

(CSL, SE/IR, PS)

(CSL),
(PS)

(SE/IR),

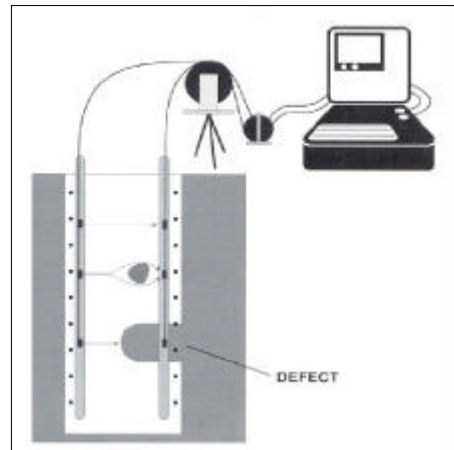


< 1 >

(CSL, Crosshole Sonic Logging)



< 2 > CSL-2



< 3 >

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7

(Hydrophone)

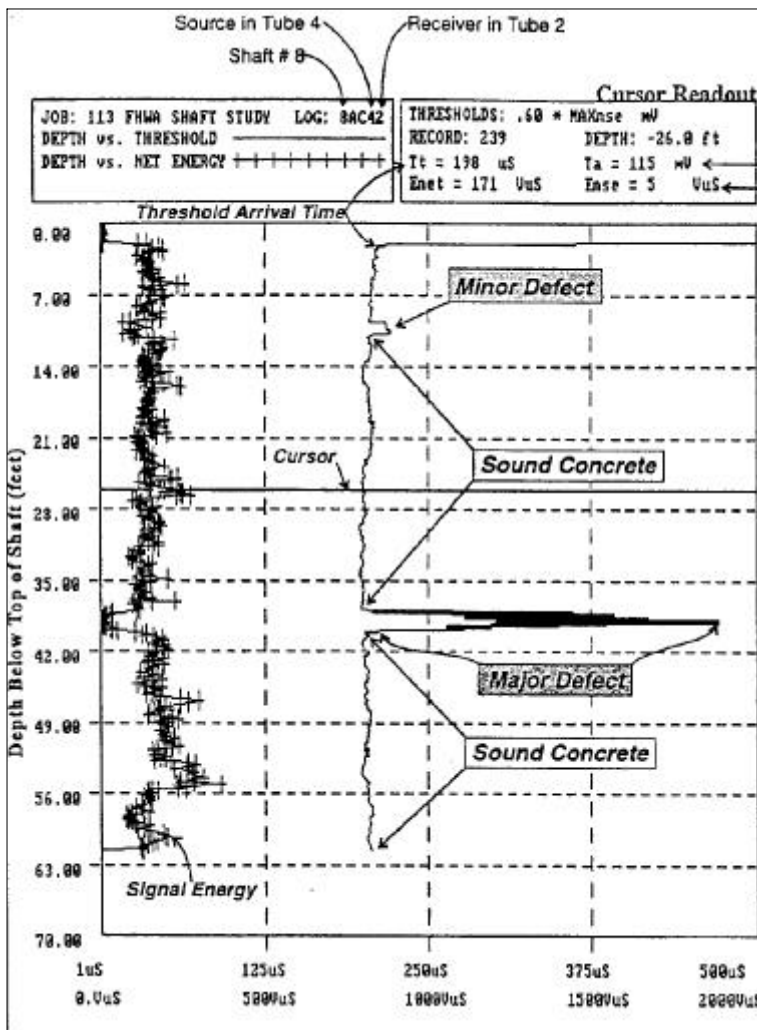
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< 4>
(profile)

- 가

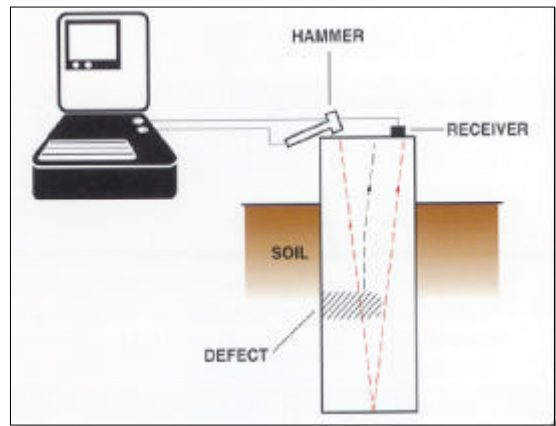
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	가	가



< 4> CSL

(SE/IR, Sonic Echo/ Impulse Response)

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< 5> SE/IR/PS

< 6>

- Receiver (가 , Geophone)

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Sonic Echo Impulse Response 2가 .

- SE
SE

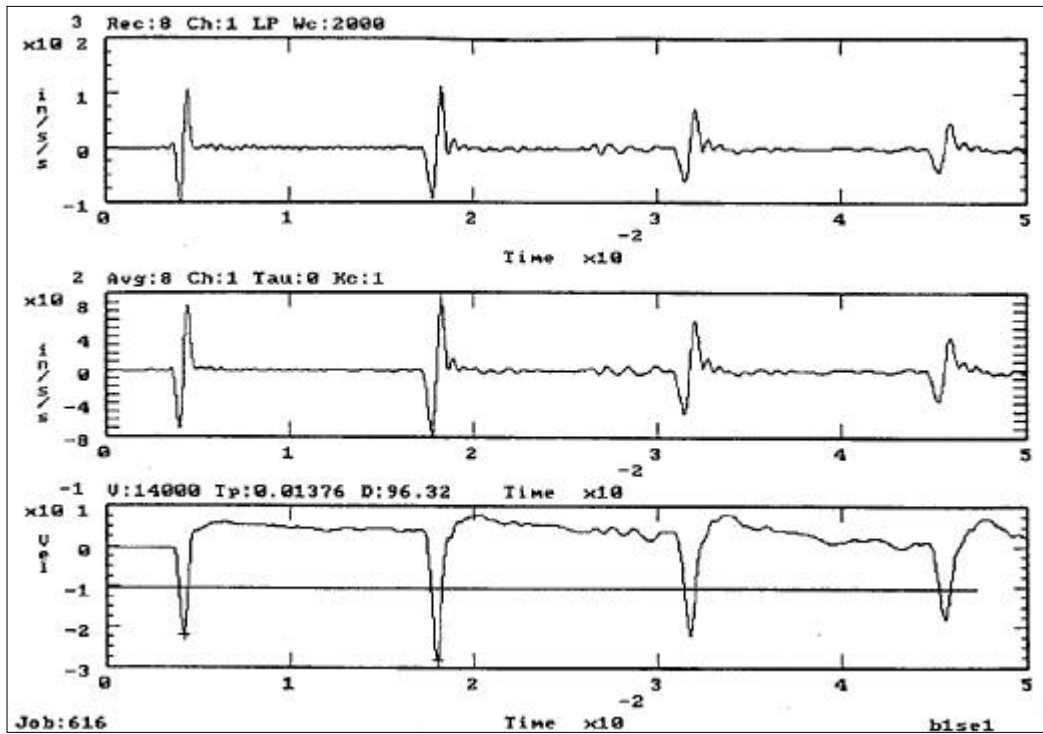
가

< 7> (t)

(v) .

$$t = \frac{2L}{v} \quad L = \frac{v \cdot t}{2}$$

, t : , L : , v :



< 7> SE

- IR

IR

()

$$(L) \quad 2 \quad 2L$$

$$\lambda = 2L$$

$$v = \lambda \cdot f = 2L \cdot f$$

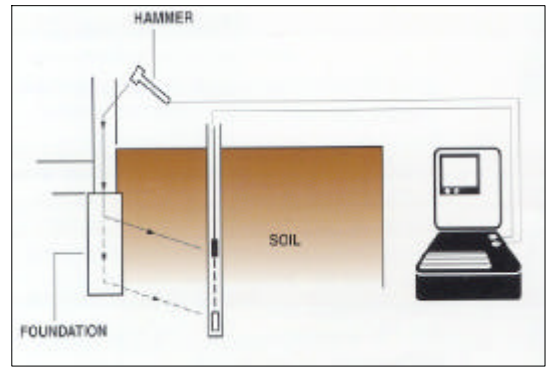
$$L = \frac{v}{2f}$$

, λ : , L : , v : , f :

(PS, Parallel Seismic)

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< 8 >

< 9 >

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PVC

, Geophone

PVC

, (Hydrophone Geophone)

(0.3 1.0m)

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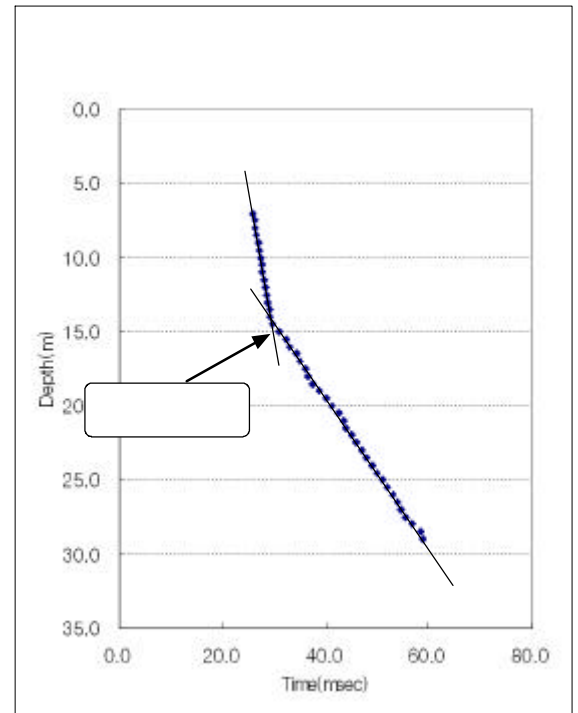
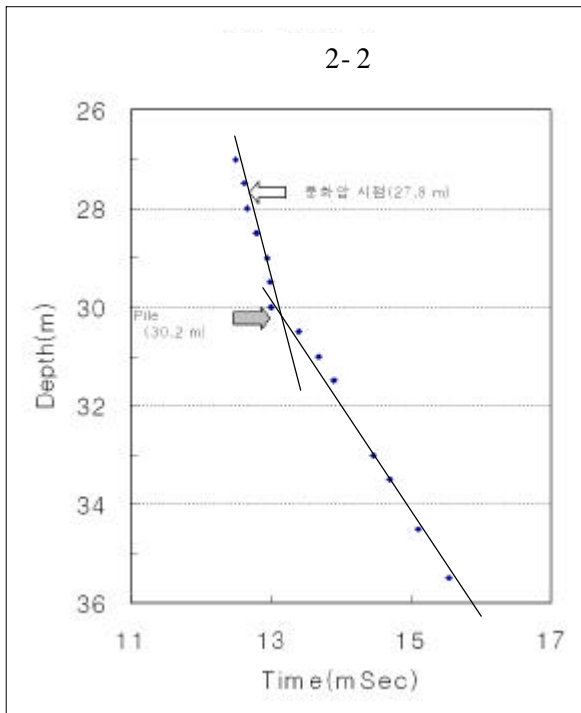
가

< 10>

PS

30.2m

15m



< 10> PS