$\therefore F = 0.31(0.5 \times 19.92\ ksf)\,0.51(180')(3500')$

$= 992,046$ kips

& $\Delta p = (W + F)/a$

$= 20.07$ ksf, use 20.0 ksf

Due to the large size of the stack footprint and relatively small thickness of the subgrade clay layer, assume

$\Delta\sigma \doteq 0.9\,\Delta p$ --- (for both sublayers)

$= 18.0$ ksf

$$\therefore S_{max} = \frac{20' \times 12}{1+0.97}\left(0.01 \times \log\frac{8.8}{1.38} + 0.3 \times \log\frac{1.38+18.0}{8.8} + 0.01 \times \log\frac{8.8}{2.48} + 0.3 \times \log\frac{2.48+18.0}{8.8}\right)$$

$= 121.83\,(0.008 + 0.103 + 0.006 + 0.110)$

$= 27.66''$ $\Rightarrow$ $2.31'$, use $\sim 2\frac{1}{2}'$.

3. RESULTS & CONCLUSION

1. The maximum settlement of the foundation subgrade under the final stack (top @ Elev. 990') is likely to be approximately 2½ feet.

2. The required clay liner/filter blanket slope, i_L, is thus equal to $2.5'/750' + 0.005 = 0.0083$ or 0.83% at the time of installation. (Note that due to more settlement below the crest, the liner slope will ultimately flatten to roughly 0.5%).

— END —