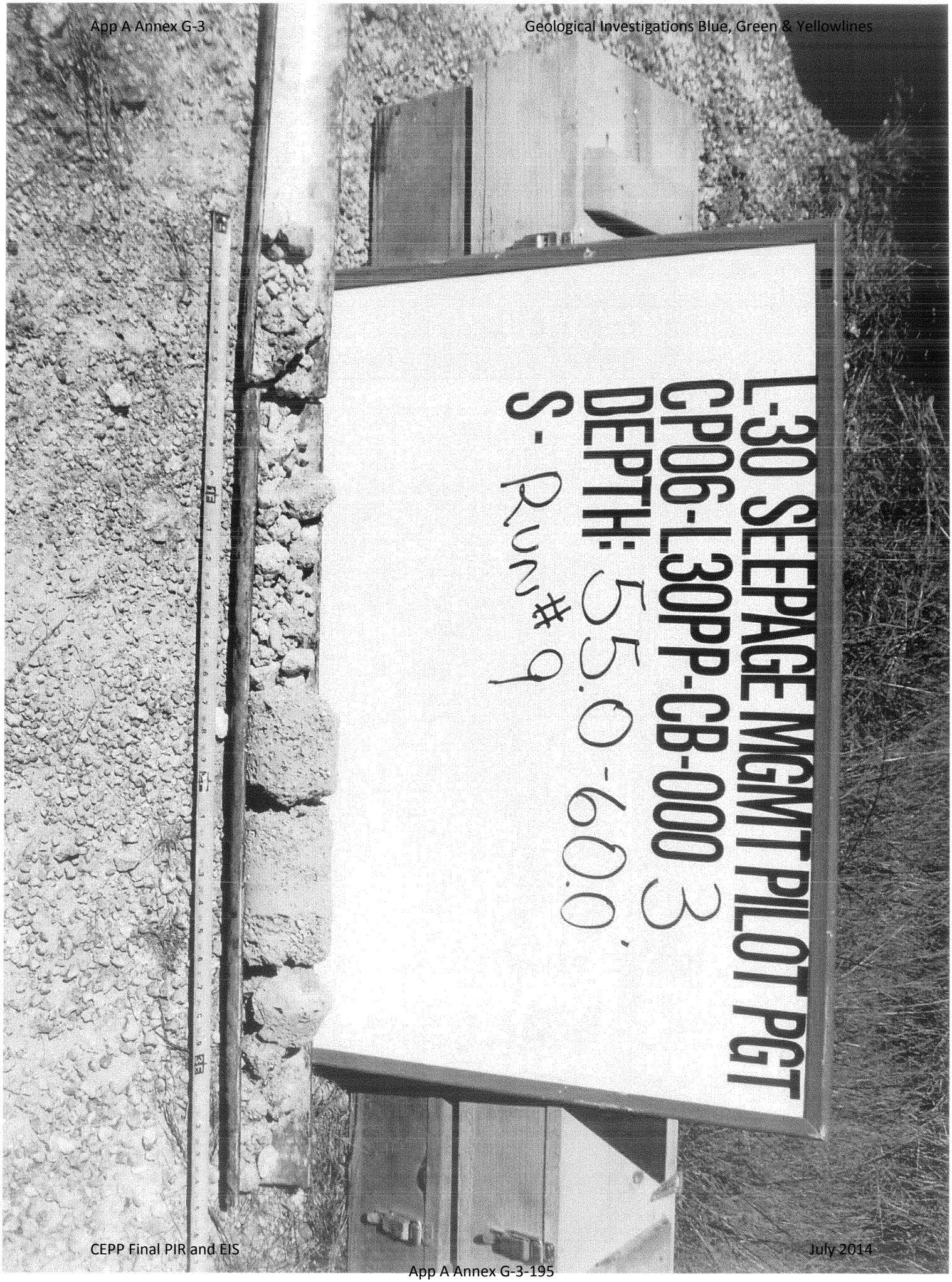
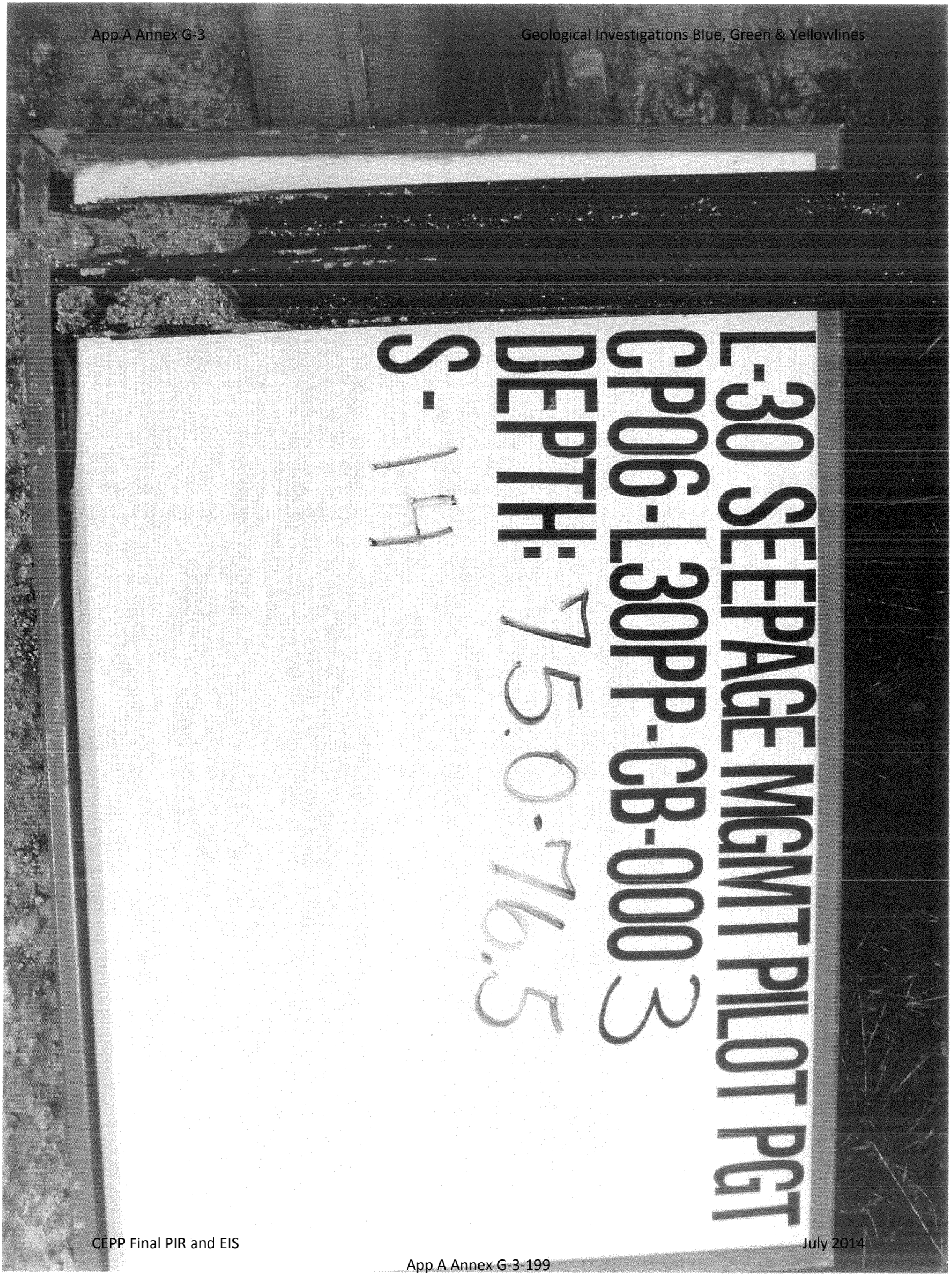
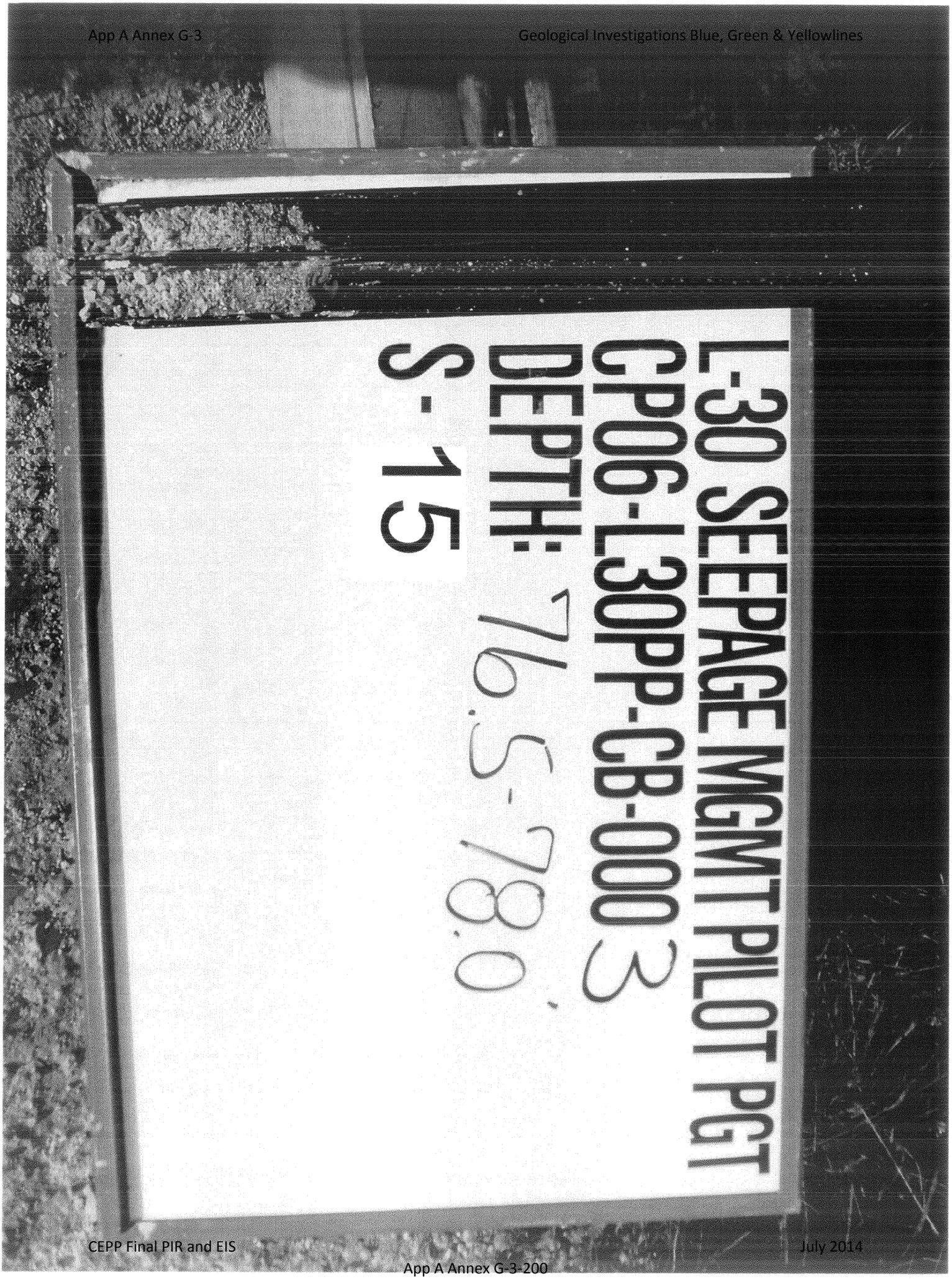

L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-000 3
DEPTH: 55.0 - 60.0'
S. Run #9

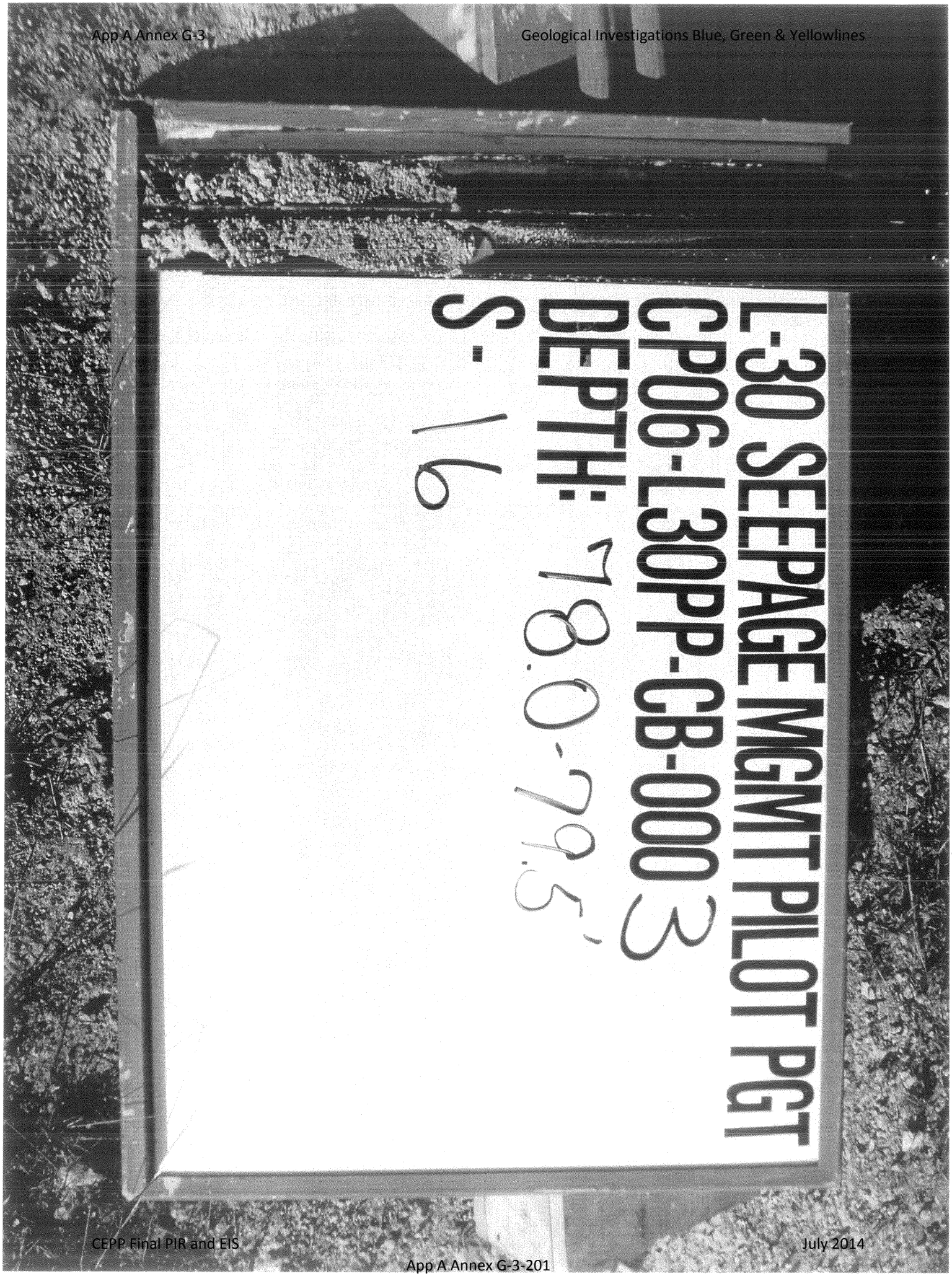
L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-000 3
DEPTH: 600-650'
S- Run #10

L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-0003
DEPTH: 650-700'
S- Run #11

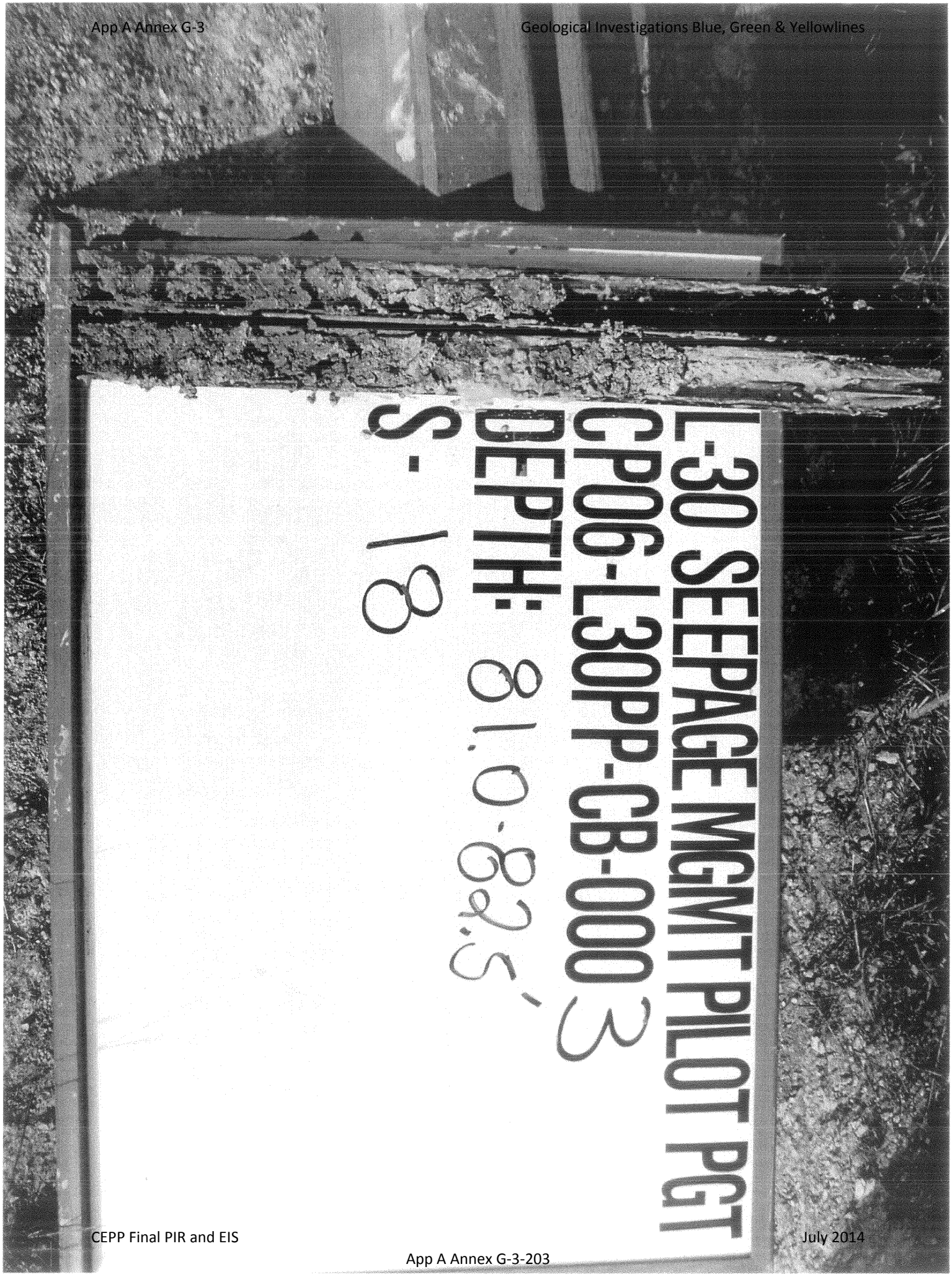
L-30 SEEPAGE MGMT PILOT PGT
GP06-L30PP-CB-000 3
DEPTH: 70.0-75.0'
S- Run#12


L-30 SEEPAGE MGMT PILOT PGT
GP06-L30PP-GB-0003
DEPTH: 75.0-76.5
S: 1H

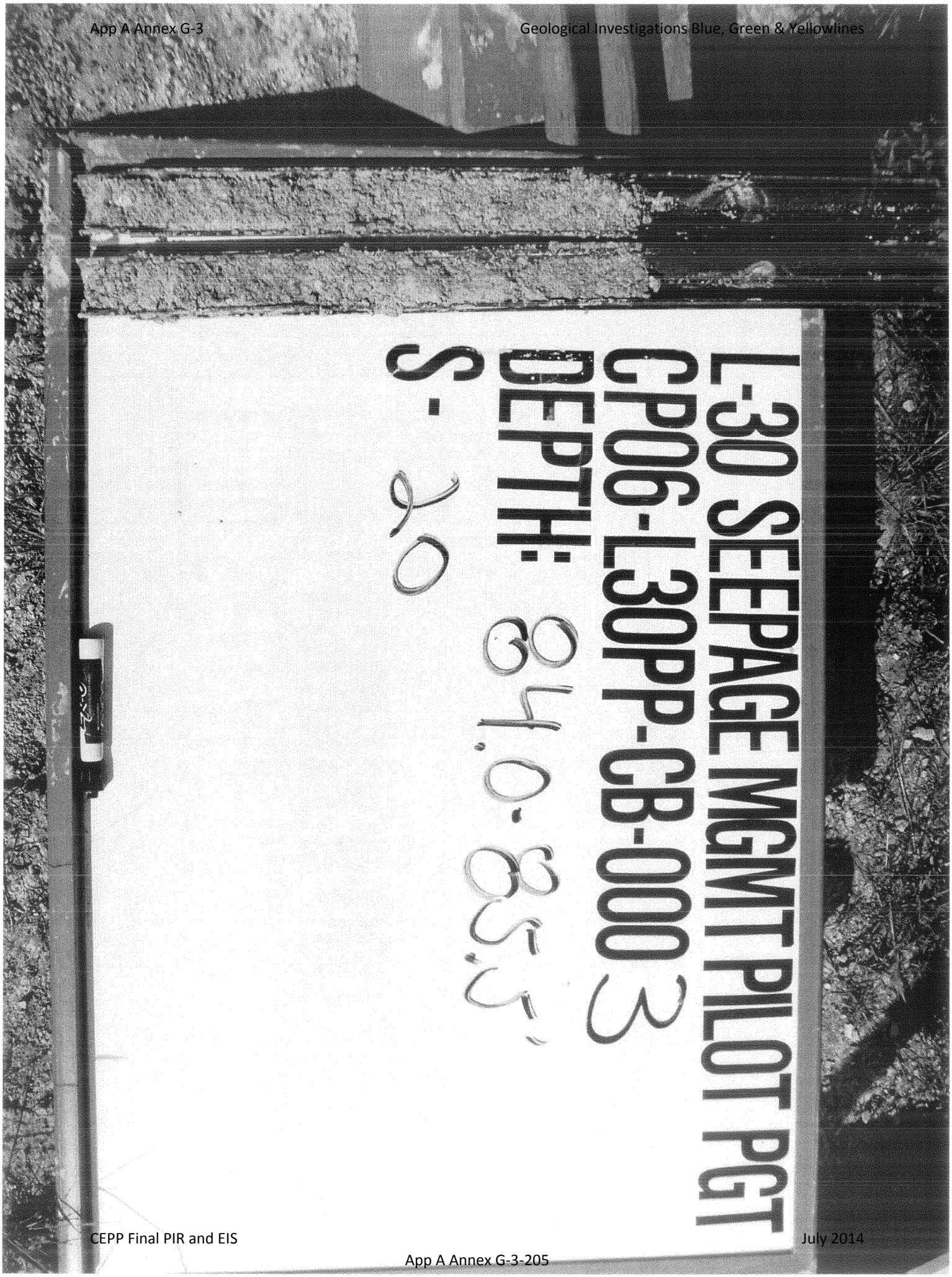

L-30 SEEPAGE MGMT PILOT PGT
GP06-L30PP-GB-000 3
DEPTH: 76.5-78.0
S-15


L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-0003
DEPTH: 78.0-79.5'
S-16

L-30 SEEPAGE MGMT PILOT PG
GP06-L30PP-CB-0003
DEPTH: 19.5-81.0
S: 17


L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-0003
DEPTH: 8.0-8.25'
S-18

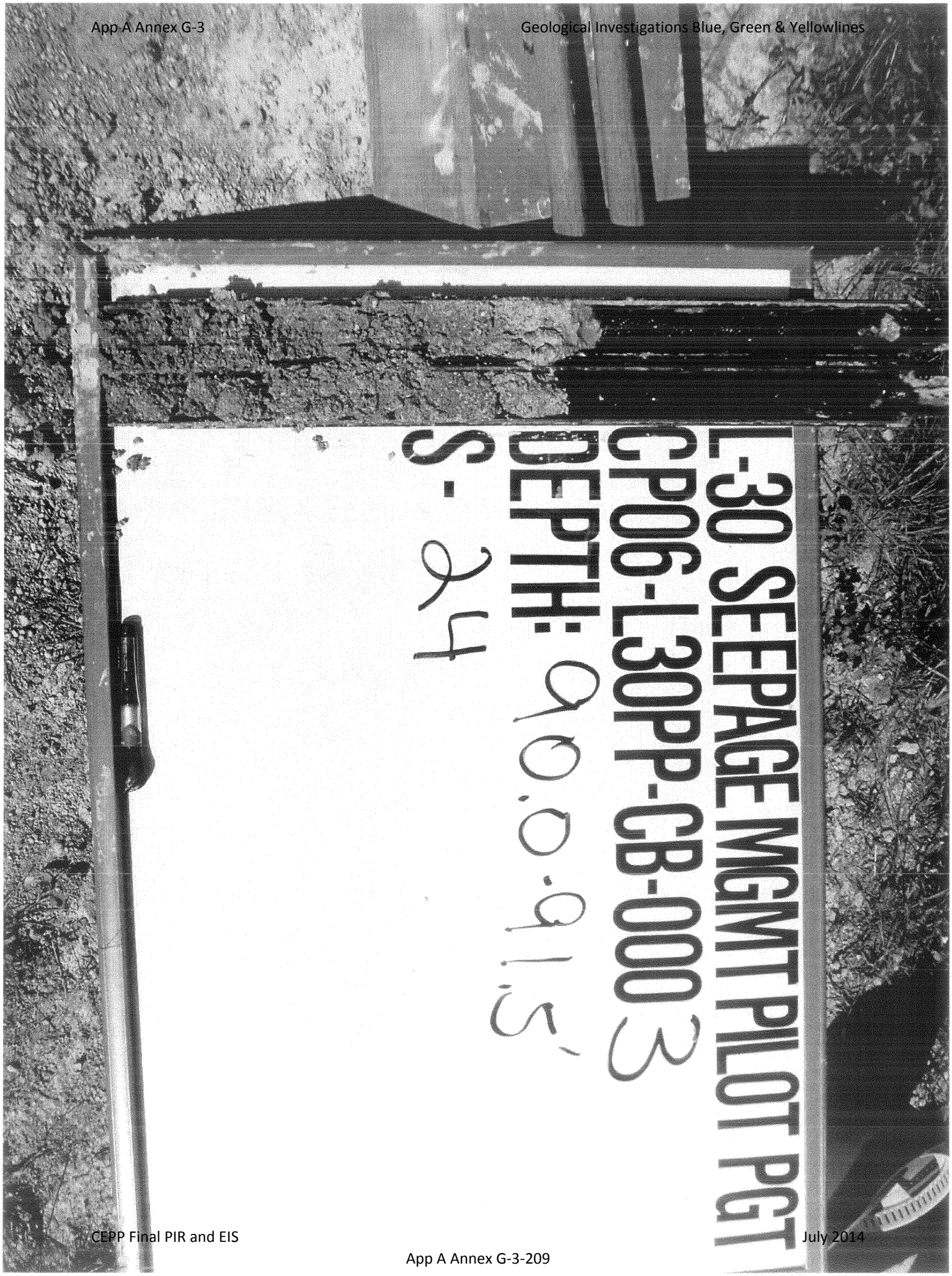
L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-0003
DEPTH: 82.5-84.0
S-19


L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-0003
DEPTH: 84.0-85.5'
S- 20

L-30 SEEPAGE MGMT PILOT PGT
GP06-L30PP-GB-0003
DEPTH: 85.5-87.0'
S-9-1

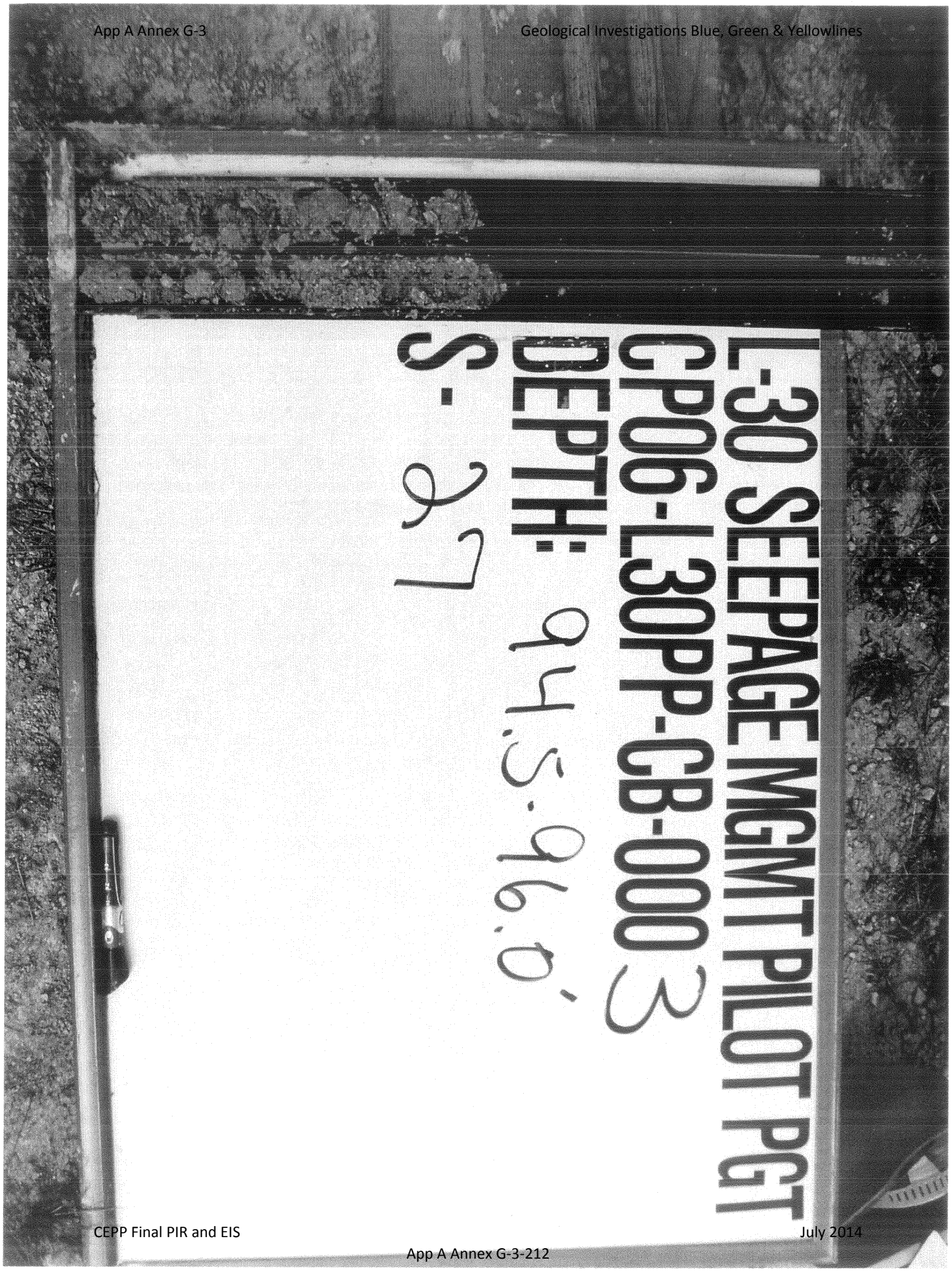
L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-0003
DEPTH: 87.0-88.5'
S-22

L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-0003
DEPTH: 88.5-90.0'
S-23


L-30 SEEPAGE MGMT PILOT PGT
GP06-L30PP-CB-0003
DEPTH: 90.0-91.5
S-94

L-30 SEEPAGE MGMT PILOT P
CP06-L30PP-CB-0003
DEPTH: 91.5-93.0'
S-25

L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-0003
DEPTH: 93.0-94.5'
S- 26


L30 SEEPAGE MGMT PILOT PGT
GP06-L30PP-GB-0003
DEPTH: 94.5-96.0'
S: L8

L-30 SEEPAGE MGMT PILOT PGT
GP06-L30PP-GB-0003
DEPTH: 96.0-97.5'
S: 8

L-30 SEEPAGE MGMT PILOT
CP06-L30PP-CB-0003
DEPTH: 97.5-98.0'
S: 99

L-30 SEEPAGE MGMT PILOT PO
GP06-L30PP-GB-0003
DEPTH: 99.0-100.5'
S.W.O

L-30 SEEPAGE MGMT PILOT PGT
CP06-L30PP-CB-0003
DEPTH: 100.5-102.0'
S: 3-1

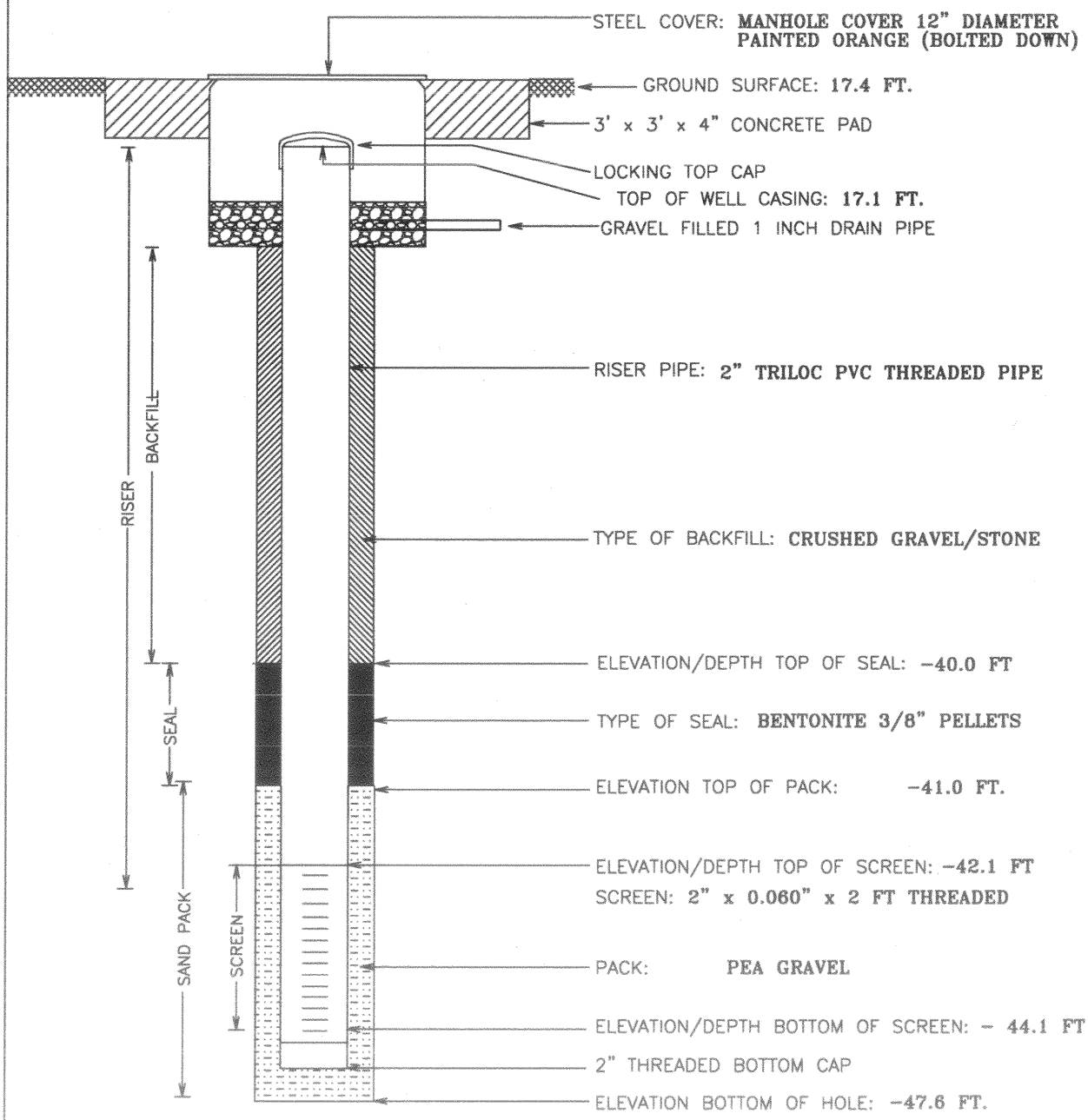
L-30 SEEPAGE MGMT PILOT
CP06-L30PP-CB-000 3
DEPTH: 102.0-103.5'
S-32

L-30 SEEPAGE MGMT PILOT PGT
GP06-L30PP-GB-0003
DEPTH: 103.5-105.0
S: 3 3

MONITORING WELL CONSTRUCTION DIAGRAMS

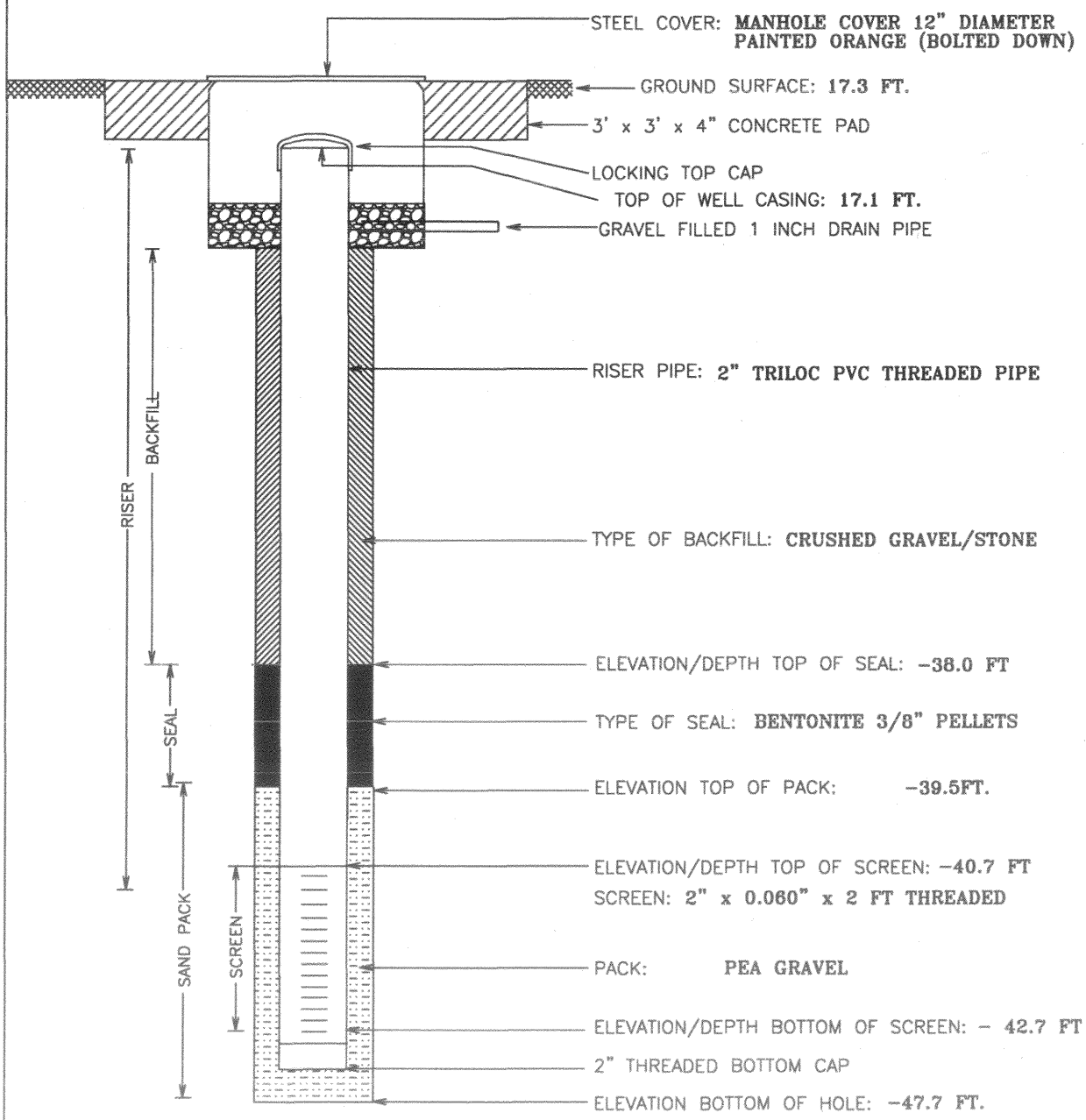
CHALLENGE ENGINEERING & TESTING, INC. 4234 HALLS MILL ROAD, MOBILE, ALABAMA 36693 (251) 666-1435	MONITORING WELL CONSTRUCTION LOG
PROJECT: **L-30 SEEPAGE MANAGEMENT PILOT PROJECT DADE COUNTY, FLORIDA** LOCATION: **L-30 LEVEE (TAMIAMI TRAIL & KROME AVE.)** BORING: **CP06-L30PP-MW-0001** CHALLENGE JOB NO.: **2006D30** DATE: **OCTOBER 20, 2006**	DRILLER: **ADAM BENSON** DRILLING METHOD: **MUD ROTARY DRILLING** DEVELOPMENT METHOD: **PUMPING/SURGING** GROUND ELEVATION: **17.4**

LOCATION: TOP OF LEVEE L-30 (SOUTH SIDE OF ROADWAY)
N = 524,270 E = 826,074



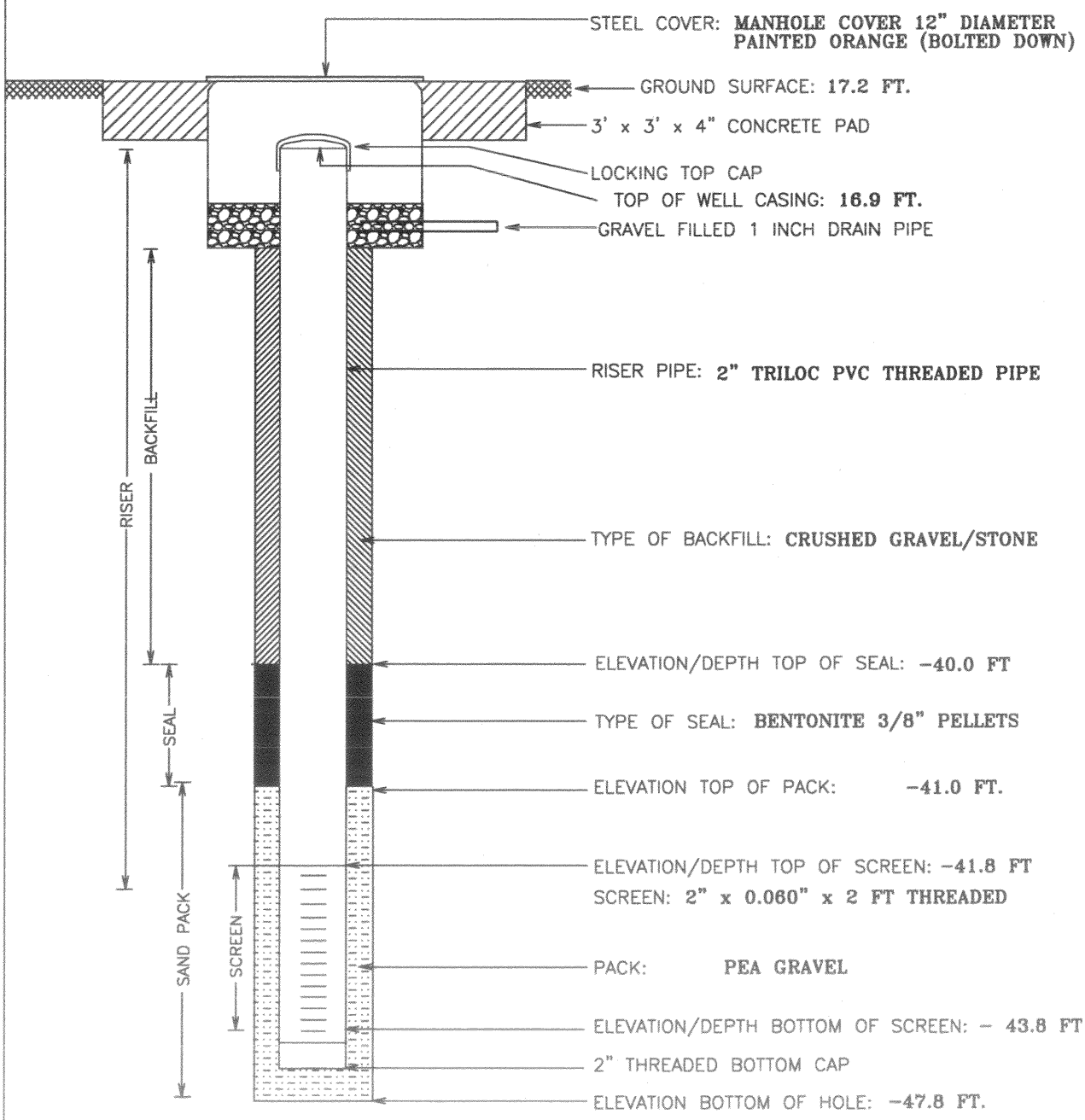
CHALLENGE ENGINEERING & TESTING, INC. 4234 HALLS MILL ROAD, MOBILE, ALABAMA 36693 (251) 666-1435	MONITORING WELL CONSTRUCTION LOG
PROJECT: **L-30 SEEPAGE MANAGEMENT PILOT PROJECT DADE COUNTY, FLORIDA** LOCATION: **L-30 LEVEE (TAMIAMI TRAIL & KROME AVE.)** BORING: **CP06-L30PP-MW-0002** CHALLENGE JOB NO.: **2006D30** DATE: **OCTOBER 20, 2006**	DRILLER: **ADAM BENSON** DRILLING METHOD: **MUD ROTARY DRILLING** DEVELOPMENT METHOD: **PUMPING/SURGING** GROUND ELEVATION: **17.3 FT. NAVD88**

LOCATION: TOP OF LEVEE L-30 (SOUTH SIDE OF ROADWAY)
N = 522,036 E = 823,754



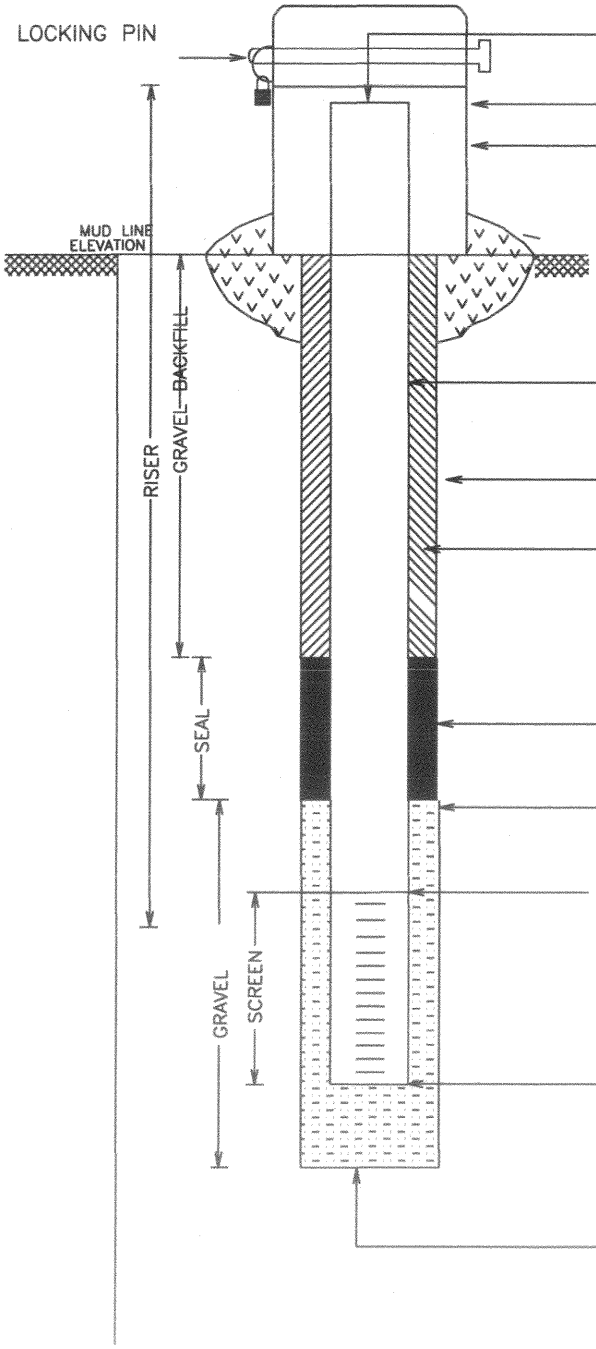
CHALLENGE ENGINEERING & TESTING, INC. 4234 HALLS MILL ROAD, MOBILE, ALABAMA 36693 (251) 666-1435	MONITORING WELL CONSTRUCTION LOG
PROJECT: **L-30 SEEPAGE MANAGEMENT PILOT PROJECT DADE COUNTY, FLORIDA** LOCATION: **L-30 LEVEE (TAMIAMI TRAIL & KROME AVE.)** BORING: **CP06-L30PP-MW-0003** CHALLENGE JOB NO.: **2006D30** DATE: **OCTOBER 20, 2006**	DRILLER: **ADAM BENSON** DRILLING METHOD: **MUD ROTARY DRILLING** DEVELOPMENT METHOD: **PUMPING/SURGING** GROUND ELEVATION: **17.2 FT. NAVD88**

LOCATION: TOP OF LEVEE L-30 (SOUTH SIDE OF ROADWAY)
N = 519,734 E = 821,356



CHALLENGE ENGINEERING & TESTING, INC. 4234 HALLS MILL ROAD, MOBILE, ALABAMA 36693 (251) 666-1435	MONITORING WELL CONSTRUCTION LOG
PROJECT: **L-30 SEEPAGE MANAGEMENT PILOT PROJECT**	DRILLER: **ADAM BENSON**
LOCATION: **DADE COUNTY, FL (TAMIAMI TRAIL & KROME AVE.)**	DRILLING METHOD: **ROLLER BIT - WET ROTARY**
BORING: **CP06-L30PP-MW-0004**	DEVELOPMENT METHOD: **PUMPING/SURGING**
CHALLENGE JOB NO.: **2006D30**	TOP OF CASING: **12.00 FT.**
DATE: **NOVEMBER 2006**	FIELD GEOLOGIST: **BOB MOMBERGER, P.G.**

- MARINE WELL -



TOP CAP WITH VENT HOLE

ELEVATION OF TOP OF RISER PIPE: **12.00 FT.**

STICK-UP TOP OF SECURITY CASING: **6" SCHEDULE 80 PVC**

RISER PIPE: **2" TRILOC PVC THREADED PIPE**

BOREHOLE DIAMETER: **4.5"**

TYPE OF BACKFILL: **CRUSHED GRAVEL BACKFILL**

TYPE OF SEAL: **BENTONITE 3/8" PELLETS**

PEA GRAVEL BACKFILL

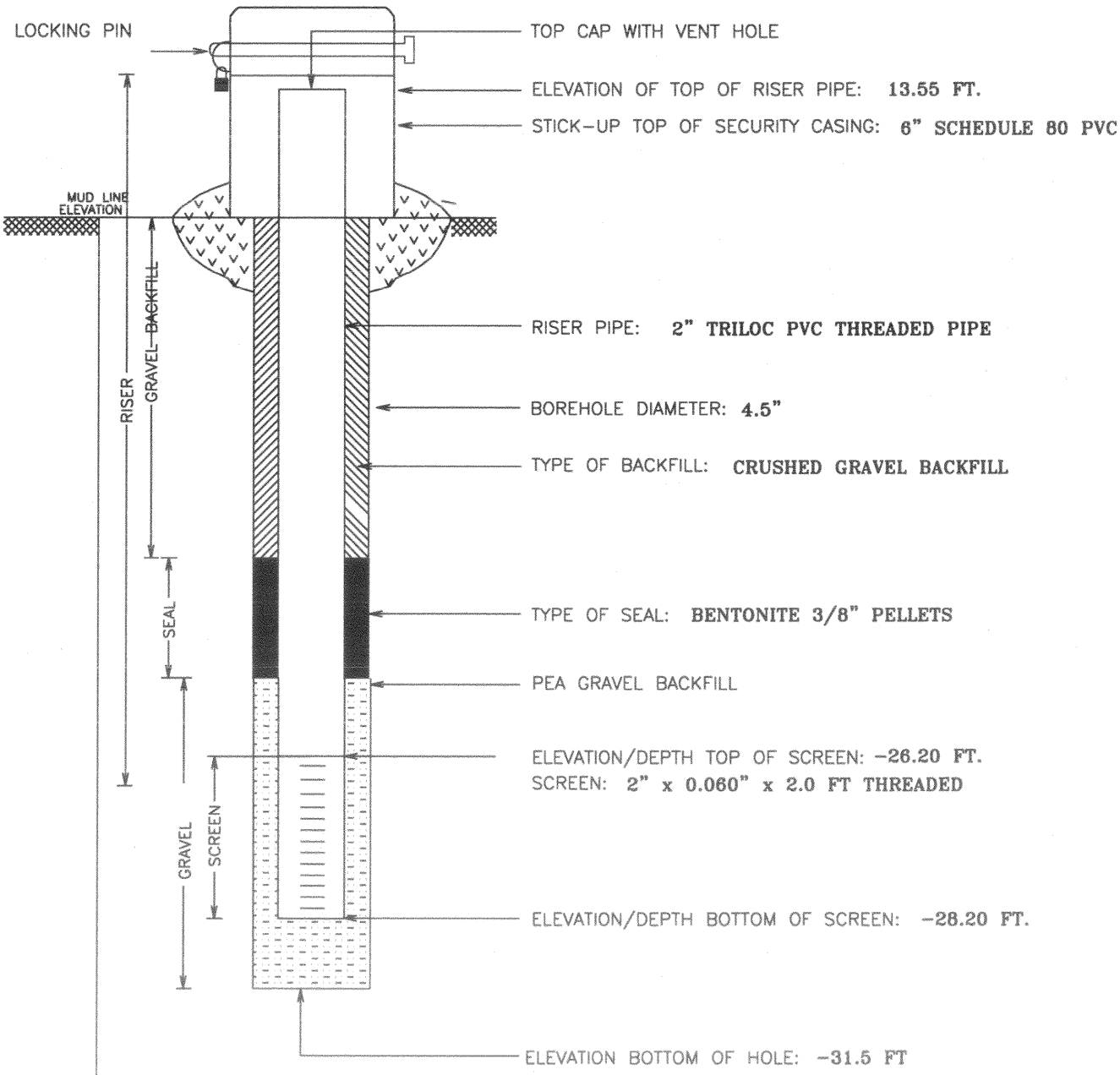
ELEVATION/DEPTH TOP OF SCREEN: **-23.8 FT.**
SCREEN: **2" x 0.060" x 2.0 FT THREADED**

ELEVATION/DEPTH BOTTOM OF SCREEN: **-25.8 FT.**

ELEVATION BOTTOM OF HOLE: **-30.0 FT**

CHALLENGE ENGINEERING & TESTING, INC. 4234 HALLS MILL ROAD, MOBILE, ALABAMA 36693 (251) 666-1435	MONITORING WELL CONSTRUCTION LOG
PROJECT: **L-30 SEEPAGE MANAGEMENT PILOT PROJECT**	DRILLER: **ADAM BENSON**
LOCATION: **DADE COUNTY, FL (TAMIAMI TRAIL & KROME AVE.)**	DRILLING METHOD: **ROLLER BIT - WET ROTARY**
BORING: **CP06-L30PP-MW-0005**	DEVELOPMENT METHOD: **PUMPING/SURGING**
CHALLENGE JOB NO.: **2006D30**	TOP OF CASING: **13.55 FT.**
DATE: **NOVEMBER 2006**	FIELD GEOLOGIST: **BOB MOMBERGER, P.G.**

- MARINE WELL -



CORE BOX INVENTORY REPORT & PHOTOGRAPHS

```
ENCP06-L30PP-CB-0001  L-30 Seepage M~BOX 1 OF 5 BOXES; BORING 1 OF 1 BORING; EL. -0.2 TO -14.7; BOX ID: 1A Loca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0001  L-30 Seepage M~BOX 2 OF 5 BOXES; BORING 1 OF 1 BORING; EL. -14.7 TO -24.7; BOX ID: 2ALoca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0001  L-30 Seepage M~BOX 3 OF 5 BOXES; BORING 1 OF 1 BORING; EL. -24.7 TO -39.7; BOX ID: 3ALoca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0001  L-30 Seepage M~BOX 4 OF 5 BOXES; BORING 1 OF 1 BORING; EL. -39.7 TO -50.7; BOX ID: 4ALoca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0001  L-30 Seepage M~BOX 5 OF 5 BOXES; BORING 1 OF 2 BORINGS; EL. -50.7 TO -87.7; BOX ID: ~Loca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0002  L-30 Seepage M~BOX 1 OF 4 BOXES; BORING 1 OF 1 BORING; EL. 0.2 TO -12.5; BOX ID: 6A  Loca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0002  L-30 Seepage M~BOX 2 OF 4 BOXES; BORING 1 OF 1 BORING; EL. -12.5 TO -32.5; BOX ID: 7ALoca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0002  L-30 Seepage M~BOX 3 OF 4 BOXES; BORING 1 OF 1 BORING; EL. -32.5 TO -52.5; BOX ID: 8ALoca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0002  L-30 Seepage M~BOX 4 OF 4 BOXES; BORING 1 OF 1 BORING; EL. -52.5 TO -91.5; BOX ID: 9ALoca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0003  L-30 Seepage M~BOX 1 OF 5 BOXES; BORING 1 OF 1 BORING; EL. -0.3 TO -11.8; BOX ID: 10ALoca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0003  L-30 Seepage M~BOX 2 OF 5 BOXES; BORING 1 OF 1 BORING; EL. -11.8 TO -29.3; BOX ID: 1~Loca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0003  L-30 Seepage M~BOX 3 OF 5 BOXES; BORING 1 OF 1 BORING; EL. -29.3 TO -44.8; BOX ID: 1~Loca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0003  L-30 Seepage M~BOX 4 OF 5 BOXES; BORING 1 OF 1 BORING; EL. -44.8 TO -86.3; BOX ID: 1~Loca~ 1BX  PITCHFORDKARENEN-GG3295
ENCP06-L30PP-CB-0003  L-30 Seepage M~BOX 5 OF 5 BOXES; BORING 2 OF 2 BORINGS; EL. -86.3 TO -87.8; BOX ID: ~Loca~ 1BX  PITCHFORDKARENEN-GG3295
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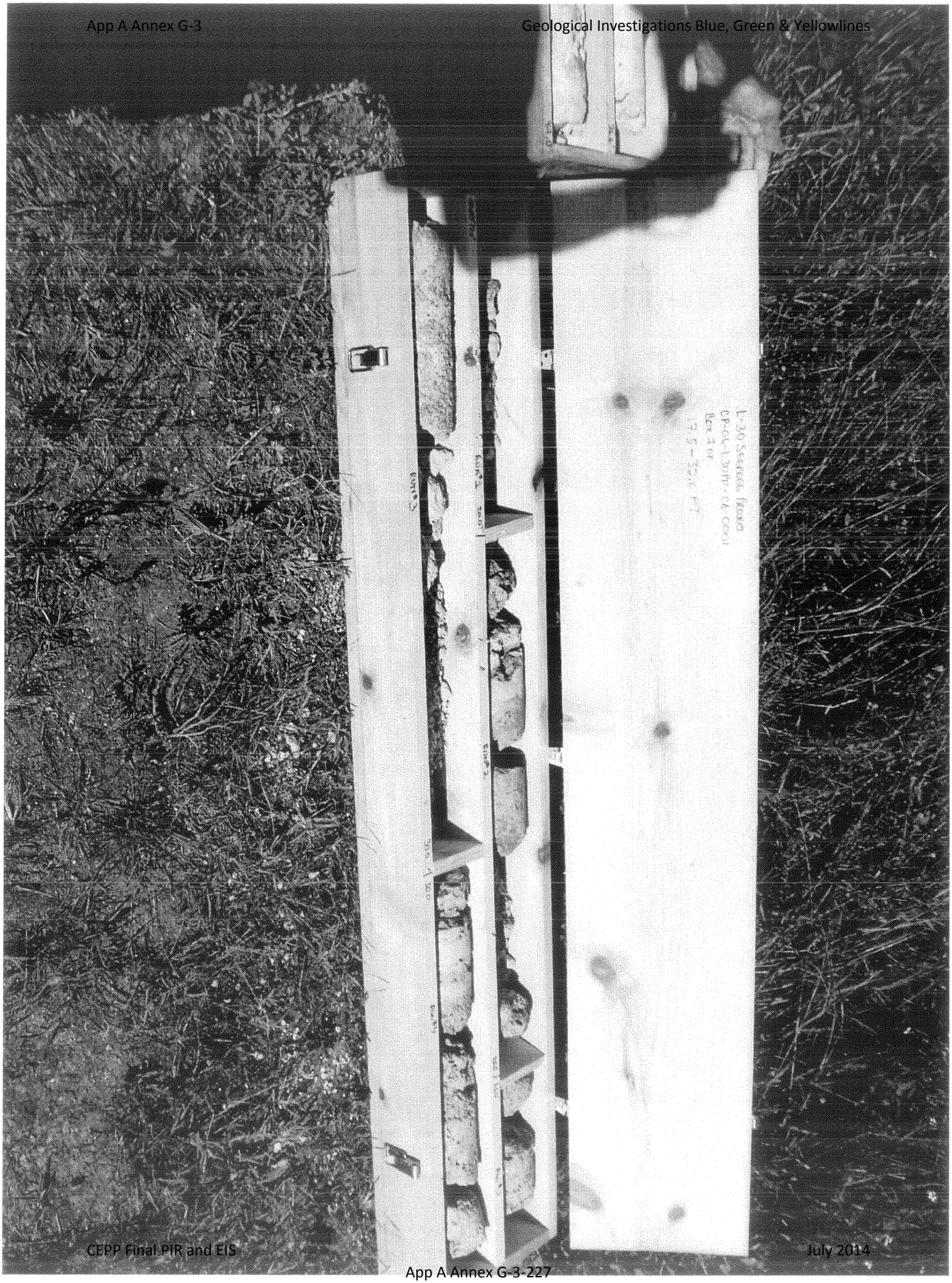
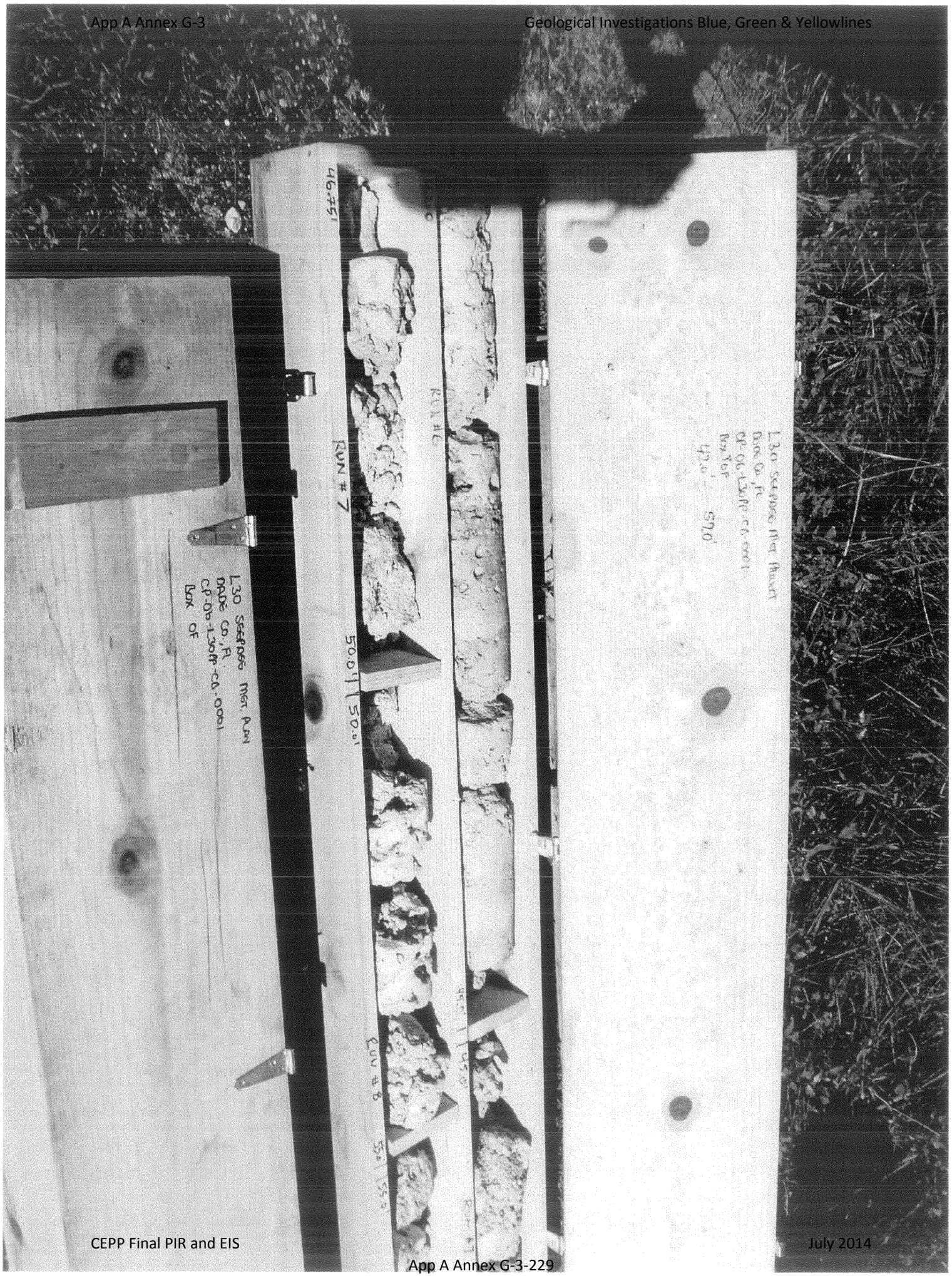
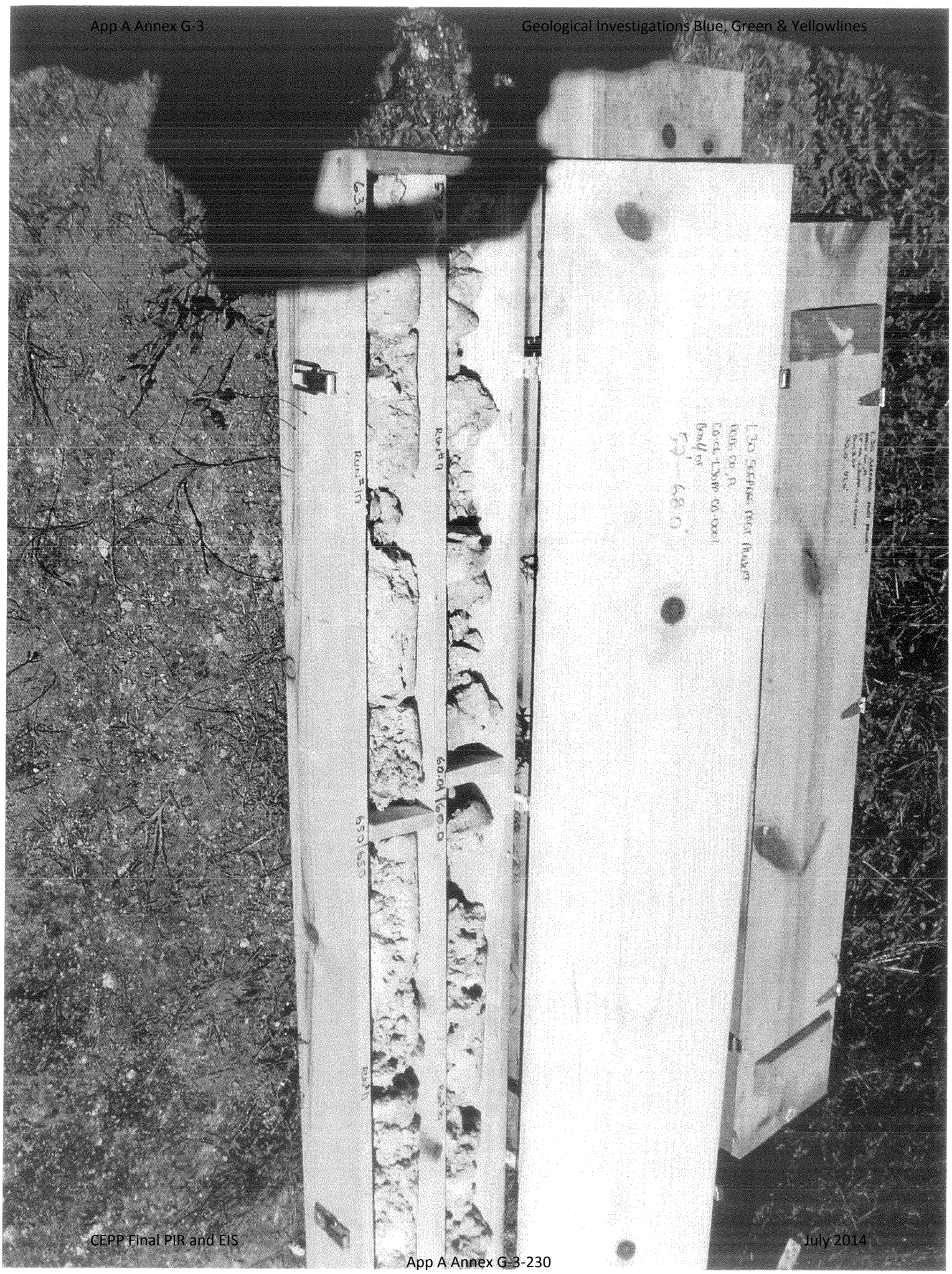
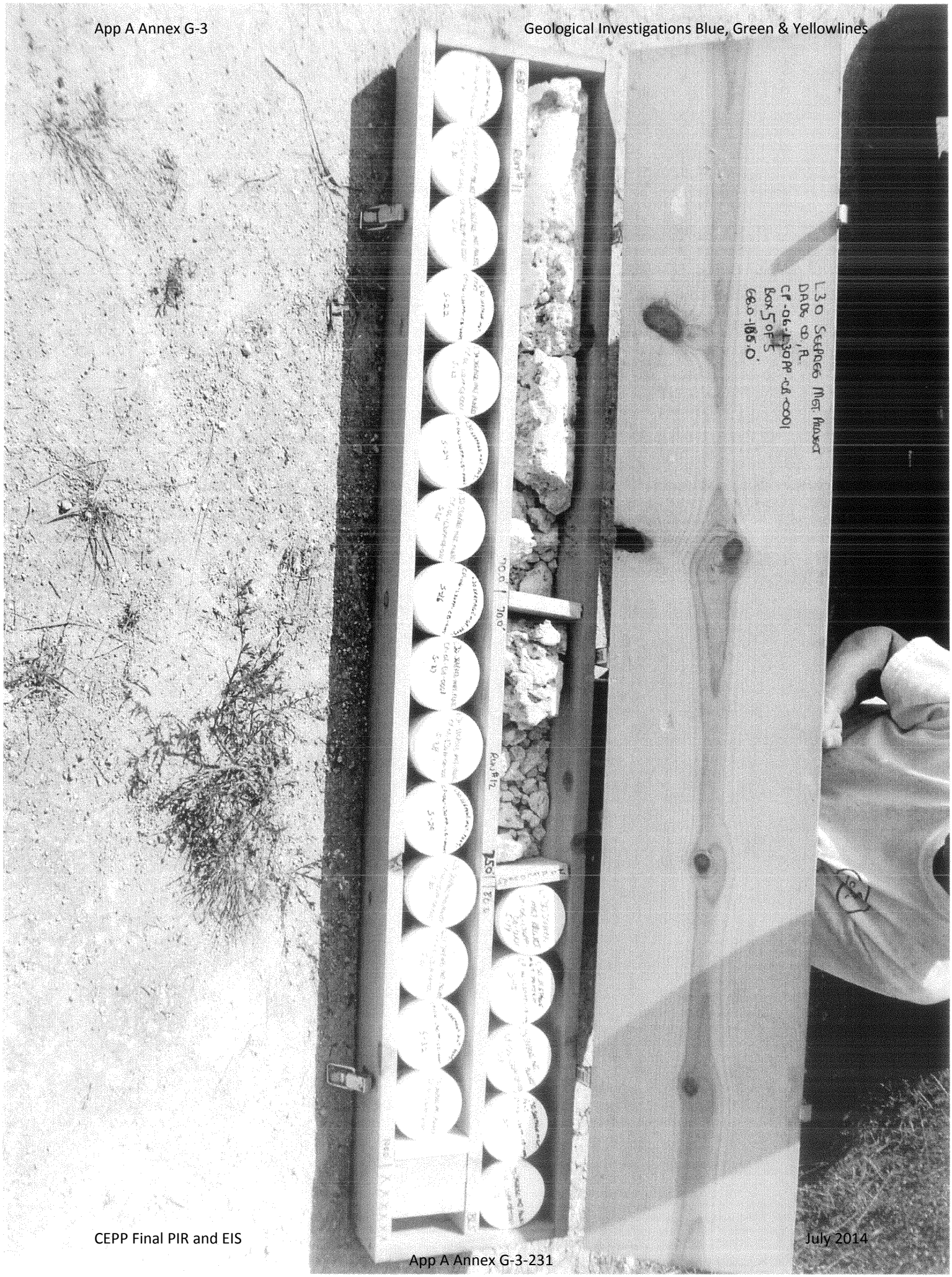
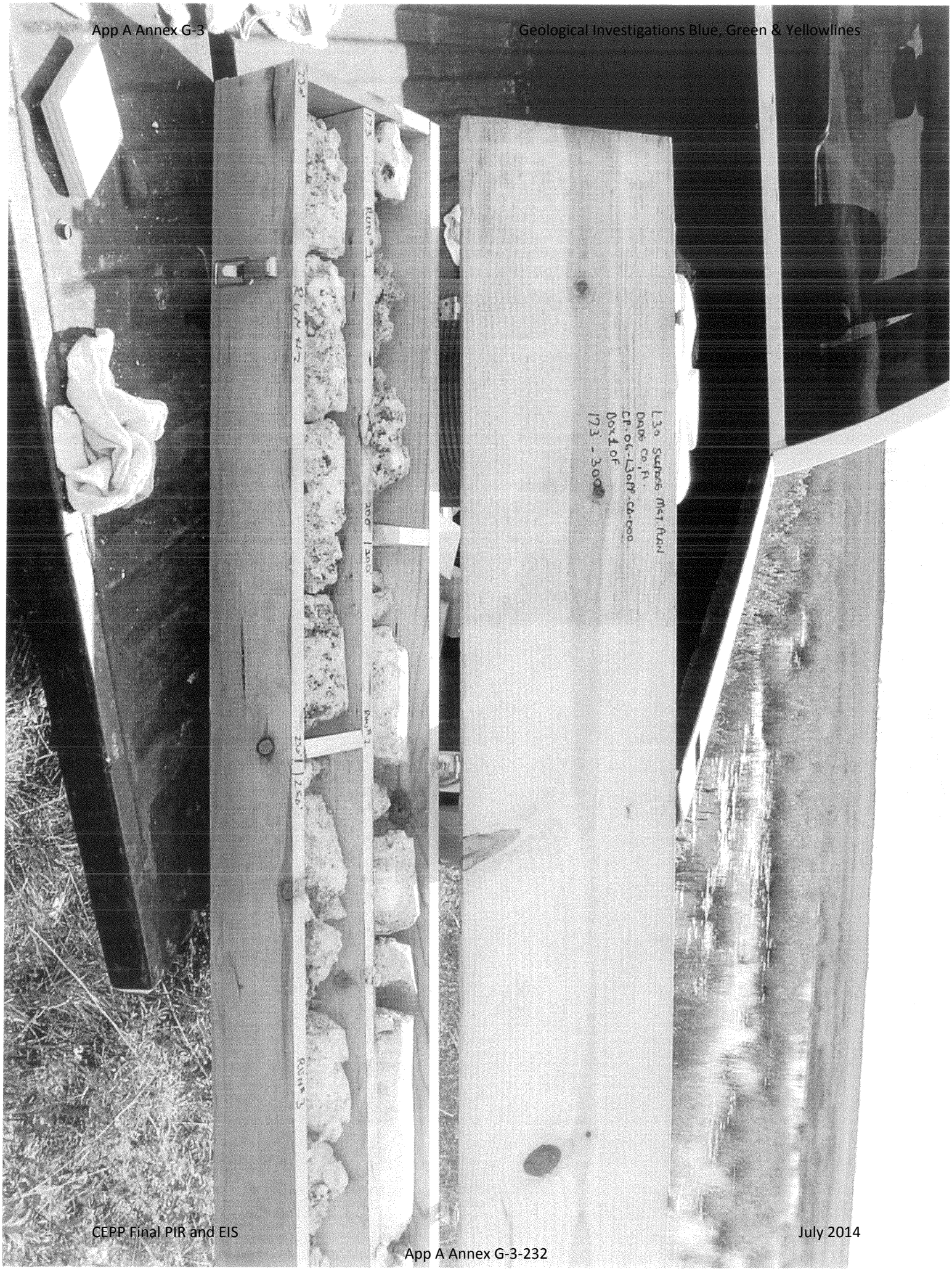
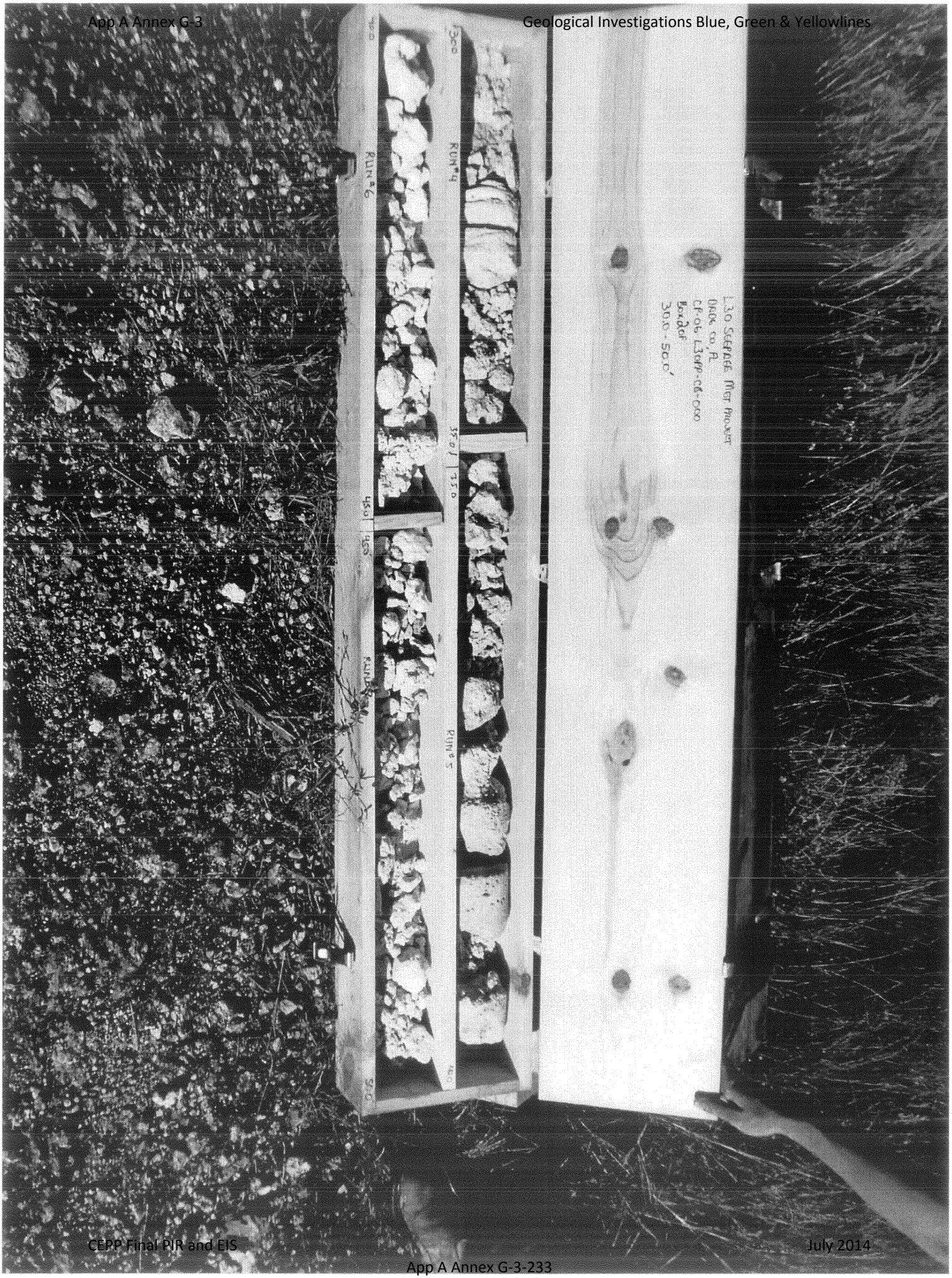


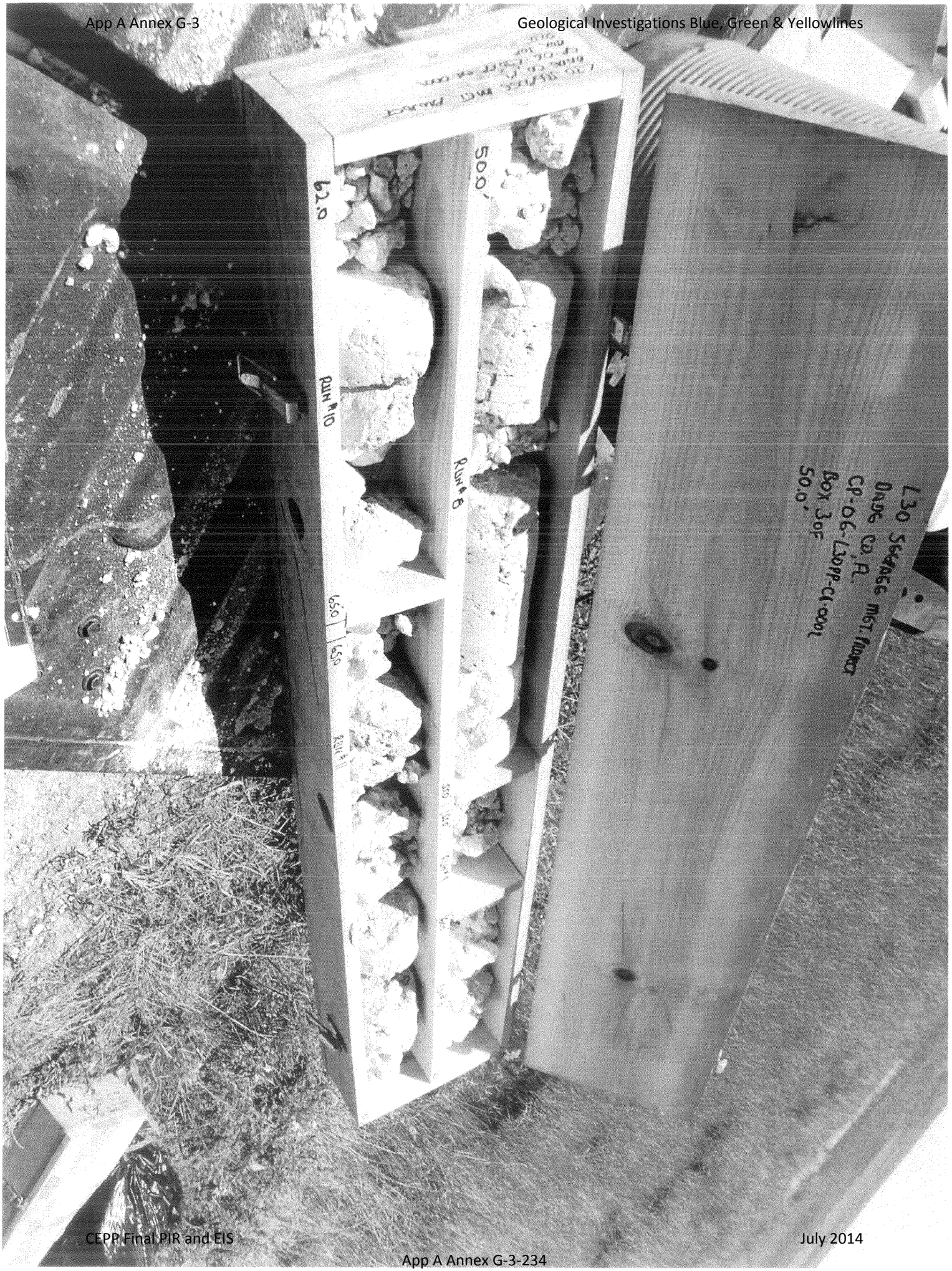

L30 SEEPAGE MGT. PLAN
DADE CO., FL
CP-06-L30PP-CA-0001
BOX OF
RUN #7
50.0'
RUN #8




L30 SEEPAGE MGT. PROJECT
DADE CO, FL
CP-06-L30PP-CB-0001
BOX 5 OF 5
68.0-105.0'
70.0'
70.0'
Run #12
75.0'

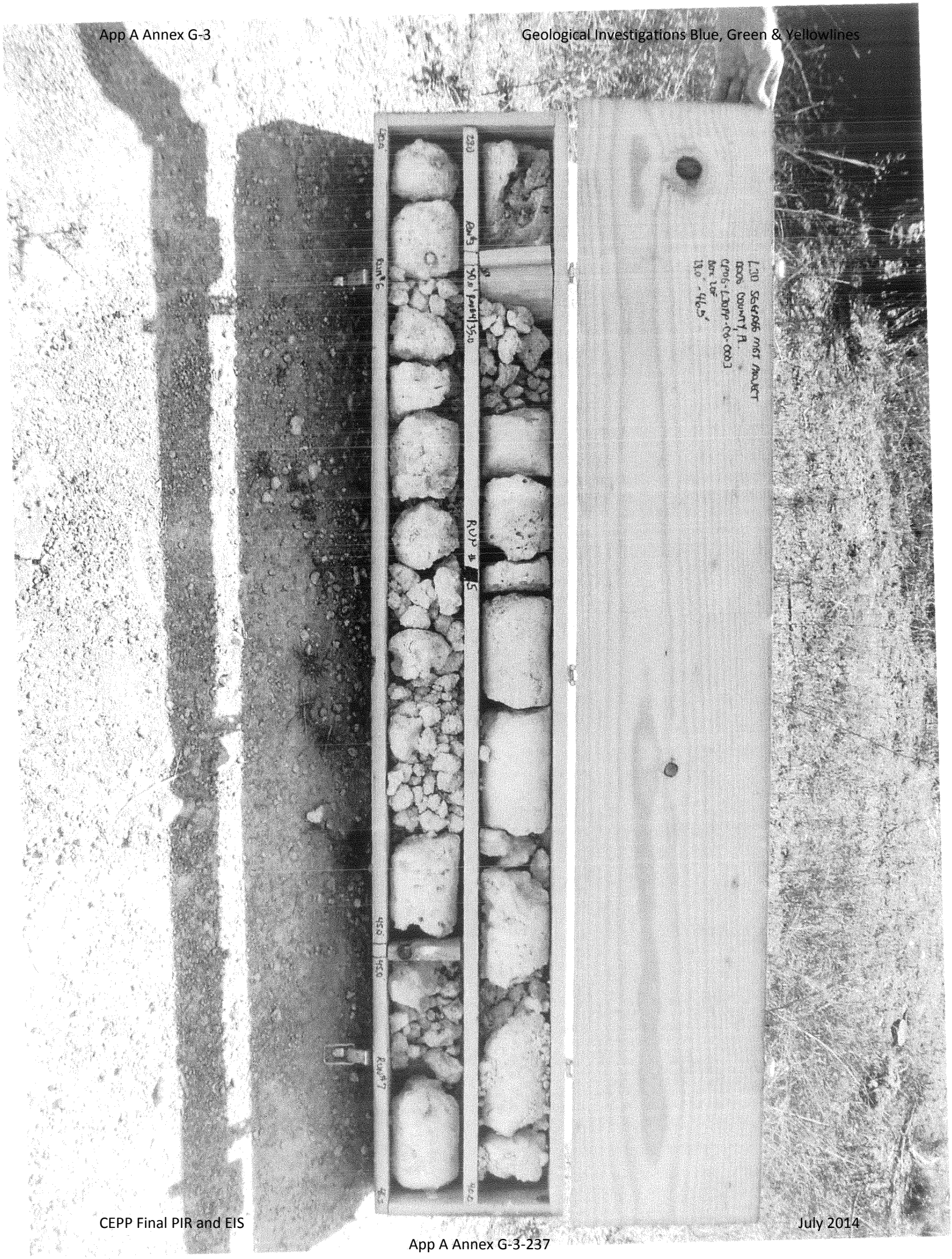

L30 SURFACE MAT PLAN
DADE CO, FL
CP-04-L30PP-CD-000
Box 1 of
173 - 300

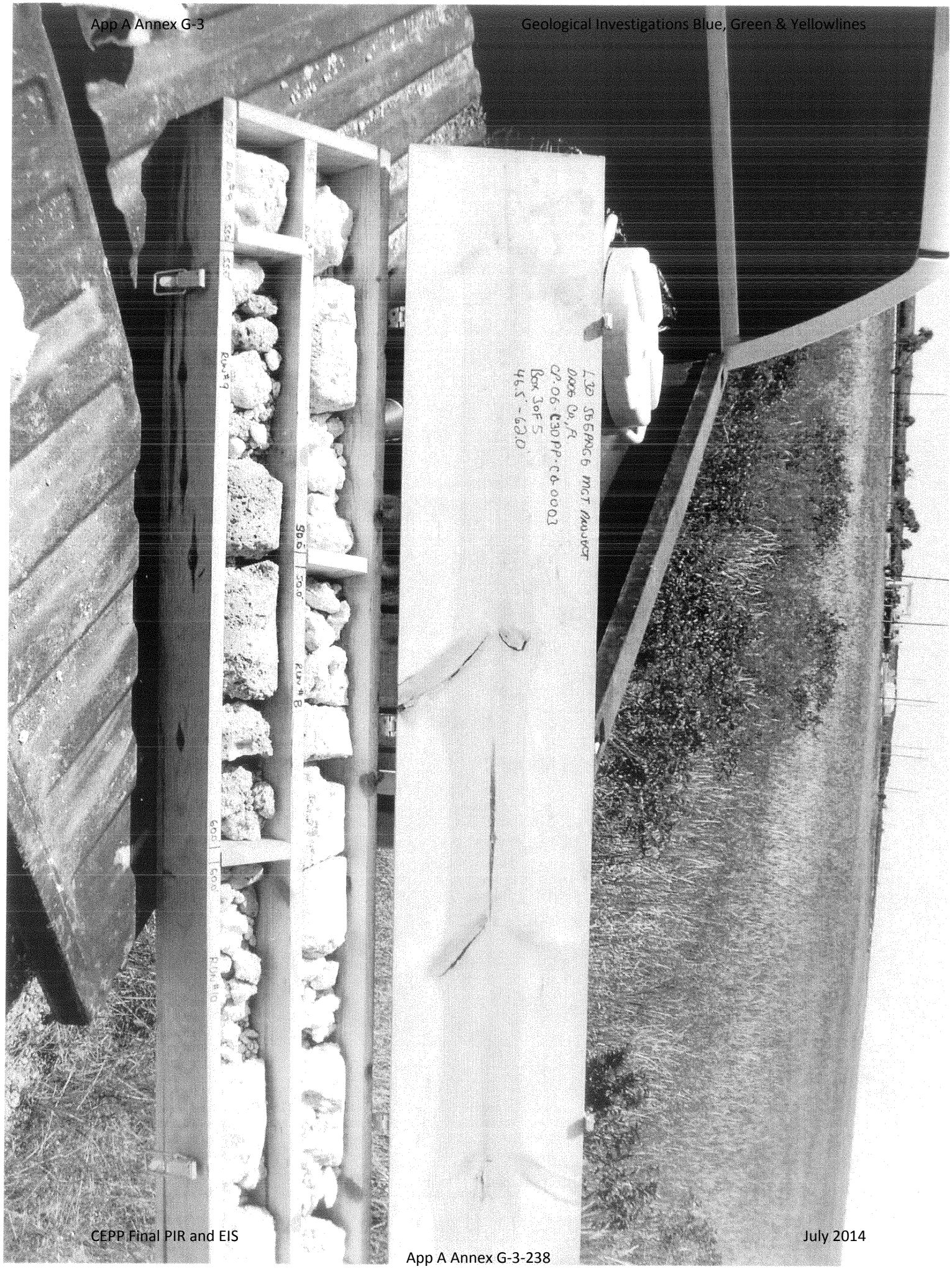

L30 SEEPAGE MGT PROJECT
DADE CO, FL
CP-06 L30PP-CB-000
Box 2 of
30.0-50.0'
RUN #4
RUN #6
RUN #5

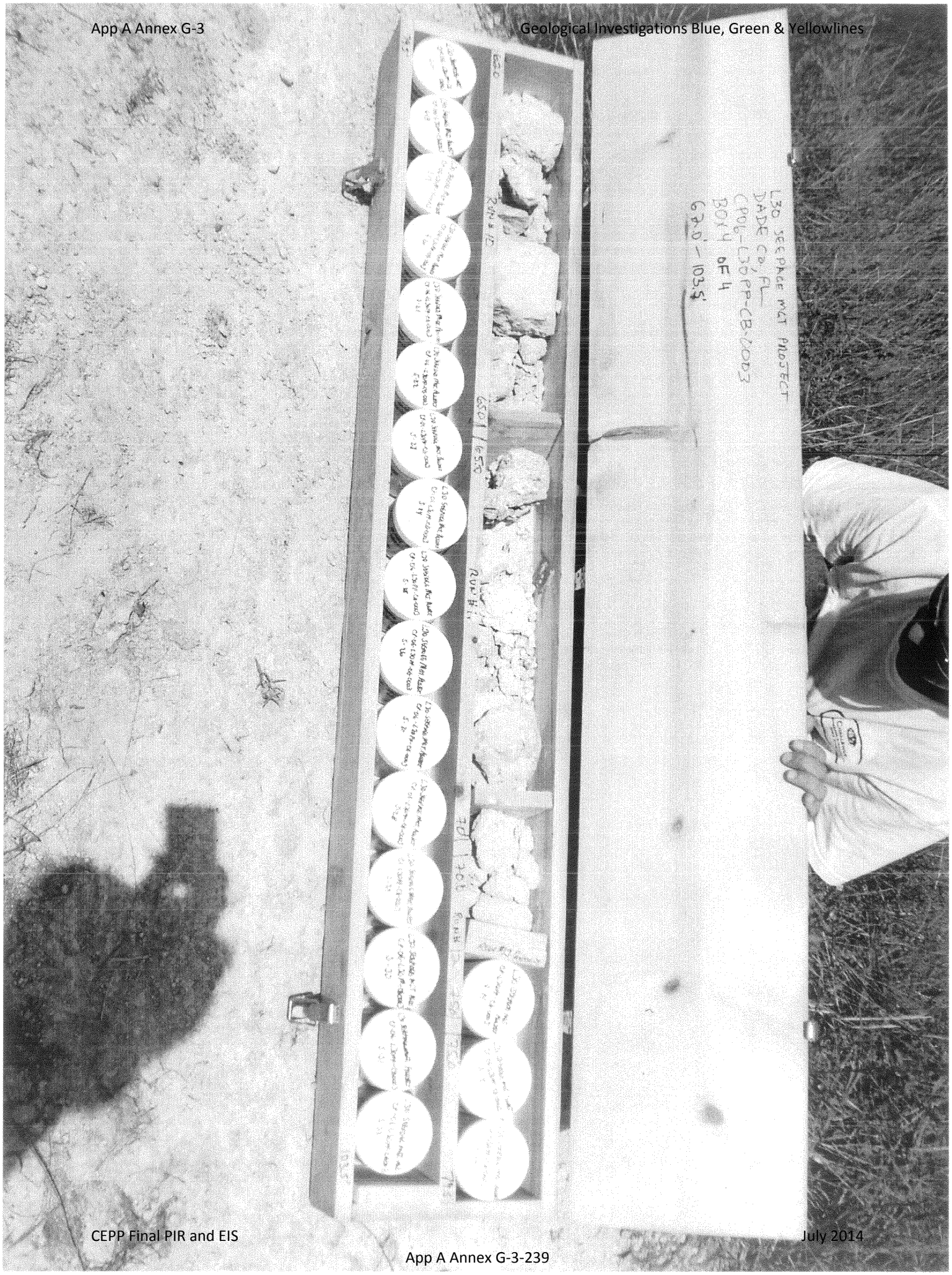

L30 SEEPAGE MGT. PROJECT
DADE CO., FL.
CP-06-L30PP-C1-0001
BOX 3 OF
50.0'
62.0
50.0'
RUN #10
RUN #8
65.0
65.0

L-30 SEEPAGE TEST PROJECT
DADE CO., FL
CP-06-L30PP-CA-0001
BOX 4 OF 7
70.0' - 110.0'

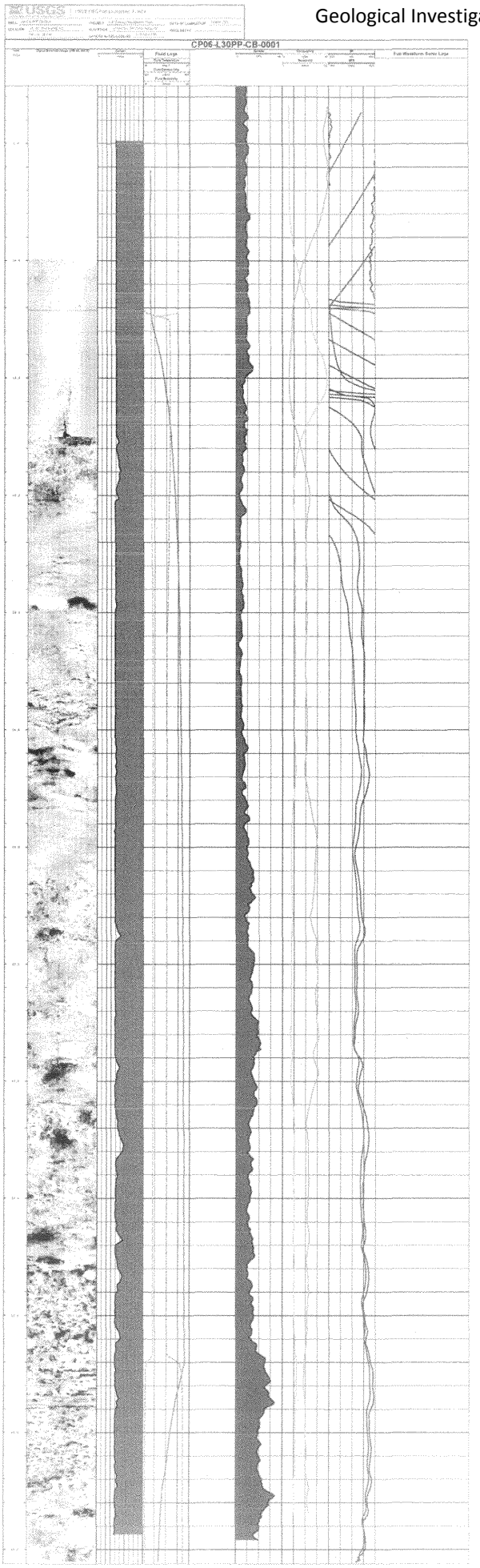
L 30 SEEPAGE MGT PROJECT
DADE CO, FL
CP 06-L30PP-CB-0003
BOX 1 OF
175'-29.0'
Run #1
Run #2
Run #3
Run #2
Run #3


RVP # 15


L30 SEEPAGE MGT PROJECT
DRAG Co., A
CP-06 C30PP-CA-0003
Box 3 of 5
46.5'-62.0'
Run #9
Run #8
Run #10
50.0'
50.0'
60.0'
60.0'


L30 SEEPAGE MGT PROJECT
DADE Co, FL
CP06-L30PP-CB-6003
BOX 4 OF 4
67.0'-103.5'

U.S.G.S. BOREHOLE LOGS


CP06-L30PP-CB-0001

Well	Phase	Duration	Volume Recharged/Recovered (in million gallons)	Percent Recovery	Aquifer or Water Source	Sample Collection Date	Sample Collection Time	Gross Alpha, in pCi/L	Gross Alpha, Reporting Level	WQ FLAG for WQ 304
								WQ304	WQ306	
OKF-100 upper	Recharge	Week 1	7.773946		UFA	12-Jul-11	10:35			
OKF-100 lower	Recharge		7.773946		APPZ	12-Jul-11	12:00			
EXKR-1	Recharge		2.938902		Surface Water	11-Jul-11	15:21	0.597	3	U
MW-19	Recharge				UFA - 4200-FT					
MW-18	Recharge				UFA - 2350-FT					
MW-10	Recharge		7.773946		UFA - 350 ft SZMW	12-Jul-11	9:30			
MW-17	Recharge				SAS					
OKF-100 upper	Recharge	Week 3	81.716135		UFA	27-Jul-11	11:43	4.61	3	V
OKF-100 lower	Recharge		81.716135		APPZ	27-Jul-11	12:54	2.26	3	U
EXKR-1	Recharge		81.716135		Surface Water	26-Jul-11	13:10	0.245	3	U
MW-19	Recharge		86.726274		UFA - 4200-FT	28-Jul-11	11:17			
MW-18	Recharge		86.726274		UFA - 2350-FT	28-Jul-11	13:35			
MW-10	Recharge		86.726274		UFA - 350 ft SZMW	28-Jul-11	12:05	1.43	3	J
MW-17	Recharge				SAS	26-Jul-11	15:03			
OKF-100 upper	Recharge	Week 5	144.501563		UFA	9-Aug-11	9:51	3.19	3	V
OKF-100 lower	Recharge		144.501563		APPZ	9-Aug-11	11:07			
EXKR-1	Recharge		149.427474		Surface Water	10-Aug-11	11:50	1.31	3	U
MW-19	Recharge				UFA - 4200-FT					
MW-18	Recharge				UFA - 2350-FT					
MW-10	Recharge		149.427474		UFA - 350 ft SZMW	10-Aug-11	12:50	-0.283	3	U
MW-17	Recharge				SAS					
OKF-100 upper	Recharge	Week 7	214.208367		UFA	23-Aug-11	11:50	2.93	3	J
OKF-100 lower	Recharge		214.208367		APPZ	23-Aug-11	13:00	3.58	3	U
EXKR-1	Recharge		219.296561		Surface Water	24-Aug-11	11:30	0.843	3	U
MW-19	Recharge		224.014730		UFA - 4200-FT	25-Aug-11	12:02			
MW-18	Recharge		224.014730		UFA - 2350-FT	25-Aug-11	13:32			
MW-10	Recharge		224.014730		UFA - 350 ft SZMW	25-Aug-11	10:45	1.23	3	U
MW-17	Recharge				SAS	24-Aug-11	12:29	2.62	3	U
OKF-100 upper	Recharge	Week 9	289.282410		UFA	7-Sep-11	11:30	4.66	3	V
OKF-100 lower	Recharge		289.282410		APPZ	7-Sep-11	12:40	5.19	3	V
EXKR-1	Recharge		284.191399		Surface Water	6-Sep-11	11:10	0.421	3	U
MW-19	Recharge		294.198994		UFA - 4200-FT	8-Sep-11	13:55			
MW-18	Recharge		294.198994		UFA - 2350-FT	8-Sep-11	12:02			
MW-10	Recharge		294.198994		UFA - 350 ft SZMW	8-Sep-11	10:45			
MW-17	Recharge				SAS	6-Sep-11	12:20	6.78	3	V
OKF-100 upper	Recharge	Week 13	433.591124		UFA	5-Oct-11	12:00	2.82	3	U
OKF-100 lower	Recharge		433.591124		APPZ	5-Oct-11	13:30	-2.56	3	U
EXKR-1	Recharge		428.548053		Surface Water	4-Oct-11	11:30	0.281	3	U
MW-19	Recharge		438.582593		UFA - 4200-FT	6-Oct-11	12:09			
MW-18	Recharge		438.582593		UFA - 2350-FT	6-Oct-11	14:07			
MW-10	Recharge		438.582593		UFA - 350 ft SZMW	6-Oct-11	11:00	2.76	3	U
MW-17	Recharge				SAS	4-Oct-11	12:45	9.07	3	U
OKF-100 upper	Recharge	Week 17	536.941012		UFA	2-Nov-11	12:25	1.44	3	J
OKF-100 lower	Recharge		541.854719		APPZ	3-Nov-11	11:17			
EXKR-1	Recharge		536.941012		Surface Water	2-Nov-11	10:05	0.0372	3	U
MW-19	Recharge		541.854719		UFA - 4200-FT	3-Nov-11	12:55			
MW-18	Recharge		541.854719		UFA - 2350-FT	3-Nov-11	13:42			
MW-10	Recharge		541.854719		UFA - 350 ft SZMW	3-Nov-11	10:05			
MW-17	Recharge				SAS	2-Nov-11	11:12	3.45	3	U
OKF-100 upper	Recharge	Week 21	713.623007		UFA	7-Dec-11	13:35	1.3	3	U
OKF-100 lower	Recharge		718.616152		APPZ	8-Dec-11	13:05			
EXKR-1	Recharge		713.623007		Surface Water	7-Dec-11	11:50	0.553	3	U
MW-19	Recharge		718.616152		UFA - 4200-FT	8-Dec-11	14:05	1.15	3	U
MW-18	Recharge		718.616152		UFA - 2350-FT	8-Dec-11	15:11			
MW-10	Recharge		718.616152		UFA - 350 ft SZMW	8-Dec-11	11:30	0.888	3	U
MW-17	Recharge				SAS	7-Dec-11	12:20	5.8	3	J
OKF-100 upper	Recharge	Week 25	847.990793		UFA	3-Jan-12	12:10	1.36	3	U
OKF-100 lower	Recharge		847.990793		APPZ	3-Jan-12	13:15	4.14	3	U
EXKR-1	Recharge		852.955765		Surface Water	4-Jan-12	11:15	0.359	3	U
MW-19	Recharge		857.881459		UFA - 4200-FT	5-Jan-12	11:11			
MW-18	Recharge		857.881459		UFA - 2350-FT	5-Jan-12	12:25			
MW-10	Recharge		857.881459		UFA - 350 ft SZMW	5-Jan-12	13:25	0.937	3	U
MW-17	Recharge				SAS	5-Jan-12	13:55	3.82	3	U
OKF-100 upper	Storage	Week 29-31	998.358723		UFA	8-Feb-12	11:20	1.18	3	U
OKF-100 upper	Storage		998.358723		UFA	23-Feb-12	12:07			
OKF-100 lower	Recharge		998.358723		APPZ	8-Feb-12	12:34	0.204	3	U
EXKR-1	Recharge		995.849288		Surface Water	2-Feb-12	11:55	0.409	3	U
EXKR-1D	Recharge		998.358723		Surface Water	3-Feb-12	11:55			
MW-19	Recharge		998.358723		UFA - 4200-FT	9-Feb-12	12:02			
MW-18	Recharge		998.358723		UFA - 2350-FT	9-Feb-12	14:10			
MW-10	Recharge		998.358723		UFA - 350 ft SZMW	9-Feb-12	10:49	0.0476	3	U
MW-10	Recharge		998.358723		UFA - 350 ft SZMW	23-Feb-12	11:05			
MW-17	Recharge				SAS	9-Feb-12	12:56	3.67	3	U
OKF-100 upper	Storage	Weeks 32-34	998.358723		UFA	5-Mar-12	12:35	0.36	3	U
OKF-100 lower	Storage		998.358723		APPZ	5-Mar-12	13:45	5.22	3	U
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	6-Mar-12	10:17			
MW-18	Storage		998.358723		UFA - 2350-FT	6-Mar-12	13:45			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	6-Mar-12	11:16	0.0745	3	U
MW-17	Storage				SAS	6-Mar-12	12:05	2.75	3	U
OKF-100 upper	Storage	Week 35-36	998.358723		UFA	22-Mar-12	11:50			
OKF-100 upper	Storage		998.358723		UFA	4-Apr-12	10:00	1.53	3	J
OKF-100 lower	Storage		998.358723		APPZ	4-Apr-12	11:30	0.941	3	U
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	5-Apr-12	11:35			
MW-18	Storage		998.358723		UFA - 2350-FT	5-Apr-12	13:45			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	5-Apr-12	10:23	1.62	3	U
MW-17	Storage				SAS	5-Apr-12	12:20	2.02	3	U
OKF-100 upper	Storage	Week 39-40	998.358723		UFA	22-Mar-12	11:50			
OKF-100 upper	Storage		998.358723		UFA	4-Apr-12	10:00	1.53	3	J
OKF-100 lower	Storage		998.358723		APPZ	4-Apr-12	11:30	0.941	3	U
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	5-Apr-12	11:35			
MW-18	Storage		998.358723		UFA - 2350-FT	5-Apr-12	13:45			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	5-Apr-12	10:23	1.62	3	U
MW-17	Storage				SAS	5-Apr-12	12:20	2.02	3	U
OKF-100 upper	Storage	Week 44	998.358723		UFA	2-May-12	11:06	1.95	3	J
OKF-100 lower	Storage		998.358723		APPZ	2-May-12	12:27	4.44	3	U
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	3-May-12	13:14			
MW-18	Storage		998.358723		UFA - 2350-FT	3-May-12	14:23			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	3-May-12	11:30	0.566	3	U
MW-17	Storage				SAS	3-May-12	11:50	2.84	3	U

Table 8. Radionuclide concentrations and activities obtained during Cycle 4.

Well	Phase	Duration	Volume Recharged/Recovered (in million gallons)	Percent Recovery	Aquifer or Water Source	Sample Collection Date	Sample Collection Time	Gross Alpha, in pCi/L	Gross Alpha, Reporting Level	WQ FLAG for WQ 304
								WQ304	WQ306	
OKF-100 upper	Storage	Week 48	998.358723		UFA	13-Jun-12	10:51	1.65	3	U
OKF-100 lower	Storage		998.358723		APPZ	13-Jun-12	11:57	1.83	3	U
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	13-Jun-12	13:31			
MW-18	Storage		998.358723		UFA - 2350-FT	14-Jun-12	14:18			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	14-Jun-12	10:46	0.858	3	U
MW-17	Storage				SAS	14-Jun-12	12:42	< 2.71	3	U
OKF-100 upper	Storage	Week 52	998.358723		UFA	11-Jul-12	10:50	1.86	3	J
OKF-100 lower	Storage		998.358723		APPZ	11-Jul-12	11:57	<0.22	3	U
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	12-Jul-12	12:35			
MW-18	Storage		998.358723		UFA - 2350-FT	12-Jul-12	14:45			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	12-Jul-12	11:00	0.866	3	U
MW-17	Storage				SAS	12-Jul-12	13:05	< 1.58	3	U
OKF-100 upper	Storage	Week 56	998.358723		UFA	8-Aug-12	11:55	1.64	3	U
~~OKF-100 lower~~	~~Storage~~		~~998.358723~~		~~APPZ~~	~~8-Aug-12~~	~~13:06~~	~~9.17~~	~~3~~	~~Y~~
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	9-Aug-12	12:10			
MW-18	Storage		998.358723		UFA - 2350-FT	9-Aug-12	13:36			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	9-Aug-12	10:55	0.896	3	U
MW-17	Storage				SAS	8-Aug-12	13:41	10.2	3	U
OKF-100 upper	Storage	Week 60	998.358723		UFA	11-Sep-12	11:20	1.86	3	U
OKF-100 lower	Storage		998.358723		APPZ	11-Sep-12	12:25	13.7	3	U
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	12-Sep-12	12:11			
MW-18	Storage		998.358723		UFA - 2350-FT	12-Sep-12	13:35			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	12-Sep-12	10:50	1.54	3	J
MW-17	Storage				SAS	11-Sep-12	13:59	5.36	3	U
OKF-100 upper	Storage	Week 64	998.358723		UFA	10-Oct-12	12:05	2.28	3	J
OKF-100 lower	Storage		998.358723		APPZ	10-Oct-12	13:10	3.79	3	U
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	10-Oct-12	14:57			
MW-18	Storage		998.358723		UFA - 2350-FT	11-Oct-12	11:42			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	11-Oct-12	10:05	1.73	3	U
MW-17	Storage				SAS	11-Oct-12	12:55	< 4.18	3	U
OKF-100 upper	Storage	Week 68	998.358723		UFA	6-Nov-12	12:45	1.3	3	U
OKF-100 lower	Storage		998.358723		APPZ	6-Nov-12	14:01	1.5	3	U
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	8-Nov-12	12:12			
MW-18	Storage		998.358723		UFA - 2350-FT	8-Nov-12	13:42			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	8-Nov-12	12:50	2.44	3	J
MW-17	Storage				SAS	7-Nov-12	14:23	0	3	U
OKF-100 upper	Storage	Week 74	998.358723		UFA	18-Dec-12	11:20	1.35	3	U
OKF-100 lower	Storage		998.358723		APPZ	18-Dec-12	12:30	5.07	3	U
EXKR-1	Storage		998.358723		Stored Water					
MW-19	Storage		998.358723		UFA - 4200-FT	20-Dec-12	10:57			
MW-18	Storage		998.358723		UFA - 2350-FT	20-Dec-12	12:27			
MW-10	Storage		998.358723		UFA - 350 ft SZMW	19-Dec-12	10:15	1.48	3	U
MW-17	Storage				SAS	19-Dec-12	13:08	1.69	3	U

Table 8. Radionuclide concentrations and activities obtained during Cycle 4.

GEOLOGICAL INVESTIGATION PERTAINING TO L31N SLURRY WALL CONSTRUCTION

(U.S. ARMY CORPS OF ENGINEERS, 2011)

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www.amec.com CA-0007867

MIAMI-DADE LIMESTONE PRODUCTS ASSOCIATION
L-31N SEEPAGE BARRIER: PHASE 1
L-31N LEVEE
SITE PLAN

MIAMI-DADE COUNTY, FLORIDA

DATE: October 11, 2011
DRAWN BY: MAJ
CHECKED BY: LGB
PROJECT NO.: 16059

LELSIE G. BROMWELL, P.E.
FLA. REG. NO. 18234

DATE:

REFER TO INDEX FOR TOTAL SHEETS INCLUDED.
SHEET - 5

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MIAMI-DADE LIMESTONE PRODUCTS ASSOCIATION
L-31N SEEPAGE BARRIER: PHASE 1
L-31N LEVEE
SITE PLAN
MIAMI-DADE COUNTY, FLORIDA

DATE: October 11, 2011
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LELSIE G. BROMWELL, P.E.
FLA. REG. NO. 18234

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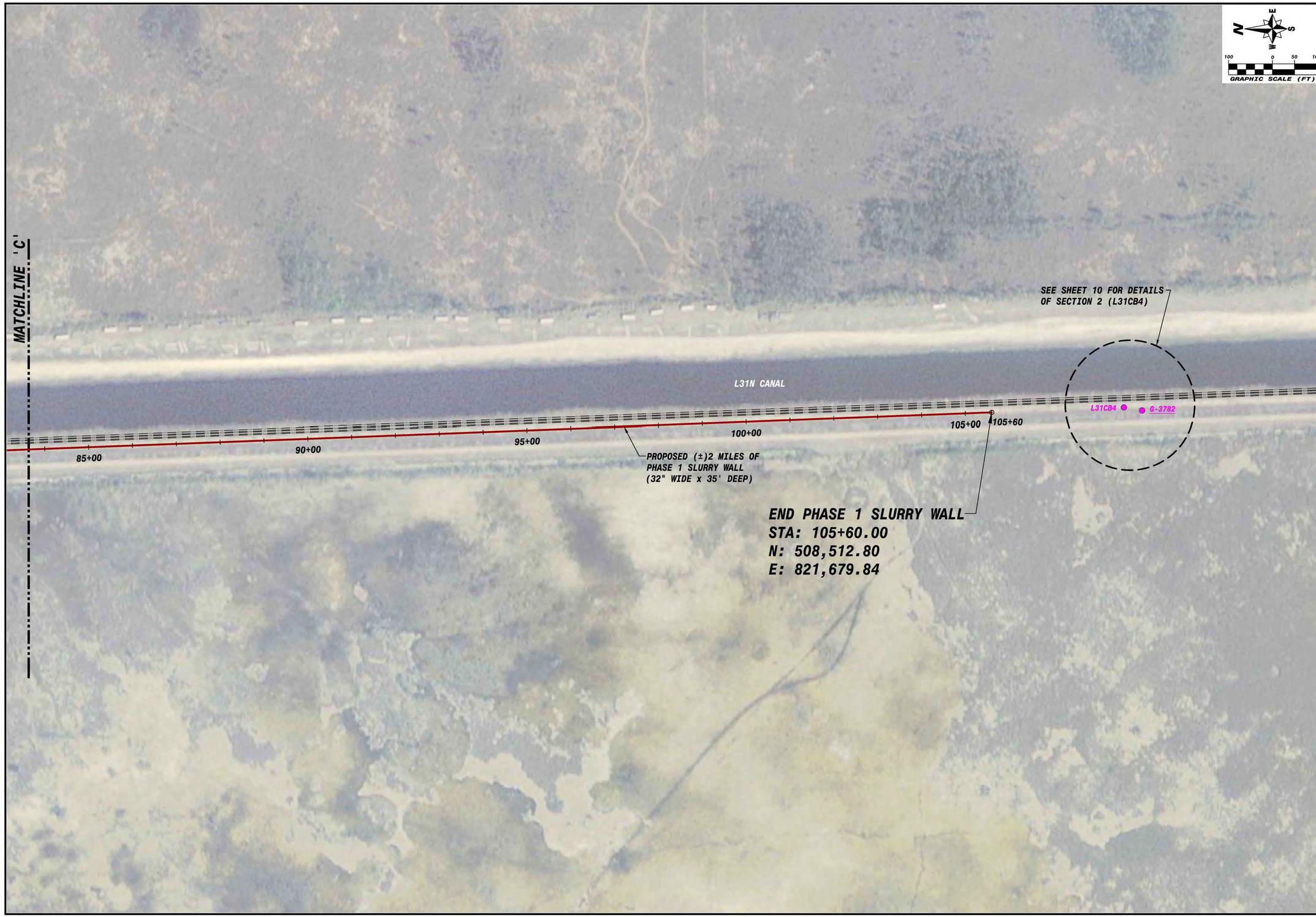
SHEET – 6



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L-31N SEEPAGE BARRIER: PHASE 1
L-31N LEVEE
SITE PLAN
MIAMI-DADE COUNTY, FLORIDA

DATE: October 11, 2011
DRAWN BY: MAJ
CHECKED BY: LGB
PROJECT NO.: 16059

LELSIE G. BROMWELL, P.E.
FLA. REG. NO. 18234

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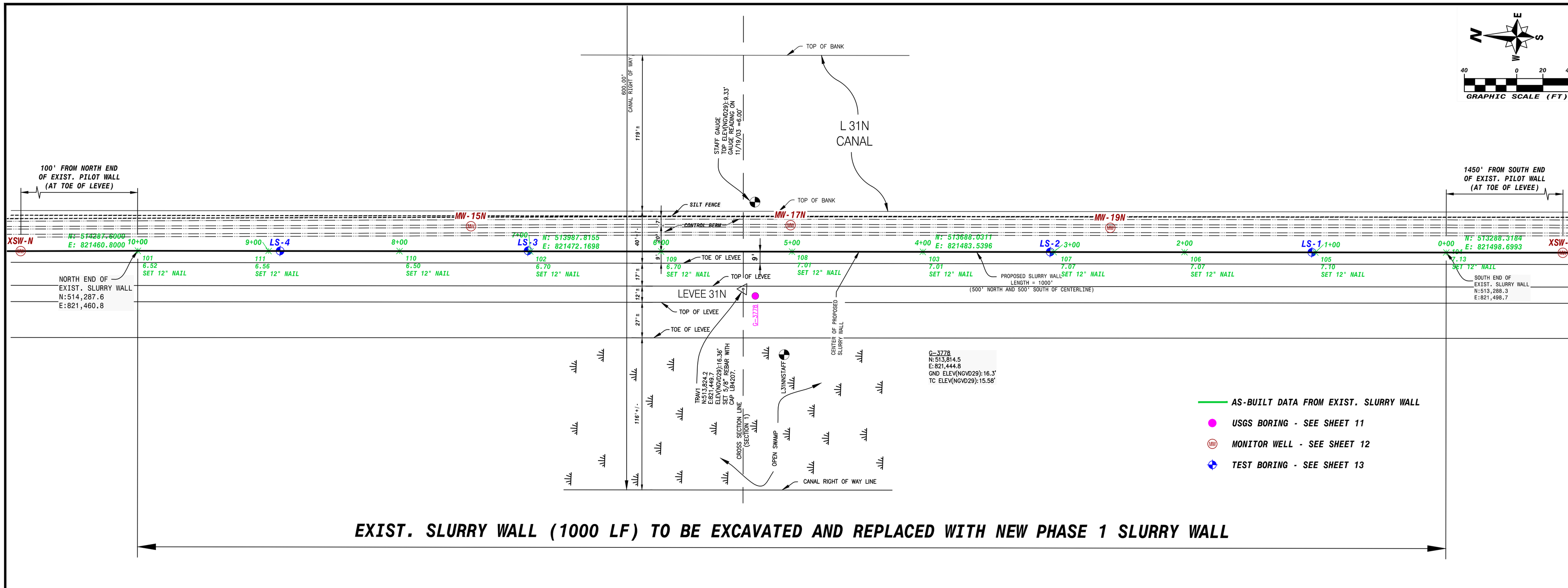
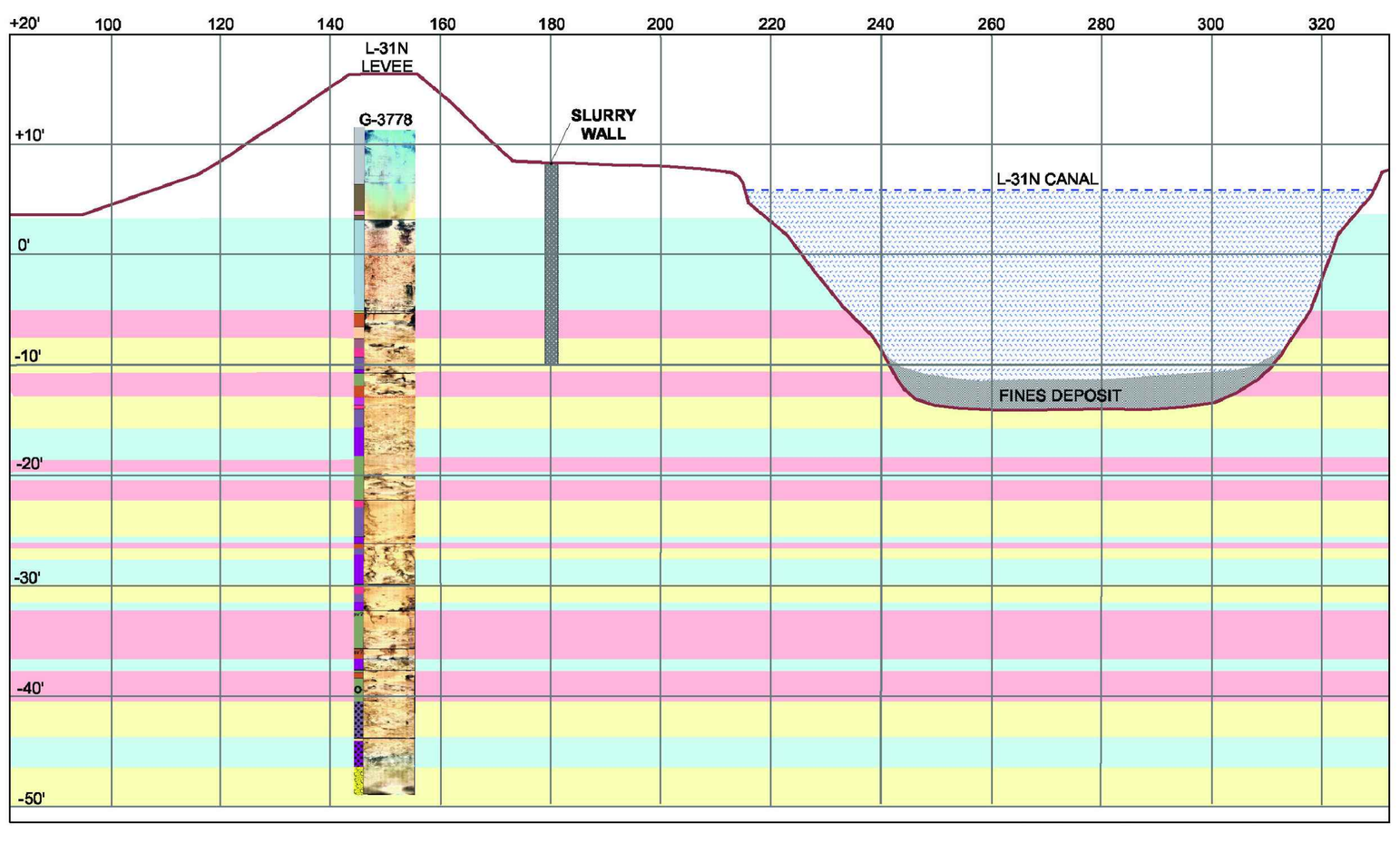
SHEET - 7

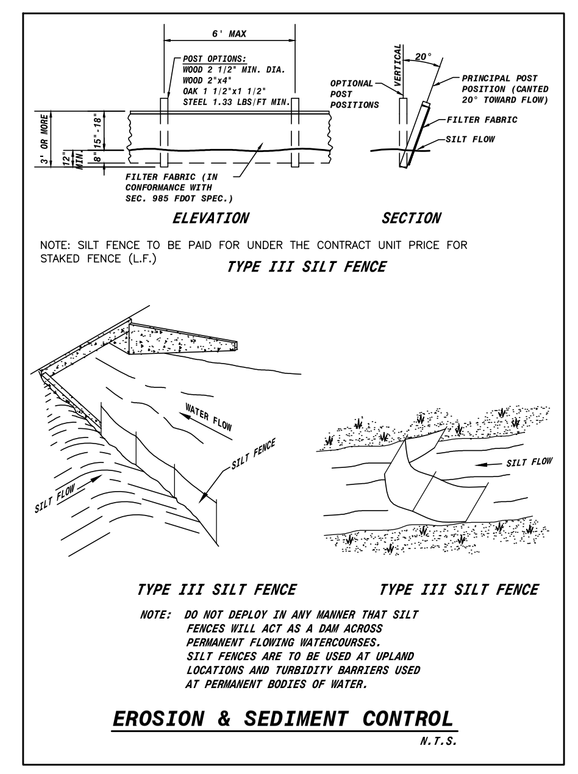




SCHEMATIC SECTION VIEW

DESIGNATION	NORTHING	EASTING	GROUND ELEVATION	TOP OF CASING	TOTAL DEPTH (ELEVATION)	SCREEN INTERVAL (ELEVATION)	
G-3778	513,814.5	821,444.8	16.3'	15.58'	-88	-86 to -88	NGVD29

DESIGNATION	NORTHING	EASTING	NGVD29 ELEV
TRAV1	513,824.2	821,449.7	16.36'



CONTRACTOR CERTIFICATION

I have read the notes and reviewed the plans and I propose to properly implement erosion and sediment control during construction.

SIGNATURE: _____

PRINTED NAME: _____

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MIAMI-DADE LIMESTONE PRODUCTS ASSOCIATION
L-31N SEEPAGE BARRIER: PHASE 1
L-31N LEVEE
EXISTING TEST SECTION
MIAMI-DADE COUNTY, FLORIDA

DATE: October 11, 2011
DRAWN BY: MAJ
CHECKED BY: LGB
PROJECT NO.: 16059

LELSIE G. BROMWELL, P.E.
FLA. REG. NO. 18234

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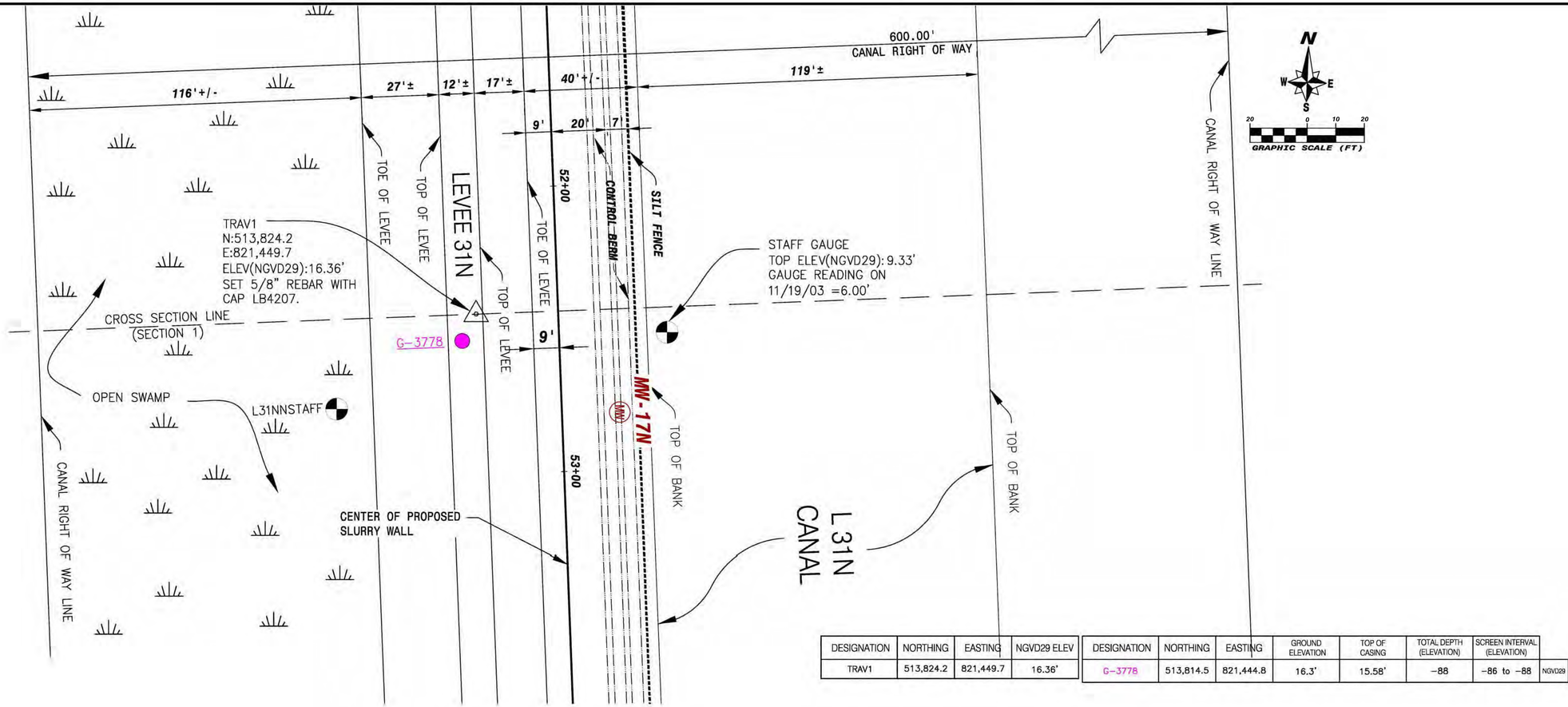
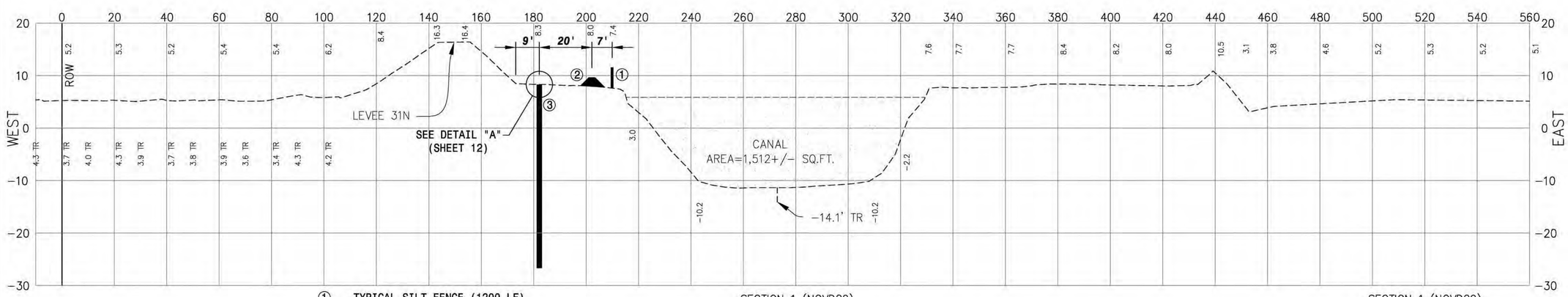
SHEET - 8



DESIGNATION	NORTHING	EASTING	NGVD29 ELEV
TRAV1	513,824.2	821,449.7	16.36'

DESIGNATION	NORTHING	EASTING	GROUND ELEVATION	TOP OF CASING	TOTAL DEPTH (ELEVATION)	SCREEN INTERVAL (ELEVATION)	
G-3778	513,814.5	821,444.8	16.3'	15.58'	-88	-86 to -88	NGVD29



SURVEYORS NOTES:

1- FOR ADDITIONAL NOTES AND REFERENCES SEE SHEET No. 3.

2- ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NGVD29 DATUM.

① TYPICAL SILT FENCE (1200 LF) (FDOT INDEX 102)

② TYPICAL 2-FOOT HIGH RUNOFF CONTROL BERM CONSTRUCTED WITH NATIVE SOIL (1200 LF)

③ SLURRY WALL 32" WIDE X 35' DEEP (2 MILES) SEE DETAIL "A", SHEET 12

SECTION 1 (NGVD29)

WATER ELEVATION = 5.8'(NGVD29)
DATE = 10/27/2003

SECTION 1 (NGVD29)

GRAPHIC SCALE (FT)

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L-31N SEEPAGE BARRIER: PHASE 1
L-31N LEVEE

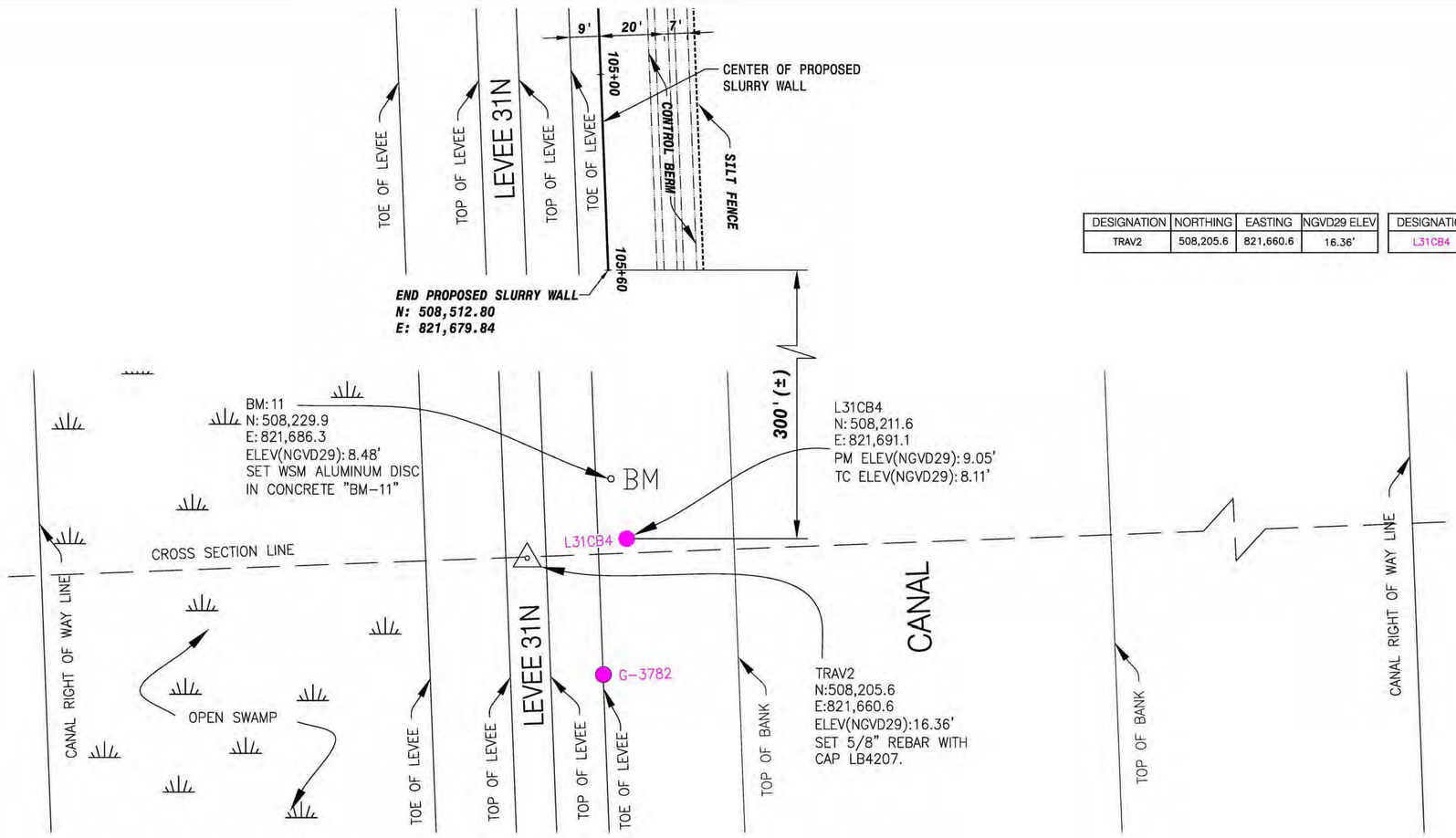
PLAN AND PROFILE
SECTION 1 - (G3778)
MIAMI-DADE COUNTY, FLORIDA

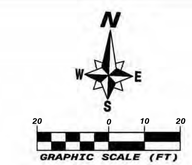
DATE: October 11, 2011
DRAWN BY: MAJ
CHECKED BY: LGB
PROJECT NO.: 16059

LELSIE G. BROMWELL, P.E.
FLA. REG. NO. 18234

DATE:

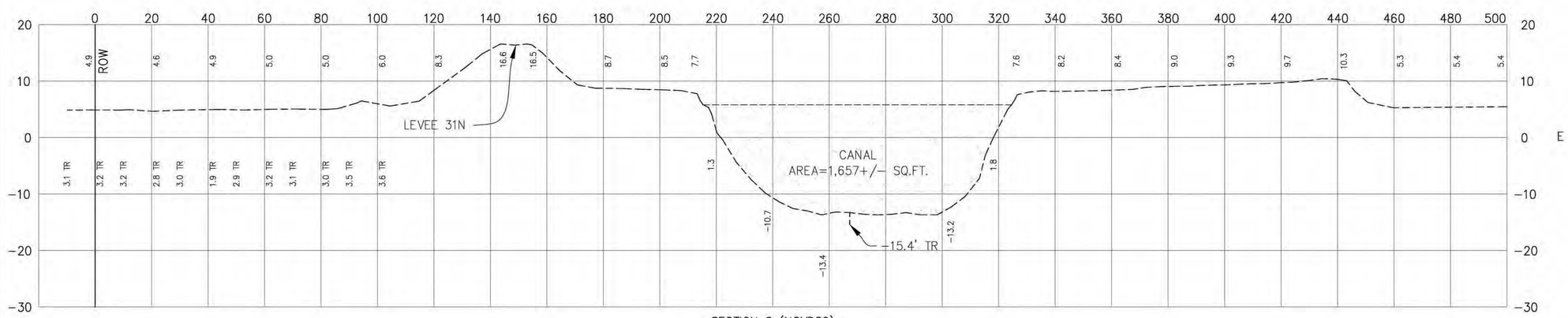
REFER TO INDEX FOR TOTAL SHEETS INCLUDED.
SHEET - 9





DESIGNATION	NORTHING	EASTING	NGVD29 ELEV
TRAV2	508,205.6	821,660.6	16.36'

DESIGNATION	NORTHING	EASTING	PLATFORM MARK	TOP OF CASING	
L31CB4	508,211.6	821,691.1	9.05'	8.11'	NGVD29



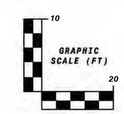
SECTION 2 (NGVD29)

WATER ELEVATION = 5.8'(NGVD29)
DATE = 10/27/2003

SURVEYORS NOTES:

1– FOR ADDITIONAL NOTES AND REFERENCES SEE SHEET No. 1 OF 9.

2– ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NGVD29 DATUM.



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L-31N SEEPAGE BARRIER: PHASE 1
L-31N LEVEE

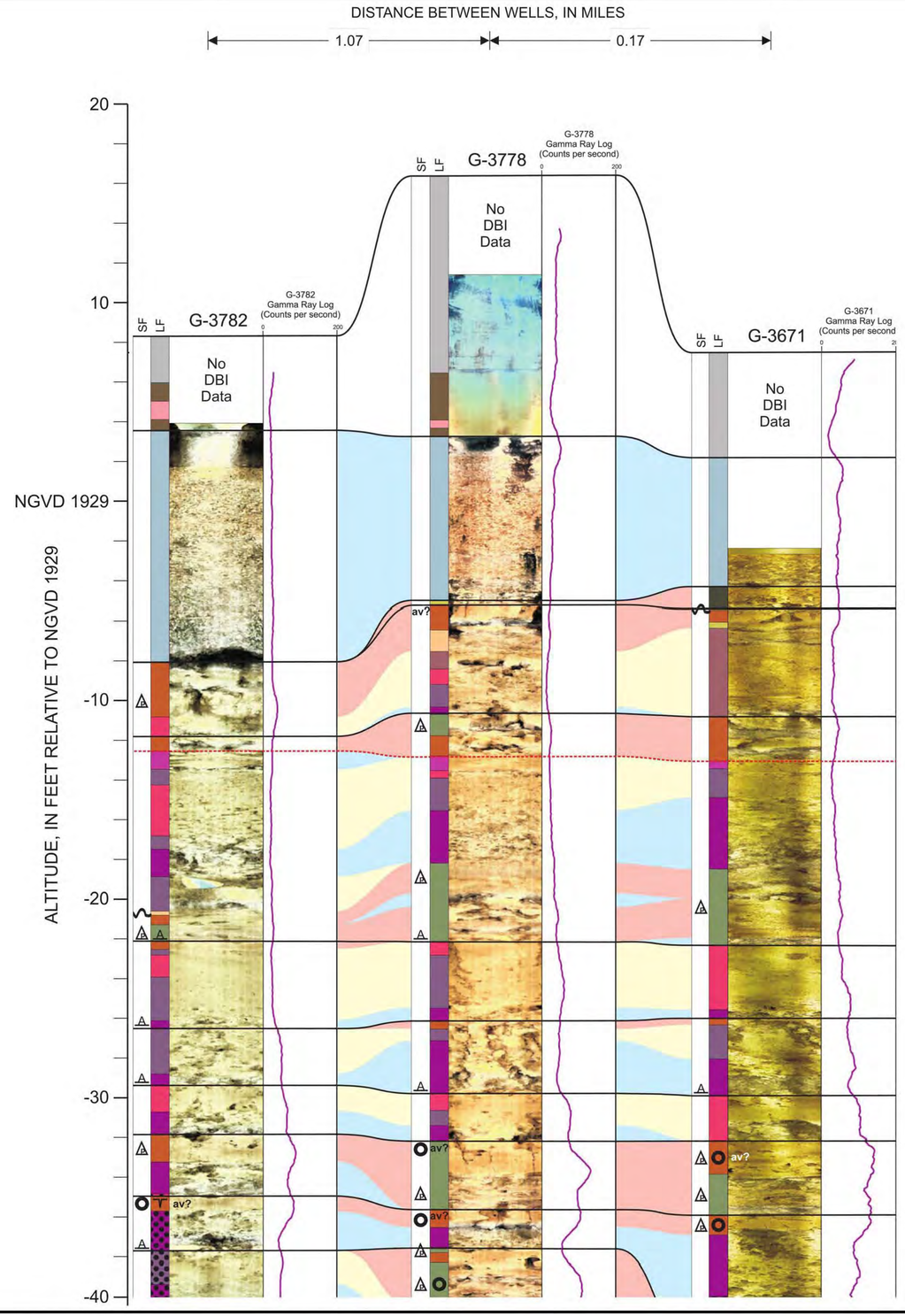
PLAN AND PROFILE
SECTION 2 (L31CB4)
MIAMI-DADE COUNTY, FLORIDA

DATE: October 11, 2011
DRAWN BY: MAJ
CHECKED BY: LGB
PROJECT NO.: 16059

LELSIE G. BROMWELL, P.E.
FLA. REG. NO. 18234

DATE:

REFER TO INDEX FOR TOTAL SHEETS INCLUDED.
SHEET – 10



EXPLANATION

Lithofacies

- Peloid packstone/ grainstone
- Peloid wackestone/ packstone
- *Planorbella* floatstone/ rudstone & sandy *Planorbella* floatstone/ rudstone
- Gastropod floatstone/ rudstone & sandy gastropod floatstone/ rudstone
- Conglomerate & sandy conglomerate
- Autobreccia
- Pedogenic limestone
- Root-mold limestone
- Mudstone/wackestone & sandy mudstone/ wackestone
- Laminated peloid packstone/grainstone
- Skeletal packstone/ grainstone & sandy skeletal pack-stone/grainstone
- Coral framestone
- Pelecypod floatstone/ rudstone & sandy pelecypod floatstone/ rudstone
- Touching-vug pelecypod floatstone/rudstone & sandy touching-vug pelecypod floatstone/ rudstone
- Vuggy wackestone/ packstone
- Quartz sandstone & skeletal sandstone
- Quartz sand
- Calcareous sandstone
- Shelly quartz sand
- Limestone & sandy limestone
- Mollusk shells & sandy mollusk shells

Miscellaneous

- Fill
- Peat
- Marl
- Latence
- No recovery

- HFC3A STROMATOLITE LAYER
- STRATIGRAPHIC BOUNDARY--Dashed where uncertain
- BASE OF BISCAYNE AQUIFER

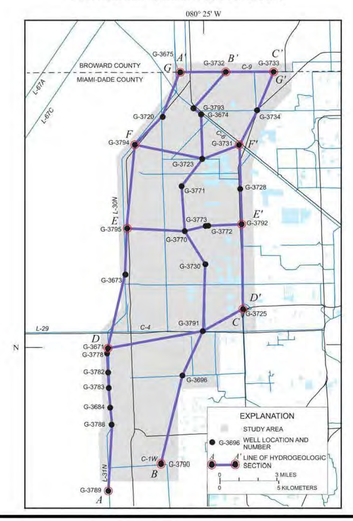
- ABRUPT CONTACT
- av? ALVEOLAR TEXTURE ?
- CHAROPHYTES
- CLAY RICH
- DBI DIGITAL BOREHOLE IMAGE
- LAMINATED CALCRETE
- CLAST OF LAMINATED CALCRETE
- FM FORMATION
- GAMMA RAY
- HFC HIGH-FREQUENCY CYCLE
- HFCS HIGH-FREQUENCY CYCLE SET
- HU HYDROGEOLOGIC UNIT
- LF LITHOFACIES
- MICRITIC RICH
- *PLANORBELLA*
- QU Q-UNIT (Perkins, 1977)
- SEMIVERTICAL CRACKS
- SF SIGNIFICANT FEATURES

Pore Class

CARBONATE PORE CLASSES OF THE FORT THOMPSON FORMATION AND MIAMI LIMESTONE

- PORE CLASS III
- PORE CLASS II
- PORE CLASS I
- PORE CLASS II MIXED SILICICLASTICS AND CARBONATES

Vertical Scale Greatly Exagerated
Horizontal Scale Not to Scale



Reference: Cunningham, K. J., et al., USGS SIR 2005-5235

811 Know what's below. Call before you dig.

NO.	DATE	REVISION

amec
AMEC-BCI Engineers & Scientists, Inc.
2000 E. Edgewood Dr., Ste #215, Lakeland, FL 33803
Phone: 863.667.2345 Fax: 863.667.2662
www.amec.com CA-0007867

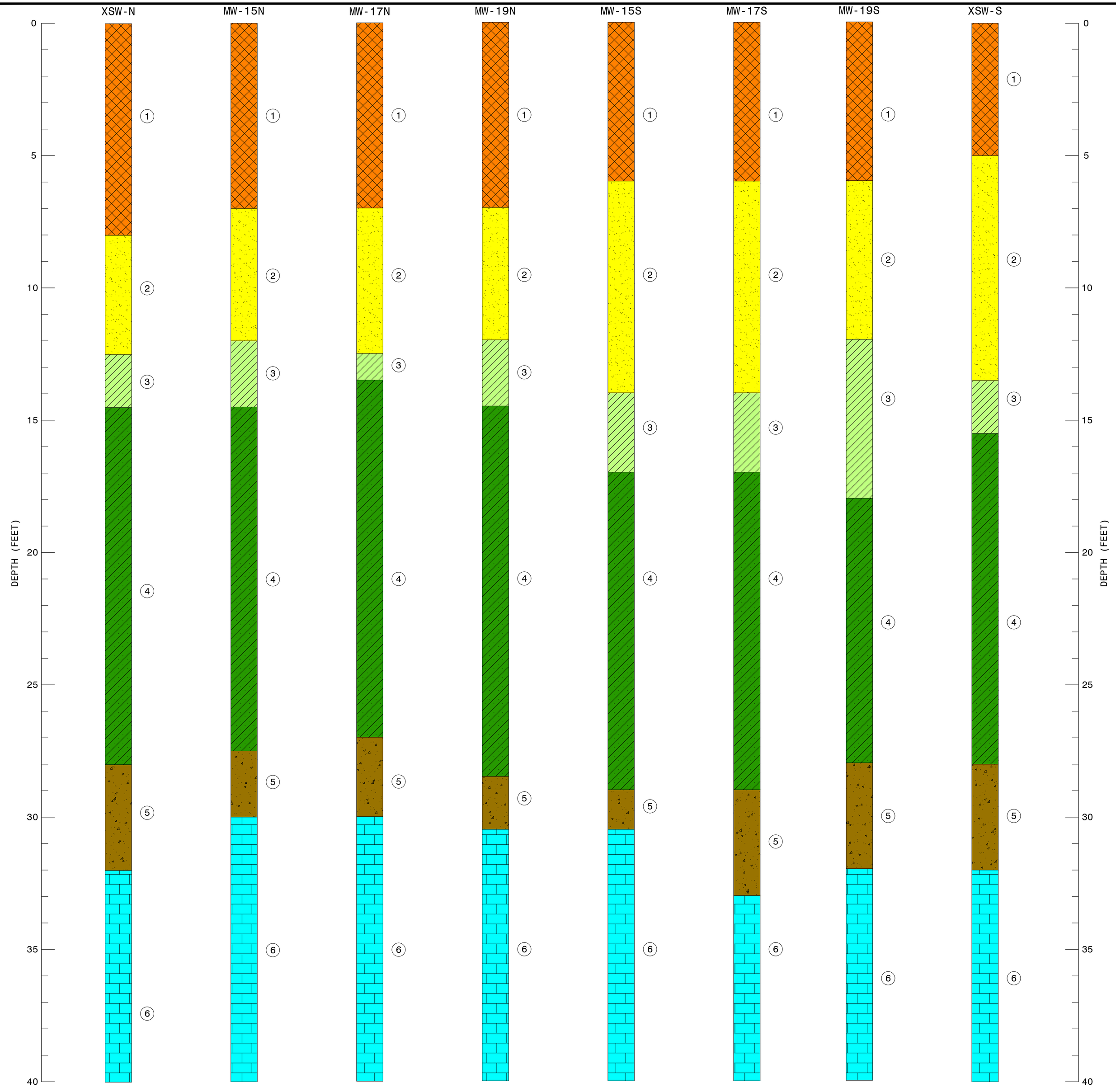
MIAMI-DADE LIMESTONE PRODUCTS ASSOCIATION
L-31N SEEPAGE BARRIER: PHASE 1
L-31N LEVEE
USGS LOG
MIAMI-DADE COUNTY, FLORIDA

DATE: October 11, 2011
DRAWN BY: MAJ
CHECKED BY: LGB
PROJECT NO.: 16059

LELSIE G. BROWN, P.E.
FLA. REG. NO. 18234
DATE:

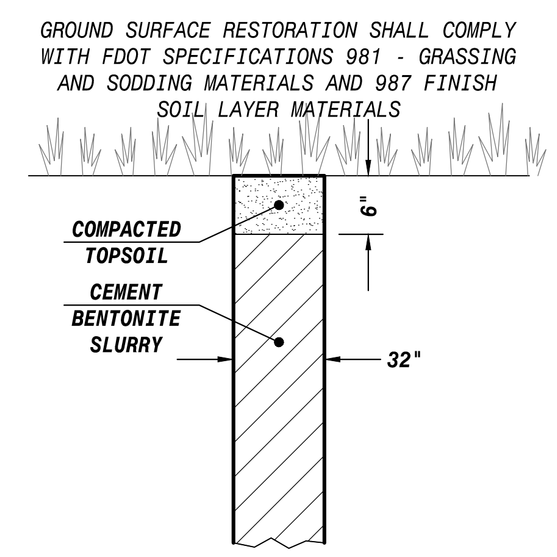
DRAFT

REFER TO INDEX FOR TOTAL SHEETS INCLUDED.
SHEET - 11



EXPLANATION

1. FILL/PEAT/VOID
2. OOLITE LIMESTONE
3. HARD, DENSE LIMESTONE (Q4 MARKER)
4. MARINE LIMESTONE (GRAY AND WHITE)
5. FRESHWATER/BRACKISH WATER LIMESTONE (Q3 MARKER)
6. WHITE, MARINE LIMESTONE (VERY PERMEABLE)



DETAIL "A"
WALL COMPLETION
not to scale

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MIAMI-DADE LIMESTONE PRODUCTS ASSOCIATION
L-31N SEEPAGE BARRIER: PHASE 1
L-31N LEVEE

MONITOR WELL LOGS AND WALL DETAIL

MIAMI-DADE COUNTY, FLORIDA

DATE: October 11, 2011
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LELSIE G. BROMWELL, P.E.
FLA. REG. NO. 18234

DATE:

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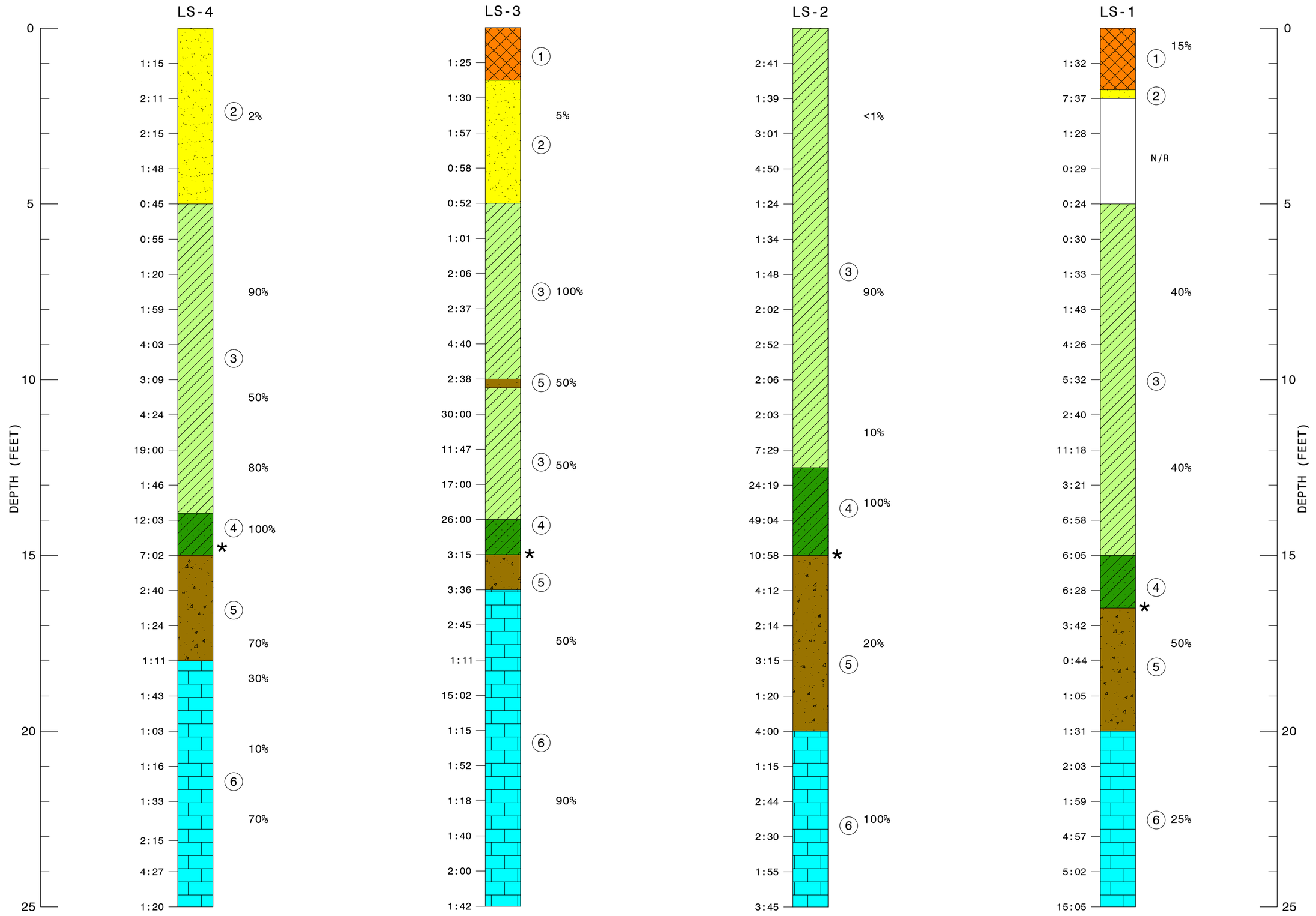
SHEET – 12



EXPLANATION

1. FILL
2. LAKE FLIRT MARL; WITH LIMESTONE / MUDSTONE
3. MIAMI ODLITE; WHITE TO CREAM OOLITIC LIMESTONE, CAVITY RIDDLED
4. Q_4 LAYER; FRESH WATER LIMESTONE
5. TAN TO GRAY, FOSSILFEROUS, VARIABLE SANDSTONE FRAGMENTS
6. MARINE LIMESTONE; WHITE TO LIGHT GRAY FOSSILIFEROUS

%	PERCENT RECOVERY
N/R	NO RECOVERY
2:41	DRILLING RATE (MINUTES PER FOOT ADVANCED)
*	TOP OF FORT THOMPSON FORMATION

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MIAMI-DADE LIMESTONE PRODUCTS ASSOCIATION
L-31N SEEPAGE BARRIER: PHASE 1
L-31N LEVEE
BORING LOGS AND WALL DETAIL
MIAMI-DADE COUNTY, FLORIDA

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LELSIE G. BROMWELL, P.E.
FLA. REG. NO. 18234

DATE:

REFER TO INDEX FOR TOTAL SHEETS INCLUDED.
SHEET – 13