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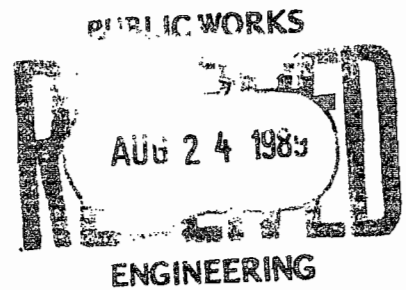
Progress Report
Slurry Wall Construction
Lena Road Landfill
June 19, 1989 through July 21, 1989

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

MAY 13 2010

SOUTHWEST DISTRICT
TAMPA

Ardaman & Associates, Inc.



**Progress Report
Slurry Wall Construction
Lena Road Landfill
June 19, 1989 through July 21, 1989**



Ardaman & Associates, Inc.

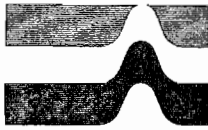
FLORIDA DEPARTMENT OF
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Ardaman & Associates, Inc.

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

August 23, 1989
File Number 86-115A

Manatee County Public Works Department
315 75th Street West
Bradenton, Florida 34209

Attention: Mr. Tom Zink

Subject: Progress Report for Slurry Wall Construction Lena Road Landfill June 19 through July 21, 1989 Manatee County, Florida

Gentlemen:

This report summarizes the field and laboratory quality control program for the slurry wall construction at the Lena Road Landfill between June 19 and July 21, 1989. During the subject time period, construction of the slurry wall progressed from initial connection with the existing wall at the northwest corner of the existing landfill site (Station 14+80) to Station 52+80, as depicted on Figure 1.

Field Observation and Monitoring

A field representative from Ardaman and Associates, Inc. was present at the site to provide continuous on-site observation and monitoring of the slurry wall installation during the construction period. The tasks of our field inspectors are as follows:

- (1) to inspect the installation of the slurry wall to document that it conforms to the specification requirements;
- (2) to perform field tests at the site;
- (3) to collect samples for laboratory testing;
- (4) to document the field activities and test data on a daily basis.

According to the specifications, the slurry wall should be at least 30 inches wide and should be keyed 36 inches into an underlying clayey stratum of low permeability. The bentonite slurry viscosity, as determined by a Marsh Funnel, should be no less than 40 Marsh-seconds. The slump of the backfill after mixing with the bentonite slurry should have a slump cone value of 2 to 6 inches prior to placement. The density of the slurry should be at least 67 pcf.

Daily Field Reports prepared by our field inspector for the project between June 19 and July 21, 1989 are included in Appendix 1. The Slurry Wall Field Data Sheets are included in Appendix 2.

As indicated on the field data sheets, the slurry wall was embedded a minimum of 3 feet into the clayey confining layer. The typical depths of the confining layer during the subject time period are as follows:

<u>Station Number</u>	<u>Typical Depth to Top of Confining Layer (feet)</u>
14+80 to 16+40	17 to 21
16+60 to 17+20	15 to 17
17+40 to 17+80	16
18+00	26
18+20 to 20+00	31 to 33
20+20 to 28+60	30
28+80 to 30+60	25 to 24
30+80 to 33+00	23
33+20 to 35+20	24 to 29
35+40 to 37+20	27
37+40 to 37+80	26 to 24
38+00 to 43+80	23
44+00 to 52+80	25 to 28

The slurry viscosity obtained at the mix plant varied from 34 to 55 Marsh-seconds, with an average velocity of 40 Marsh-seconds. The slump of the backfill after mixing with the bentonite slurry was typically 4.0 to 6.5 inches, with an average slump of 5 inches. The unit weight of the bentonite slurry in the trench ranged from 69 to 102 pcf, with an average unit weight of 88 pcf.

Based on our field observation and monitoring, it is our opinion that the procedures and materials used for the installation of the slurry trench over the subject time period met the intent of the specifications.

On the average, the slurry wall was advanced at a rate of approximately 224 lineal feet per day during the subject time period. Advancement was halted several times for construction repairs and/or rock excavation.

Laboratory Testing

In accordance with the specifications, the backfill sampling frequency for laboratory permeability testing was a minimum of one sample per day or one sample for each 200 feet of installed slurry wall. In addition, a minimum of one sample of backfill per day or one sample for each 100 feet of installed slurry wall was obtained for grain size testing.

Index Testing

The bentonite product used for the slurry wall construction was sampled by our field inspector. Atterberg limits tests conducted on two samples yielded an average liquid limit of 467 percent and a plasticity index of 432 percent. The average moisture content of these samples was 8.5 percent. These results are within the expected values for the specified type of bentonite.

In order to show compliance with the grain size requirements set forth in the specifications, the soil-bentonite mixture must have at least 12.5 percent of materials by dry weight passing the U.S. No. 200 sieve size (fines content) and at least 80 percent of materials by dry weight passing the U.S. No. 20 sieve size.

The fines content of the 40 samples retrieved for the subject time period ranges from 8 to 24 percent, with an average fines content of 15 percent. The percent soil by dry weight that passes through the U.S. No. 20 sieve ranges from 86 to 98 percent with an average of 94 percent. Therefore, in our opinion, the backfill samples met the gradation requirements in the specifications.

Permeability Testing

According to the specifications, a backfill coefficient of permeability up to 5×10^{-7} cm/sec is allowed for determining compliance with the permeability requirement, provided no more than 20 percent of the tested specimens for each 2000-foot section of the slurry wall display a coefficient of permeability greater than 1×10^{-7} cm/sec.

Two types of tests have been used by Ardaman & Associates, Inc. to assess the coefficient of permeability of the backfill samples. The principal test consisted of determining the permeability in an 8-cm high, rigid wall, steel mold after the samples were properly placed and tamped in the mold. A typical head difference of approximately 60 to 120 cm was used in performing these tests. The other method involved triaxial cell testing in which the "consolidated" samples from the steel mold were transferred to a triaxial cell and a 2.5 psi effective consolidation stress was applied to the samples prior to permeability testing. Hydraulic gradients for both types of tests ranged between 7 and 15.

As anticipated, the tests performed in the steel molds yielded higher values of permeability than identical specimens tested in the triaxial cell. In our opinion, the triaxial permeability with an effective consolidation stress of 2.5 psi approximates the in-situ condition at mid-depth of the slurry wall and is used as the permeability for determining compliance with the specifications. The ratio of steel-mold permeability to triaxial permeability for 7 specimens tested with both procedures averaged 2.8 and varied from 1.4 to 4.3. To check compliance with the specifications, a factor of 2.8 was applied to the steel-mold permeability values to obtain equivalent triaxial permeability values.

The laboratory test data for the backfill samples recovered for the subject time period are summarized in Table 1. The permeability values presented represent the 2.5 psi effective stress permeability values (i.e., the "steel-mold" permeability divided by 2.8). The maximum documented coefficient of permeability is 1.8×10^{-7} cm/sec at Station 50+00. The average coefficient of permeability of the backfill samples recovered during the subject time period is computed to be 9.1×10^{-8} cm/sec, based on 21 test samples. Only 5 of those samples displayed coefficients of permeability equal to or greater than 1×10^{-7} cm/sec.

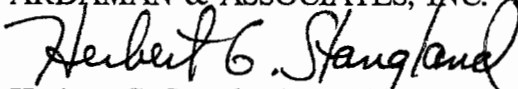
The 2000-foot section with the highest measured permeability values had an overall average permeability of 9.7×10^{-8} cm/sec. Although more than 20 percent of the tested specimens for the 2000-foot section (Station 32+00 to 52+00) displayed coefficients of permeability greater than 1×10^{-7} cm/sec, in our opinion, the slurry wall installed between the subject time period meets the permeability requirements of the specifications considering that the average permeability for the subject section is less than the overall average allowable permeability of 1.0×10^{-7} cm/sec.

Conclusions

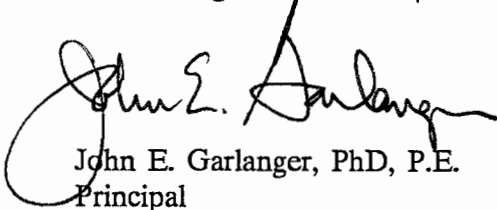
This progress report represents the initiation of construction for the proposed slurry wall at the Lena Road Landfill. As discussed in the previous sections, it is our opinion that the slurry wall constructed within the subject time period has been constructed in accordance with the project specifications.

We look forward to our continuing association with you on this project. If you should have any questions or need further assistance, please do not hesitate to contact us.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.



Herbert G. Stangland, Jr., P.E.
Senior Water Resources Engineer
Florida Registration No. 16713



John E. Garlanger, PhD, P.E.
Principal

HGS/JEG/js

Enclosure

cc: G.I.T. (w/encl.)
800 Office Plaza Blvd.
Suite 402
Kissimmee, Florida 32743

TABLE 1
LABORATORY TEST RESULTS

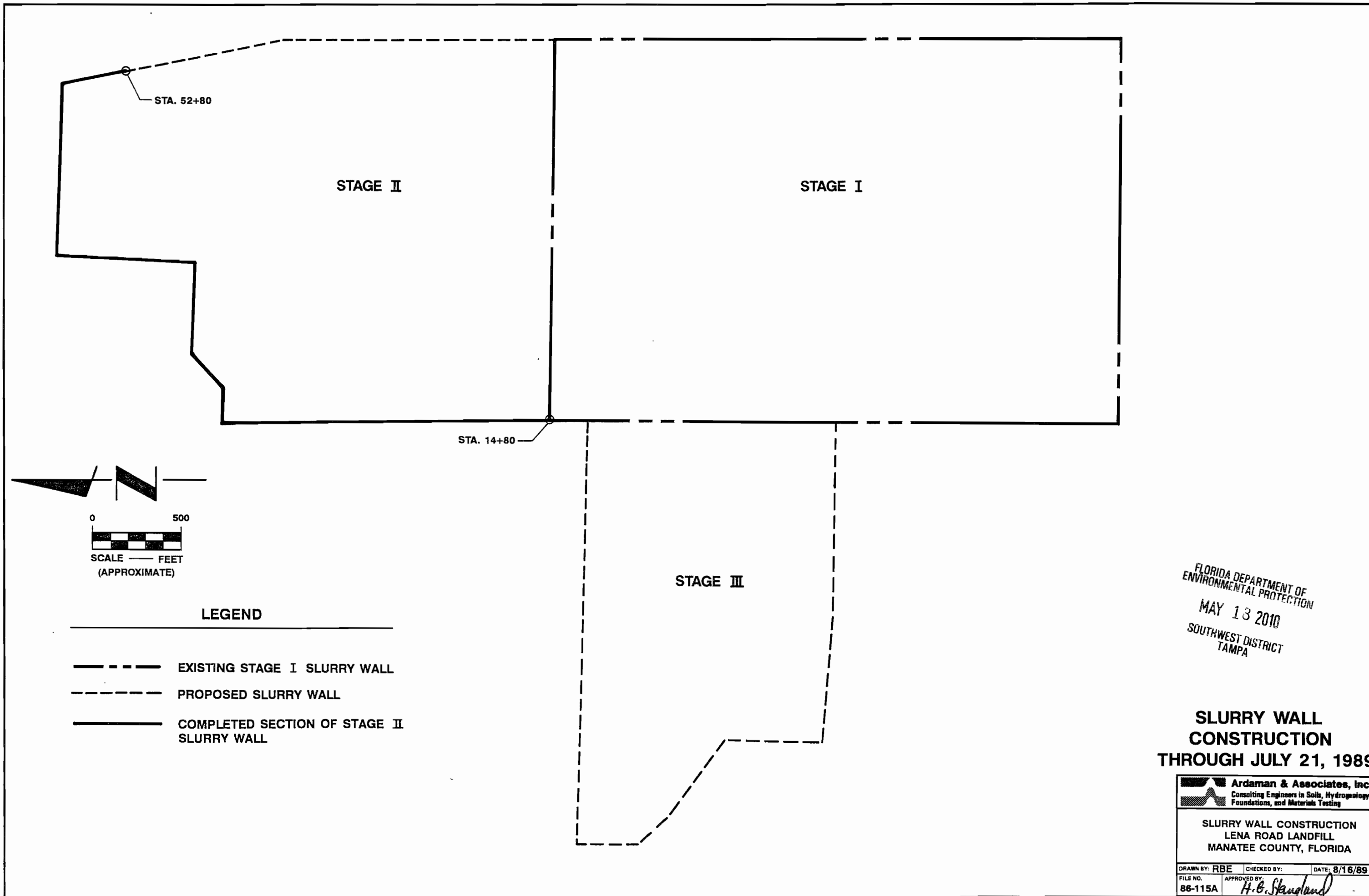
Sample Number	Sampling Date	Station Number	Initial Moisture Content (%)	Initial Dry Density (PCF)	Coefficient of Permeability (cm/sec)	Percent Passing By Dry Weight (%)	
						-20	-200
1	6-20-89	14+50	34.7	85.6	6.5×10^{-8} **	91	17
2	6-20-89	14+80	29.3	90.0	1.0×10^{-7}	95	14
3	6-20-89	15+80				--	19
4	6-21-89	16+80	30.6	88.3	1.4×10^{-7} **	98	24
5	6-22-89	17+80				--	20
6	6-23-89	18+80	29.4	95.3	7.2×10^{-8} **	97	15
7	6-23-89	19+80				--	18
8	6-23-89	20+80	27.1	92.7	1.5×10^{-7} **	97	10
9	6-27-89	21+90				--	14
10	6-27-89	22+80	26.7	93.8	6.5×10^{-8} **	96	11
11	6-27-89	23+80				--	15
12	6-28-89	24+80	29.4	90.0	4.6×10^{-8}	96	14
13	6-28-89	25+80				97	15
14	6-28-89	26+80	29.2	91.2	8.2×10^{-8}	96	13
15	6-28-89	27+70				94	15
16	6-29-89	28+80	28.4	92.4	4.3×10^{-8}	95	13
17	6-29-89	29+80				98	15
18	6-29-89	30+80	29.0	91.7	8.2×10^{-8}	94	12
19	6-30-89	31+80				94	14
20	6-30-89	32+80	27.8	92.6	8.9×10^{-8}	93	13
21	7-5-89	33+80				94	21
22	7-5-89	34+80	30.3	88.8	7.9×10^{-8}	94	17
23	7-5-89	35+80				93	24
24	7-6-89	36+80	28.7	92.0	6.1×10^{-8}	94	18
25	7-6-89	37+80				94	14
26	7-6-89	38+80	26.6	95.0	5.7×10^{-8}	95	11
27	7-6-89	39+80				94	12

**Results from triaxial cell testing

TABLE 1 (continued)
LABORATORY TEST RESULTS

<u>Sample Number</u>	<u>Sampling Date</u>	<u>Station Number</u>	<u>Initial Moisture Content (%)</u>	<u>Initial Dry Density (PCF)</u>	<u>Coefficient of Permeability (cm/sec)</u>	<u>Percent Passing By Dry Weight (%)</u>	
						<u>-20</u>	<u>-200</u>
28	7-10-89	40+80	25.4	96.4	6.8×10^{-8}	98	8
29	7-10-89	41+80				93	12
30	7-11-89	42+80	25.4	97.4	8.9×10^{-8}	97	9
31	7-16-89	43+00				86	14
32	7-16-89	44+00	26.5	93.7	1.2×10^{-7}	94	14
33	7-17-89	45+00				88	13
34	7-17-89	46+00	30.1	89.6	8.6×10^{-8}	92	16
35	7-19-89	47+00				92	18
36	7-19-89	48+00	29.9	91.7	6.8×10^{-8}	93	15
37	7-20-89	49+00				92	15
38	7-20-89	50+00	29.2	91.3	1.8×10^{-7} **	95	15
39	7-20-89	51+00				93	17
40	7-20-89	52+00	29.2	93.3	1.7×10^{-7} **	91	14

**Results from triaxial cell testing



FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MAY 13 2010
SOUTHWEST DISTRICT
TAMPA

**SLURRY WALL
CONSTRUCTION
THROUGH JULY 21, 1989**

 Ardaman & Associates, Inc. Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing		
SLURRY WALL CONSTRUCTION LENA ROAD LANDFILL MANATEE COUNTY, FLORIDA		
DRAWN BY: RBE	CHECKED BY:	DATE: 8/16/89
FILE NO. 86-115A	APPROVED BY: <i>H. G. Stangland</i>	

APPENDIX 1
DAILY FIELD REPORTS



Ardaman & Associates, Inc.

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

8008 SOUTH ORANGE AVE.
ORLANDO, FLORIDA
MAIL: P.O. BOX 593003
32809-3003

DAILY FIELD REPORTS

Project Lena Rd Landfill slurry wall File No. 86115A Time _____
Client MANATEE County Weather Sunny Date 6-19
AFTER-NOON
RAIN

The slurry wall was scheduled to start at 7:00 AM. The contractor worked on the assembly of the back-hoe and started digging at 3:00 PM. The original slurry wall was located and the new trench was tied into that area 30 FT as specified and was dug down to the natural undisturbed clay to insure the bottom of the wall was reached.

The leading trench was not yet completed when it started to rain. Work was not continued. I was on site with Keith Foerste for startup of the job.

There was no backfill mixed today. The key material was a blue-green clay.

Time on the project 13.5 hrs

Clients' Rep. _____

Ardaman & Associates _____

Peter W. Angell

DAILY FIELD REPORTS

Project LENA RD LANDFILL SHUT-DOWN File No. 36-115A Time _____
Client MANOTEE Weather PIE Date 6-20-89
AFTERNOON
RAIN

EXCAVATION OF DRAIN WALL STARTED AT 14+80
+ A 30 FT LEAD IN DRAIN TOWARD
AND WENT TO STA. 18+10 TO GIVE
A TOTAL OF 6750 SQ FT OF TRENCH FOR
THE DAY. THE DEPTH WAS 3 FEET DEEP.

BACKFILL WAS DONE AND PIPE IN
THE TRENCH FROM STA 14+50 TO STA
16+10 WITH A SLOPE OF 4:5 5:1

Slumps, viscosities & permeability ARE ALL
ON THE DATA SHEET. TWO SAMPLES WERE
TAKEN TO THE LAB FOR PERMEABILITY, SO
PETE INDEXES AND ONE SAMPLE SAVED FOR FIELD
ANALYSIS

TIME ON PROJECT - 13.0 Hrs.

BENTONITE

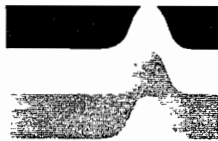
Dry - 25,200 lbs

slurry - 36,500 lbs

Clients' Rep. _____

Ardaman & Associates

K. J. Ford



Ardaman & Associates, Inc.

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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32809-3003

DAILY FIELD REPORTS

Project LENA RD LANDFILL SHORING File No. 16-10 Time _____
Client MANATEE CO Weather OC. Date 6-5-90
RAIN

EXCAVATION OF SLUMPS STARTED AT
STA - 18+00 AND WENT TO STA 19+80
FOR A TOTAL OF 180 FEET OF
TRENCH. THE TRENCH WAS 6260 FEET
DEEP. MAINTAINED 3:1 SLOPE. THE TRENCH
WAS OPENED UP TO THE TOP OF THE
FILL AND THE FILL WAS PLACED

BACKFILL WAS MIXED FOR A SHORT
TIME AND PLACED IN TRENCH FROM
STA 16+10 TO STA 16+90 AND
TRENCH DEPTH WAS 16+10

THE BACKFILL WAS PLACED IN TRENCH
AT 3:1

SLUMPS DISCLOSED 3 UNIT WEIGHT ARE ALL
ON THE DATA SHEETS

TIME ON PROJECT - 13 Hrs
BENTONITE
Dry - 15,300 lbs
slurry - 40,500 lbs

Clients' Rep. _____

Ardaman & Associates K. E. [Signature]



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ORLANDO, FLORIDA
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32809-3003

DAILY FIELD REPORTS

Project LENA RD LANDFILL SLURRY WALL File No. 85-11517 Time _____
Client MANATEE CO Weather PC Date 6.22.89
RAIN

EXCAVATION OF SLURRY WALL STARTED AT
STA - 19+80 AND WENT TO STA 22+00
FOR A TOTAL OF 220 ~~FEET~~ OF TRENCH
AND A TOTAL OF 7320 ~~sq~~ FT OF SLURRY WALL
KEY MATERIAL IS A GRAY TO GREENISH
GRAY CLAY TO CLAYEY FS WITH
SOME PHOSPHATE

BACK FILL ~~WAS~~ WAS PLACED IN TRENCH
FROM STA 16+90 TO STA - 18+70
ONE SAMPLE WAS OBTAINED AT STA
17+00 FOR SIEVE ANALYSIS SLUMP 6"
TOE OF BACK FILL WAS AT STA 21+20
FOR A SLOPE OF 9:1

Slumps, VISCOSITY, & UNIT WEIGHT ARE ALL
ON THE DATA SHEET

TOTAL BENTONITE USED TODAY
Dry - 4 BAGS APPROX EVERY 50' APPROX = 16,000 lbs
WET SLURRY - APPROX 19,300

TOTAL TIME ON PROJECT - 13 Hrs

Clients' Rep. _____

Ardaman & Associates _____

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Foundations and Materials Testing

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32809-3003

DAILY FIELD REPORTS

Project LENA RD LANDFILL SLURRY WALL File No. 86-115A Time _____

Client MANATEE CO. Weather PL Date 6-23-89
AM RAIN

EXCAVATION OF SLURRY WALL STARTED AT STA. 22+00
AND WENT TO STA. 24+40 FOR A TOTAL OF
240 FT. AVEG. OF 33 FT DEEP FOR A
TOTAL OF 7920 sq ft

KEY MATERIAL IS A GRAY TO GREENISH GRAY,
CLAY TO SILTY F.S. WITH SOME PHO-PHATE

BACKFILL WAS PLACED IN TRENCH FROM STA 18+30
TO STA 20+80. 3 SAMPLE WERE COLLECTED
TODAY 2 FOR PENMETER.

TOE OF BACKFILL IS AT STA 23+40
FOR A SLOPE OF 8.5:1

Dry BENTONITE TO BACKFILL WAS CUT BACK
TO ONE BAG PER 100 FT STARTING AT STA. 21+80

SUMPS, VISCOSITY & UNIT WEIGHTS WERE ALL
RECORDED ON THE DATA SHEET

TOTAL BENTONITE USED TODAY

Dry - 3 BAGS APPROX EVERY 100' APPROX 12,000 lbs
WET SLURRY - APPROX 6500 lbs

TOTAL TIME ON PROJECT - 13.5 Hrs

Clients' Rep. _____

Ardaman & Associates _____

Kal F...



Ardaman & Associates, Inc.

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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ORLANDO, FLORIDA
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32809-3003

DAILY FIELD REPORTS

Project LENA RD. LANDFILL SLURRY WALL File No. 86-115A Time _____

Client MANATEE Weather PC/ Date 6-26-89
Am Rain

EXCAVATION OF slurry wall STARTED AT STA
STA - 24+40 AND WENT TO STA 24+80 FOR
A TOTAL OF 40 FT AVG OF 33 FT DEEP FOR
A TOTAL OF 1320 cu ft

BACK HOE BLEW A HOSE AND WAS DOWN
ALL DAY

BACK FILL WAS PLACED ~ TRUCK FROM STA 20+80
TO STA. 21+80. NO SAMPLES WERE
TAKEN TODAY.

TOE OF BACK FILL WAS AT 24+80 FOR
A SLOPE OF 7.5:1

ONLY ONE BAG OF Dry BENTONITE WAS
PUT OUT AT STA - 24+40

TOTAL BENTONITE USED TODAY:

Dry - 1 bag 4000 lbs

WET (slurry) - 0

TOTAL TIME ON PROJECT - 6.0 Hrs

Clients' Rep. _____

Ardaman & Associates _____

DAILY FIELD REPORTS

Project LENA RD LANDFILL SLURRY WALL File No. 86-115A Time _____

Client MANATEE CO Weather PC/PA Date 6-27-89

BACK HOE UP ABOUT 9:00
EXCAVATION OF SLURRY WALL STARTED AT STA - 24+80
AND WENT TO STA 27+40 FOR A TOTAL OF
260' AVG OF 33' DEEP TOTAL OF 8580 sq ft
OF TRENCH

Key MATERIAL is A LIGHT GREEN TO GRAY
GREEN CLAY TO CLAY, FINE SAND

BACKFILL WAS MIXED & PLACED IN TRENCH
FROM STA - 21+80 TO STA 24+10 = 230'
TOE OF BACKFILL IS AT 26+80 FOR A SLOPE OF
SLOPE = 8:1 3 TEST SAMPLES WERE OBTAINED TODAY

AFTER A DISCUSSION WITH HENRY STANGI AND
ABOUT PERMEABILITY, I RELAID APPROX #3 TO
G.I.T. THEY INCREASED Dry BENTONITE BACK TO
170 1-BAG APPROX EVERY 50' OF TRENCH
THEY WENT BACK AND ADDED BAGS WHERE
THEY HAD SKIPPED EARLIER. NOW ENTIRE
TRENCH IS THE SAME

Slumps, VISCOSITY, & UNIT WEIGHTS ARE ALL
RECORDED ON THE DATA SHEET

TOTAL BENTONITE USED TODAY

Dry - 6 bags @ 4000lb = ~~24,000~~ 21,900

WED (Slurry) - Approx 24,000

TOTAL TIME ON PROJECT 14.5 Hrs

Clients' Rep. _____

Ardaman & Associates

K. J. Jones

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

8008 SOUTH ORANGE AVE.
ORLANDO, FLORIDA
MAIL: P.O. BOX 593003
32809-3003

DAILY FIELD REPORTS

Project LENA RD LANDFILL SLURRY WALL File No. 36-115A Time

Client MANATEE CO. Weather CC Date 6-28-89
AM RAIN

EXCAVATION OF SLURRY WALL LOCATED AT STA 27+40
AND WENT TO STA 24+00 FOR A TOTAL OF
340' FOR A TOTAL OF 10,410 cu yd of
TRENCH DUG TODAY.

KEY MATERIAL IS A LIGHT GREEN TO GRAYISH
GREEN CLAY.

BACKFILL WAS MIXED - PLACED IN TRENCH FROM
STA 24+10 TO STA 27+80 FOR 370'
TOE OF BACK FILL IS AT STA 30+00 FOR
A SLOPE OF 8:1, 4 SAMPLES WERE
TAKEN TODAY.

SLOPE VISCOSITIES & UNIT WEIGHTS NOT ALL
RECORDED IN THE DATA SHEET

SANBOTA OFFICE PICKED UP SAMPLES TO BE
SENT TO ORLANDO TO LAB.

TOTAL BENTONITE USED TODAY

Dry - 8 BAGS APPROX 32,000 lbs

WET SLURRY - APPROX 16,000 lbs

TIME ON PROJECT - 14.5 Hrs

Clients' Rep.

Ardaman & Associates

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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32809-3003

DAILY FIELD REPORTS

Project LENA RD LANDFILL slurry wall File No. 86-115A Time _____
Client MANATEE CO Weather PC Date 6-29-89
ARRIVE MOST OF DAY

EXCAVATION OF SLURRY WALL STARTED AT STA 31+00
AND WENT TO STA 34+20 FOR A TOTAL OF
320' AND A TOTAL OF 8590 cu yd OF
TRENCH DUG TODAY

KEY MATERIAL IS A LIGHT GREEN TO GRAY-GREEN
CLAY WITH SOME PHOSPHATE.

BACK FILL WAS MIXED AND PLACED IN TRENCH
FROM STA 27+80 TO STA 31+30 FOR 350'
TOE OF BACK FILL IS AT STA 33+50 FOR
A SLOPE OF 6:1, 3 SAMPLES WERE COLLECTED
TODAY

Slumps, Viscosities, & UNIT WEIGHTS ARE ALL
RECORDED ON THE DATA SHEET.

GIT DOWNED - TED HOE, & ESTIMATE LONNIE BURGESS
WAS ON SITE TODAY. GIT SUPERINTENDING REFINED
TOTAL BENTONITE USED TODAY

Day - 7 BAGS APPROX 28,000 LB
WET (slurry) - APPROX - 12,000 LB

Time on project - 13.5 Hrs

Clients' Rep. _____

Ardaman & Associates

K. J. Fount

DAILY FIELD REPORTS

Project LENA RD LAND FILL SLURRY WALL File No. 33-15A Time _____

Client MANATEE CO Weather PC Date 6-30-85
AM RAIN

EXCAVATION OF SLURRY WALL STARTED AT STA 34+20
AND WENT TO STA 35+80 FOR A TOTAL OF
160' AND A TOTAL OF 4970 cu ft of
TRENCH DIRT.

KEY MATERIAL IS A LIGHT GREEN CLAY
WITH SOME PHOSPHATE

BACK FILL WAS MIXED AND PLACED IN TRENCH
FROM STA 21+30 TO STA 33+20 FOR
190' OF TRENCH BACKFILLED TOP OF SLOPE IS
AT STA # 35+00 FOR A SLOPE OF 6:1
2 SAMPLES WERE COLLECTED TODAY

SLOPES, VISCOSITIES & UNIT WEIGHTS ARE ALL
RECORDED IN THE DATA SHEET

TOTAL BENTONITE USED TODAY

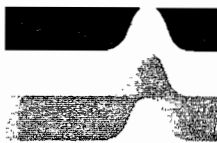
Day - 2	BAGS	APP-EX	8000 lbs
WET - 2	BAGS	APP-EX	8000 lbs

Time on Project 11.5 Hrs

Clients' Rep. _____

Ardaman & Associates

K. J. Fournier



Ardaman & Associates, Inc.

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

8008 SOUTH ORANGE AVE.
ORLANDO, FLORIDA
MAIL: P.O. BOX 593003
32809-3003

DAILY FIELD REPORTS

Project LENA RD LANDFILL SLURRY WALL File No. 86-115A Time _____
Client MANATEE CO Weather P/C Date 7-5-89

EXCAVATION STARTED AT STA 35+80 AND WENT
TO STA 38+60 FOR A TOTAL OF 380' OF
TRENCH FOR A TOTAL OF 10580 ~~sq ft~~ TODAY.
KEY MATERIAL IS A LIGHT GREEN CLAY WITH
SOME PHOSPHATE

BASIC FILL WAS MIXED AND PLACED IN TRENCH
FROM STA 33+20 TO STA 36+30 FOR
A TOTAL OF 310' OF TRENCH BACKFILL
TOE OF SLOPE IS AT STA 38+40 FOR
A SLOPE OF 8:1. 3 SAMPLES WERE
COLLECTED TODAY.

Slumps, Viscosities & UNIT WEIGHTS ARE ALL
RECORDED ON THE DATA SHEET

G.I.T. HAS A NEW SUPER— THAT STARTED
TODAY. LONNIE BURGASS WAS ON SITE
TODAY.

TOTAL BENTONITE USED TODAY
Dry - 8 BAGS APPROX 32,000 lbs
WET (SLURRY) APPROX 45,000 lbs

TIME ON PROJECT - 13.0 Hrs

Clients' Rep. _____

Ardaman & Associates _____

Kur Fourn

DAILY FIELD REPORTS

Project Leaa Rd Landfill File No. 86115A Time _____
Client Manatee County Weather Sunny Date 7-6-89

The contractor continued to excavate the slurry wall trench from STA #39+60 to 43+80 to an average depth of 26 FT. The total was 10,920 FT² for the day production. At the end of the day hard digging was experienced and the ~~staff~~ superintendant said they could NOT go any deeper so John Garbanger was contacted and he was told NOT to vary from the specifications. This problem would be worked on 7-7-89 AM. There was 2.5" of rain dropped between 2:45 PM to 3:45 PM and stopped production.

The backfill was mixed, tested, and placed in the trench from STA #38+30 to STA #39+90. There were 4 samples taken and will be hand carried to the lab by myself on 7-8-89.

Today is my first day back on the project replacing Keith Foerste.

The contractor is adding ONE 4000 LB bag of dry bentonite to each 50 FT of trench excavated.

Time on the project 10.5 hrs

Clients' Rep. _____

Ardaman & Associates _____



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32809-3003

DAILY FIELD REPORTS

Project Lena Rd Landfill slurry wall File No. 86115A Time _____

Client MANATEE County Weather sunny Date 7-7-89

AT 10:00 A.M. AFTER THE elevation were verified by the surveyors it was determined THAT they had to be 2 more FEET into the cemented sand. The contractor started the excavation process. The hard layer was broken through and the number 4 key material was located under this layer. The excavation was from STA #43+80 TO 44+80 ranging from 26 FT TO 29 FT in depth and a TOTAL OF 2810 FT² production for the day. The backhoe broke down AT 5:30 WITH A CRACK in the bucket.

The backfill was mixed and placed in the ditch for about 15 FT TO keep the slurry level up to the top of the trench.

Time on the project 11.0 hrs

Clients' Rep. _____

Ardaman & Associates _____

P. W. G. [Signature]

DAILY FIELD REPORTS

Project Lena Rd Land Fill slurry wall File No. 8815A Time _____
Client Manatee County Weather sunny Date 7-10

The contractor started excavation at 7:30 am and at 9:30 the backhoe broke down and was unable to dig. At 2:30 pm the repairs had been made and excavation was resumed. They excavated from STA # 44+80 to STA # 45+80 at an average of 28 feet in depth to give a total of 2810 FT² for the day's production.

The backfill was mixed, tested and placed in the trench from STA # 39+90 to STA # 43+00 and the ending slope was at 8:1 with 50 FT from the excavation point to the toe of the slope. (Backfill). There were 2 samples taken and will be sent to Lab for further testing.

Tom Zink with Manatee County visited the site today to review the cemented sand material that the contractor is calling rock.

Time on the project 12.5 hrs

Clients' Rep. _____

Ardaman & Associates

Pete W. Gale



DAILY FIELD REPORTS

Project Lena Rd Land F. II Slurry wall File No. 86115A Time _____
Client MANATEE County Weather Sunny Date 7-11-89

The Trench was excavated From STA # 45+80 To STA # 46+20 AT AN AVERAGE OF 29 FT TO give a TOTAL OF 1150 FT² For The day production. The operation was stopped AT This point due TO mechanical problem with the back hoe.

The backfill was mixed, tested, and placed in the excavated Trench from STA # 43+00 To STA # 43+50, one sample was taken and delivered To The Orlando Lab by myself.

On 7-12-89 I will deliver samples of the hard material To John GARLanger with ARDaman & Associates in Orlando so A Determination can be made on The need For blasting. The blasting crew is scheduled on site 7-13-89.

Time on The project 13.0 hrs

Clients' Rep. _____

Ardaman & Associates _____

R. W. J. [Signature]

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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DAILY FIELD REPORTS

Project Lena Rd Landfill Slurry wall File No. 86115A Time _____
Client MANATEE County Weather Sunny Date 7-14

The Blasting crew set-up drilled and blasted the proposed Rock Layer. The data is as follows:

TH #	STA #	Depth To Top of Rock (ft)	Depth of Rock (ft)	TH #	STA #	Depth To Top of Rock (ft)	Depth of Rock (ft)
1	46+45	25	27	24	47+83	24	28
2	46+63	25	27	25	47+89	24	28
3	46+69	24	27	26	47+95	24	28
4	46+75	24	27	27	48+01	24	28
5	46+81	24	27.5	28	48+07	24	28
6	46+87	24	28	29	48+13	24	28
7	46+93	24	28	30	48+19	24	28
8	46+99	24	28				
9	47+05	25	28.5				
10	47+11	24	28				
11	47+17	24	28				
12	47+23	22.5	28				
13	47+29	24	28				
14	47+35	24.5	28				
15	46+51	25	27				
16	46+57	25	27.5				
17	47+41	24	27.5				
18	47+47	24	28				
19	47+53	24	27.5				
20	47+59	24	27.5				
21	47+65	24	27.5				
22	47+71	23.5	27.5				
23	47+77	24	28				

This data was collected
by Wayne Walker of
The Brandon Office
of Ardaman & Assoc.

Clients' Rep. _____

Ardaman & Associates

W. Walker



Ardaman & Associates, Inc.

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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DAILY FIELD REPORTS

Project Lena Rd slurry wall File No. 86115A Time

Client MANATEE COUNTY Weather Sunny Date 7-15

The blasting company continued to drill and blast today but due to mechanical problems only did seven holes. The results are as follows:

TH #	STA #	depth To Rock	depth ^{clay} of clay layer
31	48+25	24	27.5
32	48+31	24	27.5
33	48+37	24	27.5
34	48+43	24	27.5
35	48+49	24	27.5
36	48+55	23.5	28
37	48+61	23.5	28

On the above bearings there appears to be a clay layer (IFD) (from depth 25' to 26') between 2 layers of rock material.

Time on the project 11.0 hrs

Clients' Rep.

Ardaman & Associates

Peter W. Lyall



Ardaman & Associates, Inc.

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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DAILY FIELD REPORTS

Project Lena Rd Landfill Slurry wall File No. 86115A Time _____
Client MANATEE COUNTY Weather Cloudy Date 7-16-89

The contractor started digging today for the slurry wall at STA# 46+20 and stopped at 47+80 at an average depth of 30'. The total production for the day was 4800 FT². The key material is a gray to green clay.

The backfill was mixed, tested, and placed in the trench from STA# 43+50 to STA# 44+60 and the bentonite content added was stepped up to 3 bags for every 100' of trench.

The blasting is breaking the hard layer into pieces 2' and smaller as far as we can tell at this point. The dozer operator has been told to watch for larger pieces. If larger pieces are seen they will be removed from the backfill and not any over 3" will be placed in the trench wall.

Time on the project 12.5 hrs

Clients' Rep. _____

Ardaman & Associates _____

Pete W. Galt



Ardaman & Associates, Inc.

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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32809-3003

DAILY FIELD REPORTS

Project Lena Rd Land Fill Slurry wall File No. 86115A Time _____
Client Manatee County Weather P/C Date 7-16-89

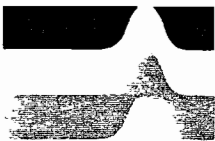
The blasting continued today and 16 holes were drilled and charged. There is still a 1' layer of hard material then 1' of clayey fs w/ phosphate and 1.5 feet of hard material below the clay. The results are as follows:

TH #	STA #	depth To Rock (FT)	depth of ^{clay} Layer (FT)
37	48+61	24	27.5
38	48+67	24	27.5
39	48+73	24	27.5
40	48+79	24	27.5
41	48+85	24	27.5
42	48+91	24	27.5
43	48+97	23.5	27.5
44	48+03	24	27.5
45	49+09	24	27.5
46	49+15	24	27.5
47	49+21	24	27.5
48	49+27	24	27.5
49	49+33	24.5	28
50	49+39	24.5	28
51	49+45	24.5	28
52	49+51	24.5	28

Clients' Rep. _____

Ardaman & Associates _____

P. D. W. [Signature]



DAILY FIELD REPORTS

Project Lena Rd Landfill Slurry wall File No. 86115A Time _____

Client MANATEE COUNTY Weather PIU Date 7-17

The slurry wall excavation continued today from STA #47+80 TO STA #49+20 AT AN AVERAGE OF 31 FT TO THE BOTTOM OF THE CUT FOR A TOTAL OF 4340 FT² PRODUCTION FOR THE DAY. DUE TO PROBLEMS WITH THE PLASTING CREW'S EQUIPMENT THE EXCAVATION WAS HELD BACK.

THE BACKFILL WAS MIXED TESTED AND PLACED IN THE TRENCH FROM STA #44+60 TO STA #46+00. THERE WERE 2 SAMPLES TAKEN AND WILL BE DELIVERED TO THE ORLANDO LAB FOR FURTHER TESTING.

FROM STA 42+00 TO 52+00 THE CONTRACTOR IS ADDING 3,400 LB BAGS OF DRY BENTONITE TO THE BACKFILL PER 100 FT. THE MATERIAL ON TOP OF THE CEMENTED SAND LAY IS ABOUT ALL SAND AT THIS WILL INSURE GOOD PERMEABILITIES AND QUALITY OF THE WALL.

Clients' Rep. _____

Ardaman & Associates

Pete W. Ryan



Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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DAILY FIELD REPORTS

Project Leona Rd Landfill Slurry wall File No. 861150 Time

Client MANATEE COUNTY Weather P/C Date 7-17

The blasting continued today with problems. The cardboard tubes are wanting to float to the top of the bore hole and at about 6:20 the driller had mechanical problems so the operation was stopped until the parts could be obtained. The results of the bore hole for the day are as follows:

TH #	STA #	depth To Rock (ft)	depth of ^{bottom} Rock (ft)
53	49+57	24.5	28.0
54	49+63	24.5	27.5
55	49+69	24.0	27.5
56	49+75	24.0	27.5
57	49+81	24.0	27.5
58	49+87	23.0	26.5
59	49+93	23.0	26.5
60	49+99	23.0	26.5
61	50+05	23.0	26.5
62	50+11	23.0	26.5

Clients' Rep.

Ardaman & Associates Pete W. Gale



Ardaman & Associates, Inc.

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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DAILY FIELD REPORTS

Project Lena Rd Landfill Slurry wall File No. 8615A Time _____

Client MANATEE County Weather PCloudy Date 7-18

The blasting crew drilled and blasted today for the excavation of the slurry wall. There were 10 holes drilled but only 9 charged because the rock layer changed back to clay and there is no more rock in this area. The results are as follows:

TH #	STA #	Depth To Rock	Depth of Rock
63	50+17	23	26.5
64	50+23	23	26.5
65	50+29	23	26.5
66	50+35	23	26.5
67	50+41	23	26.5
68	50+47	23	26.5
69	50+53	23	26.5
70	50+59	23	26.5
71	50+65	No Rock	but charged
72	50+71	No Rock	No charge loaded

Time on the project 11.0 hrs

Clients' Rep. _____

Ardaman & Associates _____

Pete W. [Signature]



Ardaman & Associates, Inc.

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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DAILY FIELD REPORTS

Project Lena Rd Landfill slurry wall File No. 861154 Time _____
Client MANATEE County Weather P/C Date 7-19-89

The contractor started the excavation today at STA # 49+20 and proceeded to STA # 52+80 at a depth ranging from 31 FT to 28 FT in this distance. The TOTAL production for the day was 10590 FT². The key material is a gray-green clay with a trace of Fe₂O₃ + phosphate.

The backfill was mixed, tested, and placed in the trench from STA # 46+00 to STA # 48+40. There were 2 samples taken and will be delivered to the lab for further testing. The contractor has started back adding 2 bags of dry bentonite at 4000 Lbs each to every 100 feet of backfill.

The key material is dry and consolidated but can be cut with a knife and is NOT considered to be rock. The contractor is having problems excavating this material.

Time on project 13.5 hrs

Clients' Rep. _____

Ardaman & Associates

P. W. Jones

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

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32809-3003

DAILY FIELD REPORTS

Project Lena Rd Land Fill Slurry wall File No. 86115A Time _____
Client Manatee County Weather P/C Date 7-19-89

The blasting crew was instructed to do Test Holes
AT my direction in areas that rock may be encountered
on ^{Stage} phase II of the above referenced project. These
Locations were discussed and agreed upon by Bob
Conneybeer with the Slurry wall Contractor (GIT).
The results are as follows:

STA # 58+00

20' HARD CLAY w/tr Phosphate (1')

24' CLAY

STA # 59+00

20' Dense CLAY w/tr Phosphate (1')

24' CLAY

STA # 61+00

20' Dense CLAY w/tr Phosphate (1')

24' CLAY

STA # 62+00

17' CLAYey sand & phosphate

21' dense CLAY w/tr sand + phosphate (1.5')

23' dense CLAY " " (3.5')

STA # 64+00

17' CLAYey FS w/tr phosphate (1.5')

22' dense CLAY w/tr sand + phosphate (3.5')

STA # 66+00

19' CLAY FS w/tr phosphate + sand (2')

23' dense CLAY w/tr phosphate + sand (3.5')

STA # 84+00

19' sandy CLAY w/tr phosphate

24' dense CLAY w/tr phosphate (1')

NOTE:

In the seven location
that ~~the~~ were drilled
and agreed upon by the
contractor no rock
was encountered in the
8" hole bored to
depth of 28'.

Clients' Rep. _____

Ardaman & Associates

Pete W. Baker



DAILY FIELD REPORTS

Project Lena Rd Landfill Slurry wall File No 96-115A Time _____
Client MANATEE COUNTY Weather sunny Date 7-20
P/C

The excavation of the slurry wall continued today from STA #52+80 to STA #56+60 with the depth ranging from 28 FT to 24 FT and a TOTAL production of 9240 FT². The key is a gray to green clay with a trace of sand and phosphate.

The backfill was mixed, tested, and placed in the excavated trench from STA #48+40 to STA #52+80. There were 4 samples taken and these would be sent to the lab for further testing. The contractor is adding 1 bag of dry bentonite at 4000 lbs/bag to each 50' cut at the present depth.

No additional problems have been encountered to the point in time.

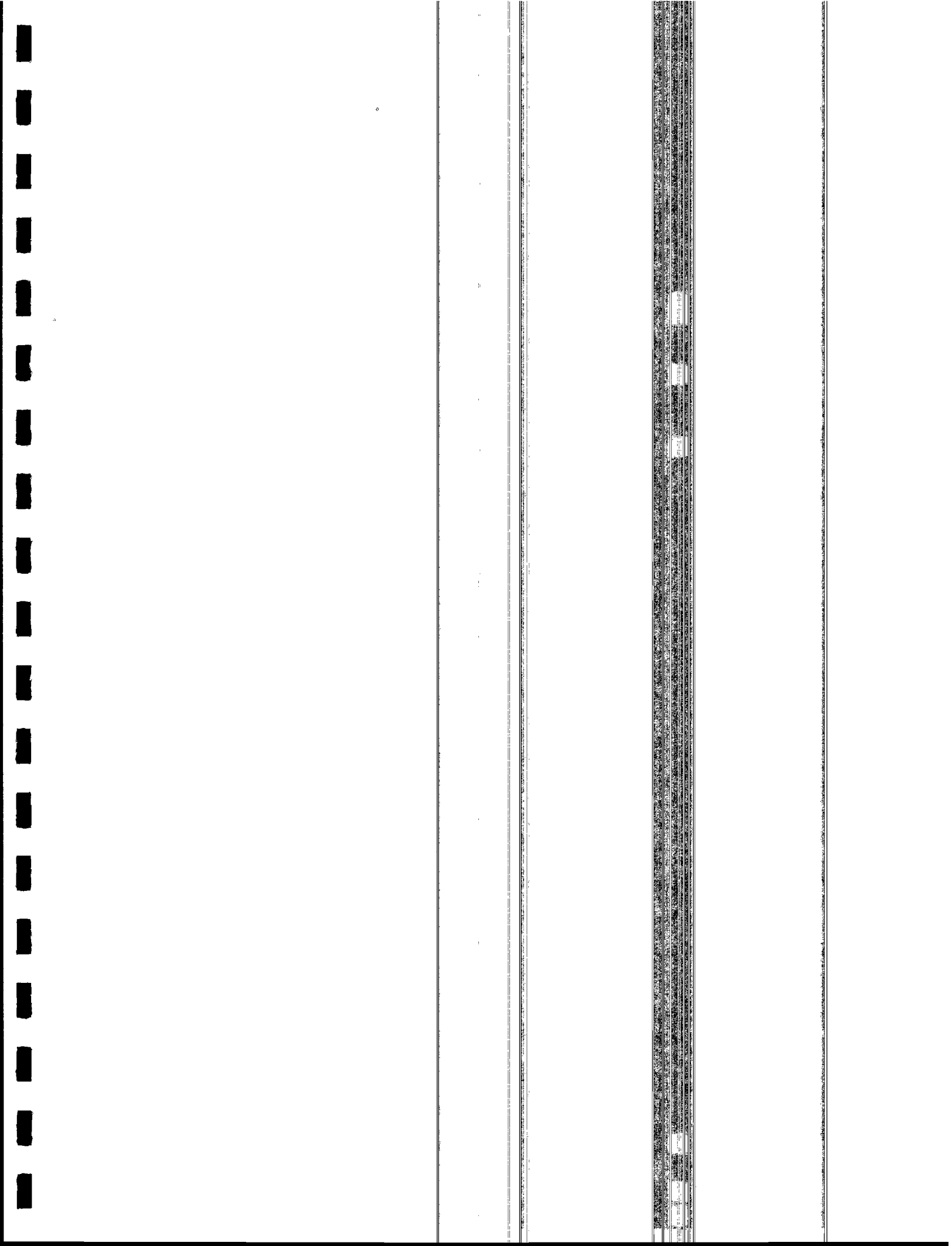
The contractor has been notified that there is 200 FT from the excavation point and the toe of the backfill slope and the trench needs to be closed up to within specified requirements.

Time on the project 13.5 hrs

Clients' Rep. _____

Ardaman & Associates _____

Pete W. L. [Signature]



APPENDIX 2
SLURRY WALL FIELD DATA SHEETS

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Land Fill FILE NO. 86 115 A
 CLIENT Manatee Co WEATHER P/C DATE 6-20-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
14+80	17	20	16+40	20	23	18+00	26	29
15+00	20	23	16+60	15	18			
15+20	21	24	16+80	15	18			
15+40	21	24	17+00	16	19			
15+60	18	21	17+20	17	20			
15+80	21	24	17+40	16	19			
16+00	17	20	17+60	16	19			
16+20	17	20	17+80	16	19			

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
9:20	15+40		66		
9:26	14+80	36			
11:25	15+90	Not Pumping	82		
14:00	16+60	55	84		
16:10	17+30	45	82		
18:07	17+80	Not Pumping	89		

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
10:40	14+50	5	1		✓		
12:55	14+80	4	2		✓		
17:50	15+80	4.5	3	✓			
						5:1	100'

COMMENT _____

NOTE: _____

INSPECTOR: Kieth Foerste

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Land Fill slurry wall FILE NO. 86115A
 CLIENT Monarch Co WEATHER P/B + Rain DATE 6-21-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
18+00	26	29	19+60	31	34			
18+20	33	36	19+80	32	35			
18+40	32	35						
18+60	32	35						
18+80	32	35						
19+00	32	35						
19+20	32	35						
19+40	32	35						

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
9:00	18+00	—	90		Not Pumping
11:10	18+20	47	85		
13:30	18+80	45	80		
15:20	19+20	43	74		
17:35	19+45	41	75		

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
1000	16+80	5"	4		✓	6:1	90'

COMMENT _____

NOTE: _____

INSPECTOR: Keith Roerke

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Land Fill Slurry wall FILE NO. 86115A
 CLIENT Martinez Co WEATHER 9c + Rain P.M. DATE 6-22-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
19+80	32	35	21+40	30	33			
20+00	32	35	21+60	30	33			
20+20	30	33	21+80	30	33			
20+40	30	33	22+00	30	33			
20+60	30	33						
20+80	30	33						
21+00	30	33						
21+20	30	33						

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
9:15	19+70		74		NOT Pumping
10:18	20+20	37	76		
12:40	20+40	42	77		
15:45	20+90	44	75		
17:35	21+70		76		NOT Pumping

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
14:46	17+80	6	5	✓			
						9:1	80'

COMMENT _____

NOTE: _____

INSPECTOR: Kietl Roerster

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Landfill slurry wall FILE NO. 86105A
 CLIENT MANATEE Co WEATHER P.C. Am Rain DATE 6-23-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
22+00	30	33	22+60	30	33			
22+20	30	33	23+80	30	33			
22+40	30	33	24+00	30	33			
22+60	30	33	24+20	30	33			
22+80	30	33	24+40	30	33			
23+00	30	33						
23+20	30	33						
23+40	30	33						

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
7:22	21+80		73		NOT Pumping
9:20	22+30		85		"
11:25	22+80		82		"
14:10	23+10	42	80		
16:15	23+60	38	82		
18:10	24+20		80		NOT Pumping

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
9:33	18+80	4.5	6		✓		
14:00	19+80	5	7	✓			
18:45	20+80	4	8		✓		
						8.5:1	100'

COMMENT _____

NOTE: _____

INSPECTOR: Kiahl Foerster

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Leas Rd Landfill Slurry wall FILE NO. 86115A
 CLIENT Manatee Co WEATHER P.C. Am Rain DATE 6-26-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
24+40	39	33						
24+60	30	33						
24+80	30	33						

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
7:54	24+30		69		Not Pumping
					Back hoe down
					Slurry Pump down

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
8:20	21+90	5"				7.5:1	50'

COMMENT No samples Taken

NOTE: _____

INSPECTOR: Kietl Foster

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Land Fill slurry wall FILE NO. 86 115A
 CLIENT Manatee Co WEATHER PC AM RAIN DATE 6-27-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
24+80	30	33	26+40	30	33			
25+00	30	33	26+60	30	33			
25+20	30	33	26+80	30	33			
25+40	30	33	27+00	30	33			
25+60	30	33	27+20	30	33			
25+80	30	33	27+40	30	33			
26+00	30	33						
26+20	30	33						

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
9:52	24+90	38	73		
12:00	25+10	—	75		No Pumping
14:30	25+40	39	76		
16:35	26+10	42	78		
18:40	26+70	42	80		

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
11:25	21+90	4	9	✓			
15:10	22+80	6	10		✓		
19:36	23+80	5	11	✓			
						8:1	140'

COMMENT _____

NOTE: _____

INSPECTOR: K. A. T. Pearce

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lens Rd Landfill Slurry wall FILE NO. 86115A
CLIENT Manatee Co WEATHER P/C AM Rain DATE 6-28-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
27+40	30	33	29+00	25	28	30+60	24	27
27+60	30	33	29+20	25	28	30+80	23	26
27+80	30	33	29+40	25	28	31+00	23	26
28+00	30	33	29+60	25	28			
28+20	30	33	29+80	25	28			
28+40	30	33	30+00	25	28			
28+60	30	33	30+20	24	27			
28+80	25	28	30+40	24	27			

COMMENT

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
8:50	27+50		91		NOT Pumping
11:00	28+00		93		NOT Pumping
13:00	28+30	43	92		
15:00	28+90	41	90		
17:10	29+60		95		NOT Pumping
19+20	30+00	40	94		

COMMENT

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
9:40	24+80	4.5	1.2		✓		
13:10	25+80	5	1.3	✓			
17:15	26+80	5	1.4		✓		
20:15	27+70	5	1.5	✓			
						B:1	70'
							SARASOTA OFFICE
							Picked up samples
							#35, 3, 9, 11 For SA
							10, 12 For SA + K

COMMENT

NOTE :

INSPECTOR: Kietz Forster

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Land Fill Slurry wall FILE NO. 86115A
 CLIENT Manatee Co WEATHER PC Rain most day DATE 6-29-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
31+00	23	26	32+60	23	26	34+20	28	31
31+20	23	26	32+80	23	26			
31+40	23	26	33+00	23	26			
31+60	23	26	33+20	24	27			
31+80	23	26	33+40	24	27			
32+00	23	26	33+60	25	28			
32+20	23	26	33+80	26	29			
32+40	23	26	34+00	27	30			

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
9:20	31+50	45	93		
11:30	32+00		92		Not Pumping
14:00	32+40		94		" "
16:17	32+80		96		" "
17:12	32+80	40	—		
18:20	33+60	42	95		

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
10:04	28+80	4.5	16		✓		
13:37	29+80	5	17	✓			
15:55	30+80	5	18		✓		
						6:1	80'

COMMENT _____

NOTE: _____

INSPECTOR: Kirk Foerster

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Land Fill Slurry Wall FILE NO. 86115A
 CLIENT Manatee Co WEATHER 9/1 AM Rain DATE 6-30-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
34+20	28	31	35+80	27	30			
34+40	29	32						
34+60	29	32						
34+80	29	32						
35+00	28	31						
35+20	28	31						
35+40	27	30						
35+60	27	30						

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
8:30	33+90		94		NOT Pumping
10:25	34+60	38	95		
13:10	34+90		94		NOT Pumping
15:02	35+20		94		NOT Pumping

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
11:45	31+80	4	19	✓			
15:15	32+80	4.5	20		✓		
						6:1	70'

COMMENT _____

NOTE: _____

INSPECTOR: Kiath Foerste

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT LENA RD HAND FILL Slurry wall FILE NO. 86-115A
 CLIENT MANATSE WEATHER ☀ P/C DATE 7-5-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
35+80	27	30	37+40	26	29	39+00	23	26
36+00	27	30	38+60	24	27	39+20	23	26
36+20	27	30	37+80	24	27	39+40	23	26
36+40	27	30	38+00	23	26	39+60	23	26
36+60	27	30	38+20	23	26			
36+80	27	30	38+40	23	26			
38+00	27	30	38+60	23	26			
38+20	27	30	38+80	23	26			

COMMENT TOTAL = 10580 LF

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
8:05	36+00	39	86		
10:00	36+40	40	89		
12:10	36+90	NOT Pumping	89		
14:15	37+20	42	91		
16:10	38+00	NOT Pumping	94		
18:05	39+60	38	95		

COMMENT

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
10:38	33+80	5.5	21	✓			
14:00	34+80	4	22		✓		
16:43	35+80	4.5	23	✓			
						8:1	120'

COMMENT

NOTE:

INSPECTOR: K. Z...

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Land Fill FILE NO. 86 115 A
 CLIENT Manatee Co. WEATHER Sunny Afternoon Rain DATE 7-6-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
39+60	23	26	41+20	23	26	42+80	23	26
39+80	23	26	41+40	23	26	43+00	23	26
40+00	23	26	41+60	23	26	43+20	23	26
40+20	23	26	41+80	23	26	43+40	23	26
40+40	23	26	42+00	23	26	43+60	23	26
40+60	23	26	42+20	23	26	43+80	23	26
40+80	23	26	42+40	23	26			
41+00	23	26	42+60	23	26			

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
8:09	39+70	40	95		
10:10	40+20	39	96		
1:50	42+40	37	98		
					RAIN 2:45-3:45 2.5"
5:15	42+80	40	93		
7:00	43+60	38	94		

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
8:20	36+80	5.5	24		✓		
11:20	37+80	5.0	25	✓			
1:55	38+80	5.0	26		✓		
5:05	39+80	5.5	27	✓			
						10:1	85'

COMMENT Back Fill Top out AT 39+90

NOTE: Keith Foerste carried sample to Lab

INSPECTOR: P. W. [Signature]

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Landfill FILE NO. 86115A
 CLIENT Marathon Co WEATHER Sunny DATE 7-7-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
43+80	23	26						
44+00	25	28						
44+20	25	28						
44+40	25	28						
44+60	26	29						
44+80	26	29						

COMMENT Broke Through The Cemented Sand Layer

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
1:00	43+80	Not Pumping	90		
3:00	44+20	39	92		

COMMENT STARTED 10:00

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
						12:1	60'

COMMENT No Backfill slope slid down

NOTE: _____ INSPECTOR: RTW

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Landfill FILE NO. 86115A
 CLIENT Manatee Co. WEATHER Sunny DATE 7-10-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
44+80	26	29						
45+00	25	28						
45+20	25	28						
45+40	25	28						
45+60	25	28						
45+80	25	28						

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
9:00	45+00		98		
					Back hoe down 9:30-2:30
4:00	45+20	37			
4:35	45+20		88		
6:15	45+60	38	89		

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
9:00	40+80	5	28		✓		
4:45	42+80	6	29	✓			
						8:1	50'

COMMENT _____

NOTE: _____

INSPECTOR: Peter Ingalls

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Landfill slurry wall FILE NO. 86115A
 CLIENT Manateen Co WEATHER sunny DATE 7-11

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
45+80	25	28						
46+00	26	29						
46+20	26	29						

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
8:00	45+80	36	87		

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
7:45	42+80	5.5	30		✓		
						10:1	
							35'
							ditch closed for the
							possible blasting
							procedure

COMMENT _____

NOTE: _____

INSPECTOR: Pete W. Ryan

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Land Fill Slurry wall FILE NO. 86115A
 CLIENT Manatee Co WEATHER Cloudy DATE 7-16

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
46+20	26	29						
46+40	27	30						
46+80	27	30						
47+00	27	30						
47+20	27	30						
47+40	27	30						
47+60	27	30						
47+80	28	31						

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
9:50	45+20	37	86		
12:45	46+40	45	93		
2:20	46+80	40	95		
3:50	47+60	40	97		

COMMENT START up 9:00 am shut down 4:15

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
11:30	43+00	4.5	31	✓			
1:45	44+00	5.0	32		✓		
						8.5:1	60'

COMMENT _____

NOTE: _____

INSPECTOR: Pete Tappin

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Landfill Slurry Wall FILE NO. 86115A
 CLIENT Manatee Co WEATHER P/C DATE 7-17-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
47+80	28	31						
48+00	28	31						
48+20	28	31						
48+40	28	31						
48+60	28	31						
48+80	28	31						
49+00	28	31						
49+20	28	31						

COMMENT Crew stopped For blasting (No room To dig)

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
10:30	47+80	37	93		
12:00	48+60	37	97		
3:35	48+80	34	96		Low visc. is To Try To Lower The Unit wt.

COMMENT STARTUP 9:30 AM - STOP 12:00 - START 3:00 - STOP 4:15

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
10:45	45+00	5.5	33	✓			
3:30	46+00	4.5	34		✓		
						2.7:1	50'

COMMENT

NOTE:

INSPECTOR: Peter W. Lyall

1

PROJECT Lena Rd Landfill slurry wall FILE NO. 26115A
CLIENT Manatee Co WEATHER PC DATE 7-19

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
49+20	28	31	50+80	27	20	52+40	25	28
49+40	28	31	51+00	27	20	52+60	25	28
49+60	27	30	51+20	27	30	52+80	25	28
49+80	27	30	51+40	27	30			
50+00	27	20	51+60	26	29			
50+20	27	20	51+80	25	28			
50+40	27	20	52+00	25	28			
50+60	27	20	52+20	25	28			

COMMENT

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
7:30	48+60	38			
9:10	48+80	37	97		
11:30	49+20	38	98		
2:30	49+40	38	102		
4:30	50+20	35	101		
6:15	51+20	—	99		NOT Pumping

COMMENT The visc was kept below 40 sec To Lower The unit wt.

BACKFILL DATA

[illegible]

COMMENT Back F.V. was held back To help lower the unit WTE.

NOTE :

INSPECTOR: Peter Ingalls

ARDAMAN & ASSOCIATES, INC.

SLURRY WALL INSPECTION FIELD DATA REPORT

PROJECT Lena Rd Land Fill Slurry wall FILE NO. 86115A
 CLIENT Manatee Co WEATHER P/C DATE 7-20-89

EXCAVATION DATA

STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)	STATION	DEPTH TO CLAY (FT)	DEPTH OF TRENCH (FT)
52+80	25	28	54+40	21	24	56+00	21	24
53+00	24	27	54+60	21	24	56+20	21	24
53+20	23	26	54+80	21	24	56+40	21	24
53+40	22	25	55+00	21	24	56+60	21	24
53+60	22	25	55+20	21	24			
53+80	22	25	55+40	21	24			
54+00	22	25	55+60	21	24			
54+20	21	24	55+80	21	24			

COMMENT _____

SLURRY DATA

TIME	STATION	VISCOSITY (SECS)	UNIT WEIGHT (PCF)	FILTRATE LOSS (CC)	REMARKS
7:30	51+60	40	94		
9:15	52+80	40	87		
11:30	53+00	—	89		NOT Pumping
1:45	53+80	—	95		NOT Pumping
2:00	54+80	38	—		
4:00	54+40	35	93		
5:45	55+20	28	91		

COMMENT _____

BACKFILL DATA

TIME	STATION	SLUMP (INCHES)	SAMPLE NO.	TEST REQUIRED (✓)		SLOPE OF BACKFILL (H:V)	DISTANCE BETWEEN TOES OF BACKFILL AND EXCAVATION (FT)
				SA	K+SA		
9:00	49+00	6.0	37	✓			
1:20	50+00	5.0	38		✓		
4:00	51+00	6.5	39	✓			
6:00	52+00	5.5	40		✓		
						7.5:1	200'

COMMENT _____

NOTE: _____ INSPECTOR: Pete Dyer