

Project Number: 050772

Project Title: Sediment Quality Survey Of Heavily-Oiled Beaches In Prince William Sound

PI Name: Betsy Day, Integral Consulting, Inc.

Time Period Covered by Report: August 16, 2004 – August 29, 2005

Date of Report: August 29, 2005

1. Work Performed:

INTRODUCTION

The Exxon Valdez Trustee Council approved a research proposal in May 2004 to assess the potential effects of lingering oil on intertidal sediment quality. The objectives of the work are to:

1. Determine whether heavily-oiled sediments exhibit toxicity to invertebrates relative to nearby non-oiled sediments
2. Determine whether the benthic infaunal community in heavily-oiled sediments differs from that community in nearby non-oiled sediments
3. Determine whether a relationship exists among sediment PAH concentrations, bioassay response and benthic community structure
4. Evaluate the suitability of sediment toxicity tests and benthic infauna enumeration as elements of long-term monitoring.

To meet these objectives, a sampling program to evaluate sediment chemistry, sediment toxicity and infaunal benthic community structure was conducted from June 13-17, 2004. Field work was conducted in collaboration with ongoing lingering oil studies being conducted by the National Marine Fisheries Service (NMFS) [i.e., the retrieval of semi-permeable membrane devices (SPMDs)]. Samples were collected from five pairs of sampling stations. Each pair consisted of one intertidal station that had been classified as remaining heavily-oiled in 2003, and one nearby non-oiled reference station.

LABORATORY ANALYSES

Data were received over the period September 2004 – May 2005 from the following laboratories:

- NMFS Auke Bay Lab: PAHs in sediment samples and bioassay elutriates
- Analytical Resources, Inc.: Sediment grain size, total organic carbon, TPH
- Weston Solutions: Mussel larval bioassay (*Mytilus* sp.) using sediment elutriates and the amphipod chronic bioassay (*Leptocheirus plumulosus*)
- Marine Taxonomic Services: Benthic infauna sorting and identifications

DATA EVALUATION AND REPORTING

Data evaluation is nearly complete and the final report is nearing completion.

2. Future Work: The remainder of the work on this project involves completion of data evaluation and the data report. The schedule for this report has been delayed because the final sediment PAH data were not available from the Auke Bay Laboratory until May 2005. The final

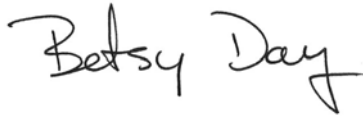
report, prepared as a manuscript for publication in *Environmental Science and Technology*, will be provided to the Trustee Council by October 15, 2005.

3. Coordination/Collaboration: Field work in 2004 was carried out in collaboration with the NMFS SPMD program. Sample locations were identified by NMFS personnel. Sediment and bioassay elutriate samples were analyzed by NOAA's Auke Bay Lab.

4. Community Involvement/TEK and Resource Management Applications: Field work in 2004 was conducted from a locally chartered vessel, the Auklet.

5. Information Transfer: This project was initiated in spring 2004. Results will be submitted for publication in FY06.

6. Budget: There are no changes to the budget of \$208,000.

A handwritten signature in black ink that reads "Betsy Day". The signature is written in a cursive, slightly slanted style.

Signature of PI:

Project Web Site Address: www.integral-corp.com