



CLIENT NAME: TVA
PROJECT NAME: Kingston - Gypsum Disposal - Peninsula Site

JOB NO.: 51032301

**STANDARD
CALCULATION
SHEET**

SUBJECT: Settlement of Final stack

CALC NO.: **FP6KIFFESD
X0003002D050004**

REVISION	0	1	2	3
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DATE:	12-08-05			

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Since the soil is primarily a single silty clay layer, it's subdivided into two sublayers based on CPT-5 data:

$$H_1 = 20' \text{ --- (Elev. 760' - Elev. 740')}$$

$$H_2 = 20' \text{ --- (Elev. 740' - Elev. 720')}$$

Further, assume conservatively that the soil above GWL is fully saturated and also consolidates similarly as soil below GWL.

C_c & e_0 :

Refer to the available consolidation-test data (Ref. 3) for the soil from NB-44 location, described similarly as at Point A (i.e. in borings NB-59, 57 and 66), although it's softer @ NB-44 (SPT N=7 compared to 10 @ Point A).

Results of the consolidation tests on the soil from NB-44 location are shown and interpreted on the following pages (Page No. 5 thru 8).

Based on this data, the following properties for this clay for the entire 40' thickness can be assumed for the settlement evaluation:

Compⁿ Index, $C_c = 0.30$ --- (ave. of 0.24, 0.35 & 0.32)
 Initial V.R., $e_0 = 0.97$ --- (" " 0.84, 1.04 & 1.03)
 Preconsol. Press., $P_c = 8.8$ ksf --- (" " 10.0, 7.5 & 9.0 ksf)
 Unit Wt. $\gamma_s \neq \gamma_{sat} = 117.5$ pcf --- (" " 122.3, 115.0 & 115.3 pcf)
 Recompⁿ Index, $C_r = 0.01$