

## APPENDIX E Sample Cost Estimate

**E-1. Introduction.** This cost estimate is based on CENWK drill crew and SCAPS average daily rates and the following assumptions.

*a.* Mobilization/demobilization (mob/demob) days are averaged into daily cost.

*b.* Work days are 8 hours long.

*c.* During an average project 25 LIF pushes and 11 wells are installed.

*d.* An average 25-foot-deep LIF direct push boring is equivalent to a 25-foot-deep auger boring made to collect five soil samples for laboratory analysis.

(1) Two 25-foot-deep auger borings can be drilled and sampled in a day. This includes setup, drilling, sampling, sample preservation, decontamination, waste handling, and backfilling with a mix of spoil and grout.

(2) 25 borings/2 a day = 12.5 days

*e.* An average 21-foot-deep well point installed in sand by direct push is equivalent to the same depth well installed through hollow stem augers (the most frequently used method of well installation on HTRW sites).

(1) Each well installed through hollow stems will take approximately 12 hours to complete. This includes setup, drilling, setting well, decontamination, development, setting protective pad and posts, and handling investigation derived waste.

(2) 11 wells  $\times$  12 hours = 132 hours / 8 hours = 16.5 days

(3) Each well installed with the SCAPS will take approximately 3 hours to complete. This includes setup, pushing to depth, setting well, decontamination, and handling investigation derived waste.

(4) 11 wells  $\times$  3 hours = 33 hours / 8 hours  $\approx$  4 days

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**E-2. Cost Comparison.** The following table compares costs for auger drilling and SCAPS direct push:

	Drilling		SCAPS	
	Quantity	Cost per day	Quantity	Cost per day
Soil borings or LIF pushes /day	2	\$2,692	5	\$2,887
	Days	Costs	Days	Costs
Total number of days, drilling/sampling	12.5	\$33,650	5	\$14,435
Total number of days, well installation	16.5	\$44,418	4	\$11,548
Mob/demob		\$3,454		\$4,498
Per diem incl. mob/demob	39	\$15,600	11	\$4,400
Materials, incl. drums		\$3,550		\$1,100
Total cost with no analytical included		\$100,672		\$35,981
4 days of field analysis of dissolved VOCs in ground water using DSITMS				\$15,400
SCAPS cost with field analysis of volatiles				\$51,381
Cost savings realized by using SCAPS				\$100,672 – \$51,381 = \$49,291