GEO·CON INC.
GEOTECHNICAL CONTRACTING

OCT 12 1988

October 7, 1988

17-S103

Higgerson-Buchanan Inc.
P. O. Box 506
Dumfries, VA 22026

Attn: Joe Ware

Quality Control Report
Slurry Wall
VEPCO - Ash Pond "D" Expansion
Possum Point, Virginia

Gentlemen:

In accordance with our Quality Control Plan and the Performance Specifications, we hereby submit this summary of all test results performed to document the above referenced work. Attached are copies of daily field reports and laboratory test results performed during the work. Original copies of most of this data was submitted earlier. This document completes our contractual obligations for the work and amends our interim reports of August 23rd and July 26, 1988.

PRE-JOB DESIGN MIX

Based on the pre-job testing program, the soil-bentonite mix proportions were to consist of native soils from the trench excavation plus onsite borrow clay, when needed, plus about 1% bentonite. Borrow clay would be added when the fines content of the backfill dropped below 30%. Bentonite would be added to the backfill by sluicing with bentonite slurry. The final measure of slurry wall quality is permeability tests of the backfill.

FIELD TEST RESULTS

Daily field tests of the slurry wall materials and excavation were performed by Geo-Con's Slurry Trench Specialist, which were observed and verified by the owner's representative, CTI. Samples of the backfill were selected by Geo-Con and CTI for laboratory testing by CTI, J&L Testing and GAI Consultants.

P.O. Box 17380 · Pittsburgh, PA 15235 · Tel (412)856-7700 · FAX (412)373-3357

Texas Office (817)383-1400 California Office (408)286-3187 Florida Office (813)688-4066

Bentonite Slurry

The slurry was produced in our 5 c.y. colloidal mixer. Continuous and batch mixing were employed. The mix water was obtained from an onsite fire hydrant. The bentonite was supplied by Federal Bentonite a division of M-I Drilling Fluids.

All slurry results were acceptable. No cases of trench instability, flocculation, or excessive slurry losses were observed due to the slurry's quality.

Trench Excavation

The trench was excavated with a specially modified hydraulic excavator to depths of up to 69 feet. The excavation was performed through the bentonite slurry to maintain trench stability. Each cut of the excavation was measured for depth and length and sampled to confirm the key into the "E" layer.

Two cases of local soil instability were overcome. During the initial project start-up, weak underlying zones of fly ash caused difficulty in digging our lead-in trench. The trench location was moved away from the fly ash to compensate. Again, during our restart of the trench, some cracking was observed, but this was controlled by working away from the fly ash stockpiles.

Soil-Bentonite Backfill

The soil-bentonite backfill was mixed beside the trench by sluicing trench spoil and clay borrow with bentonite slurry and mixing with bulldozer tracks.

Tests were performed daily of the backfill slump. Laboratory samples of the backfill were tested for grainsize and permeability. Any samples which exhibited a lower than expected fines content were tested for permeability to verify compliance with the specifications. A summary of the backfill test results are attached. All results meet or exceed the $k \leq 10^{-7}$ cm/sec. requirement.

GEO·CON INC.

CONCLUSION

Field and laboratory test results conclusively demonstrate that the slurry wall constructed at Ash Pond "D" presents a relatively impermeable hydraulic barrier to groundwater flow. It has been a pleasure working with Higgerson-Buchanan and VEPCO on this project. Please feel free to call on us again.

Sincerely,

GEO-CON, INC.

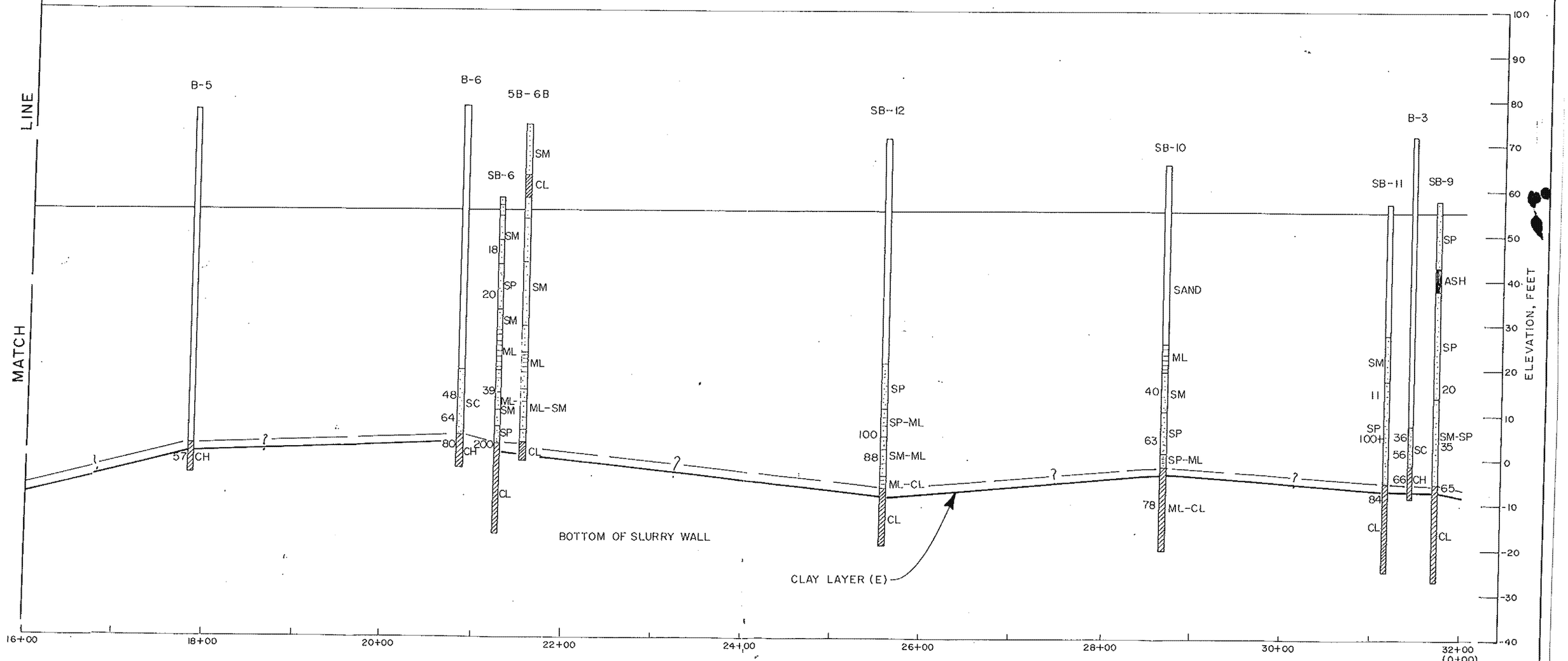
Steven R. Day
Slurry Wall
Group Manager

SRD/lmw

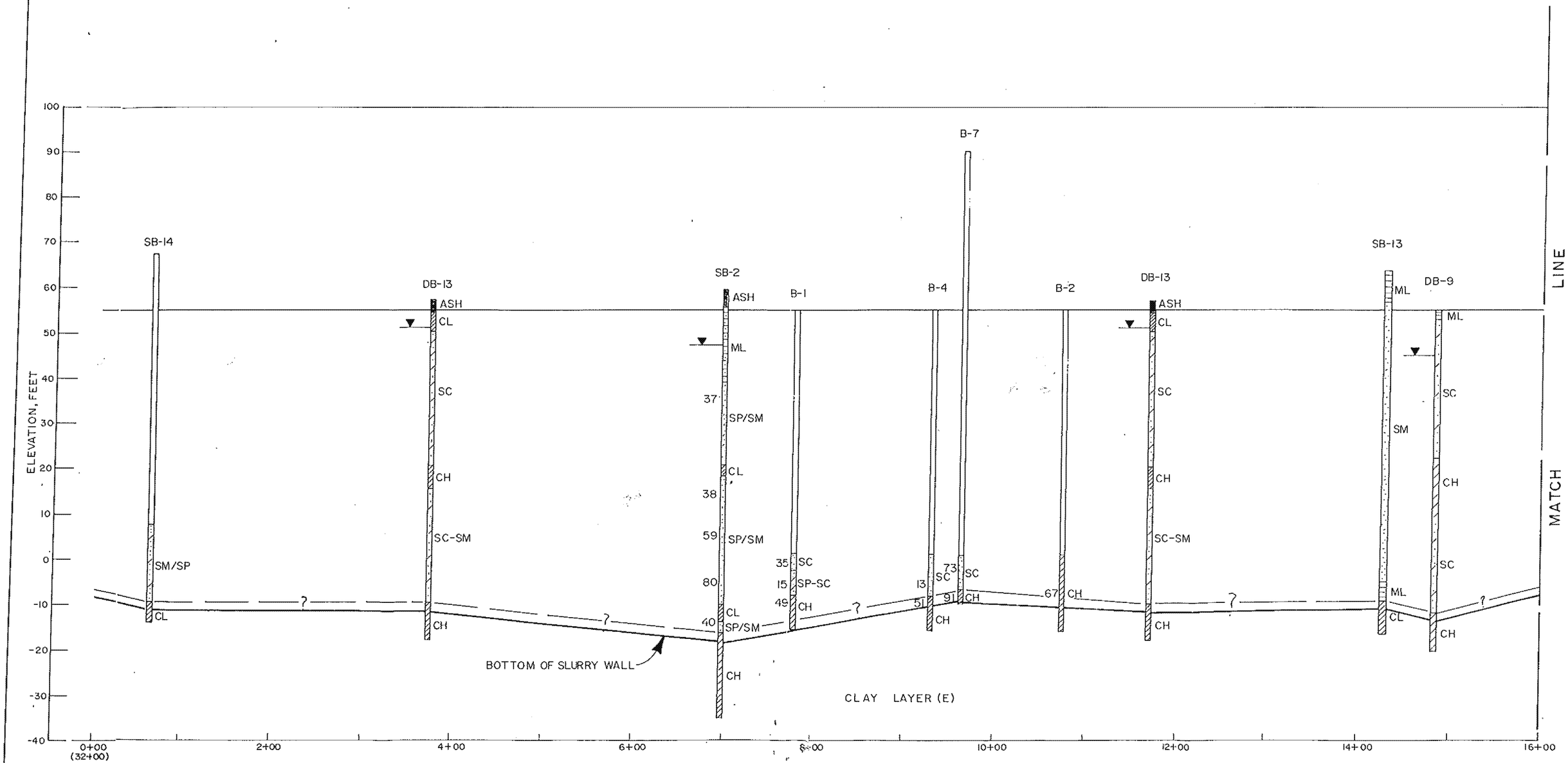
GEO·CON INC.

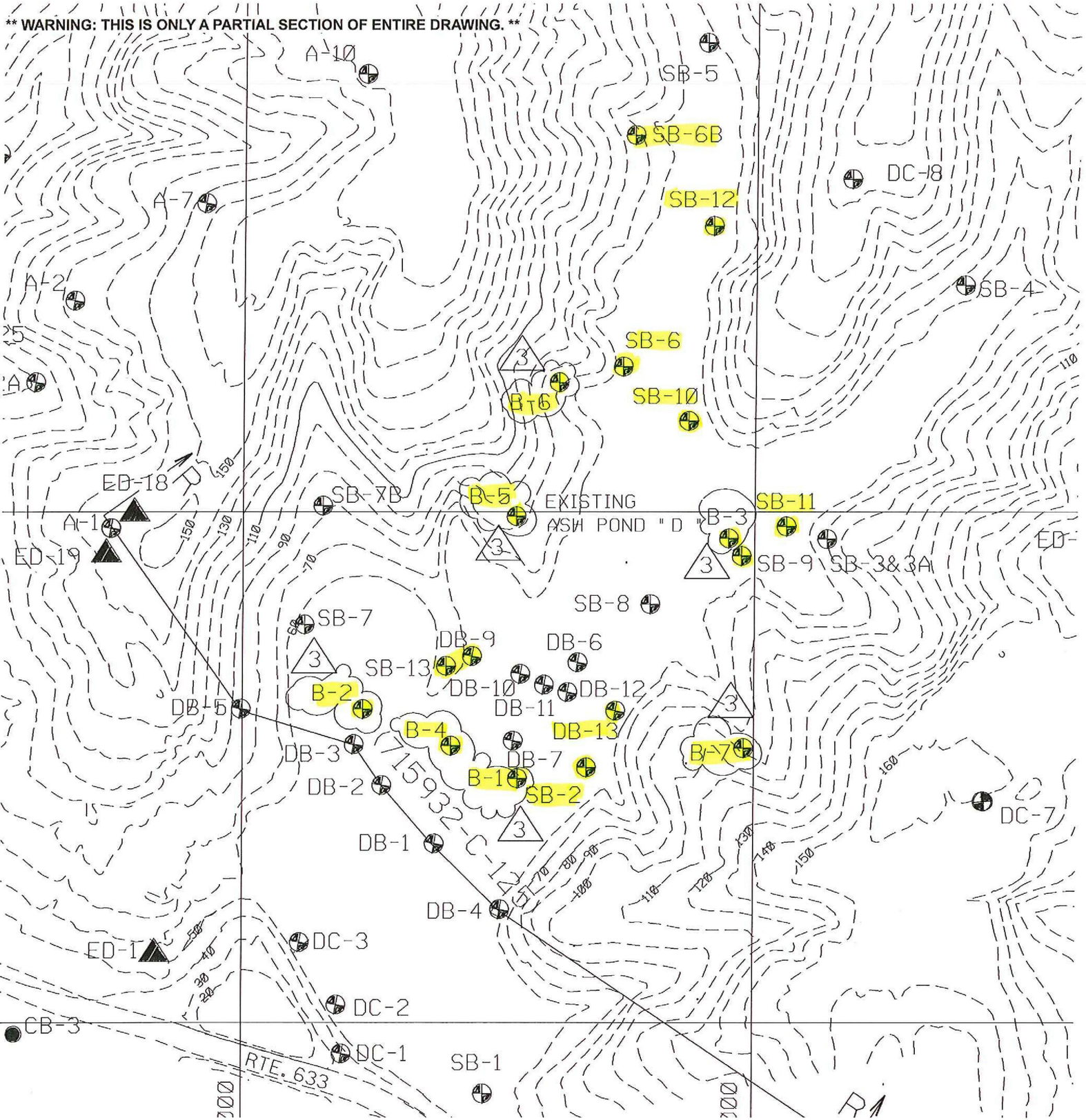
SOIL-BENTONITE BACKFILL RESULTS

Sta.	Fines (% < #200)	K x 10^{-7} (cm/sec)
0+00	34/31	0.9
0+00	36/34	0.8
0+40	36/28	-
1+30	32	0.1
1+30	30	0.1
3+80	26	0.03
3+80	29	0.08
5+00	47/61	0.05
7+00	49/55	0.06
9+00	50	-
10+00	41/48	0.04
12+00	45	-
14+00	36	0.09
16+00	37	-
18+00	49	-
20+00	51	0.02
22+00	29/32	-
24+00	48/33	0.07
26+00	32/36	-
28+00	49/36	-
29+00	30/35	0.2



SLURRY WALL PROFILE
VEPCO
POSSUM POINT, VA.
17-5107
SHEET 2 OF 2



SLURRY WALL PROFILE
VEPCO
POSSUM POINT, VA.
17-5107
SHEET 1 OF 2

** WARNING: THIS IS ONLY A PARTIAL SECTION OF ENTIRE DRAWING. **