

**DATA SUMMARY REPORT
YEAR 2 EVENT 1 LONG-TERM PILOT CAP MONITORING**

**REMOVAL ACTION
NW NATURAL “GASCO” SITE**

Prepared for Submittal to

U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue
Seattle, Washington 98101

Prepared by

Anchor Environmental, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, Oregon 97224

On behalf of

NW Natural
220 NW Second Avenue
Portland, Oregon 97209

December 2008



ANCHOR
ENVIRONMENTAL, L.L.C.

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Table of Contents

1	INTRODUCTION.....	1
2	SUMMARY OF MONITORING ACTIVITIES AND ANALYSES.....	3
2.1	Visual Inspection (RAO-Specific)	3
2.2	Bathymetric Survey (RAO-Specific)	3
2.3	Recent Depositional Sediment Sampling (Site-Specific).....	4
2.4	Near-Bottom Surface Water Sampling (Pilot Cap-Specific).....	4
2.5	Chemical Analysis.....	5
2.6	Quality Assurance/Quality Control (QA/QC)	5
2.6.1	Field QA/QC.....	5
2.6.2	Laboratory QA/QC	5
2.6.3	Chain-of-Custody	6
2.7	Data Validation.....	6
3	MONITORING RESULTS	7
3.1	Visual Inspection/Diver Survey	7
3.2	Bathymetry Survey	7
3.3	Recent Depositional Sediment Sampling.....	8
3.4	Near-Bottom Surface Water.....	8
3.5	Quality Assurance/Quality Control.....	8
3.5.1	Field QA/QC.....	8
3.5.2	Laboratory QA/QC.....	9
3.5.3	Data Validation	9
3.5.3.1	Depositional Sediment Results.....	9
3.5.3.2	Discrete Surface Water Results.....	10
3.5.3.3	QA/QC Analytical Results	10
3.5.3.4	Reporting Limits.....	11
4	REFERENCES	13

List of Tables

Table 1	Sample Collection Information – Year 2 Event 1 Long-Term Monitoring
Table 2	Depositional Surface Sediment Analytical Results – Year 2 Event 1 Long-Term Monitoring
Table 3	Discrete Near-Bottom Surface Water Analytical Results – Year 2 Event 1 Long-Term Monitoring
Table 4	Quality Assurance/Quality Control Analytical Results – Year 2 Event 1 Long-Term Monitoring
Table 5	Target Analytes with Laboratory Reporting Limits Above the Target Reporting Limits

Table of Contents

List of Figures

Figure 1	Vicinity Map
Figure 2	Former Pre-Removal Lateral and Vertical Extents of Surface Tar Body
Figure 3	Actual Year 2 Event 1 Diver Transect Surveys
Figure 4	Actual Year 2 Event 1 Monitoring Stations
Figure 5	Year 2 Event 1 Bathymetry
Figure 6	Isopach Comparing Post-Cap October 2005 and August 2008 Bathymetry Surveys

List of Appendices

Appendix A	Diver Reconnaissance Survey Video (on DVD)
Appendix B	Visual Monitoring Collection Forms
Appendix C	Depositional Surface Sediment Collection Forms
Appendix D	Chain-of-Custody Forms
Appendix E	Data Validation Reports (on CD)

List of Acronyms and Abbreviations

µg	microgram
AWQC	Ambient Water Quality Criteria
BTEX	benzene, toluene, ethylbenzene, and xylene
CAS	Columbia Analytical Services, Inc.
CCC	criterion continuous concentration
COC	chain-of-custody
DOC	dissolved organic carbon
EPA	U.S. Environmental Protection Agency
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LDC	Laboratory Data Consultants, Inc.
MARP	Monitoring and Reporting Plan
MD	matrix duplicate
MDL	method detection limit
MRL	method reporting limit
MS/MSD	matrix spike and matrix spike duplicate
NELAP	National Environmental Laboratory Accreditation Program
NRWQC	National Recommended Water Quality Criteria
ODEQ	Oregon Department of Environmental Quality
Order	Administrative Order on Consent
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PEC	Probable Effects Concentration
PRG	Preliminary Remediation Goal
QA/QC	quality assurance/quality control
RAOs	Removal Action Objectives
RAPP	Removal Action Project Plan
RPD	relative percent difference
SCV	Sediment Concentration Value
Site	NW Natural "Gasco" Site
SLV	Screening Level Value
SOW	Statement of Work
SVOC	semivolatile organic compound



List of Acronyms and Abbreviations

TOC	total organic carbon
TPH-Dx	total petroleum hydrocarbons – diesel range
TSS	total suspended solids
VOC	volatile organic compound

1 INTRODUCTION

NW Natural entered into an Administrative Order on Consent (Order) with the U.S. Environmental Protection Agency (EPA) on April 28, 2004, to perform a time-critical removal action at the “Gasco” site (Site; EPA 2004a; Figure 1). The Order requires that NW Natural perform a number of actions associated with removing a tar body (as defined in the Order) from the riverbank and nearshore sediment adjacent to the Site. The extent of the tar body was defined during the design characterization sampling (Figure 2). In accordance with the EPA-approved *Final Removal Action Project Plan* (RAPP; Anchor 2005), removal of the tar body was initiated in August 2005 and was completed in late October 2005.

Pending future implementation of a site-wide remedy, long-term monitoring of the tar body removal occurred in 2006 and 2007 (referred to as Year 0 and Year 1 long-term monitoring) in accordance with the EPA-approved *Monitoring and Reporting Plan* (MARF; Anchor 2006a). Evaluation of the first two years of post-removal long-term monitoring results showed that a revised monitoring approach was warranted to continue to collect useful information relevant to the identified post-removal monitoring objectives. The revised monitoring approach was summarized in a letter to EPA dated March 26, 2008, with the subject “Proposed Revised Long-Term Pilot Cap Monitoring Approach – NW Natural “Gasco” Site.” EPA approved of this approach in a letter to NW Natural dated April 30, 2008.

In summary, the revised monitoring approach consisted of the following activities and a reporting procedure and schedule identical to those defined in the MARF (Anchor 2006a):

- Diver reconnaissance surveys once per summer during low river elevations
- Bathymetric surveys during summer low and winter high river elevation conditions
- Continued monitoring for the presence of product (i.e., tar or oil) in the hydraulic low spot created by the removal action during the annual low river elevation diver reconnaissance surveys
- Continued monitoring of the stability of the pilot cap armor and adjacent fringe through completion of the semi-annual bathymetry surveys and annual diver reconnaissance surveys
- Continued monitoring of depositional sediment concentrations both within the pilot cap area and in the fringe cover area

- Continued monitoring of the discrete near-bottom surface water concentrations at the nine pilot cap monitoring stations and downstream and upstream “background” stations

In accordance with the reporting requirements identified in the MARP (Anchor 2006a), the remainder of this Data Summary Report provides the Year 2 Event 1 monitoring results. As requested by EPA, this Data Summary Report includes a summary of the monitoring conducted and methods used, tabulated results, data validation reports, and sampling location maps.

