assessment will also include possible effects on human health and social and economic consequences.

DRAFT OUTLINE OF ASSESSMENT REPORT:

0 Executive summary

1 Introduction

Background and introduction to the assessment, emphasizing recent and future developments, and the need to assess environmental, social, and economic consequences.

2 Oil and gas developments in the Arctic

This chapter should give an updated overview of the oil and gas resources perspective in the Arctic as well as a description of recent developments in the oil and gas industry. This would include transportation of oil and gas and infrastructure such as roads, harbors, etc. The chapter should also give an outlook with development scenarios based on future plans and prospects.

3 Sources and inputs of petroleum hydrocarbons and PAHs in the Arctic

The chapter will give an overview of sources of inputs of petroleum hydrocarbons and PAHs to the Arctic environment. This will include discharges, emissions and spills from petroleum exploration, production, and transportation, as well as other sources from human activities and long-range transport. The substances would include all relevant contaminants from oil and gas development and use, i.e. petroleum hydrocarbons, petroleum related PAHs, oil related substances in produced water (e.g. phenols), and production chemicals. Information should be given on source characteristics and approaches to identify and distinguish different sources.

The chapter should also give an overview of the amounts of inputs of petroleum hydrocarbons, PAHs, and other relevant substances to the different regions of the Arctic.

4 Concentrations and fate of petroleum hydrocarbons and PAHs in the Arctic environment

This chapter will give an updated description of concentrations of petroleum hydrocarbons, PAHs, and other relevant substances in different compartments (sediments, soils, water, and biota) of the Arctic terrestrial, freshwater and marine environments. This will be based on

existing information from national monitoring, and research activities. The chapter will also describe transport pathways and fates of hydrocarbons, PAHs, etc. in the Arctic environment, including oil-ice interactions and physical-chemical weathering processes. Information on temporal trends will be included based upon results from long term monitoring and sediment cores where such information exists. The spatial and temporal patterns in concentration of the contaminants will be examined in relation to sources and inputs.

5 Biological effects

This chapter will consist of four main parts. The first will describe biological uptake and metabolism of petroleum hydrocarbons, PAHs, and other relevant substances in various organisms in the Arctic. The second part will give an overview of the various types of biological effects from oil, PAHs, other substances, and petroleum developments in the Arctic. The emphasis will be to summarize new information. The third part will summarize information on the sensitivity and vulnerability of different groups of organisms (birds, mammals, vegetation, plankton, and benthos) to oil and petroleum activities. The chapter will include results and experiences from accidental oil spills as well as laboratory and field studies. The fourth part would address human health aspects related to pollution and possible changes in life styles.

6 Environmental status and impacts on habitats and ecosystems in the Arctic

Building on the information on biological effects in the previous chapter, this chapter will address the environmental quality status and impacts or threats by pollution or petroleum activities on habitats and ecosystems in the Arctic. The chapter will provide a brief overview of ecosystems and habitats based on major river systems and drainage basins, and large marine ecosystems. This will include information on species, populations and habitats that are vulnerable and/or of special conservation concern in relation to pollution and petroleum activities. Information on the environmental quality status of habitats and ecosystems will be summarized from case studies. Information will also be summarized from environmental impact analyses and risk assessments that have been carried out in relation to petroleum development activities. The information will be used to make an assessment of the environmental impacts and threats from pollution by petroleum hydrocarbons, PAHs, etc., and from other factors related to petroleum development.

7 Social and economic consequences of petroleum development in the Arctic

NOTE: The topic of socio-economic consequences of oil/gas development in the Arctic is a subject that is beyond the scope of AMAP and other Arctic Council WGs, with the possible exception of SDWG. The SAOs need to be consulted for guidance on the issues to be addressed, and the mechanisms for fulfilling this part of the assessment.

8 Conclusions and recommendations

Annex B:

DRAFT PROPOSAL FOR:

Timetable for preparation of the 2006 assessment of petroleum hydrocarbons

1. Update through national nominations the core group of national key experts and the supporting group of designated experts.
   - by October 2003

2. Complete assessment outline and work plan in collaboration with other AC Working Groups
   - by October 2003

3. Compile national information on recent petroleum industry developments and future plans.
   - initial reporting by December 2003
   - supplementary reporting by mid 2005

4. Compile national information on sources and amounts of inputs of petroleum hydrocarbons, PAHs, substances in produced water and production chemicals.
   - initial reporting by December 2003
   - supplementary reporting by January 2005

5. Compile information on monitoring and analytical methodologies, guidelines and QA procedures to facilitate assessment of data quality and improve the comparability of data from ongoing and new monitoring activities.
   - by March 2004

6. Compile data on concentration levels of petroleum hydrocarbons, PAHs, and other relevant substances in the Arctic environment.
   - initial compilation by March 2004
   - supplementary data compilation by January 2005

7. Conduct supplementary monitoring of petroleum hydrocarbons, PAHs, and other relevant substances in water and sediments to fill gaps, contribute to intercomparisons, and improve the baseline.
   - monitoring in 2003-2004
   - final data availability by mid 2005

8. Provide the means for international cooperation to obtain Russian data in a form suitable for assessment (older monitoring data, newer petroleum industry data, and scientific research data).

9. Summarize and review recent studies on environmental behavior and fate of oil, gas, petroleum hydrocarbons, PAHs, substances in produced water and production chemicals under Arctic environmental conditions. This includes the possible application of models along with QA-data, to describe and analyze transport pathways and fate.
   - initial draft by December 2004

- final draft by October 2005

10. Summarize and review recent studies on biological effects of oil, petroleum hydrocarbons, PAHs, substances in produced water, and production chemicals.
    - initial draft by December 2004
    - final draft by October 2005

11. Summarize and review environmental impact assessments and risk analyses performed in relation to the petroleum industry development and major oil spill events.
    - initial draft by December 2004
    - final draft by October 2005

12. Summarize information on species and habitats of special conservation concern and/or high sensitivity and vulnerability in relation to oil and gas developments.
    - by June 2004

13. Summarize and review information on biodiversity impacts of physical impacts and disturbances from oil and gas developments
    - initial draft by December 2004
    - final draft by October 2005

14. Cooperate with the human health group to provide a summary of possible effects on human health by oil and PAHs.

15. Summarize and review information on social and economic aspects in relation to oil and gas developments in the Arctic.
    - initial draft by December 2004
    - final draft by October 2005

16. Organize a conference on oil and gas developments in the Arctic to review new results on industry developments, plans and future scenarios, including technological aspects, regulations, emergency contingency planning, environmental impacts and risks, and social and economic consequences.
    - Summer 2005

17. Prepare the draft assessment report on oil and gas developments in the Arctic.
    - Initial draft by March 2005
    - Draft for peer review by November 2005

18. Carry out peer review of the draft assessment report
    - November 2005-January 2006

19. Complete and print the assessment report
    - final draft by March 2006
    - technical editing April-May 2006
    - printing June 2006