



COPY

September 10, 2002

WM Riley & Company
738 South Broadway Avenue
Tacoma, Washington 98402

Attention: Rudy Kolar

Proposal
Subsurface Investigation
Coski Industrial Landfill
Tacoma, Washington
File No. 10212-001-00

INTRODUCTION

GeoEngineers is pleased to provide this proposal to conduct an investigation of subsurface conditions at the Coski Industrial Landfill located between 19th Street East and 12th Street East, west of 58th Avenue Northeast in Tacoma, Washington. We understand that the site was used as an unpermitted disposal site for construction and woodwaste debris from possibly 1960 until 1984. We understand that bilge-oil, roofing plant waste and petroleum-treated clay were also dumped at the site.

The site is located near the top of a bluff that overlooks Marine View Drive and the eastern portion of Commencement Bay. A ravine that drains to Commencement Bay is located on the eastern edge of the site. This ravine appears to be a remnant of a much larger ravine that was filled to create the present-day landfill. A Bonneville Power Administration easement for high-voltage power lines is located along the eastern portion of the site.

The Washington State Department of Ecology (Ecology) conducted a site assessment of the dumpsite in November 1985. Ecology collected surface soil and sediment samples and spring water samples as a part of their work. Ecology prepared a report in February 1986 stating that contaminants were present in the soil sampled including polychlorinated biphenyls (PCBs) in the form of Arochlors 1242 and 1254. These contaminants were present in on- and off-site soil or sediment at concentrations exceeding current regulatory criteria.

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We performed a partial subsurface investigation of the site in 2000. Our services were performed for Pacific Hansa Inc., and consisted of observing the excavation of 14 test pits at the site. Our services were terminated by the client prior to submittal of soil and water samples for chemical analysis due to the discovery of large amounts of wood waste encountered in the explorations. We provided a summary memorandum to Pacific Hansa at the conclusion of our services. Our memorandum indicated that the wood waste encountered in the explorations will decompose over time. Wood-waste decomposition will likely induce significant, long-term ground settlements and will generate methane gas. We concluded in our memorandum that the site will be difficult and expensive to develop, based on these factors.

We understand that the site owner (Bernard Coski) is considering a residential development on the site. We also understand that Mr. Coski requires an investigation of the environmental nature of soil and groundwater at the site. It should be noted that closure of the landfill could be a multi-phase process, depending on the results of our initial services.

SCOPE OF SERVICES

The purpose of our services will be to evaluate the nature of fill material in the area of the proposed development, collect and analyze representative soil and groundwater samples from the site. The results of our services can be used as a basis for evaluating the requirements for closure of the landfill. We propose the following tasks for this part of the project.

1. Review historical aerial photographs of the site and surrounding area for the period that dumping occurred. Our review will enable us to understand the sequence of filling, the areas filled and assist in developing our field sampling procedures.
2. Prepare a Health and Safety Plan in accordance with OSHA and WISHA requirements. The Health and Safety Plan details safety measures to be taken by field staff conducting sampling activities on the site.
3. Excavate a series of exploratory test pits on the site using a tracked excavator. We anticipate excavating up to 12 test pits in various locations on the site. We understand that the site owner is considering providing the backhoe and operator. The operator must be 40-hour health and safety trained prior to excavating test pits on this site.
4. Observe and log materials encountered in the test pit explorations. Our field representative will prepare a log of each test pit describing the materials encountered. A soil sample will be collected from the base of each test pit and stored for possible laboratory analysis. Vapor measurements will be made in each test pit to evaluate concentrations of combustible vapors. The test pits will be backfilled using the excavated materials following sample collection.
5. Collect water samples from springs present along the wall of the ravine that were described by Ecology in the 1986 report. Water samples will be collected in appropriate laboratory-supplied containers and will be stored in a chilled condition pending possible laboratory analysis.

6. Collect representative sediment samples from the base of the ravine in the vicinity of sampling locations described by Ecology in their 1986 report. Sediment samples will be collected in laboratory-supplied glass containers and will be stored in a chilled condition pending laboratory analysis.
7. Drill one boring at the site in the apparent deepest fill area based on our previous test pit explorations and aerial photo review. Collect soil/fill samples at approximate 5-foot intervals during drilling. We anticipate drilling the boring to depths of about 50 feet. The boring will extend through the fill into native soil material. Soil/fill cuttings from the boring will be stored on-site in steel 55-gallon drums. Labels will be placed on the drums which indicate the date of generation, drum contents, and contact information.
8. Measure groundwater levels and soil vapor levels in the boring.
9. Construct a 2-inch diameter plastic PVC well in the boring if measurable groundwater is encountered during drilling. Install a flush-mounted steel well monument as a part of the well construction.
10. Develop the well screen by surging and bailing. Store the purged groundwater in steel 55-gallon drums on-site. Labels will be placed on the drums which indicate the date of generation, drum contents, and contact information.
11. Collect one groundwater sample from the well after the development is complete.
12. Arrange for laboratory analysis of selected soil, sediment and water samples for the presence of PCBs and related semivolatile organic compounds using EPA Methods 8081 and 8270, volatile organic compounds using EPA Method 8260 and petroleum hydrocarbons by Ecology Methods NWTPH-G and NWTPH-D extended with silica gel cleanup. At this time we anticipate analyzing five soil and/or sediment samples and five water samples, including the well groundwater sample, for these parameters.
13. Prepare a report summarizing our field activities, presenting our conclusions regarding environmental conditions at the site.
14. Arrange for a meeting with Ecology to present the results of our report and to discuss the requirements necessary for closure of the landfill.

Following our meeting with Ecology, we can prepare a cost estimate for actions to bring the Coski dump to final closure. Activities may include installing additional groundwater monitoring wells, collecting and analyzing groundwater samples over a period of several years and design and installation of a soil cap.

It should be noted that the geotechnical problems with developing this site will likely not be mitigated through closure of the landfill.

TERMS, BUDGET AND SCHEDULE

We propose to conduct our services on a time-and-expense basis in accordance with the rates and terms described in our attached Schedule of Charges and General Conditions, which are a part of this agreement. Please review the terms of this agreement carefully and contact us with any questions you may have, or if you desire to modify the terms of our agreement.

We estimate that the fee for the scope of services outlined above will be approximately \$23,000. Of this fee, approximately \$15,000 is for subcontracted laboratory and backhoe services. A summary breakdown of our proposed services is presented below.

BUDGET	
Project Startup	
GeoEngineers Labor	\$ 1,300
Subcontracted Health and Safety Plan Preparation	\$ 1,000
Subtotal	\$ 2,300
Subsurface Exploration	
GeoEngineers Field Labor	\$ 3,300
Subcontracted Trackhoe	\$ 2,000
Subcontracted Drilling	\$ 3,000
Subtotal	\$ 8,300
Analysis, Laboratory Testing and Report Preparation	
Subcontracted Laboratory Analyses	\$ 9,100
Report Preparation	\$ 3,300
Subtotal	\$12,400
Total Estimated Project Fee	\$23,000

We are prepared to begin work on this project within one week of receiving your authorization to proceed. We will require a 100 percent retainer prior to initiating our services.

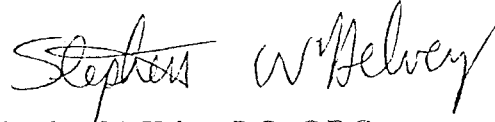
Field services will take about three to four days to complete. Laboratory analysis of soil and groundwater samples typically takes two to three weeks. An expedited laboratory schedule may be conducted for an increased fee. Our report will be submitted to you approximately two weeks following receipt of final laboratory reports. Our proposed schedule can be modified to meet your specific needs, if required. Please note that for this project all claims of professional negligence are limited to the amount of GeoEngineers' fee, or \$20,000, whichever is more.



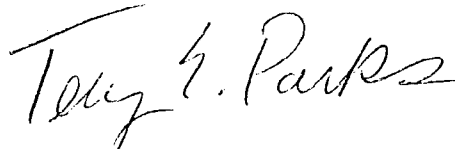
We appreciate the opportunity to submit this proposal. Please contact us if you have questions regarding our proposed scope of services or our proposed fee. Authorization for our services may be indicated by returning one copy of this proposal, signed in the space provided below, including a check for \$23,000.

Yours very truly,

GeoEngineers, Inc.



Stephen W. Helvey P.G., C.E.G.
Senior Hydrogeologist



Terry E. Parks, P.G.
Principal

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Attachments

- 2001 General Conditions (Standard)
- 2001 Schedule of Charges

Two copies submitted

The scope of services and terms described herein are accepted and GeoEngineers, Inc. is authorized to proceed.

_____	by	_____
Organization		*Signature
_____		_____
Date		Name Printed

*Individual with contracting authority and responsible for payment of GeoEngineers, Inc. services.

2.8 COSKI

The Coski dumpsite is located along the Pierce County and City of Tacoma boundary between 19th Street NE and 12th Street NE, west of 58th Avenue NE in Sec's 25 and 36, T 21N, and R 3E and also Sec 31, T 21N, and R 4E. The exact dates of use are not known, however, it is estimated that this dump began to be used in the 1960's and continued accepting waste intermittently until 1990. The dump at no time was permitted to accept solid waste. The dumpsite area is estimated at approximately 30 acres.

2.8.1 PAST AND PRESENT USE

This land is owned by Bernard Coski. At the time of active dumping, this site was about 70 acres in size. It is unknown exactly when Mr. Coski began dumping solid waste at the site, although it was probably sometime in the 1960's. Mr. Coski applied for a solid waste permit from the Health Department to operate an industrial waste landfill (that would not include any food products) in June 1975 and again in April 1976. Mr. Coski's application was first to the City of Tacoma for landfilling on the City side of his property. This application was denied for zoning reasons. Subsequent applications to Pierce County were either denied or weren't followed through on. Mr. Coski continued to operate his dump during the time the applications were reviewed. Mr. Coski was subsequently issued several cease and desist orders. In 1984, the dump was closed. An appeal of the closure was made by Mr. Coski. In 1985, a Pierce County Hearing Examiner denied a conditional use permit that would have allowed the dump to reopen. Also in 1985, the western portion of the Coski property was sold to the Manke Lumber Company. This portion of the property was entirely within the City of Tacoma and comprised about 33 acres. This portion of the property contained a portion of the Coski dumpsite at the eastern end.

In November 1985, the Department of Ecology (Ecology) conducted a site assessment of the dump. Ecology collected samples from soil, leachate, and spring water. The conclusions and recommendations of the subsequent report dated March 1986 indicated that some contaminants were present in the soil including PCB's. The report also noted that Ecology, in conjunction with the EPA, would be conducting further sampling at the site to determine the full extent of contamination. Mr. Coski was allowed to bring in clean fill to provide a cover for this dumpsite. However, it was noted that until 1988, Mr. Coski was accepting other solid wastes in addition to the clean fill. Also being accepted at the site were concrete, asphalt, and land clearing woodwaste. Again, cease and desist orders were issued to Mr. Coski. In order to avoid prosecution, Mr. Coski agreed to apply a cover and proper drainage system to the landfill. In April 1990, Mr. Coski was allowed to spread 1,200 yards of mulch on the landfill in order to bring the final grade within limits. This site was ranked on Ecology's Site Information Systems list as a site requiring further investigation and/or cleanup. It was ranked a 5 (the low end of a 1 through 5 scale). At the time of the last inspection, it was noted that most of the site was covered. Some exposed refuse was noted by TPCHD staff along the western edge of the fill.

In 1998, a proposal was being made to develop most of the remaining property owned by Mr. Coski into a mobile home court containing approximately 54 lots. TPCHD staff met with the developers proposing this project. The developers were informed that they needed to contact Ecology concerning this dumpsite that was ranked as a contaminated site. Ecology was notified by TPCHD staff of the development proposal. Any pending action as a result of Ecology's ranking this site would have to

be completed before any development proposal would be considered. A visual inspection was conducted by TPCHD staff on August 22, 2001. No new development was noted at the site. A "For Sale" sign was noted on the property. Mr. Coski was still listed on Pierce County records as the legal owner at the time of that inspection.

2.8.2 WASTE DISPOSAL PRACTICES

The Coski dumpsite was operated as an open face hillside dump. It was primarily used by industries in the Port of Tacoma tideflats. Wastes included demolition debris such as sheetrock and wood debris, ~~oil from General Metals~~ ~~oil from ships~~, fuel filter clay from US Oil Company, 450 cubic yards of sludge classified as a hazardous waste from Lilyblad Fertilizer Company, and other miscellaneous debris. *later removed per B. Coski.*

2.8.3 SUSPECTED PROBLEMS

Because of the organic nature of some of the wastes disposed of at this site, methane gas migration could potentially pose a problem, especially if any future development occurs at the site. PCB's and PAH's are confirmed by Ecology to be present in the soils. Also, due to the unknown nature of some of the wastes dumped at this site, other hazardous wastes may be present.

2.8.4 FIELD RESULTS

On August 5, 1998, a site inspection and methane monitoring were conducted at the dumpsite. Low concentrations of methane gas were detected, the highest being 10 percent of the LEL (see Table 6 and Figure 9).

Table 6. Methane monitoring results for the Coski Dump on August 5, 1998.

Sample	Methane reading	Depth of Measurement
1	120 ppm	28"
2	6% LEL	36"
3	120 ppm	24"
4	320 ppm	12"
5	10% LEL	36"
6	200 ppm	36"
7	420 ppm	36"
8	220 ppm	36"
9	900 ppm	36"
10	220 ppm	36"
11	420 ppm	28"
12	40 ppm	28"
13	400 ppm	24"

ppm = parts per million

LEL = Lower Explosive Limit

2.8.5 RECOMMENDATIONS

The TPCHD recommends that this site be periodically monitored for methane gas migration. Since this site is ranked on Ecology's Site Information Systems list as a site requiring further investigation and/or cleanup, Ecology will serve as the lead agency for future remediation at the site.

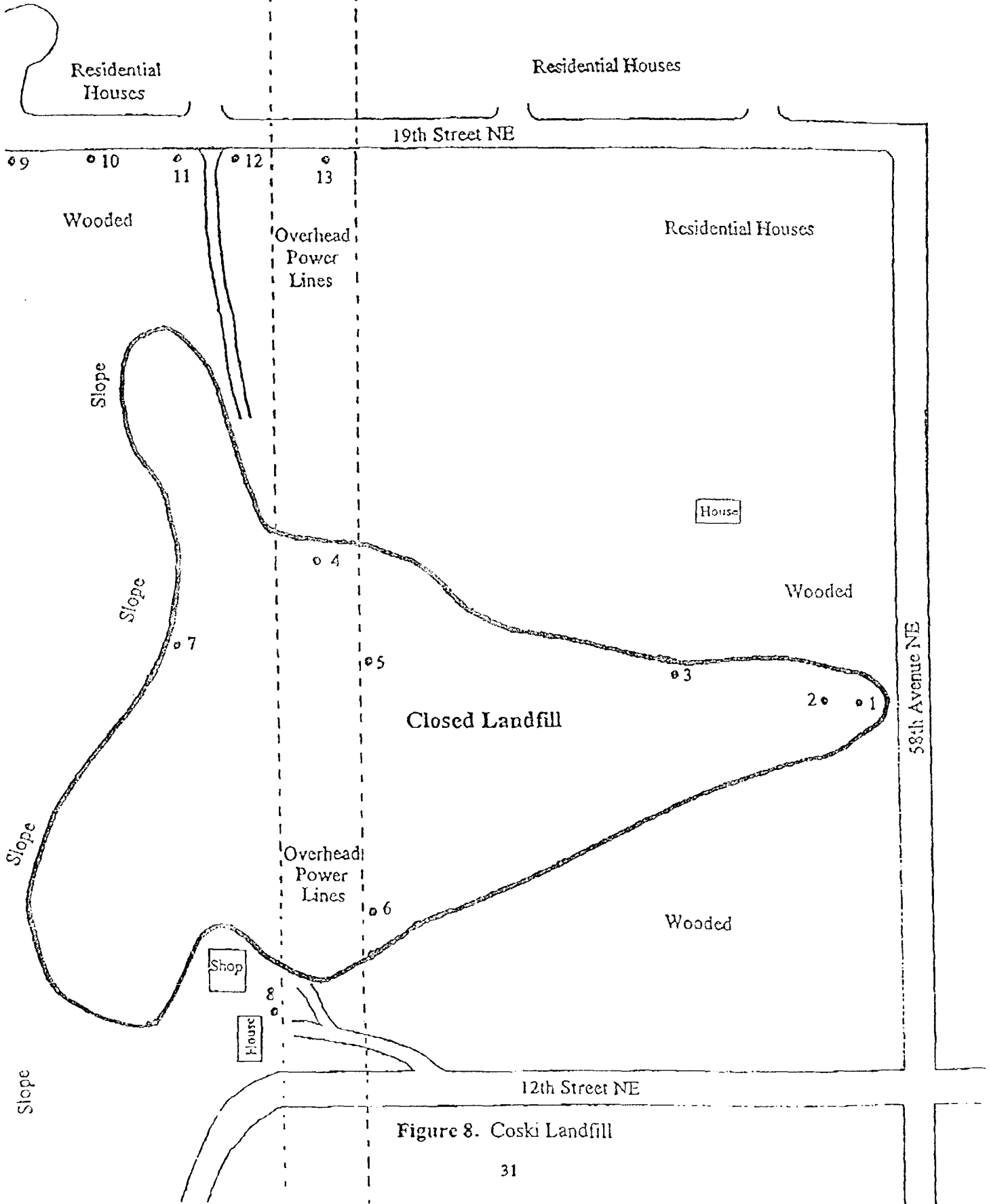


Figure 8. Coski Landfill