MAUL FOSTER ALONGI INC.
ENVIRONMENTAL & ENGINEERING CONSULTANTS
3121 SW Moody Avenue, Suite 200 | Portland, Oregon 97239 | Phone 971.544.2139 | Fax 971.54 4.2140 | www.MFAinc.org

October 25, 2005
Project 8128.01.08

Mr. Dana Bayuk
Oregon Department of Environmental Quality
2020 SW 4th Avenue, Suite 400
Portland, Oregon 97201-4987

Re: Dive Survey Report – Area 2
Siltronic Corporation
7200 NW Front Avenue, Portland, OR
ECSI #183

Dear Dana:

Maul Foster & Alongi, Inc. (MFA) submitted the *Supplemental Investigation Report* (SIR) to the Oregon Department of Environmental Quality (DEQ) on September 8, 2005. The results of the SIR indicated the presence of two separate and distinct areas where concentrations of trichloroethene (TCE) and its degradation products[1] exceeded risk-based screening levels. Characterization data indicated that TCE in Area 2 was unrelated to the upland groundwater source. At the request of Siltronic Corporation (Siltronic), MFA coordinated a dive survey of the river bottom in the vicinity of Area 2 on September 21, 2005. The objective of the dive survey was to locate, if present, an in-river point source of TCE (e.g., a drum) below the mudline in Area 2.

FIELD METHODS

Advanced American Diving Services, Inc. (AADS) of Oregon City, Oregon was contracted with to conduct the dive survey. Area 2 and the area surveyed are shown on Figure 1. The survey grid proposed in the work plan was modified during the survey to focus the survey on locations corresponding to the highest concentrations of TCE and its degradation products in transition zone water. A differential global positioning system (DGPS) was used to establish and navigate to waypoints. The diver surveyed the area in five-foot swaths.

The diver carried a video camera that fed real-time images to the work boat. The diver used a Fishers Pulse 8X metal detector (designed for underwater operations) to identify potential metal targets up to 5 feet below the mudline.

[1] Specifically, cis-1,2-dichloroethene (DCE), trans-1,2-DCE, 1,1-DCE, and vinyl chloride.

RESULTS

The metal detector registered readings in several locations. Small pieces of metal and an aluminum can were detected. In addition, the detector appeared to register readings near rocks (i.e., a rock lifted from the river bottom and placed near the detector registered a reading, probably the result of iron-bearing minerals in the rock).

The visibility under water was low. Objects were only visible on the image from the video feed if the diver's camera was within 6 inches to 1 foot. The diver's movements occasionally disturbed sediments containing non-aqueous phase liquid (NAPL) characteristic of manufactured gas plant (MGP) waste, which created temporary blooms and sheens on the water surface.

One potential target (T-1) was identified (see Figure 1). The diver described the river bottom at the target location as silty. The signal on the metal detector indicated that the target area is approximately 2 feet by 2 feet. The diver inspected the river bottom in the target area, but was unable to visually locate the target above or beneath the mudline. A buoy was placed on the target and DGPS coordinates were collected at the buoy.

DISCUSSION

Target T-1 is located within 10 feet of sediment sample location 299 collected by the Lower Willamette Group (LWG) in 2004 (see Figure 1). TCE and its degradation products were not detected in the surface sediment sample collected 0 – 26 cm (approximately 1 foot) below mudline (bml) at this location. However, TCE was detected at elevated concentrations at location 299 at 30-104 cm (approximately 1 – 3.5 feet) and 104-230 cm (approximately 3.5 to 7.5 feet) bml, respectively. Vinyl chloride was also detected in the 30-104 cm sample.

The concentration data from the deeper LWG samples[2] suggest that T-1 could be a source of TCE and its degradation products, but the concentration data from the surface sediment sample (0-30 cm) do not.

The highest concentrations of TCE and its degradation products in transition zone water (i.e., 1 and 3 feet bml) were detected at location GP-67, approximately 35 feet southwest of T-1. The elevation of the mudline at GP-67 is approximately 5 feet higher than location 299 (see Figure 1). The relative vertical location of these concentrations suggests that T-1 is not the source of TCE and its degradation products.

[2] MFA was unable to validate the LWG's data due to undocumented modifications to USEPA Method 8260 as implemented by LWG's laboratory.

However, other sampling results may be consistent with a source at T-1:

- Concentrations of TCE and its degradation products were below screening levels in transition zone water samples collected from approximately 25 feet upriver from T-1 (GP-70 and GP-84, see Figure 1), indicating that the source of TCE in Area 2 is not upriver of T-1.

- TCE and/or its degradation products were detected in surface water (collected approximately 1 foot above the mudline) up to approximately 55 feet downstream of T-1, indicating a potential nearby source.

- Concentrations of TCE and its degradation products are generally highest near T-1 and decrease with increasing distance from T-1.

The analytical data are inconclusive with respect to identifying T-1 as the source of TCE and its degradation products detected in Area 2.

RECOMMENDATION

The results of the dive survey and the analytical data indicate that, while T-1 could be a source of TCE, there are confounding factors (e.g., high concentrations of TCE upslope of T-1 and detections of "metal" in rocks) that introduce uncertainty. An attempt to further investigate or uncover T-1 could disturb MGP-contaminated sediment or MGP-NAPL. As such, further investigation of the possible point source at T-1 is not recommended until an evaluation of remedial options for Area 2 has been completed as part of Siltronic's ongoing Source Control Evaluation. The evaluation of remedial options should incorporate the possibility of a point source at T-1.

Please call with any comments or questions.

Sincerely,

Maul Foster & Alongi, Inc.

James Peale
Senior Hydrogeologist

James J. Maul
President and Principal Hydrogeologist

Attachment: Figure 1

cc: Matt McClincy, DEQ
Tom McCue; Siltronic
Chris Reive; Jordan Schrader
Alan Gladstone and Bill Earle; Davis Rothwell Earle & Xochihua, P.C.