WESTERN GRAY WHALE ADVISORY PANEL **WGWAP 3/INF.14**

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FUTURE SEIC PLANS FOR WGW MONITORING AND RESEARCH

SEIC Future Western Gray Whale Research and Monitoring Plans and Scope of Input from the WGWAP

Submitted by SEIC

SEIC Future Western Gray Whale Research and Monitoring Plans and Scope of Input from the WGWAP

This document provides a short overview of the direction in which SEIC sees the research program developing in the next few years. There are a few principles on which this is based and they provide the context for the discussion below.

These principles are:

1. SEIC participates in a program to monitor the Western Gray Whales in order to better understand this species so that SEIC activities can be designed to minimize any impact that the Company may have on the long-term survival of these whales.
2. The Western Gray Whale and acoustic monitoring programs have (in part) been designed to comply with the recommendations of the Russian Federation State Expertise Environmental Review (SEER) and is as such part of SEIC's regulatory requirements.
3. The extent of the program will be managed in line with SEIC's offshore activities and as such will be adjusted from time to time
4. SEIC currently shares this program with ENL. There are many synergies in this and SEIC plans to continue to have a shared program. However, this also means that there are some limitations and compromises that have to be made by both companies.
5. SEIC believes that it is important to increase Russian participation in the project (which is also a requirement from the Russian government), and for that reason the research is mainly conducted by scientists from Russian institutes.

Based on these principles, the five research components of the scientific program are discussed below.

Photo Identification

This program has successfully led to the development of expertise in this scientific technique in the Institute of Marine Biology in Vladivostok. The IBM team has run this program since 2002 and are now acknowledged as respected scientists in this field. The program is primarily executed through the use of a small inflatable craft that is launched from a large research vessel offshore. This means that they have access to all of the currently known feeding areas of the WGW's.

The program provides a valuable range of information in that it documents all WGW's observed during the research period and gives information on mother – calf pairs, the physical condition of the whales, and re-sighting of whales within and between seasons. It forms the basis for developing informed population estimates which SEIC sees as a cornerstone on which knowledge of the status of the population rests. It is therefore envisaged that this program will continue.

Benthos Studies

The systematic collection of benthic samples in predetermined grids in both the Piltun and Offshore feeding areas since 2002 has resulted in an increased knowledge in the benthic species composition on a spatial and temporal scale. Collection of benthos at whale feeding points provided additional information on the preferred food organisms. Scientists from the Institute of Marine Biology in Vladivostok conduct this program. In general these surveys were carried out during the August – September period of each year, except for years in which the research vessel was mobilized to the field earlier due to offshore construction activities. Because the whales are migrating to the Sakhalin area primarily to feed, understanding of the dynamics of their prey organisms provides very useful insights in the natural movement patterns and behaviour of the whale. Together with the Photo ID and the Distribution programs, the information on benthos provides another key piece of information in the understanding of the behaviour and drivers for whale movement and site fidelity.

In addition, the monitoring of benthos in the feeding areas will provide a baseline against which to measure any disruption of the area due to exceptional incidents such as an oil spill from the platforms. The monitoring of benthos will also help explain the distribution of the Western Gray Whales in their Piltun summer grounds by correlating whale presence with prey habitat.

Acoustic Monitoring

Acoustic monitoring has also been conducted for two specific reasons:

1) To provide baseline information of the "ambient" noise levels in the feeding area prior to offshore construction activities (acoustic data collected at specific monitoring stations in the feeding area prior to 2005)
2) Monitoring of noise levels during the offshore construction phase in real time as part of a mitigation program.

Both real time and baseline monitoring of noise levels have been particularly important activities during the SEIC construction phase. The effort will be reduced in 2008 in that the yearly real time monitoring program will not occur in 2008 as there is no identified need (no significant offshore construction activity by SEIC). Real time monitoring, however, will be considered again in the event of specific activities in the offshore area that may influence the WGW's real time monitoring. Specifically, this would be the case when SEIC conducts seismic surveying in the Astokh area.

Archival acoustic monitoring using self-contained underwater sound recorders will continue, as it provides incremental baseline information against which any future activities may be measured.

Distribution Monitoring

The monitoring of Western Gray Whale distribution has been conducted by aerial, vessel-based and onshore-based teams. Aerial surveys have not been carried out since 2005, because of safety reasons and also the low cost-effectiveness. Onshore-based monitoring will continue, as it is a low impact manner of conducting research and provides good coverage of a large part of the Piltun near-shore area. Vessel-based distribution studies will also continue as they complement the onshore-based surveys, through surveying the offshore part of the Piltun feeding area and monitoring the offshore feeding area. Data prior to SEIC's offshore construction in 2005 serves as baseline and data collected in 2008 and beyond will provide additional information against which future years with additional offshore activities (e.g. seismic surveys) can be compared. Besides this, obtaining long term information on whale distribution in combination with other monitoring components increases the understanding of the ecology of feeding Western Gray Whales.

Behaviour Monitoring

The value of monitoring of behaviour in a year of negligible activity such as 2008, has been debated, and it is agreed that this too will provide an excellent benchmark against which to compare future years. In 2009, when SEIC plan to acquire additional seismic data, behaviour monitoring will naturally form part of the overall WGW protection program. It is thus envisaged that this program too will continue at least into the near future.

There is a sixth possible area of study.

Satellite Tagging

SEIC views this area as one that could potentially be considered in the future. However, the science around this technology does not seem to be developed sufficiently to implement this program effectively and responsibly on the Western Gray Whales. The tagging of WGW's should therefore be approached with caution. SEIC will not embark on any such program unless it is strongly endorsed by the WGWAP, and would probably look to the panel to spearhead such a program or recommend a scientific body capable of doing so.

The monitoring of the Western Gray Whales is thus seen as a process that will continue. Over the past years enough information has been collected to have baseline information on each of these research components. The logical next step would be to try to integrate the data from these separate components in such a way that they lead to an increased knowledge of Western Gray Whale ecology in general.

What is now important is that these programs be fine-tuned to provide data that can best be used to advance the understanding of the potential impact that offshore construction activities may have on the whales.

The major construction of the SEIC offshore facilities is now completed, other than the final commissioning activities on the platforms themselves. This means that the focus can now change from developing measures in a 'response' mode, so as to mitigate disturbance to the whales, to being more proactive in developing a greater understanding of the ecology of this species. With the reduced offshore construction activity, however, SEIC (and ENL in their joint work) will reduce the duration of the monitoring program from approximately 90 days to around 70 days per year, which is in line with what was done during the pre-construction period. This change also brings some challenges given that some elements of the program favour monitoring activity early in the season whilst others later. The identification of mother/calf pairs vs. benthic studies is an example of two activities having different timing priorities.

The input from the panel can therefore help with:

1. Developing hypotheses that can be tested and developed from the integration of the currently planned program or slightly modified studies.
2. Advising SEIC where to focus research efforts, bearing in mind that there are now pressures to reduce some of these scientific activities.
3. Identify areas of research that SEIC could consider in order to better understand the potential impacts that the Company's activities may have on the Western Gray Whales.
4. Advise on methods to integrate various datasets to produce a better understanding of abundance, distribution, and movement trends Western Gray Whales on a daily, seasonal, and annual basis.
5. Identify/suggest alternative analytical techniques to further examine the number of datasets that exist
6. Identify additional parameters that could potential explain variation that exists within a given dataset.
7. Review all methodological approaches and conduct a cost/benefit/power analysis to maintain all monitoring programs at an efficient/optimal level and suggest practical durations/periods of observations given average weather limitations.
8. Review the annual programs and provide feedback on improvements, training and analyses that may be undertaken.