

Council for Protection of the Environment

January 17, 2008

Independent Mathematical Contractors, Inc.
104 Pinkerton
Tacoma, WA 98402

Dear IMC:

The Council for Protection of the Environment, as part of its mission to protect the citizens of the south sound region from environmental hazards posed by modernization and industrialization, is required to investigate sites with possible environmental contamination prior to their sale to new owners. Recently the site of the old Puget Paint Company has become the subject of a possible sale, resulting in our investigation of the same. As you may know, Puget Paint produced paints from 1972 until 1980 (with over 50% of its production coming in the years 1985–1989), at which point its owners without explanation abruptly ceased operations at the plant.

Our investigation of the site, which began a number of years ago, has determined the following information. There is a large “lagoon” at the center of the plant into which paint residue and waste chemicals were flushed regularly in the course of Puget Paint's operations. The chemical contaminants from the lagoon have leached down to the water table in the region, and are being transported in the aquifer below the site. In order to determine the threat this poses to local water supplies, we have investigated the water contamination at a number of wells near the site.

The first three wells were drilled by the owners of Puget Paint, and it is from their records that we obtain the following data:

well	distance from lagoon	water table level (measured up from a reference level)
1	500 ft	60 ft
2	700 ft	58 ft
3	1000 ft	55 ft

(at the lagoon the water table is 70 feet). In 1991 all three were clean, while in 1997 contaminants were detected in the water at wells 1 and 2 but not 3. In 2002 there was some discussion of the sale of the site of the company, and, on investigation, we found contamination in well 3, and drilled an additional well, well 4:

well	distance	water table
4	1200 ft	49 ft

In 2002 this well was not contaminated. This sale did not go through, and while the site was listed as a possible SuperFund site, funding was then unavailable to begin cleanup. This year, however, there is active discussion on the possibility of its sale. We have determined that well 4 is now contaminated, and have drilled three additional wells:

well	distance	water table
5	1500 ft	40 ft
6	1700 ft	34 ft
7	1900 ft	28 ft

We found contamination in wells 5 and 6, but not in well 7.

We need from your company:

- an analysis of the manner in which the contaminant has spread from the site since the years in which the company was operating, with some justification of your model, and
- a prediction of the amount of time it will take the water contamination to reach a distance of 2500 feet from the lagoon (the location of the nearest well providing drinking water). Your prediction should include an indication of the rate at which you believe the contamination to be spreading and why.

To assure your success in the completion of this project, our department's scientific expert, Dr. Jennifer Quinn, will be available to answer any technical questions you might have in the course of your investigation—feel free to contact her (with all members of your consulting team) with any questions you might have. You should additionally plan to see her by the 25th of this month with an indication of your group members and preliminary work on the project. Your finished report is due by February 5th. Failure to meet any of these deadlines will be grounds for reducing your payment.

We look forward to receiving your report, which should be typewritten and 3–5 pages in length. Equations explaining your solution should be included in the report, and it is permissible to hand-write these in blank lines between your typewritten explanation if this greatly facilitates the production of the report.

Sincerely,

Jack C. Ousteaux

Director, South Sound Council for Protection of the Environment