DATE: FEBRUARY [illegible]
Revision No.:
E

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW1

Location: 550 Feet Southeast of Surface Impoundment

Depth of Well: 40 Feet

Well Screen Interval: 15 Feet

Casing Description: 2 inch PVC Pipe

Type of Well: Upgradient
(Background)

Hole No. WGM 1

DRILLING LOG	PROJECT: William C. Meredith	INSTALLATION: East Point, Ga.	SHEET 1 OF 2 SHEETS
LOCATION (Coordinates or Station): ~550 feet, SE of lagoon		SIZE AND TYPE OF BIT: 6" hollow stem auger	
DRILLING AGENCY: ATEC Associates		TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: 9	
THICKNESS OF OVERBURDEN: 45.0'		DATE HOLE STARTED: 9 Oct 1982	COMPLETED: 9 Oct 1982
DEPTH DRILLED INTO ROCK: 0		ELEVATION TOP OF HOLE: 1045.0 msl	
TOTAL DEPTH OF HOLE: 45.0'		ELEVATION GROUND WATER: 1021.4 msl (11 Oct)	
NAME OF DRILLER: Mike Banich		SIGNATURE OF INSPECTOR: Carl F. Tolcomb / Geologist	

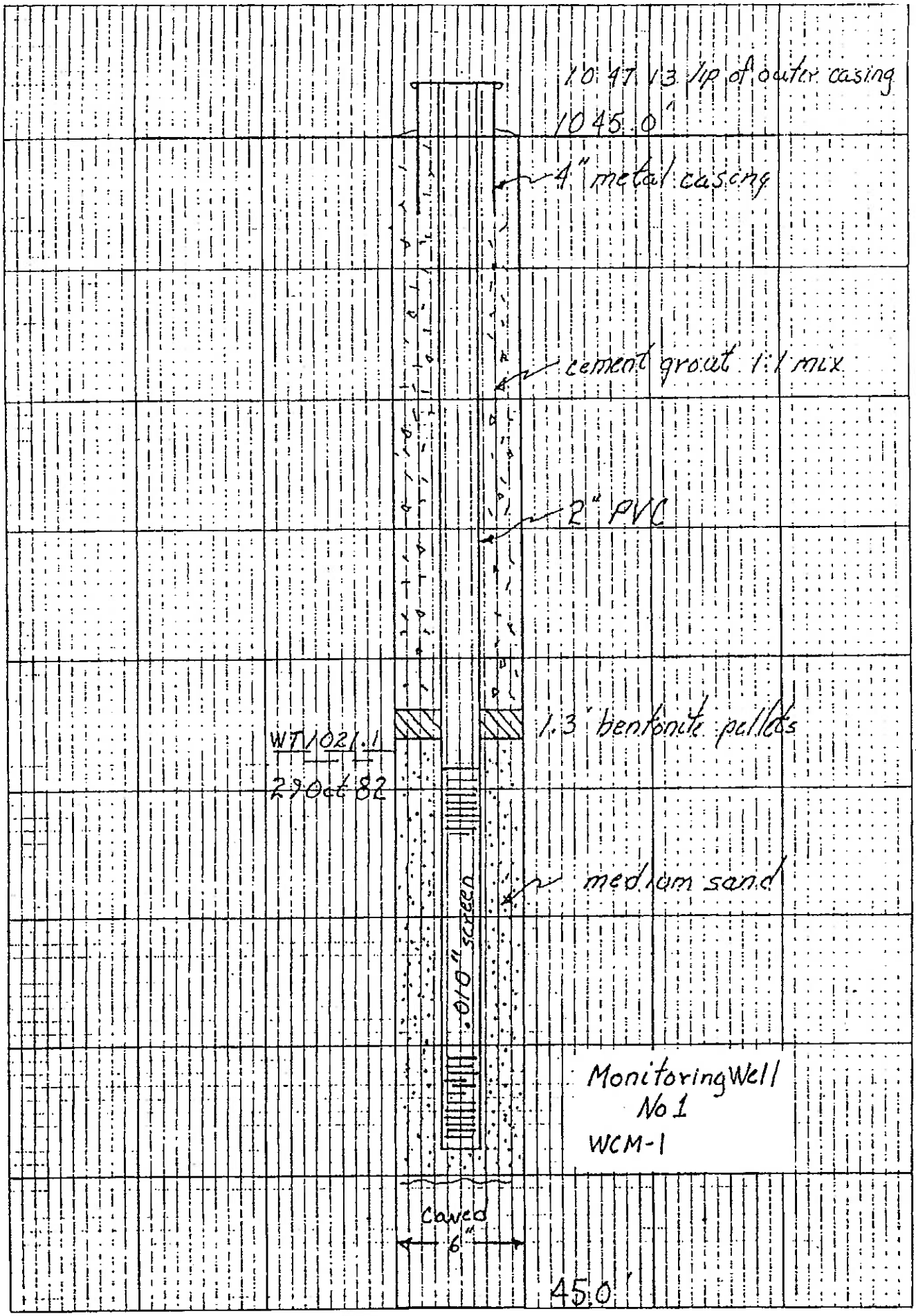
MW-1

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
1045.0			SM red micaceous silty sand. est. 30% mica, 25% quartz remainder silt & very fine mica	Blows per 0.5'		Soils field classified in accordance with the Unified Soil Classification System
				5		
				10		
	5			14	1	
				9		
				10		
	10			13	2	
				10		
				19		
	15			22	3	
			brown-red	13		
				25		
	20			30	4	
WT 23.6						
11 Oct 82			brown-gray - becomes coarser	16		
WT 25.6	25			24	5	
9 Oct 82				40		
			brown-orange with black Mn. & white decomposed feldspar.	11		
				21		
	30			25	6	
				8		
				16		
	35			21	7	
			mottled orange-white & gray weathered gneiss	16		
				21		
	40			26	8	

Hole No. WCM 1

DRILLING LOG	PROJECT William C. Meredith	INSTALLATION	SHEET 2 OF 2 SHEETS
LOCATION (Coordinates or Station)		SIZE AND TYPE OF BIT	
DRILLING AGENCY		TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED	COMPLETED
DEPTH DRILLED INTO ROCK		ELEVATION TOP OF HOLE	
TOTAL DEPTH OF HOLE		ELEVATION GROUND WATER	
NAME OF DRILLER		SIGNATURE OF INSPECTOR	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			SM mottled white-orange silty sand, highly micaceous.	9 18 26	9	
1000.0	45					Began Boring 1000 hrs. Completed 1150 hrs



DRAWING PAPER NO. 1230-10
TRACING PAPER NO. 1227-10
CROSS SECTION-10X10 TO 1 INCH

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW 2

Location: 400 Feet N65° W of Surface Impoundment

Depth of Well: 36 Feet

Well Screen Interval: 15 Feet

Casing Description: 2 inch PVC Pipe

Type of Well: Downgradient

Hole No. WCM 2

DRILLING LOG	PROJECT: William C. Meredith	INSTALLATION: East Point, Ga	SHEET 1 OF 2 SHEETS
LOCATION (Coordinates or Station): 400 feet, N65°W of lagoon		SIZE AND TYPE OF BIT: 6" hollow stem auger	
DRILLING AGENCY: ATEC Associates		TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: 10	
THICKNESS OF OVERBURDEN: 50.0'		DATE HOLE: STARTED 9 Oct 82	COMPLETED 9 Oct 82
DEPTH DRILLED INTO ROCK: 0		ELEVATION TOP OF HOLE: 1018.2	
TOTAL DEPTH OF HOLE: 50.0'		ELEVATION GROUND WATER: 998.9' (11 Oct 1982)	
NAME OF DRILLER: Mike Banich		SIGNATURE OF INSPECTOR: Earl F. Titcomb Jr. Geologist	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
1018.2 / 1016.2			SM-SC black-red silty clayey sand, fill	Blows per 0.5'		Soils field classified in accordance with the Unified Soil Classification System
			SM red very micaceous silty sand. Sand size mica about 40%, quartz sand 20%. Weathered schist.	5 11 16	1	
	5					
			brown micaceous sand, slightly coarser than sample 1	11 22 26	2	
	10					
				11 17 26	3	
	15					
WT 19.3 10 Oct 82 WT 20.9 9 Oct 82				9 17 19	4	
	20					
				9 11 21	5	
	25					
			slightly less decomposed	9 16 26	6	Boring caved in at 32.0 on 10 Oct 82
	30					
			brown-gray very micaceous weathered gneiss more sand much black Mn staining.	26 50 50/0.3	7	very slow drilling
	35					
				50 50/0.3	8	
	40					

MW-2

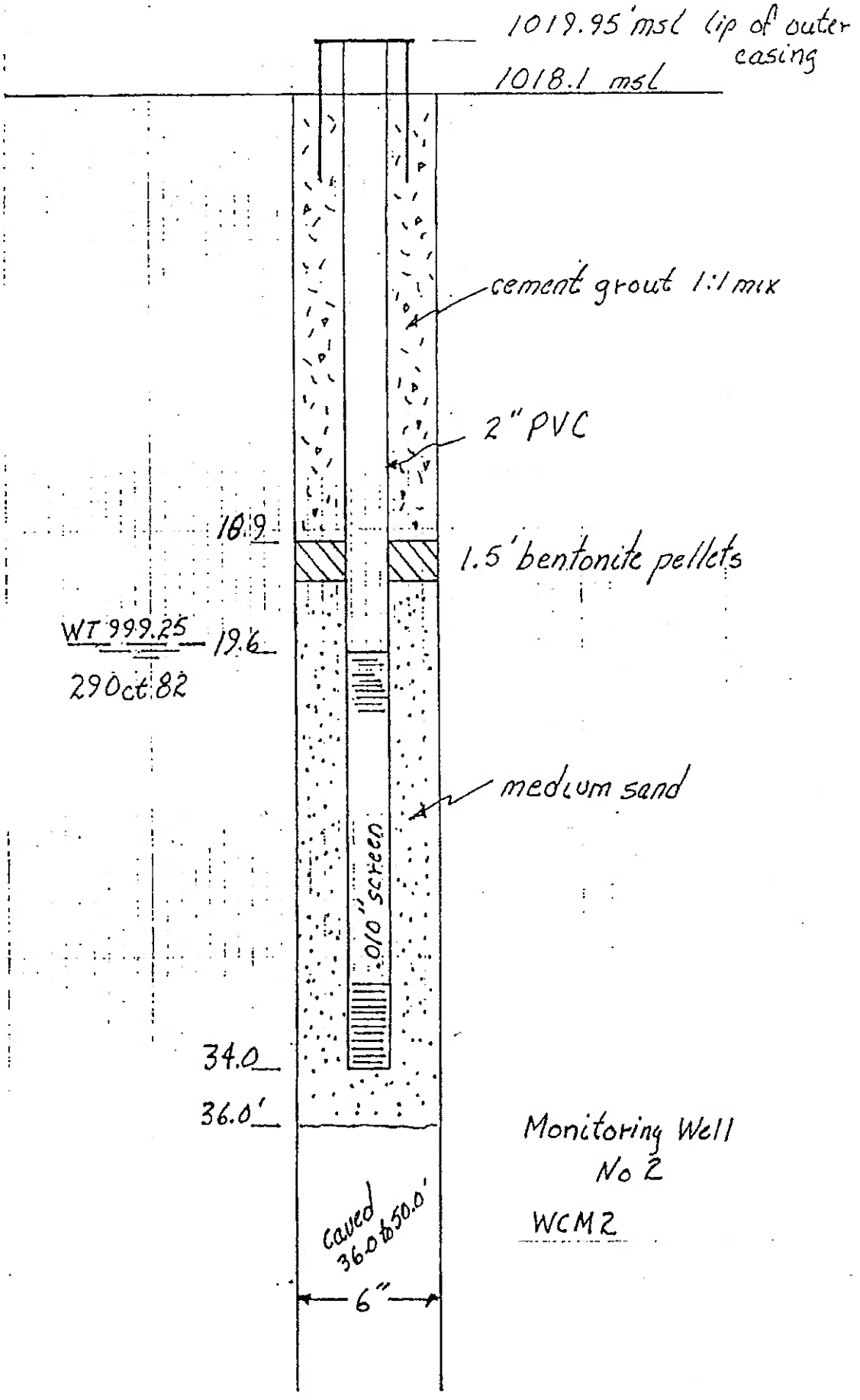
Res

PWR

Hole No. WCM 2

DRILLING LOG	PROJECT William C. Meredith	INSTALLATION East Point, Ga	SHEET 2 OF 2 SHEETS
LOCATION (Coordinates or Station)		SIZE AND TYPE OF BIT 6	
DRILLING AGENCY		TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED	COMPLETED
DEPTH DRILLED INTO ROCK		ELEVATION TOP OF HOLE	
TOTAL DEPTH OF HOLE		ELEVATION GROUND WATER	
NAME OF DRILLER		SIGNATURE OF INSPECTOR	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			SM brown to gray highly micaceous silty sand. Weathered biotite gneiss			
	45			100/0.4	9	
				50/0.2	10	
968.2	50					Began Boring 1310 hrs Completed 1600 hrs


1019.95 msl lip of outer casing
1018.1 msl
cement grout 1:1 mix
2" PVC
18.9
1.5' bentonite pellets
WT 999.25
19.6
29 Oct 82
medium sand
.010" screen
34.0
36.0'
Monitoring Well
No 2
WCM2
caved 36.0 to 50.0'
6"

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW 3

Location: 250 Feet N 40° W of Surface Impoundment

Depth of Well: 32 Feet

Well Screen Interval: 15 Feet

Casing Description: 2 inch PVC Pipe

Type of Well: Downgradient

Hole No. WCM 3

DRILLING LOG	PROJECT: William C. Meredith	INSTALLATION: East Point, Ga	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Station): ~250 feet, N 40° W of lagoon		SIZE AND TYPE OF BIT: 6" hollow stem auger	
DRILLING AGENCY: ATEC		TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: 8	
THICKNESS OF OVERBURDEN: 40.0'		DATE HOLE STARTED: 10 Oct 82	COMPLETED: 10 Oct 82
DEPTH DRILLED INTO ROCK: 0		ELEVATION TOP OF HOLE: 1023.8 msl	
TOTAL DEPTH OF HOLE: 40.0'		ELEVATION GROUND WATER: 1009.0 (11 Oct 82)	
NAME OF DRILLER: Mike Banich		SIGNATURE OF INSPECTOR: Carl F. Tiedemann Geologist	

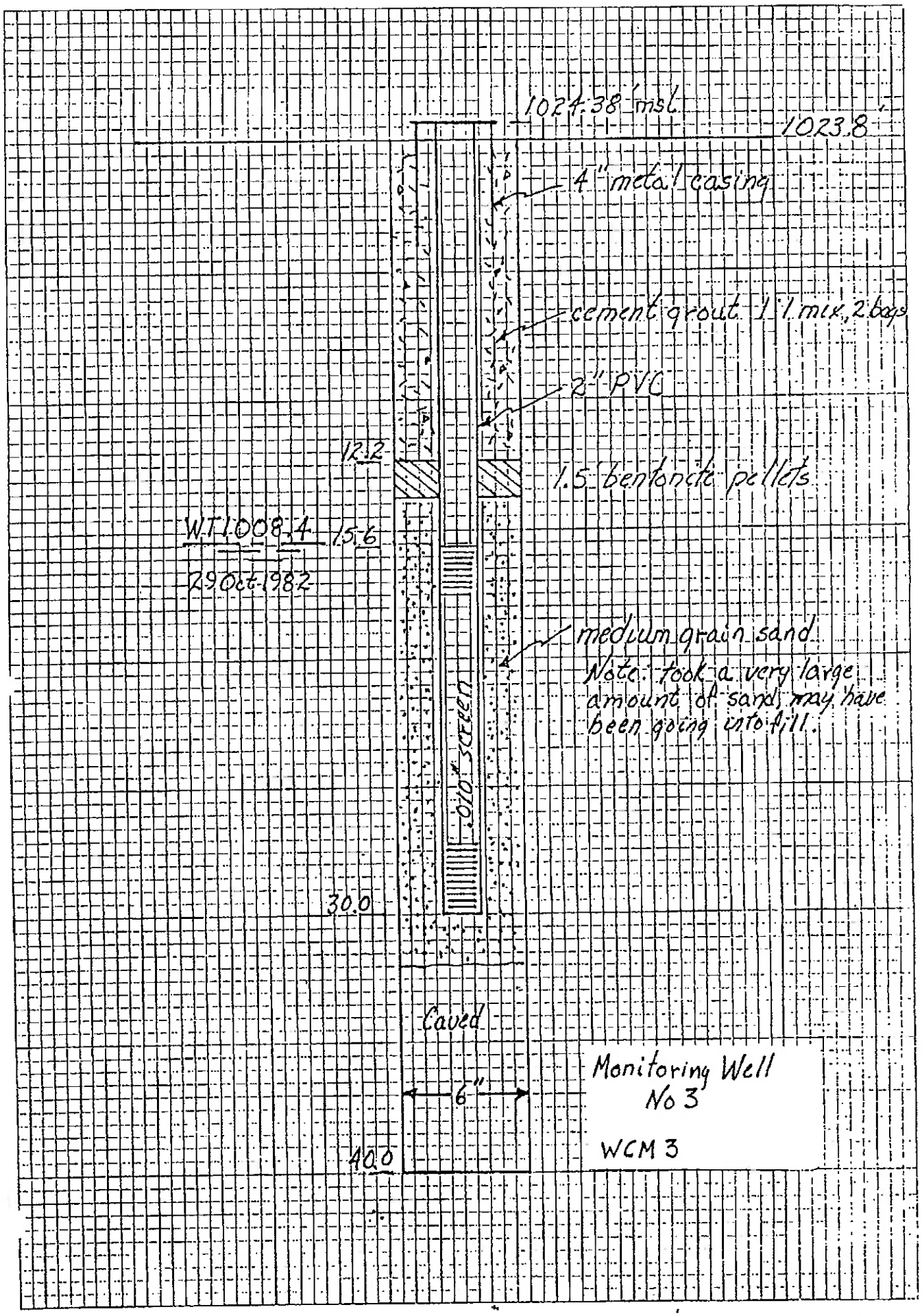
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT (Blows/0.5')	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
1023.8						
			SM red silty sand, rocks asphalt etc.	7, 8, 9	1	Soils field classified in accordance with the Unified Soil Classification System
	5		SC clayey silty sand, slighty micaceous	4, 5, 8	2	
	10		SM-SC gray to red silty clayey sand. Upper 0.5' black to gray sands.	2, 5, 3	3	WT. 15.35, 11 Oct 82
WT 15.2	15		SM-SC dark gray clayey silty sand with wood fragments black leaves etc.	4, 29, 8	4	17.5 hard zone 19.5 very rapid penetration
10 Oct 82	20		SM dark gray clayey silty sand, rock fragments, wood cuttings. Last 0.4' light gray coarse sand.	3, 4, 5	5	original ground approximately 22.5'
1009.3	25		CL gray with red banding. Very micaceous, sandy silty clay.	4, 5, 7	6	28.5 to 33.5 very rapid penetration.
	30			5, 9, 12	7	
	35		SM-SC interlayered red silty sands, gray silts, lean clay etc. 39.5 weathered biotite schist (natural ground ?)	19, 13, 16	8	36.0 slow augering Began boring 1230 hrs Completed boring 1430 hrs
983.8	40					

MW-3

Fill

Residuum

Rock


1024.38 msl
1023.8
4" metal casing
cement grout 1:1 mix, 2 bags
2" PVC
12.2
1.5 bentonite pellets
WT 1008.4
15.6
29 Oct 1982
medium grain sand
Note: took a very large amount of sand, may have been going into fill.
.010" screen
30.0
Caved
6"
40.0
Monitoring Well
No 3
WCM 3

E-5a

DATE: APRIL 28, 2008
Revision No.: 1
E

E-5a DESCRIPTION OF WELLS

Ground Water Monitoring Well No.: MW 3A

Location: 5 FEET SOUTH OF WELL MW3

Depth of Well: 58.7 FEET

Well Screen Interval: 10 feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient

Project No: WCM

Project: April 04 Well Installations

Client: William C. Meredith

Location: 5' S of MW3

Boring ID: MW3A

Enclosure:

Geologist: Earl Titcomb, P.G.

SUBSURFACE PROFILE

Depth	Symbol	Description	SPT	Well Installation Details	Remarks
0		Ground Surface			
1-10		***MH*** micaceous silt with minor sandy layers (0.1')			Casing Stick-Up = 1.7' bgs
11-12		- red clay @ 11.0' bgs	7		Cement grout
13-14		- leaf fragment @ 14.0' bgs			
15-20		- difficult drilling from 17 - 18' bgs; lots of wood fragments. - charcoal and rock fragments (20 - 21' bgs); alluvial to 21.2' bgs	3		
21-25		***MH*** weathered schist; dark olive brown			
26-30		***SM*** weathered granite gneiss; gray black and brown banded feldspars; completely weathered	3		
31-38					Top of bentonite = 38.0' bgs
39-40		- foliation dips 45 degrees - feldspars less weathered at 39' bgs	17		
41-46					Top of Sand = 46.7' bgs
47-48					Top of Screen = 48' bgs
49-50		- large quartz viens, some gravel sized fragments	16		
51-58		Refusal at 59.0' bgs			Total Depth Below Top of Casing = 58.5'
59-60		End of Borehole			

Drilled By: GeoLab

Drill Method: HSA - CME 55

Drill Date: April 20, 2004

Hole Size: 8-inch

Sheet: 1 of 1

Soil Boring
No. MW-3B

Project: W.C. Meredith	Boring No: MW-3B
Date Installed: 11/17/16	Location: MW-3 Cluster
Drilling Method: Hollow Stem Auger - 3.25 and 6.25 ID	Total Depth of Boring: 62.5'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: 19.82'
Sampler Type: Soil Cuttings / Core Barrel used @ 28-30'	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
						GRAVEL, SAND, AND SILT COVER, TAN, BROWN, SOME RIP-RAP AND DEBRIS, FILL
				CUTTINGS	SM/ML	BROWN, SAND, SILT, WITH TRACE CLAY MICACEOUS, FINE TO MEDIUM, NO ODOR
5	NS		NS			
				CUTTINGS	SM/ML	BROWN, SAND, SILT, WITH TRACE CLAY MICACEOUS, FINE TO MEDIUM, NO ODOR
10	8-10 FT		0.0			
				CUTTINGS		
						BROWN, TAN, SAND, SILT, TRACE CLAY
					SM/SP	MICACEOUS, ENCOUNTERED DEBRIS, HARD DRILLING AT 11 FEET, NO ODOR
15	13-15 FT		0.0			
				CUTTINGS	SC/SM	BROWN, SAND AND SILT, MICACEOUS, FINE, SLIGHTLY MOIST, SLIGHT ODOR
20	18-20 FT		0.0			
				CUTTINGS		
					SM	BROWN, SAND AND SILT, MICACEOUS, FINE, SLIGHTLY MOIST, SLIGHT ODOR
25	23-25 FT		0.0			

Soil Boring
No. MW-3B

Project: W.C. Meredith	Boring No: MW-3B
Date Installed: 11/17/16	Location: MW-3 Cluster
Drilling Method: Hollow Stem Auger - 3.25 and 6.25 ID	Total Depth of Boring: 62.5'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: 19.82'
Sampler Type: Soil Cuttings / Core Barrel used @ 28-30'	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
				5%	SM	GRAY, BROWN, TAN, SAND AND SILT, MICACEOUS, FINE TO MEDIUM, MOIST TO WET, SLIGHT ODOR
30	28-30 FT		0.0			
				5% (CORE BARREL NOT WORKING)	SM	GRAY, BROWN, SAND AND SILT, FINE AND MICACEOUS, SLIGHTLY SAPROLITIC, TEXTURE (FOLIATION) WET, SLIGHT ODOR
35	33-35 FT		0.0			
				CUTTINGS	SM	LIGHT GRAY, SILT AND CLAY, FINE, WITH MEDIUM TO COARSE SAND, VERY WET, SLIGHT ODOR
40	38-40 FT		0.0			
				CUTTINGS	SM	GREY, SAPROLITIC, WEATHERED SCHIST, SOFT PWR, FINE TO MEDIUM, MICACEOUS, WET, SLIGHT ODOR
45	44-45		0.0			
				CUTTINGS	SM	GREY, SAPROLITIC, WEATHERED SCHIST, SOFT PWR, FINE TO MEDIUM, MICACEOUS, WET, SLIGHT ODOR
50	49-50		0.0			

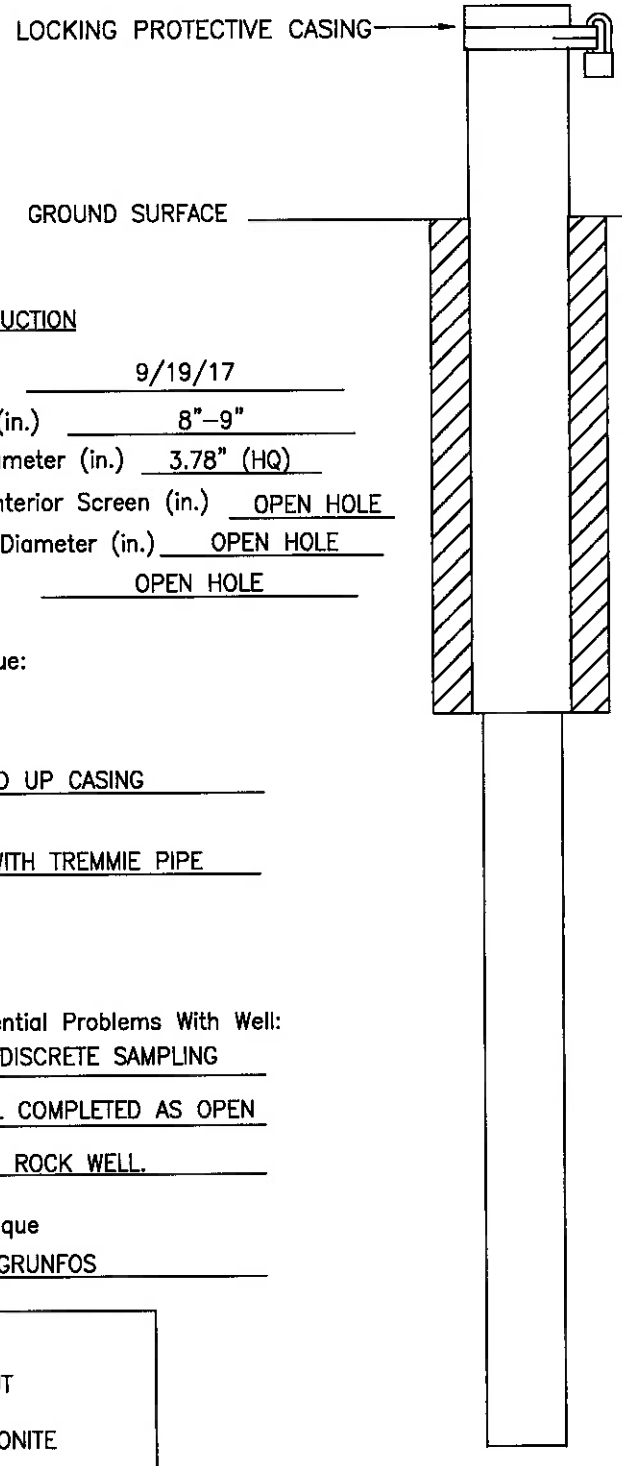
Soil Boring
No. MW-3B

Project: W.C. Meredith	Boring No: MW-3B
Date Installed: 11/17/16	Location: MW-3 Cluster
Drilling Method: Hollow Stem Auger - 3.25 and 6.25 ID	Total Depth of Boring: 62.5'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: 19.82'
Sampler Type: Soil Cuttings / Core Barrel used @ 28-30'	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
					SM	GREY, SAPROLITIC, WEATHERED SCHIST
						FINE TO MEDIUM, VERY MICACEOUS,
						WET, SLIGHT ODOR
				CUTTINGS		
55	54-55 FT		0.0			
					SM	GREY, SAPROLITIC, WEATHERED SCHIST
						FINE TO MEDIUM, VERY MICACEOUS,
						VERY WET, SLIGHT ODOR
				CUTTINGS		
60	59-60		0.0			
					SM	GREY, SAPROLITIC, WEATHERED SCHIST
				CUTTINGS		FINE TO MEDIUM, VERY MICACEOUS,
						VERY WET, SLIGHT ODOR
						BORING REFUSAL ON COMPETENT
						BEDROCK TERMINATED AT 62.5 FEET
						(REFER TO CORING LOG FOR BORING
65						CONTINUATION)
70						
75						

DOUBLE-CASED WELL CONSTRUCTION DETAILS FLUSH GRADE

PROJECT NAME	WILLIAM C. MEREDITH	SUPERVISING GEOLOGIST	KEN SUMMEROUR
PROJECT NO.	ER-437	DRILLER	SMITH DRILLING
PROJECT LOCATION	EAST POINT, GA	DATE OF INSTALLATION	9/19/17
MONITORING WELL	MW-3B		



CASING MATERIAL: PVC
CASING DIAMETER: 5"
CASING LENGTH: 62.5'
PAD DIMENSIONS: 2'X2'
HEIGHT ABOVE GROUND: 2'

Well Casing Elevation: 1,025.73'
Ground Surface Elev.: 1,023.78'
Drilling Method/Rig Type: H.S.A., ROCK CORING

DETAILS OF CONSTRUCTION

Date Completed: 9/19/17
Borehole Diameter (in.): 8"-9"
Open Core Hole Diameter (in.): 3.78" (HQ)
Type and Size of Interior Screen (in.): OPEN HOLE
Screen Perforation Diameter (in.): OPEN HOLE
Screen Length (ft.): OPEN HOLE

SURFACE CASING
TYPE: PVC
DIAMETER: 5"
LENGTH: 62.5' BGS
SEAL TYPE: GROUT

Completion Technique:

STAND UP CASING

GROUTED WITH TREMMIE PIPE

OPEN CORE HOLE 3.8"

Description of Potential Problems With Well:
BASED ON DISCRETE SAMPLING RESULTS, WELL COMPLETED AS OPEN HOLE ROCK WELL.

Development Technique
GRUNFOS

GROUT
BENTONITE
FILTER PACK

Bottom of Open Hole 200 ft. BGS

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW 4

Location: 250 Feet West of Surface Impoundment

Depth of Well: 30 Feet

Well Screen Interval: 15 Feet

Casing Description: 2 inch PVC Pipe

Type of Well: Downgradient

Hole No. WCM 6

DRILLING LOG	PROJECT: William C. Meredith	INSTALLATION: East Point, Ga	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Station): ~250' W of lagoon		SIZE AND TYPE OF BIT: 6" hollow stem auger	
DRILLING AGENCY: ATEC		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: 6	
THICKNESS OF OVERBURDEN: 40.0'		DATE HOLE: STARTED 10 Oct 82	COMPLETED 10 Oct 82
DEPTH DRILLED INTO ROCK: 0		ELEVATION TOP OF HOLE: 1026.0' msl	
TOTAL DEPTH OF HOLE: 40.0'		ELEVATION GROUND WATER: 1012.8' 11 Oct 82	
NAME OF DRILLER: Mike Banich		SIGNATURE OF INSPECTOR: Carl F. Tetrault, Geologist	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT (Blows per 0.5')	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
1026.0			GM black, gravel - fill	19, 19, 17	1	Soils field classified in accordance with the Unified Soil Classification System.
	5		SC red clayey silty sand, micaceous	5, 6, 9	2	
	10		MH red clayey micaceous silt, slight plasticity, banded with some quartz & feldspar lenses.	12, 13, 17	3	
	15			9, 13, 16	4	18.5' to 23.5' rapid penetration 1 min 30 sec @ 300 psig
	20		SM (H) red silty sand, very micaceous. Some mottled red, pink & brown, some black Mn (?) pods.			23.5' to 28.5' rapid penetration 1 min 12 sec @ 300 psig.
	25			10, 15, 19	5	28.5 to 33.5 very rapid penetration (5 sec @ 200 psig)
	30					33.5 to 38.5 rapid penetration (1 min 15 sec.)
	35			10, 17, 19	6	Begin 1530 hrs. Completed 1700 hrs.
	40					

Fill

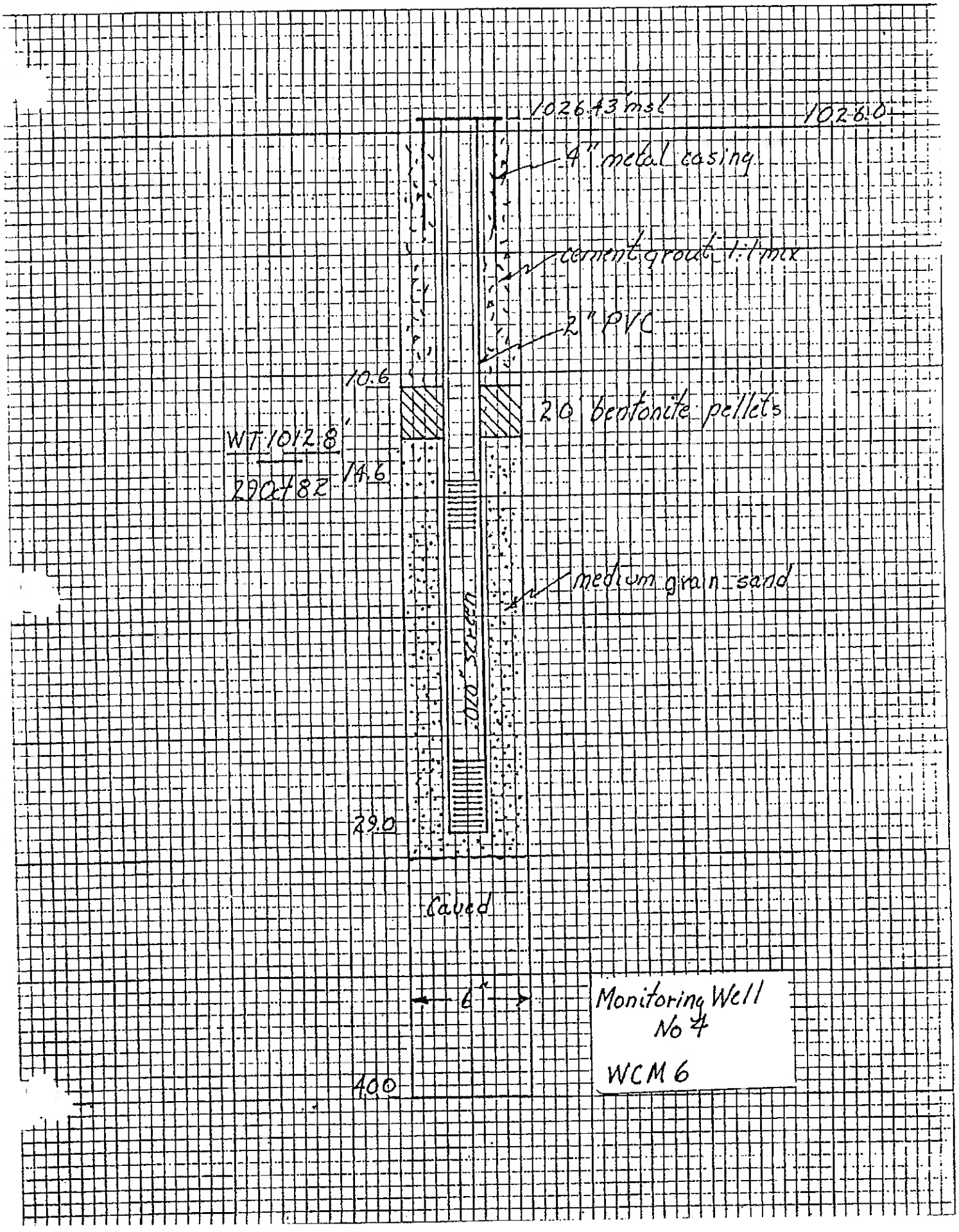
Red clay

WT 13.3
11 Oct 82

WT 16.4
10 Oct 82

MW-4

maybe Call PWR?


1026.43 msl
1028.0
4" metal casing
cement grout 1:1 mix
2" PVC
10.6
20 bentonite pellets
WT 1012.8
29Oct82
14.6
medium grain sand
.010" screen
29.0
Caved
4"
Monitoring Well
No 4
WCM 6
40.0

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW 5

Location: 6 Feet North of Toe of surface Impoundment dike. (East side of light pole)

Depth of Well: 35 Feet

Well Screen Interval: 15 Feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient (point of compliance)

CONSULTANT IN GEOLOGY

Hole MW3

DRILLING LOG	COMPANY William C. Meredith	INSTALLATION East Point, Ga	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Station) near grease trap -6' from toe		SIZE AND TYPE OF BIT 2¼" hollow stem auger, SPT	
DRILLING AGENCY ATEC		TOTAL NO OF OVERBURDEN SAMPLES TAKEN 8	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED 11May84	COMPLETED 11May84
DEPTH DRILLED INTO ROCK		ELEVATION TOP OF HOLE 1030.02	
TOTAL DEPTH OF HOLE 43.0'		ELEVATION GROUND WATER 1014.8 0900hrs 12May84	
NAME OF DRILLER Robert Ray		SIGNATURE OF INSPECTOR OR GEOLOGIST Carl F. Tolcomb	

MW-5

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
1030.02			SM dark gray silty sand with gravel. 3 to 3.5' hard layer			difficult to start hole, auger "walking" off rubble
	5		ML dark gray, micaceous sandy silt, damp, with red and black mottling, till, with gravel size fragments of biotite gneiss.	7	1	
	10			14	2	10.5 to 11.0 very hard
WT 1014.8 12May84	15		more clayey, banded red & black & dark gray, black coal(?)	12	3	
	20			3	4	
1007.0	25		"Roots", banded gray weathered gneiss.	5	5	top of original ground(?) WT encountered drilling about 23.0'
1003.0	30		SM banded gray, white, black micaceous fine silty sand. Weathered schist.	22	6	creosote(?) at top of sampler or core.
	35		NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.	38	7	BLOWS PER FOOT: Number required to drive 1⅜" ID splitspoon w/140 lb hammer falling 30".
	40		augered to 43.0'	26	8	

EARL F. TITCOMB, JR.
CONSULTANT IN GEOLOGY

GROUND WATER OBSERVATION WELL REPORT

PROJECT: Lagoon Monitoring System
LOCATION: East Point, Ga.
CLIENT: William C. Meredith
CONTRACTOR: ATEC
DRILLER: Ray INSPECTOR: Earl F. Titcomb
INSTALLATION DATE 11 May 84

FILE NO.
WELL NO. MW5
BORING NO. same
LOCATION east of grease trap - 6' from tac
SHEET OF

SURVEY DATUM MSL

GROUND ELEVATION 1030.02

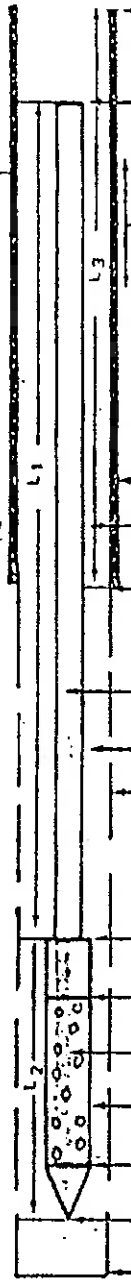
SUMMARIZE SOIL CONDITIONS (NOT TO SCALE)

dark gray silty sand fill

dark gray, clayey micaceous sandy silt soft

weathered schist

See Drilling Log For Detailed Soil Description



ELEVATION OR STICKUP ABOVE/BELOW GROUND SURFACE OF CASING OR ROADWAY BOX	1032.90
ELEVATION OR STICKUP ABOVE/BELOW GROUND SURFACE OF RISER PIPE.	1032.50
THICKNESS OF SURFACE SEAL	3'
TYPE OF SURFACE SEAL	sand mix
[INDICATE ALL SEALS SHOWING DEPTH, THICKNESS AND TYPE]	13.6' neat cement grout 2' bentonit pellets.
TYPE OF CASING	steel
INSIDE DIAMETER OF CASING	6" □
ELEVATION/DEPTH OF BOTTOM OF CASING	1028.9
INSIDE DIAMETER OF RISER PIPE	2" OD
TYPE OF BACKFILL AROUND RISER	sand
DIAMETER OF BOREHOLE	6½" ±
ELEVATION/DEPTH OF BOTTOM OF RISER	1012.2
TYPE OF POINT OR MANUFACTURER	PVC - Tri-loc
SCREEN GAUGE OR SIZE OF OPENINGS	.010"
DIAMETER OF WELLPOINT	2"
TYPE OF BACKFILL AROUND POINT	coarse sand
ELEVATION/DEPTH OF BOTTOM OF POINT	997.2
ELEVATION/DEPTH OF BOTTOM OF BOREHOLE	987.0

[FIGURES REFER TO: EL. ✓ DEPTH ___]

E-6a

DATE: July 14, 1998
Revision No.: 1
E

E-6a DESCRIPTION OF WELLS

Ground Water Monitoring Well No.: MW5R

Location: 6 Feet North of Toe of Surface Impoundment at toe of original dike.
(Just beyond closed surface impoundment cap - inside fenced area)

Depth of Well: 34 feet

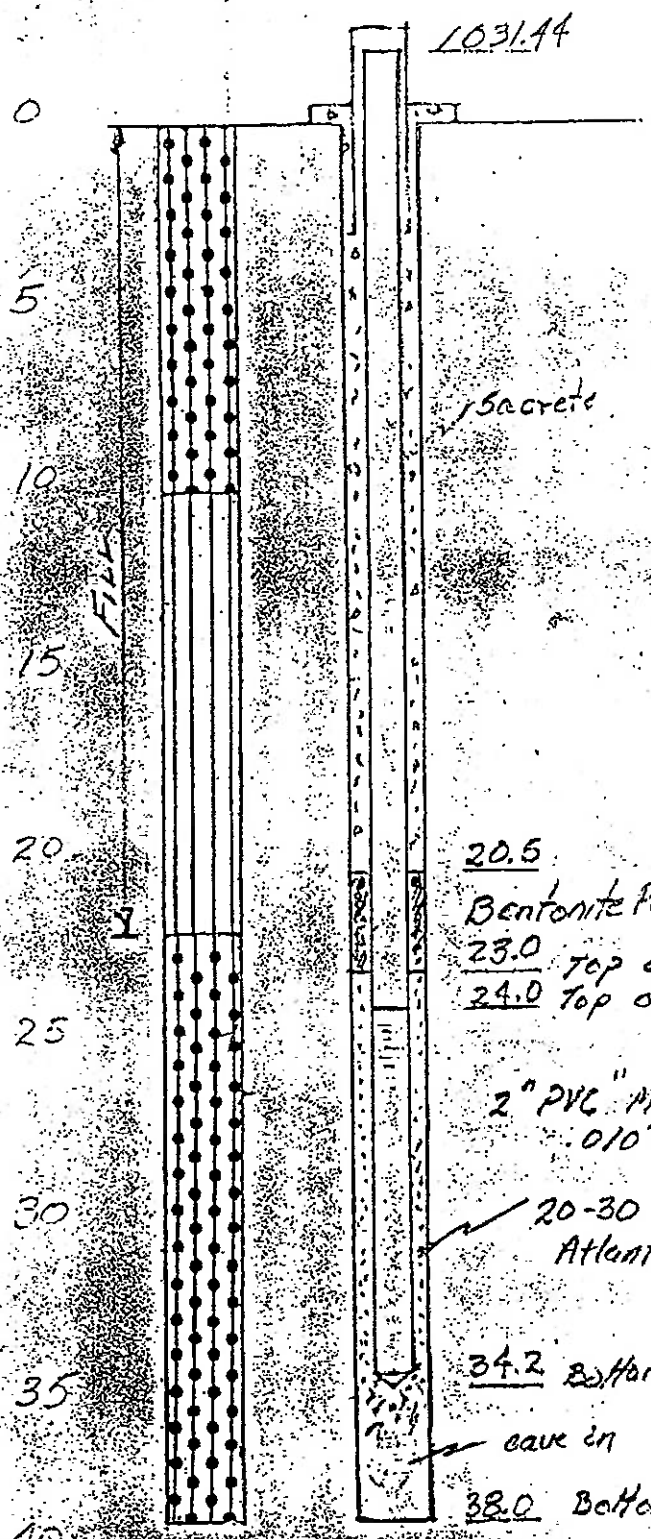
Well Screen Interval: 10 feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient
(point of compliance)

NOTE: Well MW5R replaced well MW5 removed during surface impoundment closure excavation in 1989.
Well MW5R put in same location as previous well MW5.

W. C. Meredith Co | East Point, Ga | MW 5 (R)



Note: Replacement for MW5 destroyed during closure at same location

Soil Boring
No. MW-5A

Project: **William C. Meredith Company**	Boring No: **MW-5A**
Date Installed: **January 15, 2013**	Location: **North of MW-5R**
Drilling Method: **DPT/hollow stem auger**	Total Depth of Boring: **46'**
Drilling Company: **Atlas Geo Sampling**	Initial Depth to Groundwater: **21.52**
Driller: **Sammy/Penni Whitaker**	Final Depth to Groundwater: **N/A**
Sampler Type: **Continuous Macrocore**	Geologist: **Ken Summerour, PG**

DEPTH	SAMPLE NUMBER	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
			70%	Fill	Brown/red/yellow sandy silt fill with wood debris and gravel, no odor
	3-4'	0.0			
5			65%	Fill	Fill (same as above) with more clay
	7-8'	32.0		Fill	Gray/blue/red silty sandy clay, mild odor at 8' and from 13-17'
10	11-12'	5.2	65%		
15	15-16'	0.0	100%		
20	19-20'	0.4	85%	Fill	Gray/brown/red gravelly sandy clay fill, slight odor
	23-24'	0	70%	Fill	Tan to gray sandy clay
25				Fill	Black product zone
				Fill	Tan to gray sandy clay, some product, strong odor

Soil Boring
No. MW-5A (cont)

Project: **William C. Meredith Company**	Boring No: **MW-5A**
Date Installed: **January 15, 2013**	Location: **North of MW-5R**
Drilling Method: **DPT/hollow stem auger**	Total Depth of Boring: **46'**
Drilling Company: **Atlas Geo Sampling**	Initial Depth to Groundwater: **21.52**
Driller: **Sammy/Penni Whitaker**	Final Depth to Groundwater: **N/A**
Sampler Type: **Continuous Macrocore**	Geologist: **Ken Summerour, PG**

DEPTH	SAMPLE NUMBER	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
				Fill	Tan to gray sandy clay, pockets of product throughout, strong odor
	27-28'	86.3	95%		
30	30-31'	31.2	100%		
				SM	Transition to native soils, brown/gray/tan/white/yellow silty sandy saprolite, micaceous, slight foliation, mild odor,
			70%		no product, becomes harder with depth
	34-35'	30.0			
35					
			50%		
	38-39'	23.6			
40					
			80%		
	43-44'	7.5			
45					
	46-47'	18.6	40%	SM	46' - Boring terminated, refusal
50					

ENVIRORISK CONSULTANTS, INC.

MONITORING WELL CONSTRUCTION DETAILS – MW-5A

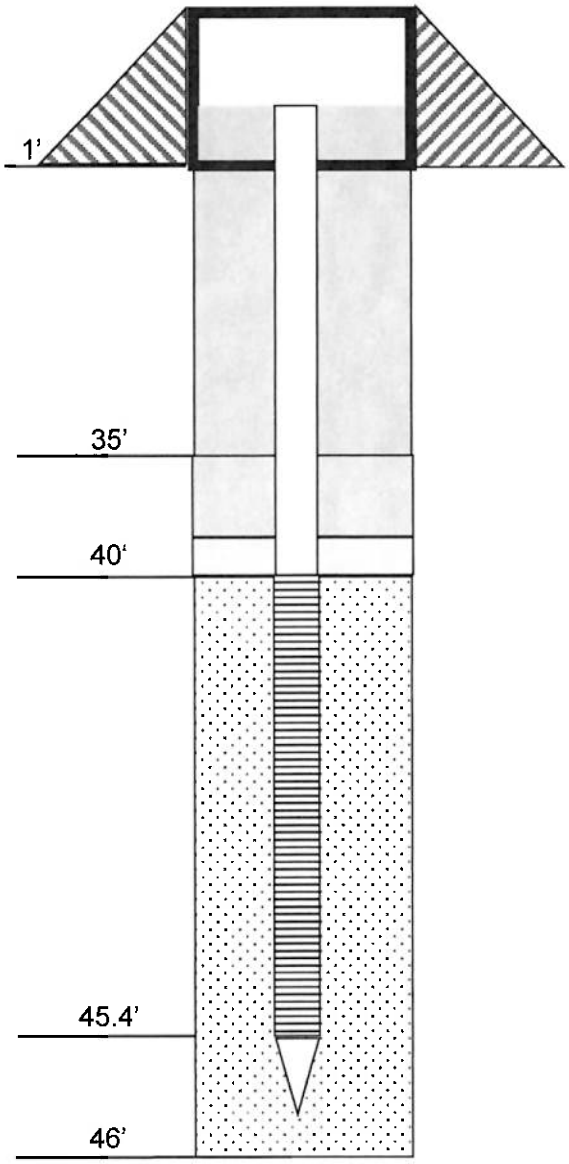
DRILLING FIRM: Atlas Geo **SUPERVISING GEOLOGIST:** Ken Summerour, PG

PROJECT NAME: William C. Meredith Company, Inc.

PROJECT LOCATION: East Point, GA

MONITORING WELL NO.: MW-5A **DATE OF INSTALLATION:** January 15, 2013

STEEL, BOLT-DOWN WELL VAULT ENCLOSED IN CONCRETE PAD WITH FLUSH FITTING PVC CAP



WELL RISER
- MATERIAL: PVC
- DIAMETER: ¾ INCH
- JOINT TYPE: FLUSH THREADED
- LENGTH: 40 FEET

THIRD SEAL
- TYPE OF SEAL: PORTLAND CEMENT
- THICKNESS: 1 FOOT

SECOND SEAL
- TYPE OF SEAL: BENTONITE CHIPS
- THICKNESS: 35 FEET

FIRST PRE-PACK SEAL
- TYPE OF SEAL: BENTONITE PRE-PACK
- THICKNESS: 4 FEET

FOAM BRIDGE: POROUS FOAM, 0.5 FEET

WELL SCREEN/ SAND FILTER PRE-PACK
- SCREEN MATERIAL: PVC
- DIAMETER: ¾ INCH
- LENGTH: 5 FEET
- SLOT SIZE: 0.010 INCHES

DEPTH TO BOTTOM OF MONITORING WELL: 45.4 FEET

DEPTH TO BOTTOM OF BOREHOLE (SAND FILTER ADDED): 46 FEET

Soil Boring
No. MW-5B

Project: W.C. Meredith	Boring No: MW-5B
Date Installed: 12/15/16	Location: MW-5 Cluster
Drilling Method: Hollow Stem Auger - 3.25 and 6.25 ID	Total Depth of Boring: 46'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: NM
Sampler Type: Soil Cuttings / Core Barrel @ 40'	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
				CUTTINGS	FILL	GRAVEL, SAND AND SILT COVER, TAN, BROWN, FOLLOWED BY FILL - BROWN, RED, SAND, SILT, AND TRACE CLAY, FINE TO MEDIUM, NO ODOR
5	0-5 FT	NA	1.9			
				CUTTINGS	FILL	BROWN, TAN, GREY, SAND AND SILT, CLAY, FINE GRAVEL DUST WITH COBBLEY GRAVEL, NO ODOR, FILL
10	5-10 FT	NA	3.3			
				CUTTINGS	CL/FILL	GREY, LIGHT GREY, ALLUVIAL CLAY, PERCHED ZONE, MOIST TO WET, NO ODOR, FILL
15	10-15 FT	NA	2.6			
				CUTTINGS	CL/FILL	LIGHT GREY, ALLUVIAL CLAY, VERY FINE WET, SLIGHT ODOR, FILL
20	15-20 FT	NA	2.0			
				CUTTINGS	CL/FILL	VERY LITTLE RECOVERY - GREY, LIGHT GRAY CLAY, WET, ODOR, FILL
25	20-25 FT	NA	NS			

Soil Boring
No. MW-5B

Project: W.C. Meredith	Boring No: MW-5B
Date Installed: 12/15/16	Location: MW-5 Cluster
Drilling Method: Hollow Stem Auger - 3.25 and 6.25 ID	Total Depth of Boring: 46'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: NM
Sampler Type: Soil Cuttings / Core Barrel @ 40'	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
					FILL	GREY, LIGHT GREY, ALLUVIAL CLAY, WET, ODOR, FILL
				CUTTINGS		
					FILL	BLACK APPARENT CREOSOTE PRODUCT OBSERVED AT 27 TO 28 FEET, STRONG ODOR
30	25-30 FT	NA	20.0			
				CUTTINGS	SC/SM	GREY, SAND, SILT, TRACE CLAY, FINE TO MEDIUM, WET, STRONG ODOR, APPEARED TO BE NATIVE SOIL
35	34-35 FT	NA	0.8			
				CUTTINGS	SM	GREY, BROWN, SAND AND SILT, FINE TO MEDIUM, SLIGHTLY MICACEOUS, WET, NO ODOR, SAPROLITE, NATIVE
40		NA	0.9			
				10%		VERY LITTLE RECOVERY (SLOUGH)
	40-42 FT				SM	GREY, BROWN, SAND AND SILT, FINE TO MEDIUM, VERY MICACEOUS, PARTIALLY WEATHERED SCHIST, MnO2 STAINING
45		NA	0.7			45 FEET, WET, NO ODOR
	45-46 FT			50%		WHITE QUARTZ FRAGMENTS AT 46 FEET BORING REFUSAL
50						BORING TERMINATED AT 46 FEET

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW 6

Location: Northwest of surface impoundment at Toe od dike. (West side of light pole)

Depth of Well: 30 Feet

Well Screen Interval: 15 Feet

Casing Description: 2 inch PVC Pipe

Type of Well: Downgradient (point of compliance)

EARL F. TITCOMB, JR.
CONSULTANT IN GEOLOGY

MW6

DRILLING LOG	COMPANY William C. Meredith	INSTALLATION East Point, Ga	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Station) 22 W of grease trap, toe of berm		SIZE AND TYPE OF BIT 2¼" ID hollow stem auger, SPT	
DRILLING AGENCY ATEC		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 6	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED 11 May 84	COMPLETED 12 May 84
DEPTH DRILLED INTO ROCK N.A.		ELEVATION TOP OF HOLE 1030.7 msl	
TOTAL DEPTH OF HOLE 33.0'		ELEVATION GROUND WATER 1014.6 1830 hrs, 16 May 84	
NAME OF DRILLER Robert Ray		SIGNATURE OF INSPECTOR OR GEOLOGIST Earl F. Titcomb P.G.	

MW-6

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	5		SM dark gray-red silty sand with gravel (till) slightly clayey, highly mica.	2 2 3	1	
	10		-upper 1.0' light gray very fine silty sand, lower 0.5' dark gray clayey silty sand with gravel	2 2 3	2	
	15		-black mixture soil-wood coal etc (till) very micaceous silty	4 2 3	3	13.5 boulders - rubble rocks etc.
1014.6 16 May 84 1012.2	20		SM greenish gray-red fine silty micaceous sand, weathered schist gneiss	2 4 7	4	black oily substance on top of core - not observed in sample. very wet. Water on tools 21.3'
	25			14 18 21	5	
997.1	30		Bottom of Hole 33.0'	9 14 17	6	

Fill — Res

NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.

BLOWS PER FOOT:

Number required to drive 1⅜" ID splitspoon w/140 lb hammer falling 30".

EARL F. TITCOMB, JR.
CONSULTANT IN GEOLOGY

GROUND WATER OBSERVATION WELL REPORT

PROJECT: Lagoon Monitoring System
LOCATION: East Point, Ga.
CLIENT: William C. Meredith
CONTRACTOR: ATEC
DRILLER: Ray INSPECTOR: Earl Titcomb
INSTALLATION DATE 12 May 1984

FILE NO.
WELL NO. MW 6
BORING NO. same
LOCATION west of grease trap - toe berm
SHEET OF

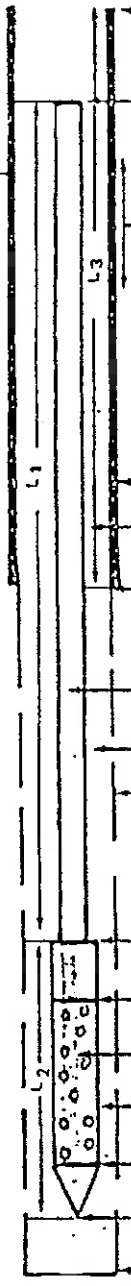
SURVEY DATUM MSL

GROUND ELEVATION 1030.7

SUMMARIZE SOIL CONDITIONS (NOT TO SCALE)

dark gray to red silty sand

See Drilling Log for Detailed description



ELEVATION OR STICKUP ABOVE/BELOW GROUND SURFACE OF CASING OR ROADWAY BOX	1031.71
ELEVATION OR STICKUP ABOVE/BELOW GROUND SURFACE OF RISER PIPE.	1031.71
THICKNESS OF SURFACE SEAL	3.0'
TYPE OF SURFACE SEAL	sand-cement
[INDICATE ALL SEALS SHOWING DEPTH, THICKNESS AND TYPE]	2.9' bentonite
TYPE OF CASING	steel
INSIDE DIAMETER OF CASING	6" □
ELEVATION/DEPTH OF BOTTOM OF CASING	1027.71
INSIDE DIAMETER OF RISER PIPE	2" OD
TYPE OF BACKFILL AROUND RISER	sand
DIAMETER OF BOREHOLE	6½" ±
ELEVATION/DEPTH OF BOTTOM OF RISER	1013.71
TYPE OF POINT OR MANUFACTURER	PVC, TriLoc
SCREEN GAUGE OR SIZE OF OPENINGS	.010"
DIAMETER OF WELLPOINT	2"
TYPE OF BACKFILL AROUND POINT	coarse sand
ELEVATION/DEPTH OF BOTTOM OF POINT	1000.41
ELEVATION/DEPTH OF BOTTOM OF BOREHOLE	998.71

[FIGURES REFER TO: EL. ✓ DEPTH]

DATE: July 14, 1998
Revision No.: 1
E

E-6a DESCRIPTION OF WELLS

Ground Water Monitoring Well No.: MW6R

Location: Northwest of surface impoundment at toe of original dike.
(Just beyond closed surface impoundment cap - inside fenced area)

Depth of Well: 32 feet

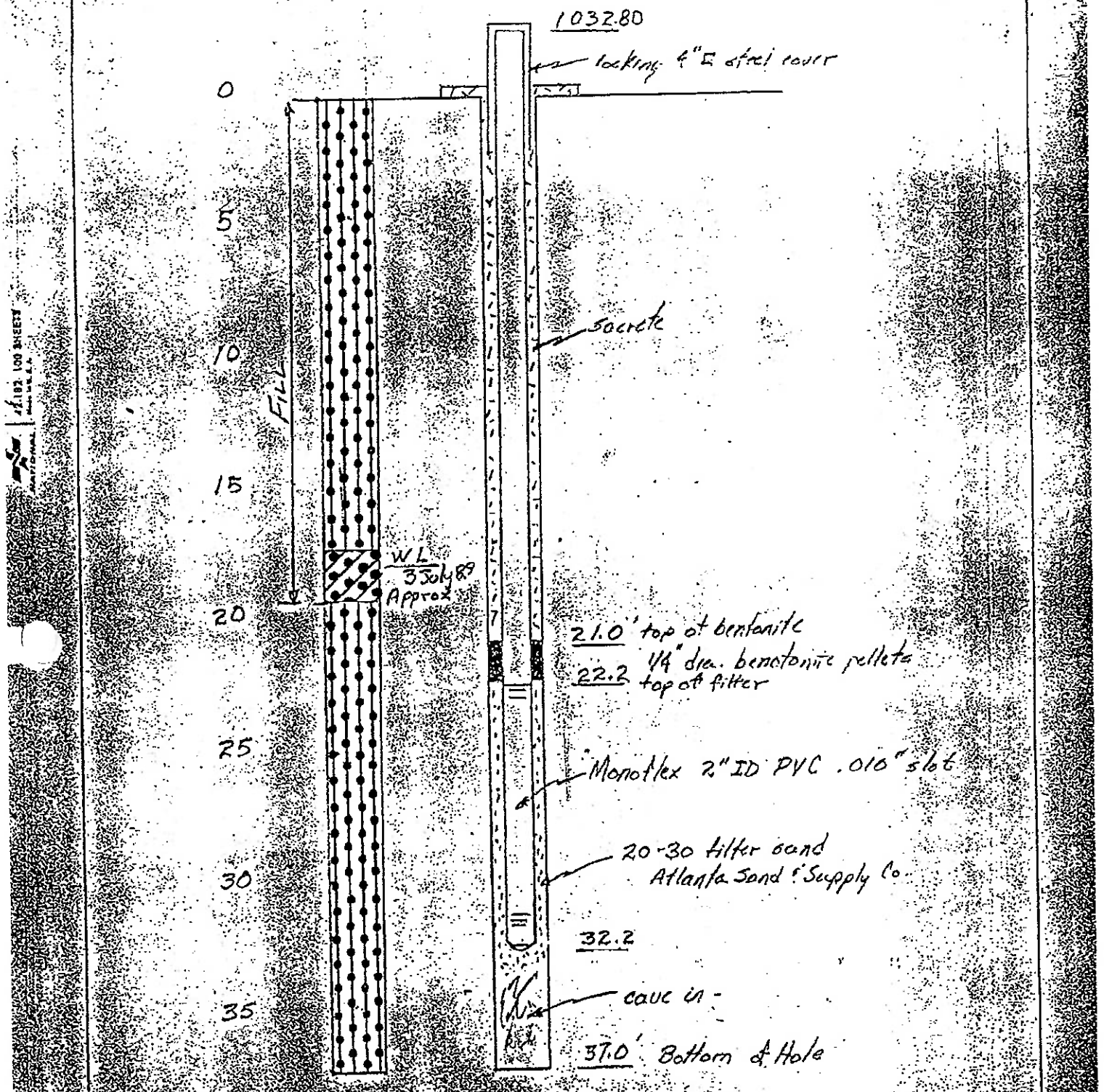
Well Screen Interval: 10 feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient
(point of compliance)

NOTE: Well MW6R replaced well MW6 removed during surface impoundment closure excavation in 1989.
Well MW6R put in same location as previous well MW6.

W. C. Meredith Co | East Point, Ga | MW6 (R)



Note: Replacement for MW6 destroyed during closure, at same location

MW 6 (R)
2 July 1989

TOTAL P.04

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW 7

Location: 90 Feet Northwest of surface impoundment

Depth of Well:	36 Feet
Well Screen Interval:	10 Feet
Casing Description:	2 inch PVC pipe
Type of Well:	Downgradient (rate and extent well)

EARL F. TITCOMB, JR.
CONSULTANT IN GEOLOGY

MW 7

DRILLING LOG	COMPANY William C. Meredith	INSTALLATION East Point, Ga	SHEET 1 OF 2 SHEETS
LOCATION (Coordinates or Station)		SIZE AND TYPE OF BIT 2¼ I.D. HSA, SPT	
DRILLING AGENCY ATEC Assoc. of Ga.		TOTAL NO OF OVERBURDEN SAMPLES TAKEN 9 jar samples	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED 23Feb85	COMPLETED 23Feb85
DEPTH DRILLED INTO ROCK		ELEVATION TOP OF HOLE 1027.38 msl	
TOTAL DEPTH OF HOLE 45.0		ELEVATION GROUND WATER 1011.96 msl · 24Feb85	
NAME OF DRILLER Robert Ray		SIGNATURE OF ~~INSPECTOR~~ OR GEOLOGIST Earl F. Titcomb	

MW-7

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			SM gray, fine silty sand, washings from aggregate.	9	1	
	5		SC dark red, very clayey, silty sand.	4	2	
Fill	10		GM mixed silt, sand, gravel clay fill. Rounded quartz, angular gneiss etc. Mottled brown to black	8	3	
16.92 WD 24Feb85	15		13.5 to 15.0 no sample, large piece of gneiss wedged in shoe.	2	NS	
	20		SM-H mottled red-dark gray highly micaceous clayey, silty sand. No rock structure Approximate Top of Original Gd.	4	4	
1008.38	25		SM red-gray, micaceous, silty sand, banded weathered gneiss & schist.	44	5	Driller notes change, material 23.0'. Water 22.3 on rods.
RCS	30			8	6	
	35		Continued on sheet #2	15	7	

EARL F. TITCOMB, JR.
CONSULTANT IN GEOLOGY

MW 7

DRILLING LOG	COMPANY William C. Meredith	INSTALLATION	SHEET 2 OF 2 SHEETS
LOCATION (Coordinates or Station)		SIZE AND TYPE OF BIT	
DRILLING AGENCY		TOTAL NO OF OVERBURDEN SAMPLES TAKEN	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED	COMPLETED
DEPTH DRILLED INTO ROCK		ELEVATION TOP OF HOLE	
TOTAL DEPTH OF HOLE		ELEVATION GROUND WATER	
NAME OF DRILLER		SIGNATURE OF INSPECTOR OR GEOLOGIST	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			SM red-gray silty sand, weathered gneiss & schist			
	40		banded white-light gray less weathered than preceding sample, coarser grained	22	8	
	45			18	9	
			Hole completed to 45.0'			

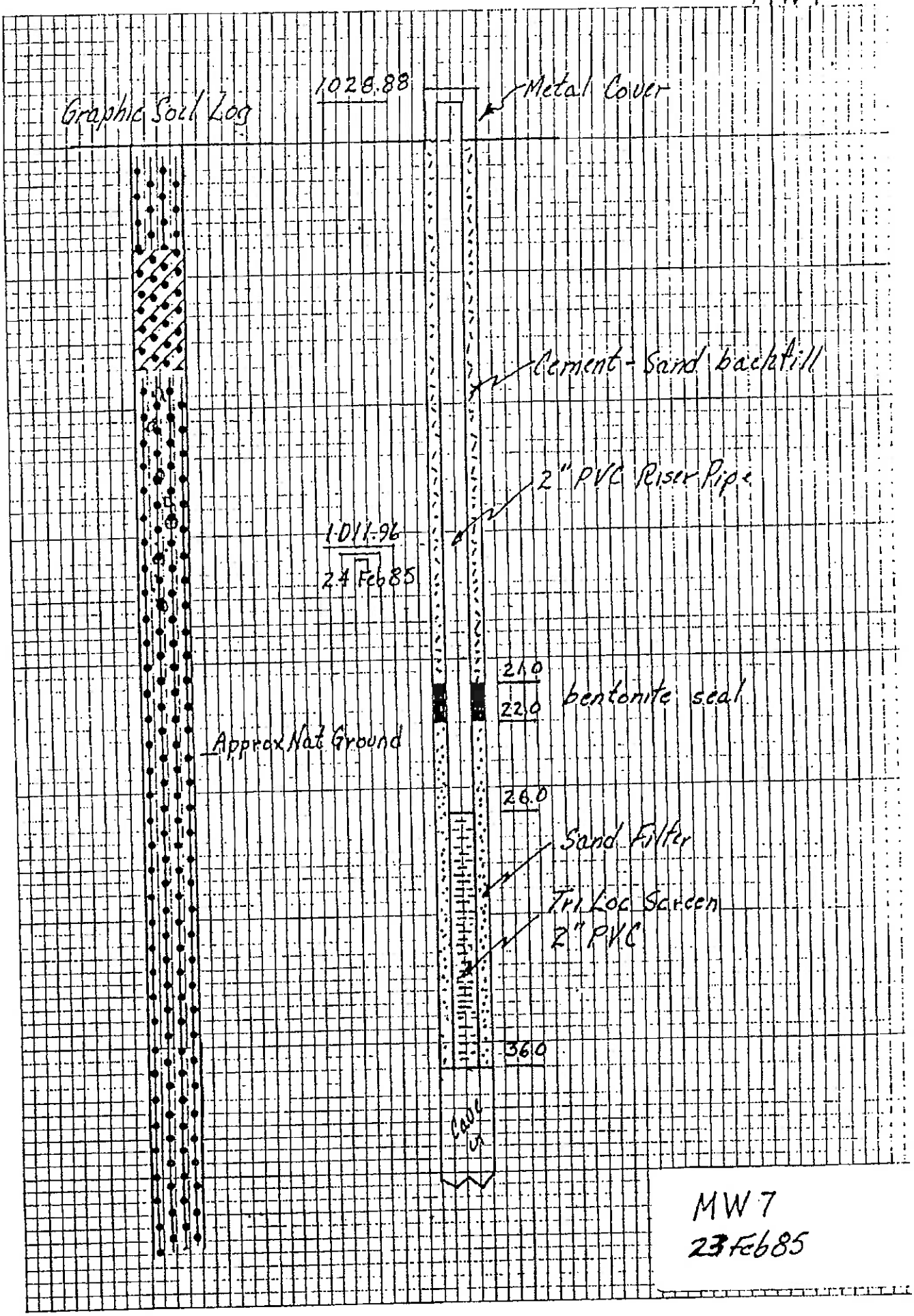
PWR

NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.

BLOWS PER FOOT:

Number required to drive 1⅜" ID splitspoon w/140 lb. hammer falling 30".

MW 7



MW 7
23 Feb 85

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW 7A

Location: 93 Feet Northwest of surface impoundment

Depth of Well: 53 Feet

Well Screen Interval: 5 Feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient
(Vertical extent well)

EARL F. TITCOMB, JR.
CONSULTANT IN GEOLOGY

MW7A

DRILLING LOG	COMPANY William C. Meredith	INSTALLATION East Point, Ga.	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Station) Adjacent MW7		SIZE AND TYPE OF BIT 2¼" ID HSA, SPT, 4½" Roller	
DRILLING AGENCY Robert Stansfield		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 1 jar	
THICKNESS OF OVERBURDEN NA		DATE HOLE STARTED 13 July 86	COMPLETED 13 July 86
DEPTH DRILLED INTO ROCK NA		ELEVATION TOP OF HOLE 1027.2 msl	
TOTAL DEPTH OF HOLE 60.0		ELEVATION GROUND WATER 1008.2 msl, 14 July 86	
NAME OF DRILLER Robert Stansfield		SIGNATURE OF INSPECTOR OR GEOLOGIST Earl F. Titcomb P.G.	

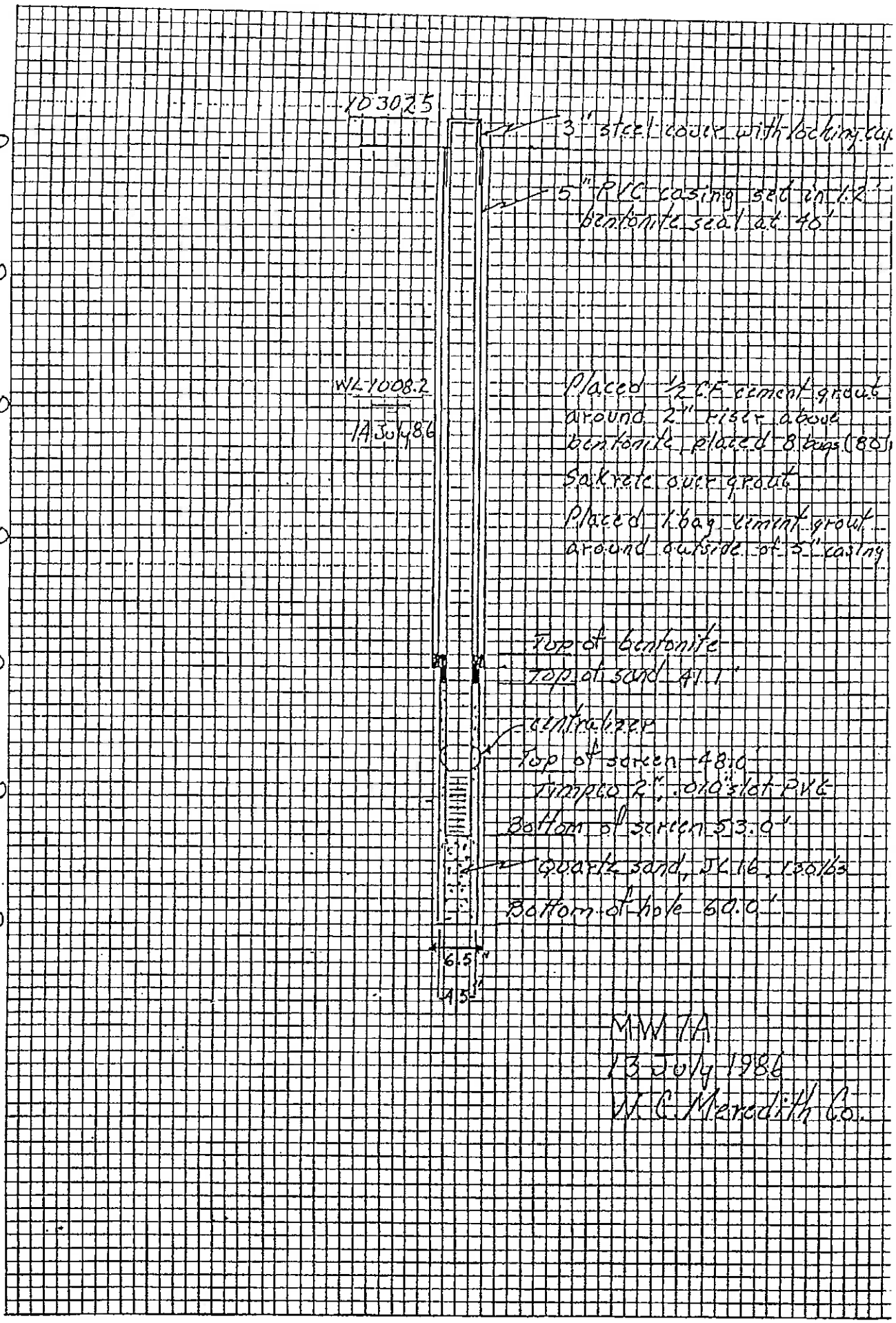
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			See MW7 for detailed log, HSA to 40.0'			
			Began hole with rotary, lost water return at 5'. Went to HSA. Augered to 40.0'. Mixed tub of mud using 1 gal Poly Gel. Cleaned out hole to 40.0'			- Hard zone - Hard zone - 12.5 to 30.0 very rapid penetration, almost no resistance
WL 19.0 14 July 86	10					
	20					
	30					
	40					Set 40' Sch 40 5" PVC casing, into 1.2' bentonite placed in hole.
			SM greenish-red-gray silty sand, very micaceous, mica weathered to "golden" color relic foliation.	-10	1	Used rotary with clear water to drill below casing.
	50		Much mica in cuttings, also small bk-red garnets(?).			
	60		Bottom of hole 60.0'			

NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.

BLOWS PER FOOT:

Number required to drive 1⅜" ID splitspoon w/140 lb. hammer falling 30".

MW-7A


1030.25
3" steel cover with locking cap
5" PVC casing set in 1.2' bentonite seal at 40'
WL-1008.2
14 July 86
Placed ½ C.F. cement grout around 2" riser above bentonite placed 8 bags (80)
Sakrete over grout
Placed 1 bag cement grout around outside of 5" casing
Top of bentonite
Top of sand 41.1'
centralizer
Top of screen 48.0'
Vinpro 2", .010" slot PVC
Bottom of screen 53.0'
Quartz sand, 12.16, 1.30/63
Bottom of hole 60.0'
6.5"
4.5"
0
10
20
30
40
50
60
MW 1A
13 July 1986
W.C. Meredith Co.

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW 7B

Location: 90 Feet Northwest of surface impoundment

Depth of Well: 121 FEET

Well Screen Interval: 10 FEET (111 FOOT TO 121 FOOT)

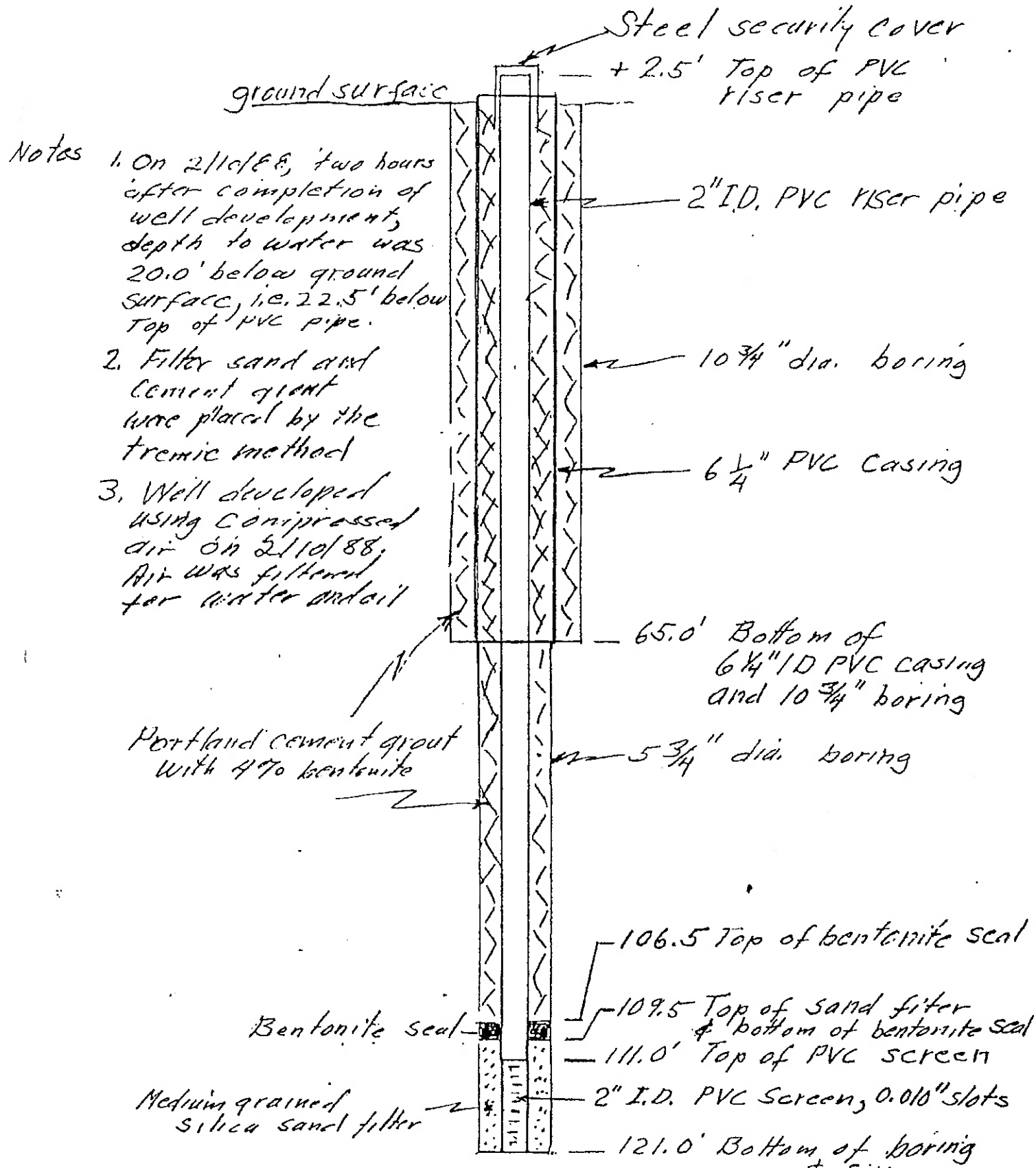
Casing Description: 2 inch PVC pipe

Type of Well: Downgradient
(Vertical extent well)

LOCATION	William C. Meredith	East Point, GA	OF 1 SHEETS
DRILLING AGENCY	Middle Georgia Water Systems, Inc.	SIZE AND TYPE OF BIT	10-3/4 & 5-7/8 Tricone; 5-3/4 down hole percussion
THICKNESS OF OVERBURDEN	68'	TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	5 jars
DEPTH DRILLED INTO ROCK	53'	DATE HOLE STARTED	2/5/88
TAL DEPTH OF HOLE	121'	DATE HOLE COMPLETED	2/9/88
NAME OF DRILLER	Steve Baker	ELEVATION TOP OF HOLE	
		ELEVATION GROUND WATER	20.0' below ground surface on 2/10/88
		SIGNATURE OF ~~INSPECTOR OR~~ GEOLOGIST	R. F. Stanley Ltd

ELEVATION	DEPTH feet	LEGEND	CLASSIFICATION OF MATERIALS (visual classification)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0		(See logs of Mw's- 7, & 7A for description of materials to depth of 65.0') Driller reported encountering wood, treated with creosote, at approximate depth of 20'			On 2/5/88, drilled with 10-3/4" dia. tricone bit and mud rotary to depth of 65'. Set 6-1/4" I.D. PVC casing to bottom of boring. Tremie grouted casing with 20 sacks of cement with added 4% bentonite.
	65		65'	65.0' SPT 1 66.1	65.0' Jar 1 66.1'	SPT 1= 42-48-10(for 0.1' advance)
	70		GNEISS Classified as gneiss rather than schist on the basis of banding of light (white) and dark (black) colored minerals (feldspar, muscovite, & biotite) observed in drive sample taken at 65' depth. Sample had foliated structure.			Resumed drilling with mud rotary, using only potable water and 5-7/8" dia. tricone bit at 12:30 PM on 2/8/88; drilled out 10' of cement grout in bottom of casing.
	75					
	80					
	85		Top of firm rock at 68'.		85'	After depth of 68', material became progressively harder, until at 70" depth, the drill penitration rate was reduced to 1' in 10 minutes. Drilling was contiued to a depth of 85', where it was stopped at 5:45 PM on 2/8/88.
	90		Fractures in rock, apparent from drill action, at depths of 87', 107', 110', 115', and 118'. Tan colored water initially issued from fracture at 87' depth, but quickly cleared.		Jar 2	
	95					
	100		Drill cuttings consist predominatly of dark colored minerals, up to 90% ±.		102' Jar 3	
	105				107' Jar 4	On 2/9/88/ moved mud rotary drill off boring and resumed drilling at 3:50 PM with Ingersall Rand T4W and down-hole hammer with 5-3/4" dia. bit. Oiler not used for for hammer operation.
	110				110'	
	115				Jar 5	
	120		121' Bottom of boring		120'	Boring completed and drilling ceased at 4:35 PM on 2/10/88

Mw-7B



Notes

1. On 2/10/88, two hours after completion of well development, depth to water was 20.0' below ground surface, i.e. 22.5' below Top of PVC pipe.
2. Filter sand and cement grout were placed by the tremie method
3. Well developed using Compressed air on 2/10/88. Air was filtered for water and oil

Not to scale

MW-7B
Feb. 10, 1988

Soil Boring
No. MW-7B2

Project: **William C. Meredith Company**	Boring No: **MW-7B2 (first attempt)**
Date Installed: **1-24-2013 to 1-28-2013**	Location: **North of MW-7B cluster**
Drilling Method: **HSA/rock coring**	Total Depth of Boring: **73.5'**
Drilling Company: **Kilman Brothers**	Initial Depth to Groundwater: **N/A**
Driller: **Bobbie and Marcel**	Final Depth to Groundwater: **N/A**
Sampler Type: **Split Spoon**	Geologist: **Kenneth Summerour, PG**

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
					Fill	Top 6" - Red/gray/black gravel
		3-3-5				
5	4-5'		0.0	100%	Fill	Wood debris, silty, no odor, fill material
		4-4-5				
				90%	Fill	Red/brown micaceous silty clay, some sand, fill material
10	910'		0.3		Fill	Pink/brown/tan sandy silt, some clay, no odor, no structure
				100%	Fill	Red/brown silty clay to sandy silt, micaceous, no structure, no odor
		2-2-2				
15	14-15'		0.0			
				5%		
					Fill	Pulverized rock and gravel, quartz-like
					Fill	Rock stuck in drill shoe- no recovery- fill material
20	19-20'					
				30%		
					Fill	Red/brown silty clay, micaceous, saturated, no odor
		4-4-5				
25	24-25'		0.0			

Soil Boring
No. MW-7B2

Project: **William C. Meredith Company**	Boring No: **MW-7B2 (first attempt)**
Date Installed: **1-24-2013 to 1-28-2013**	Location: **North of MW-7B cluster**
Drilling Method: **Air Rotary**	Total Depth of Boring: **73.5'**
Drilling Company: **Kilman Brothers**	Initial Depth to Groundwater: **N/A**
Driller: **Bobbie and Marcel**	Final Depth to Groundwater: **N/A**
Sampler Type: **Split Spoon**	Geologist: **Kenneth Summerour, PG**

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
				80%	Fill	Same as above, fill to 28'
		16-20-16			SM/SP	Possibly native, white/yellow/tan/brown/red silty sandy saprolite, no odor, moist
						White, hard quartz vain from 29.75'-30'
30	29-30'		0.5	80%		
					SM/SP	Gray/brown/gold/black silty clay with some saprolite, kaoline, black MnO2 streaks, very micaceous, moist to
		4-5-9				saturated
				75%	SM/SP	At 34.5' - moist, no structure, slight possible odor, some 45° foliation
35	34-35'		0.1			
		3-4-6		90%	SM/SP	Same as above, less clay, slight odor
40	39-40'		0.0			
					SM/SP	Same as above, very saturated
				85%		
		5-6-7			SM	Brown/tan/white sandy silty saprolite, moist, no foliation, some quartz throughout, no odor
45	44-45'		0.0			
				70%		
		6-8-8			SM	Brown homogeneous silty clay, hard, saturated, no odor
50	49-50'		0.0			

Soil Boring
No. MW-7B2

Project: **William C. Meredith Company**	Boring No: **MW-7B2 (first attempt)**
Date Installed: **1-24-2013 to 1-28-2013**	Location: **North of MW-7B cluster**
Drilling Method: **Air Rotary**	Total Depth of Boring: **73.5'**
Drilling Company: **Kilman Brothers**	Initial Depth to Groundwater: **N/A**
Driller: **Bobbie and Marcel**	Final Depth to Groundwater: **N/A**
Sampler Type: **Split Spoon**	Geologist: **Kenneth Summerour, PG**

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
				80%		
					SM	Brown silty clay, no odor
					SM	Gray/black/white clay and silt, fine grained, hard, no odor, very saturated
55	54-55'		0.0	100%		
		18-12-50				
				100%	SM	Gray/white PWR/granitic saprolite, 20° foliation, no odor
60	59-60'		0.0			
65						
70						
					SM	73.5' - Boring terminated, competent bedrock, 4" PVC casing set, pressure grouted in place, wire line coring began (see rock core log)
75						

Soil Boring No. MW-7B2

Project: **William C. Meredith Company**	Boring No: **MW-7B2 (second attempt)**
Date Installed: **2-26-2013 to 2-27-2013**	Location: **North of MW-7B cluster**
Drilling Method: **Solid Stem/Air Rotary**	Total Depth of Boring: **175'**
Drilling Company: **Kilman Bros/Greene's**	Initial Depth to Groundwater: **N/A**
Driller: **Tim, Mike, and Jimmy**	Final Depth to Groundwater: **N/A**
Sampler Type: **Packer**	Geologist: **Kenneth Summerour, PG**

DEPTH	SAMPLE NUMBER	GEOLOGIC DESCRIPTIONS/COMMENTS
		ATTEMPT #2- offset location of well- solid stem auger to 93', installed pressure grouted 6" ID steel outer casing in place, no recovery, drilling stopped due to heavily fractured rock, air rotary drilling began
80		
	84-85' (Groundwater)	
85		
90		
		93' - Air rotary drilling began, ground cuttings, no evidence reported by driller of any fracturing
		Black amphibolite gneiss, hornblende rich, biotite and phlogopite mica observed, white ground feldspar
95		
100		Gray milky quartz mass, same cuttings as above

Soil Boring No. MW-7B2

Project: **William C. Meredith Company**	Boring No: **MW-7B2 (second attempt)**
Date Installed: **2-26-2013 to 2-27-2013**	Location: **North of MW-7B cluster**
Drilling Method: **Solid Stem/Air Rotary**	Total Depth of Boring: **175'**
Drilling Company: **Kilman Bros/Greene's**	Initial Depth to Groundwater: **N/A**
Driller: **Tim, Mike, and Jimmy**	Final Depth to Groundwater: **N/A**
Sampler Type: **Packer**	Geologist: **Kenneth Summerour, PG**

DEPTH	SAMPLE NUMBER	GEOLOGIC DESCRIPTIONS/COMMENTS
		NO OBSERVATIONS
105		
115		
125		
135		
145		

Soil Boring No. MW-7B2

Project: **William C. Meredith Company**	Boring No: **MW-7B2 (second attempt)**
Date Installed: **2-26-2013 to 2-27-2013**	Location: **North of MW-7B cluster**
Drilling Method: **Solid Stem/Air Rotary**	Total Depth of Boring: **175'**
Drilling Company: **Kilman Bros/Greene's**	Initial Depth to Groundwater: **N/A**
Driller: **Tim, Mike, and Jimmy**	Final Depth to Groundwater: **N/A**
Sampler Type: **Packer**	Geologist: **Kenneth Summerour, PG**

DEPTH	SAMPLE NUMBER	GEOLOGIC DESCRIPTIONS/COMMENTS
		Softer formation reported by driller, ground cuttings contained more white coarse feldspar
	148-150' Groundwater ("rush" sample)	
150		
160		
170		
	173-175' Groundwater ("rush" sample)	
180		
190		

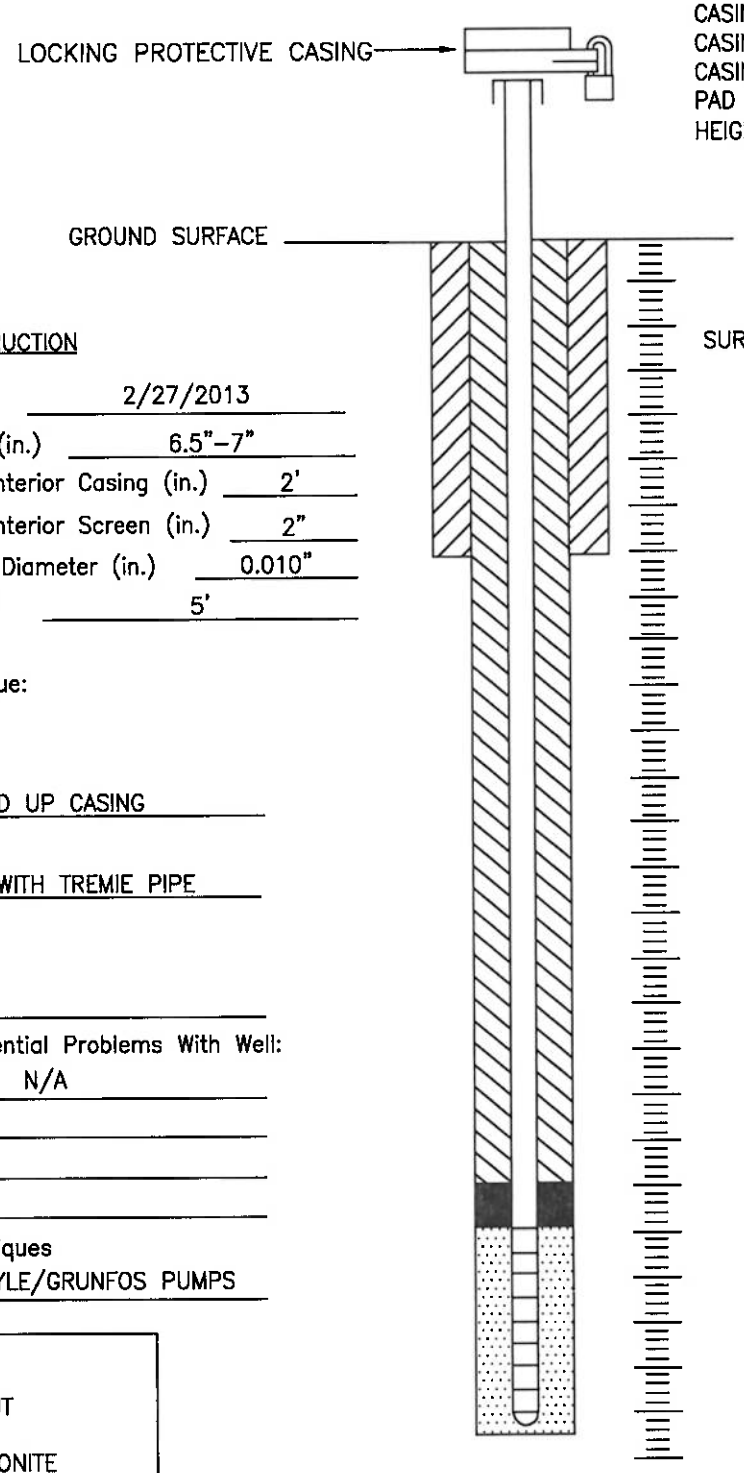
Soil Boring No. MW-7B2

Project: **William C. Meredith Company**	Boring No: **MW-7B2 (second attempt)**
Date Installed: **2-26-2013 to 2-27-2013**	Location: **North of MW-7B cluster**
Drilling Method: **Solid Stem/Air Rotary**	Total Depth of Boring: **175'**
Drilling Company: **Kilman Bros/Greene's**	Initial Depth to Groundwater: **N/A**
Driller: **Tim, Mike, and Jimmy**	Final Depth to Groundwater: **N/A**
Sampler Type: **Packer**	Geologist: **Kenneth Summerour, PG**

DEPTH	SAMPLE NUMBER	GEOLOGIC DESCRIPTIONS/COMMENTS
200		200' - Boring terminated, well constructed using a 5' prepack screen section and a 4-foot bentonite sleeve with a 0.5' foam bridge between the sand prepack and bentonite, 6" ID well with steel casing
210		
220		
230		
240		

DOUBLE-CASED WELL CONSTRUCTION DETAILS ABOVE GRADE

PROJECT NAME	WILLIAM C. MEREDITH CO	SUPERVISING GEOLOGIST	KEN SUMMEROUR P.G.
PROJECT NO.	ER-437	DRILLER	KILMAN BROTHERS & GREENE'S
PROJECT LOCATION	EAST POINT, GA	DATE OF INSTALLATION	2/26/2013 - 2/27/2013
MONITORING WELL	MW-7B2		



CASING MATERIAL	STEEL
CASING DIAMETER	AIR ROTARY
CASING LENGTH	95'
PAD DIMENSIONS	2'X2'
HEIGHT ABOVE GROUND	2'

Drilling Method/Rig Type: AIR ROTARY

DETAILS OF CONSTRUCTION

Date Completed: 2/27/2013

Borehole Diameter (in.): 6.5"-7"

Type and Size of Interior Casing (in.): 2'

Type and Size of Interior Screen (in.): 2"

Screen Perforation Diameter (in.): 0.010"

Screen Length (ft.): 5'

Completion Technique:

STAND UP CASING

GROUTED WITH TREMIE PIPE

Description of Potential Problems With Well:

N/A

Development Techniques

WATERRA STYLE/GRUNFOS PUMPS

SURFACE CASING

TYPE	STEEL
DIAMETER	6" ID & 6.5" OD
LENGTH	93' BGS
SEAL TYPE	GROUT

Top of Bentonite Seal 190.5 ft. BGS

Top of Foam Bridge 194.5 ft. BGS

Top of Screen 195 ft. BGS

Bottom of Screen 200 ft. BGS

Bottom of Hole 200 ft. BGS

GROUT

BENTONITE

FILTER PACK

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

DATE: February 12, 1988
Revision No.:
E

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW8

Location: 103 Feet N 15° of surface impoundment

Depth of Well: 36.6 Feet

Well Screen Interval: 10 Feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient
(Rate and extent well)

EARL F. TITCOMB, JR.
CONSULTANT IN GEOLOGY

MW 8

DRILLING LOG	COMPANY William C. Meredith	INSTALLATION East Point Ga.	SHEET 1 OF 2 SHEETS
LOCATION (Coordinates or Station) 703' N 15° E of MW5 - edge of lagoon		SIZE AND TYPE OF BIT 2¼" I.D. HSA & SPT	
DRILLING AGENCY ATEC Assoc. of Ga.		TOTAL NO OF OVERBURDEN SAMPLES TAKEN 9	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED 24 Feb 85	COMPLETED 24 Feb 85
DEPTH DRILLED INTO ROCK		ELEVATION TOP OF HOLE 1030.45 msl.	
TOTAL DEPTH OF HOLE 45.0'		ELEVATION GROUND WATER 1010.35 msl (15 Apr 85)	
NAME OF DRILLER Robert Ray		SIGNATURE OF [redacted] OR GEOLOGIST Earl F. Titcomb Jr.	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			SM Upper 0.5' red, mica., clayey 0.5 to 4.6 med gray, very fine sand	15	1	
	5		SM-SC red & black silty clayey sand mixture. Bit of steel cable 5.0'; rubble at 6.0' (fill) 9.5 to 10.0' white sand & gravel	4	2	
	10			20	3	
	15		SM mottled red & black & gray silty sand, gray weathered rock, minor gravel (fill)	13	4	
1009.9	20		Approximate Top Original Gd.	5	5	one large piece of gravel
			CL gray green mottled silty clay, some roots; black organic material	10	6	
	25		SC gray green clayey sand (possible fill material) fall in?	8	7	
	30		SM weathered very micaceous gneiss, banded	9	8	
	35		very micaceous, green-brown light olive brown - schistose	21	9	
			Continued on sheet # 2			

Mw-8

Fill

Res

PWR

EARL F. TITCOMB, JR.
CONSULTANT IN GEOLOGY

MW8

DRILLING LOG	COMPANY William C. Meredith	INSTALLATION	SHEET 2 OF 2 SHEETS
LOCATION (Coordinates or Station)		SIZE AND TYPE OF BIT	
DRILLING AGENCY		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED	COMPLETED
DEPTH DRILLED INTO ROCK		ELEVATION TOP OF HOLE	
TOTAL DEPTH OF HOLE		ELEVATION GROUND WATER	
NAME OF DRILLER		SIGNATURE OF ~~INSPECTOR~~ OR GEOLOGIST Earl F. Titcomb	

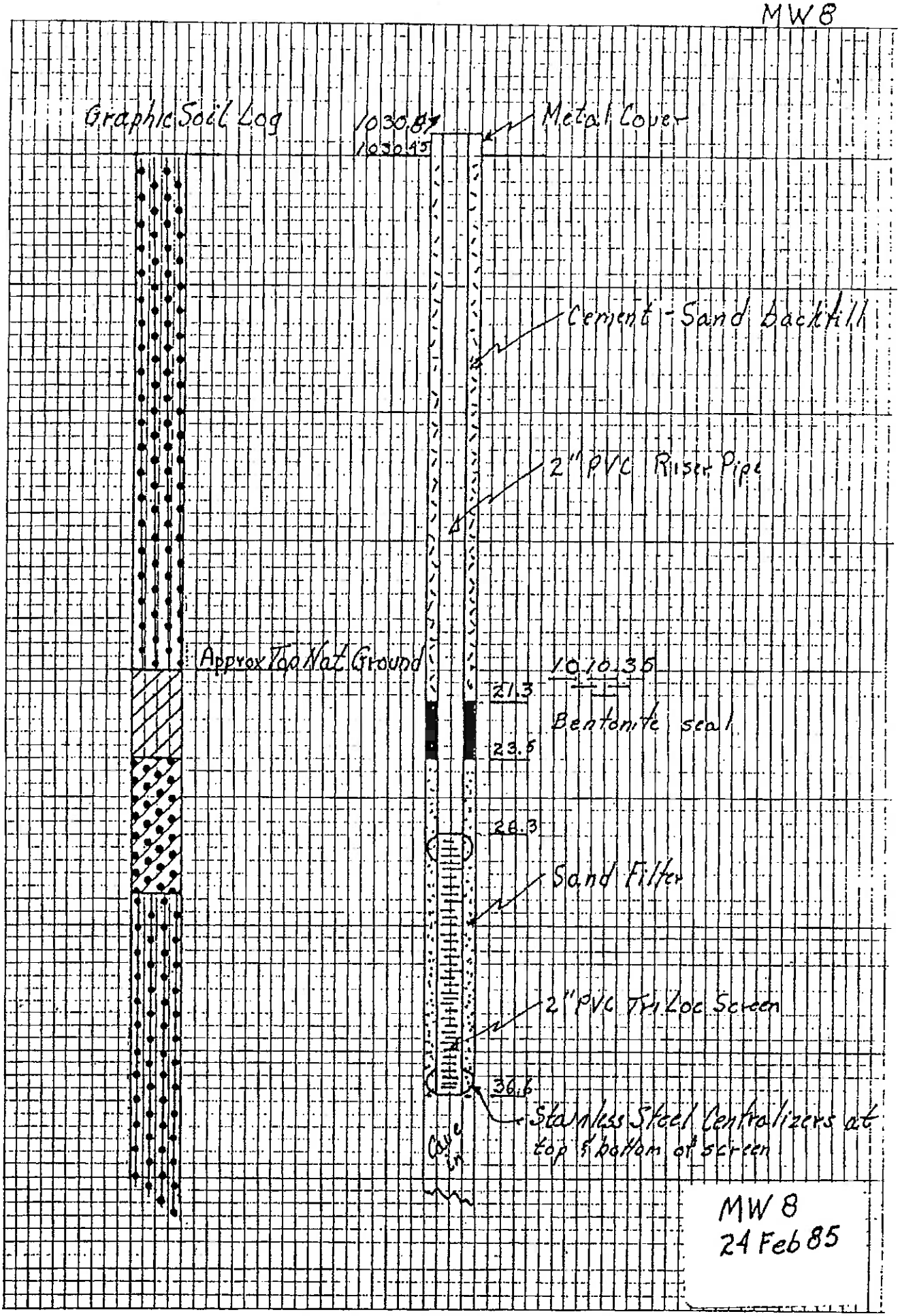
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	40		SM green-brown, very micaceous sand, banded with relic schist structure.	50/0.2'	NS	fall in blows probably no good. augered to 45.0'
985.4	45		Hole completed to 45.0'			

NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.

BLOWS PER FOOT:

Number required to drive 1⅜" ID splitspoon w/140 lb. hammer falling 30".

MW8



Soil Boring
No. MW-8A

Project: W.C. Meredith	Boring No: MW-8A
Date Installed: 11/17/16 and 12/14/16	Location: MW-8 Cluster
Drilling Method: Hollow Stem Auger - 3.25 and 6.25 ID	Total Depth of Boring: 51'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: 22.70'
Sampler Type: Soil Cuttings / Core Barrel @ 33'	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
				CUTTINGS	FILL	GRAVEL, SAND, AND SILT COVER, TAN, BROWN, FOLLOWED BY FILL - BROWN, SAND AND SILT, TRACE CLAY, FINE TO MEDIUM, SOME FINE GREY GRAVEL DUST NO ODOR
5	0-5 FT	NA	15.0			
				CUTTINGS	FILL	BROWN, TAN, GREY, SAND AND SILT, CLAY, FINE GRAVEL DUST, NO ODOR
10	5-10 FT	NA	4.0		FILL	
				CUTTINGS	FILL	RED, BROWN, SILT, SAND, CLAY, FINE TO MEDIUM, SLIGHTLY MOIST, NO ODOR
15	10-15 FT	NA	2.1			
				CUTTINGS	FILL	RED, BROWN, SAND, SILT, TRACE CLAY, TRACE GREY, GRAVELY SAND, FINE TO MEDIUM, MOIST, NO ODOR
20	15-20 FT	NA	7.1			
				CUTTINGS	FILL	BROWN, GREY, SAND AND SILT, FINE TO MEDIUM, MOIST TO WET, NO ODOR
25	20-25 FT	NA	4.3			

Soil Boring
No. MW-8A

Project: W.C. Meredith	Boring No: MW-8A
Date Installed: 11/17/16 and 12/14/16	Location: MW-8 Cluster
Drilling Method: Hollow Stem Auger - 3.25 and 6.25 ID	Total Depth of Boring: 51'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: 22.70'
Sampler Type: Soil Cuttings / Core Barrel @ 33'	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
				CUTTINGS		FILL, SAME
30	25-30 FT	NA	0.5		SM/SP	FILL GRADES TO GREY, BROWN, SAND AND SILT, FINE TO MEDIUM, WITH SOME COARSE GRAVELY SAND, WET, NO ODOR POSSIBLE NATIVE SOIL
	33 FT		2.2	75%	SM/ML	BROWN, GREY, SAND AND SILT, FINE TO MEDIUM, MICACEOUS, SAPROLITIC, SOME FOLIATION, NO ODOR
35	34-35 FT	NA	0.8			
				50%	SM	BROWN, GREY, SAND AND SILT, MORE MICACEOUS AND SAPROLITIC, FINE TO MEDIUM, SOME MANGANESE DIOXIDE (MnO STAINING AT 35 FEET, DEFINED FOLIATION, WET, NO ODOR
40	38-40 FT	NA	0.9			BROWN, GREY, WHITE, WEATHERED SCHIST, VERY MICACEOUS, MnO2 STAINING AND QUARTZ OR QUARZITE FRAGMENTS AT 40 FEET, WET, NO ODOR
				75%	SM	SAME
45	43-45 FT	NA	0.7			
				50%	SM	GREY, BROWN, SAND AND SILT, FINE TO MEDIUM, VERY MICACEOUS, PARTIALLY WEATHERED SCHIST (PWR), MnO2 STAININ 45 FEET, WET, NO ODOR
50	45-50 FT	NA	0.8			

Soil Boring
No. MW-8A

Project: W.C. Meredith	Boring No: MW-8A
Date Installed: 11/17/16 and 12/14/16	Location: MW-8 Cluster
Drilling Method: Hollow Stem Auger - 3.25 and 6.25 ID	Total Depth of Boring: 51'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: 22.70'
Sampler Type: Soil Cuttings / Core Barrel @ 33'	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
	50-51 FT	NA	3.2	25%	SM	GREY, BROWN, SAND AND SILT, FINE TO MEDIUM, VERY MICACEOUS, SCHIST PWR
						BORING REFUSAL
						BORING TERMINATED AT 51 FEET
55						
60						
65						
70						
75						

ENVIRORISK CONSULTANTS, INC.

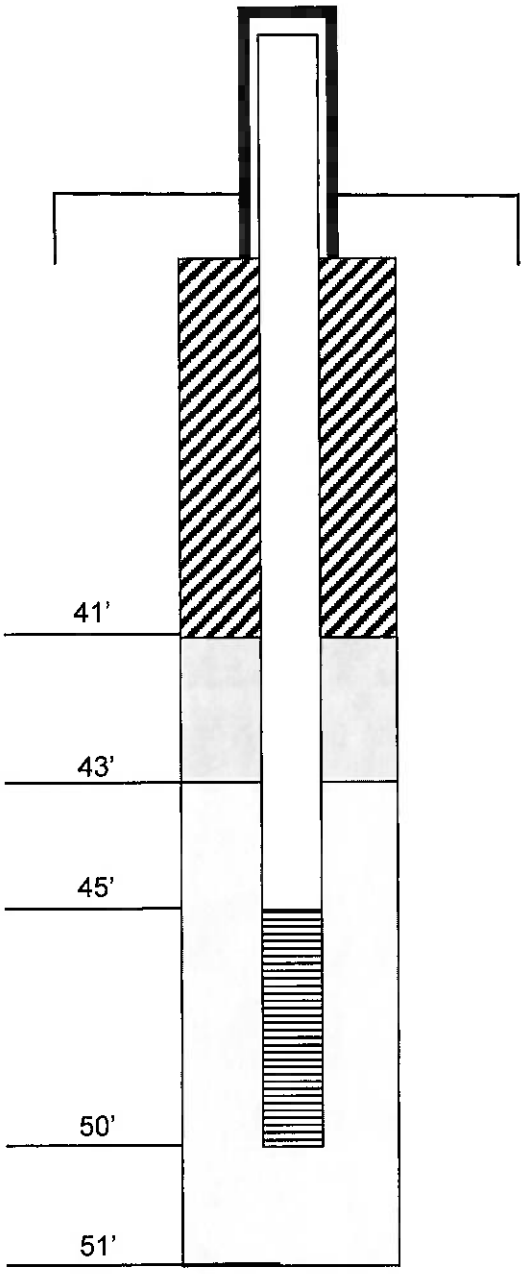
MONITORING WELL CONSTRUCTION DETAILS

DRILLING FIRM: Smith Drilling **SUPERVISING SCIENTIST:** JPC

PROJECT NAME: W.C. Meredith

PROJECT LOCATION: East Point, Georgia

MONITORING WELL NO.: MW-8A **DATE OF INSTALLATION:** 12/21/16



STEEL, STICKUP PRO-COVER ON CONCRETE PAD WITH LOCKING COVER

WELL RISER
- MATERIAL: PVC
- DIAMETER: 2 INCH
- JOINT TYPE: FLUSH THREADED
- LENGTH: 45 FEET

SECOND SEAL
- TYPE OF SEAL: PORTLAND CEMENT
- THICKNESS: 41 FEET

FIRST SEAL
- TYPE OF SEAL: BENTONITE CHIPS
- THICKNESS: 2 FEET

FILTER PACK
- TYPE OF FILTER: SAND
- DISTANCE ABOVE SCREEN: 2 FEET

WELL SCREEN
- SCREEN MATERIAL: PVC
- DIAMETER: 2 INCH
- LENGTH: 5 FEET
- SLOT SIZE: 0.010 INCHES

Soil Boring
No. MW-8B

Project: W.C. Meredith	Boring No: MW-8B
Date Installed: 1/10/17	Location: MW-8 Cluster
Drilling Method: Hollow Stem Auger - 6.25 ID	Total Depth of Boring: 52'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: 26.70'
Sampler Type: Soil Cuttings	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
				CUTTINGS	FILL	GRAVEL, SAND, AND SILT COVER, TAN, BROWN, FOLLOWED BY FILL - BROWN, SAND AND SILT, TRACE CLAY, SOME GREY GRAVEL DUST, NO ODOR
5	0-5 FT	NA	NS			
				CUTTINGS	FILL	BROWN, TAN, GREY, SAND AND SILT, TRACE CLAY, GRAVEL FILL AND FINE GRAVEL DUST FROM PULVERIZED STONE, NO ODOR
10	5-10 FT	NA	NS			
				CUTTINGS	FILL	RED, BROWN, SILT, SAND, CLAY, FINE TO MEDIUM, MOIST, NO ODOR
15	10-15 FT	NA	NS			
				CUTTINGS	FILL	RED, BROWN, GREY, SAND, SILT, TRACE CLAY, TRACE GREY, GRAVELY SAND, FINE TO MEDIUM, MOIST, NO ODOR
20	15-20 FT	NA	NS			
				CUTTINGS	FILL	BROWN, GREY, SAND AND SILT, TRACE CLAY, FINE TO MEDIUM, MOIST, NO ODOR
25	20-25 FT	NA	NS			

Soil Boring
No. MW-8B

Project: W.C. Meredith	Boring No: MW-8B
Date Installed: 1/10/17	Location: MW-8 Cluster
Drilling Method: Hollow Stem Auger - 6.25 ID	Total Depth of Boring: 52'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: 26.70'
Sampler Type: Soil Cuttings	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
				CUTTINGS		
30	25-30 FT	NA	NS		SM	FILL GRADES TO GREY, BROWN, SAND AND SILT, FINE TO MEDIUM-GRAINED SAPROLITE, WET, NO ODOR
				CUTTINGS		
35	30-35 FT	NA	NS			
				CUTTINGS	SM	BROWN, GREY, SAND AND SILT, SLIGHTLY MICACEOUS, SAPROLITE, FOLIATION, WET NO ODOR
40	35-40 FT	NA	NS			
				CUTTINGS	SM	BROWN, GREY, SAND AND SILT, MORE MICACEOUS AND SAPROLITIC, FINE TO MEDIUM, WET, NO ODOR
45	40-45 FT	NA	NS			
				CUTTINGS	SM/SP	GREY, BROWN, SAND AND SILT, FINE TO MEDIUM, VERY MICACEOUS, PARTIALLY WEATHERED SCHIST (PWR), WET, NO ODOR
50	45-50 FT	NA	NS			

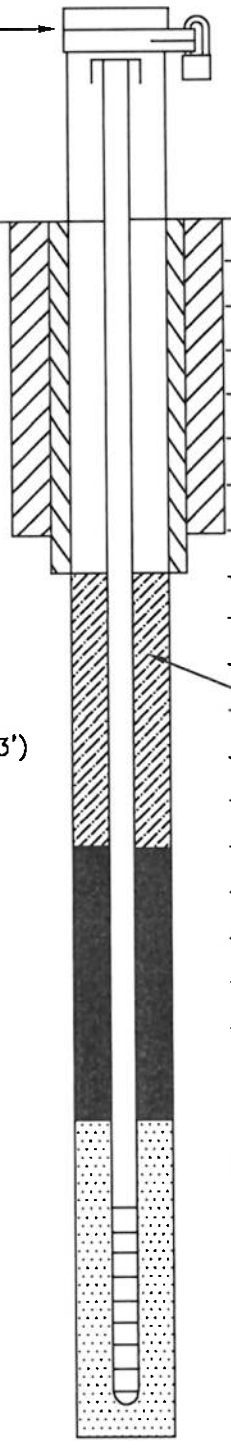
Soil Boring
No. MW-8B

Project: W.C. Meredith	Boring No: MW-8B
Date Installed: 1/10/17	Location: MW-8 Cluster
Drilling Method: Hollow Stem Auger - 6.25 ID	Total Depth of Boring: 52'
Drilling Company: Smith Drilling	Initial Depth to Groundwater: NM
Driller: Joe Smith	Final Depth to Groundwater: 26.70'
Sampler Type: Soil Cuttings	Scientist: Jason Chappell

DEPTH	SAMPLE NUMBER	BLOWS/6"	PID/FID (ppm)	RECOVERY	USCS	GEOLOGIC DESCRIPTIONS/COMMENTS
	50-51 FT	NA	NS	CUTTINGS	SM	GREY, BROWN, SAND AND SILT, FINE TO MEDIUM, VERY MICACEOUS, PARTIALLY WEATHERED SCHIST, WET, NO ODOR
						BORING REFUSAL
						BORING TERMINATED AT 52 FEET
						(REFER TO CORE LOG FOR CONTINUATION OF BORING)
55						
60						
65						
70						
75						

DOUBLE-CASED WELL CONSTRUCTION DETAILS

PROJECT NAME	WILLIAM C. MEREDITH	SUPERVISING GEOLOGIST	KEN SUMMEROUR, P.G.
PROJECT NO.	ER-437	DRILLER	SMITH DRILLING
PROJECT LOCATION	EAST POINT, GA	DATE OF INSTALLATION	9/22/17
MONITORING WELL	MW-8B & MW-8B2		



PROPOSED LOCKING PROTECTIVE CASING →

GROUND SURFACE

CASING MATERIAL	PVC
CASING DIAMETER	5" & 4"
CASING LENGTH	52' & 55'
PAD DIMENSIONS	2'X2'
HEIGHT ABOVE GROUND	3'

Well Casing Elevation	1,033.20'/1,032.37'
Ground Surface Elev.	1,030.28'
Drilling Method/Rig Type	H.S.A., AIR HAMMER, ROCK CORING

DETAILS OF CONSTRUCTION

Date Completed	9/22/17
Borehole Diameter (in.)	8"
Open Core Hole Diameter (in.)	3.78" (HQ)
Type and Size of Interior Casing (in.)	1"
Type and Size of Interior Screen (in.)	1"
Screen Perforation Diameter (in.)	0.010"
Screen Length (ft.)	5'

1ST SURFACE CASING (TOP OF ROCK)

TYPE	PVC
DIAMETER	5" OD
LENGTH	52' BGS
SEAL TYPE	GROUT

2ND SURFACE CASING (KEYED INTO ROCK)

TYPE	PVC
DIAMETER	4" OD
LENGTH	55' BGS
SEAL TYPE	GROUT

MW-8B2
1-INCH PVC INSTALLED TO BOTTOM OF CORE HOLE (153')

MW-8B
OPEN CORE HOLE 55' TO 80'
BOTTOM SEALED WITH BENTONITE GROUT

Completion Technique:

STAND UP CASING,
BENTONITE GROUT WITH TREMIE PIPE
FROM 146' TO 80'

Description of Potential Problems With Well:

BASED ON DISCRETE SAMPLING RESULTS, TWO WELLS (MW-8 AND MW-8B) WERE INSTALLED.

Development Technique

GRUNFOS

Top of Bentonite Seal 80 ft. BGS

Top of Filter Pack 146 ft. BGS

Top of Screen 148 ft. BGS

Bottom of Screen 153 ft. BGS
Bottom of Hole 153 ft. BGS

OPEN CORE
GROUT
BENTONITE
FILTER PACK

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW 9

Location: 112.2 Feet east of MW 6 at edge of surface impoundment

Depth of Well: 30 Feet

Well Screen Interval: 10 Feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient
(Rate and extent well)

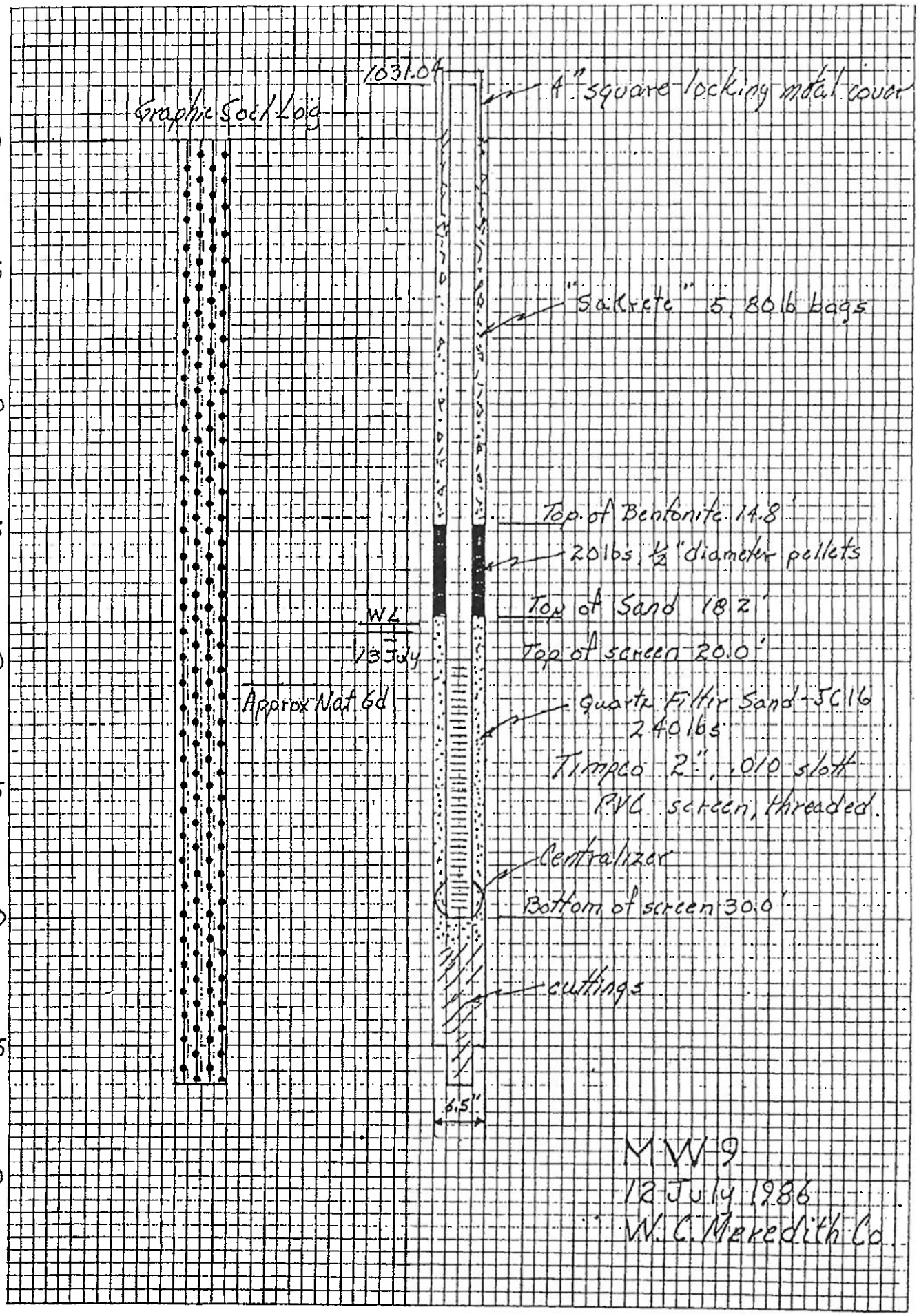
EARL F. TITCOMB, JR.
CONSULTANT IN GEOLOGY

MW9

DRILLING LOG	COMPANY William C. Meredith	INSTALLATION East Point Ga	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Station) 112.2' E of MW6		SIZE AND TYPE OF BIT 2¼" ID. HSA & Splitspoon	
DRILLING AGENCY Robert Stansfied		TOTAL NO OF OVERBURDEN SAMPLES TAKEN 7 jars	
THICKNESS OF OVERBURDEN NA		DATE HOLE STARTED 12 July 86	COMPLETED 12 July 86
DEPTH DRILLED INTO ROCK NA		ELEVATION TOP OF HOLE 1029.0 msl	
TOTAL DEPTH OF HOLE 36.5'		ELEVATION GROUND WATER 1011.48, 13 July 86	
NAME OF DRILLER Robert Stansfied		SIGNATURE OF INSPECTOR OR GEOLOGIST Earl F. Titcomb P.G.	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			GM red silty gravel, fill			NOTE: Soils field classified in accordance with the Unified Soil Classification Systems..
	5		SM reddish brown, micaceous silty sand. Some clay	35	1	
			bits of wood, about .75 thick			
	10			45	2	
	15			17	3	
WL 1011.48 13 July 86	20		20-20.3 dk red MH with wood fragments, 20.3 damp, orange with black inclusions	19	4	
1009.0	25		21.0' approximate original ground.			
			SM-H greenish-red-orange very micaceous silty sand. Mica has "golden" color. Weathered micaceous gneiss, foliation low, relic garnets(?).	33	5	
	30			19	6	
993.5	35			12	7	BLOWS PER FOOT: Number required to drive 1⅜" ID splitspoon w/140 lb. hammer falling 30"...
			Bottom of Hole 36.5			

MW-4 Fill ↓ Res


1031.04
4" square locking metal cover
Graphic Soil Log
0
5
"Sakrete" 5, 80lb bags
10
Top of Bentonite 14.8'
15
20lbs, ½" diameter pellets
WL
13 July
Top of Sand 18.2'
20
Top of screen 20.0'
Approx Natl Gd
Quartz Filter Sand - 3C 16
240 lbs
Timco 2", .010 slot
PVC screen, threaded.
25
Centralizer
Bottom of screen 30.0'
30
cuttings
35
6.5"
MW9
12 July 1986
W. C. Meredith Co.
40

DATE: February 12, 1988
Revision No.:
E

E-1a DESCRIPTION OF WELLS (Continued)

Ground Water Monitoring Well No.: MW 10

Location: 141 Feet North of MW 8, 240 Feet North of MW 5 at edge of surface impoundment

Depth of Well: 35 Feet

Well Screen Interval: 10 Feet

Casing Description: 2 inch PVC

Type of Well: Downgradient
(Rate and extent well)

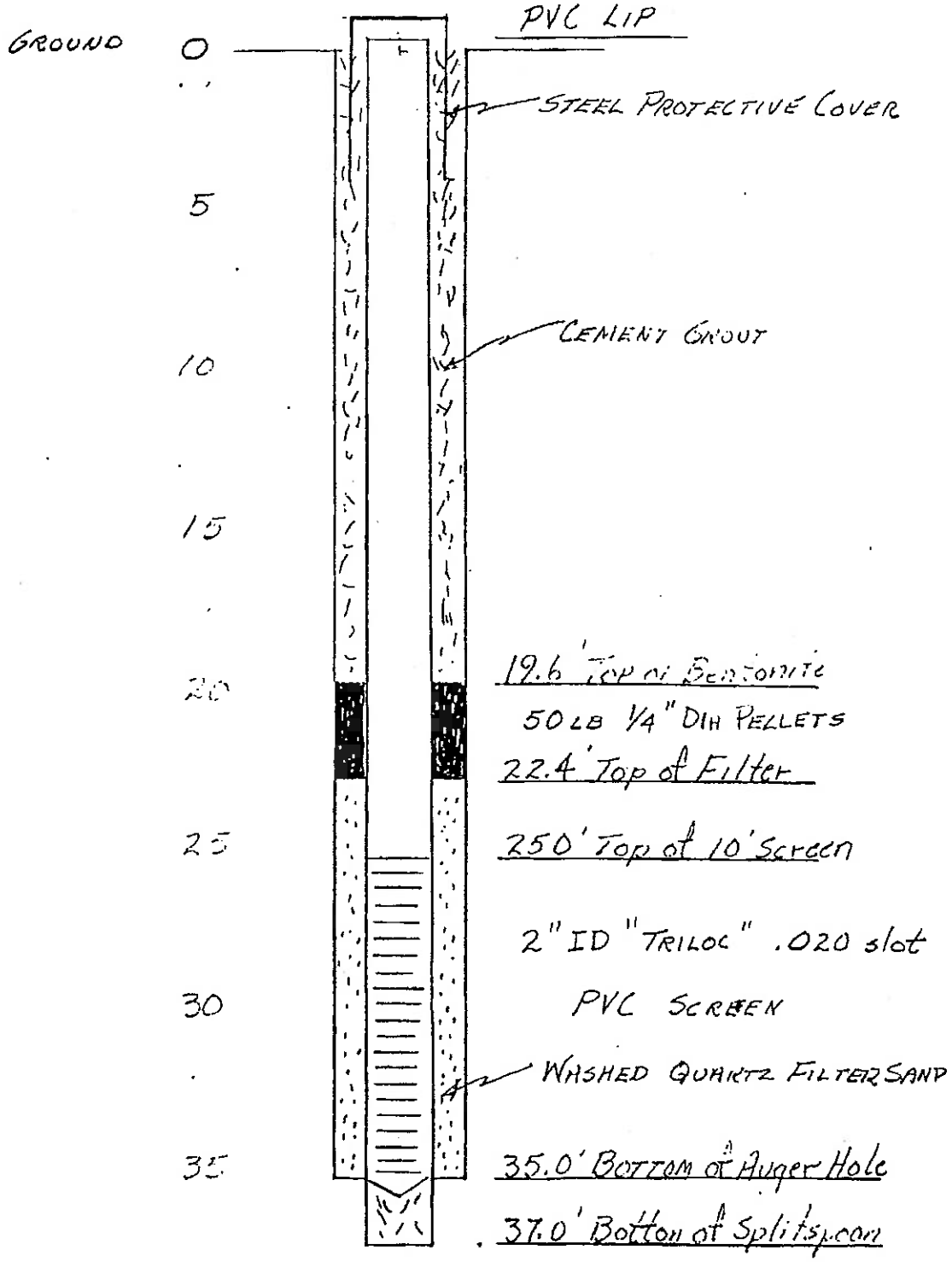
CONSULTANT IN GEOLOGY

MW10

DRILLING LOG	COMPANY W. C. MEREDITH Co	INSTALLATION EAST POINT, GA	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Station) N10°W, 144.2' FR MW8		SIZE AND TYPE OF BIT 4¼" I.D. HSA	
DRILLING AGENCY ATEC		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 7 JARS	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED 30 JAN 88	COMPLETED 30 JAN 88
DEPTH DRILLED INTO ROCK 0		ELEVATION TOP OF HOLE	
TOTAL DEPTH OF HOLE 37.0'		ELEVATION GROUND WATER	
NAME OF DRILLER DALE TUPPER		SIGNATURE OF INSPECTOR OR GEOLOGIST Paul J. Kendall P.G.	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			GP DARK BROWN TO BLACK SANDY GRAVEL, FILL, SOME WOOD FRAG			SPT = BLOWS PER FOOT 140LP HAMMER FALLING 30 INCHES
	5		SM-SC DARK BROWN TO BLACK, SILTY, CLAYEY, MICACEOUS SAND, FILL	9	1	SOILS FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)
	10		MINOR SMALL GRAVEL	10	2	
	15		SM-H RED-BROWN, SILTY VERY MICACEOUS SAND BECOMES MORE DENSE 17.5 - TOP OF NATURAL GROUND	13	3	
	20			15	4	
	25		WEATHERED GARNETS(?) BLACK	6	5	WATER ON SPLITSPOON
	30		GRAY, BANDED SAPROLITE	6	6	Preliminary
	35		BOTTOM OF HOLE 37.0'	14	7	

MW-10



WILLIAM C. MEREDITH CO

MW 10

30 JAN 1988

Carl F. Tiffenbach P.G.

DATE: July 14, 1998
Revision No.: 1
E

E-6a DESCRIPTION OF WELLS

Ground Water Monitoring Well No.: MW11

Location: North/northeast of surface impoundment at toe of original dike.
(Just beyond closed surface impoundment cap - inside fenced area)

Depth of Well: 35 feet

Well Screen Interval: 10 feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient
(point of compliance)

E-5a

EARL F. TITCOMB, JR.
CONSULTANT IN GEOLOGY

(404) 761-2972

MW11

DRILLING LOG	COMPANY W. C. Meredith	INSTALLATION East Point, Ga	SHEET OF SHEETS
LOCATION (Coordinates or Station) Old Lagoon Edge		SIZE AND TYPE OF BIT 4" auger, 1½" splitspoon	
DRILLING AGENCY EFT INC		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 3	
THICKNESS OF OVERBURDEN 39.0		DATE HOLE STARTED 12 Aug 1989	COMPLETED 13 Aug 1989
DEPTH DRILLED INTO ROCK NA		ELEVATION TOP OF HOLE 1032.00±	
TOTAL DEPTH OF HOLE 39.0		ELEVATION GROUND WATER 1013.08 msl 18 Aug 89	
NAME OF DRILLER Bolen		SIGNATURE OF INSPECTOR OR GEOLOGIST Earl F. Titcomb P.G.	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	5		SM-SC red-orange silty-clayey sand with gravel fill.			Note: Area was excavated by backhoe to about 22.0' to remove concrete debris. It was then backfilled with SM-SC and ML
	10					
	15			2	1	
	20		ML dark green micaceous silt	8	2	Water on splitspoon
	25		Approximate Top Natural Ground SM dark green micaceous sand weathered gneiss Very strong odor, sheen, black material.	17	3	
	30					
	35		NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.			BLOWS PER FOOT: Number required to drive 1⅜" ID splitspoon w/140 lb. hammer falling 30".
			Bottom of Hole 39.0'			

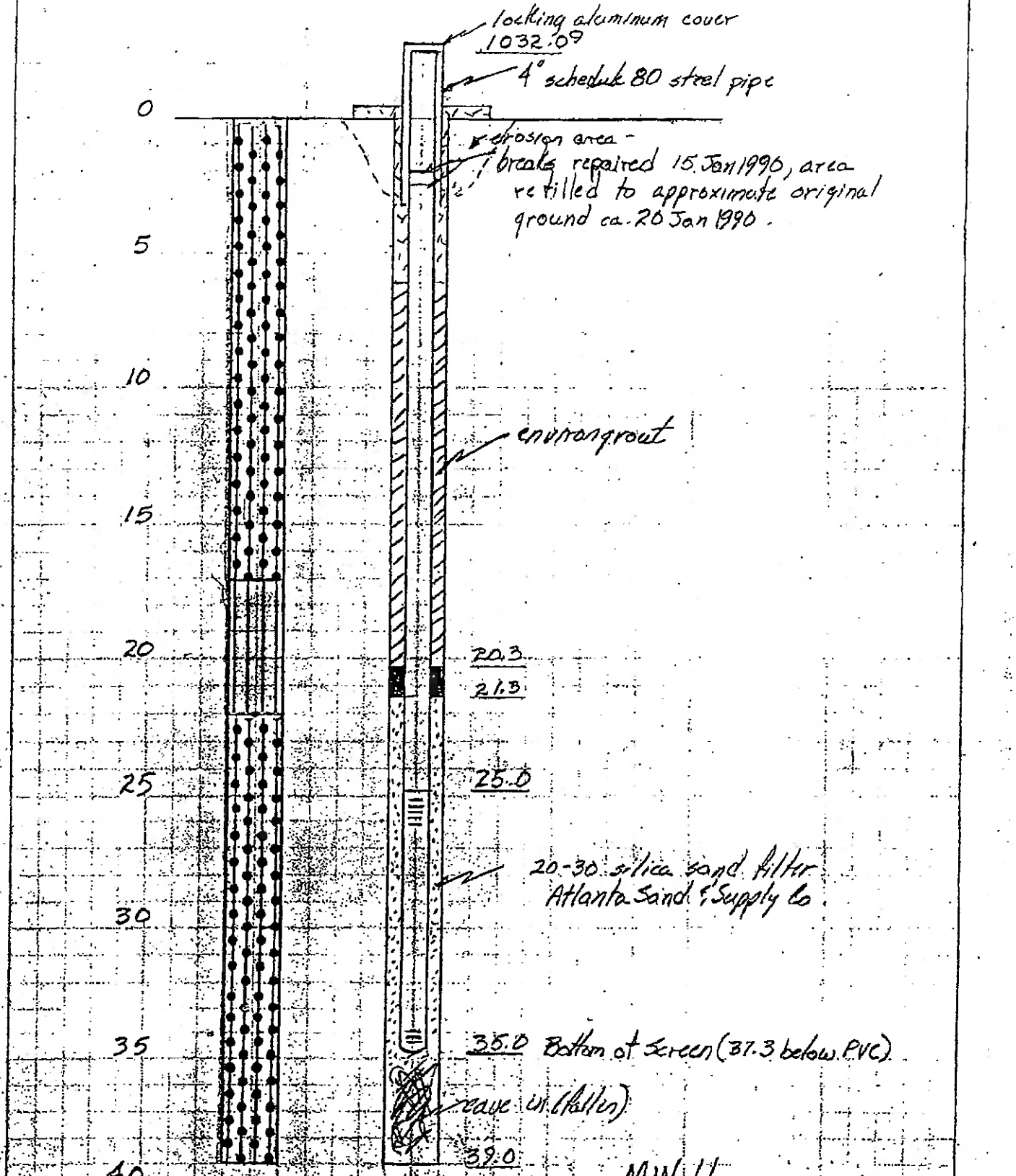
MW-11

Fill

Res

PWR

W.C. Meredith Co | East Point, Ga | MW 11



MW 11

Installed 12-13 Aug. Erosion and construction cap caused breakage of riser ca. 2' below original ground. Was repaired 15 Jan 1990

DATE: APRIL 28, 2008
Revision No.: 1
E

E-6a DESCRIPTION OF WELLS

Ground Water Monitoring Well No.: MW 12

Location: NORTH OF MAIN OFFICE, IN VALLEY OF SWMU #9
ADJACENT TO STREAM BED SWMU #10

Depth of Well: 15 FEET

Well Screen Interval: 5 feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient

Project No: WCM

Project: April 04 Well Installations

Client: William C. Meredith

Location: see Plan (valley)

Boring ID: MW12

Enclosure:

Geologist: Earl Titcomb, P.G.

SUBSURFACE PROFILE

Depth	Symbol	Description	SPT	Well Installation Details	Remarks
0		Ground Surface			
		Alluvium - no recovery			Casing Stick-Up = 2.69' above slab
1		Gravelly Sand, Silt mixture, fluvial deposition			
2					Top of Bentonite = 2.0' bgs
3					
4					2 bags of bentonite
5					
6					
7					
8					Top of Sand = 7.6' bgs Top of Screen = 8.1' bgs
9		*SM(H)*			
10		Highly weathered biote hornblende schist			
11					5 bags of filter sand
12					
13					
14					
15		Total Augured Depth = 15.0' bgs			Total Well Depth = 17.37' BTOC

Drilled By: GeoLab

Drill Method: HSA - CME

Drill Date: April 20, 2004

Hole Size: 8-inch

Sheet: 1 of 1

E-5a

DATE: APRIL 28, 2008
Revision No.: 1
E

E-5a DESCRIPTION OF WELLS

Ground Water Monitoring Well No.: MW 12A

Location: 5 FEET EAST OF WELL MW12, NORTH OF MAIN OFFICE IN VALLEY OF SWMU #9, ADJACENT TO STREAM BED SWMU #10

Depth of Well: 32.2 FEET

Well Screen Interval: 5 feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient

Project No: WCM

Project: April 04 Well Installations

Client: William C. Meredith

Location: Valley

Boring ID: MW12A

Enclosure:

Geologist: Earl Titcomb, P.G.

SUBSURFACE PROFILE

Depth	Symbol	Description	SPT	Well Installation Details	Remarks
0		Ground Surface			
0–4		***SM(H)*** Very soft, weathered, wet recovery only 1.5' bgs	1.5		Casing Stick-Up = 2.70' ags
4–5		Alluvium - no recovery			Cement grout
5–11		***Schist*** Biotite-hornblende schist banded w/ few 10 mm white bands (brown-gray); odor detectable	2		Top of bentonite = 7.0' bgs
11–21		Foliation dips ca. 30 degrees; odor	3.4 3.4		Top of Cave-In = 21.0' bgs Note: borehole caved during placement
21–28					Top of Sand = 27.5' bgs
28–33		dark reddish brown, very weathered	1.5 1.4		Top of Screen = 28.5' bgs Total Well Dpth = 34.8' BTOC
33–34		gray brown, much less weathered granite (sandy)			
34		End of Borehole			
34–37		Total Depth = 34.4' bgs (refusal)			

Drilled By: GeoLab

Hole Size: 8-inch

Drill Method: HSA - Probe

Drill Date: April 21, 2004

Sheet: 1 of 1

E-6a

DATE: APRIL 28, 2008
Revision No.: 1
E

E-6a DESCRIPTION OF WELLS

Ground Water Monitoring Well No.: MW 13

Location: NW OF WELL MW 10

Depth of Well: 35 FEET

Well Screen Interval: 10 feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient

MW-13

Project No: WCM

Project: April 04 Well Installations

Client: William C. Meredith

Location: NW of MW10

Boring ID: MW13

Enclosure:

Geologist: Earl Titcomb, P.G.

SUBSURFACE PROFILE

Depth	Symbol	Description	SPT	Well Installation Details	Remarks
0		Ground Surface			
0–10		*SM* Orange silty mica sand, slightly clayey - very fast drilling - Fill			Casing Stick-Up = 1.22' ags
					Top of Bentonite = 6.0' bgs
10		0.2-foot layer of black "asphalt-like" material	6		
10–17		- Fill			
17		approximate fill depth (16.0' bgs)			
20			5		Top of Sand = 20.0' bgs
25		*SM(H)* Schist - intensely weathered; orange to green			Top of Screen = 25.0' bgs
30			6		6 bags of medium filter sand
35		Total Depth = 35.0' bgs			Total Well Depth = 36.1' BTOC
36		End of Borehole			

Drilled By: GeoLab

Drill Method: HSA - CME

Drill Date: April 19, 2004

Hole Size: 8-inch

Sheet: 1 of 1

DATE: APRIL 28, 2008
Revision No.: 1
E

E-6a DESCRIPTION OF WELLS

Ground Water Monitoring Well No.: MW 14

Location: 305 FEET NORTHEAST OF WELL MW8

Depth of Well: 26.5 FEET

Well Screen Interval: 10 feet

Casing Description: 2 inch PVC pipe

Type of Well: Downgradient

Project No: WCM

Project: April 04 Well Installations

Client: William C. Meredith

Location: 305' NE of MW8

Boring ID: MW14

Enclosure:

Geologist: Earl Titcomb, P.G.

SUBSURFACE PROFILE

Depth	Symbol	Description	SPT	Well Installation Details	Remarks
0		Ground Surface			
1	SM	orange silty micaceous sand			Casing Stick-Up = 1.0' ags
2					
3					Cement grout
4					
5					
6					Top of bentonite = 6.5' bgs
7		- several hard layers of light gray granite gneiss			
8					
9					
10					
11			43		
12					
13		- weathered dark brown silty micaceous sand			
14					Top of Sand = 14.0' bgs
15					Top of Screen = 15.7' bgs
16					
17		- hard layer ca 0.2' thick			
18					
19					
20			bb		
21					
22		- Hornblende-biotite schist; moderately weathered			
23					
24					
25					
26		Refusal at 26.5' bgs			Total Well Depth = 26.7' BTOC

Drilled By: GeoLab

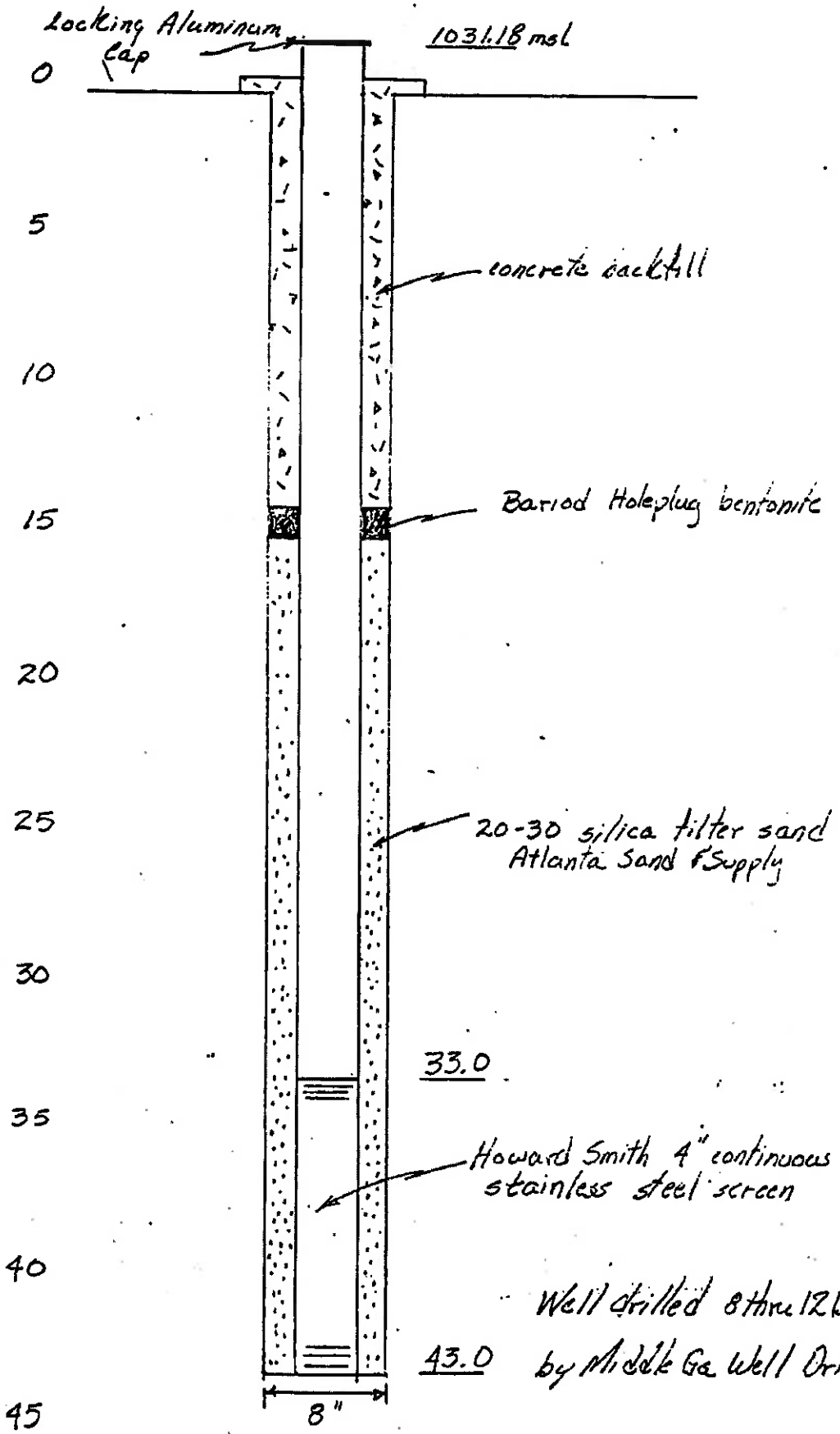
Drill Method: HSA - 4 1/4" bit

Drill Date: April 21, 2004

Hole Size: 8-Inch

Sheet: 1 of 1

W.C. Meredith | East Point, Ga | PW 1



Well drilled 8 thru 12 Dec 089 by Middle Ga Well Drillers.

FIGURE 1