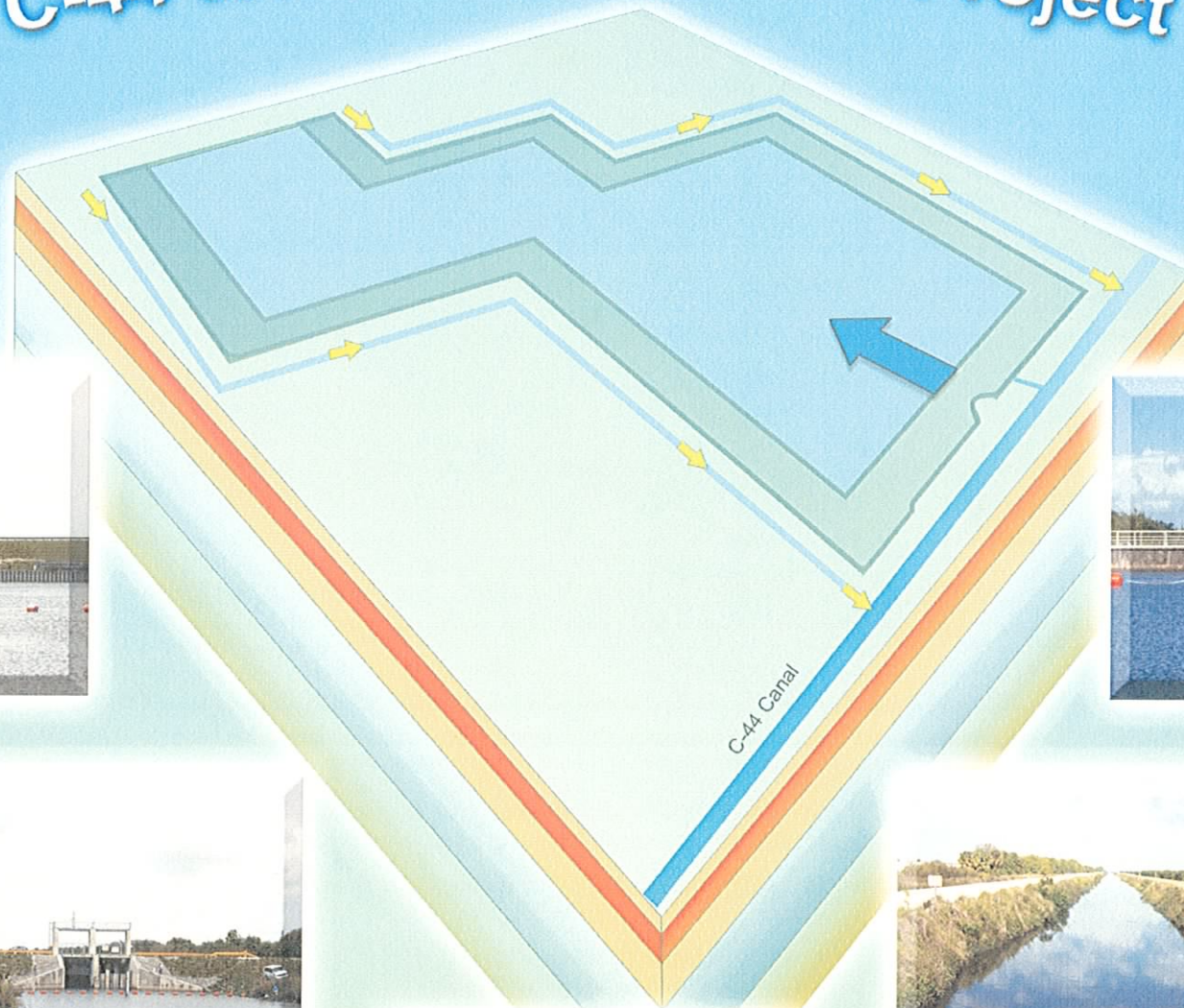


Preliminary Geotechnical Engineering Evaluation for the C-44 Water Management Project



Appendices

Appendix A Reference Documents

Appendix B Subsurface Exploration and Preliminary Geotechnical Engineering
Evaluation by Ardaman & Associates, Inc.

Appendix C Boring Logs, Test Pit Logs, Well Installation and Monitoring Logs

Appendix D Field Hydraulic Conductivity Testing

Appendix E Laboratory Testing Results

Appendix F Wave Run-up Analysis

Appendix G Seepage Analysis – SEEP2D and SEEP/W

Appendix H Stability Analysis – UTEXAS4 and XSTABL

Appendix I Bearing Capacity and Settlement Analysis

APPENDIX C

Boring Logs, Test Pit Logs, Well Installation and Monitoring Logs

BORING LOGS



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-101

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Nodarse & Associates, Inc.

Surface Elevation (ft.): 24.91

Drilling Method/Rig: Mud Rotary Drill/CME 45

Total Depth (ft.): 140

Drillers: Carl Sandgren

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 01/19/04 **End:** 01/21/04

Abandonment Method: Portland Cement

Borehole Coordinates:

Field Screening Instrument:

N 1,011,068.70 E 831,654.20

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			24.9 0				SM	Light brown, silty fine SAND.
			19.9 5				SP-SM	Light Brown, slightly silty fine SAND.
			14.9 10					
			9.9 15					
			4.9 20				SP	Light gray, shelly fine SAND.
			-0.1					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

Drilled down without sampling from 0 to 98.5 ft-bgs.
 Soil description based on driller observation during drilling.
 Split Spoon sampling started at 98.5 ft-bgs.

BL C-44 PHASE1.GPJ_CDM_CORP.GDT_4/16/04

Reviewed by: *A. K. Neamtu*

Date: 04/21/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-101

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			-0.1 25				SP	
			-5.1 30				SP-SHELL	Gray, fine sandy SHELL.
			-10.1 35					
			-15.1 40					
			-20.1 45				SP-SC	Gray, slightly clayey shelly fine SAND.
			-25.1 50					
			-30.1 55					
			-35.1 60					
			-40.1 65					
			-45.1 70					
			-50.1					

BL C-44 PHASE1.GPJ_CDM_CORP.GDT_4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-101

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			-50.1 75				SP-SC	Gray, slightly clayey fine SAND, some cemented shell fragments. (Difficult drilling from 75 to 98.5 ft-bgs.)
			-55.1 80					
			-60.1 85					
			-65.1 90					
			-70.1 95					
SS	S-1	18/18	-75.1 100		18 20 11		SM	Dense, gray, slightly shelly silty fine SAND, trace coarse cemented shell fragments.
SS	S-2	18/18	-80.1 105		8 8 14			Medium dense, gray, slightly shelly silty fine SAND, trace coarse cemented shell fragments.
SS	S-3	18/18	-85.1 110		10 10 14		SP-SC	Medium dense, light olive gray, slightly shelly clayey fine SAND, trace silt.
SS	S-4	18/18	-90.1 115		6 6 11		SP	Medium dense, light gray, slightly silty and slightly shelly fine to medium SAND, trace cemented fragments.
SS	S-5	18/18	-95.1 120		13 9 25			Dense, light gray, shelly medium SAND, trace cemented fragments, phosphate, weak to moderate cementation.
SS	S-6	18/18	-100.1		15 24 18			Dense, light gray, shelly medium SAND, some cemented fragments, phosphate, weak to moderate cementation.

BL C-44 PHASE1.GPJ CDM_CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-101

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			-100.1 125				SP	
SS	S-7	11/11	-105.1 130		28 50/5"		SP-SO	Very dense, olive gray, slightly clayey slightly fine SAND, some phosphate, trace shell fragments.
SS	S-8	18/18	-110.1 135		22 25 30		SM	Very dense, silty fine SAND, some phosphate, trace shell fragments.
SS		18/0	-115.1 140		28 31 49			No recovery.
			-120.1 145					Boring terminated at 140 ft-bgs.
			-125.1 150					
			-130.1 155					
			-135.1 160					
			-140.1 165					
			-145.1 170					
			-150.1					

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 4/18/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

W-101

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.): 28.67

Drilling Method/Rig: Mud Rotary Drill/CME 45

Total Depth (ft.): 137

Drillers: Carl Sandgren

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 02/23/04 **End:** 02/26/04

Abandonment Method: 2-in well

Borehole Coordinates:

Field Screening Instrument:

N 1,011,069.30 E 831,695.30

Logged By: KL

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			28.7 0				SP	Light brown, very slightly clayey and very slightly shelly fine to coarse SAND.
			23.7 5					
			18.7 10					- shell fragments
			13.7 15					- shell fragments
SS	S-1	18/18	8.7 20		11 22 30	SP-SHELL		Dense, dark gray, fine to medium SAND and SHELL. - shell fragments
			3.7					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

Reviewed by: *A.K. Nandy*

Date: 04/21/04

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 4/21/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

W-101

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			3.7 25				SP-SHELL	
			-1.3 30					
			-6.3 35					
SS	S-2	18/18	-11.3 40		10 12 11			Medium dense, dark gray, fine to medium SAND and SHELL. - shell fragments
			-16.3 45					- shell fragments
			-21.3 50					
			-26.3 55					- shell fragments
SS	S-3	18/18	-31.3 60		9 12 14		SP	Medium dense, dark gray, slightly shelly silty fine SAND.
			-36.3 65					- shell fragments
			-41.3 70				SP-SHELL	Dark gray, silty fine SAND and SHELL fragments.
			-46.3					

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 4/21/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

W-101

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			-46.3 75				SP-SHELL	
SS	S-4	18/18	-51.3 80		12 25 25		SP	Very dense, bluish gray, silty fine to medium SAND, with cemented fragments.
			-56.3 85					No sampling to end of boring at 137 ft-bgs.
			-61.3 90					
			-66.3 95					
			-71.3 100					
			-76.3 105					
			-81.3 110					
			-86.3 115					
			-91.3 120					
			-96.3					

BL C-44 PHASE1.GPJ CDM_CORP.GDT 4/21/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-102

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Nodarse & Associates, Inc.

Surface Elevation (ft.): 29.5

Drilling Method/Rig: Mud Rotary Drill/CME 55

Total Depth (ft.): 140

Drillers: Ralph Smith

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 01/21/04 **End:** 01/23/04

Abandonment Method: Portland Cement

Borehole Coordinates:

Field Screening Instrument:

N 1,000,669.00 E 851,819.80

Logged By: KL

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 inches	Graphic Log	Stratum Designation	Material Description
			29.5					
SS	S-1	24/24	0		2		TS	Brown, silty SAND. -TOPSOIL- Medium dense, light yellow, slightly silty fine SAND.
SS	S-2	24/24		5	10		SP	
SS	S-3	24/24		13	13		CL-ML	Very stiff, gray and brown, sandy silty CLAY.
SS	S-4	24/24	24.5	7	8		ML	Very stiff, dark gray, sandy clayey SILT.
SS	S-5	24/24	5	12	7			Hard, dark gray, sandy clayey SILT.
SS	S-6	24/24		8	8			Loose, bluish gray, silty fine SAND.
SS	S-7	24/24		15	5			
SS	S-8	24/24	19.5	15	8			SP-SM
			10		16			
			14.5		16			
			15					
			9.5		16			
			20		29			
					26			
			9.5					
			20					
SS	S-8	2/0	4.5		50/2		SHELL	No recovery, description based on driller observation. Very dense, light gray, cemented SHELL fragments.

EXPLANATION OF ABBREVIATIONS

- DRILLING METHODS:**
- HSA - Hollow Stem Auger
 - SSA - Solid Stem Auger
 - HA - Hand Auger
 - AR - Air Rotary
 - DTR - Dual Tube Rotary
 - FR - Foam Rotary
 - MR - Mud Rotary
 - RC - Reverse Circulation
 - CT - Cable Tool
 - JET - Jetting
 - D - Driving
 - DTC - Drill Through Casing

- SAMPLING TYPES:**
- AS - Auger/Grab Sample
 - CS - California Sampler
 - BX - 1.5" Rock Core
 - NX - 2.1" Rock Core
 - GP - Geoprobe
 - HP - Hydro Punch
 - SS - Split Spoon
 - ST - Shelby Tube
 - WS - Wash Sample
- OTHER:**
- AGS - Above Ground Surface

REMARKS

Reviewed by: *[Signature]*

Date: 01/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-102

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			4.5 25				SHELL	
								Soft stratum encountered at 26.5 ft-bgsd while drilling (based on driller observation).
SS	S-9	18/18	-0.5 30		20 37 45		SM-SHELL	Very dense, dark gray, silty SHELL fragments.
SS	S-10	18/18	-5.5 35		27 39 36		SP	Very dense, dark gray, slightly silty fine to medium SAND, trace shell fragments, phosphate.
SS	S-11	18/18	-10.5 40		19 26 28			Very dense, light brown and gray, slightly silty fine SAND, trace shell fragments.
SS	S-12	18/18	-15.5 45		21 27 29			Very dense, light brownish gray, slightly silty fine SAND, trace shell fragments, phosphate.
SS	S-13	18/18	-20.5 50		14 18 18			Dense, light brownish gray, slightly silty fine SAND, trace shell fragments, phosphate.
SS	S-14	18/18	-25.5 55		8 11 14			Medium dense, light brownish gray, slightly silty fine SAND, trace shell fragments, phosphate.
SS	S-15	18/18	-30.5 60		11 15 16			Dense, light brownish gray, slightly silty fine SAND, trace shell fragments, phosphate.
SS	S-16	18/18	-35.5 65		5 5		ML	Stiff, light olive gray, slightly sandy slightly clayey SILT, trace shell fragments.
SS	S-17	11/11	-40.5 70		21 50/5"		SM	Very dense, light gray, silty fine SAND, trace shell fragments, phosphate.
SS	S-18	18/18	-45.5		18 29 17		SP-SHELL	Dense, dark gray, silty sandy SHELL, trace phosphate.

BL C-44 PHASE1.GPJ CDM_CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-102

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			-45.5 75				SP-SHELL	
SS	S-19	18/18	-50.5 80		15 24 15			Dense, light gray and brown, silty sandy SHELL fragments.
SS	S-20	18/18	-55.5 85		15 24 18		SP-SHELL	Dense, dark gray, shelly slightly silty fine to medium SAND.
SS	S-21	18/18	-60.5 90		15 24 18			
SS	S-22	18/18	-65.5 95		14 12 10			Medium dense, gray and brown, slightly silty fine to medium SAND and SHELL fragments.
SS	S-23	18/18	-70.5 100		12 10 10		SP	Medium dense, brown and gray, slightly silty fine SAND, trace shell fragments.
SS	S-24	18/18	-75.5 105		15 10 12			Medium dense, light gray, slightly silty fine to medium SAND, trace shell fragments.
SS	S-25	18/18	-80.5 110		13 18 16			Dense, light gray, slightly silty fine to medium SAND, trace shell fragments.
SS	S-26	18/18	-85.5 115		16 25 25			Dense, light gray, slightly silty fine to medium SAND, trace shell fragments.
SS	S-27	18/18	-90.5 120		9 15 22		WEATHERED LIME ROCK	Dense, light grayish brown, silty WEATHERED LIME ROCK.
SS	S-28	18/18	-95.5		9 10 21	ML-SM-SHELL	Medium dense and very stiff, light grayish brown, cemented SILT and fine to medium SAND and SHELL fragments, trace	

BL C-44 PHASE1.GPJ CDM CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-102

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 inches	Graphic Log	Stratum Designation	Material Description
			-95.5 125				ML-SM-SHELL	phosphate, weathered limestone.
								(Driller notes stratum change at 126.5 ft-bgs)
SS	S-29	18/18	-100.5 130		6 10		ML	Stiff to very stiff, light grayish brown, sandy SILT, trace phosphate.
SS	S-30	18/18	-105.5 135		18 29 40		SM	Very dense, light grayish brown, silty fine to medium SAND, trace shell fragments.
SS	S-31	17/17	-110.5 140		29 20 50/5*			Very dense, light grayish brown, silty fine to medium SAND, trace shell fragments.
			-115.5 145					Boring terminated at 140 ft-bgs.
			-120.5 150					
			-125.5 155					
			-130.5 160					
			-135.5 165					
			-140.5 170					
			-145.5					

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-103

Client: Aquacalma LP
Project Location: Indiantown, Florida

Project Name: C-44 Reservoir Phase 1
Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Nodarse & Associates, Inc.
Drilling Method/Rig: Mud Rotary Drill/CME 55
Drillers: Ralph Smith
Drilling Date: Start: 01/19/04 **End:** 01/22/04
Borehole Coordinates:
N 983,392.10 E 842,992.90

Surface Elevation (ft.): 25.5
Total Depth (ft.): 150
Depth to Initial Water Level (ft. BGS):
Abandonment Method: Portland Cement
Field Screening Instrument:
Logged By: KL

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			25.5					
			0			AUGER		
			20.5 5					
			15.5 10					
			10.5 15					
			5.5 20					
			0.5					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Drilled down without sampling from 0 to 103.5 ft-bgs.
Split Spoon Sampling started at 103.5 ft-bgs.

Reviewed by: *R.K. Neamtu*

Date: 01/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-103

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 inches	Graphic Log	Stratum Designation	Material Description
			0.5 25				AUGER	
			-4.5 30					
			-9.5 35					
			-14.5 40					
			-19.5 45					
			-24.5 50					
			-29.5 55					
			-34.5 60					
			-39.5 65					
			-44.5 70					
			-49.5					
							Shell fragments started encountered at 64 ft-bgs.	

BL C-44 PHASE1.GPJ CDM_CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-103

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			-49.5 75				AUGER	
			-54.5 80					
			-59.5 85					
			-64.5 90					
			-69.5 95					
			-74.5 100					
SS	S-1	18/12	-79.5 105		28 29 46		SP	Very dense, light gray, slightly silty fine to medium SAND, trace cemented shell fragments.
SS	S-2	18/18	-84.5 110		7 7		SM	Medium dense, light gray, silty fine SAND, trace shell fragments.
SS	S-3	18/18	-89.5 115		7 8 6			Medium dense, light gray, silty fine SAND, trace shell fragments.
SS	S-4	18/0	-94.5 120		13 15 16		SP	No recovery.
SS	S-5	18/18	-99.5		12 10 26			Dense, light gray, slightly silty fine to medium SAND, trace weathered limestone, shell fragments.

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-103

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			-99.5 125				SP	
SS	S-6	18/18	-104.5 130		17 14 25	LIMESTONE		Dense, yellowish gray, soft LIMESTONE, poorly indurated, trace silt, phosphate.
SS	S-7	18/18	-109.5 135		10 26 7		SM	Dense, yellowish gray, silty fine to medium SAND, trace clay, phosphate.
SS	S-8	18/18	-114.5 140		11 22 18			Dense, olive green, silty fine SAND, trace clay.
SS	S-9	18/18	-119.5 145		21 28 10			Dense, olive green, silty fine to medium SAND.
SS	S-10	18/18	-124.5 150		17 27 45		SP	Very dense, olive green, silty fine to medium SAND.
			-129.5 155					Boring terminated at 150 ft-bgs.
			-134.5 160					
			-139.5 165					
			-144.5 170					
			-149.5					

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

W-103

Client: Aquacalma LP
Project Location: Indiantown, Florida

Project Name: C-44 Reservoir Phase 1
Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP
Drilling Method/Rig: Mud Rotary Drill/CME 45
Drillers: Carl Sandgren
Drilling Date: Start: 02/19/04 **End:** 02/21/04

Surface Elevation (ft.): 25
Total Depth (ft.): 135
Depth to Initial Water Level (ft. BGS):
Abandonment Method: 2-in well

Borehole Coordinates:
N 983,384.60 E 843,066.50

Field Screening Instrument:
Logged By: KL

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			25.0 0					
			20.0 5			[Dotted pattern]	SP	Gray, fine SAND.
			15.0 10					
			10.0 15					
SS	S-1	18/18	5.0 20		8 12			Medium dense, gray, slightly silty fine to medium SAND.
			0.0					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

Reviewed by: *[Signature]*

Date: 04/21/04

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 4/21/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

W-103

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			0.0 25				SP-SHELL	Gray and brown, SHELL and coarse SAND, some cemented fragments.
			-5.0 30				SP-SHELL	Dark gray, coarse SAND and SHELL, trace phosphate.
			-10.0 35					
SS	S-2	18/18	-15.0 40		27 31 44		SP-SHELL	Very dense, dark gray, very slightly shelly silty fine to medium SAND, trace cemented fragments, phosphate.
			-20.0 45					
			-25.0 50					- some cemented fragments.
			-30.0 55					
SS	S-3	18/18	-35.0 60		39 50/5"		SP-SHELL	Very dense, gray, slightly shelly slightly silt SAND, trace phosphate.
			-40.0 65					Gray, SAND and SHELL, some cemented fragments, trace phosphate.
			-45.0 70					- some gray shell fragments.
			-50.0					

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 4/21/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

W-103

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			-50.0 75				SS-SHELL	Light gray, slightly silty fine SAND and SHELL fragments.
SS	S-4	18/18	-55.0 80		18 11			Medium dense, light gray, slightly silty fine to medium SAND and SHELL. - trace phosphate.
			-60.0 85					
			-65.0 90					
			-70.0 95				SM-SHELL	Silty SAND and SHELL fragments.
			-75.0 100					
			-80.0 105					
			-85.0 110					
			-90.0 115					
			-95.0 120					
			-100.0					No sampling to end of boring at 135 ft-bgs.

BL C-44 PHASE1.GPJ CDM_CORP.GDT 4/21/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-104

Client: Aquacalma LP
Project Location: Indiantown, Florida

Project Name: C-44 Reservoir Phase 1
Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Nodarse & Associates, Inc.
Drilling Method/Rig: HSA & Mud Rotary Drill/CME 45
Drillers: Carl Sandgren
Drilling Date: Start: 01/21/04 **End:** 01/26/04

Surface Elevation (ft.): 20.6
Total Depth (ft.): 135
Depth to Initial Water Level (ft. BGS): 7.5
Abandonment Method: Portland Cement

Borehole Coordinates:
N 997,961.30 E 833,488.27

Field Screening Instrument:
Logged By: EDM/ KL

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 inches	Graphic Log	Stratum Designation	Material Description
			20.6					
SS	S-1	18/18	0		4		TS	Medium dense, dark grayish brown, silty fine SAND, trace roots.
SS	S-2	18/18			5		SC	-TOPSOIL- Medium dense, dark grayish brown, slightly silty clayey fine SAND.
SS	S-3	18/18			8			Medium dense, gray, clayey fine to medium SAND.
SS	S-4	18/18	15.6		10			Dense, greenish gray, clayey fine SAND.
SS	S-5	18/18	5		10		CL-ML	Very stiff, light brownish gray, silty CLAY, trace fine sand.
SS	S-6	18/18			10		SP	Medium dense, gray, slightly silty and slightly clayey shelly fine SAND.
SS	S-7	18/18	10.6		4			Medium dense, gray, shelly fine SAND, trace rock (gravel size).
			10		7			
SS	S-8	18/12	5.6		8		SHELL-SP	Medium dense, gray, slightly clayey sandy SHELL fragments, some phosphate.
			15		11			
					16			
SS	S-9	18/12	0.6		19		SP	Dense, gray, shelly fine SAND.
			20		21			
					22			
SS	S-10	18/12	-4.4		19		SM	Dense, gray, shelly silty fine SAND.
					13			
					26			

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Hollow Steam Auger from 0 to 10.5 ft-bgs, continued by Mud Rotary Drill to 135 ft-bgs.
Ground water was encountered during drilling at 7.5 ft-bgs.

Reviewed by: *A.K. Namdar*

Date: 04/20/04

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-104

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			-4.4 25				SM	
SS	S-11	18/12	-9.4 30		17 25 21		SP	Dense, gray and white, sandy SHELL fragments.
SS	S-12	18/12	-14.4 35		9 10 8			Medium dense, gray, slightly shelly fine SAND, some phosphate.
SS	S-13	18/12	-19.4 40		9 15 27			Dense, light brownish gray, slightly shelly and slightly silty fine SAND.
SS	S-14	18/10	-24.4 45		7 7	SP-SHELL		Medium dense, light brownish gray, slightly silty shelly fine SAND, some phosphate.
SS	S-15	18/10	-29.4 50		11 12 11			Medium dense, gray, shelly silty fine SAND, little phosphate.
SS	S-16	18/8	-34.4 55		10 13 14		SP	Medium dense, gray, slightly shelly and slightly silty fine to medium SAND.
SS	S-17	18/10	-39.4 60		2 5		SM	Loose, gray, slightly shelly slightly silty fine SAND, trace phosphate.
SS	S-18	18/10	-44.4 65		14 15 16		SP	Dense, gray, slightly shelly fine to medium SAND, trace silt, phosphate.
SS	S-19	18/16	-49.4 70		23 12 21			Dense, gray and white, slightly shelly medium SAND, little phosphate, trace silt.
SS	S-20	18/18	-54.4		21 12 15			Very dense, gray, fine SAND, trace shell fragments, phosphate.

BL C-44 PHASE1.GPJ CDM_CORP.GDT 4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-104

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description		
			-54.4 75				SP	Very dense, gray, fine SAND, trace lime rock, trace shell fragments, phosphate.		
SS	S-21	18/12	-59.4 80		29 19 18					
SS	S-22	18/18	-64.4 85		44 27 26					
SS	S-23	18/18	-69.4 90		22 49 19					
SS	S-24	18/18	-74.4 95		15 15 16					
SS	S-25	18/18	-79.4 100		6 7 17				SM	Medium dense, light gray, silty SAND, trace shell fragments.
SS	S-26	18/18	-84.4 105		15 7 11					
SS	S-27	18/18	-89.4 110		8 7 16					
SS	S-28	18/18	-94.4 115		15 10 7				SP	Medium dense, greenish gray, slightly silty fine to medium SAND, trace shell fragments.
SS	S-29	18/18	-99.4 120		33 17 48					
SS	S-30	18/18	-104.4		24 15 2		Medium dense, light greenish gray, slightly clayey and slightly silty SAND, trace shell fragments, phosphate.			

BL C-44 PHASE1.GPJ_CDM_CORP_GDT_4/16/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

BOREHOLE LOG

B-104

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			-104.4 125				SP	
SS	S-31	18/18	-109.4 130		6 8 11		SM	Medium dense, olive gray, silty fine SAND, trace phosphate.
SS	S-32	18/18	-114.4 135		6 8 15			Medium dense, olive gray, very silty fine SAND.
			-119.4 140					Boring terminated at 135 ft-bgs.
			-124.4 145					
			-129.4 150					
			-134.4 155					
			-139.4 160					
			-144.4 165					
			-149.4 170					
			-154.4					

BL C-44 PHASE1.GPJ CDM_CORP.GDT 4/16/04

TEST PIT LOGS



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP- 1

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 13

Drillers: Wayne

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 01/14/04 **End:** 01/14/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: SLW/ B

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS	-	-	0				SP-SM	Dry, dark brown, slightly silty and slightly clayey or slightly organic fine SAND, occasional limestone fragments up to 18 inches wide x 6 inches thick.
AS	-	-	5				SM	Dry, yellowish orange, calcareous shelly silty fine to medium SAND. Increasing number of shells with depth. Moist at 6 ft to 8 ft below ground surface.
AS	-	-	10				SC	Moist, bluish gray, clayey fine SAND.
			15					Bottom of test pit at 13 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Cemented sand and shell at 13 ft-bgs.

Test pit located on Consolidated Citrus LP western property on north side.

Reviewed by: *A.K. Newton*

Date: 04/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 9/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP-2

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 11

Drillers: Wayne

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 01/14/04 **End:** 01/14/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: SLW/ B

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS	BS-1	-	0				SC	Dry, black muck, organic SAND, slightly plastic, grading to clayey SAND.
AS		-					SC	Dry, blue gray, clayey SAND.
AS		-	5				SM	Dry, silty SAND, no shells. Start moist at 6 ft-bgs.
			10					
			15					
			20					
								Bottom of test pit at 11 ft-bgs.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Test pit located on western side of Consolidated Citrus LP western property.

Test pit caved in.

Reviewed by: *A.S. Neander*

Date: 04/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 3/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP- 3

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 13

Drillers: Wayne

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 01/14/04 **End:** 01/14/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: SLW/ B

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0				TS	TOPSOIL
AS		-					SP	Dry, gray/ white, fine SAND. Color change to orange at 1 ft-bgs.
AS		-	5				SP-SM	Dry, blue gray, slightly silty fine SAND.
AS		-	10				SC	Moist, blue gray, clayey SAND.
AS		-					SP-SC	Moist, blue gray, slightly clayey SAND.
			15					Bottom of test pit at 13 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Test pit located on the eastern boundary of Consolidated Citrus LP western property.

Reviewed by: *[Signature]*

Date: 01/21/04

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 3/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP- 4

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 12

Drillers: Wayne

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 01/14/04 **End:** 01/14/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: SLW/ B

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS	-	-	0				SP	Dry, orange and white, fine SAND.
AS	-	-					CH	Dry, blue gray, CLAY, high plasticity.
AS	-	-					SP-SM	Dry, orangish brown, slightly silty fine SAND.
AS	-	-	5				SC	Dry, brown, clayey fine SAND.
AS	-	-					SP-SC	Moist, brown, slightly clayey fine SAND.
AS	-	-	10				SP	Moist, white, fine SAND.
								Bottom of test pit at 12 ft-bgs.
			15					
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Test pit located on south border of reservoir site, west of B32.

Reviewed by: *A.K. Neamth*

Date: 01/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 3/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP- 5

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 15

Drillers: Wayne

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 01/14/04 **End:** 01/14/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: SLW/ B

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0				TS	TOPSOIL (10 inches)
AS		-					SP	Dry, white with orange, fine SAND.
AS		-					CH	Dry, blue gray, CLAY, overlying organics roots/ sand. (1-inch thick)
AS		-					SP	Dry, white, fine SAND.
AS	BS-2	-	5				CH	Dry, blue gray, CLAY.
AS		-					OH	Moist, black, MUCK, with fiber. (5 inches - 6 inches thick)
AS		-					SP	Moist, white, fine SAND.
AS		-	10				SC	Moist, light gray, clayey SAND.
AS		-					SP	Light gray clean sand.
			15					Bottom of test pit at 15 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Test pit located on the south border of reservoir site near A51.

Reviewed by: *D. K. Naman*

Date: 01/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 3/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP- 6

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 13.5

Drillers: Wayne

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 01/14/04 **End:** 01/14/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: SLW/ B

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0				TS	TOPSOIL
AS		-					SP	Dry, white, fine SAND.
AS		-					CH	Dry, blue gray, CLAY. (4-in thick)
AS		-					SP	Dry, orangish brown, fine SAND.
			5				SC	Dry, brownish gray, clayey SAND.
AS		-					SM	With shells in the bottom of layer. Moist, light brown, shelly silty SAND.
AS		-					SC	Moist, light brown, shelly clayey SAND.
AS		-	10				SM	Moist, gray, shelly silty SAND.
			15					Bottom of test pit at 13.5 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
 OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Test pit located at south west boundary of reservoir property near B21.

Reviewed by: *A.K. Neaman*

Date: 04/21/04

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 3/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP-7

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 12.5

Drillers: Wayne

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 01/14/04 **End:** 01/14/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: SLW/ B

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS			0				SP	Dry, orangish brown, fine SAND.
AS	BS-3						OL SC	Moist, black, organic SILT. Dry, brownish gray, clayey SAND.
AS			5					
			10					
			15					Bottom of test pit at 12.5 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Reviewed by: *D.K. Warrick*

Date: 04/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 3/22/04



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Raleigh, NC 27612

TEST PIT LOG

TP- 8

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 15

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 10

Drilling Date: Start: 03/09/04 **End:** 03/09/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0				TS SM	Dry, dark gray, slightly silty SAND, trace organic silt. -TOPSOIL- Dry, light gray, silty fine SAND.
AS	S-1	-		E				
AS	S-2	-		E			SC	Moist, grayish brown, clayey SAND.
			5				SP-SC SP	Moist, light gray, slightly clayey fine SAND, trace silt. Moist, light gray, fine SAND, trace clay, silt.
AS	S-3	-		E				
AS		-	10	E			SP-SM	Wet, light gray, silty fine SAND, trace shell fragments. Wet, light gray, shelly silty fine SAND.
AS	S-4	-		E				
			15					Bottom of test pit at 15 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Shell fragments begin at 11 ft-bgs, and increases with depth.

Reviewed by: *D.K. Neanta*

Date: 04/21/04



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TEST PIT LOG

TP-9

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 15

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 14.5

Drilling Date: Start: 03/09/04 **End:** 03/09/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0	F			TS	Dry, dark gray, silty SAND. -TOPSOIL-
AS	S-1A	-		E			SC	Moist, light yellowish brown, slightly clayey SAND.
AS	S-1	-		E			SP-SM	Moist, light brownish gray, silty fine SAND, trace clay.
AS	S-2	-	5	E				Moist, light gray, shelly silty fine SAND, some cemented fragments. Cemented fragments begins at 5.5 ft-bgs, and increase in number with depth. Shells begin to decrease with depth at 5.5 ft-bgs.
AS	S-3	-	10	M			SM	Moist, gray, very fine silty SAND, trace shell fragments..
			15					Bottom of test pit at 15 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult
 Cemented fragment started at 5.5 ft-bgs, and grades to more with depth.
 Both sides of test pit walls caved in.

Reviewed by: *A.K. Neams*

Date: 04/21/04

BL C-44 PHASE I.GPJ.CDM.CORP.GDT 3/22/04



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Raleigh, NC 27612

TEST PIT LOG

TP-10

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 15

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 12

Drilling Date: Start: 03/09/04 **End:** 03/09/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 inches	Graphic Log	Stratum Designation	Material Description
AS			0	E			TS	Dry, dark gray, silty SAND. -TOPSOIL-
AS	S-1	-		E			SP-SM	Dry, light brownish gray, very fine silty SAND.
AS	S-2	-	5	E			SC	Dry, light yellowish brown, slightly clayey SAND, trace organic silt. Color change to greenish gray at 4 ft to 6 ft-bgs.
AS	S-3	-	10	E			SM	Moist, light greenish gray and light brown, very fine silty SAND, trace clay.
			15				SP	Wet, light gray, slightly shelly fine to medium SAND.
			20					Bottom of test pit at 15 ft-bgs.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
 OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Shell fragments begin at 13 ft-bgs, and increase in number with depth.

Reviewed by: *A.K. Nambhu*

Date: 04/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 3/22/04



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Raleigh, NC 27612

TEST PIT LOG

TP-11

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 15

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 15

Drilling Date: Start: 03/09/04 **End:** 03/09/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 inches	Graphic Log	Stratum Designation	Material Description
AS		-	0	F			TS	Dry, dark gray, silty SAND. -TOPSOIL-
AS	S-1	-		E			SM	Dry, light brown, fine silty SAND. Color change to light greyish brown at 2 ft-bgs.
AS	S-2	-	5	E			SP-SC	Moist, light yellowish brown and grayish brown, slightly clayey SAND, trace calcareous. Color change to light bluish gray, slightly clayey at 7 ft-bgs.
AS	S-3	-	10	E			SP	Moist, light bluish gray, slightly silty very fine SAND, trace calcareous, shell fragments.
			15					Test pit bottom at 15 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Reviewed by: *D.K. Nanda*

Date: 04/21/04

BL C-44 PHASE1.GPJ CDM CORP.GDT 3/22/04



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Raleigh, NC 27612

TEST PIT LOG

TP-12

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 16

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 12

Drilling Date: Start: 03/09/04 **End:** 03/09/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0	E			TS	Dry, dark gray, sandy SILT. -TOPSOIL-
AS	S-1	-		E			SP-SM	Dry, light brownish gray, very fine silty SAND.
AS	S-2	-	5	E			SC	Moist, light brown, clayey SAND, some black organic silt.
AS	S-3	-	10	E			SM	Moist, light olive gray, fine silty SAND, trace clay.
AS	S-4	-	15	M			SHELL	Wet, white, sandy SHELL, trace cemented fragments.
			20					Bottom of test pit at 16 ft-bgs.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Reviewed by: *A. K. Neamtu*

Date: 04/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 3/22/04



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Raleigh, NC 27612

TEST PIT LOG

TP-13

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 16

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 14

Drilling Date: Start: 03/09/04 **End:** 03/09/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0	E			TS	Dry, dark gray, silty SAND, trace organic silt. -TOPSOIL-
AS	S-1	-		E			SP-SM	Dry, light brown, very fine silty SAND, trace organic silt.
AS	S-2	-	5	E			SM	Moist, light brown, silty SAND, trace clay, organic silt.
AS	S-3	-	10	M			SP	Color change to bluish gray at 6 ft-bgs. Moist, light bluish gray, slightly clayey fine to medium SAND, trace cemented shell fragments.
AS		-	15	M			SP-SHELL	Wet, light bluish gray, slightly shelly and slightly clayey fine SAND.
			20					Bottom of test pit at 16 ft-bgs.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Reviewed by: *J.H. Neenan*

Date: 04/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 3/22/04



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Raleigh, NC 27612

TEST PIT LOG

TP-14

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 10

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 8

Drilling Date: Start: 03/09/04 **End:** 03/09/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0				TS	Dry, dark gray, fine silty SAND. -TOPSOIL-
AS	S-1	-		E			SP-SM	Dry, light grayish brown, fine silty SAND, trace organic silt.
AS	S-2	-		E			SC	Dry, brown, clayey SAND, trace silt.
AS	S-3	-	5	M			SP-SC	Moist, light bluish gray, slightly clayey SAND.
AS	S-4	-		D			SP	Wet, light bluish gray and light brown, fine SAND, some cemented fragments. Size and number of cemented fragments increase with depth.
			10					Bottom of test pit at 10 ft-bgs.
			15					
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
 OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Test pit terminated due to difficulty excavating with trackhoe and the frequency and size of cemented fragments increases with depth.

Reviewed by: *A.K. Nwankwo*

Date: 04/21/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP-15

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 12

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 11

Drilling Date: Start: 03/09/04 **End:** 03/09/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 inches	Graphic Log	Stratum Designation	Material Description
AS		-	0	E			TS	Dry, dark gray, silty SAND, trace organic silt. -TOPSOIL-
AS	S-1A	-		E			ML	Dry, dark gray, sandy SILT.
AS	S-1	-		E			SP-SM	Dry, brownish gray, fine silty SAND, trace clay.
AS	S-2	-	5	M			SP-SC	Moist, light brown and gray, slightly clayey SAND.
AS	S-3	-	10	D			SP	Moist, light greenish gray, fine SAND, trace clay.
								Bottom of test pit at 12 ft-bgs.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Test pit caved in at 10 ft-bgs, tried to excavate to 12 ft-bgs and caved in again.

Test pit cannot be excavated deeper than 12 ft-bgs.

Reviewed by: *W.K. Neumba* **Date:** 04/21/04

BL C-44 PHASE1.GPJ_CDM_CORP.GDT_3/22/04



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Raleigh, NC 27612

TEST PIT LOG

TP-16

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 15

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 12

Drilling Date: Start: 03/09/04 End: 03/09/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS			0	E			TS	Dry, dark gray, silty SAND. -TOPSOIL- (4-inches)
AS	S-1A	-		E			OL	Dry, dark gray, organic SILT.
AS	S-1	-		E			SP-SM	Dry, light brown and brown, very fine silty SAND, trace organic silt.
AS	S-2	-	5	E			SP-SC	Moist, light yellowish brown and light greenish gray, slightly clayey SAND.
AS	S-3	-	10	E/M			SM	Moist, light greenish gray, fine silty SAND.
AS				M			SP	Trace shell begins at 11 ft-bgs. Cemented fragments begin at 11 ft-bgs, and increase in number with depth. Wet, light greenish gray, fine SAND, trace shell, cemented fragments.
			15					Test pit bottom at 15 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Reviewed by: *R.K. Naman*

Date: 04/21/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP-17

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 15

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 14

Drilling Date: Start: 03/10/04 **End:** 03/10/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 inches	Graphic Log	Stratum Designation	Material Description
AS	S-1	-	0	E			SP	Dry, light brown and light yellowish brown, slightly silty fine SAND.
AS	S-2	-		E				Dry, gray, fine SAND, little organic silt.
AS	S-3	-	5	E			SC	Moist, light bluish gray, clayey SAND, trace silt.
AS	S-4	-	10	E			SP	Moist, light bluish gray, fine SAND, trace silt.
			15					Bottom of test pit at 15 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult
 One side of test pit caved in during excavation.

Reviewed by: *A.K. Nanth*

Date: 04/24/04

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 3/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP-18

Client: Aquacalma LP **Project Name:** C-44 Reservoir Phase 1
Project Location: Indiantown, Florida **Project Number:** 24752-40911-RT2.FIELD
Drilling Contractor: Consolidated Citrus LP **Surface Elevation (ft.):**
Drilling Method/Rig: Trackhoe/CAT 3208 L **Total Depth (ft.):** 15
Drillers: Wayne **Depth to Initial Water Level (ft. BGS):**
Drilling Date: Start: 03/10/04 **End:** 03/10/04 **Abandonment Method:** Backfill
Borehole Coordinates: **Field Screening Instrument:**
 N E **Logged By:** EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0	E			TS	Dry, light gray, sandy SILT. -TOPSOIL- (4-inches)
AS		-		E			SP	Dry, yellowish brown, fine SAND to slightly silty fine SAND.
AS	S-1A	-		E				Dry, gray and dark gray, fine SAND, little organic silt.
AS	S-1	-	5	E				Dry, light gray, fine SAND, trace silt.
AS	S-2	-	10	E			SC	Dry, light brown and orange brown, clayey SAND, trace calcareous.
AS	S-3	-	15	E			SP	Moist, light greenish gray, fine SAND, trace clay, silt.
			20					Bottom of test pit at 15 ft-bgs.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult
 Test pit caved in at 12 ft-bgs, excavation continued to 15 ft-bgs and test pit caved in again.
 No water encountered during excavation.

Reviewed by: *A.K. Meunier* **Date:** 04/2/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 3/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP-19

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 15

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 11

Drilling Date: Start: 03/10/04 **End:** 03/10/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0	E			TS	Dry, gray, silty SAND, trace organic silt. -TOPSOIL-
AS	S-1	-		E			SP-SM	Dry, gray and dark gray, fine silty SAND.
AS	S-2	-	5	E			CL-SC	Moist, yellowish brown and orange brown, sandy CLAY to clayey SAND, trace silt.
AS	S-3	-	10	E/M			SP	Moist, light brownish gray, slightly clayey fine to medium SAND, some cemented fragments, trace silt.
AS	S-4	-		D			SP-SHELL	Wet, light brownish gray, shelly fine to medium SAND, some cemented fragments.
			15					Bottom of test pit at 15 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Reviewed by: *D.K. Neuman*

Date: 04/24/04

BL C-44 PHASE1.GPJ_CDM_CORP.GDT 3/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP-20

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 15

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 12

Drilling Date: Start: 03/10/04 End: 03/10/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0	F			TS	Dry, dark gray, silty SAND, trace organic silt. (6-inches)
AS	S-1	-		E			SP	Dry, light gray, fine SAND, trace silt.
AS	S-2	-		E			SP-SC	Dry, brown, slightly clayey SAND.
AS	S-3	-	5	M			SC	Moist, light greenish gray, clayey SAND, some cemented fragments. Color change to greenish gray and increase in number of cemented fragments begin at 8 ft-bgs.
AS	S-4	-	10	E			SHELL	Wet, white, sandy SHELL.
			15					Bottom of test pit at 15 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Reviewed by: *[Signature]*

Date: 04/21/04

BL C-44 PHASE1.GPJ CDM_CORP.GDT 3/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP-21

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 16

Drillers: Wayne

Depth to Initial Water Level (ft. BGS):

Drilling Date: Start: 03/10/04 **End:** 03/10/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 inches	Graphic Log	Stratum Designation	Material Description
AS			0	E			TS	Dry, brown, silty SAND. -TOPSOIL- (4-inches)
AS	S-1	-		E			SP	Dry, light brown, fine SAND.
AS	S-2	-	5	E				Dry, light gray, fine SAND, trace silt.
AS	S-3	-	10	E				Moist, light brown, slightly silty fine SAND, trace calcareous.
			15				SP-SM	Moist, light greenish gray, slightly silty fine SAND, trace clay.
			20					Bottom of test pit at 16 ft-bgs.

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

No water encountered during excavation.
 Test pit caved in several times beginning at 6 ft-bgs.

Reviewed by: *J. K. Neaman*

Date: 04/21/04

BL C-44 PHASE I.GPJ_CDM_CORP.GDT 3/22/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP-22

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 15

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 11

Drilling Date: Start: 03/10/04 **End:** 03/10/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0	E			TS	Dry, gray, slightly silty fine SAND, trace organic silt. -TOPSOIL- (8-inches)
AS	S-1	-		E			SP-SM	Dry, gray to light gray, fine silty SAND, little organic silt.
AS	S-2	-	5	E			CL-SC	Moist, yellowish brown and orange brown, sandy CLAY to clayey SAND.
AS		-		E			SP-SC	Moist, light greenish gray, slightly clayey SAND, some cemented fragments.
AS	S-3	-	10	M			SP	Moist, light greenish gray, fine to medium SAND, trace clay, little cemented fragments. Cemented fragments begin at 10 ft-bgs, and increase in number with depth.
AS	S-4	-		E			SHELL	Wet, white, slightly sandy SHELL.
			15					Bottom of test pit at 15 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Reviewed by: *R.K. Neaman*

Date: 04/21/04



5400 Glenwood Avenue Suite 300
Raleigh, NC 27612

TEST PIT LOG

TP-23

Client: Aquacalma LP

Project Name: C-44 Reservoir Phase 1

Project Location: Indiantown, Florida

Project Number: 24752-40911-RT2.FIELD

Drilling Contractor: Consolidated Citrus LP

Surface Elevation (ft.):

Drilling Method/Rig: Trackhoe/CAT 3208 L

Total Depth (ft.): 14

Drillers: Wayne

Depth to Initial Water Level (ft. BGS): 10

Drilling Date: Start: 03/10/04 **End:** 03/10/04

Abandonment Method: Backfill

Borehole Coordinates:

Field Screening Instrument:

N E

Logged By: EDM

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Excavation Effort	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
AS		-	0	E			TS	Dry, gray, slightly silty fine SAND, trace organic silt. -TOPSOIL- (8-inches)
AS	S-1	-		E			SP	Dry, light gray to gray, fine SAND, trace organic silt.
AS	S-2	-		E			SP-SC	Dry, grayish brown, slightly clayey SAND, little organic silt, trace silt.
AS		-	5	E			SP	Moist, light gray and light yellowish brown, fine to coarse SAND, some cemented fragments. Cemented fragments begin at 5 ft-bgs. Size and number of cemented fragments increase with depth.
AS	S-3	-	10	M			SP-SC	Wet, light greenish gray, slightly clayey SAND, some cemented fragments, some fossilized shells.
AS	S-4	-		D			SHELL	Wet, light gray and white, sandy SHELL, some cemented fragments, some fossilized shell in boulder size.
			15					Bottom of test pit at 14 ft-bgs.
			20					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
 HSA - Hollow Stem Auger
 SSA - Solid Stem Auger
 HA - Hand Auger
 AR - Air Rotary
 DTR - Dual Tube Rotary
 FR - Foam Rotary
 MR - Mud Rotary
 RC - Reverse Circulation
 CT - Cable Tool
 JET - Jetting
 D - Driving
 DTC - Drill Through Casing

SAMPLING TYPES:
 AS - Auger/Grab Sample
 CS - California Sampler
 BX - 1.5" Rock Core
 NX - 2.1" Rock Core
 GP - Geoprobe
 HP - Hydro Punch
 SS - Split Spoon
 ST - Shelby Tube
 WS - Wash Sample
OTHER:
 AGS - Above Ground Surface

REMARKS

E = Easy
 M = Moderate
 D = Difficult

Cemented fragments begin at 10 ft-bgs, and increase in size and number with depth.
 Excavation cannot continue deeper due to the presence of cemented fragment and fossilized of shell of boulder size.

Reviewed by: *R. K. Neuman*

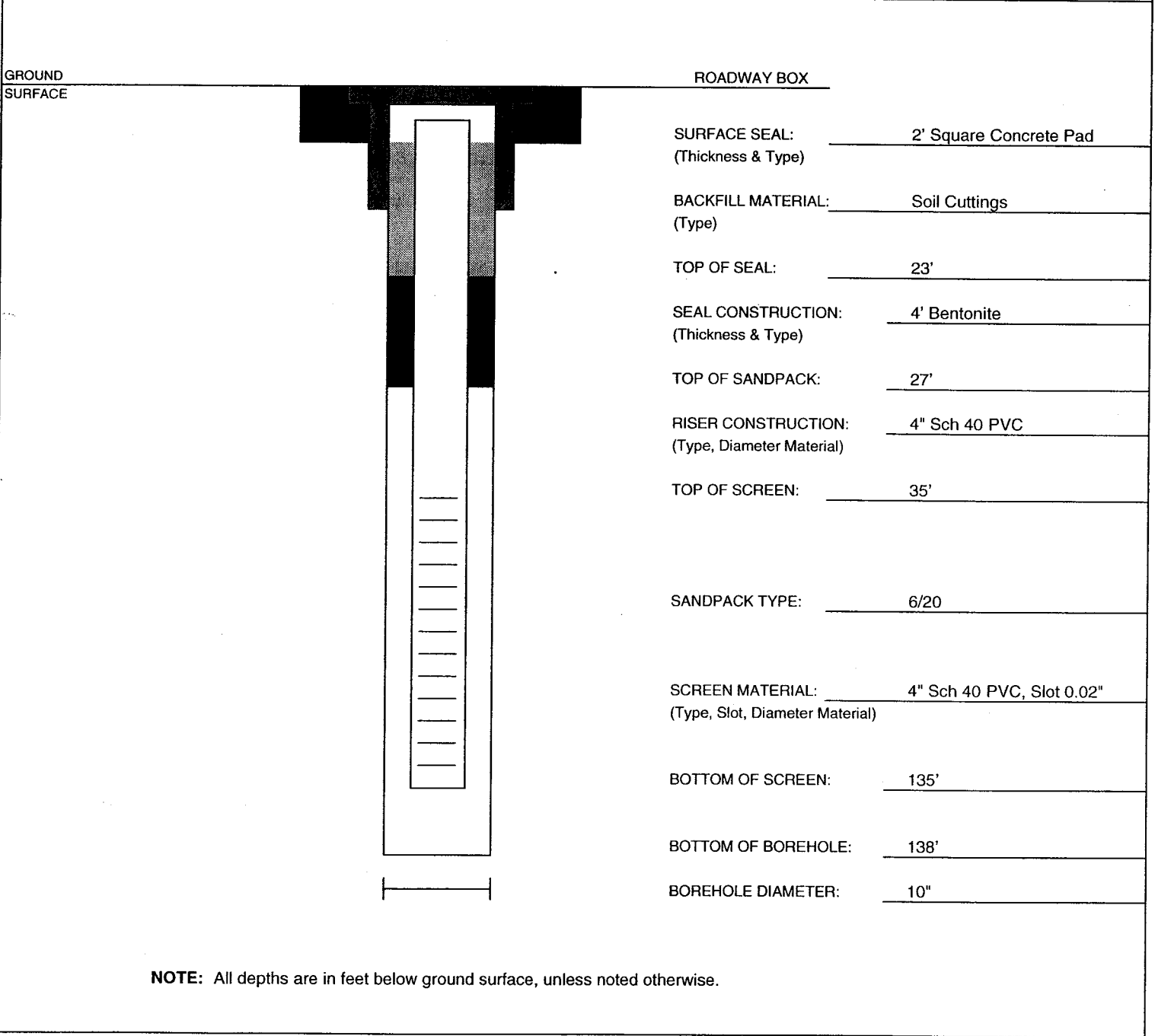
Date: 04/21/04

BL C-44 PHASE1.GPJ_CDM_CORP_GDT_3/22/04

WELL INSTALLATION LOGS AND MONITORING REPORTS

Monitoring Well Installation Log

Client:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	APT-101
Project Name:	C-44 Reservoir Phase I	Driller:	Ralph Smith	Date Installed:	2/5/2004
Project Location:	Indiantown, Florida	Ground EL:	26.75	Logged By:	K.L.
Project Number:	24752-40911-RT2.FIELD	Riser EL:		Page:	1 of 1



SURFACE SEAL: 2' Square Concrete Pad
(Thickness & Type)

BACKFILL MATERIAL: Soil Cuttings
(Type)

TOP OF SEAL: 23'

SEAL CONSTRUCTION: 4' Bentonite
(Thickness & Type)

TOP OF SANDPACK: 27'

RISER CONSTRUCTION: 4" Sch 40 PVC
(Type, Diameter Material)

TOP OF SCREEN: 35'

SANDPACK TYPE: 6/20

SCREEN MATERIAL: 4" Sch 40 PVC, Slot 0.02"
(Type, Slot, Diameter Material)

BOTTOM OF SCREEN: 135'

BOTTOM OF BOREHOLE: 138'

BOREHOLE DIAMETER: 10"

NOTE: All depths are in feet below ground surface, unless noted otherwise.

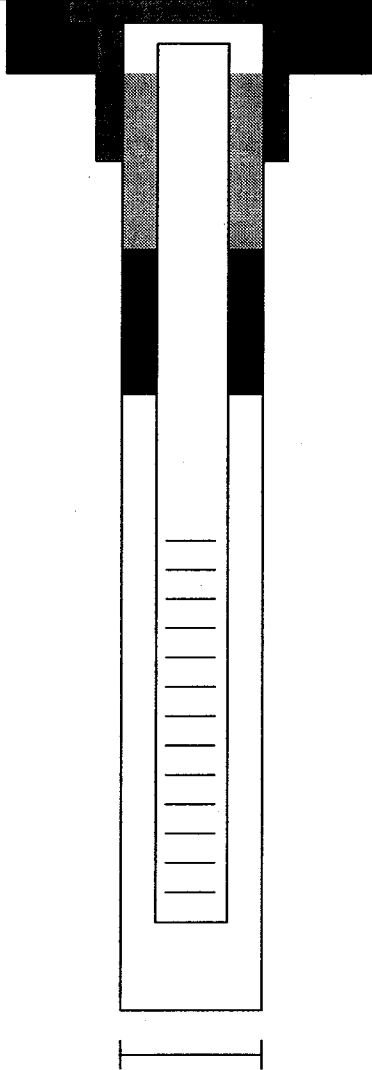
Remarks:

Monitoring Well Installation Log

Client:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	W-101
Project Name:	C-44 Reservoir Phase I	Driller:	Carl Sandgren	Date Installed:	2/26/2004
Project Location:	Indiantown, Florida	Ground EL:	26.98	Logged By:	K.L.
Project Number:	24752-40911-RT2.FIELD	Riser EL:		Page: 1	of 1

GROUND SURFACE

ROADWAY BOX



SURFACE SEAL: 2' Square Concrete Pad
(Thickness & Type)

BACKFILL MATERIAL: Soil Cuttings
(Type)

TOP OF SEAL: 33'

SEAL CONSTRUCTION: 2' Bentonite
(Thickness & Type)

TOP OF SANDPACK: 35'

RISER CONSTRUCTION: 2" Sch 40 PVC
(Type, Diameter Material)

TOP OF SCREEN: 37.6'

SANDPACK TYPE: 6/20

SCREEN MATERIAL: 2" Sch 40 PVC, Slot 0.02"
(Type, Slot, Diameter Material)

BOTTOM OF SCREEN: 137.6'

BOTTOM OF BOREHOLE: 140'

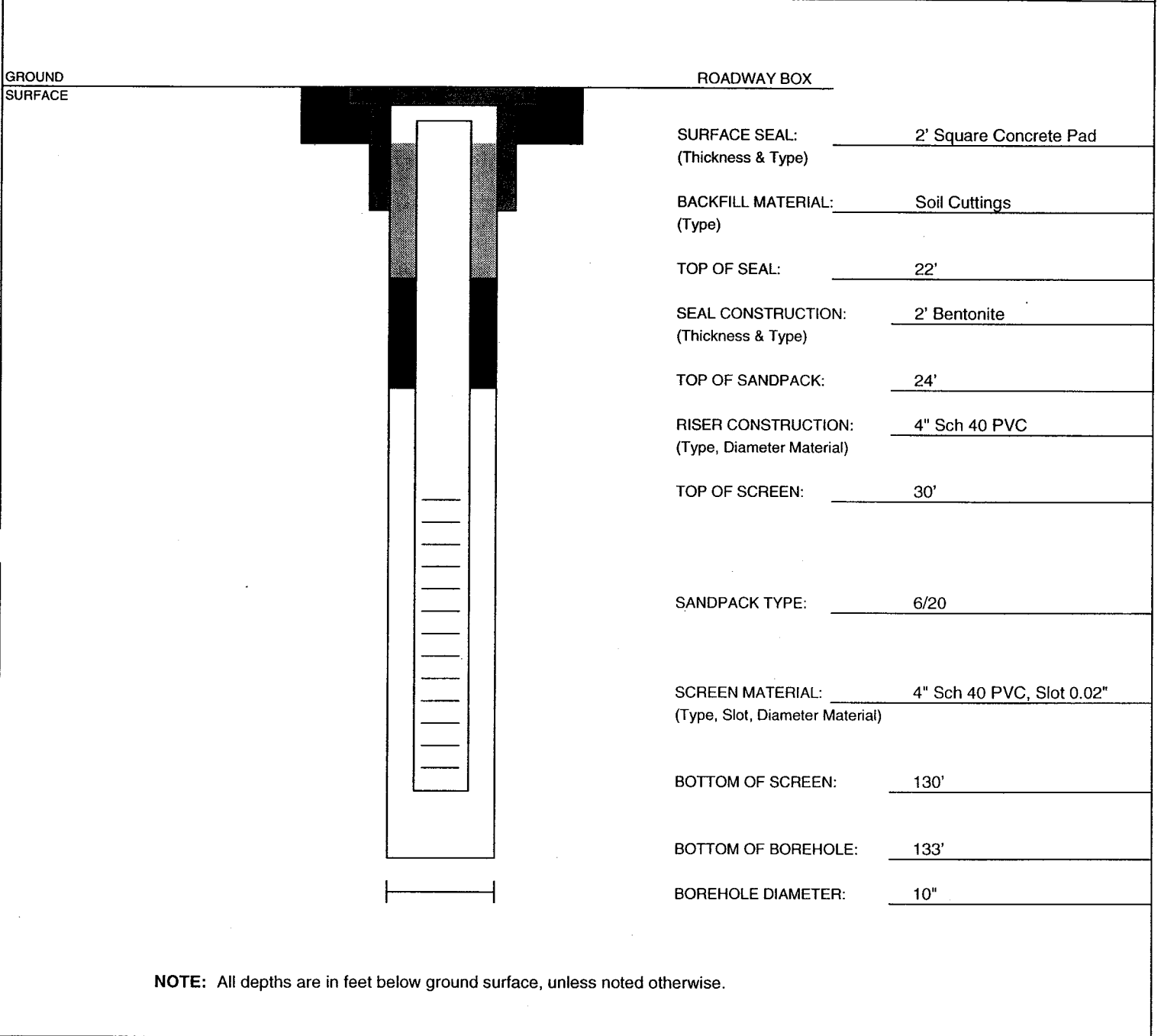
BOREHOLE DIAMETER: 7"

NOTE: All depths are in feet below ground surface, unless noted otherwise.

Remarks:

Monitoring Well Installation Log

Client:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	APT-102
Project Name:	C-44 Reservoir Phase I	Driller:	Ralph Smith	Date Installed:	2/5/2004
Project Location:	Indiantown, Florida	Ground EL:	25.83	Logged By:	K.L.
Project Number:	24752-40911-RT2.FIELD	Riser EL:		Page:	1 of 1



NOTE: All depths are in feet below ground surface, unless noted otherwise.

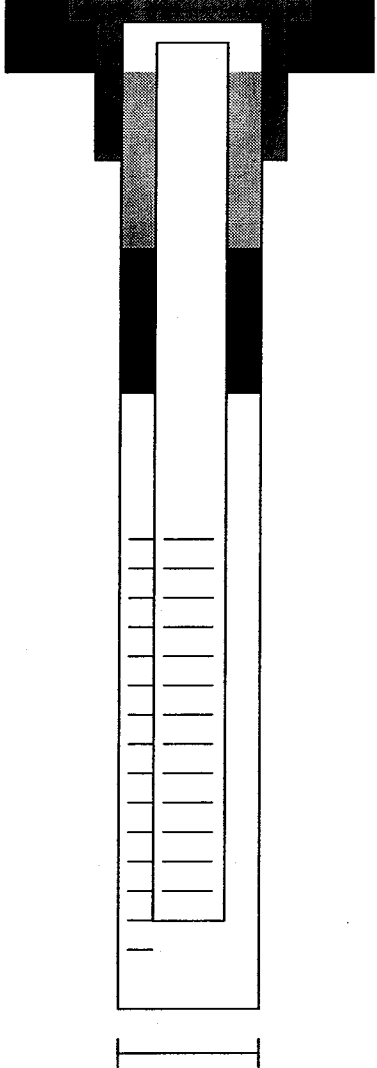
Remarks:

Monitoring Well Installation Log

Client: <u>Aquacalma LP</u>	Contractor: <u>Nodarse & Associates, Inc.</u>	Boring/Well No.: <u>W-102</u>
Project Name: <u>C-44 Reservoir Phase I</u>	Driller: _____	Date Installed: <u>3/1/2004</u>
Project Location: <u>Indiantown, Florida</u>	Ground EL: <u>26.09</u>	Logged By: _____
Project Number: <u>24752-40911-RT2.FIELD</u>	Riser EL: _____	Page: <u>1</u> of <u>1</u>

GROUND SURFACE

ROADWAY BOX



SURFACE SEAL: 2' Square Concrete Pad
(Thickness & Type)

BACKFILL MATERIAL: Soil Cuttings
(Type)

TOP OF SEAL: 30'

SEAL CONSTRUCTION: 2' Bentonite
(Thickness & Type)

TOP OF SANDPACK: 32'

RISER CONSTRUCTION: 2" Sch 40 PVC
(Type, Diameter Material)

TOP OF SCREEN: 35'

SANDPACK TYPE: 6/20

SCREEN MATERIAL: 2" Sch 40 PVC, Slot 0.02"
(Type, Slot, Diameter Material)

BOTTOM OF SCREEN: 135'

BOTTOM OF BOREHOLE: 136'

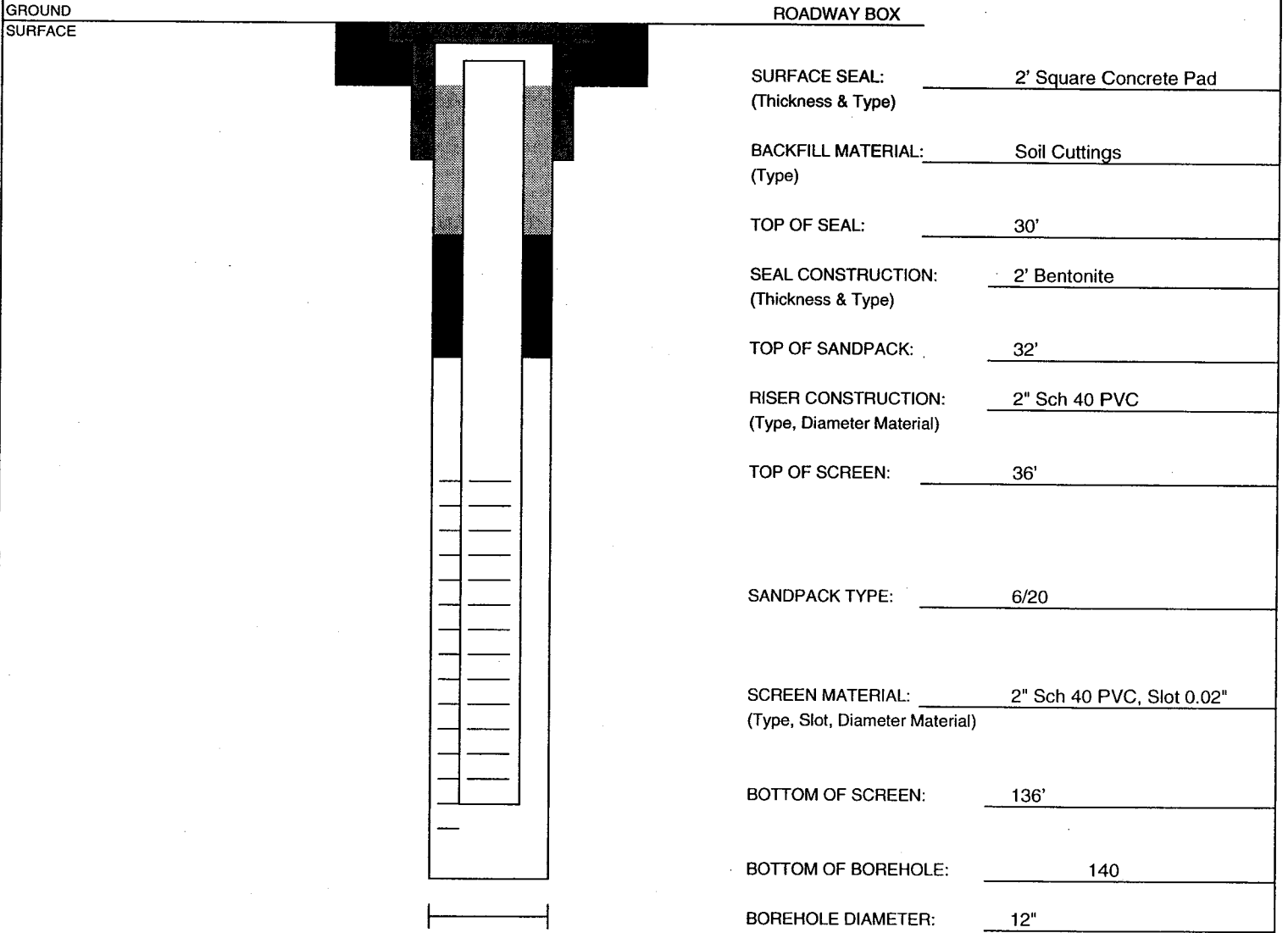
BOREHOLE DIAMETER: 7"

NOTE: All depths are in feet below ground surface, unless noted otherwise.

Remarks:

Monitoring Well Installation Log

Client:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	APT-103
Project Name:	C-44 Reservoir Phase I	Driller:	Ralph Smith	Date Installed:	2/27/2004
Project Location:	Indiantown, Florida	Ground EL:	24.74	Logged By:	K.L.
Project Number:	24752-40911-RT2.FIELD	Riser EL:		Page:	1 of 1



NOTE: All depths are in feet below ground surface, unless noted otherwise.

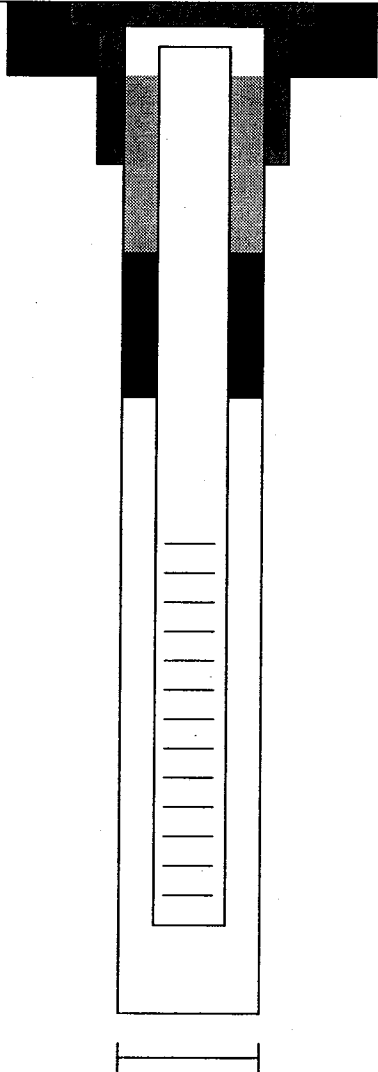
Remarks:

Monitoring Well Installation Log

Client: <u>Aquacalma LP</u>	Contractor: <u>Nodarse & Associates, Inc.</u>	Boring/Well No.: <u>W-103</u>
Project Name: <u>C-44 Reservoir Phase I</u>	Driller: <u>Carl Sandgren</u>	Date Installed: <u>2/21/2004</u>
Project Location: <u>Indiantown, Florida</u>	Ground EL: <u>24.79</u>	Logged By: <u>K.L.</u>
Project Number: <u>24752-40911-RT2.FIELD</u>	Riser EL:	Page: 1 of 1

GROUND SURFACE

ROADWAY BOX



SURFACE SEAL: 2' Square Concrete Pad
(Thickness & Type)

BACKFILL MATERIAL: Soil Cuttings
(Type)

TOP OF SEAL: 30'

SEAL CONSTRUCTION: 2' Bentonite
(Thickness & Type)

TOP OF SANDPACK: 32'

RISER CONSTRUCTION: 2" Sch 40 PVC
(Type, Diameter Material)

TOP OF SCREEN: 35'

SANDPACK TYPE: 6/20

SCREEN MATERIAL: 2" Sch 40 PVC, Slot 0.02"
(Type, Slot, Diameter Material)

BOTTOM OF SCREEN: 135'

BOTTOM OF BOREHOLE: 137'

BOREHOLE DIAMETER: 7"

NOTE: All depths are in feet below ground surface, unless noted otherwise.

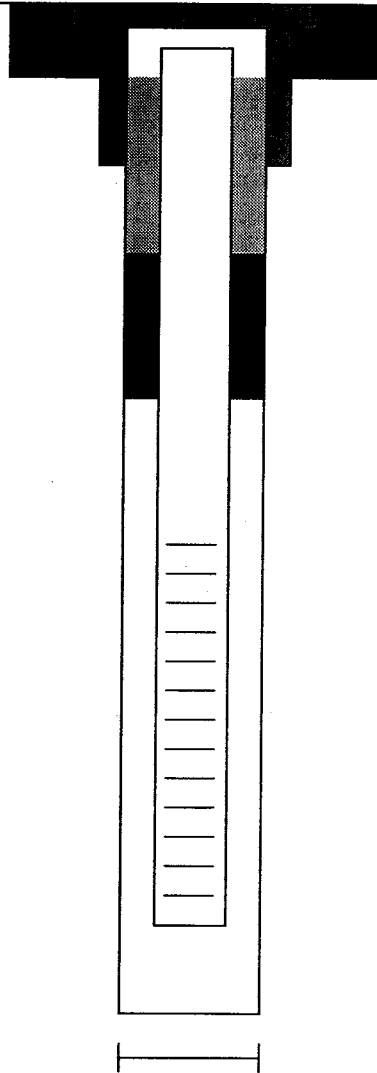
Remarks:

Monitoring Well Installation Log

Client:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	W-104a
Project Name:	C-44 Reservoir Phase I	Driller:	Carl Sundgren	Date Installed:	1/30/2004
Project Location:	Indiantown, Florida	Ground EL:	25.71	Logged By:	K.L.
Project Number:	24752-40911-RT2.FIELD	Riser EL:		Page:	1 of 1

GROUND SURFACE

ROADWAY BOX



SURFACE SEAL: 2' Square Concrete Pad
(Thickness & Type)

BACKFILL MATERIAL: Soil Cuttings
(Type)

TOP OF SEAL: 17'

SEAL CONSTRUCTION: 3' Bentonite
(Thickness & Type)

TOP OF SANDPACK: 20'

RISER CONSTRUCTION: 2" Sch 40 PVC
(Type, Diameter Material)

TOP OF SCREEN: 22.83'

SANDPACK TYPE: 6/20 (8 bags)

SCREEN MATERIAL: 2" Sch 40 PVC, Slot 0.02"
(Type, Slot, Diameter Material)

BOTTOM OF SCREEN: 27.83'

BOTTOM OF BOREHOLE: 28'

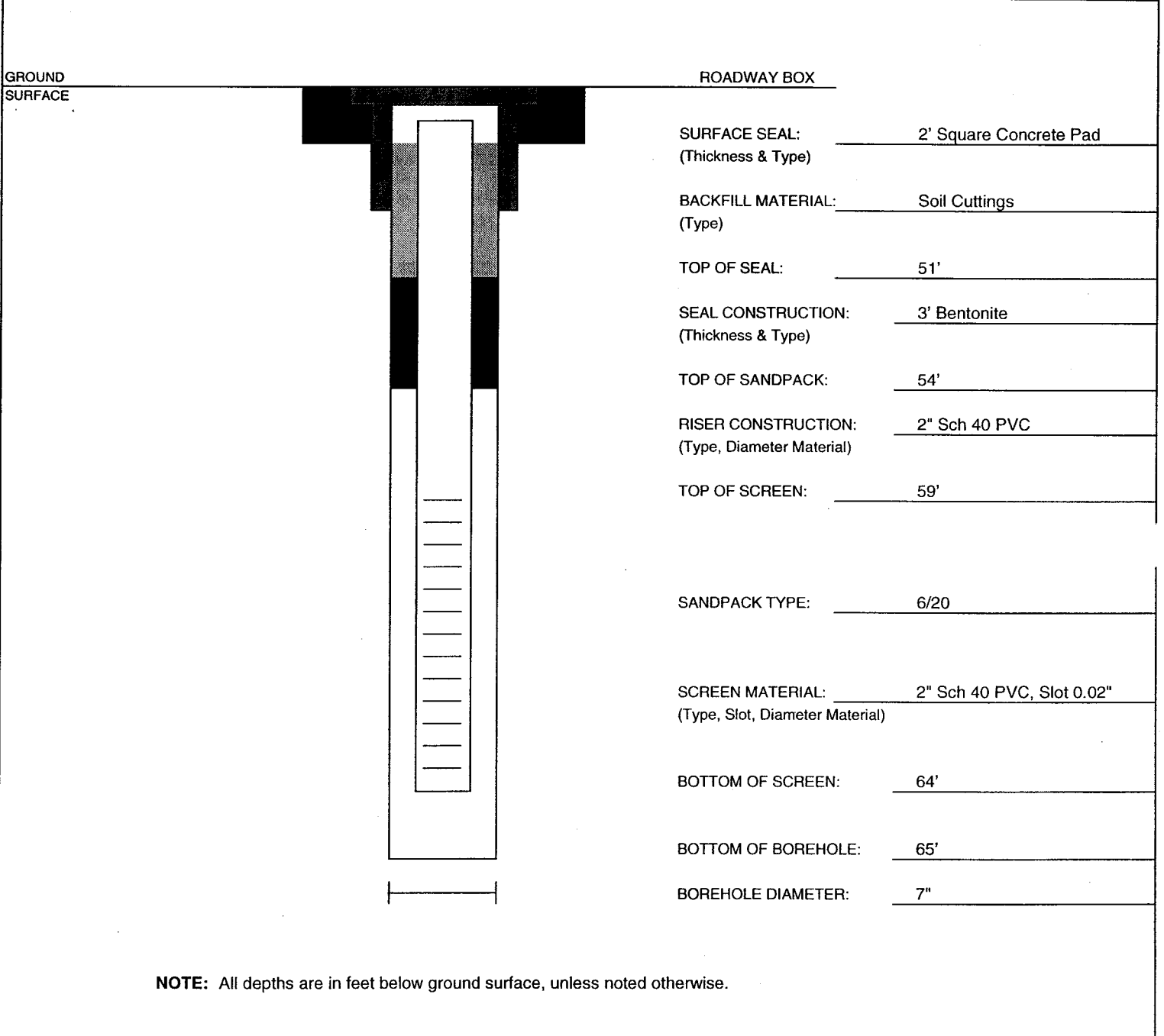
BOREHOLE DIAMETER: 7"

NOTE: All depths are in feet below ground surface, unless noted otherwise.

Remarks:

Monitoring Well Installation Log

Client: <u>Aquacalma LP</u>	Contractor: <u>Nodarse & Associates, Inc.</u>	Boring/Well No.: <u>W-104b</u>
Project Name: <u>C-44 Reservoir Phase I</u>	Driller: <u>Carl Sundgren</u>	Date Installed: <u>1/30/2004</u>
Project Location: <u>Indiantown, Florida</u>	Ground EL: <u>25.71</u>	Logged By: <u>K.L.</u>
Project Number: <u>24752-40911-RT2.FIELD</u>	Riser EL:	Page: <u>1</u> of <u>1</u>

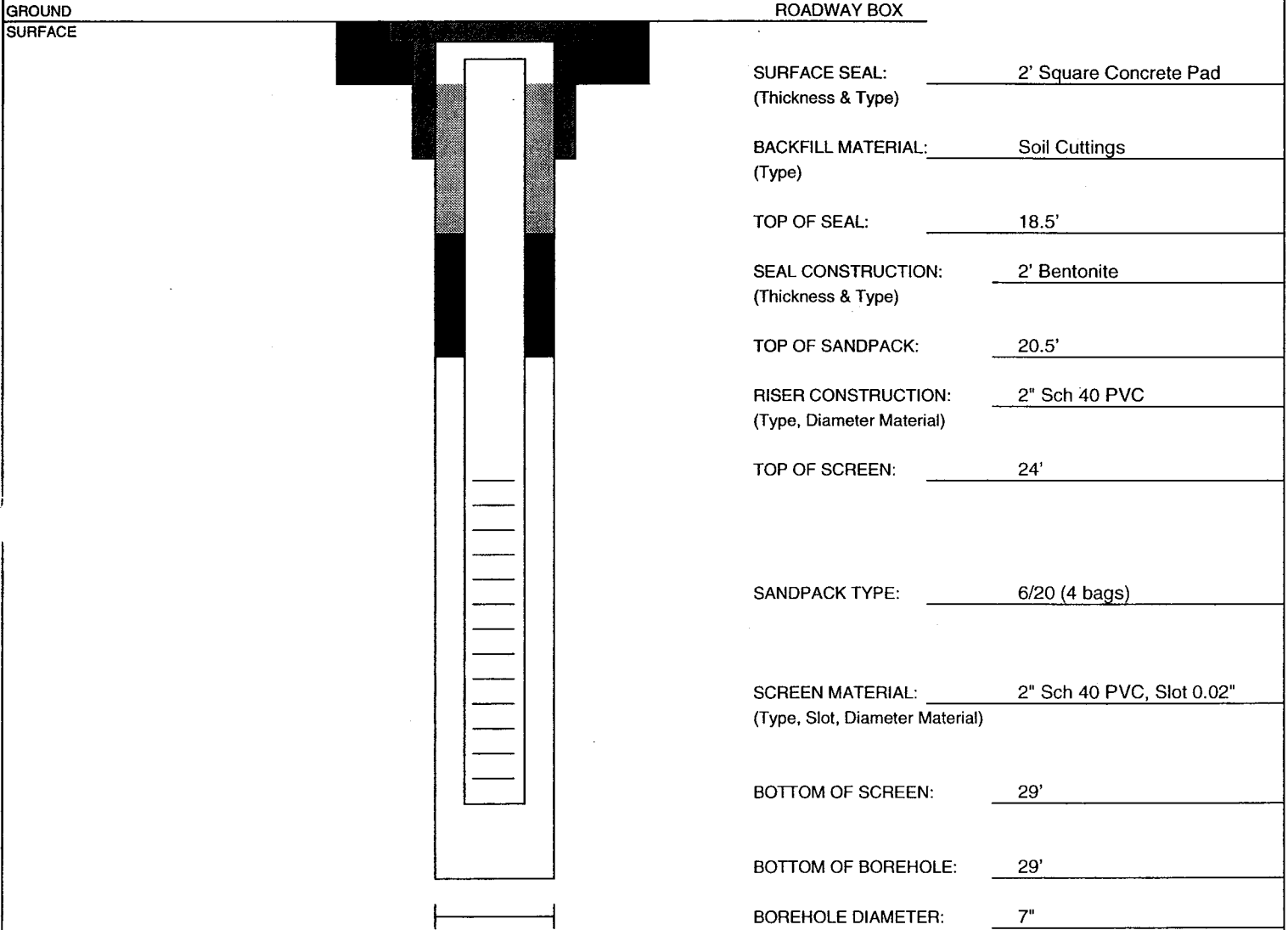


NOTE: All depths are in feet below ground surface, unless noted otherwise.

Remarks:

Monitoring Well Installation Log

Client:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	W-105a
Project Name:	C-44 Reservoir Phase I	Driller:	Carl Sandgren	Date Installed:	2/3/2004
Project Location:	Indiantown, Florida	Ground EL:	25.24	Logged By:	K.L.
Project Number:	24752-40911-RT2.FIELD	Riser EL:		Page:	1 of 1

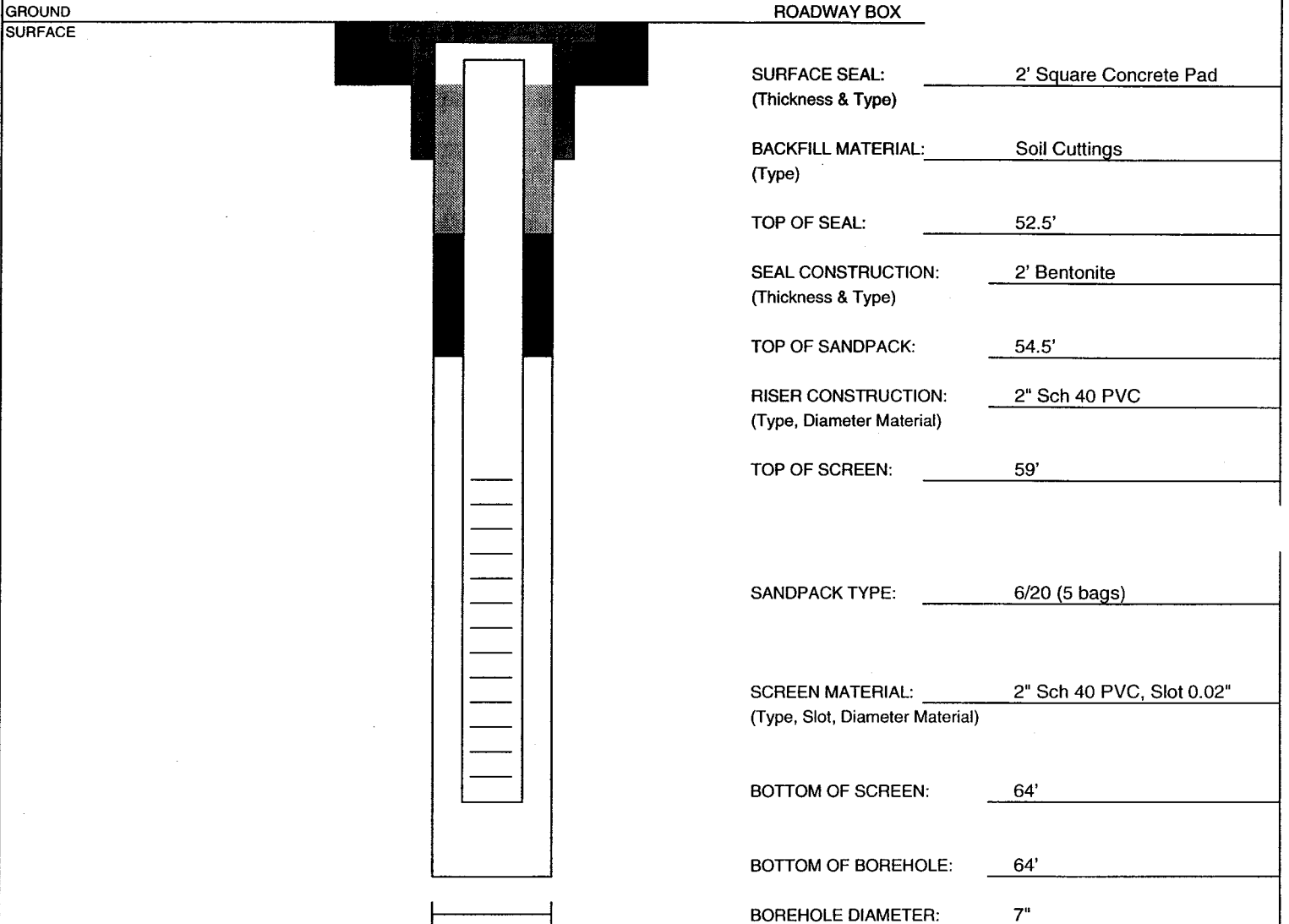


NOTE: All depths are in feet below ground surface, unless noted otherwise.

Remarks:

Monitoring Well Installation Log

Client:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	W-105b
Project Name:	C-44 Reservoir Phase I	Driller:	Carl Sandgren	Date Installed:	2/4/2004
Project Location:	Indiantown, Florida	Ground EL:	25.24	Logged By:	K.L.
Project Number:	24752-40911-RT2.FIELD	Riser EL:		Page:	1 of 1

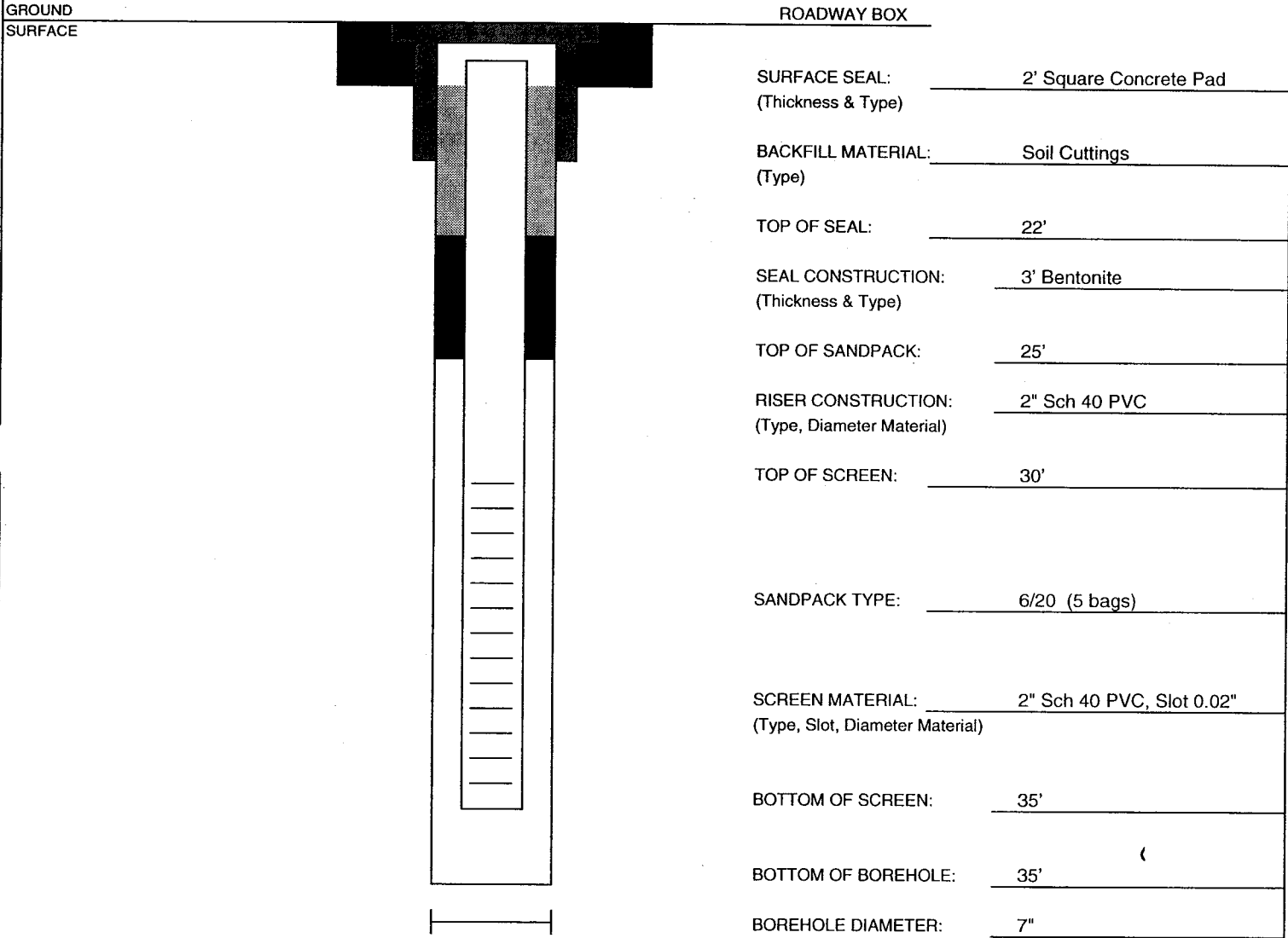


NOTE: All depths are in feet below ground surface, unless noted otherwise.

Remarks:

Monitoring Well Installation Log

Client: <u>Aquacalma LP</u>	Contractor: <u>Nodarse & Associates, Inc.</u>	Boring/Well No.: <u>W-106a</u>
Project Name: <u>C-44 Reservoir Phase I</u>	Driller: <u>Ralph Smith</u>	Date Installed: <u>2/11/2004</u>
Project Location: <u>Indiantown, Florida</u>	Ground EL: <u>27.62</u>	Logged By: <u>K.L.</u>
Project Number: <u>24752-40911-RT2.FIELD</u>	Riser EL:	Page: <u>1</u> of <u>1</u>



NOTE: All depths are in feet below ground surface, unless noted otherwise.

Remarks:

Monitoring Well Installation Log

Client: <u>Aquacalma LP</u>	Contractor: <u>Nodarse & Associates, Inc.</u>	Boring/Well No.: <u>W-106b</u>
Project Name: <u>C-44 Reservoir Phase I</u>	Driller: <u>Ralph Smith</u>	Date Installed: <u>2/11/2004</u>
Project Location: <u>Indiantown, Florida</u>	Ground EL: <u>27.62</u>	Logged By: <u>K.L.</u>
Project Number: <u>24752-40911-RT2.FIELD</u>	Riser EL:	Page: <u>1</u> of <u>1</u>

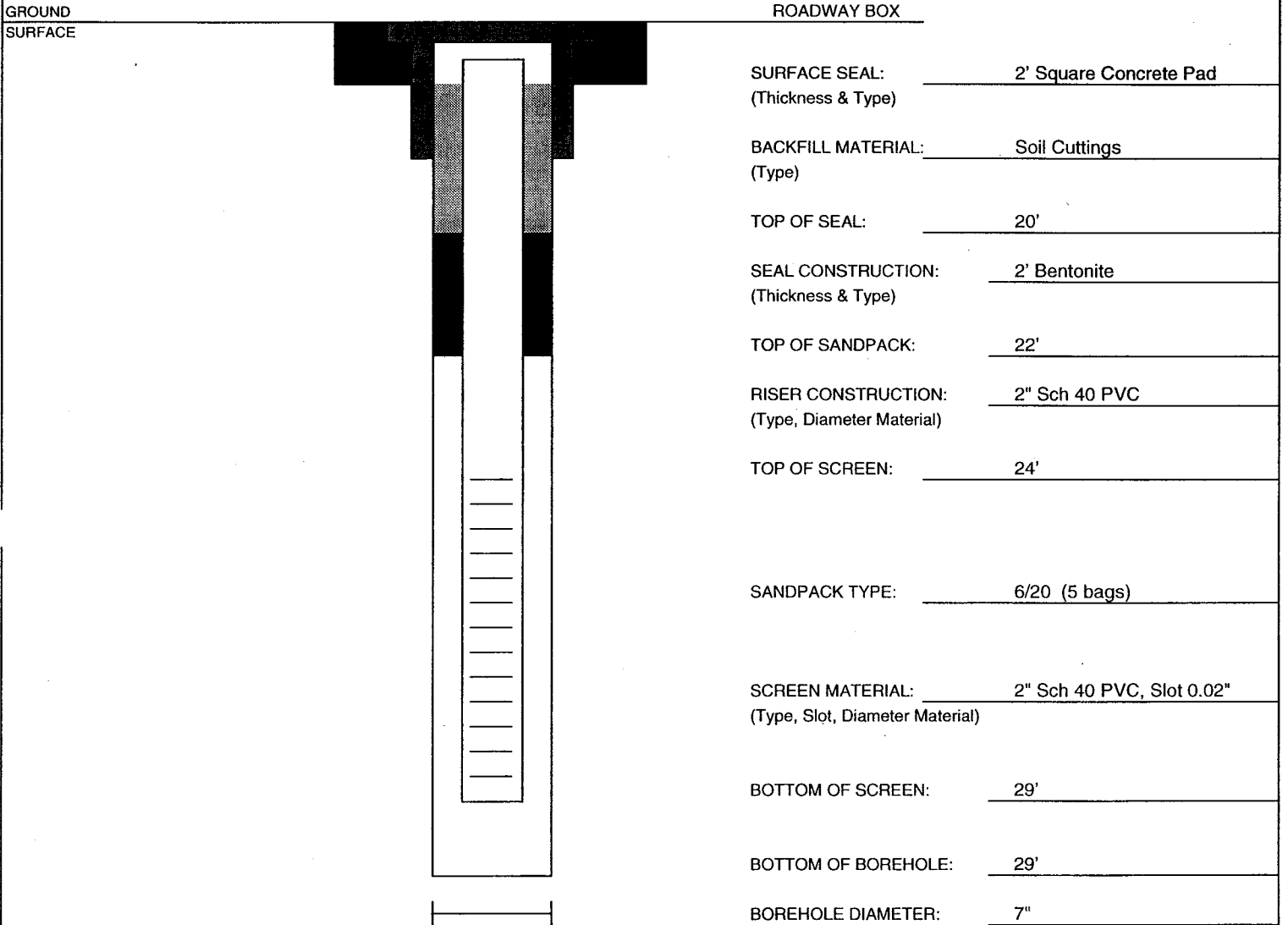
	<p>SURFACE SEAL: <u>2' Square Concrete Pad</u> (Thickness & Type)</p> <p>BACKFILL MATERIAL: <u>Soil Cuttings</u> (Type)</p> <p>TOP OF SEAL: <u>71'</u></p> <p>SEAL CONSTRUCTION: <u>2' Bentonite</u> (Thickness & Type)</p> <p>TOP OF SANDPACK: <u>73'</u></p> <p>RISER CONSTRUCTION: <u>2" Sch 40 PVC</u> (Type, Diameter Material)</p> <p>TOP OF SCREEN: <u>75'</u></p> <p>SANDPACK TYPE: <u>6/20 (6 bags)</u></p> <p>SCREEN MATERIAL: <u>2" Sch 40 PVC, Slot 0.02"</u> (Type, Slot, Diameter Material)</p> <p>BOTTOM OF SCREEN: <u>80'</u></p> <p>BOTTOM OF BOREHOLE: <u>80'</u></p> <p>BOREHOLE DIAMETER: <u>7"</u></p>
--	---

NOTE: All depths are in feet below ground surface, unless noted otherwise.

Remarks:

Monitoring Well Installation Log

Client:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	W-107a
Project Name:	C-44 Reservoir Phase I	Driller:	Carl Sundgren	Date Installed:	2/10/2004
Project Location:	Indiantown, Florida	Ground EL:	26.14	Logged By:	K.L.
Project Number:	24752-40911-RT2.FIELD	Riser EL:		Page: 1	of 1



SURFACE SEAL: (Thickness & Type)	2' Square Concrete Pad
BACKFILL MATERIAL: (Type)	Soil Cuttings
TOP OF SEAL:	20'
SEAL CONSTRUCTION: (Thickness & Type)	2' Bentonite
TOP OF SANDPACK:	22'
RISER CONSTRUCTION: (Type, Diameter Material)	2" Sch 40 PVC
TOP OF SCREEN:	24'
SANDPACK TYPE:	6/20 (5 bags)
SCREEN MATERIAL: (Type, Slot, Diameter Material)	2" Sch 40 PVC, Slot 0.02"
BOTTOM OF SCREEN:	29'
BOTTOM OF BOREHOLE:	29'
BOREHOLE DIAMETER:	7"

NOTE: All depths are in feet below ground surface, unless noted otherwise.

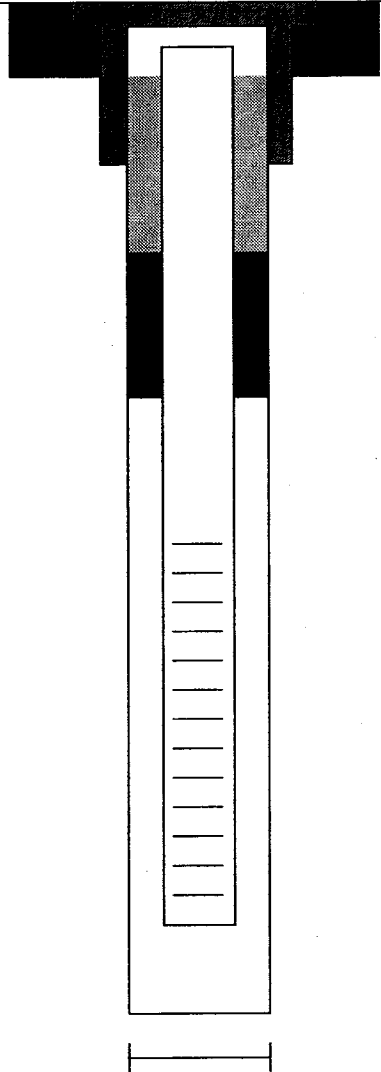
Remarks:

Monitoring Well Installation Log

Client: <u>Aquacalma LP</u>	Contractor: <u>Nodarse & Associates, Inc.</u>	Boring/Well No.: <u>W-107b</u>
Project Name: <u>C-44 Reservoir Phase I</u>	Driller: <u>Carl Sundgren</u>	Date Installed: <u>2/10/2004</u>
Project Location: <u>Indiantown, Florida</u>	Ground EL: <u>26.15</u>	Logged By: <u>K.L.</u>
Project Number: <u>24752-40911-RT2.FIELD</u>	Riser EL:	Page: <u>1</u> of <u>1</u>

GROUND SURFACE

ROADWAY BOX



SURFACE SEAL: 2' Square Concrete Pad
(Thickness & Type)

BACKFILL MATERIAL: Soil Cuttings
(Type)

TOP OF SEAL: 58'

SEAL CONSTRUCTION: 2' Bentonite
(Thickness & Type)

TOP OF SANDPACK: 60'

RISER CONSTRUCTION: 2" Sch 40 PVC
(Type, Diameter Material)

TOP OF SCREEN: 64'

SANDPACK TYPE: 6/20 (5.5 bags)

SCREEN MATERIAL: 2" Sch 40 PVC, Slot 0.02"
(Type, Slot, Diameter Material)

BOTTOM OF SCREEN: 69'

BOTTOM OF BOREHOLE: 69'

BOREHOLE DIAMETER: 7"

NOTE: All depths are in feet below ground surface, unless noted otherwise.

Remarks:

Monitoring Well Report

Client:	Aquacalma LP	Ground Surface EL:	25.24	Boring/Well No.	W-105a (29')
Project Name:	C-44 Reservoir Phase I	Riser EL:		Page:	1 of 1
Project Location:	Indiantown, Florida				
Project Number:	24752-40911-RT2.FIELD				

Date	Time	Elapsed Time (days)	Depth of Water Below Ground Surface (ft)	Elevation of Water (ft)	Remarks	Read By
2/6/2004	10:40		14.85		just before well development	K.L.
2/6/2004	11:05		8.1		after well development	K.L.
2/6/2004	11:09		7.7			K.L.
2/6/2004	11:10		7.6			K.L.
2/6/2004	11:11		7.6			K.L.
2/6/2004	11:13		7.6			K.L.
2/9/2004	8:30		7.4			K.L.
2/18/2004	15:20		7.5		just before slug test	K.L.

Remarks:

Monitoring Well Report

Client:	Aquacalma LP	Ground Surface EL:	25.24	Boring/Well No.	W-105b (64')
Project Name:	C-44 Reservoir Phase I	Riser EL:		Page:	1 of 1
Project Location:	Indiantown, Florida				
Project Number:	24752-40911-RT2.FIELD				

Date	Time	Elapsed Time (days)	Depth of Water Below Ground Surface (ft)	Elevation of Water (ft)	Remarks	Read By
2/6/2004	10:44		22.95		after well development	K.L.
2/6/2004	10:50		9			K.L.
2/6/2004	11:00		6.8			K.L.
2/6/2004	11:15		6.45			K.L.
2/8/2004	15:00		6.5		just before slug test	K.L.
2/9/2004	8:30		7.4			K.L.
2/18/2004	15:20		6.4			K.L.

Remarks:

APPENDIX D

Field Hydraulic Conductivity Testing

1. Variable Head Hydraulic conductivity Tests
2. Slug Tests
3. Aquifer Performance Tests

VARIABLE HEAD HYDRAULIC CONDUCTIVITY TESTS

Falling Head Permeability Test

Project Name:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	W-104
Project Location:	C-44 Reservoir Phase I	Driller:	Carl Sandgren	Date Installed:	1/23/2004
Project Number:	Indiantown, Florida	Ground EL.:		Logged By:	K.L.
	24752-40911-RT2.FIELD	Riser EL.:		Page:	1 of 2

Top of Casing 5.25'

Ground Surface

h₁

h₂

SWL

Casing Inside Diameter = 3.2"

Bottom of Casing 5'

L = 0

Depth to SWL before test = _____ ft
(measured from top of casing)

$$k = \frac{A}{F(t_2 - t_1)} \ln(h_1/h_2)$$

k = permeability (ft/min)
A = Area of borehole (ft²)
F = intake factor
h₀ = initial height of water above static water level (ft)
h₁ = height of water column (ft) at time t₁ (min)
h₂ = height of water column (ft) at time t₂ (min)

For a borehole open to its base, of diameter D, and cased to the full depth, F = 2.75 D

If the cased hole is through impermeable soil and the base of the casing is at the interface with a permeable stratum, F = 2D

For an intake formed by a cylindrical filter zone of diameter D and length A in an infinite isotropic stratum, F = $\frac{2\pi L}{\ln(2L/D)}$

Time (min)	Drop (ft)	h (ft)
0.00	0.00	5.25
1.50	0.02	5.23
2.75	0.03	5.23
3.50	0.03	5.22
4.50	0.04	5.21
5.67	0.05	5.20
6.92	0.06	5.19
8.15	0.07	5.18
9.52	0.08	5.18
10.77	0.08	5.17
12.50	0.10	5.15
15.67	0.12	5.13
18.83	0.13	5.12
22.00	0.15	5.10
24.58	0.17	5.08
27.50	0.18	5.07
29.42	0.20	5.05
34.00	0.22	5.03
38.25	0.23	5.02
43.00	0.25	5.00

Time (min)	Drop (ft)	h (ft)
49.17	0.26666667	4.98
52.08	0.28333333	4.97
61.00	0.3	4.95
65.83	0.31666667	4.93
69.25	0.33333333	4.92
79.33	0.35	4.90
165.00	0.50833333	4.74
187.00	0.55	4.70
322.00	1	4.25

Reference: U.S. Dept of the Navy, Naval Facilities Engineering Command, DM 7.1-105/106 (1982)

Remarks: Falling Head permeability test performed in vicinity of W-104 wells. Bottom of casing seated in clay layer. Depth to static water level assumed to be depth to bottom of casing

Falling Head Permeability Test

Client: Aquacalma LP	Contractor: Nodarse & Associates, Inc.	Boring/Well No.: W-104
Project Name: C-44 Reservoir Phase I	Driller: Carl Sandgren	Date Installed: 1/23/2004
Project Location: Indiantown, Florida	Ground EL:	Logged By: K.L.
Project Number: 24752-40911-RT2.FIELD	Riser EL:	Page: 2 of 2

Time (min)	h (ft)	LN h
0.00	5.25	1.66
1.50	5.23	1.66
2.75	5.23	1.65
3.50	5.22	1.65
4.50	5.21	1.65
5.67	5.20	1.65
6.92	5.19	1.65
8.15	5.18	1.65
9.52	5.18	1.64
10.77	5.17	1.64
12.50	5.15	1.64
15.67	5.13	1.64
18.83	5.12	1.63
22.00	5.10	1.63
24.58	5.08	1.63
27.50	5.07	1.62
29.42	5.05	1.62
34.00	5.03	1.62
38.25	5.02	1.61
43.00	5.00	1.61
49.17	4.98	1.61
52.08	4.97	1.60
61.00	4.95	1.60
65.83	4.93	1.60
69.25	4.92	1.59
79.33	4.90	1.59
165.00	4.74	1.56
187.00	4.70	1.55
322.00	4.25	1.45

$$k = \frac{A}{F(t_2 - t_1)} \ln(h_1/h_2)$$

k = permeability (ft/min)

A = Area of borehole (ft²) = 0.05585049 ft²

F = intake factor = 0.73 ft

h₀ = initial height of water above static water level (ft)

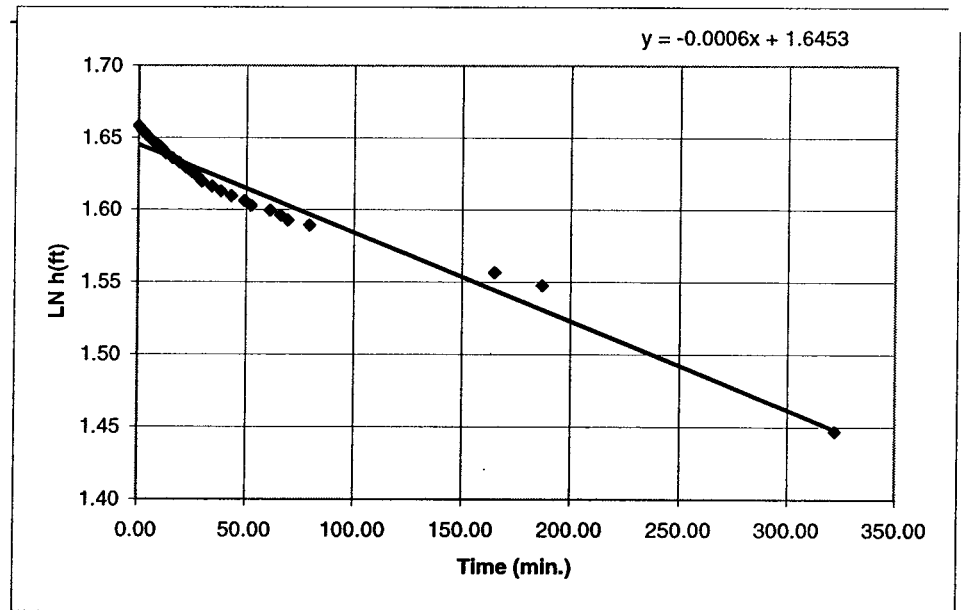
h₁ = height of water column (ft) at time t₁ (min)

h₂ = height of water column (ft) at time t₂ (min)

k = 4.56959E-05 ft/min

= 2.32E-05 cm/sec

The slope of this graph is : $-\frac{\ln(h_1/h_2)}{(t_2-t_1)}$

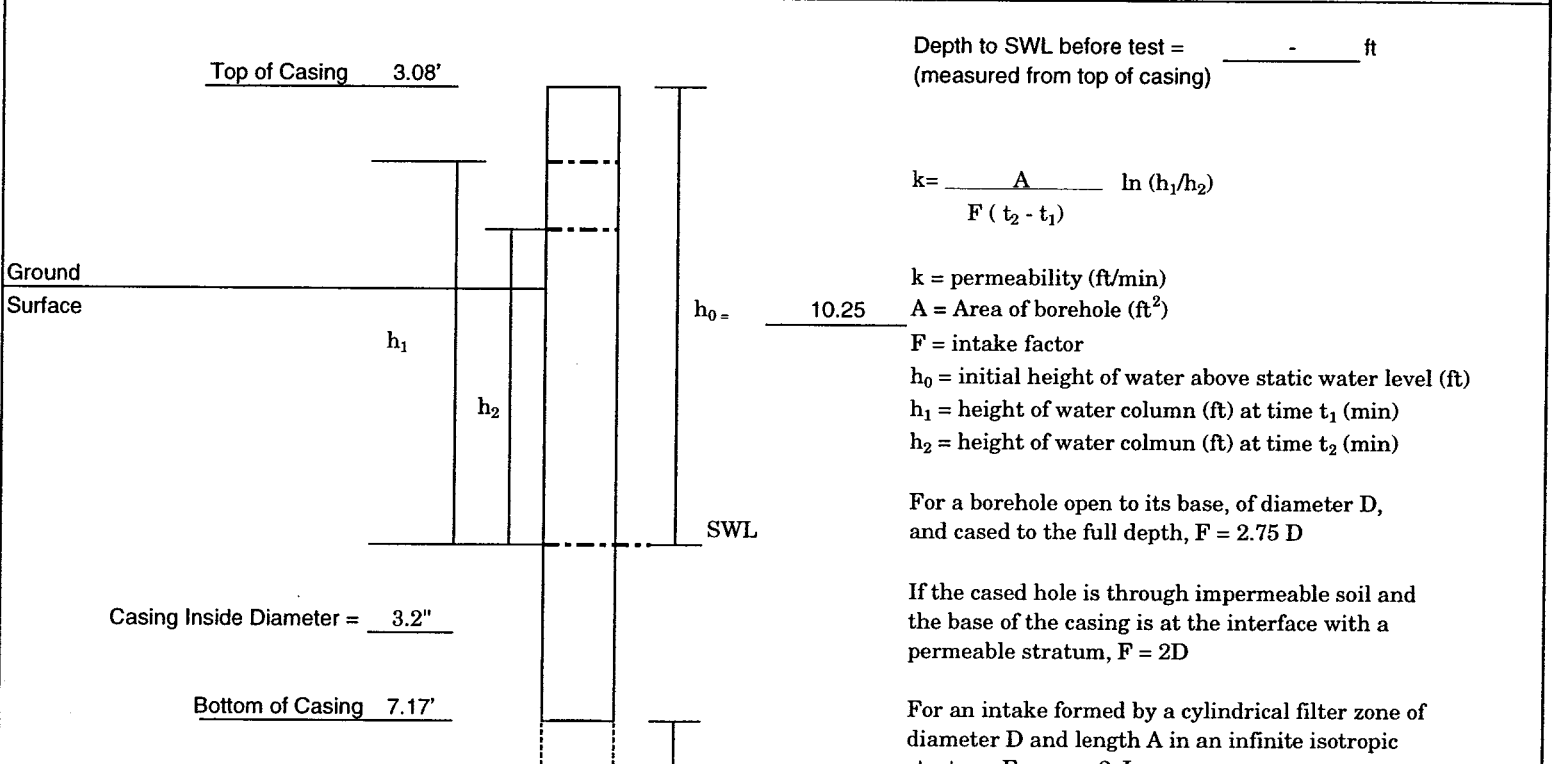


Reference: U.S. Dept of the Navy, Naval Facilities Engineering Command, DM 7.1-105/106 (1982)

Remarks: Falling Head permeability test performed in vicinity of W-104 wells. Bottom of casing seated in clay layer. Depth to static water level assumed to be depth to bottom of casing

Falling Head Permeability Test

t:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	W-105
Project Name:	C-44 Reservoir Phase I	Driller:	Carl Sandgren	Date Installed:	2/9/2004
Project Location:	Indiantown, Florida	Ground EL:		Logged By:	K.L.
Project Number:	24752-40911-RT2.FIELD	Riser EL:		Page:	1 of 2



Time (min)	Drop (ft)	h (ft)
0.00	0	10.25
0.22	0.01	10.24
0.35	0.02	10.23
0.47	0.03	10.22
0.65	0.04	10.21
0.83	0.05	10.20
1.02	0.06	10.19
1.20	0.07	10.18
1.40	0.08	10.17
1.62	0.09	10.16
1.87	0.1	10.15
2.50	0.12	10.13
3.00	0.145	10.11
3.50	0.16	10.09
4.00	0.18	10.07
4.50	0.2	10.05
5.00	0.22	10.03
5.50	0.23	10.02
6.00	0.24	10.01
6.50	0.255	10.00

(Table Cont'd)

Time (min)	Drop (ft)	h (ft)
7.00	0.27	9.98
7.50	0.285	9.97
8.00	0.3	9.95
8.50	0.31	9.94
9.00	0.32	9.93
9.50	0.33	9.92
10.00	0.35	9.90
13.50	0.41	9.84
15.67	0.45	9.80
20.50	0.55	9.70
22.00	0.58	9.67
25.00	0.6	9.65
30.00	0.68	9.57
35.00	0.72	9.53
38.00	0.75	9.50

Time (min)	Drop (ft)	h (ft)
40.00	0.77	9.48
45.00	0.8	9.45
170.00	1.71	8.54
280.00	2.2	8.05
372.00	2.62	7.63
460.00	2.9	7.35

Reference: U.S. Dept of the Navy, Naval Facilities Engineering Command, DM 7.1-105/106 (1982)

Remarks: Falling Head permeability test performed in vicinity of W-105 wells. Bottom of casing seated in clay layer. Depth to static water level assumed to be depth to bottom of casing

Falling Head Permeability Test

Client: Aquacalma LP	Contractor: Nodarse & Associates, Inc.	Boring/Well No.: W-105
Project Name: C-44 Reservoir Phase I	Driller: Carl Sandgren	Date Installed: 2/9/2004
Project Location: Indiantown, Florida	Ground EL:	Logged By: K.L.
Project Number: 24752-40911-RT2.FIELD	Riser EL:	Page: 2 of 2

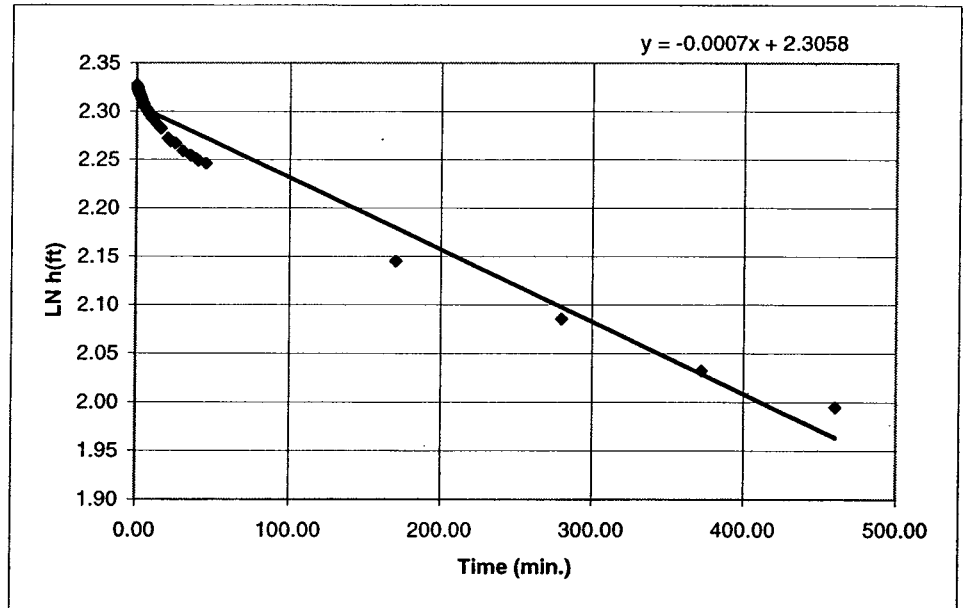
Time (min)	h (ft)	LN h
0.00	10.25	2.33
0.22	10.24	2.33
0.35	10.23	2.33
0.47	10.22	2.32
0.65	10.21	2.32
0.83	10.20	2.32
1.02	10.19	2.32
1.20	10.18	2.32
1.40	10.17	2.32
1.62	10.16	2.32
1.87	10.15	2.32
2.50	10.13	2.32
3.00	10.11	2.31
3.50	10.09	2.31
4.00	10.07	2.31
4.50	10.05	2.31
5.00	10.03	2.31
5.50	10.02	2.30
6.00	10.01	2.30
6.50	10.00	2.30
7.00	9.98	2.30
7.50	9.97	2.30
8.00	9.95	2.30
8.50	9.94	2.30
9.00	9.93	2.30
9.50	9.92	2.29
10.00	9.90	2.29
13.50	9.84	2.29
15.67	9.80	2.28
20.50	9.70	2.27
22.00	9.67	2.27
25.00	9.65	2.27
30.00	9.57	2.26
35.00	9.53	2.25
38.00	9.50	2.25
40.00	9.48	2.25
45.00	9.45	2.25
170.00	8.54	2.14
280.00	8.05	2.09
372.00	7.63	2.03
460.00	7.35	1.99

$$k = \frac{A}{F(t_2 - t_1)} \ln(h_1/h_2)$$

k = permeability (ft/min)
 A = Area of borehole (ft²) = 0.05585049 ft²
 F = intake factor = 0.73 ft
 h_0 = initial height of water above static water level (ft)
 h_1 = height of water column (ft) at time t_1 (min)
 h_2 = height of water column (ft) at time t_2 (min)

$k = 5.33E-05$ ft/min
 $= 2.71E-05$ cm/sec

The slope of this graph is : $-\frac{\ln(h_1/h_2)}{(t_2 - t_1)}$



Reference: U.S. Dept of the Navy, Naval Facilities Engineering Command, DM 7.1-105/106 (1982)

Remarks: Falling Head permeability test performed in vicinity of W-105 wells. Bottom of casing seated in clay layer. Depth to static water level assumed to be depth to bottom of casing

Falling Head Permeability Test

Client: Aquacalma LP	Contractor: Nodarse & Associates, Inc.	Boring/Well No.: W-106
Project Name: C-44 Reservoir Phase I	Driller: Carl Sandgren	Date Installed: 2/17/2004
Project Location: Indiantown, Florida	Ground EL:	Logged By: K.L.
Project Number: 24752-40911-RT2.FIELD	Riser EL:	Page: 2 of 2

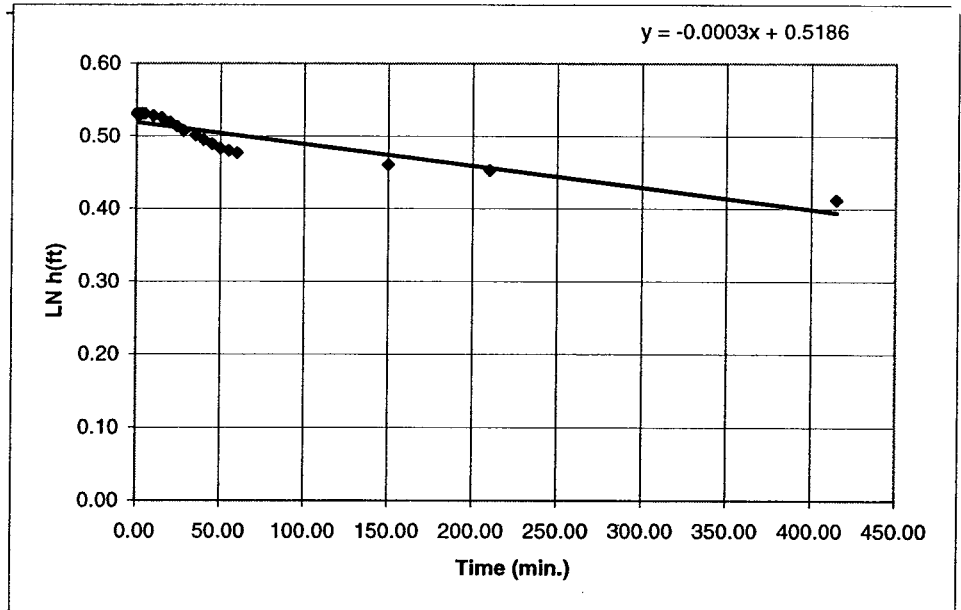
Time (min)	h (ft)	F (ft)
0.00	1.70	0.53
1.00	1.70	0.53
2.00	1.70	0.53
3.00	1.70	0.53
4.00	1.70	0.53
5.00	1.70	0.53
10.00	1.70	0.53
15.00	1.69	0.52
20.00	1.68	0.52
24.00	1.67	0.51
28.00	1.66	0.51
35.00	1.65	0.50
40.00	1.64	0.49
45.00	1.63	0.49
50.00	1.62	0.48
55.00	1.62	0.48
60.00	1.61	0.48
150.00	1.59	0.46
210.00	1.57	0.45
415.00	1.51	0.41

$$k = \frac{A}{F(t_2 - t_1)} \ln(h_1/h_2)$$

k = permeability (ft/min)
 A = Area of borehole (ft²) = 0.05585049 ft²
 F = intake factor = 0.73 ft
 h_0 = initial height of water above static water level (ft)
 h_1 = height of water column (ft) at time t_1 (min)
 h_2 = height of water column (ft) at time t_2 (min)

$k = 2.28E-05$ ft/min
 $= 1.16E-05$ cm/sec

The slope of this graph is : $-\ln(h_1/h_2) / (t_2 - t_1)$



Reference: U.S. Dept of the Navy, Naval Facilities Engineering Command, DM 7.1-105/106 (1982)

Remarks: Falling Head permeability test performed in vicinity of W-106 wells. Bottom of casing seated in clay layer.

Falling Head Permeability Test

t:	Aquacalma LP	Contractor:	Nodarse & Associates, Inc.	Boring/Well No.:	W-107
Project Name:	C-44 Reservoir Phase I	Driller:	Carl Sandgren	Date Installed:	2/11/2004
Project Location:	Indiantown, Florida	Ground EL:		Logged By:	K.L.
Project Number:	24752-40911-RT2.FIELD	Riser EL:		Page: 1	of 2

Top of Casing 3.83'

Ground Surface

h₁

h₂

SWL

Casing Inside Diameter = 3.2 inches

Bottom of Casing 6.33'

Time (min)	Drop (ft)	h (ft)
0.00	0.000	10.16
1.00	0.010	10.15
2.00	0.020	10.14
3.00	0.030	10.13
4.00	0.030	10.13
5.00	0.035	10.13
6.00	0.045	10.12
7.00	0.050	10.11
8.00	0.060	10.10
9.00	0.065	10.10
10.00	0.072	10.09
12.00	0.090	10.07
14.00	0.100	10.06
16.00	0.115	10.05
18.00	0.130	10.03
20.00	0.140	10.02
25.00	0.180	9.98
30.00	0.210	9.95
35.00	0.260	9.90
40.00	0.300	9.86

Depth to SWL before test = _____ ft
(measured from top of casing)

$$k = \frac{A}{F(t_2 - t_1)} \ln(h_1/h_2)$$

k = permeability (ft/min)
A = Area of borehole (ft²)
F = intake factor
h₀ = initial height of water above static water level (ft)
h₁ = height of water column (ft) at time t₁ (min)
h₂ = height of water column (ft) at time t₂ (min)

For a borehole open to its base, of diameter D, and cased to the full depth, F = 2.75 D

If the cased hole is through impermeable soil and the base of the casing is at the interface with a permeable stratum, F = 2D

For an intake formed by a cylindrical filter zone of diameter D and length A in an infinite isotropic stratum, F = $\frac{2\pi L}{\ln[2L/D]}$

L = 0 ft

(Table Cont'd)

Time (min)	Drop (ft)	h (ft)
45.00	0.33	9.83
50.00	0.38	9.78
55.00	0.43	9.73
60.00	0.46	9.70
65.00	0.5	9.66
70.00	0.53	9.63
175.00	0.89	9.27
1050.00	4.3	5.86

Reference: U.S. Dept of the Navy, Naval Facilities Engineering Command, DM 7.1-105/106 (1982)

Remarks: Falling Head permeability test performed in vicinity of W-107 wells. Bottom of casing seated in clay layer. Depth to static water level assumed to be depth to bottom of casing

Falling Head Permeability Test

Client: Aquacalma LP	Contractor: Nodarse & Associates, Inc.	Boring/Well No.: W-107
Project Name: C-44 Reservoir Phase I	Driller: Carl Sandgren	Date Installed: 2/11/2004
Project Location: Indiantown, Florida	Ground EL:	Logged By: K.L.
Project Number: 24752-40911-RT2.FIELD	Riser EL:	Page: 2 of 2

Time (min)	h (ft)	LN h
0.00	10.16	2.32
1.00	10.15	2.32
2.00	10.14	2.32
3.00	10.13	2.32
4.00	10.13	2.32
5.00	10.13	2.32
6.00	10.12	2.31
7.00	10.11	2.31
8.00	10.10	2.31
9.00	10.10	2.31
10.00	10.09	2.31
12.00	10.07	2.31
14.00	10.06	2.31
16.00	10.05	2.31
18.00	10.03	2.31
20.00	10.02	2.30
25.00	9.98	2.30
30.00	9.95	2.30
35.00	9.90	2.29
40.00	9.86	2.29
45.00	9.83	2.29
50.00	9.78	2.28
55.00	9.73	2.28
60.00	9.70	2.27
65.00	9.66	2.27
70.00	9.63	2.26
175.00	9.27	2.23
1050.00	5.86	1.77

$$k = \frac{A}{F(t_2 - t_1)} \ln(h_1/h_2)$$

k = permeability (ft/min)

A = Area of borehole (ft²) = 0.05585049 ft²

F = intake factor = 0.73 ft

h₀ = initial height of water above static water level (ft)

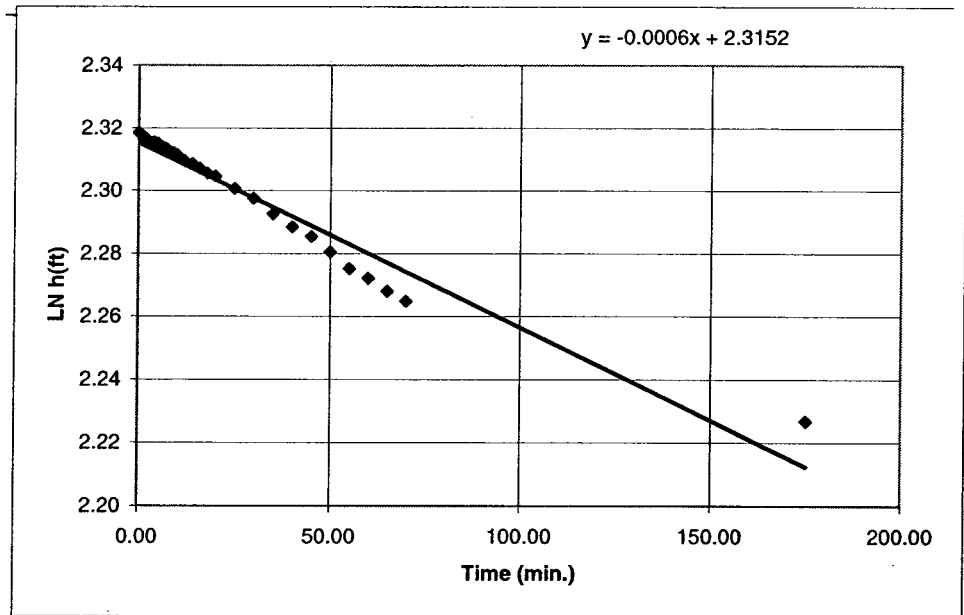
h₁ = height of water column (ft) at time t₁ (min)

h₂ = height of water column (ft) at time t₂ (min)

k = 4.57E-05 ft/min

= 2.32E-05 cm/sec

The slope of this graph is : $-\ln(h_1/h_2) / (t_2 - t_1)$



Reference: U.S. Dept of the Navy, Naval Facilities Engineering Command, DM 7.1-105/106 (1982)

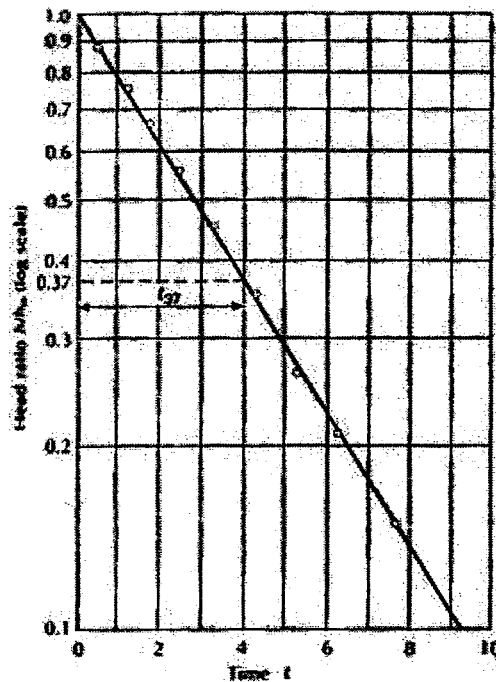
Remarks: Falling Head permeability test performed in vicinity of W-107 wells. Bottom of casing seated in clay layer. Depth to static water level assumed to be depth to bottom of casing

SLUG TESTS

Hvorslev Method

For the slug-in test, a metal bar (slug) of fixed volume was added to the well to displace the water level above original groundwater level and the relaxation of the water level in the well to the original level is measured over time. For the slug-out test, the slug was removed from the well and the recovery of the water level in the well to original groundwater level was measured over time.

For the Hvorslev Method, the head versus time was plotted as shown below and the time to 37% recovery of the initial change in head in the well (t_{37}) was estimated.



$$k = \frac{r^2 \ln(L/R)}{2Lt_{37}}$$

r = well casing radius

L = length of the screened interval

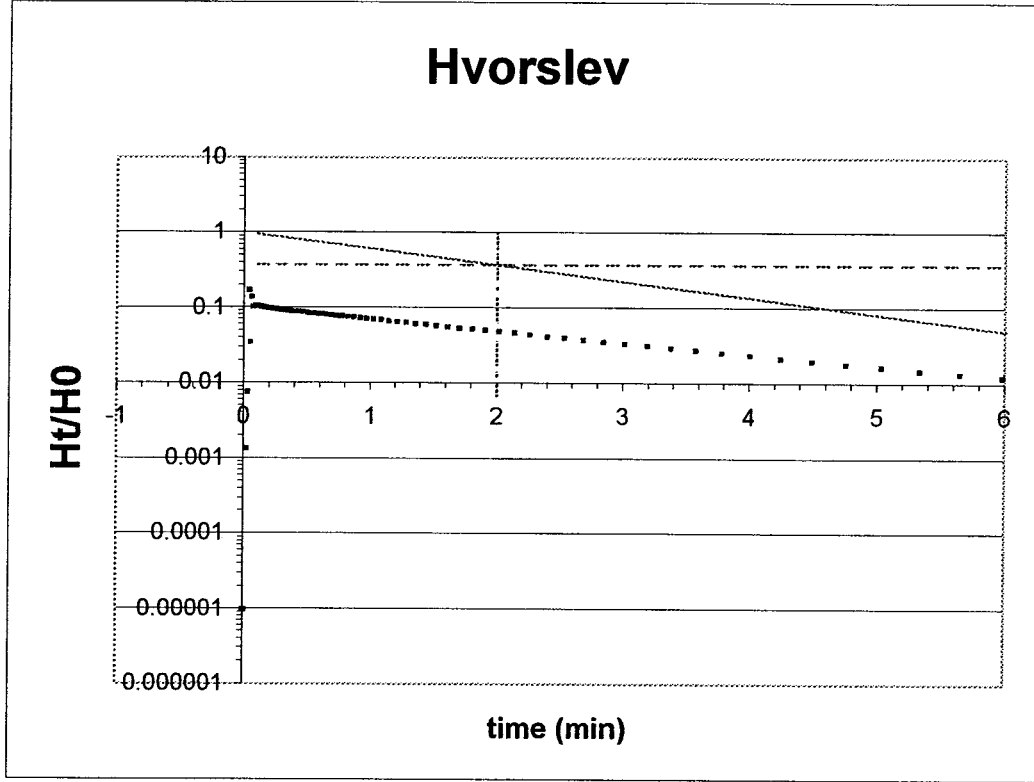
R = radius of well casing plus gravel pack

t_{37} = time for the water level to recover to 37% of the original change in head

Well W-104A

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	4.1	13.5

t (min)	H _t /H ₀
0	9.48E-06
0.011	9.48E-06
0.022	0.001327
0.033	0.007583
0.044	0.169289
0.055	0.034313
0.066	0.135735
0.077	0.100569
0.088	0.10436
0.099	0.103602
0.11	0.102749
0.121	0.101991
0.132	0.101137
0.143	0.100284
0.154	0.099242
0.165	0.098389
0.176	0.097915
0.187	0.097346
0.198	0.096493
0.209	0.095735
0.22	0.09545
0.231	0.094882
0.2427	0.094123
0.2552	0.093555
0.2683	0.092796
0.2823	0.092227
0.2972	0.091659
0.3128	0.090616
0.3295	0.089763
0.3472	0.089194
0.3658	0.08872
0.3857	0.087583
0.4067	0.087109
0.4288	0.086256
0.4523	0.085687
0.4772	0.084645
0.5035	0.083791
0.5315	0.082749
0.5612	0.081896
0.5925	0.080853
0.6257	0.07981
0.6608	0.078673
0.6982	0.07763
0.7377	0.076493
0.7795	0.07545
0.8238	0.073839
0.8708	0.072701
0.9207	0.071374
0.9733	0.069763
1.0292	0.06872
1.0883	0.067014
1.151	0.065403
1.2173	0.063791
1.2877	0.06218
1.3622	0.060569
1.4412	0.058673
1.5248	0.056777
1.6133	0.054882
1.7072	0.052986
1.8065	0.051374
1.9118	0.049479



m
-0.5
T₀
2
K (length/day)
13.5

Fitted Line

t	H _t /H ₀
0.04	0.980198673
0.02	0.990049834
0.01	0.995012479
0.1	0.951229425
0.2	0.904837418
0.3	0.860707976
0.4	0.818730753
0.6	0.740818221
0.8	0.670320046
1	0.60653066
2	0.367879441
3	0.22313016
4	0.135335283
6	0.049787068
8	0.018315639
10	0.006737947

T₀

T ₀	K (length/day)
2	13.5
0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37

2.0233	0.047299
2.1415	0.045403
2.2667	0.043223
2.3992	0.041137
2.5397	0.038957
2.6885	0.037062
2.846	0.035166
3.0128	0.032986
3.1897	0.03109
3.377	0.02891
3.5753	0.027014
3.7855	0.025118
4.0082	0.023223
4.244	0.021043
4.4938	0.019431
4.7585	0.01782
5.0388	0.016209
5.3357	0.014597
5.6502	0.01327
5.9833	0.011943
6.3362	0.010237
6.71	0.009479
7.106	0.008152
7.5253	0.007014
7.9697	0.005972
8.4403	0.00455
8.9388	0.003791
9.4668	0.003507
10.0262	0.002749
10.6187	0.001611
11.2462	0.000853
11.911	0.000569
12.6152	0.000569
13.361	9.48E-06
14.151	9.48E-06
14.9878	9.48E-06
15.8743	9.48E-06

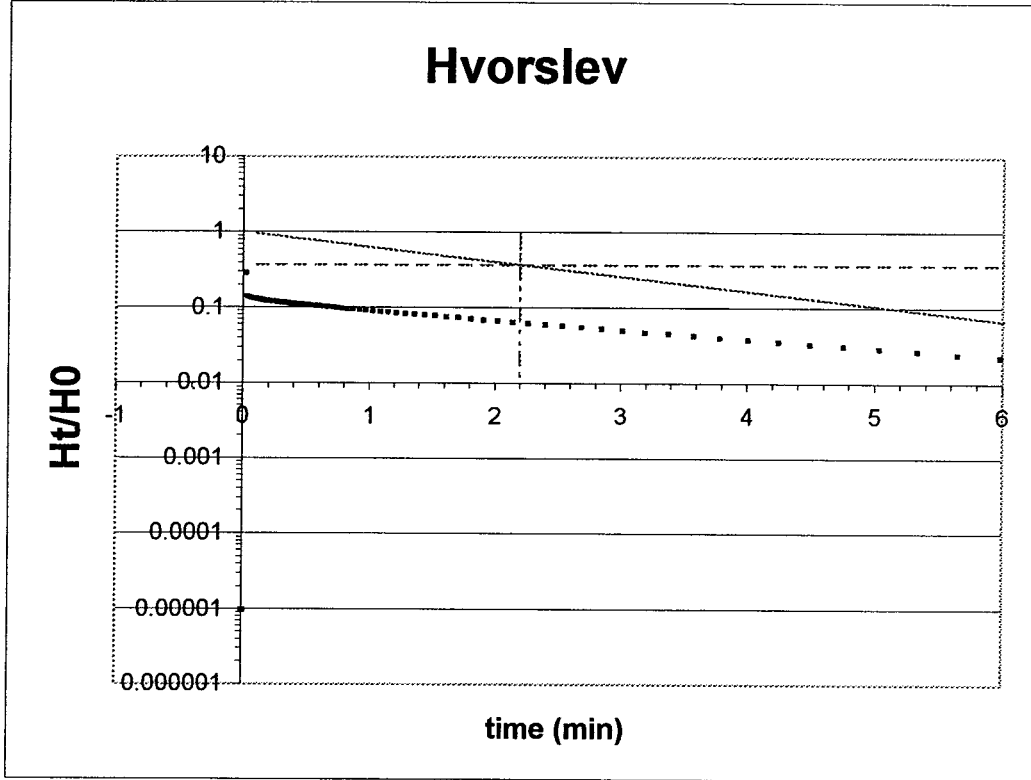
Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.0001	0	9.48E-06
		0.0001	0.011	9.48E-06
		0.014	0.022	0.001327
		0.08	0.033	0.007583
		1.786	0.044	0.169289
		0.362	0.055	0.034313
		1.432	0.066	0.135735
		1.061	0.077	0.100569
		1.101	0.088	0.10436
		1.093	0.099	0.103602
		1.084	0.11	0.102749
		1.076	0.121	0.101991
		1.067	0.132	0.101137
		1.058	0.143	0.100284
		1.047	0.154	0.099242
		1.038	0.165	0.098389
		1.033	0.176	0.097915
		1.027	0.187	0.097346
		1.018	0.198	0.096493
		1.01	0.209	0.095735
		1.007	0.22	0.09545
		1.001	0.231	0.094882
		0.993	0.2427	0.094123
		0.987	0.2552	0.093555
		0.979	0.2683	0.092796
		0.973	0.2823	0.092227
		0.967	0.2972	0.091659
		0.956	0.3128	0.090616
		0.947	0.3295	0.089763
		0.941	0.3472	0.089194
		0.936	0.3658	0.08872
		0.924	0.3857	0.087583
		0.919	0.4067	0.087109
		0.91	0.4288	0.086256
		0.904	0.4523	0.085687
		0.893	0.4772	0.084645
		0.884	0.5035	0.083791
		0.873	0.5315	0.082749
		0.864	0.5612	0.081896
		0.853	0.5925	0.080853
		0.842	0.6257	0.07981
		0.83	0.6608	0.078673
		0.819	0.6982	0.07763
		0.807	0.7377	0.076493
		0.796	0.7795	0.07545
		0.779	0.8238	0.073839
		0.767	0.8708	0.072701
		0.753	0.9207	0.071374
		0.736	0.9733	0.069763
		0.725	1.0292	0.06872
		0.707	1.0883	0.067014
		0.69	1.151	0.065403
		0.673	1.2173	0.063791
		0.656	1.2877	0.06218
		0.639	1.3622	0.060569
		0.619	1.4412	0.058673
		0.599	1.5248	0.056777
		0.579	1.6133	0.054882

0.559	1.7072	0.052986
0.542	1.8065	0.051374
0.522	1.9118	0.049479
0.499	2.0233	0.047299
0.479	2.1415	0.045403
0.456	2.2667	0.043223
0.434	2.3992	0.041137
0.411	2.5397	0.038957
0.391	2.6885	0.037062
0.371	2.846	0.035166
0.348	3.0128	0.032986
0.328	3.1897	0.03109
0.305	3.377	0.02891
0.285	3.5753	0.027014
0.265	3.7855	0.025118
0.245	4.0082	0.023223
0.222	4.244	0.021043
0.205	4.4938	0.019431
0.188	4.7585	0.01782
0.171	5.0388	0.016209
0.154	5.3357	0.014597
0.14	5.6502	0.01327
0.126	5.9833	0.011943
0.108	6.3362	0.010237
0.1	6.71	0.009479
0.086	7.106	0.008152
0.074	7.5253	0.007014
0.063	7.9697	0.005972
0.048	8.4403	0.00455
0.04	8.9388	0.003791
0.037	9.4668	0.003507
0.029	10.0262	0.002749
0.017	10.6187	0.001611
0.009	11.2462	0.000853
0.006	11.911	0.000569
0.006	12.6152	0.000569
0.0001	13.361	9.48E-06
0.0001	14.151	9.48E-06
0.0001	14.9878	9.48E-06
0.0001	15.8743	9.48E-06

c44w104a test 1 step 1
 Hvorslev Slug Test Method

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	3.7	12.3

t (min)	H _t /H ₀
0	9.48E-06
0.011	9.48E-06
0.022	0.287583
0.033	0.138673
0.044	0.135924
0.055	0.134597
0.066	0.132701
0.077	0.13109
0.088	0.129479
0.099	0.128152
0.11	0.126825
0.121	0.125403
0.132	0.124929
0.143	0.123791
0.154	0.123033
0.165	0.121327
0.176	0.121137
0.187	0.120569
0.198	0.119716
0.209	0.119242
0.22	0.118673
0.231	0.11782
0.2427	0.117346
0.2552	0.116493
0.2683	0.115735
0.2823	0.115166
0.2972	0.114313
0.3128	0.113839
0.3295	0.11327
0.3472	0.112417
0.3658	0.111659
0.3857	0.110521
0.4067	0.109479
0.4288	0.108626
0.4523	0.107867
0.4772	0.107867
0.5035	0.105118
0.5315	0.104929
0.5612	0.103791
0.5925	0.102749
0.6257	0.101137
0.6608	0.1
0.6982	0.098957
0.7377	0.09763
0.7795	0.096493
0.8238	0.094882
0.8708	0.09327
0.9207	0.092227
0.9733	0.090521
1.0292	0.089194
1.0883	0.087299
1.151	0.085972
1.2173	0.084076
1.2877	0.082464
1.3622	0.080569
1.4412	0.079242
1.5248	0.076777
1.6133	0.074597
1.7072	0.072701
1.8065	0.070521
1.9118	0.068152



m
-0.45

T₀
2.2

K (length/day)
12.3

Fitted Line

T₀

t	H _t /H ₀	T ₀
0.04	0.982161032	2.2
0.02	0.991040379	2.2
0.01	0.99551011	2.2
0.1	0.955997482	2.2
0.2	0.913931185	2.2
0.3	0.873715912	2.2
0.4	0.835270211	2.2
0.6	0.763379494	2.2
0.8	0.697676326	2.2
1	0.637628152	2.2
2	0.40656966	2.2
3	0.259240261	2.2
4	0.165298888	2.2
6	0.067205513	2.2
8	0.027323722	2.2
10	0.011108997	2.2
	1	1

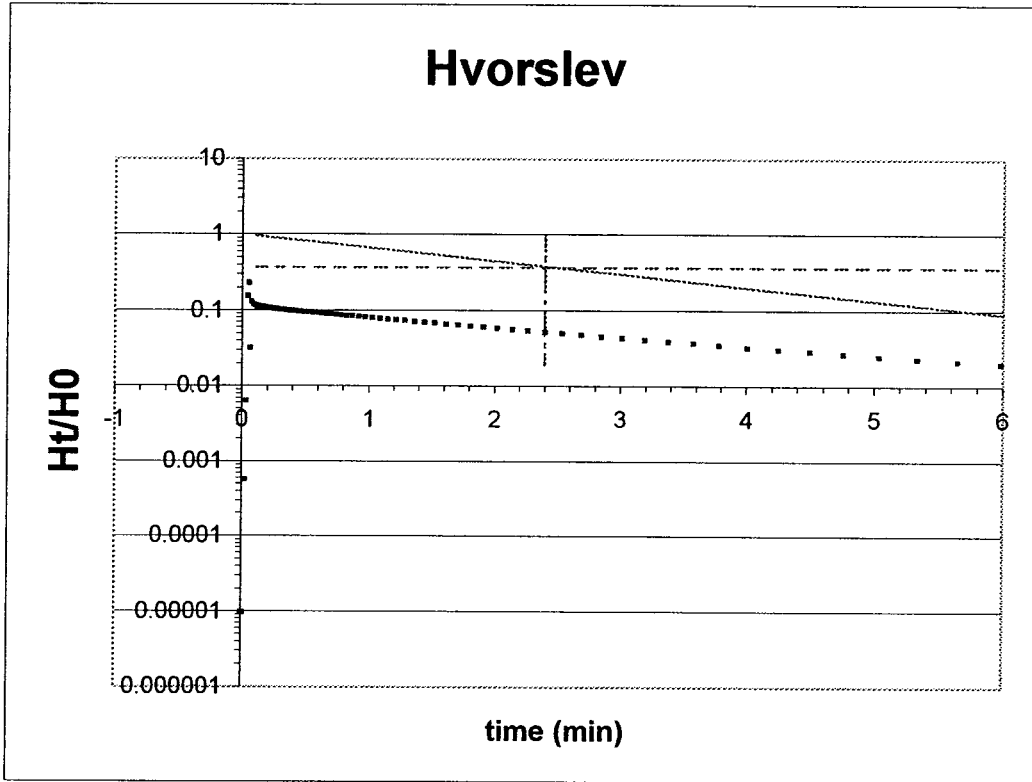
2.0233	0.06673
2.1415	0.06436
2.2667	0.061611
2.3992	0.059242
2.5397	0.057062
2.6885	0.054313
2.846	0.052417
3.0128	0.049763
3.1897	0.047014
3.377	0.044834
3.5753	0.042464
3.7855	0.04
4.0082	0.03782
4.244	0.03545
4.4938	0.032701
4.7585	0.030806
5.0388	0.028626
5.3357	0.02654
5.6502	0.024076
5.9833	0.02218
6.3362	0.02
6.71	0.018104
7.106	0.016493
7.5253	0.014882
7.9697	0.01327
8.4403	0.011659
8.9388	0.010521
9.4668	0.00891
10.0262	0.008152
10.6187	0.007299
11.2462	0.005687
11.911	0.005118
12.6152	0.004076
13.361	0.003791
14.151	0.002749
14.9878	0.002464
15.8743	0.001611

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.0001	0	9.48E-06
		0.0001	0.011	9.48E-06
		3.034	0.022	0.287583
		1.463	0.033	0.138673
		1.434	0.044	0.135924
		1.42	0.055	0.134597
		1.4	0.066	0.132701
		1.383	0.077	0.13109
		1.366	0.088	0.129479
		1.352	0.099	0.128152
		1.338	0.11	0.126825
		1.323	0.121	0.125403
		1.318	0.132	0.124929
		1.306	0.143	0.123791
		1.298	0.154	0.123033
		1.28	0.165	0.121327
		1.278	0.176	0.121137
		1.272	0.187	0.120569
		1.263	0.198	0.119716
		1.258	0.209	0.119242
		1.252	0.22	0.118673
		1.243	0.231	0.11782
		1.238	0.2427	0.117346
		1.229	0.2552	0.116493
		1.221	0.2683	0.115735
		1.215	0.2823	0.115166
		1.206	0.2972	0.114313
		1.201	0.3128	0.113839
		1.195	0.3295	0.11327
		1.186	0.3472	0.112417
		1.178	0.3658	0.111659
		1.166	0.3857	0.110521
		1.155	0.4067	0.109479
		1.146	0.4288	0.108626
		1.138	0.4523	0.107867
		1.138	0.4772	0.107867
		1.109	0.5035	0.105118
		1.107	0.5315	0.104929
		1.095	0.5612	0.103791
		1.084	0.5925	0.102749
		1.067	0.6257	0.101137
		1.055	0.6608	0.1
		1.044	0.6982	0.098957
		1.03	0.7377	0.09763
		1.018	0.7795	0.096493
		1.001	0.8238	0.094882
		0.984	0.8708	0.09327
		0.973	0.9207	0.092227
		0.955	0.9733	0.090521
		0.941	1.0292	0.089194
		0.921	1.0883	0.087299
		0.907	1.151	0.085972
		0.887	1.2173	0.084076
		0.87	1.2877	0.082464
		0.85	1.3622	0.080569
		0.836	1.4412	0.079242
		0.81	1.5248	0.076777
		0.787	1.6133	0.074597

0.767	1.7072	0.072701
0.744	1.8065	0.070521
0.719	1.9118	0.068152
0.704	2.0233	0.06673
0.679	2.1415	0.06436
0.65	2.2667	0.061611
0.625	2.3992	0.059242
0.602	2.5397	0.057062
0.573	2.6885	0.054313
0.553	2.846	0.052417
0.525	3.0128	0.049763
0.496	3.1897	0.047014
0.473	3.377	0.044834
0.448	3.5753	0.042464
0.422	3.7855	0.04
0.399	4.0082	0.03782
0.374	4.244	0.03545
0.345	4.4938	0.032701
0.325	4.7585	0.030806
0.302	5.0388	0.028626
0.28	5.3357	0.02654
0.254	5.6502	0.024076
0.234	5.9833	0.02218
0.211	6.3362	0.02
0.191	6.71	0.018104
0.174	7.106	0.016493
0.157	7.5253	0.014882
0.14	7.9697	0.01327
0.123	8.4403	0.011659
0.111	8.9388	0.010521
0.094	9.4668	0.00891
0.086	10.0262	0.008152
0.077	10.6187	0.007299
0.06	11.2462	0.005687
0.054	11.911	0.005118
0.043	12.6152	0.004076
0.04	13.361	0.003791
0.029	14.151	0.002749
0.026	14.9878	0.002464
0.017	15.8743	0.001611
0.014		
0.01		
0.011		
0.006		

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	3.4	11.2

t (min)	H _t /H ₀
0	9.48E-06
0.011	9.48E-06
0.022	0.000569
0.033	0.006256
0.044	0.157156
0.055	0.232038
0.066	0.031943
0.077	0.129005
0.088	0.116777
0.099	0.11545
0.11	0.114123
0.121	0.107867
0.132	0.111374
0.143	0.109005
0.154	0.110616
0.165	0.109479
0.176	0.10872
0.187	0.107867
0.198	0.106825
0.209	0.105687
0.22	0.105972
0.231	0.105213
0.2427	0.10436
0.2552	0.103791
0.2683	0.103033
0.2823	0.102464
0.2972	0.101706
0.3128	0.101137
0.3295	0.100284
0.3472	0.09981
0.3658	0.098673
0.3857	0.097915
0.4067	0.097346
0.4288	0.096493
0.4523	0.095735
0.4772	0.094882
0.5035	0.094123
0.5315	0.093555
0.5612	0.092227
0.5925	0.091374
0.6257	0.090047
0.6608	0.089005
0.6982	0.088152
0.7377	0.087109
0.7795	0.085687
0.8238	0.08436
0.8708	0.083318
0.9207	0.081706
0.9733	0.080284
1.0292	0.078673
1.0883	0.07763
1.151	0.075735
1.2173	0.074123
1.2877	0.072512
1.3622	0.070616
1.4412	0.06891
1.5248	0.067583
1.6133	0.065118
1.7072	0.063318
1.8065	0.061611
1.9118	0.059716



m
-0.4
T₀
2.4
K (length/day)
11.2

Fitted Line

T₀

t	H _t /H ₀	T ₀
0.04	0.98412732	2.4
0.02	0.992031915	2.4
0.01	0.996007989	2.4
0.1	0.960789439	2.4
0.2	0.923116346	2.4
0.3	0.886920437	2.4
0.4	0.852143789	2.4
0.6	0.786627861	2.4
0.8	0.726149037	2.4
1	0.670320046	2.4
2	0.449328964	2.4
3	0.301194212	2.4
4	0.201896518	2.4
6	0.090717953	2.4
8	0.040762204	2.4
10	0.018315639	2.4

t	H _t /H ₀	T ₀
0.1	0.96078944	0.1
0.2	0.92311635	0.2
0.3	0.88692044	0.3
0.4	0.85214379	0.4
0.6	0.78662786	0.6
0.8	0.72614904	0.8
1	0.67032005	1
2	0.44932896	2
3	0.30119421	3
4	0.20189652	4
6	0.09071795	6
8	0.04076222	8
10	0.01831564	10

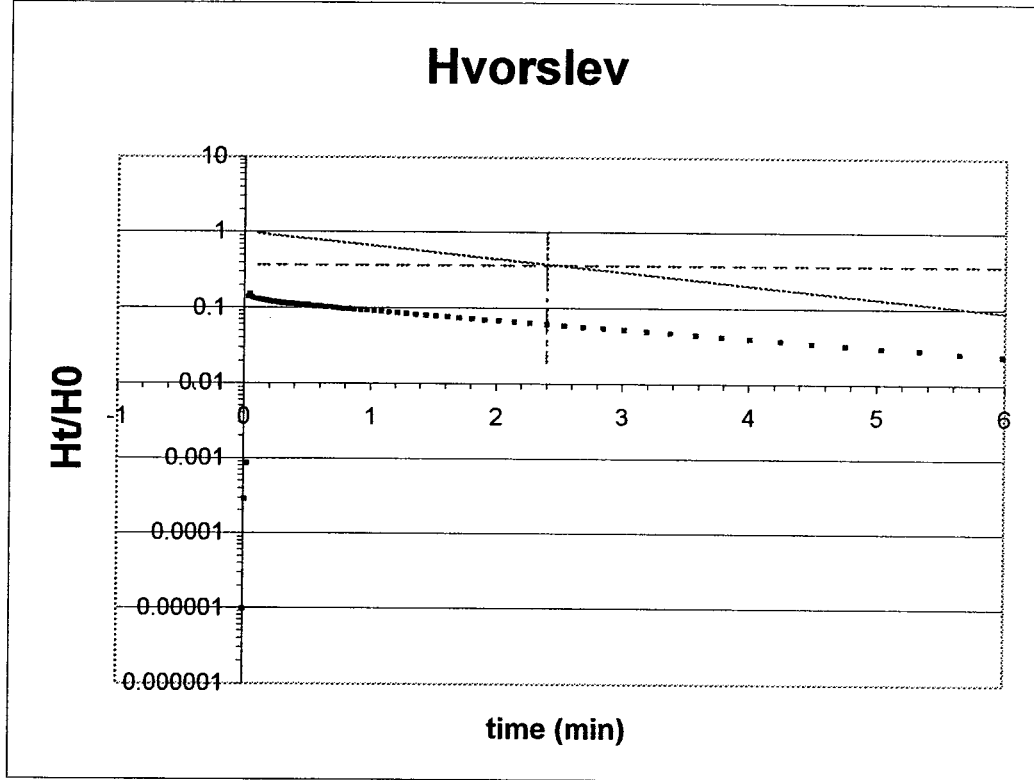
2.0233	0.05763
2.1415	0.055735
2.2667	0.053555
2.3992	0.051659
2.5397	0.049479
2.6885	0.047299
2.846	0.045118
3.0128	0.043223
3.1897	0.040853
3.377	0.038673
3.5753	0.036777
3.7855	0.034597
4.0082	0.032417
4.244	0.030521
4.4938	0.028626
4.7585	0.02673
5.0388	0.024645
5.3357	0.022938
5.6502	0.021327
5.9833	0.02
6.3362	0.018104
6.71	0.015924
7.106	0.014597
7.5253	0.013744
7.9697	0.012417
8.4403	0.01109
8.9388	0.010047
9.4668	0.009479
10.0262	0.008341
10.6187	0.007014
11.2462	0.006256
11.911	0.005687
12.6152	0.004834
13.361	0.00455
14.151	0.003791
14.9878	0.003791
15.8743	0.003791

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.0001	0	9.48E-06
		0.0001	0.011	9.48E-06
		0.006	0.022	0.000569
		0.066	0.033	0.006256
		1.658	0.044	0.157156
		2.448	0.055	0.232038
		0.337	0.066	0.031943
		1.361	0.077	0.129005
		1.232	0.088	0.116777
		1.218	0.099	0.11545
		1.204	0.11	0.114123
		1.138	0.121	0.107867
		1.175	0.132	0.111374
		1.15	0.143	0.109005
		1.167	0.154	0.110616
		1.155	0.165	0.109479
		1.147	0.176	0.10872
		1.138	0.187	0.107867
		1.127	0.198	0.106825
		1.115	0.209	0.105687
		1.118	0.22	0.105972
		1.11	0.231	0.105213
		1.101	0.2427	0.10436
		1.095	0.2552	0.103791
		1.087	0.2683	0.103033
		1.081	0.2823	0.102464
		1.073	0.2972	0.101706
		1.067	0.3128	0.101137
		1.058	0.3295	0.100284
		1.053	0.3472	0.09981
		1.041	0.3658	0.098673
		1.033	0.3857	0.097915
		1.027	0.4067	0.097346
		1.018	0.4288	0.096493
		1.01	0.4523	0.095735
		1.001	0.4772	0.094882
		0.993	0.5035	0.094123
		0.987	0.5315	0.093555
		0.973	0.5612	0.092227
		0.964	0.5925	0.091374
		0.95	0.6257	0.090047
		0.939	0.6608	0.089005
		0.93	0.6982	0.088152
		0.919	0.7377	0.087109
		0.904	0.7795	0.085687
		0.89	0.8238	0.08436
		0.879	0.8708	0.083318
		0.862	0.9207	0.081706
		0.847	0.9733	0.080284
		0.83	1.0292	0.078673
		0.819	1.0883	0.07763
		0.799	1.151	0.075735
		0.782	1.2173	0.074123
		0.765	1.2877	0.072512
		0.745	1.3622	0.070616
		0.727	1.4412	0.06891
		0.713	1.5248	0.067583
		0.687	1.6133	0.065118

0.668	1.7072	0.063318
0.65	1.8065	0.061611
0.63	1.9118	0.059716
0.608	2.0233	0.05763
0.588	2.1415	0.055735
0.565	2.2667	0.053555
0.545	2.3992	0.051659
0.522	2.5397	0.049479
0.499	2.6885	0.047299
0.476	2.846	0.045118
0.456	3.0128	0.043223
0.431	3.1897	0.040853
0.408	3.377	0.038673
0.388	3.5753	0.036777
0.365	3.7855	0.034597
0.342	4.0082	0.032417
0.322	4.244	0.030521
0.302	4.4938	0.028626
0.282	4.7585	0.02673
0.26	5.0388	0.024645
0.242	5.3357	0.022938
0.225	5.6502	0.021327
0.211	5.9833	0.02
0.191	6.3362	0.018104
0.168	6.71	0.015924
0.154	7.106	0.014597
0.145	7.5253	0.013744
0.131	7.9697	0.012417
0.117	8.4403	0.01109
0.106	8.9388	0.010047
0.1	9.4668	0.009479
0.088	10.0262	0.008341
0.074	10.6187	0.007014
0.066	11.2462	0.006256
0.06	11.911	0.005687
0.051	12.6152	0.004834
0.048	13.361	0.00455
0.04	14.151	0.003791
0.04	14.9878	0.003791
0.04	15.8743	0.003791
0.034		
0.01		
0.011		
0.006		

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	3.4	11.2

t (min)	H _t /H ₀
0	9.48E-06
0.011	0.000284
0.022	0.000853
0.033	0.139242
0.044	0.152227
0.055	0.139716
0.066	0.13545
0.077	0.13327
0.088	0.131943
0.099	0.130521
0.11	0.12891
0.121	0.127583
0.132	0.126256
0.143	0.125118
0.154	0.124076
0.165	0.123033
0.176	0.122464
0.187	0.121137
0.198	0.120284
0.209	0.119526
0.22	0.118957
0.231	0.118104
0.2427	0.117346
0.2552	0.116777
0.2683	0.116209
0.2823	0.115166
0.2972	0.114597
0.3128	0.113839
0.3295	0.112986
0.3472	0.112227
0.3658	0.111659
0.3857	0.11109
0.4067	0.110047
0.4288	0.109194
0.4523	0.108436
0.4772	0.107583
0.5035	0.107299
0.5315	0.104645
0.5612	0.103791
0.5925	0.102749
0.6257	0.101896
0.6608	0.100853
0.6982	0.099526
0.7377	0.09782
0.7795	0.096493
0.8238	0.095166
0.8708	0.094028
0.9207	0.092417
0.9733	0.091374
1.0292	0.089763
1.0883	0.088152
1.151	0.08654
1.2173	0.084929
1.2877	0.083033
1.3622	0.081137
1.4412	0.079242
1.5248	0.07763
1.6133	0.075735
1.7072	0.07327
1.8065	0.071659
1.9118	0.069479



m
-0.4
T₀
2.4
K (length/day)
11.2

Fitted Line

t	H _t /H ₀
0.04	0.98412732
0.02	0.992031915
0.01	0.996007989
0.1	0.960789439
0.2	0.923116346
0.3	0.886920437
0.4	0.852143789
0.6	0.786627861
0.8	0.726149037
1	0.670320046
2	0.449328964
3	0.301194212
4	0.201896518
6	0.090717953
8	0.040762204
10	0.018315639

T₀

T ₀	H _t /H ₀	m	K (length/day)
2.4	0.98412732		
2.4	0.99203191		
2.4	0.99600799		
2.4	0.96078944	0.1	0.37
2.4	0.92311635	0.2	0.37
2.4	0.88692044	0.3	0.37
2.4	0.85214379	0.4	0.37
2.4	0.78662786	0.6	0.37
2.4	0.72614904	0.8	0.37
2.4	0.67032005	1	0.37
2.4	0.44932896	2	0.37
2.4	0.30119421	3	0.37
2.4	0.20189652	4	0.37
2.4	0.09071795	6	0.37
2.4	0.04076220	8	0.37
2.4	0.01831564	10	0.37
2.4	1	10	0.37

2.0233	0.067299
2.1415	0.065118
2.2667	0.063033
2.3992	0.060569
2.5397	0.058104
2.6885	0.055924
2.846	0.053839
3.0128	0.05109
3.1897	0.04891
3.377	0.04654
3.5753	0.044076
3.7855	0.041611
4.0082	0.039242
4.244	0.037062
4.4938	0.034313
4.7585	0.032133
5.0388	0.030047
5.3357	0.028341
5.6502	0.025403
5.9833	0.023791
6.3362	0.021611
6.71	0.019242
7.106	0.017536
7.5253	0.015924
7.9697	0.014313
8.4403	0.012986
8.9388	0.011659
9.4668	0.009763
10.0262	0.008626
10.6187	0.007583
11.2462	0.006445
11.911	0.005687
12.6152	0.00455
13.361	0.00436
14.151	0.003223
14.9878	0.002938
15.8743	0.002464

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _i /H ₀
		0.0001	0	9.48E-06
		0.003	0.011	0.000284
		0.009	0.022	0.000853
		1.469	0.033	0.139242
		1.606	0.044	0.152227
		1.474	0.055	0.139716
		1.429	0.066	0.13545
		1.406	0.077	0.13327
		1.392	0.088	0.131943
		1.377	0.099	0.130521
		1.36	0.11	0.12891
		1.346	0.121	0.127583
		1.332	0.132	0.126256
		1.32	0.143	0.125118
		1.309	0.154	0.124076
		1.298	0.165	0.123033
		1.292	0.176	0.122464
		1.278	0.187	0.121137
		1.269	0.198	0.120284
		1.261	0.209	0.119526
		1.255	0.22	0.118957
		1.246	0.231	0.118104
		1.238	0.2427	0.117346
		1.232	0.2552	0.116777
		1.226	0.2683	0.116209
		1.215	0.2823	0.115166
		1.209	0.2972	0.114597
		1.201	0.3128	0.113839
		1.192	0.3295	0.112986
		1.184	0.3472	0.112227
		1.178	0.3658	0.111659
		1.172	0.3857	0.11109
		1.161	0.4067	0.110047
		1.152	0.4288	0.109194
		1.144	0.4523	0.108436
		1.135	0.4772	0.107583
		1.132	0.5035	0.107299
		1.104	0.5315	0.104645
		1.095	0.5612	0.103791
		1.084	0.5925	0.102749
		1.075	0.6257	0.101896
		1.064	0.6608	0.100853
		1.05	0.6982	0.099526
		1.032	0.7377	0.09782
		1.018	0.7795	0.096493
		1.004	0.8238	0.095166
		0.992	0.8708	0.094028
		0.975	0.9207	0.092417
		0.964	0.9733	0.091374
		0.947	1.0292	0.089763
		0.93	1.0883	0.088152
		0.913	1.151	0.08654
		0.896	1.2173	0.084929
		0.876	1.2877	0.083033
		0.856	1.3622	0.081137
		0.836	1.4412	0.079242
		0.819	1.5248	0.07763
		0.799	1.6133	0.075735

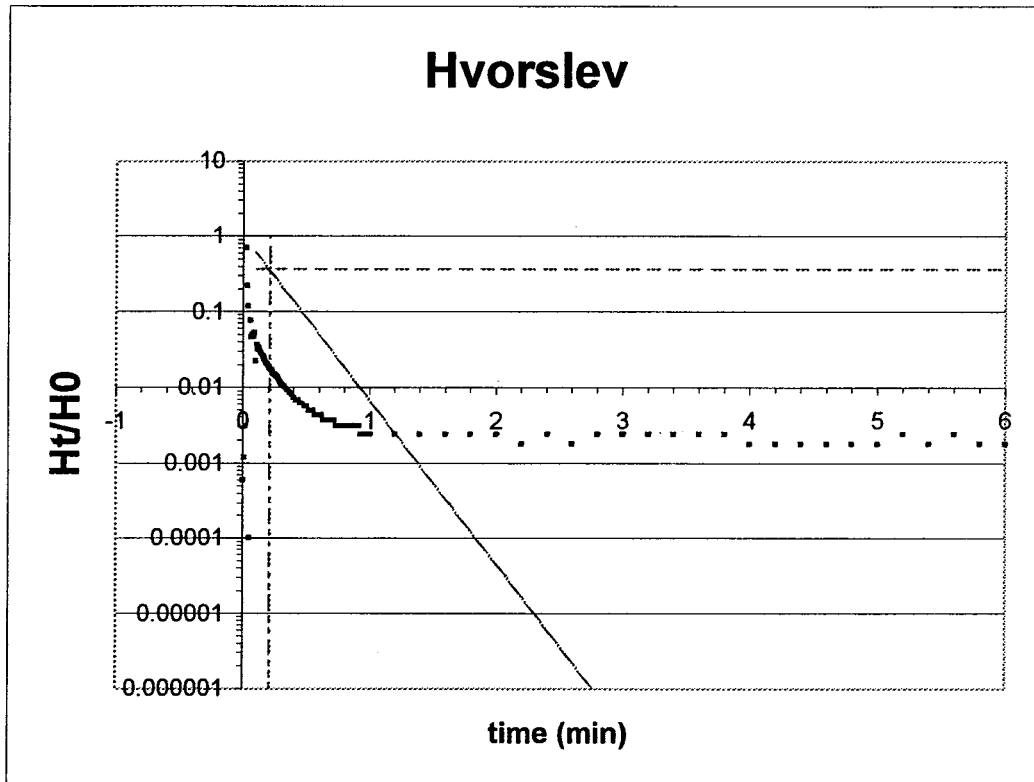
0.773	1.7072	0.07327
0.756	1.8065	0.071659
0.733	1.9118	0.069479
0.71	2.0233	0.067299
0.687	2.1415	0.065118
0.665	2.2667	0.063033
0.639	2.3992	0.060569
0.613	2.5397	0.058104
0.59	2.6885	0.055924
0.568	2.846	0.053839
0.539	3.0128	0.05109
0.516	3.1897	0.04891
0.491	3.377	0.04654
0.465	3.5753	0.044076
0.439	3.7855	0.041611
0.414	4.0082	0.039242
0.391	4.244	0.037062
0.362	4.4938	0.034313
0.339	4.7585	0.032133
0.317	5.0388	0.030047
0.299	5.3357	0.028341
0.268	5.6502	0.025403
0.251	5.9833	0.023791
0.228	6.3362	0.021611
0.203	6.71	0.019242
0.185	7.106	0.017536
0.168	7.5253	0.015924
0.151	7.9697	0.014313
0.137	8.4403	0.012986
0.123	8.9388	0.011659
0.103	9.4668	0.009763
0.091	10.0262	0.008626
0.08	10.6187	0.007583
0.068	11.2462	0.006445
0.06	11.911	0.005687
0.048	12.6152	0.00455
0.046	13.361	0.00436
0.034	14.151	0.003223
0.031	14.9878	0.002938
0.026	15.8743	0.002464

Well W-104B

CDM

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	39.1	128.4

t (min)	H _t /H ₀
0	0.000597
0.0083	0.001194
0.0166	0.003085
0.025	0.6999
0.0333	0.220498
0.0416	0.116716
0.05	9.95E-05
0.0583	0.076318
0.0666	0.045871
0.075	0.049055
0.0833	0.047164
0.0916	0.052139
0.1	0.022289
0.1083	0.036617
0.1166	0.031642
0.125	0.033532
0.1333	0.030348
0.1416	0.028557
0.15	0.026667
0.1583	0.025373
0.1666	0.023582
0.175	0.022289
0.1833	0.021095
0.1916	0.020398
0.2	0.019204
0.2083	0.01801
0.2166	0.017313
0.225	0.016716
0.2333	0.015522
0.2416	0.014826
0.25	0.014826
0.2583	0.014229
0.2666	0.013632
0.275	0.013035
0.2833	0.012338
0.2916	0.011741
0.3	0.011144
0.3083	0.011144
0.3166	0.010547
0.325	0.010547
0.3333	0.009851
0.35	0.009254
0.3666	0.008657
0.3833	0.00806
0.4	0.007363
0.4166	0.006766
0.4333	0.006766
0.45	0.006169
0.4666	0.006169
0.4833	0.005572
0.5	0.005572
0.5166	0.004876
0.5333	0.004876
0.55	0.004876
0.5666	0.004279
0.5833	0.004279
0.6	0.004279
0.6166	0.004279
0.6333	0.003682
0.65	0.003682
0.6666	0.003682



Fitted Line

t	H _t /H ₀
0.04	0.818730753
0.02	0.904837418
0.01	0.951229425
0.1	0.60653066
0.2	0.367879441
0.3	0.22313016
0.4	0.135335283
0.6	0.049787068
0.8	0.018315639
1	0.006737947
2	4.53999E-05
3	3.05902E-07
4	2.06115E-09
6	9.35762E-14
8	4.24835E-18
10	1.92875E-22

T₀

0.21

t	H _t /H ₀
0.21	0.81873075
0.21	0.90483742
0.21	0.95122942
0.21	0.60653066
0.21	0.36787944
0.21	0.22313016
0.21	0.13533528
0.21	0.04978707
0.21	0.01831564
0.21	0.00673795
0.21	4.54E-05
0.21	3.059E-07
0.21	2.0612E-09
0.21	9.3576E-14
0.21	4.2484E-18
0.21	1.9287E-22

m
-5

T₀
0.21

K (length/day)
128.4

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37

0.6833	0.003682
0.7	0.003682
0.7166	0.003682
0.7333	0.003085
0.75	0.003085
0.7666	0.003085
0.7833	0.003085
0.8	0.003085
0.8166	0.003085
0.8333	0.003085
0.85	0.003085
0.8666	0.003085
0.8833	0.003085
0.9	0.003085
0.9166	0.003085
0.9333	0.002388
0.95	0.002388
0.9666	0.002388
0.9833	0.002388
1	0.002388
1.2	0.002388
1.4	0.002388
1.6	0.002388
1.8	0.002388
2	0.002388
2.2	0.001791
2.4	0.002388
2.6	0.001791
2.8	0.002388
3	0.002388
3.2	0.002388
3.4	0.002388
3.6	0.002388
3.8	0.002388
4	0.001791
4.2	0.001791
4.4	0.001791
4.6	0.001791
4.8	0.001791
5	0.001791
5.2	0.002388
5.4	0.001791
5.6	0.002388
5.8	0.001791
6	0.001791
6.2	0.001791
6.4	0.001791
6.6	0.001791
6.8	0.001791
7	0.001791
7.2	0.001791
7.4	0.001791
7.6	0.001791
7.8	0.001791
8	0.001791
8.2	0.001791
8.4	0.001791
8.6	0.001791
8.8	0.001791
9	0.001791
9.2	0.001791
9.4	0.001791
9.6	0.001791
9.8	0.001791
10	0.001791

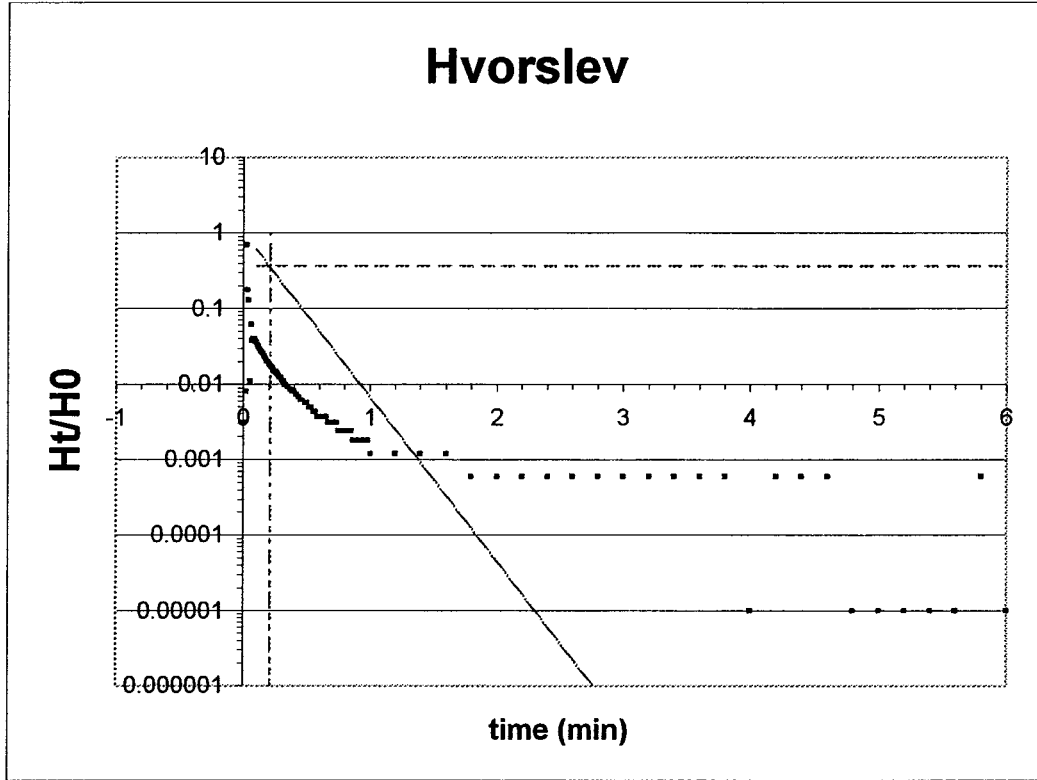
Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.006	0	0.000597
		0.012	0.0083	0.001194
		0.031	0.0166	0.003085
		7.034	0.025	0.6999
		2.216	0.0333	0.220498
		1.173	0.0416	0.116716
		0.001	0.05	9.95E-05
		0.767	0.0583	0.076318
		0.461	0.0666	0.045871
		0.493	0.075	0.049055
		0.474	0.0833	0.047164
		0.524	0.0916	0.052139
		0.224	0.1	0.022289
		0.368	0.1083	0.036617
		0.318	0.1166	0.031642
		0.337	0.125	0.033532
		0.305	0.1333	0.030348
		0.287	0.1416	0.028557
		0.268	0.15	0.026667
		0.255	0.1583	0.025373
		0.237	0.1666	0.023582
		0.224	0.175	0.022289
		0.212	0.1833	0.021095
		0.205	0.1916	0.020398
		0.193	0.2	0.019204
		0.181	0.2083	0.01801
		0.174	0.2166	0.017313
		0.168	0.225	0.016716
		0.156	0.2333	0.015522
		0.149	0.2416	0.014826
		0.149	0.25	0.014826
		0.143	0.2583	0.014229
		0.137	0.2666	0.013632
		0.131	0.275	0.013035
		0.124	0.2833	0.012338
		0.118	0.2916	0.011741
		0.112	0.3	0.011144
		0.112	0.3083	0.011144
		0.106	0.3166	0.010547
		0.106	0.325	0.010547
		0.099	0.3333	0.009851
		0.093	0.35	0.009254
		0.087	0.3666	0.008657
		0.081	0.3833	0.00806
		0.074	0.4	0.007363
		0.068	0.4166	0.006766
		0.068	0.4333	0.006766
		0.062	0.45	0.006169
		0.062	0.4666	0.006169
		0.056	0.4833	0.005572
		0.056	0.5	0.005572
		0.049	0.5166	0.004876
		0.049	0.5333	0.004876
		0.049	0.55	0.004876
		0.043	0.5666	0.004279
		0.043	0.5833	0.004279
		0.043	0.6	0.004279
		0.043	0.6166	0.004279

0.037	0.6333	0.003682
0.037	0.65	0.003682
0.037	0.6666	0.003682
0.037	0.6833	0.003682
0.037	0.7	0.003682
0.037	0.7166	0.003682
0.031	0.7333	0.003085
0.031	0.75	0.003085
0.031	0.7666	0.003085
0.031	0.7833	0.003085
0.031	0.8	0.003085
0.031	0.8166	0.003085
0.031	0.8333	0.003085
0.031	0.85	0.003085
0.031	0.8666	0.003085
0.031	0.8833	0.003085
0.031	0.9	0.003085
0.031	0.9166	0.003085
0.024	0.9333	0.002388
0.024	0.95	0.002388
0.024	0.9666	0.002388
0.024	0.9833	0.002388
0.024	1	0.002388
0.024	1.2	0.002388
0.024	1.4	0.002388
0.024	1.6	0.002388
0.024	1.8	0.002388
0.024	2	0.002388
0.018	2.2	0.001791
0.024	2.4	0.002388
0.018	2.6	0.001791
0.024	2.8	0.002388
0.024	3	0.002388
0.024	3.2	0.002388
0.024	3.4	0.002388
0.024	3.6	0.002388
0.024	3.8	0.002388
0.018	4	0.001791
0.018	4.2	0.001791
0.018	4.4	0.001791
0.018	4.6	0.001791
0.018	4.8	0.001791
0.018	5	0.001791
0.024	5.2	0.002388
0.018	5.4	0.001791
0.024	5.6	0.002388
0.018	5.8	0.001791
0.018	6	0.001791
0.018	6.2	0.001791
0.018	6.4	0.001791
0.018	6.6	0.001791
0.018	6.8	0.001791
0.018	7	0.001791
0.018	7.2	0.001791
0.018	7.4	0.001791
0.018	7.6	0.001791
0.018	7.8	0.001791
0.018	8	0.001791
0.018	8.2	0.001791
0.018	8.4	0.001791
0.018	8.6	0.001791
0.018	8.8	0.001791
0.018	9	0.001791
0.018	9.2	0.001791
0.018	9.4	0.001791
0.018	9.6	0.001791
0.018	9.8	0.001791
0.018	10	0.001791

c44w104b test 2 step 1
 Hvorslev Slug Test Method

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	39.1	128.4

t (min)	H _t /H ₀
0	0.003085
0.0083	0.003085
0.0166	0.00806
0.025	0.00498
0.0333	0.1801
0.0416	0.127264
0.05	0.011144
0.0583	0.061393
0.0666	0.037811
0.075	0.040299
0.0833	0.039701
0.0916	0.037214
0.1	0.035323
0.1083	0.032836
0.1166	0.031045
0.125	0.029154
0.1333	0.027861
0.1416	0.026667
0.15	0.025373
0.1583	0.023582
0.1666	0.022886
0.175	0.021692
0.1833	0.020398
0.1916	0.019801
0.2	0.018607
0.2083	0.01801
0.2166	0.017313
0.225	0.016716
0.2333	0.015522
0.2416	0.014826
0.25	0.014826
0.2583	0.014229
0.2666	0.013632
0.275	0.013035
0.2833	0.012338
0.2916	0.012338
0.3	0.011741
0.3083	0.011144
0.3166	0.011144
0.325	0.009851
0.3333	0.009851
0.35	0.009254
0.3666	0.008657
0.3833	0.00806
0.4	0.00806
0.4166	0.007363
0.4333	0.006766
0.45	0.006169
0.4666	0.006169
0.4833	0.005572
0.5	0.005572
0.5166	0.004876
0.5333	0.004876
0.55	0.004279
0.5666	0.004279
0.5833	0.003682
0.6	0.003682
0.6166	0.003682
0.6333	0.003682
0.65	0.003682
0.6666	0.003085



Fitted Line

T₀

t

H_t/H₀

0.21

0.04	0.818730753
0.02	0.904837418
0.01	0.951229425
0.1	0.60653066
0.2	0.367879441
0.3	0.22313016
0.4	0.135335283
0.6	0.049787068
0.8	0.018315639
1	0.006737947
2	4.53999E-05
3	3.05902E-07
4	2.06115E-09
6	9.35762E-14
8	4.24835E-18
10	1.92875E-22
	1

0.21	0.81873075
0.21	0.90483742
0.21	0.95122942
0.21	0.60653066
0.21	0.36787944
0.21	0.22313016
0.21	0.13533528
0.21	0.04978707
0.21	0.01831564
0.21	0.00673795
0.21	4.54E-05
0.21	3.059E-07
0.21	2.0612E-09
0.21	9.3576E-14
0.21	4.2484E-18
0.21	1.9287E-22
0.21	1

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37

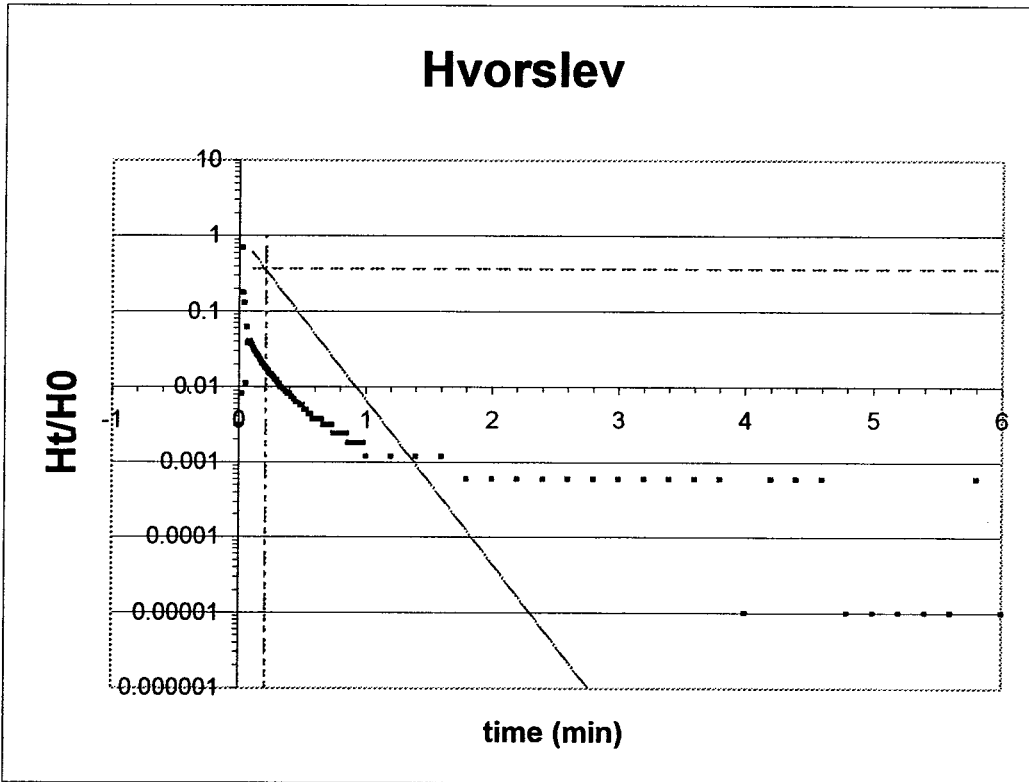
0.6833	0.003085
0.7	0.003085
0.7166	0.003085
0.7333	0.003085
0.75	0.002388
0.7666	0.002388
0.7833	0.002388
0.8	0.002388
0.8166	0.002388
0.8333	0.002388
0.85	0.002388
0.8666	0.001791
0.8833	0.001791
0.9	0.001791
0.9166	0.001791
0.9333	0.001791
0.95	0.001791
0.9666	0.001791
0.9833	0.001791
1	0.001194
1.2	0.001194
1.4	0.001194
1.6	0.001194
1.8	0.000597
2	0.000597
2.2	0.000597
2.4	0.000597
2.6	0.000597
2.8	0.000597
3	0.000597
3.2	0.000597
3.4	0.000597
3.6	0.000597
3.8	0.000597
4	9.95E-06
4.2	0.000597
4.4	0.000597
4.6	0.000597
4.8	9.95E-06
5	9.95E-06
5.2	9.95E-06
5.4	9.95E-06
5.6	9.95E-06
5.8	0.000597
6	9.95E-06
6.2	0.000597
6.4	0.000597
6.6	0.000597
6.8	0.000597
7	0.000597
7.2	0.000597
7.4	0.000597
7.6	0.000597
7.8	0.000597
8	0.000597
8.2	0.000597
8.4	0.000597
8.6	0.000597
8.8	0.000597
9	0.000597
9.2	0.000597
9.4	0.000597
9.6	0.000597
9.8	0.000597
10	0.000597

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀	
			0.031	0	0.003085
			0.031	0.0083	0.003085
			0.081	0.0166	0.00806
			7.04	0.025	0.700498
			1.81	0.0333	0.1801
			1.279	0.0416	0.127264
			0.112	0.05	0.011144
			0.617	0.0583	0.061393
			0.38	0.0666	0.037811
			0.405	0.075	0.040299
			0.399	0.0833	0.039701
			0.374	0.0916	0.037214
			0.355	0.1	0.035323
			0.33	0.1083	0.032836
			0.312	0.1166	0.031045
			0.293	0.125	0.029154
			0.28	0.1333	0.027861
			0.268	0.1416	0.026667
			0.255	0.15	0.025373
			0.237	0.1583	0.023582
			0.23	0.1666	0.022886
			0.218	0.175	0.021692
			0.205	0.1833	0.020398
			0.199	0.1916	0.019801
			0.187	0.2	0.018607
			0.181	0.2083	0.01801
			0.174	0.2166	0.017313
			0.168	0.225	0.016716
			0.156	0.2333	0.015522
			0.149	0.2416	0.014826
			0.149	0.25	0.014826
			0.143	0.2583	0.014229
			0.137	0.2666	0.013632
			0.131	0.275	0.013035
			0.124	0.2833	0.012338
			0.124	0.2916	0.012338
			0.118	0.3	0.011741
			0.112	0.3083	0.011144
			0.112	0.3166	0.011144
			0.099	0.325	0.009851
			0.099	0.3333	0.009851
			0.093	0.35	0.009254
			0.087	0.3666	0.008657
			0.081	0.3833	0.00806
			0.081	0.4	0.00806
			0.074	0.4166	0.007363
			0.068	0.4333	0.006766
			0.062	0.45	0.006169
			0.062	0.4666	0.006169
			0.056	0.4833	0.005572
			0.056	0.5	0.005572
			0.049	0.5166	0.004876
			0.049	0.5333	0.004876
			0.043	0.55	0.004279
			0.043	0.5666	0.004279
			0.037	0.5833	0.003682
			0.037	0.6	0.003682
			0.037	0.6166	0.003682

0.037	0.6333	0.003682
0.037	0.65	0.003682
0.031	0.6666	0.003085
0.031	0.6833	0.003085
0.031	0.7	0.003085
0.031	0.7166	0.003085
0.031	0.7333	0.003085
0.024	0.75	0.002388
0.024	0.7666	0.002388
0.024	0.7833	0.002388
0.024	0.8	0.002388
0.024	0.8166	0.002388
0.024	0.8333	0.002388
0.024	0.85	0.002388
0.018	0.8666	0.001791
0.018	0.8833	0.001791
0.018	0.9	0.001791
0.018	0.9166	0.001791
0.018	0.9333	0.001791
0.018	0.95	0.001791
0.018	0.9666	0.001791
0.018	0.9833	0.001791
0.012	1	0.001194
0.012	1.2	0.001194
0.012	1.4	0.001194
0.012	1.6	0.001194
0.006	1.8	0.000597
0.006	2	0.000597
0.006	2.2	0.000597
0.006	2.4	0.000597
0.006	2.6	0.000597
0.006	2.8	0.000597
0.006	3	0.000597
0.006	3.2	0.000597
0.006	3.4	0.000597
0.006	3.6	0.000597
0.006	3.8	0.000597
0.0001	4	9.95E-06
0.006	4.2	0.000597
0.006	4.4	0.000597
0.006	4.6	0.000597
0.0001	4.8	9.95E-06
0.0001	5	9.95E-06
0.0001	5.2	9.95E-06
0.0001	5.4	9.95E-06
0.0001	5.6	9.95E-06
0.006	5.8	0.000597
0.0001	6	9.95E-06
0.006	6.2	0.000597
0.006	6.4	0.000597
0.006	6.6	0.000597
0.006	6.8	0.000597
0.006	7	0.000597
0.006	7.2	0.000597
0.006	7.4	0.000597
0.006	7.6	0.000597
0.006	7.8	0.000597
0.006	8	0.000597
0.006	8.2	0.000597
0.006	8.4	0.000597
0.006	8.6	0.000597
0.006	8.8	0.000597
0.006	9	0.000597
0.006	9.2	0.000597
0.006	9.4	0.000597
0.006	9.6	0.000597
0.006	9.8	0.000597
0.006	10	0.000597

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	(m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	39.1		128.4

t (min)	H _t /H ₀
0	0.003085
0.0083	0.003085
0.0166	0.00806
0.025	0.700498
0.0333	0.1801
0.0416	0.127264
0.05	0.011144
0.0583	0.061393
0.0666	0.037811
0.075	0.040299
0.0833	0.039701
0.0916	0.037214
0.1	0.035323
0.1083	0.032836
0.1166	0.031045
0.125	0.029154
0.1333	0.027861
0.1416	0.026667
0.15	0.025373
0.1583	0.023582
0.1666	0.022886
0.175	0.021692
0.1833	0.020398
0.1916	0.019801
0.2	0.018607
0.2083	0.01801
0.2166	0.017313
0.225	0.016716
0.2333	0.015522
0.2416	0.014826
0.25	0.014826
0.2583	0.014229
0.2666	0.013632
0.275	0.013035
0.2833	0.012338
0.2916	0.012338
0.3	0.011741
0.3083	0.011144
0.3166	0.011144
0.325	0.009851
0.3333	0.009851
0.35	0.009254
0.3666	0.008657
0.3833	0.00806
0.4	0.00806
0.4166	0.007363
0.4333	0.006766
0.45	0.006169
0.4666	0.006169
0.4833	0.005572
0.5	0.005572
0.5166	0.004876
0.5333	0.004876
0.55	0.004279
0.5666	0.004279
0.5833	0.003682
0.6	0.003682
0.6166	0.003682
0.6333	0.003682
0.65	0.003682
0.6666	0.003085



m
-5
T₀
0.21
K (length/day)
128.4

Fitted Line

t	H _t /H ₀
0.04	0.818730753
0.02	0.904837418
0.01	0.951229425
0.1	0.60653066
0.2	0.367879441
0.3	0.22313016
0.4	0.135335283
0.6	0.049787068
0.8	0.018315639
1	0.006737947
2	4.53999E-05
3	3.05902E-07
4	2.06115E-09
6	9.35762E-14
8	4.24835E-18
10	1.92875E-22
1	

T₀

T ₀	H _t /H ₀
0.21	0.81873075
0.21	0.90483742
0.21	0.95122942
0.21	0.60653066
0.21	0.36787944
0.21	0.22313016
0.21	0.13533528
0.21	0.04978707
0.21	0.01831564
0.21	0.00673795
0.21	4.54E-05
0.21	3.059E-07
0.21	2.0612E-09
0.21	9.3576E-14
0.21	4.2484E-18
0.21	1.9287E-22
0.21	1

m	T ₀	K (length/day)
0.1	0.21	0.37
0.2	0.21	0.37
0.3	0.21	0.37
0.4	0.21	0.37
0.6	0.21	0.37
0.8	0.21	0.37
1	0.21	0.37
2	0.21	0.37
3	0.21	0.37
4	0.21	0.37
6	0.21	0.37
8	0.21	0.37
10	0.21	0.37

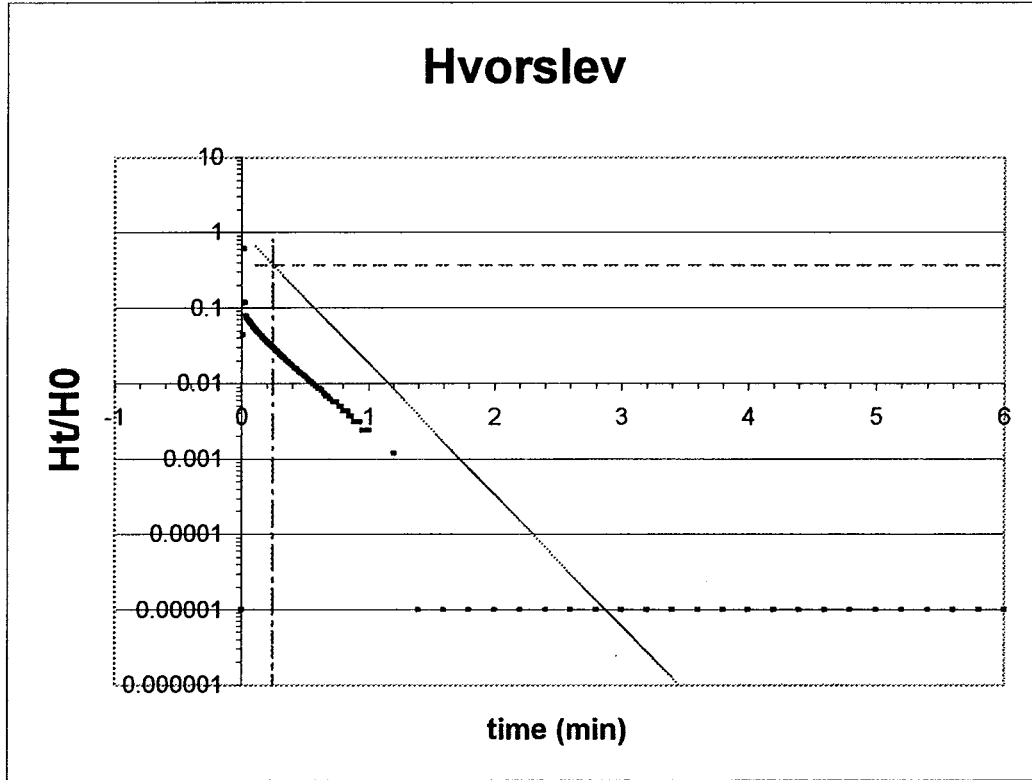
0.6833	0.003085
0.7	0.003085
0.7166	0.003085
0.7333	0.003085
0.75	0.002388
0.7666	0.002388
0.7833	0.002388
0.8	0.002388
0.8166	0.002388
0.8333	0.002388
0.85	0.002388
0.8666	0.001791
0.8833	0.001791
0.9	0.001791
0.9166	0.001791
0.9333	0.001791
0.95	0.001791
0.9666	0.001791
0.9833	0.001791
1	0.001194
1.2	0.001194
1.4	0.001194
1.6	0.001194
1.8	0.000597
2	0.000597
2.2	0.000597
2.4	0.000597
2.6	0.000597
2.8	0.000597
3	0.000597
3.2	0.000597
3.4	0.000597
3.6	0.000597
3.8	0.000597
4	9.95E-06
4.2	0.000597
4.4	0.000597
4.6	0.000597
4.8	9.95E-06
5	9.95E-06
5.2	9.95E-06
5.4	9.95E-06
5.6	9.95E-06
5.8	0.000597
6	9.95E-06
6.2	0.000597
6.4	0.000597
6.6	0.000597
6.8	0.000597
7	0.000597
7.2	0.000597
7.4	0.000597
7.6	0.000597
7.8	0.000597
8	0.000597
8.2	0.000597
8.4	0.000597
8.6	0.000597
8.8	0.000597
9	0.000597
9.2	0.000597
9.4	0.000597
9.6	0.000597
9.8	0.000597
10	0.000597

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _r /H ₀
		0.031	0	0.003085
		0.031	0.0083	0.003085
		0.081	0.0166	0.00806
		7.04	0.025	0.700498
		1.81	0.0333	0.1801
		1.279	0.0416	0.127264
		0.112	0.05	0.011144
		0.617	0.0583	0.061393
		0.38	0.0666	0.037811
		0.405	0.075	0.040299
		0.399	0.0833	0.039701
		0.374	0.0916	0.037214
		0.355	0.1	0.035323
		0.33	0.1083	0.032836
		0.312	0.1166	0.031045
		0.293	0.125	0.029154
		0.28	0.1333	0.027861
		0.268	0.1416	0.026667
		0.255	0.15	0.025373
		0.237	0.1583	0.023582
		0.23	0.1666	0.022886
		0.218	0.175	0.021692
		0.205	0.1833	0.020398
		0.199	0.1916	0.019801
		0.187	0.2	0.018607
		0.181	0.2083	0.01801
		0.174	0.2166	0.017313
		0.168	0.225	0.016716
		0.156	0.2333	0.015522
		0.149	0.2416	0.014826
		0.149	0.25	0.014826
		0.143	0.2583	0.014229
		0.137	0.2666	0.013632
		0.131	0.275	0.013035
		0.124	0.2833	0.012338
		0.124	0.2916	0.012338
		0.118	0.3	0.011741
		0.112	0.3083	0.011144
		0.112	0.3166	0.011144
		0.099	0.325	0.009851
		0.099	0.3333	0.009851
		0.093	0.35	0.009254
		0.087	0.3666	0.008657
		0.081	0.3833	0.00806
		0.081	0.4	0.00806
		0.074	0.4166	0.007363
		0.068	0.4333	0.006766
		0.062	0.45	0.006169
		0.062	0.4666	0.006169
		0.056	0.4833	0.005572
		0.056	0.5	0.005572
		0.049	0.5166	0.004876
		0.049	0.5333	0.004876
		0.043	0.55	0.004279
		0.043	0.5666	0.004279
		0.037	0.5833	0.003682
		0.037	0.6	0.003682
		0.037	0.6166	0.003682

0.037	0.6333	0.003682
0.037	0.65	0.003682
0.031	0.6666	0.003085
0.031	0.6833	0.003085
0.031	0.7	0.003085
0.031	0.7166	0.003085
0.031	0.7333	0.003085
0.024	0.75	0.002388
0.024	0.7666	0.002388
0.024	0.7833	0.002388
0.024	0.8	0.002388
0.024	0.8166	0.002388
0.024	0.8333	0.002388
0.024	0.85	0.002388
0.018	0.8666	0.001791
0.018	0.8833	0.001791
0.018	0.9	0.001791
0.018	0.9166	0.001791
0.018	0.9333	0.001791
0.018	0.95	0.001791
0.018	0.9666	0.001791
0.018	0.9833	0.001791
0.012	1	0.001194
0.012	1.2	0.001194
0.012	1.4	0.001194
0.012	1.6	0.001194
0.006	1.8	0.000597
0.006	2	0.000597
0.006	2.2	0.000597
0.006	2.4	0.000597
0.006	2.6	0.000597
0.006	2.8	0.000597
0.006	3	0.000597
0.006	3.2	0.000597
0.006	3.4	0.000597
0.006	3.6	0.000597
0.006	3.8	0.000597
0.0001	4	9.95E-06
0.006	4.2	0.000597
0.006	4.4	0.000597
0.006	4.6	0.000597
0.0001	4.8	9.95E-06
0.0001	5	9.95E-06
0.0001	5.2	9.95E-06
0.0001	5.4	9.95E-06
0.0001	5.6	9.95E-06
0.006	5.8	0.000597
0.0001	6	9.95E-06
0.006	6.2	0.000597
0.006	6.4	0.000597
0.006	6.6	0.000597
0.006	6.8	0.000597
0.006	7	0.000597
0.006	7.2	0.000597
0.006	7.4	0.000597
0.006	7.6	0.000597
0.006	7.8	0.000597
0.006	8	0.000597
0.006	8.2	0.000597
0.006	8.4	0.000597
0.006	8.6	0.000597
0.006	8.8	0.000597
0.006	9	0.000597
0.006	9.2	0.000597
0.006	9.4	0.000597
0.006	9.6	0.000597
0.006	9.8	0.000597
0.006	10	0.000597

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	34.2	112.3

t (min)	H _t /H ₀
0	9.95E-06
0.0083	0.04408
0.0166	0.610547
0.025	0.117313
0.0333	0.077612
0.0416	0.072637
0.05	0.069453
0.0583	0.066368
0.0666	0.063284
0.075	0.061393
0.0833	0.058308
0.0916	0.055224
0.1	0.053333
0.1083	0.051542
0.1166	0.049652
0.125	0.047761
0.1333	0.045871
0.1416	0.044677
0.15	0.042786
0.1583	0.042189
0.1666	0.040299
0.175	0.039104
0.1833	0.037811
0.1916	0.036617
0.2	0.035323
0.2083	0.034129
0.2166	0.032836
0.225	0.032239
0.2333	0.031045
0.2416	0.030348
0.25	0.029154
0.2583	0.028557
0.2666	0.027264
0.275	0.026667
0.2833	0.02607
0.2916	0.024776
0.3	0.024179
0.3083	0.023582
0.3166	0.022886
0.325	0.022289
0.3333	0.021692
0.35	0.020398
0.3666	0.019204
0.3833	0.01791
0.4	0.017313
0.4166	0.016119
0.4333	0.015522
0.45	0.014229
0.4666	0.013632
0.4833	0.013035
0.5	0.012338
0.5166	0.011741
0.5333	0.011144
0.55	0.010547
0.5666	0.009851
0.5833	0.009254
0.6	0.008657
0.6166	0.008657
0.6333	0.00806
0.65	0.007363
0.6666	0.006766



m
-4
T₀
0.24
K (length/day)
112.3

Fitted Line

T₀

t

H_t/H₀

0.24

0.04	0.852143789
0.02	0.923116346
0.01	0.960789439
0.1	0.670320046
0.2	0.449328964
0.3	0.301194212
0.4	0.201896518
0.6	0.090717953
0.8	0.040762204
1	0.018315639
2	0.000335463
3	6.14421E-06
4	1.12535E-07
6	3.77513E-11
8	1.26642E-14
10	4.24835E-18
	1

0.24	0.85214379
0.24	0.92311635
0.24	0.96078944
0.24	0.67032005
0.24	0.44932896
0.24	0.30119421
0.24	0.20189652
0.24	0.09071795
0.24	0.0407622
0.24	0.01831564
0.24	0.00033546
0.24	6.1442E-06
0.24	1.1254E-07
0.24	3.7751E-11
0.24	1.2664E-14
0.24	4.2484E-18
0.24	1

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37
10	0.37

0.6833	0.006766
0.7	0.006169
0.7166	0.005572
0.7333	0.005572
0.75	0.005572
0.7666	0.004876
0.7833	0.004876
0.8	0.004279
0.8166	0.004279
0.8333	0.004279
0.85	0.003682
0.8666	0.003682
0.8833	0.003085
0.9	0.003085
0.9166	0.003085
0.9333	0.003085
0.95	0.002388
0.9666	0.002388
0.9833	0.002388
1	0.002388
1.2	0.001194
1.4	9.95E-06
1.6	9.95E-06
1.8	9.95E-06
2	9.95E-06
2.2	9.95E-06
2.4	9.95E-06
2.6	9.95E-06
2.8	9.95E-06
3	9.95E-06
3.2	9.95E-06
3.4	9.95E-06
3.6	9.95E-06
3.8	9.95E-06
4	9.95E-06
4.2	9.95E-06
4.4	9.95E-06
4.6	9.95E-06
4.8	9.95E-06
5	9.95E-06
5.2	9.95E-06
5.4	9.95E-06
5.6	9.95E-06
5.8	9.95E-06
6	9.95E-06
6.2	9.95E-06
6.4	9.95E-06
6.6	9.95E-06
6.8	9.95E-06
7	9.95E-06
7.2	9.95E-06
7.4	9.95E-06
7.6	9.95E-06
7.8	9.95E-06
8	9.95E-06
8.2	9.95E-06
8.4	9.95E-06
8.6	9.95E-06
8.8	9.95E-06
9	9.95E-06
9.2	9.95E-06
9.4	9.95E-06
9.6	9.95E-06
9.8	9.95E-06
10	9.95E-06

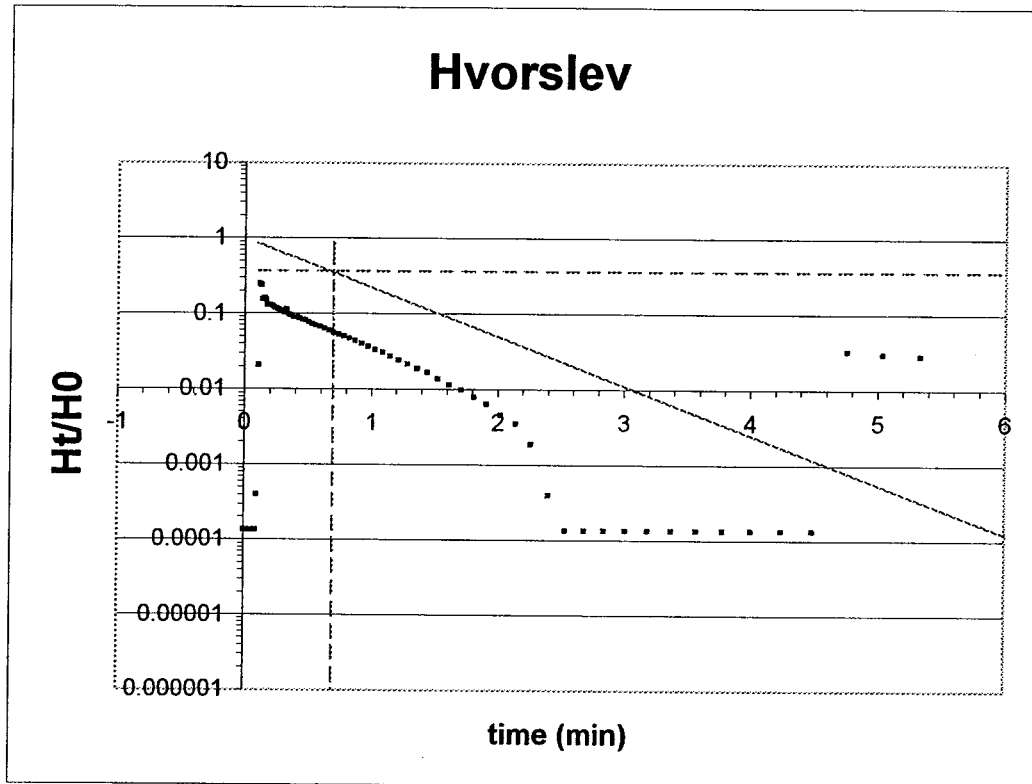
Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.0001	0	9.95E-06
	0.443	0.0083	0.04408	
	6.136	0.0166	0.610547	
	1.179	0.025	0.117313	
	0.78	0.0333	0.077612	
	0.73	0.0416	0.072637	
	0.698	0.05	0.069453	
	0.667	0.0583	0.066368	
	0.636	0.0666	0.063284	
	0.617	0.075	0.061393	
	0.586	0.0833	0.058308	
	0.555	0.0916	0.055224	
	0.536	0.1	0.053333	
	0.518	0.1083	0.051542	
	0.499	0.1166	0.049652	
	0.48	0.125	0.047761	
	0.461	0.1333	0.045871	
	0.449	0.1416	0.044677	
	0.43	0.15	0.042786	
	0.424	0.1583	0.042189	
	0.405	0.1666	0.040299	
	0.393	0.175	0.039104	
	0.38	0.1833	0.037811	
	0.368	0.1916	0.036617	
	0.355	0.2	0.035323	
	0.343	0.2083	0.034129	
	0.33	0.2166	0.032836	
	0.324	0.225	0.032239	
	0.312	0.2333	0.031045	
	0.305	0.2416	0.030348	
	0.293	0.25	0.029154	
	0.287	0.2583	0.028557	
	0.274	0.2666	0.027264	
	0.268	0.275	0.026667	
	0.262	0.2833	0.02607	
	0.249	0.2916	0.024776	
	0.243	0.3	0.024179	
	0.237	0.3083	0.023582	
	0.23	0.3166	0.022886	
	0.224	0.325	0.022289	
	0.218	0.3333	0.021692	
	0.205	0.35	0.020398	
	0.193	0.3666	0.019204	
	0.18	0.3833	0.01791	
	0.174	0.4	0.017313	
	0.162	0.4166	0.016119	
	0.156	0.4333	0.015522	
	0.143	0.45	0.014229	
	0.137	0.4666	0.013632	
	0.131	0.4833	0.013035	
	0.124	0.5	0.012338	
	0.118	0.5166	0.011741	
	0.112	0.5333	0.011144	
	0.106	0.55	0.010547	
	0.099	0.5666	0.009851	
	0.093	0.5833	0.009254	
	0.087	0.6	0.008657	
	0.087	0.6166	0.008657	

0.081	0.6333	0.00806
0.074	0.65	0.007363
0.068	0.6666	0.006766
0.068	0.6833	0.006766
0.062	0.7	0.006169
0.056	0.7166	0.005572
0.056	0.7333	0.005572
0.056	0.75	0.005572
0.049	0.7666	0.004876
0.049	0.7833	0.004876
0.043	0.8	0.004279
0.043	0.8166	0.004279
0.043	0.8333	0.004279
0.037	0.85	0.003682
0.037	0.8666	0.003682
0.031	0.8833	0.003085
0.031	0.9	0.003085
0.031	0.9166	0.003085
0.031	0.9333	0.003085
0.024	0.95	0.002388
0.024	0.9666	0.002388
0.024	0.9833	0.002388
0.024	1	0.002388
0.012	1.2	0.001194
0.0001	1.4	9.95E-06
0.0001	1.6	9.95E-06
0.0001	1.8	9.95E-06
0.0001	2	9.95E-06
0.0001	2.2	9.95E-06
0.0001	2.4	9.95E-06
0.0001	2.6	9.95E-06
0.0001	2.8	9.95E-06
0.0001	3	9.95E-06
0.0001	3.2	9.95E-06
0.0001	3.4	9.95E-06
0.0001	3.6	9.95E-06
0.0001	3.8	9.95E-06
0.0001	4	9.95E-06
0.0001	4.2	9.95E-06
0.0001	4.4	9.95E-06
0.0001	4.6	9.95E-06
0.0001	4.8	9.95E-06
0.0001	5	9.95E-06
0.0001	5.2	9.95E-06
0.0001	5.4	9.95E-06
0.0001	5.6	9.95E-06
0.0001	5.8	9.95E-06
0.0001	6	9.95E-06
0.0001	6.2	9.95E-06
0.0001	6.4	9.95E-06
0.0001	6.6	9.95E-06
0.0001	6.8	9.95E-06
0.0001	7	9.95E-06
0.0001	7.2	9.95E-06
0.0001	7.4	9.95E-06
0.0001	7.6	9.95E-06
0.0001	7.8	9.95E-06
0.0001	8	9.95E-06
0.0001	8.2	9.95E-06
0.0001	8.4	9.95E-06
0.0001	8.6	9.95E-06
0.0001	8.8	9.95E-06
0.0001	9	9.95E-06
0.0001	9.2	9.95E-06
0.0001	9.4	9.95E-06
0.0001	9.6	9.95E-06
0.0001	9.8	9.95E-06
0.0001	10	9.95E-06

Well W-105A

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	11.7	38.5

t (min)	H _t /H ₀
0	0.000133
0.011	0.000133
0.022	0.000133
0.033	0.000133
0.044	0.000133
0.055	0.000133
0.066	0.000133
0.077	0.000133
0.088	0.000133
0.099	0.0004
0.11	0.020533
0.121	0.248
0.132	0.241467
0.143	0.156267
0.154	0.1616
0.165	0.152133
0.176	0.127733
0.187	0.1316
0.198	0.128533
0.209	0.125467
0.22	0.1224
0.231	0.119733
0.2427	0.117467
0.2552	0.113733
0.2683	0.111467
0.2823	0.1088
0.2972	0.105333
0.3128	0.101867
0.3295	0.111067
0.3472	0.096267
0.3658	0.0936
0.3857	0.088933
0.4067	0.088267
0.4288	0.0852
0.4523	0.081733
0.4772	0.079867
0.5035	0.0764
0.5315	0.072267
0.5612	0.0688
0.5925	0.065733
0.6257	0.0628
0.6608	0.058933
0.6982	0.055867
0.7377	0.052533
0.7795	0.049867
0.8238	0.0464
0.8708	0.042933
0.9207	0.039867
0.9733	0.036533
1.0292	0.033067
1.0883	0.0304
1.151	0.027333
1.2173	0.024
1.2877	0.021333
1.3622	0.018667
1.4412	0.016667
1.5248	0.013733
1.6133	0.011467
1.7072	0.009867
1.8065	0.008
1.9118	0.0064



m
-1.5
T₀
0.7
K (length/day)
38.5

Fitted Line

T₀

t	H _t /H ₀	T ₀
0.04	0.941764534	0.7
0.02	0.970445534	0.7
0.01	0.98511194	0.7
0.1	0.860707976	0.7
0.2	0.740818221	0.7
0.3	0.637628152	0.7
0.4	0.548811636	0.7
0.6	0.40656966	0.7
0.8	0.301194212	0.7
1	0.22313016	0.7
2	0.049787068	0.7
3	0.011108997	0.7
4	0.002478752	0.7
6	0.00012341	0.7
8	6.14421E-06	0.7
10	3.05902E-07	0.7

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37

2.0233	0.004533
2.1415	0.003467
2.2667	0.001867
2.3992	0.0004
2.5397	0.000133
2.6885	0.000133
2.846	0.000133
3.0128	0.000133
3.1897	0.000133
3.377	0.000133
3.5753	0.000133
3.7855	0.000133
4.0082	0.000133
4.244	0.000133
4.4938	0.000133
4.7585	0.032133
5.0388	0.030047
5.3357	0.028341
5.6502	
5.9833	
6.3362	
6.71	
7.106	
7.5253	
7.9697	
8.4403	
8.9388	
9.4668	
10.0262	
10.6187	
11.2462	
11.911	
12.6152	
13.361	
14.151	
14.9878	
15.8743	

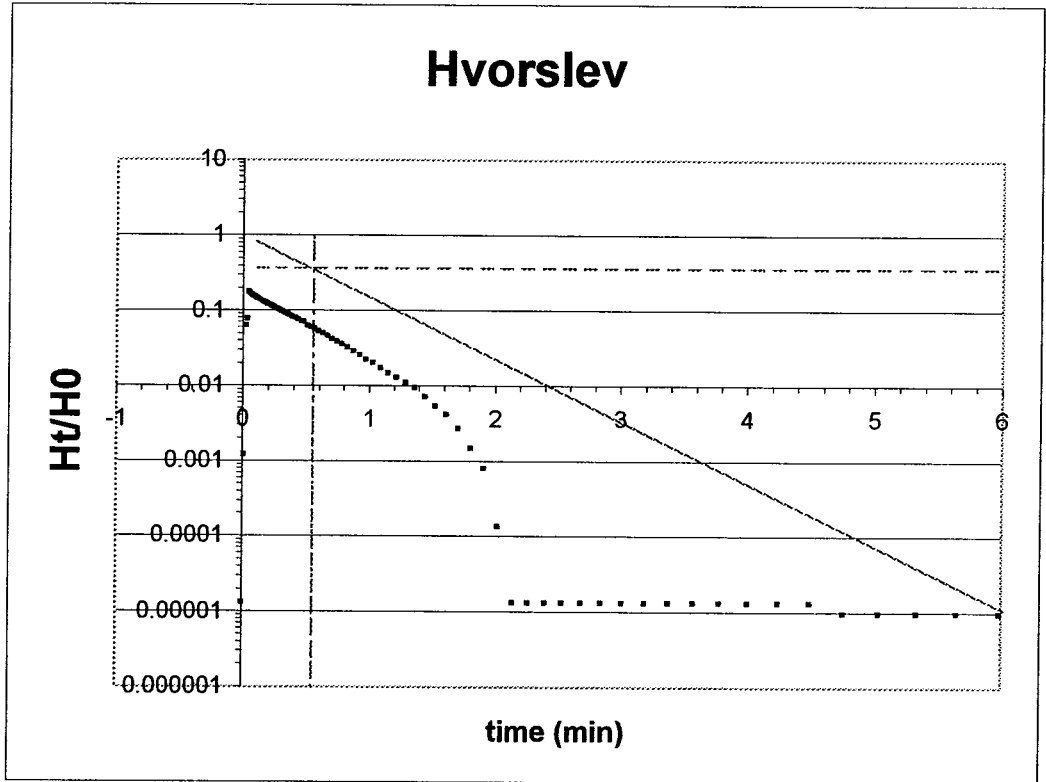
Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
0.001			0	0.000133
0.001			0.011	0.000133
0.001			0.022	0.000133
0.001			0.033	0.000133
0.001			0.044	0.000133
0.001			0.055	0.000133
0.001			0.066	0.000133
0.001			0.077	0.000133
0.001			0.088	0.000133
0.003			0.099	0.0004
0.154			0.11	0.020533
1.86			0.121	0.248
1.811			0.132	0.241467
1.172			0.143	0.156267
1.212			0.154	0.1616
1.141			0.165	0.152133
0.958			0.176	0.127733
0.987			0.187	0.1316
0.964			0.198	0.128533
0.941			0.209	0.125467
0.918			0.22	0.1224
0.898			0.231	0.119733
0.881			0.2427	0.117467
0.853			0.2552	0.113733
0.836			0.2683	0.111467
0.816			0.2823	0.1088
0.79			0.2972	0.105333
0.764			0.3128	0.101867
0.833			0.3295	0.111067
0.722			0.3472	0.096267
0.702			0.3658	0.0936
0.667			0.3857	0.088933
0.662			0.4067	0.088267
0.639			0.4288	0.0852
0.613			0.4523	0.081733
0.599			0.4772	0.079867
0.573			0.5035	0.0764
0.542			0.5315	0.072267
0.516			0.5612	0.0688
0.493			0.5925	0.065733
0.471			0.6257	0.0628
0.442			0.6608	0.058933
0.419			0.6982	0.055867
0.394			0.7377	0.052533
0.374			0.7795	0.049867
0.348			0.8238	0.0464
0.322			0.8708	0.042933
0.299			0.9207	0.039867
0.274			0.9733	0.036533
0.248			1.0292	0.033067
0.228			1.0883	0.0304
0.205			1.151	0.027333
0.18			1.2173	0.024
0.16			1.2877	0.021333
0.14			1.3622	0.018667
0.125			1.4412	0.016667
0.103			1.5248	0.013733
0.086			1.6133	0.011467

0.074	1.7072	0.009867
0.06	1.8065	0.008
0.048	1.9118	0.0064
0.034	2.0233	0.004533
0.026	2.1415	0.003467
0.014	2.2667	0.001867
0.003	2.3992	0.0004
0.001	2.5397	0.000133
0.001	2.6885	0.000133
0.001	2.846	0.000133
0.001	3.0128	0.000133
0.001	3.1897	0.000133
0.001	3.377	0.000133
0.001	3.5753	0.000133
0.001	3.7855	0.000133
0.001	4.0082	0.000133
0.001	4.244	0.000133
0.001	4.4938	0.000133
	4.7585	0
	5.0388	0
	5.3357	0
	5.6502	0
	5.9833	0
	6.3362	0
	6.71	0
	7.106	0
	7.5253	0
	7.9697	0
	8.4403	0
	8.9388	0
	9.4668	0
	10.0262	0
	10.6187	0
	11.2462	0
	11.911	0
	12.6152	0
	13.361	0
	14.151	0
	14.9878	0
	15.8743	0

c44w105a test 1 step 1
 Ivorslev Slug Test Method

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	14.9	49.0

t (min)	H _t /H ₀
0	1.33E-05
0.011	0.0012
0.022	0.062
0.033	0.0768
0.044	0.179067
0.055	0.171067
0.066	0.164267
0.077	0.159333
0.088	0.155467
0.099	0.150133
0.11	0.1464
0.121	0.142133
0.132	0.1384
0.143	0.135333
0.154	0.131867
0.165	0.128933
0.176	0.125867
0.187	0.1228
0.198	0.119733
0.209	0.117067
0.22	0.1148
0.231	0.112133
0.2427	0.109467
0.2552	0.1064
0.2683	0.104133
0.2823	0.101067
0.2972	0.098133
0.3128	0.095467
0.3295	0.0924
0.3472	0.089333
0.3658	0.085867
0.3857	0.082133
0.4067	0.079467
0.4288	0.075333
0.4523	0.071867
0.4772	0.0704
0.5035	0.063067
0.5315	0.060133
0.5612	0.056267
0.5925	0.0528
0.6257	0.049067
0.6608	0.0456
0.6982	0.041467
0.7377	0.0384
0.7795	0.035333
0.8238	0.032267
0.8708	0.028533
0.9207	0.025467
0.9733	0.0224
1.0292	0.020133
1.0883	0.017467
1.151	0.0148
1.2173	0.012933
1.2877	0.011067
1.3622	0.009467
1.4412	0.0072
1.5248	0.005333
1.6133	0.004133
1.7072	0.002667
1.8065	0.001467
1.9118	0.0008



m
-1.9
T₀
0.55
K (length/day)
49.0

Fitted Line

T₀

t

H_t/H₀

0.55

0.04	0.926816207	0.55	0.92681621		
0.02	0.962712941	0.55	0.96271294		
0.01	0.981179362	0.55	0.98117936		
0.1	0.826959134	0.55	0.82695913	0.1	0.37
0.2	0.683861409	0.55	0.68386141	0.2	0.37
0.3	0.565525439	0.55	0.56552544	0.3	0.37
0.4	0.467666427	0.55	0.46766643	0.4	0.37
0.6	0.319819022	0.55	0.31981902	0.6	0.37
0.8	0.218711887	0.55	0.21871189	0.8	0.37
1	0.149568619	0.55	0.14956862	1	0.37
2	0.022370772	0.55	0.02237077	2	0.37
3	0.003345965	0.55	0.00334597	3	0.37
4	0.000500451	0.55	0.00050045	4	0.37
6	1.11955E-05	0.55	1.1195E-05	6	0.37
8	2.50452E-07	0.55	2.5045E-07	8	0.37
10	5.6028E-09	0.55	5.6028E-09	10	0.37
	1	0.55	1	10	0.37

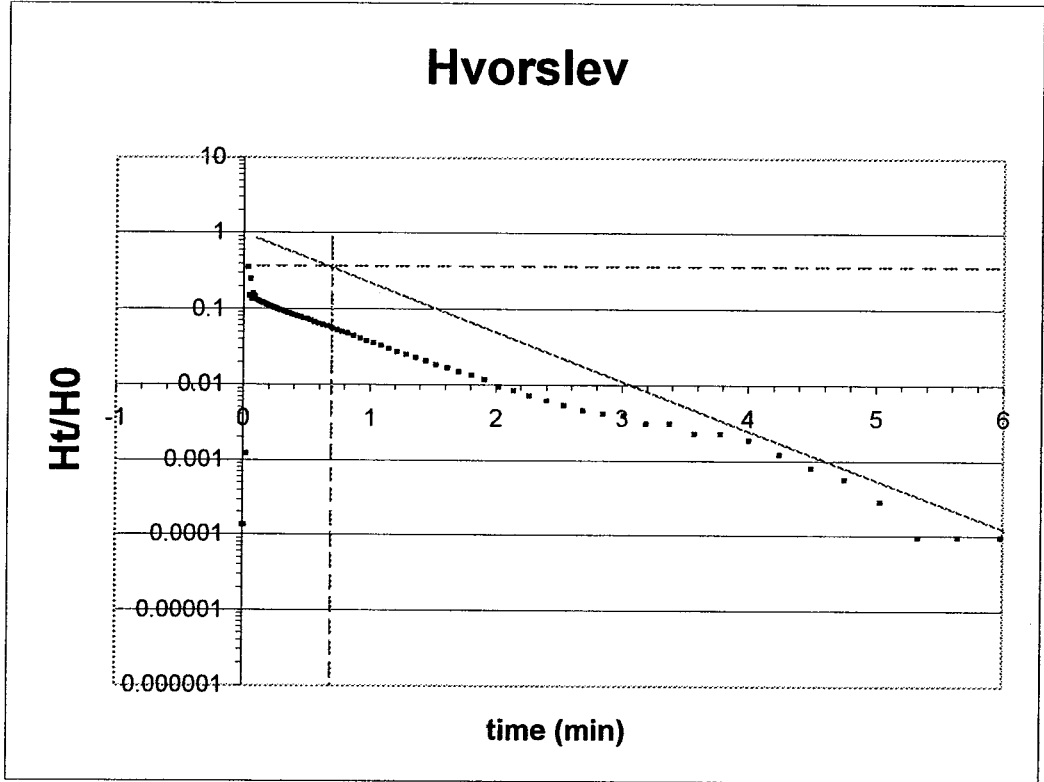
2.0233	0.000133
2.1415	1.33E-05
2.2667	1.33E-05
2.3992	1.33E-05
2.5397	1.33E-05
2.6885	1.33E-05
2.846	1.33E-05
3.0128	1.33E-05
3.1897	1.33E-05
3.377	1.33E-05
3.5753	1.33E-05
3.7855	1.33E-05
4.0082	1.33E-05
4.244	1.33E-05
4.4938	1.33E-05
4.7585	9.48E-06
5.0388	9.48E-06
5.3357	9.48E-06
5.6502	9.48E-06
5.9833	9.48E-06
6.3362	9.48E-06
6.71	9.48E-06
7.106	9.48E-06
7.5253	9.48E-06
7.9697	9.48E-06
8.4403	9.48E-06
8.9388	9.48E-06
9.4668	9.48E-06
10.0262	9.48E-06
10.6187	
11.2462	
11.911	
12.6152	
13.361	
14.151	
14.9878	
15.8743	

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _i /H ₀
		0.0001	0	1.33E-05
		0.009	0.011	0.0012
		0.465	0.022	0.062
		0.576	0.033	0.0768
		1.343	0.044	0.179067
		1.283	0.055	0.171067
		1.232	0.066	0.164267
		1.195	0.077	0.159333
		1.166	0.088	0.155467
		1.126	0.099	0.150133
		1.098	0.11	0.1464
		1.066	0.121	0.142133
		1.038	0.132	0.1384
		1.015	0.143	0.135333
		0.989	0.154	0.131867
		0.967	0.165	0.128933
		0.944	0.176	0.125867
		0.921	0.187	0.1228
		0.898	0.198	0.119733
		0.878	0.209	0.117067
		0.861	0.22	0.1148
		0.841	0.231	0.112133
		0.821	0.2427	0.109467
		0.798	0.2552	0.1064
		0.781	0.2683	0.104133
		0.758	0.2823	0.101067
		0.736	0.2972	0.098133
		0.716	0.3128	0.095467
		0.693	0.3295	0.0924
		0.67	0.3472	0.089333
		0.644	0.3658	0.085867
		0.616	0.3857	0.082133
		0.596	0.4067	0.079467
		0.565	0.4288	0.075333
		0.539	0.4523	0.071867
		0.528	0.4772	0.0704
		0.473	0.5035	0.063067
		0.451	0.5315	0.060133
		0.422	0.5612	0.056267
		0.396	0.5925	0.0528
		0.368	0.6257	0.049067
		0.342	0.6608	0.0456
		0.311	0.6982	0.041467
		0.288	0.7377	0.0384
		0.265	0.7795	0.035333
		0.242	0.8238	0.032267
		0.214	0.8708	0.028533
		0.191	0.9207	0.025467
		0.168	0.9733	0.0224
		0.151	1.0292	0.020133
		0.131	1.0883	0.017467
		0.111	1.151	0.0148
		0.097	1.2173	0.012933
		0.083	1.2877	0.011067
		0.071	1.3622	0.009467
		0.054	1.4412	0.0072
		0.04	1.5248	0.005333
		0.031	1.6133	0.004133

0.02	1.7072	0.002667
0.011	1.8065	0.001467
0.006	1.9118	0.0008
0.001	2.0233	0.000133
0.0001	2.1415	1.33E-05
0.0001	2.2667	1.33E-05
0.0001	2.3992	1.33E-05
0.0001	2.5397	1.33E-05
0.0001	2.6885	1.33E-05
0.0001	2.846	1.33E-05
0.0001	3.0128	1.33E-05
0.0001	3.1897	1.33E-05
0.0001	3.377	1.33E-05
0.0001	3.5753	1.33E-05
0.0001	3.7855	1.33E-05
0.0001	4.0082	1.33E-05
0.0001	4.244	1.33E-05
0.0001	4.4938	1.33E-05
0.0001	4.7585	9.48E-06
0.0001	5.0388	9.48E-06
0.0001	5.3357	9.48E-06
0.0001	5.6502	9.48E-06
0.0001	5.9833	9.48E-06
0.0001	6.3362	9.48E-06
0.0001	6.71	9.48E-06
0.0001	7.106	9.48E-06
0.0001	7.5253	9.48E-06
0.0001	7.9697	9.48E-06
0.0001	8.4403	9.48E-06
0.0001	8.9388	9.48E-06
0.0001	9.4668	9.48E-06
0.0001	10.0262	9.48E-06
	10.6187	0
	11.2462	0
	11.911	0
	12.6152	0
	13.361	0
	14.151	0
	14.9878	0
	15.8743	0

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	11.7	38.5

t (min)	H _t /H ₀
0	0.000133
0.011	0.000133
0.022	0.0012
0.033	0.353733
0.044	0.149067
0.055	0.249467
0.066	0.133467
0.077	0.159733
0.088	0.146
0.099	0.1312
0.11	0.128133
0.121	0.126267
0.132	0.1232
0.143	0.120533
0.154	0.118667
0.165	0.116
0.176	0.1144
0.187	0.112133
0.198	0.109867
0.209	0.1084
0.22	0.106133
0.231	0.104533
0.2427	0.102667
0.2552	0.1008
0.2683	0.098533
0.2823	0.096533
0.2972	0.094667
0.3128	0.0928
0.3295	0.090533
0.3472	0.087867
0.3658	0.086267
0.3857	0.0836
0.4067	0.081733
0.4288	0.079467
0.4523	0.0768
0.4772	0.074933
0.5035	0.073067
0.5315	0.0696
0.5612	0.066933
0.5925	0.063867
0.6257	0.0612
0.6608	0.058533
0.6982	0.055467
0.7377	0.052533
0.7795	0.049467
0.8238	0.0472
0.8708	0.044133
0.9207	0.041067
0.9733	0.038
1.0292	0.035333
1.0883	0.032667
1.151	0.03
1.2173	0.027333
1.2877	0.025067
1.3622	0.0228
1.4412	0.020533
1.5248	0.018267
1.6133	0.016667
1.7072	0.0148
1.8065	0.013333
1.9118	0.011733



m
-1.5
T₀
0.7
K (length/day)
38.5

Fitted Line

t	H _t /H ₀
0.04	0.941764534
0.02	0.970445534
0.01	0.98511194
0.1	0.860707976
0.2	0.740818221
0.3	0.637628152
0.4	0.548811636
0.6	0.40656966
0.8	0.301194212
1	0.22313016
2	0.049787068
3	0.011108997
4	0.002478752
6	0.00012341
8	6.14421E-06
10	3.05902E-07

T₀

t	H _t /H ₀	T ₀
0.7	0.94176453	0.7
0.7	0.97044553	0.7
0.7	0.98511194	0.7
0.7	0.86070798	0.1
0.7	0.74081822	0.2
0.7	0.63762815	0.3
0.7	0.54881164	0.4
0.7	0.40656966	0.6
0.7	0.30119421	0.8
0.7	0.22313016	1
0.7	0.04978707	2
0.7	0.011109	3
0.7	0.00247875	4
0.7	0.00012341	6
0.7	6.1442E-06	8
0.7	3.059E-07	10
0.7	1	10

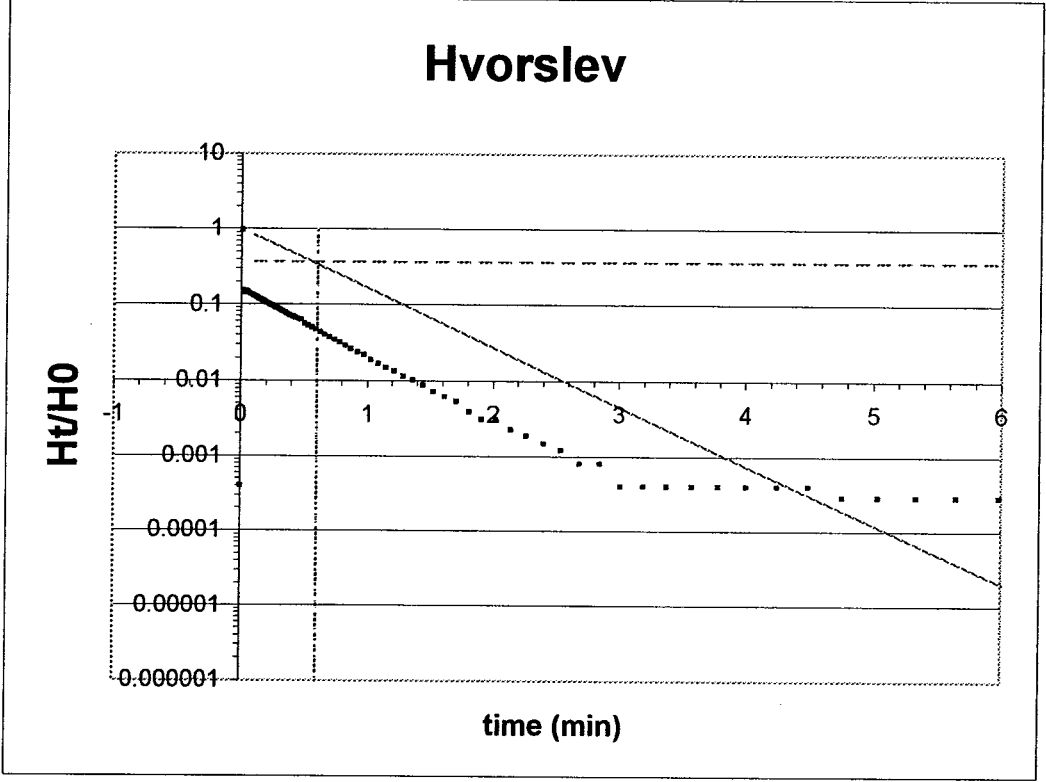
2.0233	0.009467
2.1415	0.0084
2.2667	0.0072
2.3992	0.006133
2.5397	0.005333
2.6885	0.004533
2.846	0.004133
3.0128	0.003867
3.1897	0.003067
3.377	0.003067
3.5753	0.002267
3.7855	0.002267
4.0082	0.001867
4.244	0.0012
4.4938	0.0008
4.7585	0.000569
5.0388	0.000284
5.3357	9.48E-05
5.6502	9.48E-05
5.9833	9.48E-05
6.3362	9.48E-05
6.71	9.48E-05
7.106	9.48E-05
7.5253	9.48E-05
7.9697	9.48E-05
8.4403	9.48E-05
8.9388	9.48E-05
9.4668	9.48E-05
10.0262	9.48E-05
10.6187	9.48E-05
11.2462	9.48E-05
11.911	
12.6152	
13.361	
14.151	
14.9878	
15.8743	

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _r /H ₀
		0.001	0	0.000133
		0.001	0.011	0.000133
		0.009	0.022	0.0012
		2.653	0.033	0.353733
		1.118	0.044	0.149067
		1.871	0.055	0.249467
		1.001	0.066	0.133467
		1.198	0.077	0.159733
		1.095	0.088	0.146
		0.984	0.099	0.1312
		0.961	0.11	0.128133
		0.947	0.121	0.126267
		0.924	0.132	0.1232
		0.904	0.143	0.120533
		0.89	0.154	0.118667
		0.87	0.165	0.116
		0.858	0.176	0.1144
		0.841	0.187	0.112133
		0.824	0.198	0.109867
		0.813	0.209	0.1084
		0.796	0.22	0.106133
		0.784	0.231	0.104533
		0.77	0.2427	0.102667
		0.756	0.2552	0.1008
		0.739	0.2683	0.098533
		0.724	0.2823	0.096533
		0.71	0.2972	0.094667
		0.696	0.3128	0.0928
		0.679	0.3295	0.090533
		0.659	0.3472	0.087867
		0.647	0.3658	0.086267
		0.627	0.3857	0.0836
		0.613	0.4067	0.081733
		0.596	0.4288	0.079467
		0.576	0.4523	0.0768
		0.562	0.4772	0.074933
		0.548	0.5035	0.073067
		0.522	0.5315	0.0696
		0.502	0.5612	0.066933
		0.479	0.5925	0.063867
		0.459	0.6257	0.0612
		0.439	0.6608	0.058533
		0.416	0.6982	0.055467
		0.394	0.7377	0.052533
		0.371	0.7795	0.049467
		0.354	0.8238	0.0472
		0.331	0.8708	0.044133
		0.308	0.9207	0.041067
		0.285	0.9733	0.038
		0.265	1.0292	0.035333
		0.245	1.0883	0.032667
		0.225	1.151	0.03
		0.205	1.2173	0.027333
		0.188	1.2877	0.025067
		0.171	1.3622	0.0228
		0.154	1.4412	0.020533
		0.137	1.5248	0.018267
		0.125	1.6133	0.016667

0.111	1.7072	0.0148
0.1	1.8065	0.013333
0.088	1.9118	0.011733
0.071	2.0233	0.009467
0.063	2.1415	0.0084
0.054	2.2667	0.0072
0.046	2.3992	0.006133
0.04	2.5397	0.005333
0.034	2.6885	0.004533
0.031	2.846	0.004133
0.029	3.0128	0.003867
0.023	3.1897	0.003067
0.023	3.377	0.003067
0.017	3.5753	0.002267
0.017	3.7855	0.002267
0.014	4.0082	0.001867
0.009	4.244	0.0012
0.006	4.4938	0.0008
0.006	4.7585	0.000569
0.003	5.0388	0.000284
0.001	5.3357	9.48E-05
0.001	5.6502	9.48E-05
0.001	5.9833	9.48E-05
0.001	6.3362	9.48E-05
0.001	6.71	9.48E-05
0.001	7.106	9.48E-05
0.001	7.5253	9.48E-05
0.001	7.9697	9.48E-05
0.001	8.4403	9.48E-05
0.001	8.9388	9.48E-05
0.001	9.4668	9.48E-05
0.001	10.0262	9.48E-05
0.001	10.6187	9.48E-05
0.001	11.2462	9.48E-05
	11.911	0
	12.6152	0
	13.361	0
	14.151	0
	14.9878	0
	15.8743	0

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	(m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	13.7		44.9

t (min)	H _t /H ₀
0	0.0004
0.011	0.967067
0.022	0.1456
0.033	0.1544
0.044	0.150933
0.055	0.1468
0.066	0.140667
0.077	0.1372
0.088	0.133867
0.099	0.1296
0.11	0.126533
0.121	0.1236
0.132	0.121333
0.143	0.117467
0.154	0.1148
0.165	0.112133
0.176	0.109467
0.187	0.1068
0.198	0.104533
0.209	0.102267
0.22	0.1
0.231	0.098133
0.2427	0.095467
0.2552	0.0932
0.2683	0.0912
0.2823	0.088533
0.2972	0.085867
0.3128	0.0832
0.3295	0.080533
0.3472	0.078
0.3658	0.074933
0.3857	0.072267
0.4067	0.0692
0.4288	0.066533
0.4523	0.063467
0.4772	0.062
0.5035	0.055467
0.5315	0.052133
0.5612	0.049867
0.5925	0.0468
0.6257	0.043333
0.6608	0.040267
0.6982	0.036933
0.7377	0.034533
0.7795	0.0316
0.8238	0.028533
0.8708	0.025867
0.9207	0.0236
0.9733	0.021733
1.0292	0.018667
1.0883	0.016667
1.151	0.0148
1.2173	0.013333
1.2877	0.011467
1.3622	0.010267
1.4412	0.0088
1.5248	0.0072
1.6133	0.006133
1.7072	0.005333
1.8065	0.003867
1.9118	0.003067



m
-1.8
T₀
0.6
K (length/day)
44.9

Fitted Line

t	H _t /H ₀	T ₀
0.04	0.930530896	0.6
0.02	0.964640293	0.6
0.01	0.982161032	0.6
0.1	0.835270211	0.6
0.2	0.697676326	0.6
0.3	0.582748252	0.6
0.4	0.486752256	0.6
0.6	0.339595526	0.6
0.8	0.236927759	0.6
1	0.165298888	0.6
2	0.027323722	0.6
3	0.004516581	0.6
4	0.000746586	0.6
6	2.03995E-05	0.6
8	5.5739E-07	0.6
10	1.523E-08	0.6

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37

2.0233	0.003067
2.1415	0.002267
2.2667	0.001867
2.3992	0.001467
2.5397	0.0012
2.6885	0.0008
2.846	0.0008
3.0128	0.0004
3.1897	0.0004
3.377	0.0004
3.5753	0.0004
3.7855	0.0004
4.0082	0.0004
4.244	0.0004
4.4938	0.0004
4.7585	0.000284
5.0388	0.000284
5.3357	0.000284
5.6502	0.000284
5.9833	0.000284
6.3362	0.000284
6.71	0.000284
7.106	0.000284
7.5253	0.000284
7.9697	0.000284
8.4403	0.000284
8.9388	0.000284
9.4668	0.000284
10.0262	0.000284
10.6187	9.48E-05
11.2462	9.48E-05
11.911	
12.6152	
13.361	
14.151	
14.9878	
15.8743	

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.003	0	0.0004
		7.253	0.011	0.967067
		1.092	0.022	0.1456
		1.158	0.033	0.1544
		1.132	0.044	0.150933
		1.101	0.055	0.1468
		1.055	0.066	0.140667
		1.029	0.077	0.1372
		1.004	0.088	0.133867
		0.972	0.099	0.1296
		0.949	0.11	0.126533
		0.927	0.121	0.1236
		0.91	0.132	0.121333
		0.881	0.143	0.117467
		0.861	0.154	0.1148
		0.841	0.165	0.112133
		0.821	0.176	0.109467
		0.801	0.187	0.1068
		0.784	0.198	0.104533
		0.767	0.209	0.102267
		0.75	0.22	0.1
		0.736	0.231	0.098133
		0.716	0.2427	0.095467
		0.699	0.2552	0.0932
		0.684	0.2683	0.0912
		0.664	0.2823	0.088533
		0.644	0.2972	0.085867
		0.624	0.3128	0.0832
		0.604	0.3295	0.080533
		0.585	0.3472	0.078
		0.562	0.3658	0.074933
		0.542	0.3857	0.072267
		0.519	0.4067	0.0692
		0.499	0.4288	0.066533
		0.476	0.4523	0.063467
		0.465	0.4772	0.062
		0.416	0.5035	0.055467
		0.391	0.5315	0.052133
		0.374	0.5612	0.049867
		0.351	0.5925	0.0468
		0.325	0.6257	0.043333
		0.302	0.6608	0.040267
		0.277	0.6982	0.036933
		0.259	0.7377	0.034533
		0.237	0.7795	0.0316
		0.214	0.8238	0.028533
		0.194	0.8708	0.025867
		0.177	0.9207	0.0236
		0.163	0.9733	0.021733
		0.14	1.0292	0.018667
		0.125	1.0883	0.016667
		0.111	1.151	0.0148
		0.1	1.2173	0.013333
		0.086	1.2877	0.011467
		0.077	1.3622	0.010267
		0.066	1.4412	0.0088
		0.054	1.5248	0.0072
		0.046	1.6133	0.006133

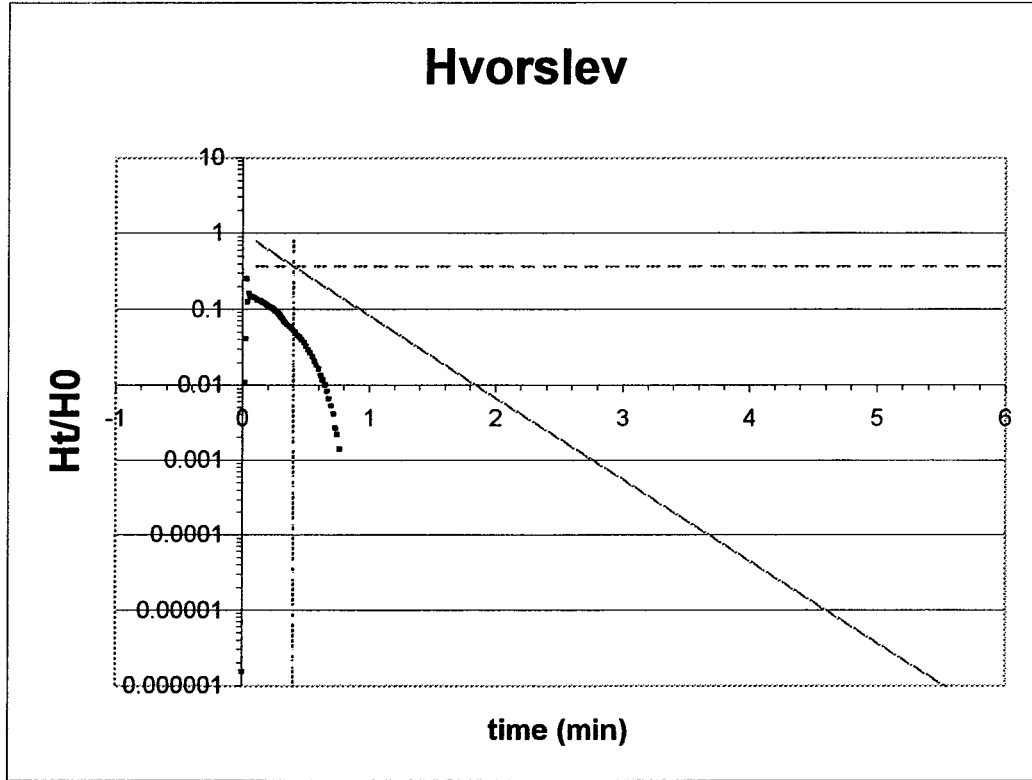
0.04	1.7072	0.005333
0.029	1.8065	0.003867
0.023	1.9118	0.003067
0.023	2.0233	0.003067
0.017	2.1415	0.002267
0.014	2.2667	0.001867
0.011	2.3992	0.001467
0.009	2.5397	0.0012
0.006	2.6885	0.0008
0.006	2.846	0.0008
0.003	3.0128	0.0004
0.003	3.1897	0.0004
0.003	3.377	0.0004
0.003	3.5753	0.0004
0.003	3.7855	0.0004
0.003	4.0082	0.0004
0.003	4.244	0.0004
0.003	4.4938	0.0004
0.003	4.7585	0.000284
0.003	5.0388	0.000284
0.003	5.3357	0.000284
0.003	5.6502	0.000284
0.003	5.9833	0.000284
0.003	6.3362	0.000284
0.003	6.71	0.000284
0.003	7.106	0.000284
0.003	7.5253	0.000284
0.003	7.9697	0.000284
0.003	8.4403	0.000284
0.003	8.9388	0.000284
0.003	9.4668	0.000284
0.003	10.0262	0.000284
0.001	10.6187	9.48E-05
0.001	11.2462	9.48E-05
	11.911	0
	12.6152	0
	13.361	0
	14.151	0
	14.9878	0
	15.8743	0

Well W-105B

CDM

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	20.5	67.4

t (min)	H _t /H ₀
0	1.54E-06
0.0083	1.54E-07
0.0166	0.010923
0.025	0.040769
0.0333	0.256
0.0416	0.122462
0.05	0.162923
0.0583	0.151077
0.0666	0.148
0.075	0.146154
0.0833	0.143231
0.0916	0.140923
0.1	0.137846
0.1083	0.135231
0.1166	0.132154
0.125	0.130462
0.1333	0.128154
0.1416	0.126462
0.15	0.123385
0.1583	0.122
0.1666	0.119846
0.175	0.117692
0.1833	0.115538
0.1916	0.112923
0.2	0.110154
0.2083	0.108462
0.2166	0.106308
0.225	0.104
0.2333	0.101846
0.2416	0.099231
0.25	0.096615
0.2583	0.094
0.2666	0.091385
0.275	0.088769
0.2833	0.085692
0.2916	0.082923
0.3	0.079538
0.3083	0.075538
0.3166	0.071538
0.325	0.068923
0.3333	0.065846
0.35	0.062769
0.3666	0.059231
0.3833	0.055385
0.4	0.052308
0.4166	0.049231
0.4333	0.045231
0.45	0.042154
0.4666	0.039077
0.4833	0.036
0.5	0.032
0.5166	0.029385
0.5333	0.026769
0.55	0.023692
0.5666	0.020615
0.5833	0.018462
0.6	0.016308
0.6166	0.013538
0.6333	0.011846
0.65	0.010154
0.6666	0.008308



Fitted Line

t	H _t /H ₀
0.04	0.904837418
0.02	0.951229425
0.01	0.975309912
0.1	0.778800783
0.2	0.606530666
0.3	0.472366553
0.4	0.367879441
0.6	0.22313016
0.8	0.135335283
1	0.082084999
2	0.006737947
3	0.000553084
4	4.53999E-05
6	3.05902E-07
8	2.06115E-09
10	1.38879E-11
1	1

T₀

t	H _t /H ₀	T ₀
0.4	0.90483742	0.4
0.4	0.95122942	0.4
0.4	0.97530991	0.4
0.4	0.77880078	0.1
0.4	0.60653066	0.2
0.4	0.47236655	0.3
0.4	0.36787944	0.4
0.4	0.22313016	0.6
0.4	0.13533528	0.8
0.4	0.082085	1
0.4	0.00673795	2
0.4	0.00055308	3
0.4	4.54E-05	4
0.4	3.059E-07	6
0.4	2.0612E-09	8
0.4	1.3888E-11	10
0.4	1	10

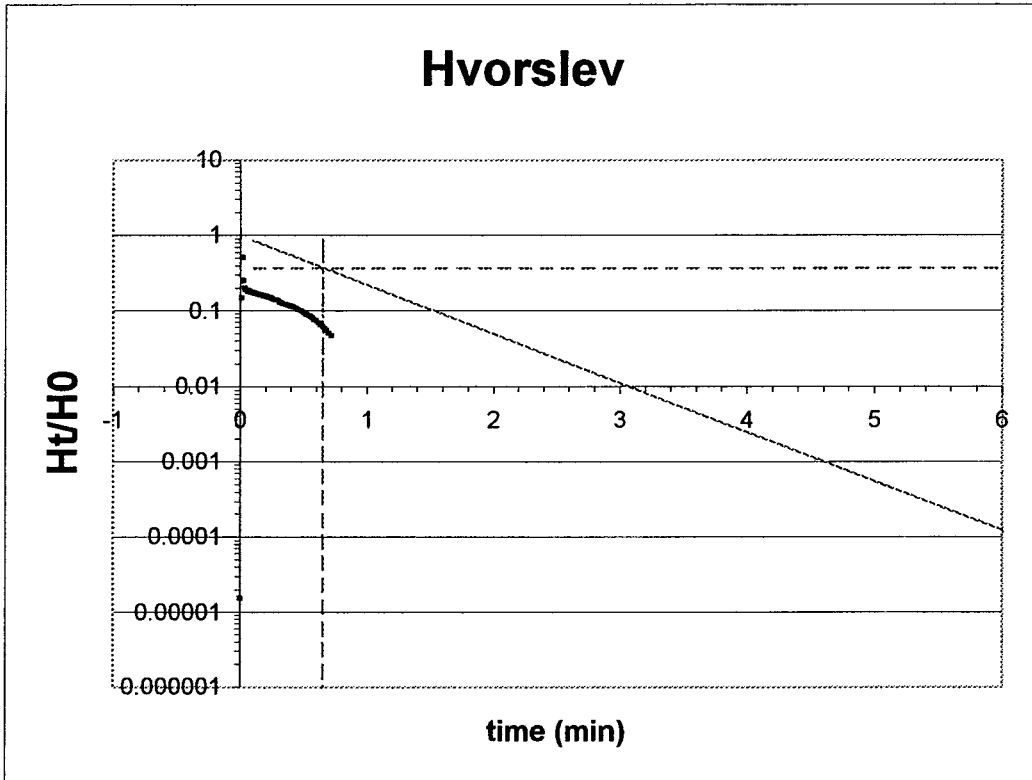
0.6833	0.006615
0.7	0.005231
0.7166	0.004
0.7333	0.002615
0.75	0.002154
0.7666	0.001385

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _i /H ₀
0.00001			0	1.54E-06
0.000001			0.0112	1.54E-07
	0.071		0.0223	0.010923
	0.265		0.0335	0.040769
	1.664		0.0447	0.256
	0.796		0.0558	0.122462
	1.059		0.067	0.162923
	0.982		0.0782	0.151077
	0.962		0.0893	0.148
	0.95		0.1005	0.146154
	0.931		0.1117	0.143231
	0.916		0.1228	0.140923
	0.896		0.134	0.137846
	0.879		0.1452	0.135231
	0.859		0.1563	0.132154
	0.848		0.1675	0.130462
	0.833		0.1787	0.128154
	0.822		0.1898	0.126462
	0.802		0.201	0.123385
	0.793		0.2122	0.122
	0.779		0.2233	0.119846
	0.765		0.235	0.117692
	0.751		0.2475	0.115538
	0.734		0.2607	0.112923
	0.716		0.2747	0.110154
	0.705		0.2895	0.108462
	0.691		0.3052	0.106308
	0.676		0.3218	0.104
	0.662		0.3395	0.101846
	0.645		0.3582	0.099231
	0.628		0.378	0.096615
	0.611		0.399	0.094
	0.594		0.4212	0.091385
	0.577		0.4447	0.088769
	0.557		0.4695	0.085692
	0.539		0.4958	0.082923
	0.517		0.5238	0.079538
	0.491		0.5535	0.075538
	0.465		0.5848	0.071538
	0.448		0.618	0.068923
	0.428		0.6532	0.065846
	0.408		0.6905	0.062769
	0.385		0.73	0.059231
	0.36		0.7718	0.055385
	0.34		0.8162	0.052308
	0.32		0.8632	0.049231
	0.294		0.913	0.045231
	0.274		0.9657	0.042154
	0.254		1.0215	0.039077
	0.234		1.0807	0.036
	0.208		1.1433	0.032
	0.191		1.2097	0.029385
	0.174		1.28	0.026769
	0.154		1.3545	0.023692
	0.134		1.4335	0.020615
	0.12		1.5172	0.018462
	0.106		1.6057	0.016308
	0.088		1.6995	0.013538

0.077	1.7988	0.011846
0.066	1.9042	0.010154
0.054	2.0157	0.008308
0.043	2.1338	0.006615
0.034	2.259	0.005231
0.026	2.3915	0.004
0.017	2.532	0.002615
0.014	2.6808	0.002154
0.009	2.8383	0.001385

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	12.6	41.5

t (min)	H _t /H ₀
0	1.54E-05
0.0083	0.149231
0.0166	0.511692
0.025	0.252
0.0333	0.198923
0.0416	0.194462
0.05	0.187846
0.0583	0.181231
0.0666	0.184
0.075	0.184
0.0833	0.18
0.0916	0.178308
0.1	0.176
0.1083	0.174769
0.1166	0.172462
0.125	0.170769
0.1333	0.168615
0.1416	0.167231
0.15	0.165538
0.1583	0.164154
0.1666	0.162923
0.175	0.162
0.1833	0.159846
0.1916	0.158923
0.2	0.157538
0.2083	0.155385
0.2166	0.153692
0.225	0.152769
0.2333	0.151077
0.2416	0.148769
0.25	0.147077
0.2583	0.144923
0.2666	0.142615
0.275	0.140923
0.2833	0.138308
0.2916	0.137846
0.3	0.135231
0.3083	0.129077
0.3166	0.127692
0.325	0.125538
0.3333	0.123846
0.35	0.121231
0.3666	0.118923
0.3833	0.116769
0.4	0.113692
0.4166	0.111077
0.4333	0.108
0.45	0.104462
0.4666	0.100923
0.4833	0.097846
0.5	0.094769
0.5166	0.090462
0.5333	0.087385
0.55	0.083846
0.5666	0.079846
0.5833	0.076462
0.6	0.072923
0.6166	0.068923
0.6333	0.064923
0.65	0.061077
0.6666	0.057538



m
-1.5
T₀
0.65
K (length/day)
41.5

Fitted Line

t	H _t /H ₀
0.04	0.941764534
0.02	0.970445534
0.01	0.98511194
0.1	0.860707976
0.2	0.740818221
0.3	0.637628152
0.4	0.548811636
0.6	0.40656966
0.8	0.301194212
1	0.22313016
2	0.049787068
3	0.011108997
4	0.002478752
6	0.00012341
8	6.14421E-06
10	3.05902E-07

T₀

T ₀	H _t /H ₀	t	K
0.65	0.94176453	0.1	0.37
0.65	0.97044553	0.2	0.37
0.65	0.98511194	0.3	0.37
0.65	0.86070798	0.4	0.37
0.65	0.74081822	0.6	0.37
0.65	0.63762815	0.8	0.37
0.65	0.54881164	1	0.37
0.65	0.40656966	2	0.37
0.65	0.30119421	3	0.37
0.65	0.22313016	4	0.37
0.65	0.04978707	6	0.37
0.65	0.011109	8	0.37
0.65	0.00247875	10	0.37
0.65	0.00012341		
0.65	6.1442E-06		
0.65	3.059E-07		

0.6833	0.054462
0.7	0.050462
0.7166	0.046923
0.7333	
0.75	
0.7666	

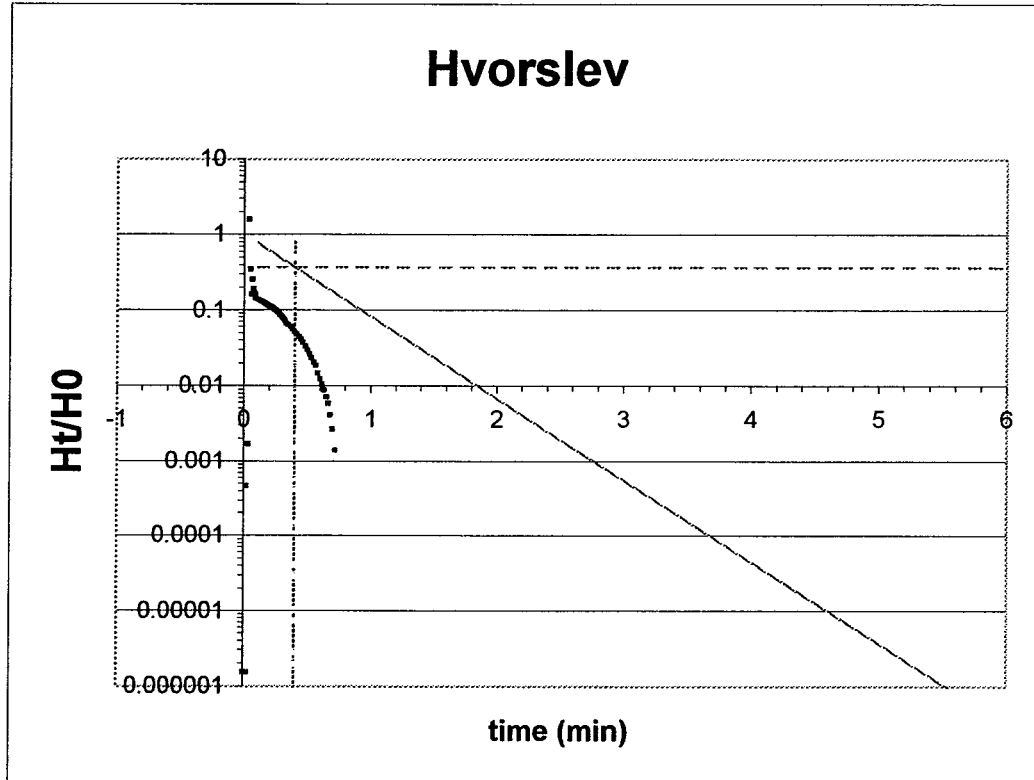
Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _i /H ₀
0.0001		0	0	1.54E-05
	0.97		0.0112	0.149231
3.326		0.0223	0.0223	0.511692
	1.638		0.0335	0.252
1.293		0.0447	0.0447	0.198923
1.264		0.0558	0.0558	0.194462
1.221		0.067	0.067	0.187846
1.178		0.0782	0.0782	0.181231
1.196		0.0893	0.0893	0.184
1.196		0.1005	0.1005	0.184
1.17		0.1117	0.1117	0.18
1.159		0.1228	0.1228	0.178308
1.144		0.134	0.134	0.176
1.136		0.1452	0.1452	0.174769
1.121		0.1563	0.1563	0.172462
1.11		0.1675	0.1675	0.170769
1.096		0.1787	0.1787	0.168615
1.087		0.1898	0.1898	0.167231
1.076		0.201	0.201	0.165538
1.067		0.2122	0.2122	0.164154
1.059		0.2233	0.2233	0.162923
1.053		0.235	0.235	0.162
1.039		0.2475	0.2475	0.159846
1.033		0.2607	0.2607	0.158923
1.024		0.2747	0.2747	0.157538
1.01		0.2895	0.2895	0.155385
0.999		0.3052	0.3052	0.153692
0.993		0.3218	0.3218	0.152769
0.982		0.3395	0.3395	0.151077
0.967		0.3582	0.3582	0.148769
0.956		0.378	0.378	0.147077
0.942		0.399	0.399	0.144923
0.927		0.4212	0.4212	0.142615
0.916		0.4447	0.4447	0.140923
0.899		0.4695	0.4695	0.138308
0.896		0.4958	0.4958	0.137846
0.879		0.5238	0.5238	0.135231
0.839		0.5535	0.5535	0.129077
0.83		0.5848	0.5848	0.127692
0.816		0.618	0.618	0.125538
0.805		0.6532	0.6532	0.123846
0.788		0.6905	0.6905	0.121231
0.773		0.73	0.73	0.118923
0.759		0.7718	0.7718	0.116769
0.739		0.8162	0.8162	0.113692
0.722		0.8632	0.8632	0.111077
0.702		0.913	0.913	0.108
0.679		0.9657	0.9657	0.104462
0.656		1.0215	1.0215	0.100923
0.636		1.0807	1.0807	0.097846
0.616		1.1433	1.1433	0.094769
0.588		1.2097	1.2097	0.090462
0.568		1.28	1.28	0.087385
0.545		1.3545	1.3545	0.083846
0.519		1.4335	1.4335	0.079846
0.497		1.5172	1.5172	0.076462
0.474		1.6057	1.6057	0.072923
0.448		1.6995	1.6995	0.068923

0.422	1.7988	0.064923
0.397	1.9042	0.061077
0.374	2.0157	0.057538
0.354	2.1338	0.054462
0.328	2.259	0.050462
0.305	2.3915	0.046923

0.08
0.074
0.068
0.066
0.057
0.054
0.054
0.051
0.051
0.049

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	20.5	67.4

t (min)	H _t /H ₀
0	1.54E-06
0.0083	1.54E-06
0.0166	0.000462
0.025	1.54E-06
0.0333	0.001692
0.0416	1.591231
0.05	0.348769
0.0583	0.162
0.0666	0.252462
0.075	0.189692
0.0833	0.161231
0.0916	0.142769
0.1	0.140923
0.1083	0.138769
0.1166	0.136615
0.125	0.133538
0.1333	0.130923
0.1416	0.128615
0.15	0.126462
0.1583	0.124308
0.1666	0.121692
0.175	0.119385
0.1833	0.117231
0.1916	0.114615
0.2	0.112923
0.2083	0.110154
0.2166	0.107538
0.225	0.104923
0.2333	0.102769
0.2416	0.100154
0.25	0.097538
0.2583	0.095231
0.2666	0.091846
0.275	0.088769
0.2833	0.086
0.2916	0.083846
0.3	0.079846
0.3083	0.077231
0.3166	0.074615
0.325	0.071077
0.3333	0.066769
0.35	0.063231
0.3666	0.059692
0.3833	0.055692
0.4	0.051846
0.4166	0.047846
0.4333	0.043846
0.45	0.040462
0.4666	0.036923
0.4833	0.032923
0.5	0.029846
0.5166	0.026308
0.5333	0.023231
0.55	0.020154
0.5666	0.018462
0.5833	0.014462
0.6	0.012308
0.6166	0.010462
0.6333	0.008769
0.65	0.007077
0.6666	0.005692



m
-2.5
T₀
0.4
K (length/day)
67.4

Fitted Line

T₀

t

H_t/H₀

0.4

0.04	0.904837418
0.02	0.951229425
0.01	0.975309912
0.1	0.778800783
0.2	0.60653066
0.3	0.472366553
0.4	0.367879441
0.6	0.22313016
0.8	0.135335283
1	0.082084999
2	0.006737947
3	0.000553084
4	4.53999E-05
6	3.05902E-07
8	2.06115E-09
10	1.38879E-11

0.4	0.90483742
0.4	0.95122942
0.4	0.97530991
0.4	0.77880078
0.4	0.60653066
0.4	0.47236655
0.4	0.36787944
0.4	0.22313016
0.4	0.13533528
0.4	0.082085
0.4	0.00673795
0.4	0.00055308
0.4	4.54E-05
0.4	3.059E-07
0.4	2.0612E-09
0.4	1.3888E-11
0.4	1

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37
10	0.37

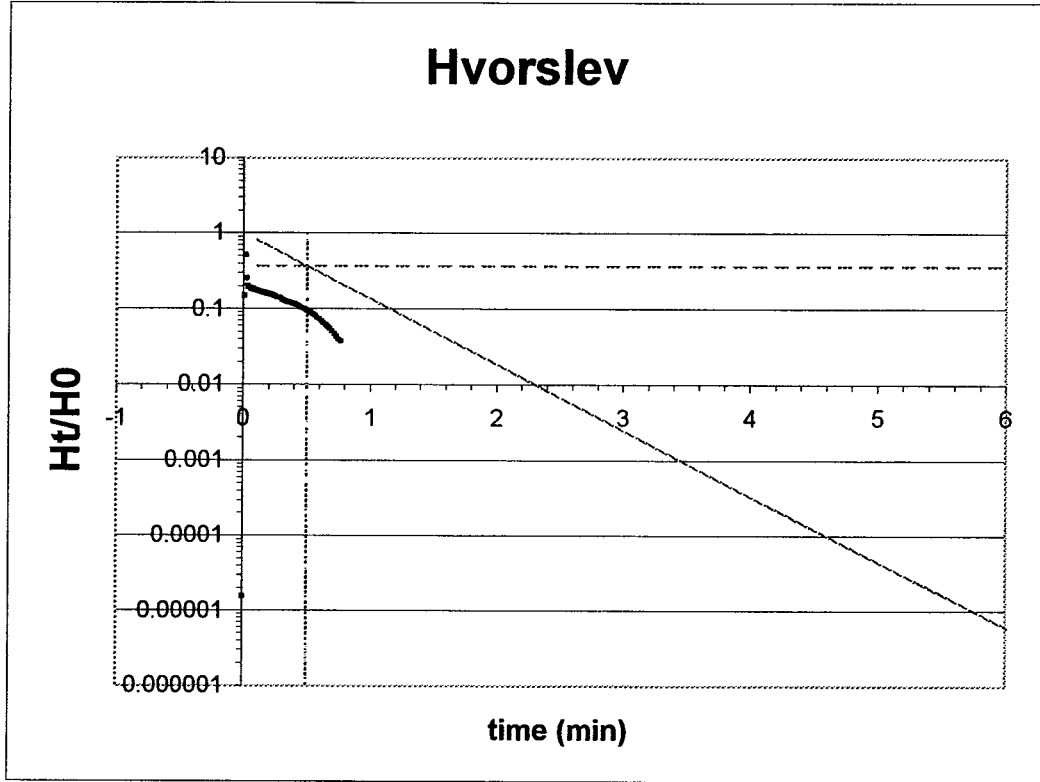
0.6833	0.004
0.7	0.002615
0.7166	0.001385
0.7333	
0.75	
0.7666	

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _r /H ₀
0.00001		0	1.54E-06	
0.00001	0.0112	1.54E-06		
0.003	0.0223	0.000462		
0.00001	0.0335	1.54E-06		
0.011	0.0447	0.001692		
10.343	0.0558	1.591231		
2.267	0.067	0.348769		
1.053	0.0782	0.162		
1.641	0.0893	0.252462		
1.233	0.1005	0.189692		
1.048	0.1117	0.161231		
0.928	0.1228	0.142769		
0.916	0.134	0.140923		
0.902	0.1452	0.138769		
0.888	0.1563	0.136615		
0.868	0.1675	0.133538		
0.851	0.1787	0.130923		
0.836	0.1898	0.128615		
0.822	0.201	0.126462		
0.808	0.2122	0.124308		
0.791	0.2233	0.121692		
0.776	0.235	0.119385		
0.762	0.2475	0.117231		
0.745	0.2607	0.114615		
0.734	0.2747	0.112923		
0.716	0.2895	0.110154		
0.699	0.3052	0.107538		
0.682	0.3218	0.104923		
0.668	0.3395	0.102769		
0.651	0.3582	0.100154		
0.634	0.378	0.097538		
0.619	0.399	0.095231		
0.597	0.4212	0.091846		
0.577	0.4447	0.088769		
0.559	0.4695	0.086		
0.545	0.4958	0.083846		
0.519	0.5238	0.079846		
0.502	0.5535	0.077231		
0.485	0.5848	0.074615		
0.462	0.618	0.071077		
0.434	0.6532	0.066769		
0.411	0.6905	0.063231		
0.388	0.73	0.059692		
0.362	0.7718	0.055692		
0.337	0.8162	0.051846		
0.311	0.8632	0.047846		
0.285	0.913	0.043846		
0.263	0.9657	0.040462		
0.24	1.0215	0.036923		
0.214	1.0807	0.032923		
0.194	1.1433	0.029846		
0.171	1.2097	0.026308		
0.151	1.28	0.023231		
0.131	1.3545	0.020154		
0.12	1.4335	0.018462		
0.094	1.5172	0.014462		
0.08	1.6057	0.012308		
0.068	1.6995	0.010462		

0.057	1.7988	0.008769
0.046	1.9042	0.007077
0.037	2.0157	0.005692
0.026	2.1338	0.004
0.017	2.259	0.002615
0.009	2.3915	0.001385

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	16.4	53.9

t (min)	H _v /H ₀
0	1.54E-05
0.0083	0.149231
0.0166	0.511692
0.025	0.252
0.0333	0.198923
0.0416	0.194462
0.05	0.187846
0.0583	0.181231
0.0666	0.184
0.075	0.184
0.0833	0.18
0.0916	0.178308
0.1	0.176
0.1083	0.174769
0.1166	0.172462
0.125	0.170769
0.1333	0.168615
0.1416	0.167231
0.15	0.165538
0.1583	0.164154
0.1666	0.162923
0.175	0.162
0.1833	0.159846
0.1916	0.158923
0.2	0.157538
0.2083	0.155385
0.2166	0.153692
0.225	0.152769
0.2333	0.151077
0.2416	0.148769
0.25	0.147077
0.2583	0.144923
0.2666	0.142615
0.275	0.140923
0.2833	0.138308
0.2916	0.137846
0.3	0.135231
0.3083	0.129077
0.3166	0.127692
0.325	0.125538
0.3333	0.123846
0.35	0.121231
0.3666	0.118923
0.3833	0.116769
0.4	0.113692
0.4166	0.111077
0.4333	0.108
0.45	0.104462
0.4666	0.100923
0.4833	0.097846
0.5	0.094769
0.5166	0.090462
0.5333	0.087385
0.55	0.083846
0.5666	0.079846
0.5833	0.076462
0.6	0.072923
0.6166	0.068923
0.6333	0.064923
0.65	0.061077
0.6666	0.057538



m
-2
T₀
0.5
K (length/day)
53.9

Fitted Line

t	H _v /H ₀
0.04	0.923116346
0.02	0.960789439
0.01	0.980198673
0.1	0.818730753
0.2	0.670320046
0.3	0.548811636
0.4	0.449328964
0.6	0.301194212
0.8	0.201896518
1	0.135335283
2	0.018315639
3	0.002478752
4	0.000335463
6	6.14421E-06
8	1.12535E-07
10	2.06115E-09

T₀

t	H _v /H ₀
0.5	0.92311635
0.5	0.96078944
0.5	0.98019867
0.5	0.81873075
0.5	0.67032005
0.5	0.54881164
0.5	0.44932896
0.5	0.30119421
0.5	0.20189652
0.5	0.13533528
0.5	0.01831564
0.5	0.00247875
0.5	0.00033546
0.5	6.1442E-06
0.5	1.1254E-07
0.5	2.0612E-09

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37
10	0.37

0.6833	0.054462
0.7	0.050462
0.7166	0.046923
0.7333	0.043538
0.75	0.04
0.7666	0.037385

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.0001	0	1.54E-05
	0.97	0.0112	0.149231	
	3.326	0.0223	0.511692	
	1.638	0.0335	0.252	
	1.293	0.0447	0.198923	
	1.264	0.0558	0.194462	
	1.221	0.067	0.187846	
	1.178	0.0782	0.181231	
	1.196	0.0893	0.184	
	1.196	0.1005	0.184	
	1.17	0.1117	0.18	
	1.159	0.1228	0.178308	
	1.144	0.134	0.176	
	1.136	0.1452	0.174769	
	1.121	0.1563	0.172462	
	1.11	0.1675	0.170769	
	1.096	0.1787	0.168615	
	1.087	0.1898	0.167231	
	1.076	0.201	0.165538	
	1.067	0.2122	0.164154	
	1.059	0.2233	0.162923	
	1.053	0.235	0.162	
	1.039	0.2475	0.159846	
	1.033	0.2607	0.158923	
	1.024	0.2747	0.157538	
	1.01	0.2895	0.155385	
	0.999	0.3052	0.153692	
	0.993	0.3218	0.152769	
	0.982	0.3395	0.151077	
	0.967	0.3582	0.148769	
	0.956	0.378	0.147077	
	0.942	0.399	0.144923	
	0.927	0.4212	0.142615	
	0.916	0.4447	0.140923	
	0.899	0.4695	0.138308	
	0.896	0.4958	0.137846	
	0.879	0.5238	0.135231	
	0.839	0.5535	0.129077	
	0.83	0.5848	0.127692	
	0.816	0.618	0.125538	
	0.805	0.6532	0.123846	
	0.788	0.6905	0.121231	
	0.773	0.73	0.118923	
	0.759	0.7718	0.116769	
	0.739	0.8162	0.113692	
	0.722	0.8632	0.111077	
	0.702	0.913	0.108	
	0.679	0.9657	0.104462	
	0.656	1.0215	0.100923	
	0.636	1.0807	0.097846	
	0.616	1.1433	0.094769	
	0.588	1.2097	0.090462	
	0.568	1.28	0.087385	
	0.545	1.3545	0.083846	
	0.519	1.4335	0.079846	
	0.497	1.5172	0.076462	
	0.474	1.6057	0.072923	
	0.448	1.6995	0.068923	

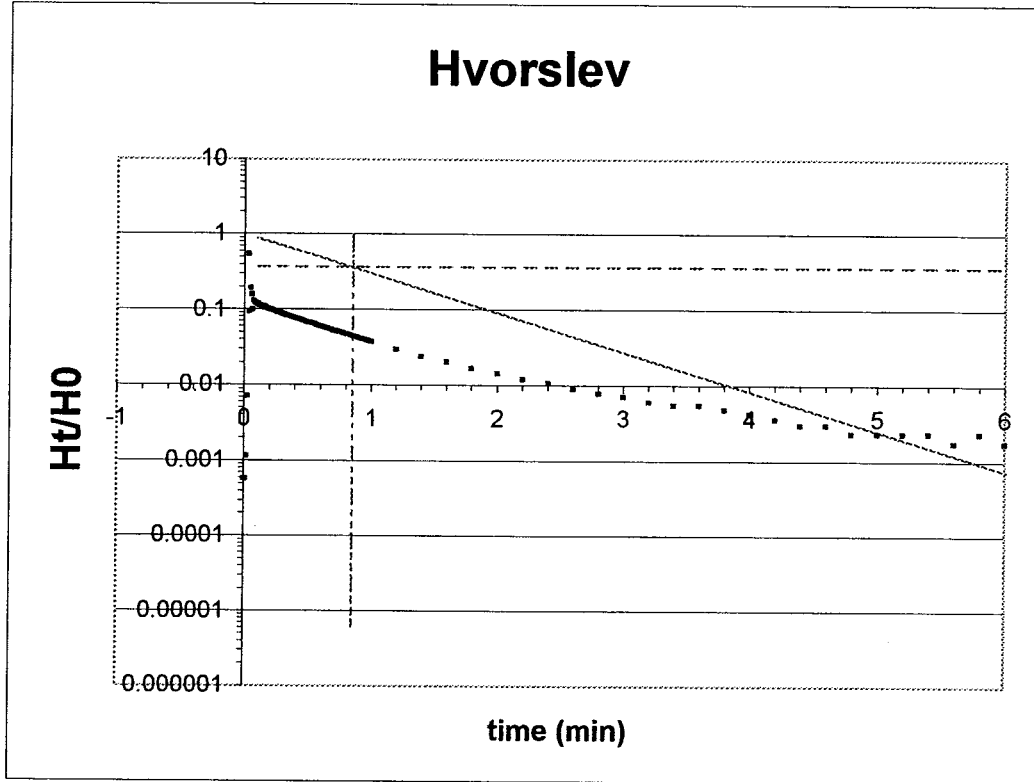
0.422	1.7988	0.064923
0.397	1.9042	0.061077
0.374	2.0157	0.057538
0.354	2.1338	0.054462
0.328	2.259	0.050462
0.305	2.3915	0.046923
0.283	2.532	0.043538
0.26	2.6808	0.04
0.243	2.8383	0.037385
0.223		
0.208		
0.188		
0.171		
0.154		
0.14		
0.128		
0.117		
0.106		
0.097		
0.086		
0.08		
0.074		
0.068		
0.066		
0.057		
0.054		
0.054		
0.051		
0.051		
0.049		
0.049		
0.046		
0.043		
0.043		
0.043		
0.037		
0.046		
0.043		

Well W-106A

CDM

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	9.7	31.7

t (min)	H _t /H ₀
0	0.000575
0.0083	0.000575
0.0166	0.001151
0.025	0.007095
0.0333	0.537009
0.0416	0.091467
0.05	0.193289
0.0583	0.159156
0.0666	0.098658
0.075	0.129243
0.0833	0.121477
0.0916	0.12023
0.1	0.116683
0.1083	0.116012
0.1166	0.111889
0.125	0.111218
0.1333	0.110067
0.1416	0.104027
0.15	0.10767
0.1583	0.10767
0.1666	0.104027
0.175	0.103452
0.1833	0.101726
0.1916	0.100479
0.2	0.099329
0.2083	0.098082
0.2166	0.096932
0.225	0.095686
0.2333	0.094535
0.2416	0.093289
0.25	0.092138
0.2583	0.090892
0.2666	0.090316
0.275	0.08907
0.2833	0.087919
0.2916	0.087344
0.3	0.086098
0.3083	0.085523
0.3166	0.084372
0.325	0.083126
0.3333	0.08255
0.35	0.080729
0.3666	0.078907
0.3833	0.077181
0.4	0.075935
0.4166	0.074113
0.4333	0.072963
0.45	0.071141
0.4666	0.06999
0.4833	0.068169
0.5	0.066922
0.5166	0.065772
0.5333	0.064621
0.55	0.063375
0.5666	0.061553
0.5833	0.060403
0.6	0.058581
0.6166	0.05743
0.6333	0.056759
0.65	0.055609
0.6666	0.054362



m
-1.2
T₀
0.85
K (length/day)
31.7

Fitted Line

t	H _t /H ₀
0.04	0.953133787
0.02	0.97628571
0.01	0.988071713
0.1	0.886920437
0.2	0.786627861
0.3	0.697676326
0.4	0.618783392
0.6	0.486752256
0.8	0.382892886
1	0.301194212
2	0.090717953
3	0.027323722
4	0.008229747
6	0.000746586
8	6.77287E-05
10	6.14421E-06

T₀

T ₀	H _t /H ₀
0.85	0.95313379
0.85	0.97628571
0.85	0.98807171
0.85	0.88692044
0.85	0.78662786
0.85	0.69767633
0.85	0.61878339
0.85	0.48675226
0.85	0.38289289
0.85	0.30119421
0.85	0.09071795
0.85	0.02732372
0.85	0.00822975
0.85	0.00074659
0.85	6.7729E-05
0.85	6.1442E-06

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37

0.6833	0.053212
0.7	0.051965
0.7166	0.05139
0.7333	0.05024
0.75	0.049569
0.7666	0.048418
0.7833	0.047267
0.8	0.046596
0.8166	0.045446
0.8333	0.044871
0.85	0.044199
0.8666	0.043049
0.8833	0.042474
0.9	0.041227
0.9166	0.040652
0.9333	0.040077
0.95	0.039406
0.9666	0.038255
0.9833	0.03768
1	0.037009
1.2	0.029243
1.4	0.023873
1.6	0.020326
1.8	0.016683
2	0.014286
2.2	0.011889
2.4	0.010738
2.6	0.008917
2.8	0.007766
3	0.007095
3.2	0.005944
3.4	0.005369
3.6	0.005369
3.8	0.004698
4	0.004123
4.2	0.003547
4.4	0.002972
4.6	0.002972
4.8	0.002301
5	0.002301
5.2	0.002301
5.4	0.002301
5.6	0.001726
5.8	0.002301
6	0.001726
6.2	0.001726
6.4	0.001726
6.6	0.001726
6.8	0.001726
7	0.002301
7.2	0.001726
7.4	0.001726
7.6	0.001726
7.8	0.001151
8	0.001151
8.2	0.001151
8.4	0.001151
8.6	0.001151
8.8	0.001151
9	0.001151
9.2	0.001151
9.4	0.001151
9.6	0.001151
9.8	0.001151
10	0.001151

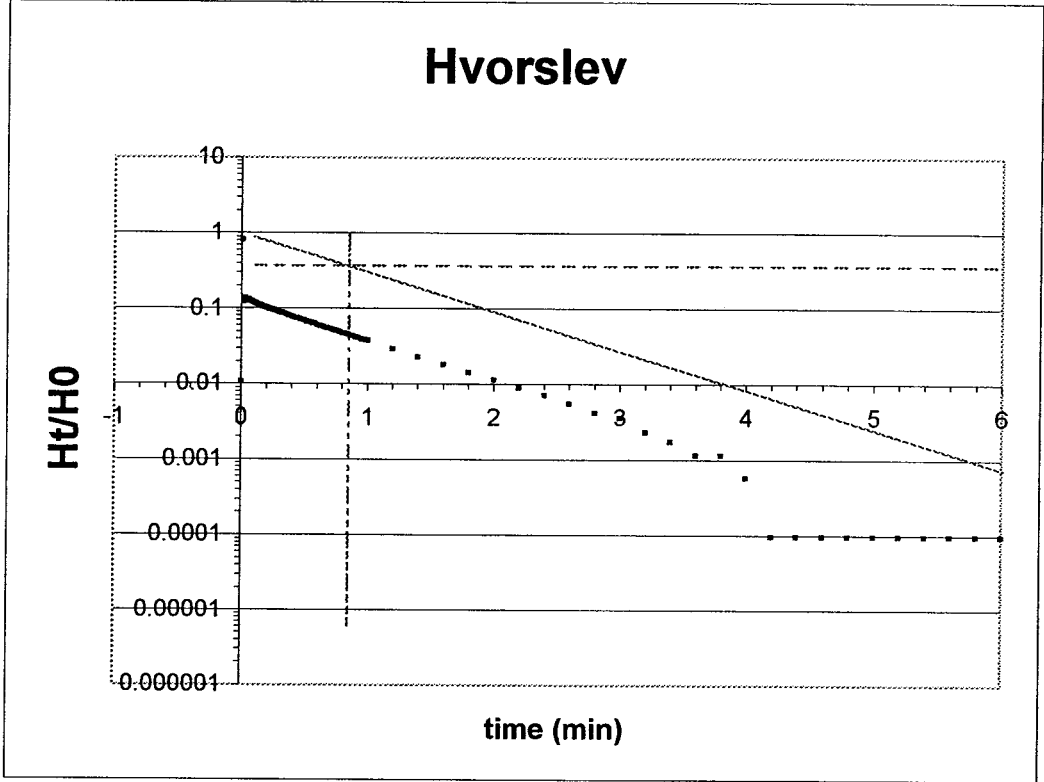
Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
0.006			0	0.000575
0.006	0.0083			0.000575
0.012	0.0166			0.001151
0.074	0.025			0.007095
5.601	0.0333			0.537009
0.954	0.0416			0.091467
2.016	0.05			0.193289
1.66	0.0583			0.159156
1.029	0.0666			0.098658
1.348	0.075			0.129243
1.267	0.0833			0.121477
1.254	0.0916			0.12023
1.217	0.1			0.116683
1.21	0.1083			0.116012
1.167	0.1166			0.111889
1.16	0.125			0.111218
1.148	0.1333			0.110067
1.085	0.1416			0.104027
1.123	0.15			0.10767
1.123	0.1583			0.10767
1.085	0.1666			0.104027
1.079	0.175			0.103452
1.061	0.1833			0.101726
1.048	0.1916			0.100479
1.036	0.2			0.099329
1.023	0.2083			0.098082
1.011	0.2166			0.096932
0.998	0.225			0.095686
0.986	0.2333			0.094535
0.973	0.2416			0.093289
0.961	0.25			0.092138
0.948	0.2583			0.090892
0.942	0.2666			0.090316
0.929	0.275			0.08907
0.917	0.2833			0.087919
0.911	0.2916			0.087344
0.898	0.3			0.086098
0.892	0.3083			0.085523
0.88	0.3166			0.084372
0.867	0.325			0.083126
0.861	0.3333			0.08255
0.842	0.35			0.080729
0.823	0.3666			0.078907
0.805	0.3833			0.077181
0.792	0.4			0.075935
0.773	0.4166			0.074113
0.761	0.4333			0.072963
0.742	0.45			0.071141
0.73	0.4666			0.06999
0.711	0.4833			0.068169
0.698	0.5			0.066922
0.686	0.5166			0.065772
0.674	0.5333			0.064621
0.661	0.55			0.063375
0.642	0.5666			0.061553
0.63	0.5833			0.060403
0.611	0.6			0.058581
0.599	0.6166			0.05743

0.592	0.6333	0.056759
0.58	0.65	0.055609
0.567	0.6666	0.054362
0.555	0.6833	0.053212
0.542	0.7	0.051965
0.536	0.7166	0.05139
0.524	0.7333	0.05024
0.517	0.75	0.049569
0.505	0.7666	0.048418
0.493	0.7833	0.047267
0.486	0.8	0.046596
0.474	0.8166	0.045446
0.468	0.8333	0.044871
0.461	0.85	0.044199
0.449	0.8666	0.043049
0.443	0.8833	0.042474
0.43	0.9	0.041227
0.424	0.9166	0.040652
0.418	0.9333	0.040077
0.411	0.95	0.039406
0.399	0.9666	0.038255
0.393	0.9833	0.03768
0.386	1	0.037009
0.305	1.2	0.029243
0.249	1.4	0.023873
0.212	1.6	0.020326
0.174	1.8	0.016683
0.149	2	0.014286
0.124	2.2	0.011889
0.112	2.4	0.010738
0.093	2.6	0.008917
0.081	2.8	0.007766
0.074	3	0.007095
0.062	3.2	0.005944
0.056	3.4	0.005369
0.056	3.6	0.005369
0.049	3.8	0.004698
0.043	4	0.004123
0.037	4.2	0.003547
0.031	4.4	0.002972
0.031	4.6	0.002972
0.024	4.8	0.002301
0.024	5	0.002301
0.024	5.2	0.002301
0.024	5.4	0.002301
0.018	5.6	0.001726
0.024	5.8	0.002301
0.018	6	0.001726
0.018	6.2	0.001726
0.018	6.4	0.001726
0.018	6.6	0.001726
0.018	6.8	0.001726
0.024	7	0.002301
0.018	7.2	0.001726
0.018	7.4	0.001726
0.018	7.6	0.001726
0.012	7.8	0.001151
0.012	8	0.001151
0.012	8.2	0.001151
0.012	8.4	0.001151
0.012	8.6	0.001151
0.012	8.8	0.001151
0.012	9	0.001151
0.012	9.2	0.001151
0.012	9.4	0.001151
0.012	9.6	0.001151
0.012	9.8	0.001151
0.012	10	0.001151

c44w106a test 3 step 1
 Hvorslev Slug Test Method

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	9.7	31.7

t (min)	H _t /H ₀
0	0.010738
0.0083	0.81745
0.0166	0.121956
0.025	0.134516
0.0333	0.135187
0.0416	0.12675
0.05	0.129147
0.0583	0.127325
0.0666	0.124353
0.075	0.123778
0.0833	0.12023
0.0916	0.118408
0.1	0.116587
0.1083	0.114765
0.1166	0.113615
0.125	0.112464
0.1333	0.110642
0.1416	0.109396
0.15	0.108245
0.1583	0.106999
0.1666	0.105273
0.175	0.104602
0.1833	0.103452
0.1916	0.10163
0.2	0.101055
0.2083	0.099808
0.2166	0.098658
0.225	0.097507
0.2333	0.096261
0.2416	0.095686
0.25	0.094439
0.2583	0.093289
0.2666	0.092042
0.275	0.091467
0.2833	0.090316
0.2916	0.08907
0.3	0.088495
0.3083	0.087248
0.3166	0.086673
0.325	0.085523
0.3333	0.084947
0.35	0.083126
0.3666	0.080729
0.3833	0.079482
0.4	0.077756
0.4166	0.075935
0.4333	0.074113
0.45	0.072963
0.4666	0.071141
0.4833	0.06999
0.5	0.068744
0.5166	0.066922
0.5333	0.065772
0.55	0.064525
0.5666	0.0628
0.5833	0.062128
0.6	0.060403
0.6166	0.059156
0.6333	0.058006
0.65	0.056759
0.6666	0.055609



Fitted Line

t	H _t /H ₀
0.04	0.953133787
0.02	0.97628571
0.01	0.988071713
0.1	0.886920437
0.2	0.786627861
0.3	0.697676326
0.4	0.618783392
0.6	0.486752256
0.8	0.382892886
1	0.301194212
2	0.090717953
3	0.027323722
4	0.008229747
6	0.000746586
8	6.77287E-05
10	6.14421E-06

T₀

t	H _t /H ₀
0.04	0.85 0.95313379
0.02	0.85 0.97628571
0.01	0.85 0.98807171
0.1	0.85 0.88692044
0.2	0.85 0.78662786
0.3	0.85 0.69767633
0.4	0.85 0.61878339
0.6	0.85 0.48675226
0.8	0.85 0.38289289
1	0.85 0.30119421
2	0.85 0.09071795
3	0.85 0.02732372
4	0.85 0.00822975
6	0.85 0.00074659
8	0.85 6.7729E-05
10	0.85 6.1442E-06

m
-1.2

T₀
0.85

K (length/day)
31.7

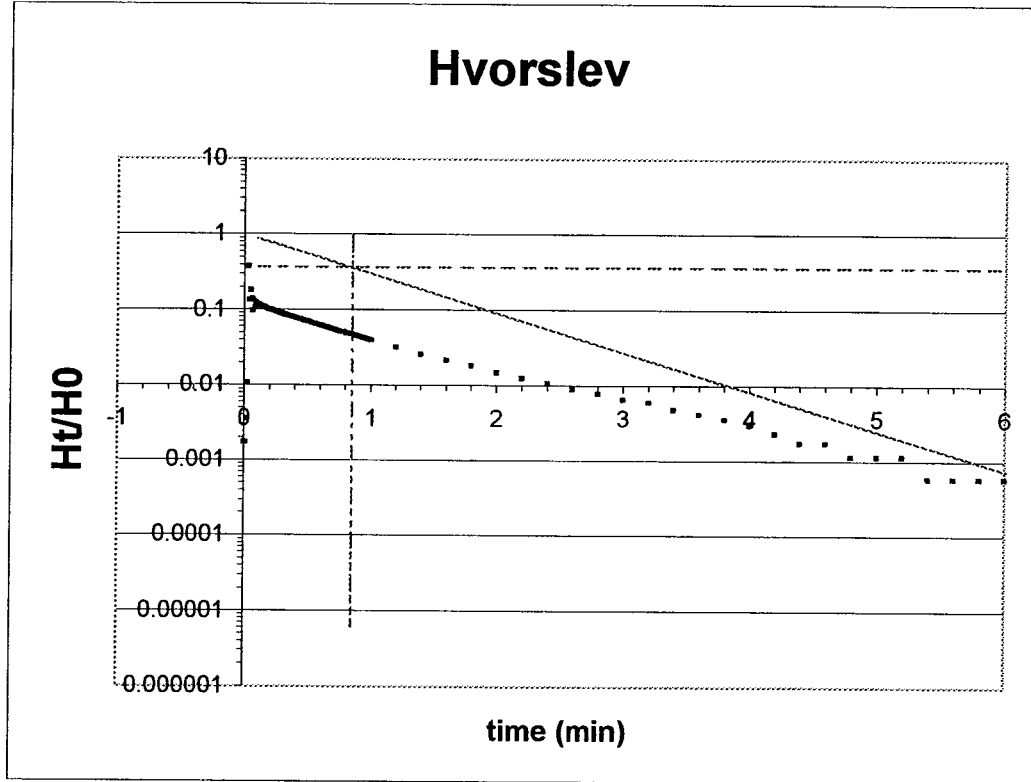
0.6833	0.055034
0.7	0.053212
0.7166	0.052637
0.7333	0.05139
0.75	0.05024
0.7666	0.049569
0.7833	0.048418
0.8	0.047172
0.8166	0.046596
0.8333	0.045446
0.85	0.044871
0.8666	0.043624
0.8833	0.043049
0.9	0.041802
0.9166	0.041227
0.9333	0.040652
0.95	0.039406
0.9666	0.03883
0.9833	0.038255
1	0.03768
1.2	0.029243
1.4	0.022723
1.6	0.017929
1.8	0.014286
2	0.011314
2.2	0.008917
2.4	0.007095
2.6	0.005369
2.8	0.004123
3	0.003547
3.2	0.002301
3.4	0.001726
3.6	0.001151
3.8	0.001151
4	0.000575
4.2	9.59E-05
4.4	9.59E-05
4.6	9.59E-05
4.8	9.59E-05
5	9.59E-05
5.2	9.59E-05
5.4	9.59E-05
5.6	9.59E-05
5.8	9.59E-05
6	9.59E-05
6.2	9.59E-05
6.4	9.59E-05
6.6	9.59E-05
6.8	9.59E-05
7	9.59E-05
7.2	9.59E-05
7.4	9.59E-05
7.6	9.59E-05
7.8	9.59E-05
8	9.59E-05
8.2	9.59E-05
8.4	9.59E-05
8.6	9.59E-05
8.8	9.59E-05
9	9.59E-05
9.2	9.59E-05
9.4	9.59E-05
9.6	9.59E-05
9.8	9.59E-05
10	9.59E-05

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _i /H _o
		0.112	0	0.010738
	8.526	0.0083	0.0083	0.81745
	1.272	0.0166	0.0166	0.121956
	1.403	0.025	0.025	0.134516
	1.41	0.0333	0.0333	0.135187
	1.322	0.0416	0.0416	0.12675
	1.347	0.05	0.05	0.129147
	1.328	0.0583	0.0583	0.127325
	1.297	0.0666	0.0666	0.124353
	1.291	0.075	0.075	0.123778
	1.254	0.0833	0.0833	0.12023
	1.235	0.0916	0.0916	0.118408
	1.216	0.1	0.1	0.116587
	1.197	0.1083	0.1083	0.114765
	1.185	0.1166	0.1166	0.113615
	1.173	0.125	0.125	0.112464
	1.154	0.1333	0.1333	0.110642
	1.141	0.1416	0.1416	0.109396
	1.129	0.15	0.15	0.108245
	1.116	0.1583	0.1583	0.106999
	1.098	0.1666	0.1666	0.105273
	1.091	0.175	0.175	0.104602
	1.079	0.1833	0.1833	0.103452
	1.06	0.1916	0.1916	0.10163
	1.054	0.2	0.2	0.101055
	1.041	0.2083	0.2083	0.099808
	1.029	0.2166	0.2166	0.098658
	1.017	0.225	0.225	0.097507
	1.004	0.2333	0.2333	0.096261
	0.998	0.2416	0.2416	0.095686
	0.985	0.25	0.25	0.094439
	0.973	0.2583	0.2583	0.093289
	0.96	0.2666	0.2666	0.092042
	0.954	0.275	0.275	0.091467
	0.942	0.2833	0.2833	0.090316
	0.929	0.2916	0.2916	0.08907
	0.923	0.3	0.3	0.088495
	0.91	0.3083	0.3083	0.087248
	0.904	0.3166	0.3166	0.086673
	0.892	0.325	0.325	0.085523
	0.886	0.3333	0.3333	0.084947
	0.867	0.35	0.35	0.083126
	0.842	0.3666	0.3666	0.080729
	0.829	0.3833	0.3833	0.079482
	0.811	0.4	0.4	0.077756
	0.792	0.4166	0.4166	0.075935
	0.773	0.4333	0.4333	0.074113
	0.761	0.45	0.45	0.072963
	0.742	0.4666	0.4666	0.071141
	0.73	0.4833	0.4833	0.06999
	0.717	0.5	0.5	0.068744
	0.698	0.5166	0.5166	0.066922
	0.686	0.5333	0.5333	0.065772
	0.673	0.55	0.55	0.064525
	0.655	0.5666	0.5666	0.0628
	0.648	0.5833	0.5833	0.062128
	0.63	0.6	0.6	0.060403
	0.617	0.6166	0.6166	0.059156

0.605	0.6333	0.058006
0.592	0.65	0.056759
0.58	0.6666	0.055609
0.574	0.6833	0.055034
0.555	0.7	0.053212
0.549	0.7166	0.052637
0.536	0.7333	0.05139
0.524	0.75	0.05024
0.517	0.7666	0.049569
0.505	0.7833	0.048418
0.492	0.8	0.047172
0.486	0.8166	0.046596
0.474	0.8333	0.045446
0.468	0.85	0.044871
0.455	0.8666	0.043624
0.449	0.8833	0.043049
0.436	0.9	0.041802
0.43	0.9166	0.041227
0.424	0.9333	0.040652
0.411	0.95	0.039406
0.405	0.9666	0.03883
0.399	0.9833	0.038255
0.393	1	0.03768
0.305	1.2	0.029243
0.237	1.4	0.022723
0.187	1.6	0.017929
0.149	1.8	0.014286
0.118	2	0.011314
0.093	2.2	0.008917
0.074	2.4	0.007095
0.056	2.6	0.005369
0.043	2.8	0.004123
0.037	3	0.003547
0.024	3.2	0.002301
0.018	3.4	0.001726
0.012	3.6	0.001151
0.012	3.8	0.001151
0.006	4	0.000575
0.001	4.2	9.59E-05
0.001	4.4	9.59E-05
0.001	4.6	9.59E-05
0.001	4.8	9.59E-05
0.001	5	9.59E-05
0.001	5.2	9.59E-05
0.001	5.4	9.59E-05
0.001	5.6	9.59E-05
0.001	5.8	9.59E-05
0.001	6	9.59E-05
0.001	6.2	9.59E-05
0.001	6.4	9.59E-05
0.001	6.6	9.59E-05
0.001	6.8	9.59E-05
0.001	7	9.59E-05
0.001	7.2	9.59E-05
0.001	7.4	9.59E-05
0.001	7.6	9.59E-05
0.001	7.8	9.59E-05
0.001	8	9.59E-05
0.001	8.2	9.59E-05
0.001	8.4	9.59E-05
0.001	8.6	9.59E-05
0.001	8.8	9.59E-05
0.001	9	9.59E-05
0.001	9.2	9.59E-05
0.001	9.4	9.59E-05
0.001	9.6	9.59E-05
0.001	9.8	9.59E-05
0.001	10	9.59E-05

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	9.7	31.7

t (min)	H _t /H ₀
0	0.001726
0.0083	0.001726
0.0166	0.003547
0.025	0.010738
0.0333	0.37651
0.0416	0.132215
0.05	0.181304
0.0583	0.139406
0.0666	0.096261
0.075	0.134612
0.0833	0.109492
0.0916	0.122627
0.1	0.116683
0.1083	0.115436
0.1166	0.113615
0.125	0.111889
0.1333	0.110067
0.1416	0.108821
0.15	0.107095
0.1583	0.105849
0.1666	0.104698
0.175	0.102876
0.1833	0.101726
0.1916	0.100479
0.2	0.099904
0.2083	0.098082
0.2166	0.096932
0.225	0.096261
0.2333	0.09511
0.2416	0.093289
0.25	0.093289
0.2583	0.092138
0.2666	0.090892
0.275	0.089741
0.2833	0.08907
0.2916	0.087919
0.3	0.087344
0.3083	0.086098
0.3166	0.085523
0.325	0.084372
0.3333	0.083701
0.35	0.081975
0.3666	0.080153
0.3833	0.078907
0.4	0.077181
0.4166	0.075935
0.4333	0.074113
0.45	0.072963
0.4666	0.071716
0.4833	0.06999
0.5	0.068744
0.5166	0.067593
0.5333	0.066347
0.55	0.065197
0.5666	0.06395
0.5833	0.062224
0.6	0.061553
0.6166	0.059827
0.6333	0.059156
0.65	0.058006
0.6666	0.056759



m
-1.2
T₀
0.85
K (length/day)
31.7

Fitted Line

T₀

t	H _t /H ₀	T ₀
0.04	0.953133787	0.85
0.02	0.97628571	0.85
0.01	0.988071713	0.85
0.1	0.886920437	0.85
0.2	0.786627861	0.85
0.3	0.697676326	0.85
0.4	0.618783392	0.85
0.6	0.486752256	0.85
0.8	0.382892886	0.85
1	0.301194212	0.85
2	0.090717953	0.85
3	0.027323722	0.85
4	0.008229747	0.85
6	0.000746586	0.85
8	6.77287E-05	0.85
10	6.14421E-06	0.85

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37

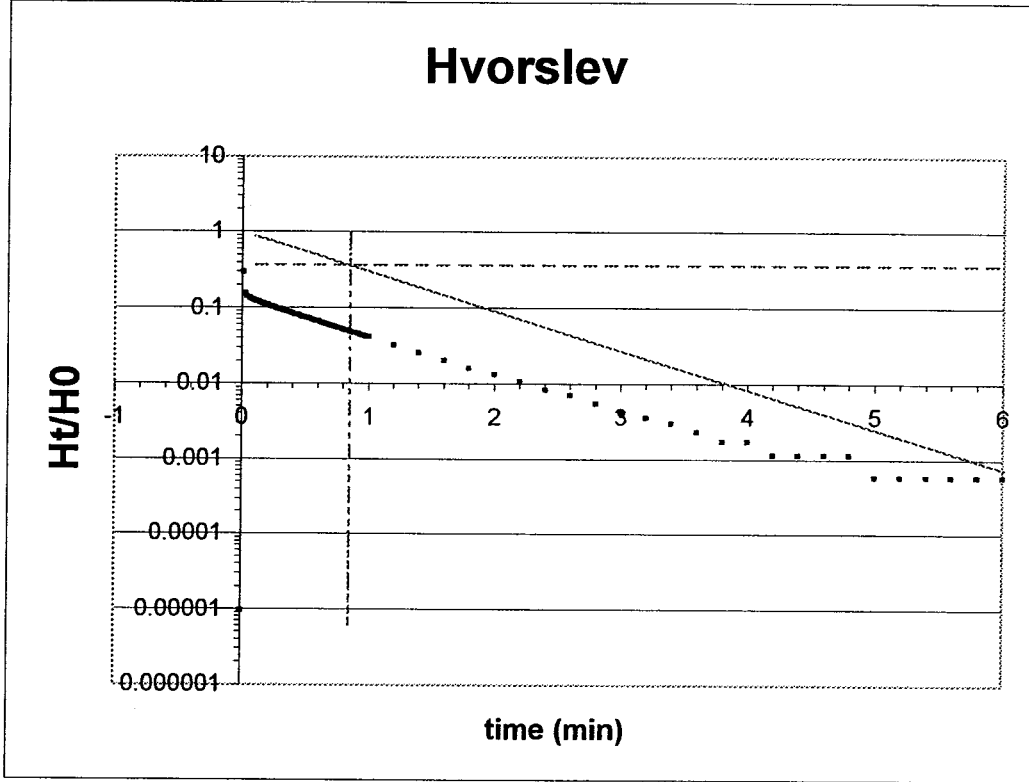
0.6833	0.056184
0.7	0.055034
0.7166	0.053787
0.7333	0.052637
0.75	0.051965
0.7666	0.050815
0.7833	0.05024
0.8	0.048993
0.8166	0.048418
0.8333	0.047267
0.85	0.046596
0.8666	0.045446
0.8833	0.044871
0.9	0.044199
0.9166	0.043049
0.9333	0.042474
0.95	0.041802
0.9666	0.040652
0.9833	0.040077
1	0.039406
1.2	0.03164
1.4	0.025695
1.6	0.021477
1.8	0.017929
2	0.014957
2.2	0.01256
2.4	0.010738
2.6	0.008917
2.8	0.007766
3	0.00652
3.2	0.005944
3.4	0.004698
3.6	0.004123
3.8	0.003547
4	0.002972
4.2	0.002301
4.4	0.001726
4.6	0.001726
4.8	0.001151
5	0.001151
5.2	0.001151
5.4	0.000575
5.6	0.000575
5.8	0.000575
6	0.000575
6.2	0.000575
6.4	9.59E-06
6.6	9.59E-06
6.8	9.59E-06
7	9.59E-06
7.2	9.59E-06
7.4	9.59E-06
7.6	9.59E-06
7.8	9.59E-06
8	9.59E-06
8.2	9.59E-06
8.4	9.59E-06
8.6	9.59E-06
8.8	9.59E-06
9	9.59E-06
9.2	9.59E-06
9.4	9.59E-06
9.6	9.59E-06
9.8	9.59E-06
10	9.59E-06

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.018	0	0.001726
		0.018	0.0083	0.001726
		0.037	0.0166	0.003547
		0.112	0.025	0.010738
		3.927	0.0333	0.37651
		1.379	0.0416	0.132215
		1.891	0.05	0.181304
		1.454	0.0583	0.139406
		1.004	0.0666	0.096261
		1.404	0.075	0.134612
		1.142	0.0833	0.109492
		1.279	0.0916	0.122627
		1.217	0.1	0.116683
		1.204	0.1083	0.115436
		1.185	0.1166	0.113615
		1.167	0.125	0.111889
		1.148	0.1333	0.110067
		1.135	0.1416	0.108821
		1.117	0.15	0.107095
		1.104	0.1583	0.105849
		1.092	0.1666	0.104698
		1.073	0.175	0.102876
		1.061	0.1833	0.101726
		1.048	0.1916	0.100479
		1.042	0.2	0.099904
		1.023	0.2083	0.098082
		1.011	0.2166	0.096932
		1.004	0.225	0.096261
		0.992	0.2333	0.09511
		0.973	0.2416	0.093289
		0.973	0.25	0.093289
		0.961	0.2583	0.092138
		0.948	0.2666	0.090892
		0.936	0.275	0.089741
		0.929	0.2833	0.08907
		0.917	0.2916	0.087919
		0.911	0.3	0.087344
		0.898	0.3083	0.086098
		0.892	0.3166	0.085523
		0.88	0.325	0.084372
		0.873	0.3333	0.083701
		0.855	0.35	0.081975
		0.836	0.3666	0.080153
		0.823	0.3833	0.078907
		0.805	0.4	0.077181
		0.792	0.4166	0.075935
		0.773	0.4333	0.074113
		0.761	0.45	0.072963
		0.748	0.4666	0.071716
		0.73	0.4833	0.06999
		0.717	0.5	0.068744
		0.705	0.5166	0.067593
		0.692	0.5333	0.066347
		0.68	0.55	0.065197
		0.667	0.5666	0.06395
		0.649	0.5833	0.062224
		0.642	0.6	0.061553
		0.624	0.6166	0.059827

0.617	0.6333	0.059156
0.605	0.65	0.058006
0.592	0.6666	0.056759
0.586	0.6833	0.056184
0.574	0.7	0.055034
0.561	0.7166	0.053787
0.549	0.7333	0.052637
0.542	0.75	0.051965
0.53	0.7666	0.050815
0.524	0.7833	0.05024
0.511	0.8	0.048993
0.505	0.8166	0.048418
0.493	0.8333	0.047267
0.486	0.85	0.046596
0.474	0.8666	0.045446
0.468	0.8833	0.044871
0.461	0.9	0.044199
0.449	0.9166	0.043049
0.443	0.9333	0.042474
0.436	0.95	0.041802
0.424	0.9666	0.040652
0.418	0.9833	0.040077
0.411	1	0.039406
0.33	1.2	0.03164
0.268	1.4	0.025695
0.224	1.6	0.021477
0.187	1.8	0.017929
0.156	2	0.014957
0.131	2.2	0.01256
0.112	2.4	0.010738
0.093	2.6	0.008917
0.081	2.8	0.007766
0.068	3	0.00652
0.062	3.2	0.005944
0.049	3.4	0.004698
0.043	3.6	0.004123
0.037	3.8	0.003547
0.031	4	0.002972
0.024	4.2	0.002301
0.018	4.4	0.001726
0.018	4.6	0.001726
0.012	4.8	0.001151
0.012	5	0.001151
0.012	5.2	0.001151
0.006	5.4	0.000575
0.006	5.6	0.000575
0.006	5.8	0.000575
0.006	6	0.000575
0.006	6.2	0.000575
0.0001	6.4	9.59E-06
0.0001	6.6	9.59E-06
0.0001	6.8	9.59E-06
0.0001	7	9.59E-06
0.0001	7.2	9.59E-06
0.0001	7.4	9.59E-06
0.0001	7.6	9.59E-06
0.0001	7.8	9.59E-06
0.0001	8	9.59E-06
0.0001	8.2	9.59E-06
0.0001	8.4	9.59E-06
0.0001	8.6	9.59E-06
0.0001	8.8	9.59E-06
0.0001	9	9.59E-06
0.0001	9.2	9.59E-06
0.0001	9.4	9.59E-06
0.0001	9.6	9.59E-06
0.0001	9.8	9.59E-06
0.0001	10	9.59E-06

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	9.7	31.7

t (min)	H _t /H ₀
0	9.59E-06
0.0083	0.298945
0.0166	0.154267
0.025	0.155513
0.0333	0.142953
0.0416	0.138734
0.05	0.136337
0.0583	0.135762
0.0666	0.131544
0.075	0.129147
0.0833	0.12675
0.0916	0.125024
0.1	0.123778
0.1083	0.121956
0.1166	0.12023
0.125	0.118984
0.1333	0.117833
0.1416	0.116012
0.15	0.114765
0.1583	0.113039
0.1666	0.111793
0.175	0.110642
0.1833	0.109396
0.1916	0.108245
0.2	0.106999
0.2083	0.105849
0.2166	0.104602
0.225	0.103452
0.2333	0.102205
0.2416	0.10163
0.25	0.100479
0.2583	0.099233
0.2666	0.098082
0.275	0.096836
0.2833	0.096261
0.2916	0.09511
0.3	0.093864
0.3083	0.093289
0.3166	0.092042
0.325	0.090892
0.3333	0.090316
0.35	0.088495
0.3666	0.086673
0.3833	0.084947
0.4	0.083126
0.4166	0.081304
0.4333	0.080153
0.45	0.078332
0.4666	0.07651
0.4833	0.074688
0.5	0.073538
0.5166	0.072387
0.5333	0.071141
0.55	0.069319
0.5666	0.067593
0.5833	0.066347
0.6	0.065772
0.6166	0.06395
0.6333	0.0628
0.65	0.061553
0.6666	0.060403



m
-1.2
T₀
0.85
K (length/day)
31.7

Fitted Line

t	H _t /H ₀
0.04	0.953133787
0.02	0.97628571
0.01	0.988071713
0.1	0.886920437
0.2	0.786627861
0.3	0.697676326
0.4	0.618783392
0.6	0.486752256
0.8	0.382892886
1	0.301194212
2	0.090717953
3	0.027323722
4	0.008229747
6	0.000746586
8	6.77287E-05
10	6.14421E-06

T₀

T ₀	H _t /H ₀
0.85	0.95313379
0.85	0.97628571
0.85	0.98807171
0.85	0.88692044
0.85	0.78662786
0.85	0.69767633
0.85	0.61878339
0.85	0.48675226
0.85	0.38289289
0.85	0.30119421
0.85	0.09071795
0.85	0.02732372
0.85	0.00822975
0.85	0.00074659
0.85	6.7729E-05
0.85	6.1442E-06

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37

0.6833	0.059156
0.7	0.058006
0.7166	0.056759
0.7333	0.056184
0.75	0.055034
0.7666	0.053787
0.7833	0.052637
0.8	0.05139
0.8166	0.050815
0.8333	0.049569
0.85	0.048418
0.8666	0.047843
0.8833	0.047172
0.9	0.046021
0.9166	0.045446
0.9333	0.044199
0.95	0.043624
0.9666	0.042474
0.9833	0.041802
1	0.041227
1.2	0.032215
1.4	0.025695
1.6	0.020326
1.8	0.016107
2	0.013135
2.2	0.010738
2.4	0.008341
2.6	0.007095
2.8	0.005369
3	0.004123
3.2	0.003547
3.4	0.002972
3.6	0.002301
3.8	0.001726
4	0.001726
4.2	0.001151
4.4	0.001151
4.6	0.001151
4.8	0.001151
5	0.000575
5.2	0.000575
5.4	0.000575
5.6	0.000575
5.8	0.000575
6	0.000575
6.2	0.000575
6.4	0.000575
6.6	9.59E-06
6.8	9.59E-06
7	9.59E-06
7.2	9.59E-06
7.4	9.59E-06
7.6	9.59E-06
7.8	9.59E-06
8	9.59E-06
8.2	9.59E-06
8.4	9.59E-06
8.6	9.59E-06
8.8	9.59E-06
9	9.59E-06
9.2	9.59E-06
9.4	9.59E-06
9.6	9.59E-06
9.8	9.59E-06
10	9.59E-06

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H_t/H_0
		0.0001	0	9.59E-06
		3.118	0.0083	0.298945
		1.609	0.0166	0.154267
		1.622	0.025	0.155513
		1.491	0.0333	0.142953
		1.447	0.0416	0.138734
		1.422	0.05	0.136337
		1.416	0.0583	0.135762
		1.372	0.0666	0.131544
		1.347	0.075	0.129147
		1.322	0.0833	0.12675
		1.304	0.0916	0.125024
		1.291	0.1	0.123778
		1.272	0.1083	0.121956
		1.254	0.1166	0.12023
		1.241	0.125	0.118984
		1.229	0.1333	0.117833
		1.21	0.1416	0.116012
		1.197	0.15	0.114765
		1.179	0.1583	0.113039
		1.166	0.1666	0.111793
		1.154	0.175	0.110642
		1.141	0.1833	0.109396
		1.129	0.1916	0.108245
		1.116	0.2	0.106999
		1.104	0.2083	0.105849
		1.091	0.2166	0.104602
		1.079	0.225	0.103452
		1.066	0.2333	0.102205
		1.06	0.2416	0.10163
		1.048	0.25	0.100479
		1.035	0.2583	0.099233
		1.023	0.2666	0.098082
		1.01	0.275	0.096836
		1.004	0.2833	0.096261
		0.992	0.2916	0.09511
		0.979	0.3	0.093864
		0.973	0.3083	0.093289
		0.96	0.3166	0.092042
		0.948	0.325	0.090892
		0.942	0.3333	0.090316
		0.923	0.35	0.088495
		0.904	0.3666	0.086673
		0.886	0.3833	0.084947
		0.867	0.4	0.083126
		0.848	0.4166	0.081304
		0.836	0.4333	0.080153
		0.817	0.45	0.078332
		0.798	0.4666	0.07651
		0.779	0.4833	0.074688
		0.767	0.5	0.073538
		0.755	0.5166	0.072387
		0.742	0.5333	0.071141
		0.723	0.55	0.069319
		0.705	0.5666	0.067593
		0.692	0.5833	0.066347
		0.686	0.6	0.065772
		0.667	0.6166	0.06395

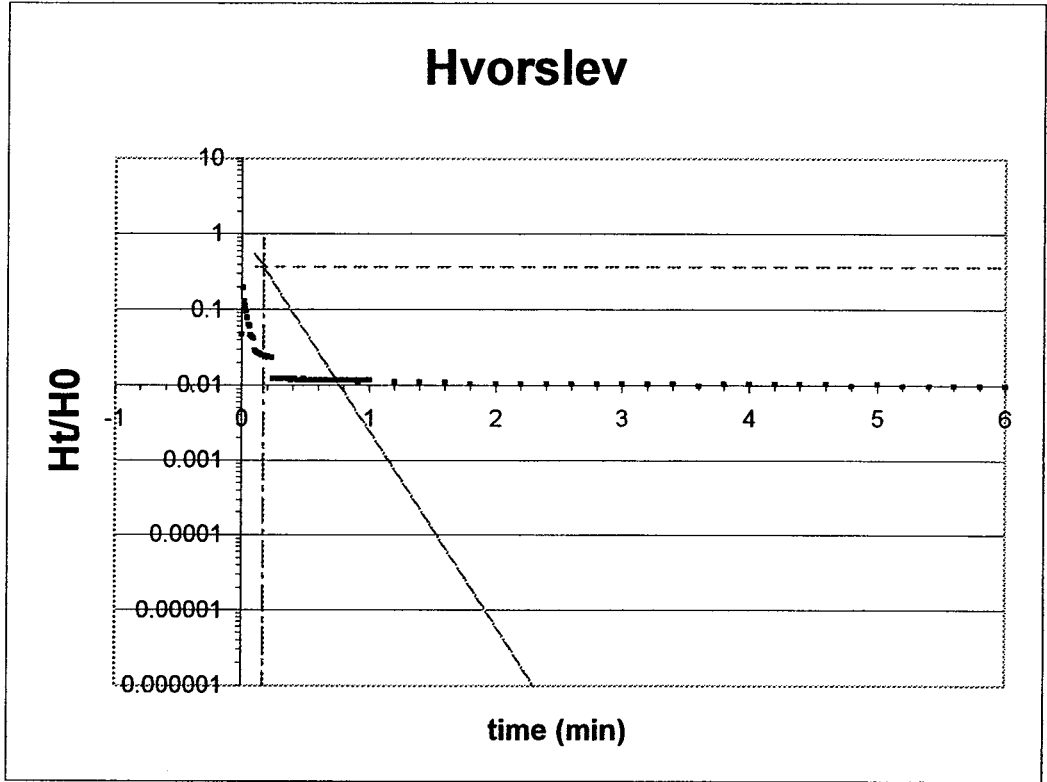
0.655	0.6333	0.0628
0.642	0.65	0.061553
0.63	0.6666	0.060403
0.617	0.6833	0.059156
0.605	0.7	0.058006
0.592	0.7166	0.056759
0.586	0.7333	0.056184
0.574	0.75	0.055034
0.561	0.7666	0.053787
0.549	0.7833	0.052637
0.536	0.8	0.05139
0.53	0.8166	0.050815
0.517	0.8333	0.049569
0.505	0.85	0.048418
0.499	0.8666	0.047843
0.492	0.8833	0.047172
0.48	0.9	0.046021
0.474	0.9166	0.045446
0.461	0.9333	0.044199
0.455	0.95	0.043624
0.443	0.9666	0.042474
0.436	0.9833	0.041802
0.43	1	0.041227
0.336	1.2	0.032215
0.268	1.4	0.025695
0.212	1.6	0.020326
0.168	1.8	0.016107
0.137	2	0.013135
0.112	2.2	0.010738
0.087	2.4	0.008341
0.074	2.6	0.007095
0.056	2.8	0.005369
0.043	3	0.004123
0.037	3.2	0.003547
0.031	3.4	0.002972
0.024	3.6	0.002301
0.018	3.8	0.001726
0.018	4	0.001726
0.012	4.2	0.001151
0.012	4.4	0.001151
0.012	4.6	0.001151
0.012	4.8	0.001151
0.006	5	0.000575
0.006	5.2	0.000575
0.006	5.4	0.000575
0.006	5.6	0.000575
0.006	5.8	0.000575
0.006	6	0.000575
0.006	6.2	0.000575
0.006	6.4	0.000575
0.0001	6.6	9.59E-06
0.0001	6.8	9.59E-06
0.0001	7	9.59E-06
0.0001	7.2	9.59E-06
0.0001	7.4	9.59E-06
0.0001	7.6	9.59E-06
0.0001	7.8	9.59E-06
0.0001	8	9.59E-06
0.0001	8.2	9.59E-06
0.0001	8.4	9.59E-06
0.0001	8.6	9.59E-06
0.0001	8.8	9.59E-06
0.0001	9	9.59E-06
0.0001	9.2	9.59E-06
0.0001	9.4	9.59E-06
0.0001	9.6	9.59E-06
0.0001	9.8	9.59E-06
0.0001	10	9.59E-06

Well W-107A

CDM

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	48.4	158.6

t (min)	H _t /H ₀
0	0.046283
0.0083	0.198216
0.0166	0.127156
0.025	0.109316
0.0333	0.093261
0.0416	0.077205
0.05	0.062339
0.0583	0.059861
0.0666	0.045689
0.075	0.0444
0.0833	0.042616
0.0916	0.041328
0.1	0.02894
0.1083	0.02775
0.1166	0.027156
0.125	0.026462
0.1333	0.025867
0.1416	0.025867
0.15	0.025273
0.1583	0.024678
0.1666	0.024678
0.175	0.024678
0.1833	0.024083
0.1916	0.024083
0.2	0.024083
0.2083	0.023389
0.2166	0.023389
0.225	0.023389
0.2333	0.023389
0.2416	0.012289
0.25	0.012289
0.2583	0.012289
0.2666	0.012289
0.275	0.012289
0.2833	0.012289
0.2916	0.012289
0.3	0.012289
0.3083	0.012289
0.3166	0.012289
0.325	0.012289
0.3333	0.012289
0.35	0.012289
0.3666	0.012289
0.3833	0.011695
0.4	0.012289
0.4166	0.012289
0.4333	0.011695
0.45	0.011695
0.4666	0.011695
0.4833	0.012289
0.5	0.011695
0.5166	0.011695
0.5333	0.011695
0.55	0.011695
0.5666	0.011695
0.5833	0.011695
0.6	0.011695
0.6166	0.011695
0.6333	0.011695
0.65	0.011695
0.6666	0.011695



m
-6
T₀
0.17
K (length/day)
158.6

Fitted Line

t	H _t /H ₀
0.04	0.786627861
0.02	0.886920437
0.01	0.941764534
0.1	0.548811636
0.2	0.301194212
0.3	0.165298888
0.4	0.090717953
0.6	0.027323722
0.8	0.008229747
1	0.002478752
2	6.14421E-06
3	1.523E-08
4	3.77513E-11
6	2.31952E-16
8	1.42516E-21
10	8.75651E-27

T₀

t	H _t /H ₀
0.17	0.78662786
0.17	0.88692044
0.17	0.94176453
0.17	0.54881164
0.17	0.30119421
0.17	0.16529889
0.17	0.09071795
0.17	0.02732372
0.17	0.00822975
0.17	0.00247875
0.17	6.1442E-06
0.17	1.523E-08
0.17	3.7751E-11
0.17	2.3195E-16
0.17	1.4252E-21
0.17	8.7565E-27

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37
10	0.37

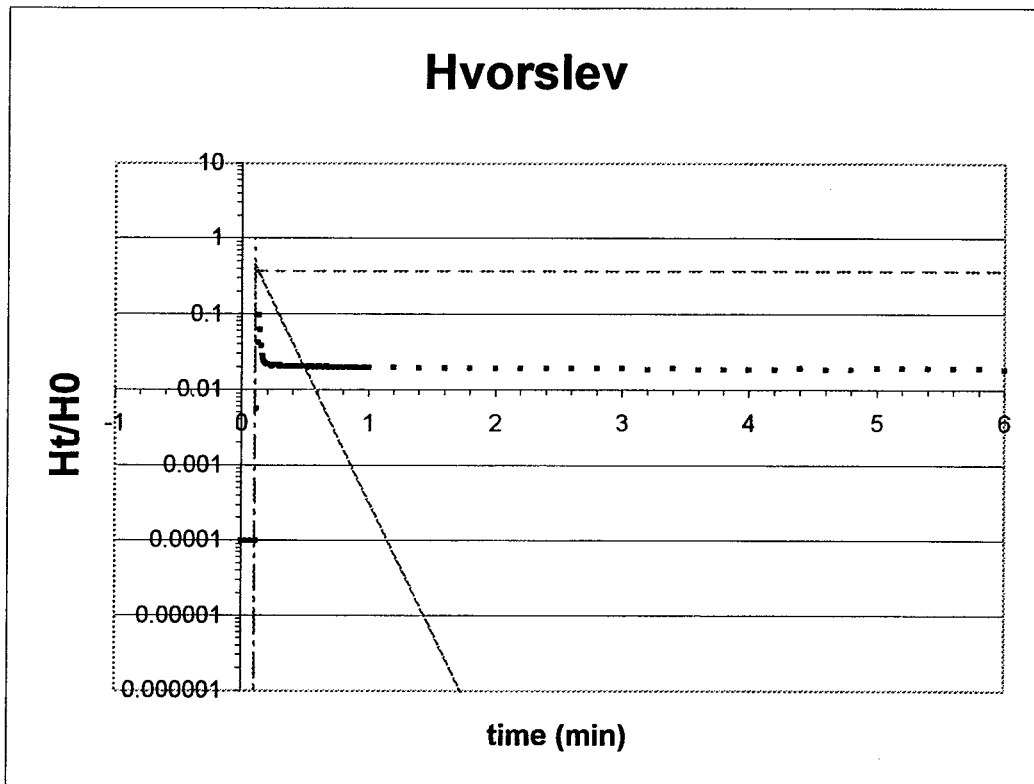
0.6833	0.011695
0.7	0.011695
0.7166	0.011695
0.7333	0.011695
0.75	0.011695
0.7666	0.011695
0.7833	0.011695
0.8	0.011695
0.8166	0.011695
0.8333	0.011695
0.85	0.011695
0.8666	0.011695
0.8833	0.011695
0.9	0.011695
0.9166	0.0111
0.9333	0.011695
0.95	0.011695
0.9666	0.011695
0.9833	0.011695
1	0.011695
1.2	0.0111
1.4	0.0111
1.6	0.0111
1.8	0.010406
2	0.010406
2.2	0.010406
2.4	0.010406
2.6	0.010406
2.8	0.010406
3	0.010406
3.2	0.010406
3.4	0.010406
3.6	0.009812
3.8	0.010406
4	0.010406
4.2	0.010406
4.4	0.010406
4.6	0.010406
4.8	0.009812
5	0.010406
5.2	0.009812
5.4	0.009812
5.6	0.009812
5.8	0.009812
6	0.009812
6.2	0.009812
6.4	0.009812
6.6	0.009812
6.8	0.009812
7	0.009812
7.2	0.009812
7.4	0.009812
7.6	0.009812
7.8	0.009812
8	0.009812
8.2	0.009812
8.4	0.009812
8.6	0.009217
8.8	0.009217
9	0.009217
9.2	0.009217
9.4	0.009217
9.6	0.008622
9.8	0.009217
10	0.009217

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
	0.467		0	0.046283
	2	0.0083	0.0083	0.198216
	1.283	0.0166	0.0166	0.127156
	1.103	0.025	0.025	0.109316
	0.941	0.0333	0.0333	0.093261
	0.779	0.0416	0.0416	0.077205
	0.629	0.05	0.05	0.062339
	0.604	0.0583	0.0583	0.059861
	0.461	0.0666	0.0666	0.045689
	0.448	0.075	0.075	0.0444
	0.43	0.0833	0.0833	0.042616
	0.417	0.0916	0.0916	0.041328
	0.292	0.1	0.1	0.02894
	0.28	0.1083	0.1083	0.02775
	0.274	0.1166	0.1166	0.027156
	0.267	0.125	0.125	0.026462
	0.261	0.1333	0.1333	0.025867
	0.261	0.1416	0.1416	0.025867
	0.255	0.15	0.15	0.025273
	0.249	0.1583	0.1583	0.024678
	0.249	0.1666	0.1666	0.024678
	0.249	0.175	0.175	0.024678
	0.243	0.1833	0.1833	0.024083
	0.243	0.1916	0.1916	0.024083
	0.243	0.2	0.2	0.024083
	0.236	0.2083	0.2083	0.023389
	0.236	0.2166	0.2166	0.023389
	0.236	0.225	0.225	0.023389
	0.236	0.2333	0.2333	0.023389
	0.124	0.2416	0.2416	0.012289
	0.124	0.25	0.25	0.012289
	0.124	0.2583	0.2583	0.012289
	0.124	0.2666	0.2666	0.012289
	0.124	0.275	0.275	0.012289
	0.124	0.2833	0.2833	0.012289
	0.124	0.2916	0.2916	0.012289
	0.124	0.3	0.3	0.012289
	0.124	0.3083	0.3083	0.012289
	0.124	0.3166	0.3166	0.012289
	0.124	0.325	0.325	0.012289
	0.124	0.3333	0.3333	0.012289
	0.124	0.35	0.35	0.012289
	0.124	0.3666	0.3666	0.012289
	0.118	0.3833	0.3833	0.011695
	0.124	0.4	0.4	0.012289
	0.124	0.4166	0.4166	0.012289
	0.118	0.4333	0.4333	0.011695
	0.118	0.45	0.45	0.011695
	0.118	0.4666	0.4666	0.011695
	0.124	0.4833	0.4833	0.012289
	0.118	0.5	0.5	0.011695
	0.118	0.5166	0.5166	0.011695
	0.118	0.5333	0.5333	0.011695
	0.118	0.55	0.55	0.011695
	0.118	0.5666	0.5666	0.011695
	0.118	0.5833	0.5833	0.011695
	0.118	0.6	0.6	0.011695
	0.118	0.6166	0.6166	0.011695

0.118	0.6333	0.011695
0.118	0.65	0.011695
0.118	0.6666	0.011695
0.118	0.6833	0.011695
0.118	0.7	0.011695
0.118	0.7166	0.011695
0.118	0.7333	0.011695
0.118	0.75	0.011695
0.118	0.7666	0.011695
0.118	0.7833	0.011695
0.118	0.8	0.011695
0.118	0.8166	0.011695
0.118	0.8333	0.011695
0.118	0.85	0.011695
0.118	0.8666	0.011695
0.118	0.8833	0.011695
0.118	0.9	0.011695
0.112	0.9166	0.0111
0.118	0.9333	0.011695
0.118	0.95	0.011695
0.118	0.9666	0.011695
0.118	0.9833	0.011695
0.118	1	0.011695
0.112	1.2	0.0111
0.112	1.4	0.0111
0.112	1.6	0.0111
0.105	1.8	0.010406
0.105	2	0.010406
0.105	2.2	0.010406
0.105	2.4	0.010406
0.105	2.6	0.010406
0.105	2.8	0.010406
0.105	3	0.010406
0.105	3.2	0.010406
0.105	3.4	0.010406
0.099	3.6	0.009812
0.105	3.8	0.010406
0.105	4	0.010406
0.105	4.2	0.010406
0.105	4.4	0.010406
0.105	4.6	0.010406
0.099	4.8	0.009812
0.105	5	0.010406
0.099	5.2	0.009812
0.099	5.4	0.009812
0.099	5.6	0.009812
0.099	5.8	0.009812
0.099	6	0.009812
0.099	6.2	0.009812
0.099	6.4	0.009812
0.099	6.6	0.009812
0.099	6.8	0.009812
0.099	7	0.009812
0.099	7.2	0.009812
0.099	7.4	0.009812
0.099	7.6	0.009812
0.099	7.8	0.009812
0.099	8	0.009812
0.099	8.2	0.009812
0.099	8.4	0.009812
0.093	8.6	0.009217
0.093	8.8	0.009217
0.093	9	0.009217
0.093	9.2	0.009217
0.093	9.4	0.009217
0.087	9.6	0.008622
0.093	9.8	0.009217
0.093	10	0.009217

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	82.2	269.6

t (min)	H _t /H ₀
0	9.91E-05
0.0083	9.91E-05
0.0166	9.91E-05
0.025	9.91E-05
0.0333	9.91E-05
0.0416	9.91E-05
0.05	9.91E-05
0.0583	9.91E-05
0.0666	9.91E-05
0.075	9.91E-05
0.0833	9.91E-05
0.0916	9.91E-05
0.1	9.91E-05
0.1083	9.91E-05
0.1166	0.00555
0.125	0.041923
0.1333	0.095639
0.1416	0.061051
0.15	0.037562
0.1583	0.027651
0.1666	0.023984
0.175	0.022795
0.1833	0.022101
0.1916	0.021506
0.2	0.021506
0.2083	0.020912
0.2166	0.020912
0.225	0.020912
0.2333	0.020317
0.2416	0.020912
0.25	0.020912
0.2583	0.020912
0.2666	0.020912
0.275	0.020912
0.2833	0.020912
0.2916	0.020317
0.3	0.020912
0.3083	0.020317
0.3166	0.020317
0.325	0.020317
0.3333	0.020317
0.35	0.020317
0.3666	0.020317
0.3833	0.020317
0.4	0.020317
0.4166	0.020317
0.4333	0.020317
0.45	0.020317
0.4666	0.020317
0.4833	0.020317
0.5	0.020317
0.5166	0.019623
0.5333	0.020317
0.55	0.020317
0.5666	0.019623
0.5833	0.019623
0.6	0.020317
0.6166	0.020317
0.6333	0.019623
0.65	0.019623
0.6666	0.020317



m
-8
T₀
0.1
K (length/day)
269.6

Fitted Line

t

H_t/H₀

T₀

0.1

0.04	0.726149037	0.1	0.72614904
0.02	0.852143789	0.1	0.85214379
0.01	0.923116346	0.1	0.92311635
0.1	0.449328964	0.1	0.44932896
0.2	0.201896518	0.1	0.20189652
0.3	0.090717953	0.1	0.09071795
0.4	0.040762204	0.1	0.0407622
0.6	0.008229747	0.1	0.00822975
0.8	0.001661557	0.1	0.00166156
1	0.000335463	0.1	0.00033546
2	1.12535E-07	0.1	1.1254E-07
3	3.77513E-11	0.1	3.7751E-11
4	1.26642E-14	0.1	1.2664E-14
6	1.42516E-21	0.1	1.4252E-21
8	1.60381E-28	0.1	1.6038E-28
10	1.80485E-35	0.1	1.8049E-35
1		0.1	1
10		0.1	10

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37
10	0.37

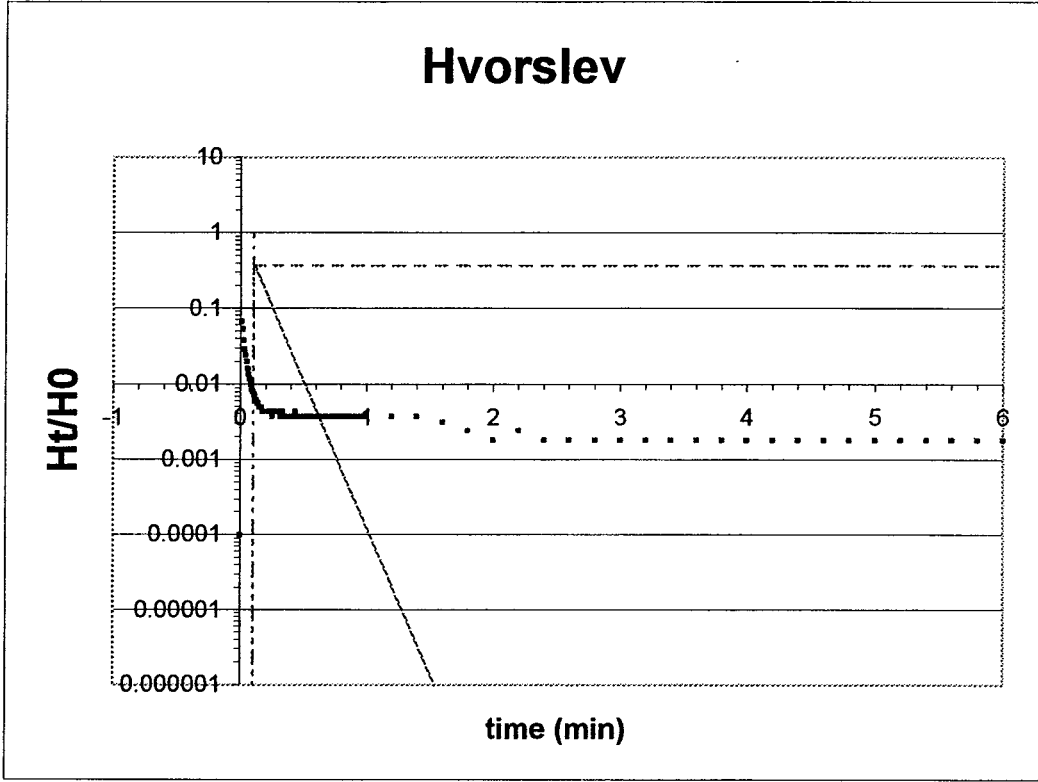
0.6833 0.019623
0.7 0.019623
0.7166 0.019623
0.7333 0.019623
0.75 0.019623
0.7666 0.019623
0.7833 0.019623
0.8 0.019623
0.8166 0.019623
0.8333 0.019623
0.85 0.019623
0.8666 0.019623
0.8833 0.019623
0.9 0.019623
0.9166 0.019623
0.9333 0.019623
0.95 0.019623
0.9666 0.019623
0.9833 0.019623
1 0.019623
1.2 0.019623
1.4 0.019029
1.6 0.019029
1.8 0.019029
2 0.019029
2.2 0.019029
2.4 0.019029
2.6 0.019029
2.8 0.019029
3 0.019029
3.2 0.018434
3.4 0.019029
3.6 0.018434
3.8 0.018434
4 0.018434
4.2 0.018434
4.4 0.019029
4.6 0.018434
4.8 0.018434
5 0.019029
5.2 0.019029
5.4 0.019029
5.6 0.019029
5.8 0.019029
6 0.018434
6.2 0.018434
6.4 0.018434
6.6 0.018434
6.8 0.018434
7 0.018434
7.2 0.018434
7.4 0.018434
7.6 0.018434
7.8 0.019029
8 0.018434
8.2 0.018434
8.4 0.018434
8.6 0.018434
8.8 0.017839
9 0.017839
9.2 0.017839
9.4 0.017839
9.6 0.017839
9.8 0.017839
10 0.017839

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
0.001		0	0	9.91E-05
0.001	0.0083		0.0083	9.91E-05
0.001	0.0166		0.0166	9.91E-05
0.001	0.025		0.025	9.91E-05
0.001	0.0333		0.0333	9.91E-05
0.001	0.0416		0.0416	9.91E-05
0.001	0.05		0.05	9.91E-05
0.001	0.0583		0.0583	9.91E-05
0.001	0.0666		0.0666	9.91E-05
0.001	0.075		0.075	9.91E-05
0.001	0.0833		0.0833	9.91E-05
0.001	0.0916		0.0916	9.91E-05
0.001	0.1		0.1	9.91E-05
0.001	0.1083		0.1083	9.91E-05
0.056	0.1166		0.1166	0.00555
0.423	0.125		0.125	0.041923
0.965	0.1333		0.1333	0.095639
0.616	0.1416		0.1416	0.061051
0.379	0.15		0.15	0.037562
0.279	0.1583		0.1583	0.027651
0.242	0.1666		0.1666	0.023984
0.23	0.175		0.175	0.022795
0.223	0.1833		0.1833	0.022101
0.217	0.1916		0.1916	0.021506
0.217	0.2		0.2	0.021506
0.211	0.2083		0.2083	0.020912
0.211	0.2166		0.2166	0.020912
0.211	0.225		0.225	0.020912
0.205	0.2333		0.2333	0.020317
0.211	0.2416		0.2416	0.020912
0.211	0.25		0.25	0.020912
0.211	0.2583		0.2583	0.020912
0.211	0.2666		0.2666	0.020912
0.211	0.275		0.275	0.020912
0.211	0.2833		0.2833	0.020912
0.205	0.2916		0.2916	0.020317
0.211	0.3		0.3	0.020912
0.205	0.3083		0.3083	0.020317
0.205	0.3166		0.3166	0.020317
0.205	0.325		0.325	0.020317
0.205	0.3333		0.3333	0.020317
0.205	0.35		0.35	0.020317
0.205	0.3666		0.3666	0.020317
0.205	0.3833		0.3833	0.020317
0.205	0.4		0.4	0.020317
0.205	0.4166		0.4166	0.020317
0.205	0.4333		0.4333	0.020317
0.205	0.45		0.45	0.020317
0.205	0.4666		0.4666	0.020317
0.205	0.4833		0.4833	0.020317
0.205	0.5		0.5	0.020317
0.198	0.5166		0.5166	0.019623
0.205	0.5333		0.5333	0.020317
0.205	0.55		0.55	0.020317
0.198	0.5666		0.5666	0.019623
0.198	0.5833		0.5833	0.019623
0.205	0.6		0.6	0.020317
0.205	0.6166		0.6166	0.020317

0.198	0.6333	0.019623
0.198	0.65	0.019623
0.205	0.6666	0.020317
0.198	0.6833	0.019623
0.198	0.7	0.019623
0.198	0.7166	0.019623
0.198	0.7333	0.019623
0.198	0.75	0.019623
0.198	0.7666	0.019623
0.198	0.7833	0.019623
0.198	0.8	0.019623
0.198	0.8166	0.019623
0.198	0.8333	0.019623
0.198	0.85	0.019623
0.198	0.8666	0.019623
0.198	0.8833	0.019623
0.198	0.9	0.019623
0.198	0.9166	0.019623
0.198	0.9333	0.019623
0.198	0.95	0.019623
0.198	0.9666	0.019623
0.198	0.9833	0.019623
0.198	1	0.019623
0.198	1.2	0.019623
0.192	1.4	0.019029
0.192	1.6	0.019029
0.192	1.8	0.019029
0.192	2	0.019029
0.192	2.2	0.019029
0.192	2.4	0.019029
0.192	2.6	0.019029
0.192	2.8	0.019029
0.192	3	0.019029
0.186	3.2	0.018434
0.192	3.4	0.019029
0.186	3.6	0.018434
0.186	3.8	0.018434
0.186	4	0.018434
0.186	4.2	0.018434
0.192	4.4	0.019029
0.186	4.6	0.018434
0.186	4.8	0.018434
0.192	5	0.019029
0.192	5.2	0.019029
0.192	5.4	0.019029
0.192	5.6	0.019029
0.192	5.8	0.019029
0.186	6	0.018434
0.186	6.2	0.018434
0.186	6.4	0.018434
0.186	6.6	0.018434
0.186	6.8	0.018434
0.186	7	0.018434
0.186	7.2	0.018434
0.186	7.4	0.018434
0.186	7.6	0.018434
0.192	7.8	0.019029
0.186	8	0.018434
0.186	8.2	0.018434
0.186	8.4	0.018434
0.186	8.6	0.018434
0.18	8.8	0.017839
0.18	9	0.017839
0.18	9.2	0.017839
0.18	9.4	0.017839
0.18	9.6	0.017839
0.18	9.8	0.017839
0.18	10	0.017839

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	82.2	269.6

t (min)	H _t /H ₀
0	9.91E-05
0.0083	0.066006
0.0166	0.052428
0.025	0.037661
0.0333	0.02894
0.0416	0.024083
0.05	0.019722
0.0583	0.016056
0.0666	0.013578
0.075	0.011695
0.0833	0.009812
0.0916	0.008622
0.1	0.008028
0.1083	0.007334
0.1166	0.006145
0.125	0.006145
0.1333	0.00555
0.1416	0.00555
0.15	0.004856
0.1583	0.004856
0.1666	0.004856
0.175	0.004262
0.1833	0.004262
0.1916	0.004262
0.2	0.004262
0.2083	0.004262
0.2166	0.004262
0.225	0.004262
0.2333	0.004262
0.2416	0.004262
0.25	0.003667
0.2583	0.004262
0.2666	0.004262
0.275	0.004262
0.2833	0.004262
0.2916	0.004262
0.3	0.004262
0.3083	0.004262
0.3166	0.003667
0.325	0.003667
0.3333	0.004262
0.35	0.003667
0.3666	0.003667
0.3833	0.003667
0.4	0.003667
0.4166	0.003667
0.4333	0.004262
0.45	0.003667
0.4666	0.003667
0.4833	0.003667
0.5	0.003667
0.5166	0.003667
0.5333	0.003667
0.55	0.003667
0.5666	0.003667
0.5833	0.003667
0.6	0.003667
0.6166	0.003667
0.6333	0.003667
0.65	0.003667
0.6666	0.003667



m
 -9
 T₀
 0.1
 K (length/day)
 269.6

Fitted Line	T ₀
t	0.1
0.04	0.1 0.697676326
0.02	0.1 0.835270211
0.01	0.1 0.913931185
0.1	0.1 0.40656966
0.2	0.1 0.165298888
0.3	0.1 0.067205513
0.4	0.1 0.027323722
0.6	0.1 0.004516581
0.8	0.1 0.000746586
1	0.1 0.00012341
2	0.1 1.523E-08
3	0.1 1.87953E-12
4	0.1 2.31952E-16
6	0.1 3.53263E-24
8	0.1 5.38019E-32
10	0.1 8.19401E-40
1	0.1 1

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37

0.6833 0.003667
0.7 0.003667
0.7166 0.003667
0.7333 0.003667
0.75 0.003667
0.7666 0.003667
0.7833 0.003667
0.8 0.003667
0.8166 0.003667
0.8333 0.003667
0.85 0.003667
0.8666 0.003667
0.8833 0.003667
0.9 0.003667
0.9166 0.003667
0.9333 0.003667
0.95 0.003667
0.9666 0.003667
0.9833 0.003667
1 0.003667
1.2 0.003667
1.4 0.003667
1.6 0.003072
1.8 0.002379
2 0.001784
2.2 0.002379
2.4 0.001784
2.6 0.001784
2.8 0.001784
3 0.001784
3.2 0.001784
3.4 0.001784
3.6 0.001784
3.8 0.001784
4 0.001784
4.2 0.001784
4.4 0.001784
4.6 0.001784
4.8 0.001784
5 0.001784
5.2 0.001784
5.4 0.001784
5.6 0.001784
5.8 0.001784
6 0.001784
6.2 0.001784
6.4 0.002379
6.6 0.001784
6.8 0.001784
7 0.001784
7.2 0.001784
7.4 0.001784
7.6 0.001784
7.8 0.001784
8 0.001784
8.2 0.001784
8.4 0.001784
8.6 0.002379
8.8 0.002379
9 0.002379
9.2 0.002379
9.4 0.002379
9.6 0.002379
9.8 0.002379
10 0.002379

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.001	0	9.91E-05
	0.666	0.0083	0.0083	0.066006
	0.529	0.0166	0.0166	0.052428
	0.38	0.025	0.025	0.037661
	0.292	0.0333	0.0333	0.02894
	0.243	0.0416	0.0416	0.024083
	0.199	0.05	0.05	0.019722
	0.162	0.0583	0.0583	0.016056
	0.137	0.0666	0.0666	0.013578
	0.118	0.075	0.075	0.011695
	0.099	0.0833	0.0833	0.009812
	0.087	0.0916	0.0916	0.008622
	0.081	0.1	0.1	0.008028
	0.074	0.1083	0.1083	0.007334
	0.062	0.1166	0.1166	0.006145
	0.062	0.125	0.125	0.006145
	0.056	0.1333	0.1333	0.00555
	0.056	0.1416	0.1416	0.00555
	0.049	0.15	0.15	0.004856
	0.049	0.1583	0.1583	0.004856
	0.049	0.1666	0.1666	0.004856
	0.043	0.175	0.175	0.004262
	0.043	0.1833	0.1833	0.004262
	0.043	0.1916	0.1916	0.004262
	0.043	0.2	0.2	0.004262
	0.043	0.2083	0.2083	0.004262
	0.043	0.2166	0.2166	0.004262
	0.043	0.225	0.225	0.004262
	0.043	0.2333	0.2333	0.004262
	0.043	0.2416	0.2416	0.004262
	0.037	0.25	0.25	0.003667
	0.043	0.2583	0.2583	0.004262
	0.043	0.2666	0.2666	0.004262
	0.043	0.275	0.275	0.004262
	0.043	0.2833	0.2833	0.004262
	0.043	0.2916	0.2916	0.004262
	0.043	0.3	0.3	0.004262
	0.043	0.3083	0.3083	0.004262
	0.037	0.3166	0.3166	0.003667
	0.037	0.325	0.325	0.003667
	0.043	0.3333	0.3333	0.004262
	0.037	0.35	0.35	0.003667
	0.037	0.3666	0.3666	0.003667
	0.037	0.3833	0.3833	0.003667
	0.037	0.4	0.4	0.003667
	0.037	0.4166	0.4166	0.003667
	0.043	0.4333	0.4333	0.004262
	0.037	0.45	0.45	0.003667
	0.037	0.4666	0.4666	0.003667
	0.037	0.4833	0.4833	0.003667
	0.037	0.5	0.5	0.003667
	0.037	0.5166	0.5166	0.003667
	0.037	0.5333	0.5333	0.003667
	0.037	0.55	0.55	0.003667
	0.037	0.5666	0.5666	0.003667
	0.037	0.5833	0.5833	0.003667
	0.037	0.6	0.6	0.003667
	0.037	0.6166	0.6166	0.003667

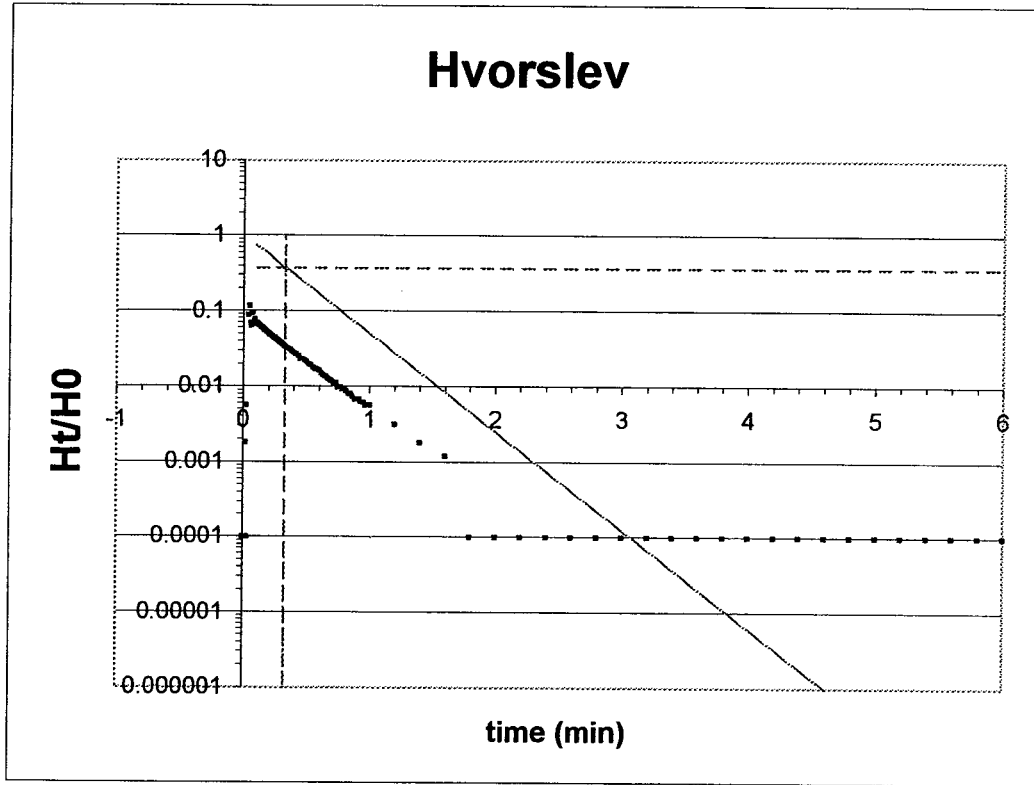
0.037	0.6333	0.003667
0.037	0.65	0.003667
0.037	0.6666	0.003667
0.037	0.6833	0.003667
0.037	0.7	0.003667
0.037	0.7166	0.003667
0.037	0.7333	0.003667
0.037	0.75	0.003667
0.037	0.7666	0.003667
0.037	0.7833	0.003667
0.037	0.8	0.003667
0.037	0.8166	0.003667
0.037	0.8333	0.003667
0.037	0.85	0.003667
0.037	0.8666	0.003667
0.037	0.8833	0.003667
0.037	0.9	0.003667
0.037	0.9166	0.003667
0.037	0.9333	0.003667
0.037	0.95	0.003667
0.037	0.9666	0.003667
0.037	0.9833	0.003667
0.037	1	0.003667
0.037	1.2	0.003667
0.037	1.4	0.003667
0.031	1.6	0.003072
0.024	1.8	0.002379
0.018	2	0.001784
0.024	2.2	0.002379
0.018	2.4	0.001784
0.018	2.6	0.001784
0.018	2.8	0.001784
0.018	3	0.001784
0.018	3.2	0.001784
0.018	3.4	0.001784
0.018	3.6	0.001784
0.018	3.8	0.001784
0.018	4	0.001784
0.018	4.2	0.001784
0.018	4.4	0.001784
0.018	4.6	0.001784
0.018	4.8	0.001784
0.018	5	0.001784
0.018	5.2	0.001784
0.018	5.4	0.001784
0.018	5.6	0.001784
0.018	5.8	0.001784
0.018	6	0.001784
0.018	6.2	0.001784
0.024	6.4	0.002379
0.018	6.6	0.001784
0.018	6.8	0.001784
0.018	7	0.001784
0.018	7.2	0.001784
0.018	7.4	0.001784
0.018	7.6	0.001784
0.018	7.8	0.001784
0.018	8	0.001784
0.018	8.2	0.001784
0.018	8.4	0.001784
0.024	8.6	0.002379
0.024	8.8	0.002379
0.024	9	0.002379
0.024	9.2	0.002379
0.024	9.4	0.002379
0.024	9.6	0.002379
0.024	9.8	0.002379
0.024	10	0.002379

Well W-107B

CDM

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	24.9	81.7

t (min)	H _t /H ₀
0	9.86E-05
0.0083	9.86E-05
0.0166	0.001775
0.025	0.005523
0.0333	9.86E-05
0.0416	0.086686
0.05	0.113807
0.0583	0.068245
0.0666	0.06213
0.075	0.092801
0.0833	0.066963
0.0916	0.075641
0.1	0.067653
0.1083	0.066963
0.1166	0.065187
0.125	0.063314
0.1333	0.06144
0.1416	0.059665
0.15	0.057791
0.1583	0.056509
0.1666	0.054734
0.175	0.053452
0.1833	0.052268
0.1916	0.050394
0.2	0.049803
0.2083	0.047929
0.2166	0.047337
0.225	0.046055
0.2333	0.044872
0.2416	0.04359
0.25	0.042998
0.2583	0.041815
0.2666	0.040533
0.275	0.039941
0.2833	0.038659
0.2916	0.038067
0.3	0.036884
0.3083	0.035602
0.3166	0.03501
0.325	0.033826
0.3333	0.033136
0.35	0.031953
0.3666	0.030671
0.3833	0.028895
0.4	0.027613
0.4166	0.02643
0.4333	0.025148
0.45	0.022682
0.4666	0.022682
0.4833	0.022091
0.5	0.020907
0.5166	0.019625
0.5333	0.019034
0.55	0.017751
0.5666	0.01716
0.5833	0.016568
0.6	0.015976
0.6166	0.014694
0.6333	0.014103
0.65	0.013511
0.6666	0.012821



m
-3
T₀
0.33
K (length/day)
81.7

Fitted Line

t	H _t /H ₀
0.04	0.886920437
0.02	0.941764534
0.01	0.970445534
0.1	0.740818221
0.2	0.548811636
0.3	0.40656966
0.4	0.301194212
0.6	0.165298888
0.8	0.090717953
1	0.049787068
2	0.002478752
3	0.00012341
4	6.14421E-06
6	1.523E-08
8	3.77513E-11
10	9.35762E-14

T₀
0.33

t	H _t /H ₀
0.33	0.88692044
0.33	0.94176453
0.33	0.97044553
0.33	0.74081822
0.33	0.54881164
0.33	0.40656966
0.33	0.30119421
0.33	0.16529889
0.33	0.09071795
0.33	0.04978707
0.33	0.00247875
0.33	0.00012341
0.33	6.1442E-06
0.33	1.523E-08
0.33	3.7751E-11
0.33	9.3576E-14

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37
10	0.37

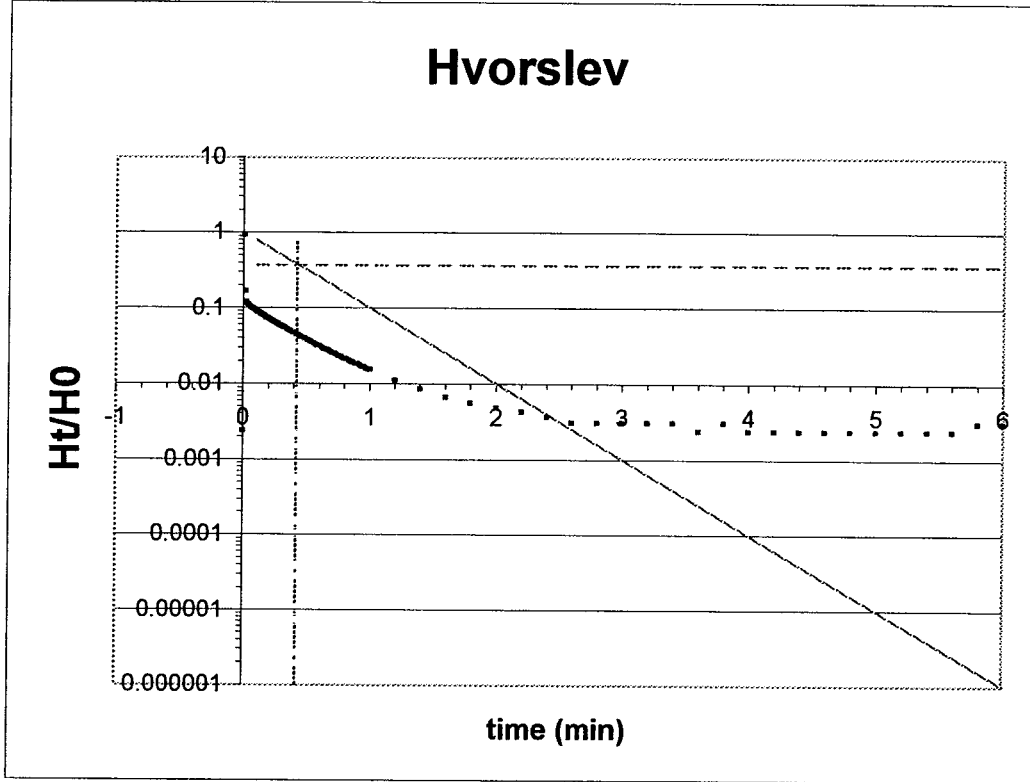
0.6833	0.012229
0.7	0.011637
0.7166	0.011045
0.7333	0.011045
0.75	0.009763
0.7666	0.009763
0.7833	0.009172
0.8	0.009172
0.8166	0.00858
0.8333	0.007988
0.85	0.007988
0.8666	0.007298
0.8833	0.006706
0.9	0.006706
0.9166	0.006706
0.9333	0.006114
0.95	0.006114
0.9666	0.005523
0.9833	0.005523
1	0.005523
1.2	0.003057
1.4	0.001775
1.6	0.001183
1.8	9.86E-05
2	9.86E-05
2.2	9.86E-05
2.4	9.86E-05
2.6	9.86E-05
2.8	9.86E-05
3	9.86E-05
3.2	9.86E-05
3.4	9.86E-05
3.6	9.86E-05
3.8	9.86E-05
4	9.86E-05
4.2	9.86E-05
4.4	9.86E-05
4.6	9.86E-05
4.8	9.86E-05
5	9.86E-05
5.2	9.86E-05
5.4	9.86E-05
5.6	9.86E-05
5.8	9.86E-05
6	9.86E-05
6.2	9.86E-05
6.4	9.86E-05
6.6	9.86E-05
6.8	9.86E-05
7	9.86E-05
7.2	9.86E-05
7.4	9.86E-05
7.6	9.86E-05
7.8	9.86E-05
8	9.86E-05
8.2	9.86E-05
8.4	9.86E-05
8.6	9.86E-05
8.8	9.86E-05
9	9.86E-05
9.2	9.86E-05
9.4	9.86E-05
9.6	9.86E-05
9.8	9.86E-05
10	9.86E-05

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.001	0	9.86E-05
		0.001	0.0083	9.86E-05
		0.018	0.0166	0.001775
		0.056	0.025	0.005523
		0.001	0.0333	9.86E-05
		0.879	0.0416	0.086686
		1.154	0.05	0.113807
		0.692	0.0583	0.068245
		0.63	0.0666	0.06213
		0.941	0.075	0.092801
		0.679	0.0833	0.066963
		0.767	0.0916	0.075641
		0.686	0.1	0.067653
		0.679	0.1083	0.066963
		0.661	0.1166	0.065187
		0.642	0.125	0.063314
		0.623	0.1333	0.06144
		0.605	0.1416	0.059665
		0.586	0.15	0.057791
		0.573	0.1583	0.056509
		0.555	0.1666	0.054734
		0.542	0.175	0.053452
		0.53	0.1833	0.052268
		0.511	0.1916	0.050394
		0.505	0.2	0.049803
		0.486	0.2083	0.047929
		0.48	0.2166	0.047337
		0.467	0.225	0.046055
		0.455	0.2333	0.044872
		0.442	0.2416	0.04359
		0.436	0.25	0.042998
		0.424	0.2583	0.041815
		0.411	0.2666	0.040533
		0.405	0.275	0.039941
		0.392	0.2833	0.038659
		0.386	0.2916	0.038067
		0.374	0.3	0.036884
		0.361	0.3083	0.035602
		0.355	0.3166	0.03501
		0.343	0.325	0.033826
		0.336	0.3333	0.033136
		0.324	0.35	0.031953
		0.311	0.3666	0.030671
		0.293	0.3833	0.028895
		0.28	0.4	0.027613
		0.268	0.4166	0.02643
		0.255	0.4333	0.025148
		0.23	0.45	0.022682
		0.23	0.4666	0.022682
		0.224	0.4833	0.022091
		0.212	0.5	0.020907
		0.199	0.5166	0.019625
		0.193	0.5333	0.019034
		0.18	0.55	0.017751
		0.174	0.5666	0.01716
		0.168	0.5833	0.016568
		0.162	0.6	0.015976
		0.149	0.6166	0.014694

0.143	0.6333	0.014103
0.137	0.65	0.013511
0.13	0.6666	0.012821
0.124	0.6833	0.012229
0.118	0.7	0.011637
0.112	0.7166	0.011045
0.112	0.7333	0.011045
0.099	0.75	0.009763
0.099	0.7666	0.009763
0.093	0.7833	0.009172
0.093	0.8	0.009172
0.087	0.8166	0.00858
0.081	0.8333	0.007988
0.081	0.85	0.007988
0.074	0.8666	0.007298
0.068	0.8833	0.006706
0.068	0.9	0.006706
0.068	0.9166	0.006706
0.062	0.9333	0.006114
0.062	0.95	0.006114
0.056	0.9666	0.005523
0.056	0.9833	0.005523
0.056	1	0.005523
0.031	1.2	0.003057
0.018	1.4	0.001775
0.012	1.6	0.001183
0.001	1.8	9.86E-05
0.001	2	9.86E-05
0.001	2.2	9.86E-05
0.001	2.4	9.86E-05
0.001	2.6	9.86E-05
0.001	2.8	9.86E-05
0.001	3	9.86E-05
0.001	3.2	9.86E-05
0.001	3.4	9.86E-05
0.001	3.6	9.86E-05
0.001	3.8	9.86E-05
0.001	4	9.86E-05
0.001	4.2	9.86E-05
0.001	4.4	9.86E-05
0.001	4.6	9.86E-05
0.001	4.8	9.86E-05
0.001	5	9.86E-05
0.001	5.2	9.86E-05
0.001	5.4	9.86E-05
0.001	5.6	9.86E-05
0.001	5.8	9.86E-05
0.001	6	9.86E-05
0.001	6.2	9.86E-05
0.001	6.4	9.86E-05
0.001	6.6	9.86E-05
0.001	6.8	9.86E-05
0.001	7	9.86E-05
0.001	7.2	9.86E-05
0.001	7.4	9.86E-05
0.001	7.6	9.86E-05
0.001	7.8	9.86E-05
0.001	8	9.86E-05
0.001	8.2	9.86E-05
0.001	8.4	9.86E-05
0.001	8.6	9.86E-05
0.001	8.8	9.86E-05
0.001	9	9.86E-05
0.001	9.2	9.86E-05
0.001	9.4	9.86E-05
0.001	9.6	9.86E-05
0.001	9.8	9.86E-05
0.001	10	9.86E-05

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day) (m/day)	K ft/day
	0.25	0.07622	5	1.52439	20	19.6	64.2

t (min)	H _i /H ₀
0	0.002367
0.0083	0.938659
0.0166	0.168442
0.025	0.118639
0.0333	0.111243
0.0416	0.109467
0.05	0.10572
0.0583	0.102663
0.0666	0.100197
0.075	0.097732
0.0833	0.095858
0.0916	0.093393
0.1	0.091026
0.1083	0.089152
0.1166	0.086686
0.125	0.084813
0.1333	0.082939
0.1416	0.081755
0.15	0.079882
0.1583	0.078698
0.1666	0.076824
0.175	0.075641
0.1833	0.073767
0.1916	0.072485
0.2	0.071302
0.2083	0.07002
0.2166	0.068836
0.225	0.067653
0.2333	0.066371
0.2416	0.065187
0.25	0.063905
0.2583	0.062722
0.2666	0.06144
0.275	0.060848
0.2833	0.059566
0.2916	0.058383
0.3	0.057791
0.3083	0.056509
0.3166	0.055325
0.325	0.054734
0.3333	0.053452
0.35	0.051578
0.3666	0.049803
0.3833	0.047929
0.4	0.046746
0.4166	0.044872
0.4333	0.04359
0.45	0.041815
0.4666	0.040533
0.4833	0.039349
0.5	0.038067
0.5166	0.036884
0.5333	0.035602
0.55	0.034418
0.5666	0.033136
0.5833	0.031953
0.6	0.031361
0.6166	0.030079
0.6333	0.028895
0.65	0.028205
0.6666	0.027613



m
-2.3

T₀
0.42

K (length/day)
64.2

Fitted Line		T ₀	
t	H _i /H ₀	0.42	
0.04	0.91210515	0.42	0.91210515
0.02	0.955041962	0.42	0.95504196
0.01	0.977262484	0.42	0.97726248
0.1	0.794533603	0.42	0.7945336
0.2	0.631283646	0.42	0.63128365
0.3	0.501576069	0.42	0.50157607
0.4	0.398519041	0.42	0.39851904
0.6	0.251578553	0.42	0.25157855
0.8	0.158817426	0.42	0.15881743
1	0.100258844	0.42	0.10025884
2	0.010051836	0.42	0.01005184
3	0.001007785	0.42	0.00100779
4	0.000101039	0.42	0.00010104
6	1.01563E-06	0.42	1.0156E-06
8	1.0209E-08	0.42	1.0209E-08
10	1.02619E-10	0.42	1.0262E-10
	1	0.42	1

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37
10	0.37

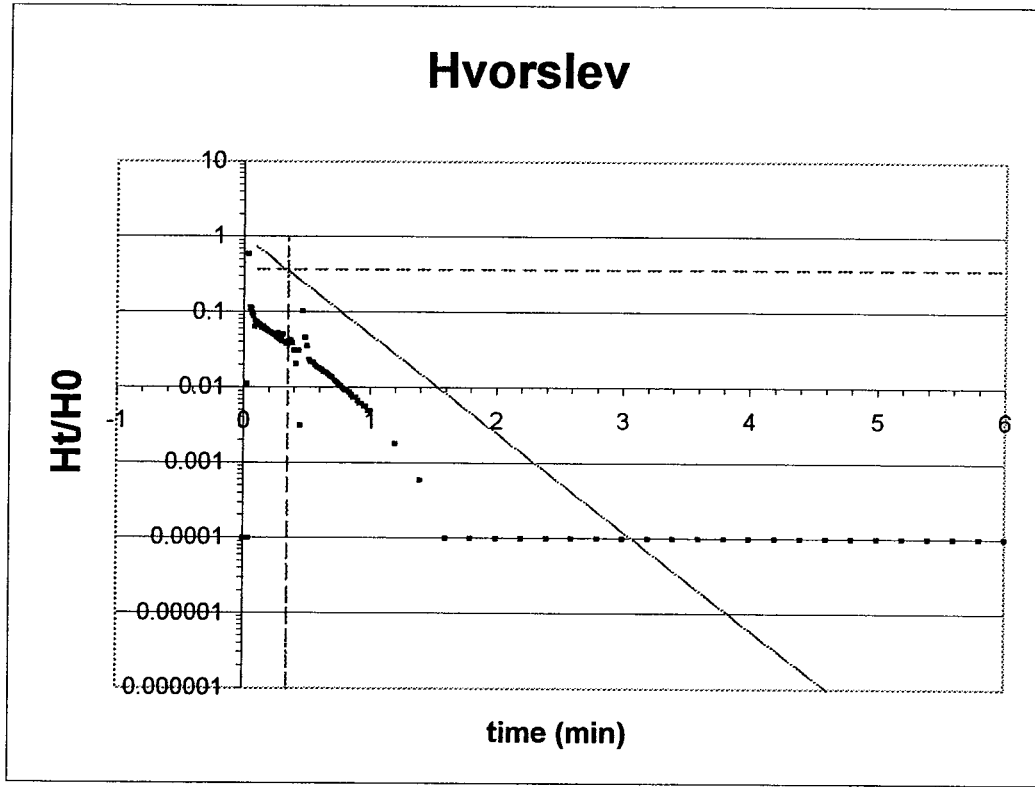
0.6833	0.02643
0.7	0.02574
0.7166	0.025148
0.7333	0.023964
0.75	0.023373
0.7666	0.022682
0.7833	0.022091
0.8	0.021499
0.8166	0.020907
0.8333	0.020217
0.85	0.019625
0.8666	0.019034
0.8833	0.018442
0.9	0.018442
0.9166	0.017751
0.9333	0.01716
0.95	0.016568
0.9666	0.015976
0.9833	0.015286
1	0.015286
1.2	0.011045
1.4	0.00858
1.6	0.006706
1.8	0.005523
2	0.004832
2.2	0.004241
2.4	0.003649
2.6	0.003057
2.8	0.003057
3	0.003057
3.2	0.003057
3.4	0.003057
3.6	0.002367
3.8	0.003057
4	0.002367
4.2	0.002367
4.4	0.002367
4.6	0.002367
4.8	0.002367
5	0.002367
5.2	0.002367
5.4	0.002367
5.6	0.002367
5.8	0.003057
6	0.003057
6.2	0.003057
6.4	0.003057
6.6	0.003057
6.8	0.003057
7	0.003057
7.2	0.003057
7.4	0.003057
7.6	0.003057
7.8	0.003057
8	0.003057
8.2	0.003057
8.4	0.003057
8.6	0.003057
8.8	0.003057
9	0.003057
9.2	0.003057
9.4	0.003057
9.6	0.002367
9.8	0.003057
10	0.002367

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.024	0	0.002367
		9.518	0.0083	0.938659
		1.708	0.0166	0.168442
		1.203	0.025	0.118639
		1.128	0.0333	0.111243
		1.11	0.0416	0.109467
		1.072	0.05	0.10572
		1.041	0.0583	0.102663
		1.016	0.0666	0.100197
		0.991	0.075	0.097732
		0.972	0.0833	0.095858
		0.947	0.0916	0.093393
		0.923	0.1	0.091026
		0.904	0.1083	0.089152
		0.879	0.1166	0.086686
		0.86	0.125	0.084813
		0.841	0.1333	0.082939
		0.829	0.1416	0.081755
		0.81	0.15	0.079882
		0.798	0.1583	0.078698
		0.779	0.1666	0.076824
		0.767	0.175	0.075641
		0.748	0.1833	0.073767
		0.735	0.1916	0.072485
		0.723	0.2	0.071302
		0.71	0.2083	0.07002
		0.698	0.2166	0.068836
		0.686	0.225	0.067653
		0.673	0.2333	0.066371
		0.661	0.2416	0.065187
		0.648	0.25	0.063905
		0.636	0.2583	0.062722
		0.623	0.2666	0.06144
		0.617	0.275	0.060848
		0.604	0.2833	0.059566
		0.592	0.2916	0.058383
		0.586	0.3	0.057791
		0.573	0.3083	0.056509
		0.561	0.3166	0.055325
		0.555	0.325	0.054734
		0.542	0.3333	0.053452
		0.523	0.35	0.051578
		0.505	0.3666	0.049803
		0.486	0.3833	0.047929
		0.474	0.4	0.046746
		0.455	0.4166	0.044872
		0.442	0.4333	0.04359
		0.424	0.45	0.041815
		0.411	0.4666	0.040533
		0.399	0.4833	0.039349
		0.386	0.5	0.038067
		0.374	0.5166	0.036884
		0.361	0.5333	0.035602
		0.349	0.55	0.034418
		0.336	0.5666	0.033136
		0.324	0.5833	0.031953
		0.318	0.6	0.031361
		0.305	0.6166	0.030079

0.293	0.6333	0.028895
0.286	0.65	0.028205
0.28	0.6666	0.027613
0.268	0.6833	0.02643
0.261	0.7	0.02574
0.255	0.7166	0.025148
0.243	0.7333	0.023964
0.237	0.75	0.023373
0.23	0.7666	0.022682
0.224	0.7833	0.022091
0.218	0.8	0.021499
0.212	0.8166	0.020907
0.205	0.8333	0.020217
0.199	0.85	0.019625
0.193	0.8666	0.019034
0.187	0.8833	0.018442
0.187	0.9	0.018442
0.18	0.9166	0.017751
0.174	0.9333	0.01716
0.168	0.95	0.016568
0.162	0.9666	0.015976
0.155	0.9833	0.015286
0.155	1	0.015286
0.112	1.2	0.011045
0.087	1.4	0.00858
0.068	1.6	0.006706
0.056	1.8	0.005523
0.049	2	0.004832
0.043	2.2	0.004241
0.037	2.4	0.003649
0.031	2.6	0.003057
0.031	2.8	0.003057
0.031	3	0.003057
0.031	3.2	0.003057
0.031	3.4	0.003057
0.024	3.6	0.002367
0.031	3.8	0.003057
0.024	4	0.002367
0.024	4.2	0.002367
0.024	4.4	0.002367
0.024	4.6	0.002367
0.024	4.8	0.002367
0.024	5	0.002367
0.024	5.2	0.002367
0.024	5.4	0.002367
0.024	5.6	0.002367
0.031	5.8	0.003057
0.031	6	0.003057
0.031	6.2	0.003057
0.031	6.4	0.003057
0.031	6.6	0.003057
0.031	6.8	0.003057
0.031	7	0.003057
0.031	7.2	0.003057
0.031	7.4	0.003057
0.031	7.6	0.003057
0.031	7.8	0.003057
0.031	8	0.003057
0.031	8.2	0.003057
0.031	8.4	0.003057
0.031	8.6	0.003057
0.031	8.8	0.003057
0.031	9	0.003057
0.031	9.2	0.003057
0.031	9.4	0.003057
0.024	9.6	0.002367
0.031	9.8	0.003057
0.024	10	0.002367

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	23.5	77.0

t (min)	H _t /H ₀
0	9.86E-05
0.0083	9.86E-05
0.0166	9.86E-05
0.025	0.011045
0.0333	0.585404
0.0416	9.86E-05
0.05	0.111933
0.0583	0.107594
0.0666	0.093491
0.075	0.086686
0.0833	0.062722
0.0916	0.075049
0.1	0.073176
0.1083	0.070118
0.1166	0.068245
0.125	0.066963
0.1333	0.065187
0.1416	0.06144
0.15	0.063905
0.1583	0.060256
0.1666	0.058974
0.175	0.057791
0.1833	0.056509
0.1916	0.055917
0.2	0.054043
0.2083	0.053452
0.2166	0.052268
0.225	0.050986
0.2333	0.050394
0.2416	0.049211
0.25	0.048521
0.2583	0.045464
0.2666	0.051578
0.275	0.042998
0.2833	0.045464
0.2916	0.042406
0.3	0.041124
0.3083	0.049211
0.3166	0.039941
0.325	0.039941
0.3333	0.038067
0.35	0.036884
0.3666	0.041815
0.3833	0.038659
0.4	0.030671
0.4166	0.020217
0.4333	0.030671
0.45	0.003057
0.4666	0.100888
0.4833	0.044872
0.5	0.03501
0.5166	0.022682
0.5333	0.021499
0.55	0.020907
0.5666	0.019625
0.5833	0.018442
0.6	0.017751
0.6166	0.01716
0.6333	0.015976
0.65	0.015286
0.6666	0.014694



m
-3
T₀
0.35
K (length/day)
77.0

Fitted Line

t	H _t /H ₀
0.04	0.886920437
0.02	0.941764534
0.01	0.970445534
0.1	0.740818221
0.2	0.548811636
0.3	0.40656966
0.4	0.301194212
0.6	0.165298888
0.8	0.090717953
1	0.049787068
2	0.002478752
3	0.00012341
4	6.14421E-06
6	1.523E-08
8	3.77513E-11
10	9.35762E-14
	1

T₀

0.35

0.35	0.88692044
0.35	0.94176453
0.35	0.97044553
0.35	0.74081822
0.35	0.54881164
0.35	0.40656966
0.35	0.30119421
0.35	0.16529889
0.35	0.09071795
0.35	0.04978707
0.35	0.00247875
0.35	0.00012341
0.35	6.1442E-06
0.35	1.523E-08
0.35	3.7751E-11
0.35	9.3576E-14
0.35	1

0.1	0.37
0.2	0.37
0.3	0.37
0.4	0.37
0.6	0.37
0.8	0.37
1	0.37
2	0.37
3	0.37
4	0.37
6	0.37
8	0.37
10	0.37
10	0.37

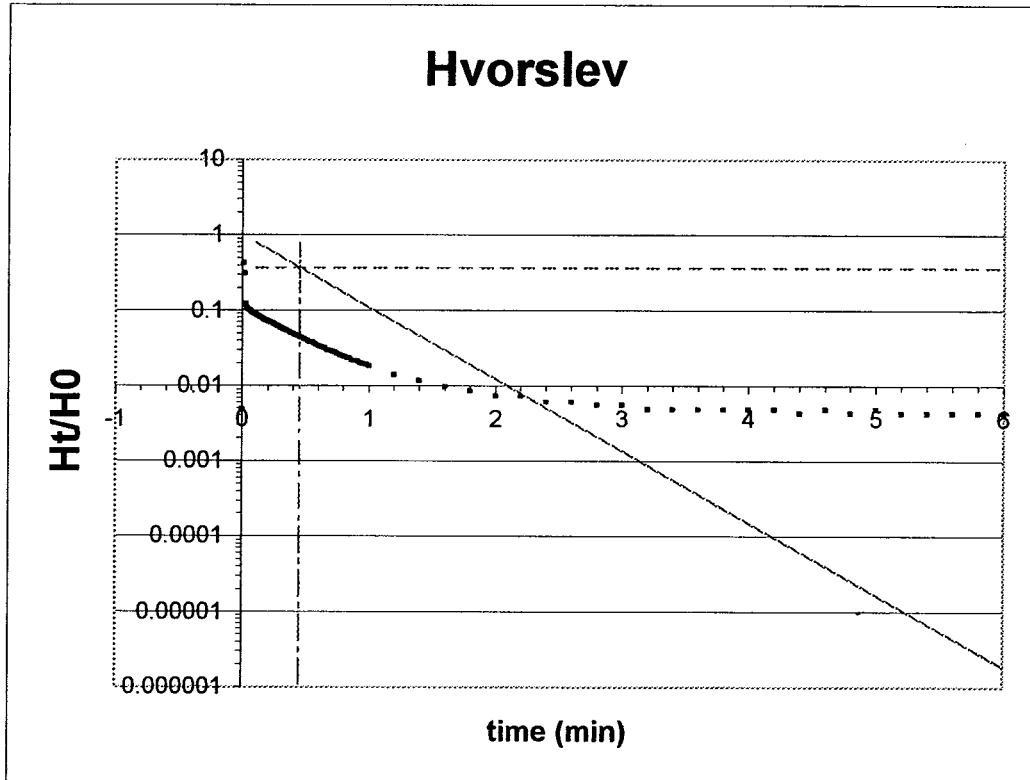
0.6833	0.014103
0.7	0.013511
0.7166	0.012229
0.7333	0.011637
0.75	0.011045
0.7666	0.010454
0.7833	0.009763
0.8	0.009172
0.8166	0.009172
0.8333	0.00858
0.85	0.007988
0.8666	0.007298
0.8833	0.007298
0.9	0.006706
0.9166	0.006114
0.9333	0.006114
0.95	0.005523
0.9666	0.005523
0.9833	0.004832
1	0.004832
1.2	0.001775
1.4	0.000592
1.6	9.86E-05
1.8	9.86E-05
2	9.86E-05
2.2	9.86E-05
2.4	9.86E-05
2.6	9.86E-05
2.8	9.86E-05
3	9.86E-05
3.2	9.86E-05
3.4	9.86E-05
3.6	9.86E-05
3.8	9.86E-05
4	9.86E-05
4.2	9.86E-05
4.4	9.86E-05
4.6	9.86E-05
4.8	9.86E-05
5	9.86E-05
5.2	9.86E-05
5.4	9.86E-05
5.6	9.86E-05
5.8	9.86E-05
6	9.86E-05
6.2	9.86E-05
6.4	9.86E-05
6.6	9.86E-05
6.8	9.86E-05
7	9.86E-05
7.2	9.86E-05
7.4	9.86E-05
7.6	9.86E-05
7.8	9.86E-05
8	9.86E-05
8.2	9.86E-05
8.4	9.86E-05
8.6	9.86E-05
8.8	9.86E-05
9	9.86E-05
9.2	9.86E-05
9.4	9.86E-05
9.6	9.86E-05
9.8	9.86E-05
10	9.86E-05

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.001	0	9.86E-05
		0.001	0.0083	9.86E-05
		0.001	0.0166	9.86E-05
		0.112	0.025	0.011045
		5.936	0.0333	0.585404
		0.001	0.0416	9.86E-05
		1.135	0.05	0.111933
		1.091	0.0583	0.107594
		0.948	0.0666	0.093491
		0.879	0.075	0.086686
		0.636	0.0833	0.062722
		0.761	0.0916	0.075049
		0.742	0.1	0.073176
		0.711	0.1083	0.070118
		0.692	0.1166	0.068245
		0.679	0.125	0.066963
		0.661	0.1333	0.065187
		0.623	0.1416	0.06144
		0.648	0.15	0.063905
		0.611	0.1583	0.060256
		0.598	0.1666	0.058974
		0.586	0.175	0.057791
		0.573	0.1833	0.056509
		0.567	0.1916	0.055917
		0.548	0.2	0.054043
		0.542	0.2083	0.053452
		0.53	0.2166	0.052268
		0.517	0.225	0.050986
		0.511	0.2333	0.050394
		0.499	0.2416	0.049211
		0.492	0.25	0.048521
		0.461	0.2583	0.045464
		0.523	0.2666	0.051578
		0.436	0.275	0.042998
		0.461	0.2833	0.045464
		0.43	0.2916	0.042406
		0.417	0.3	0.041124
		0.499	0.3083	0.049211
		0.405	0.3166	0.039941
		0.405	0.325	0.039941
		0.386	0.3333	0.038067
		0.374	0.35	0.036884
		0.424	0.3666	0.041815
		0.392	0.3833	0.038659
		0.311	0.4	0.030671
		0.205	0.4166	0.020217
		0.311	0.4333	0.030671
		0.031	0.45	0.003057
		1.023	0.4666	0.100888
		0.455	0.4833	0.044872
		0.355	0.5	0.03501
		0.23	0.5166	0.022682
		0.218	0.5333	0.021499
		0.212	0.55	0.020907
		0.199	0.5666	0.019625
		0.187	0.5833	0.018442
		0.18	0.6	0.017751
		0.174	0.6166	0.01716

0.162	0.6333	0.015976
0.155	0.65	0.015286
0.149	0.6666	0.014694
0.143	0.6833	0.014103
0.137	0.7	0.013511
0.124	0.7166	0.012229
0.118	0.7333	0.011637
0.112	0.75	0.011045
0.106	0.7666	0.010454
0.099	0.7833	0.009763
0.093	0.8	0.009172
0.093	0.8166	0.009172
0.087	0.8333	0.00858
0.081	0.85	0.007988
0.074	0.8666	0.007298
0.074	0.8833	0.007298
0.068	0.9	0.006706
0.062	0.9166	0.006114
0.062	0.9333	0.006114
0.056	0.95	0.005523
0.056	0.9666	0.005523
0.049	0.9833	0.004832
0.049	1	0.004832
0.018	1.2	0.001775
0.006	1.4	0.000592
0.001	1.6	9.86E-05
0.001	1.8	9.86E-05
0.001	2	9.86E-05
0.001	2.2	9.86E-05
0.001	2.4	9.86E-05
0.001	2.6	9.86E-05
0.001	2.8	9.86E-05
0.001	3	9.86E-05
0.001	3.2	9.86E-05
0.001	3.4	9.86E-05
0.001	3.6	9.86E-05
0.001	3.8	9.86E-05
0.001	4	9.86E-05
0.001	4.2	9.86E-05
0.001	4.4	9.86E-05
0.001	4.6	9.86E-05
0.001	4.8	9.86E-05
0.001	5	9.86E-05
0.001	5.2	9.86E-05
0.001	5.4	9.86E-05
0.001	5.6	9.86E-05
0.001	5.8	9.86E-05
0.001	6	9.86E-05
0.001	6.2	9.86E-05
0.001	6.4	9.86E-05
0.001	6.6	9.86E-05
0.001	6.8	9.86E-05
0.001	7	9.86E-05
0.001	7.2	9.86E-05
0.001	7.4	9.86E-05
0.001	7.6	9.86E-05
0.001	7.8	9.86E-05
0.001	8	9.86E-05
0.001	8.2	9.86E-05
0.001	8.4	9.86E-05
0.001	8.6	9.86E-05
0.001	8.8	9.86E-05
0.001	9	9.86E-05
0.001	9.2	9.86E-05
0.001	9.4	9.86E-05
0.001	9.6	9.86E-05
0.001	9.8	9.86E-05
0.001	10	9.86E-05

Field Data	Radius, r (ft)	r (m)	Length, L (ft)	L (m)	L/r	K (length/day)	K ft/day
	0.25	0.07622	5	1.52439	20	18.3	59.9

t (min)	H _t /H ₀
0	0.004832
0.0083	0.430276
0.0166	0.313511
0.025	0.120513
0.0333	0.107594
0.0416	0.104536
0.05	0.102071
0.0583	0.099606
0.0666	0.097732
0.075	0.094083
0.0833	0.092801
0.0916	0.091026
0.1	0.089152
0.1083	0.087278
0.1166	0.085404
0.125	0.083629
0.1333	0.082347
0.1416	0.080473
0.15	0.07929
0.1583	0.077416
0.1666	0.076233
0.175	0.074951
0.1833	0.073767
0.1916	0.072485
0.2	0.071302
0.2083	0.07002
0.2166	0.068836
0.225	0.067653
0.2333	0.066963
0.2416	0.065779
0.25	0.064497
0.2583	0.063314
0.2666	0.062722
0.275	0.06144
0.2833	0.060848
0.2916	0.059566
0.3	0.058383
0.3083	0.057791
0.3166	0.057199
0.325	0.055917
0.3333	0.054734
0.35	0.053452
0.3666	0.051578
0.3833	0.049803
0.4	0.048521
0.4166	0.046746
0.4333	0.045464
0.45	0.04428
0.4666	0.042998
0.4833	0.041815
0.5	0.040533
0.5166	0.039349
0.5333	0.038067
0.55	0.037475
0.5666	0.036193
0.5833	0.03501
0.6	0.033826
0.6166	0.033136
0.6333	0.032544
0.65	0.031361
0.6666	0.030079



m
-2.2
T₀
0.45
K (length/day)
59.9

Fitted Line

t	H _t /H ₀
0.04	0.915760877
0.02	0.956953957
0.01	0.978240235
0.1	0.802518798
0.2	0.644036421
0.3	0.516851334
0.4	0.414782912
0.6	0.267135302
0.8	0.172044864
1	0.110803158
2	0.01227734
3	0.001360368
4	0.000150733
6	1.8506E-06
8	2.27205E-08
10	2.78947E-10

T₀

T ₀	H _t /H ₀	t	H _t /H ₀
0.45	0.91576088	0.1	0.37
0.45	0.95695396	0.2	0.37
0.45	0.97824024	0.3	0.37
0.45	0.8025188	0.4	0.37
0.45	0.64403642	0.6	0.37
0.45	0.51685133	0.8	0.37
0.45	0.41478291	1	0.37
0.45	0.2671353	2	0.37
0.45	0.17204486	3	0.37
0.45	0.11080316	4	0.37
0.45	0.01227734	6	0.37
0.45	0.00136037	8	0.37
0.45	0.00015073	10	0.37
0.45	1.8506E-06		
0.45	2.272E-08		
0.45	2.7895E-10		

0.6833	0.029487
0.7	0.028895
0.7166	0.028205
0.7333	0.027613
0.75	0.02643
0.7666	0.02574
0.7833	0.025148
0.8	0.024556
0.8166	0.023964
0.8333	0.023373
0.85	0.023373
0.8666	0.022091
0.8833	0.021499
0.9	0.021499
0.9166	0.020907
0.9333	0.020217
0.95	0.019625
0.9666	0.019625
0.9833	0.019034
1	0.018442
1.2	0.014103
1.4	0.011637
1.6	0.009763
1.8	0.00858
2	0.007298
2.2	0.007298
2.4	0.006114
2.6	0.006114
2.8	0.005523
3	0.005523
3.2	0.004832
3.4	0.004832
3.6	0.004832
3.8	0.004832
4	0.004832
4.2	0.004832
4.4	0.004241
4.6	0.004832
4.8	0.004241
5	0.004832
5.2	0.004241
5.4	0.004241
5.6	0.004241
5.8	0.004241
6	0.004241
6.2	0.004241
6.4	0.004241
6.6	0.004241
6.8	0.004241
7	0.004241
7.2	0.004241
7.4	0.004832
7.6	0.004832
7.8	0.004832
8	0.004832
8.2	0.004832
8.4	0.004832
8.6	0.004832
8.8	0.004832
9	0.004832
9.2	0.004832
9.4	0.004832
9.6	0.004832
9.8	0.004832
10	0.004832

Time(days)	ddn(ft)	ddn (ft)	Time (min)	H _t /H ₀
		0.049	0	0.004832
		4.363	0.0083	0.430276
		3.179	0.0166	0.313511
		1.222	0.025	0.120513
		1.091	0.0333	0.107594
		1.06	0.0416	0.104536
		1.035	0.05	0.102071
		1.01	0.0583	0.099606
		0.991	0.0666	0.097732
		0.954	0.075	0.094083
		0.941	0.0833	0.092801
		0.923	0.0916	0.091026
		0.904	0.1	0.089152
		0.885	0.1083	0.087278
		0.866	0.1166	0.085404
		0.848	0.125	0.083629
		0.835	0.1333	0.082347
		0.816	0.1416	0.080473
		0.804	0.15	0.07929
		0.785	0.1583	0.077416
		0.773	0.1666	0.076233
		0.76	0.175	0.074951
		0.748	0.1833	0.073767
		0.735	0.1916	0.072485
		0.723	0.2	0.071302
		0.71	0.2083	0.07002
		0.698	0.2166	0.068836
		0.686	0.225	0.067653
		0.679	0.2333	0.066963
		0.667	0.2416	0.065779
		0.654	0.25	0.064497
		0.642	0.2583	0.063314
		0.636	0.2666	0.062722
		0.623	0.275	0.06144
		0.617	0.2833	0.060848
		0.604	0.2916	0.059566
		0.592	0.3	0.058383
		0.586	0.3083	0.057791
		0.58	0.3166	0.057199
		0.567	0.325	0.055917
		0.555	0.3333	0.054734
		0.542	0.35	0.053452
		0.523	0.3666	0.051578
		0.505	0.3833	0.049803
		0.492	0.4	0.048521
		0.474	0.4166	0.046746
		0.461	0.4333	0.045464
		0.449	0.45	0.04428
		0.436	0.4666	0.042998
		0.424	0.4833	0.041815
		0.411	0.5	0.040533
		0.399	0.5166	0.039349
		0.386	0.5333	0.038067
		0.38	0.55	0.037475
		0.367	0.5666	0.036193
		0.355	0.5833	0.03501
		0.343	0.6	0.033826
		0.336	0.6166	0.033136

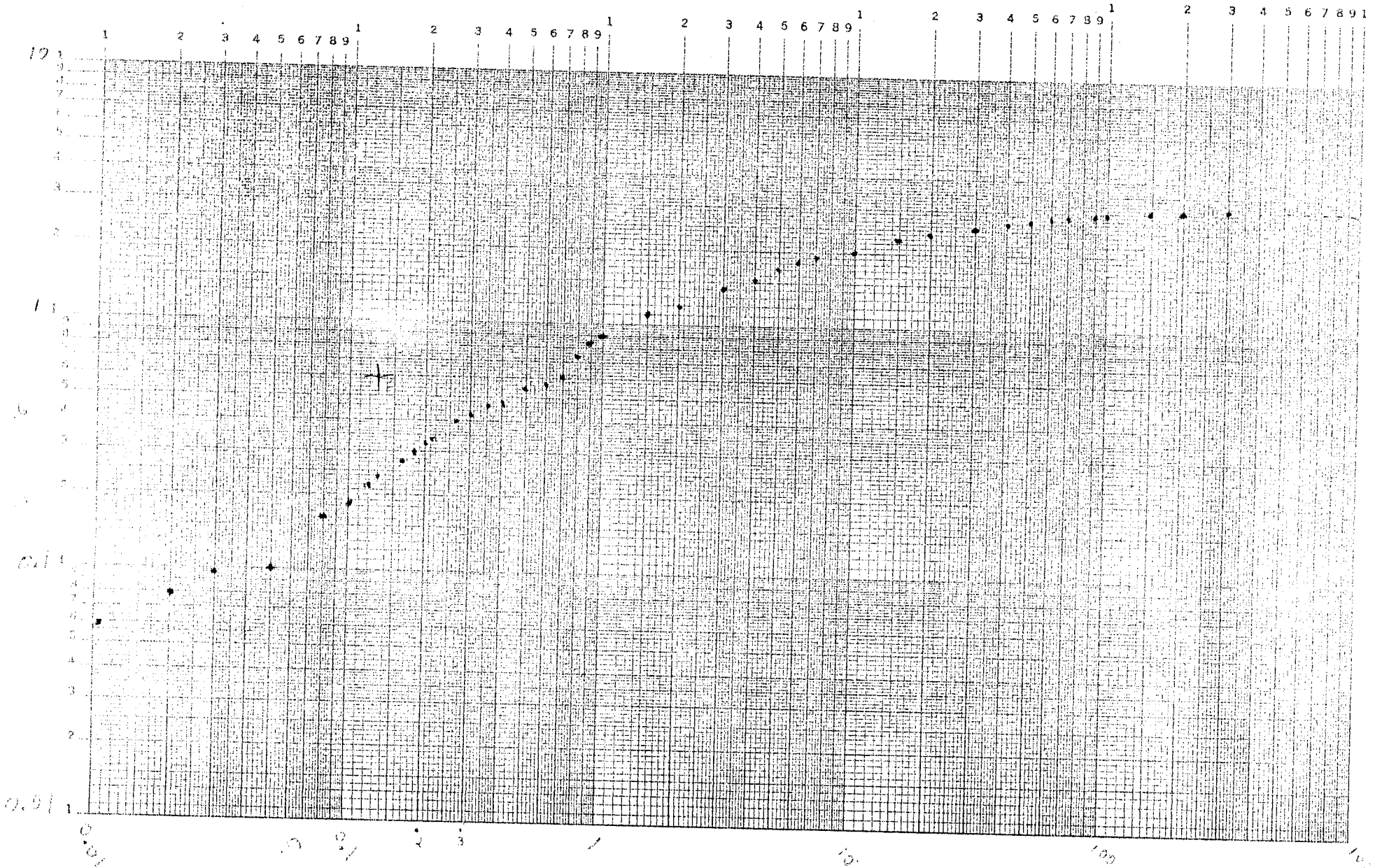
0.33	0.6333	0.032544
0.318	0.65	0.031361
0.305	0.6666	0.030079
0.299	0.6833	0.029487
0.293	0.7	0.028895
0.286	0.7166	0.028205
0.28	0.7333	0.027613
0.268	0.75	0.02643
0.261	0.7666	0.02574
0.255	0.7833	0.025148
0.249	0.8	0.024556
0.243	0.8166	0.023964
0.237	0.8333	0.023373
0.237	0.85	0.023373
0.224	0.8666	0.022091
0.218	0.8833	0.021499
0.218	0.9	0.021499
0.212	0.9166	0.020907
0.205	0.9333	0.020217
0.199	0.95	0.019625
0.199	0.9666	0.019625
0.193	0.9833	0.019034
0.187	1	0.018442
0.143	1.2	0.014103
0.118	1.4	0.011637
0.099	1.6	0.009763
0.087	1.8	0.00858
0.074	2	0.007298
0.074	2.2	0.007298
0.062	2.4	0.006114
0.062	2.6	0.006114
0.056	2.8	0.005523
0.056	3	0.005523
0.049	3.2	0.004832
0.049	3.4	0.004832
0.049	3.6	0.004832
0.049	3.8	0.004832
0.049	4	0.004832
0.049	4.2	0.004832
0.043	4.4	0.004241
0.049	4.6	0.004832
0.043	4.8	0.004241
0.049	5	0.004832
0.043	5.2	0.004241
0.043	5.4	0.004241
0.043	5.6	0.004241
0.043	5.8	0.004241
0.043	6	0.004241
0.043	6.2	0.004241
0.043	6.4	0.004241
0.043	6.6	0.004241
0.043	6.8	0.004241
0.043	7	0.004241
0.043	7.2	0.004241
0.049	7.4	0.004832
0.049	7.6	0.004832
0.049	7.8	0.004832
0.049	8	0.004832
0.049	8.2	0.004832
0.049	8.4	0.004832
0.049	8.6	0.004832
0.049	8.8	0.004832
0.049	9	0.004832
0.049	9.2	0.004832
0.049	9.4	0.004832
0.049	9.6	0.004832
0.049	9.8	0.004832
0.049	10	0.004832

AQUIFER PERFORMANCE TESTS

W-101

CDM

W101
Area B-1



$S = 0.6$
 $t = 0.13$
 $T = \frac{114.6(100)}{0.6}$
 $T = 19,100 \text{ grad/ft}$

$T = 2553 \text{ ft}^2/\text{day}$
 $K = 19 \text{ ft/day}$
 $r = 60.4'$

In-Situ Inc. Hermit 3000

Report generated: 03/12/04 13:14:57
Report from file: C:\Win-Situ\Data\SN45571 2004-03-09 150244 2.bin
DataMgr Version 3.71

Serial number: 00045571
Firmware Version 7.10
Unit name: HERMIT 3000#2

area E

Test name: 2
Test defined on: 03/09/04 02:08:20
Test started on: 03/09/04 15:02:44
Test stopped on: 03/10/04 14:58:33
Test extracted on: 03/12/04 13:13:08

Data gathered using Logarithmic testing
Maximum time between data points: 10.0000 Minutes.
Number of data samples: 264

TOTAL DATA SAMPLES 264

Channel number [1]
Measurement type: Pressure
Channel name: LOGGER
Linearity: 0.0657000
Scale: 15.2017000
Offset: -0.1791000
Warmup: 50
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Feet H2O
Referenced on: test start
Pressure head at reference: 21.908 Feet H2O

Channel number [0]
Measurement type: Barometric Pressure
Channel name: Barometric
Linearity: 0.0000000
Scale: 0.0000000
Offset: 0.0000000
Warmup: 50

Date	Time	ET (min)	Chan[1] Feet H2O	Chan[0] Inches Hg
03/09/04	15:02:44	0.0000	0.000	30.005
03/09/04	15:02:44	0.0112	0.059	30.002
03/09/04	15:02:45	0.0223	0.079	30.002
03/09/04	15:02:46	0.0335	0.093	30.005
03/09/04	15:02:46	0.0447	0.110	30.002
03/09/04	15:02:47	0.0558	0.128	30.005
03/09/04	15:02:48	0.0670	0.148	30.002
03/09/04	15:02:48	0.0782	0.165	30.000
03/09/04	15:02:49	0.0893	0.181	30.002
03/09/04	15:02:50	0.1005	0.198	30.002
03/09/04	15:02:50	0.1117	0.216	30.002
03/09/04	15:02:51	0.1228	0.229	30.002
03/09/04	15:02:52	0.1340	0.242	30.002
03/09/04	15:02:52	0.1452	0.256	30.002
03/09/04	15:02:53	0.1563	0.271	30.002
03/09/04	15:02:54	0.1675	0.284	30.005
03/09/04	15:02:54	0.1787	0.295	30.002
03/09/04	15:02:55	0.1898	0.308	30.002
03/09/04	15:02:56	0.2010	0.320	30.002
03/09/04	15:02:56	0.2122	0.331	30.002
03/09/04	15:02:57	0.2233	0.346	30.002

03/09/04	15:02:58	0.2350	0.357	30.005
03/09/04	15:02:58	0.2475	0.368	30.005
03/09/04	15:02:59	0.2607	0.379	30.005
03/09/04	15:03:00	0.2747	0.392	30.002
03/09/04	15:03:01	0.2895	0.408	30.005
03/09/04	15:03:02	0.3052	0.421	30.002
03/09/04	15:03:03	0.3218	0.434	30.005
03/09/04	15:03:04	0.3395	0.447	30.005
03/09/04	15:03:05	0.3582	0.465	30.005
03/09/04	15:03:06	0.3780	0.454	30.005
03/09/04	15:03:07	0.3990	0.465	30.002
03/09/04	15:03:09	0.4212	0.483	30.002
03/09/04	15:03:10	0.4447	0.494	30.002
03/09/04	15:03:12	0.4695	0.513	30.002
03/09/04	15:03:13	0.4958	0.551	30.002
03/09/04	15:03:15	0.5238	0.480	30.005
03/09/04	15:03:17	0.5535	0.533	30.002
03/09/04	15:03:19	0.5848	0.546	30.002
03/09/04	15:03:21	0.6180	0.566	30.002
03/09/04	15:03:23	0.6532	0.593	30.005
03/09/04	15:03:25	0.6905	0.613	30.005
03/09/04	15:03:27	0.7300	0.635	30.005
03/09/04	15:03:30	0.7718	0.712	30.002
03/09/04	15:03:32	0.8162	0.771	30.005
03/09/04	15:03:35	0.8632	0.833	30.002
03/09/04	15:03:38	0.9130	0.875	30.002
03/09/04	15:03:41	0.9657	0.888	30.002
03/09/04	15:03:45	1.0215	0.897	30.002
03/09/04	15:03:48	1.0807	0.974	30.000
03/09/04	15:03:52	1.1433	0.954	30.000
03/09/04	15:03:56	1.2097	0.983	30.005
03/09/04	15:04:00	1.2800	1.051	30.002
03/09/04	15:04:05	1.3545	1.025	30.002
03/09/04	15:04:10	1.4335	1.102	30.000
03/09/04	15:04:15	1.5172	1.086	30.002
03/09/04	15:04:20	1.6057	1.144	30.002
03/09/04	15:04:25	1.6995	1.166	30.000
03/09/04	15:04:31	1.7988	1.168	30.002
03/09/04	15:04:38	1.9042	1.190	30.000
03/09/04	15:04:44	2.0157	1.137	30.002
03/09/04	15:04:52	2.1338	1.236	30.002
03/09/04	15:04:59	2.2590	1.271	30.002
03/09/04	15:05:07	2.3915	1.300	30.002
03/09/04	15:05:15	2.5320	1.342	30.002
03/09/04	15:05:24	2.6808	1.375	30.002
03/09/04	15:05:34	2.8383	1.353	29.980
03/09/04	15:05:44	3.0052	1.430	29.972
03/09/04	15:05:54	3.1820	1.452	29.968
03/09/04	15:06:06	3.3693	1.503	29.968
03/09/04	15:06:18	3.5677	1.531	29.966
03/09/04	15:06:30	3.7778	1.573	29.966
03/09/04	15:06:44	4.0005	1.551	29.966
03/09/04	15:06:58	4.2363	1.637	29.964
03/09/04	15:07:13	4.4862	1.659	29.964
03/09/04	15:07:29	4.7508	1.679	29.964
03/09/04	15:07:45	5.0312	1.743	29.962
03/09/04	15:08:03	5.3280	1.727	29.964
03/09/04	15:08:22	5.6425	1.785	29.962
03/09/04	15:08:42	5.9757	1.798	29.964
03/09/04	15:09:03	6.3285	1.853	29.964
03/09/04	15:09:26	6.7023	1.866	29.996
03/09/04	15:09:49	7.0983	1.895	30.002
03/09/04	15:10:15	7.5177	1.945	30.002
03/09/04	15:10:41	7.9620	1.963	30.002
03/09/04	15:11:09	8.4327	2.003	30.002
03/09/04	15:11:39	8.9312	2.027	30.002
03/09/04	15:12:11	9.4592	2.022	30.002
03/09/04	15:12:45	10.0185	2.062	30.000
03/09/04	15:13:20	10.6110	2.095	30.005
03/09/04	15:13:58	11.2385	2.144	29.970

03/09/04	15:14:38	11.9033	2.157	29.966
03/09/04	15:15:20	12.6075	2.174	29.964
03/09/04	15:16:05	13.3533	2.214	29.964
03/09/04	15:16:52	14.1433	2.245	29.962
03/09/04	15:17:42	14.9802	2.249	29.962
03/09/04	15:18:36	15.8667	2.296	29.962
03/09/04	15:19:32	16.8057	2.300	29.964
03/09/04	15:20:32	17.8003	2.340	29.964
03/09/04	15:21:35	18.8540	2.340	29.962
03/09/04	15:22:42	19.9700	2.401	29.964
03/09/04	15:23:53	21.1522	2.421	29.962
03/09/04	15:25:08	22.4043	2.441	29.962
03/09/04	15:26:27	23.7308	2.454	29.962
03/09/04	15:27:52	25.1358	2.483	29.962
03/09/04	15:29:21	26.6242	2.514	29.964
03/09/04	15:30:56	28.2007	2.514	29.964
03/09/04	15:32:36	29.8705	2.549	29.966
03/09/04	15:34:22	31.6393	2.562	29.966
03/09/04	15:36:14	33.5130	2.586	29.966
03/09/04	15:38:13	35.4977	2.635	29.964
03/09/04	15:40:20	37.6000	2.650	29.960
03/09/04	15:42:33	39.8268	2.668	29.962
03/09/04	15:44:55	42.1857	2.699	29.960
03/09/04	15:47:25	44.6843	2.703	29.958
03/09/04	15:50:03	47.3310	2.716	29.956
03/09/04	15:52:52	50.1345	2.773	29.956
03/09/04	15:55:50	53.1042	2.747	29.958
03/09/04	15:58:58	56.2498	2.798	29.958
03/09/04	16:02:18	59.5818	2.773	29.956
03/09/04	16:05:50	63.1113	2.837	29.952
03/09/04	16:09:34	66.8498	2.835	29.954
03/09/04	16:13:32	70.8100	2.842	29.954
03/09/04	16:17:44	75.0048	2.850	29.952
03/09/04	16:22:10	79.4482	2.881	29.950
03/09/04	16:26:53	84.1548	2.899	29.950
03/09/04	16:31:52	89.1403	2.903	29.950
03/09/04	16:37:09	94.4212	2.884	29.948
03/09/04	16:42:44	100.0150	2.914	29.948
03/09/04	16:48:40	105.9403	2.928	29.950
03/09/04	16:54:57	112.2167	2.930	29.948
03/09/04	17:01:35	118.8650	2.972	29.950
03/09/04	17:08:38	125.9072	2.985	29.948
03/09/04	17:16:06	133.3667	3.007	29.945
03/09/04	17:24:00	141.2682	2.989	29.945
03/09/04	17:32:22	149.6378	3.038	29.948
03/09/04	17:41:14	158.5035	3.040	29.945
03/09/04	17:50:37	167.8945	3.057	29.941
03/09/04	18:00:34	177.8420	3.073	29.941
03/09/04	18:10:34	187.8420	3.079	29.948
03/09/04	18:20:34	197.8420	3.071	29.943
03/09/04	18:30:34	207.8420	3.117	29.950
03/09/04	18:40:34	217.8420	3.068	29.952
03/09/04	18:50:34	227.8420	3.117	29.952
03/09/04	19:00:34	237.8420	3.146	29.954
03/09/04	19:10:34	247.8420	3.139	29.956
03/09/04	19:20:34	257.8420	3.159	29.954
03/09/04	19:30:34	267.8420	3.187	29.962
03/09/04	19:40:34	277.8420	3.172	29.962
03/09/04	19:50:34	287.8420	3.194	29.966
03/09/04	20:00:34	297.8420	3.203	29.966
03/09/04	20:10:34	307.8420	3.205	29.974
03/09/04	20:20:34	317.8420	3.196	29.976
03/09/04	20:30:34	327.8420	3.174	29.980
03/09/04	20:40:34	337.8420	3.209	29.980
03/09/04	20:50:34	347.8420	3.207	29.986
03/09/04	21:00:34	357.8420	3.223	29.986
03/09/04	21:10:34	367.8420	3.192	29.986
03/09/04	21:20:34	377.8420	3.220	29.990
03/09/04	21:30:34	387.8420	3.209	29.996
03/09/04	21:40:34	397.8420	3.225	29.998

03/09/04	21:50:34	407.8420	3.227	30.000
03/09/04	22:00:34	417.8420	3.240	30.000
03/09/04	22:10:34	427.8420	3.227	30.002
03/09/04	22:20:34	437.8420	3.251	30.002
03/09/04	22:30:34	447.8420	3.260	30.005
03/09/04	22:40:34	457.8420	3.247	30.009
03/09/04	22:50:34	467.8420	3.260	30.007
03/09/04	23:00:34	477.8420	3.251	30.011
03/09/04	23:10:34	487.8420	3.240	30.011
03/09/04	23:20:34	497.8420	3.223	30.013
03/09/04	23:30:34	507.8420	3.260	30.013
03/09/04	23:40:34	517.8420	3.253	30.011
03/09/04	23:50:34	527.8420	3.260	30.009
03/10/04	00:00:34	537.8420	3.245	30.009
03/10/04	00:10:34	547.8420	3.275	30.007
03/10/04	00:20:34	557.8420	3.280	30.002
03/10/04	00:30:34	567.8420	3.269	30.000
03/10/04	00:40:34	577.8420	3.275	29.998
03/10/04	00:50:34	587.8420	3.282	29.998
03/10/04	01:00:34	597.8420	3.264	29.998
03/10/04	01:10:34	607.8420	3.271	29.996
03/10/04	01:20:34	617.8420	3.286	29.994
03/10/04	01:30:34	627.8420	3.280	29.994
03/10/04	01:40:34	637.8420	3.280	29.994
03/10/04	01:50:34	647.8420	3.280	29.992
03/10/04	02:00:34	657.8420	3.278	29.992
03/10/04	02:10:34	667.8420	3.271	29.990
03/10/04	02:20:34	677.8420	3.297	29.990
03/10/04	02:30:34	687.8420	3.280	29.988
03/10/04	02:40:34	697.8420	3.234	29.986
03/10/04	02:50:34	707.8420	3.262	29.986
03/10/04	03:00:34	717.8420	3.267	29.986
03/10/04	03:10:34	727.8420	3.280	29.984
03/10/04	03:20:34	737.8420	3.271	29.980
03/10/04	03:30:34	747.8420	3.242	29.984
03/10/04	03:40:34	757.8420	3.267	29.980
03/10/04	03:50:34	767.8420	3.275	29.980
03/10/04	04:00:34	777.8420	3.284	29.984
03/10/04	04:10:34	787.8420	3.271	29.986
03/10/04	04:20:34	797.8420	3.282	29.988
03/10/04	04:30:34	807.8420	3.275	29.988
03/10/04	04:40:34	817.8420	3.251	30.005
03/10/04	04:50:34	827.8420	3.273	30.015
03/10/04	05:00:34	837.8420	3.282	30.013
03/10/04	05:10:34	847.8420	3.284	30.021
03/10/04	05:20:34	857.8420	3.273	30.021
03/10/04	05:30:34	867.8420	3.256	30.023
03/10/04	05:40:34	877.8420	3.258	30.025
03/10/04	05:50:34	887.8420	3.247	30.029
03/10/04	06:00:34	897.8420	3.249	30.027
03/10/04	06:10:34	907.8420	3.260	30.025
03/10/04	06:20:34	917.8420	3.251	30.031
03/10/04	06:30:34	927.8420	3.262	30.033
03/10/04	06:40:34	937.8420	3.262	30.041
03/10/04	06:50:34	947.8420	3.249	30.045
03/10/04	07:00:34	957.8420	3.212	30.051
03/10/04	07:10:34	967.8420	3.234	30.049
03/10/04	07:20:34	977.8420	3.229	30.057
03/10/04	07:30:34	987.8420	3.242	30.064
03/10/04	07:40:34	997.8420	3.225	30.068
03/10/04	07:50:34	1007.8420	3.242	30.074
03/10/04	08:00:34	1017.8420	3.249	30.078
03/10/04	08:10:34	1027.8420	3.249	30.084
03/10/04	08:20:34	1037.8420	3.236	30.086
03/10/04	08:30:34	1047.8420	3.291	30.092
03/10/04	08:40:34	1057.8420	3.251	30.094
03/10/04	08:50:34	1067.8420	3.264	30.100
03/10/04	09:00:34	1077.8420	3.262	30.102
03/10/04	09:10:34	1087.8420	3.260	30.104
03/10/04	09:20:34	1097.8420	3.267	30.106

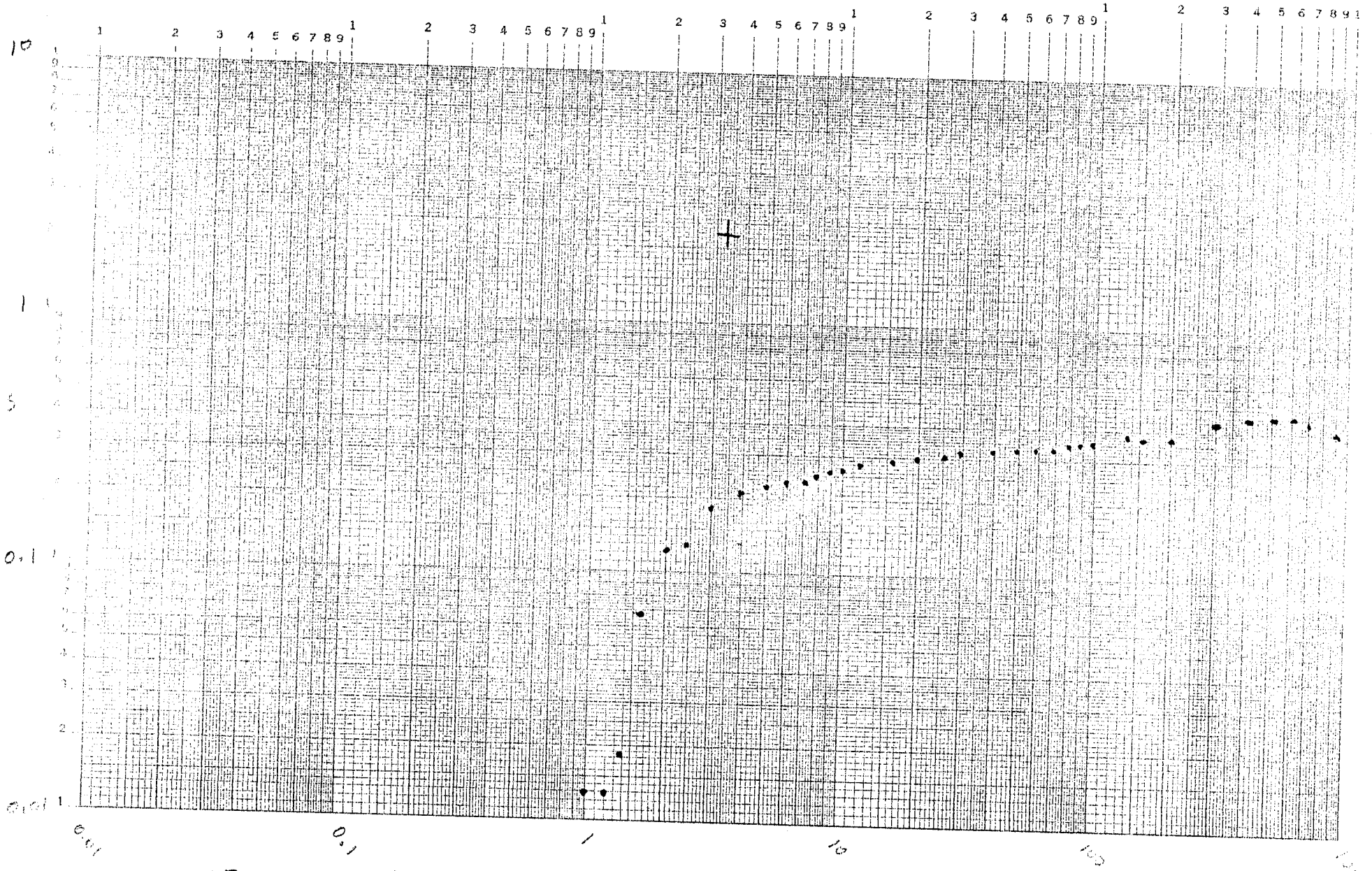
03/10/04	09:30:34	1107.8420	3.256	30.110
03/10/04	09:40:34	1117.8420	3.260	30.114
03/10/04	09:50:34	1127.8420	3.286	30.114
03/10/04	10:00:34	1137.8420	3.264	30.119
03/10/04	10:10:34	1147.8420	3.264	30.121
03/10/04	10:20:34	1157.8420	3.256	30.121
03/10/04	10:30:34	1167.8420	3.249	30.127
03/10/04	10:40:34	1177.8420	3.231	30.127
03/10/04	10:50:34	1187.8420	3.253	30.131
03/10/04	11:00:34	1197.8420	3.280	30.127
03/10/04	11:10:34	1207.8420	3.249	30.131
03/10/04	11:20:34	1217.8420	3.271	30.131
03/10/04	11:30:34	1227.8420	3.269	30.133
03/10/04	11:40:34	1237.8420	3.227	30.133
03/10/04	11:50:34	1247.8420	3.260	30.133
03/10/04	12:00:34	1257.8420	3.249	30.133
03/10/04	12:10:34	1267.8420	3.267	30.129
03/10/04	12:20:34	1277.8420	3.280	30.129
03/10/04	12:30:34	1287.8420	3.249	30.127
03/10/04	12:40:34	1297.8420	3.262	30.121
03/10/04	12:50:34	1307.8420	3.293	30.121
03/10/04	13:00:34	1317.8420	3.227	30.114
03/10/04	13:10:34	1327.8420	3.247	30.112
03/10/04	13:20:34	1337.8420	3.264	30.112
03/10/04	13:30:34	1347.8420	3.253	30.108
03/10/04	13:40:34	1357.8420	3.264	30.104
03/10/04	13:50:34	1367.8420	3.282	30.108
03/10/04	14:00:34	1377.8420	3.282	30.110
03/10/04	14:10:34	1387.8420	3.278	30.104
03/10/04	14:20:34	1397.8420	3.231	30.104
03/10/04	14:30:34	1407.8420	3.291	30.100
03/10/04	14:40:34	1417.8420	3.253	30.151
03/10/04	14:50:34	1427.8420	3.262	30.102

W-102

CDM

$\frac{r}{B} = 2.3$

Area B-3
W102



$s = 2.3$
 $t = 3.3$
 $r = 12.4'$

$$T = \frac{114.6(2.3)}{2.3}$$

$$T = 114.6 \text{ gr}^d/\text{ft}$$

+

$$T = 153 \text{ ft}^3 \text{ pd}/\text{ft}$$

$$K = 1.13$$

SE2000
Environment Logger
13-Mar 14:15

Unit# 718 Test 5

Setups: INPUT 1

Type Level (F)
Mode TOC
I.D. 1

Reference 0
PSI at Ref. 8.767
SG 1
Linearity 0.124
Scale factor 19.748
Offset -0.261
Delay mSEC 50

Step 3 9-Mar 13:40:15

Elapsed Time INPUT 1

Elapsed	Time	INPUT	1
	0	-0.075	0
	0.0083	-0.075	0
	0.0166	-0.075	0
	0.025	-0.075	0
	0.0333	-0.075	0
	0.0416	-0.075	0
	0.05	-0.075	0
	0.0583	-0.068	0.007
	0.0666	-0.075	0
	0.075	-0.068	0.007
	0.0833	-0.068	0.007
	0.0916	-0.068	0.007
	0.1	-0.068	0.007
	0.1083	-0.075	0
	0.1166	-0.068	0.007
	0.125	-0.075	0
	0.1333	-0.068	0.007
	0.1416	-0.068	0.007
	0.15	-0.068	0.007
	0.1583	-0.068	0.007
	0.1666	-0.068	0.007
	0.175	-0.068	0.007
	0.1833	-0.068	0.007
	0.1916	-0.068	0.007
	0.2	-0.068	0.007
	0.2083	-0.068	0.007
	0.2166	-0.068	0.007

0.225	-0.068	0.007
0.2333	-0.068	0.007
0.2416	-0.068	0.007
0.25	-0.068	0.007
0.2583	-0.068	0.007
0.2666	-0.068	0.007
0.275	-0.068	0.007
0.2833	-0.068	0.007
0.2916	-0.068	0.007
0.3	-0.068	0.007
0.3083	-0.068	0.007
0.3166	-0.068	0.007
0.325	-0.068	0.007
0.3333	-0.068	0.007
0.35	-0.068	0.007
0.3666	-0.068	0.007
0.3833	-0.068	0.007
0.4	-0.068	0.007
0.4166	-0.062	0.013
0.4333	-0.068	0.007
0.45	-0.068	0.007
0.4666	-0.068	0.007
0.4833	-0.062	0.013
0.5	-0.068	0.007
0.5166	-0.068	0.007
0.5333	-0.068	0.007
0.55	-0.068	0.007
0.5666	-0.068	0.007
0.5833	-0.062	0.013
0.6	-0.068	0.007
0.6166	-0.068	0.007
0.6333	-0.062	0.013
0.65	-0.068	0.007
0.6666	-0.068	0.007
0.6833	-0.068	0.007
0.7	-0.062	0.013
0.7166	-0.068	0.007
0.7333	-0.062	0.013
0.75	-0.062	0.013
0.7666	-0.062	0.013
0.7833	-0.062	0.013
0.8	-0.062	0.013
0.8166	-0.062	0.013
0.8333	-0.062	0.013
0.85	-0.062	0.013
0.8666	-0.062	0.013
0.8833	-0.062	0.013
0.9	-0.062	0.013
0.9166	-0.062	0.013
0.9333	-0.062	0.013
0.95	-0.062	0.013
0.9666	-0.062	0.013

0.9833	-0.062	0.013
1	-0.062	0.013
1.2	-0.062	0.013
1.4	-0.056	0.019
1.6	-0.006	0.069
1.8	0.031	0.106
2	0.05	0.125
2.2	0.068	0.143
2.4	0.075	0.15
2.6	0.093	0.168
2.8	0.1	0.175
3	0.106	0.181
3.2	0.112	0.187
3.4	0.118	0.193
3.6	0.125	0.2
3.8	0.131	0.206
4	0.131	0.206
4.2	0.137	0.212
4.4	0.137	0.212
4.6	0.15	0.225
4.8	0.15	0.225
5	0.15	0.225
5.2	0.15	0.225
5.4	0.156	0.231
5.6	0.156	0.231
5.8	0.156	0.231
6	0.162	0.237
6.2	0.162	0.237
6.4	0.168	0.243
6.6	0.168	0.243
6.8	0.168	0.243
7	0.168	0.243
7.2	0.175	0.25
7.4	0.175	0.25
7.6	0.175	0.25
7.8	0.175	0.25
8	0.181	0.256
8.2	0.181	0.256
8.4	0.181	0.256
8.6	0.181	0.256
8.8	0.181	0.256
9	0.187	0.262
9.2	0.187	0.262
9.4	0.187	0.262
9.6	0.187	0.262
9.8	0.187	0.262
10	0.194	0.269
12	0.2	0.275
14	0.206	0.281
16	0.212	0.287
18	0.219	0.294
20	0.225	0.3

22	0.231	0.306
24	0.237	0.312
26	0.237	0.312
28	0.237	0.312
30	0.244	0.319
32	0.244	0.319
34	0.25	0.325
36	0.25	0.325
38	0.256	0.331
40	0.25	0.325
42	0.256	0.331
44	0.256	0.331
46	0.256	0.331
48	0.256	0.331
50	0.256	0.331
52	0.256	0.331
54	0.262	0.337
56	0.262	0.337
58	0.262	0.337
60	0.262	0.337
62	0.262	0.337
64	0.269	0.344
66	0.269	0.344
68	0.269	0.344
70	0.269	0.344
72	0.269	0.344
74	0.269	0.344
76	0.269	0.344
78	0.275	0.35
80	0.275	0.35
82	0.275	0.35
84	0.275	0.35
86	0.275	0.35
88	0.275	0.35
90	0.275	0.35
92	0.275	0.35
94	0.275	0.35
96	0.281	0.356
98	0.281	0.356
100	0.281	0.356
105	0.281	0.356
110	0.281	0.356
115	0.281	0.356
120	0.287	0.362
125	0.287	0.362
130	0.244	0.319
135	0.262	0.337
140	0.312	0.387
145	0.306	0.381
150	0.3	0.375
155	0.3	0.375
160	0.3	0.375

165	0.3	0.375
170	0.294	0.369
175	0.3	0.375
180	0.3	0.375
185	0.294	0.369
190	0.294	0.369
195	0.3	0.375
200	0.3	0.375
205	0.3	0.375
210	0.3	0.375
215	0.3	0.375
220	0.3	0.375
225	0.3	0.375
230	0.3	0.375
235	0.3	0.375
240	0.3	0.375
245	0.3	0.375
250	0.325	0.4
255	0.35	0.425
260	0.356	0.431
265	0.356	0.431
270	0.356	0.431
275	0.356	0.431
280	0.356	0.431
285	0.363	0.438
290	0.356	0.431
295	0.363	0.438
300	0.363	0.438
305	0.363	0.438
310	0.363	0.438
315	0.363	0.438
320	0.369	0.444
325	0.363	0.438
330	0.363	0.438
335	0.363	0.438
340	0.363	0.438
345	0.363	0.438
350	0.363	0.438
355	0.363	0.438
360	0.363	0.438
365	0.363	0.438
370	0.363	0.438
375	0.363	0.438
380	0.369	0.444
385	0.369	0.444
390	0.369	0.444
395	0.369	0.444
400	0.369	0.444
405	0.369	0.444
410	0.369	0.444
415	0.369	0.444
420	0.369	0.444

425	0.369	0.444
430	0.369	0.444
435	0.369	0.444
440	0.369	0.444
445	0.369	0.444
450	0.369	0.444
455	0.369	0.444
460	0.369	0.444
465	0.369	0.444
470	0.369	0.444
475	0.369	0.444
480	0.369	0.444
485	0.369	0.444
490	0.369	0.444
495	0.369	0.444
500	0.369	0.444
505	0.369	0.444
510	0.369	0.444
515	0.369	0.444
520	0.369	0.444
525	0.369	0.444
530	0.369	0.444
535	0.369	0.444
540	0.369	0.444
545	0.369	0.444
550	0.369	0.444
555	0.375	0.45
560	0.375	0.45
565	0.375	0.45
570	0.369	0.444
575	0.375	0.45
580	0.369	0.444
585	0.369	0.444
590	0.369	0.444
595	0.369	0.444
600	0.369	0.444
605	0.369	0.444
610	0.369	0.444
615	0.369	0.444
620	0.369	0.444
625	0.363	0.438
630	0.363	0.438
635	0.363	0.438
640	0.363	0.438
645	0.363	0.438
650	0.363	0.438
655	0.363	0.438
660	0.363	0.438
665	0.363	0.438
670	0.356	0.431
675	0.363	0.438
680	0.356	0.431

685	0.363	0.438
690	0.356	0.431
695	0.356	0.431
700	0.356	0.431
705	0.356	0.431
710	0.356	0.431
715	0.356	0.431
720	0.356	0.431
725	0.356	0.431
730	0.35	0.425
735	0.35	0.425
740	0.35	0.425
745	0.35	0.425
750	0.35	0.425
755	0.344	0.419
760	0.344	0.419
765	0.344	0.419
770	0.344	0.419
775	0.344	0.419
780	0.344	0.419
785	0.344	0.419
790	0.344	0.419
795	0.344	0.419
800	0.337	0.412
805	0.337	0.412
810	0.337	0.412
815	0.337	0.412
820	0.337	0.412
825	0.337	0.412
830	0.337	0.412
835	0.337	0.412
840	0.337	0.412
845	0.337	0.412
850	0.331	0.406
855	0.337	0.412
860	0.331	0.406
865	0.331	0.406
870	0.331	0.406
875	0.331	0.406
880	0.331	0.406
885	0.325	0.4
890	0.325	0.4
895	0.331	0.406
900	0.325	0.4
905	0.325	0.4
910	0.331	0.406
915	0.325	0.4
920	0.325	0.4
925	0.331	0.406
930	0.331	0.406
935	0.331	0.406
940	0.331	0.406

945	0.325	0.4
950	0.325	0.4
955	0.325	0.4
960	0.325	0.4
965	0.325	0.4
970	0.325	0.4
975	0.325	0.4
980	0.325	0.4
985	0.325	0.4
990	0.325	0.4
995	0.325	0.4
1000	0.325	0.4
1005	0.325	0.4
1010	0.325	0.4
1015	0.325	0.4
1020	0.325	0.4
1025	0.325	0.4
1030	0.325	0.4
1035	0.325	0.4
1040	0.325	0.4
1045	0.325	0.4
1050	0.325	0.4
1055	0.325	0.4
1060	0.325	0.4
1065	0.325	0.4
1070	0.325	0.4
1075	0.325	0.4
1080	0.331	0.406
1085	0.331	0.406
1090	0.331	0.406
1095	0.331	0.406
1100	0.337	0.412
1105	0.337	0.412
1110	0.337	0.412
1115	0.337	0.412
1120	0.337	0.412
1125	0.337	0.412
1130	0.337	0.412
1135	0.344	0.419
1140	0.344	0.419
1145	0.344	0.419
1150	0.337	0.412
1155	0.344	0.419
1160	0.344	0.419
1165	0.344	0.419
1170	0.344	0.419
1175	0.344	0.419
1180	0.344	0.419
1185	0.344	0.419
1190	0.344	0.419
1195	0.344	0.419
1200	0.337	0.412

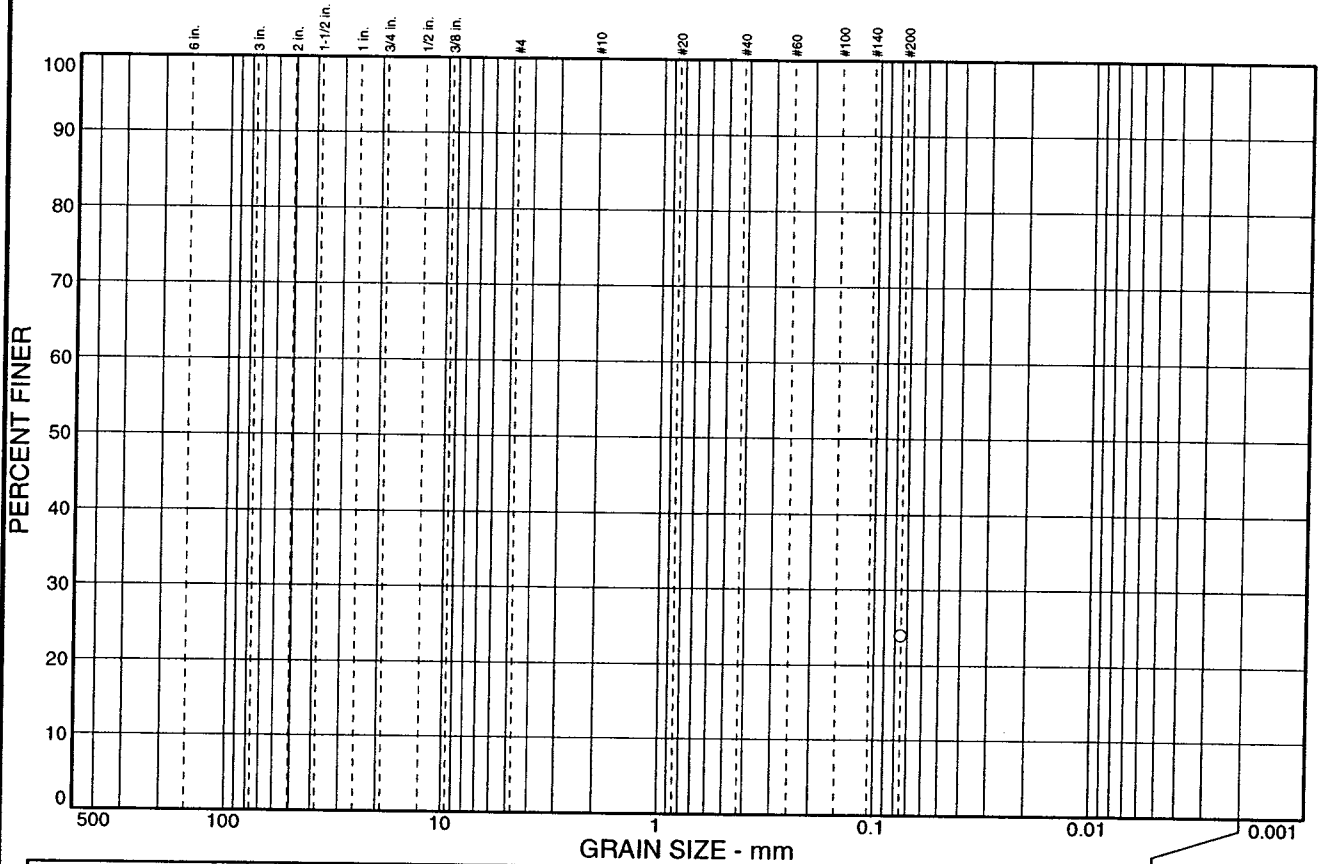
1205	0.344	0.419
1210	0.35	0.425
1215	0.344	0.419
1220	0.344	0.419
1225	0.344	0.419
1230	0.344	0.419
1235	0.337	0.412
1240	0.344	0.419
1245	0.344	0.419
1250	0.344	0.419
1255	0.344	0.419
1260	0.337	0.412
1265	0.344	0.419
1270	0.337	0.412
1275	0.337	0.412
1280	0.344	0.419
1285	0.331	0.406
1290	0.344	0.419
1295	0.331	0.406
1300	0.344	0.419
1305	0.337	0.412
1310	0.337	0.412
1315	0.344	0.419
1320	0.337	0.412
1325	0.337	0.412
1330	0.337	0.412
1335	0.331	0.406
1340	0.325	0.4
1345	0.325	0.4
1350	0.331	0.406
1355	0.325	0.4
1360	0.325	0.4
1365	0.331	0.406
1370	0.331	0.406
1375	0.331	0.406
1380	0.325	0.4
1385	0.325	0.4
1390	0.325	0.4
1395	0.325	0.4
1400	0.325	0.4
1405	0.325	0.4
1410	0.325	0.4
1415	0.325	0.4
1420	0.325	0.4
1425	0.325	0.4
1430	0.319	0.394
1435	0.319	0.394
1440	0.319	0.394

APPENDIX E

Laboratory Testing Results

LABORATORY TESTING OF ADDITIONAL ARDAMAN SAMPLES

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						23.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	23.9		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks
 As received moisture content = 11.7%

* (no specification provided)

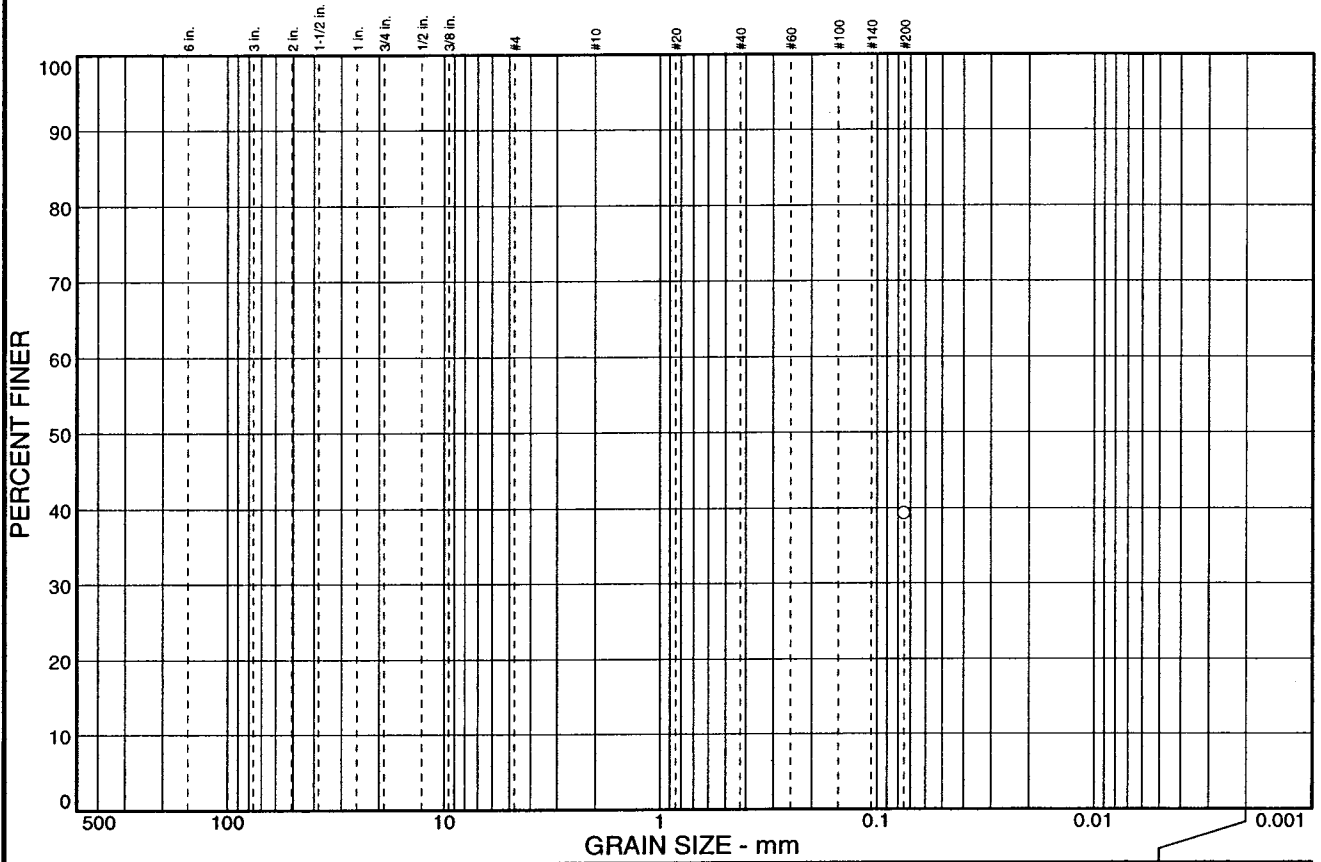
Sample No.: B1
Location: 4

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
							39.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	39.3		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks

As received moisture content = 7.3%

* (no specification provided)

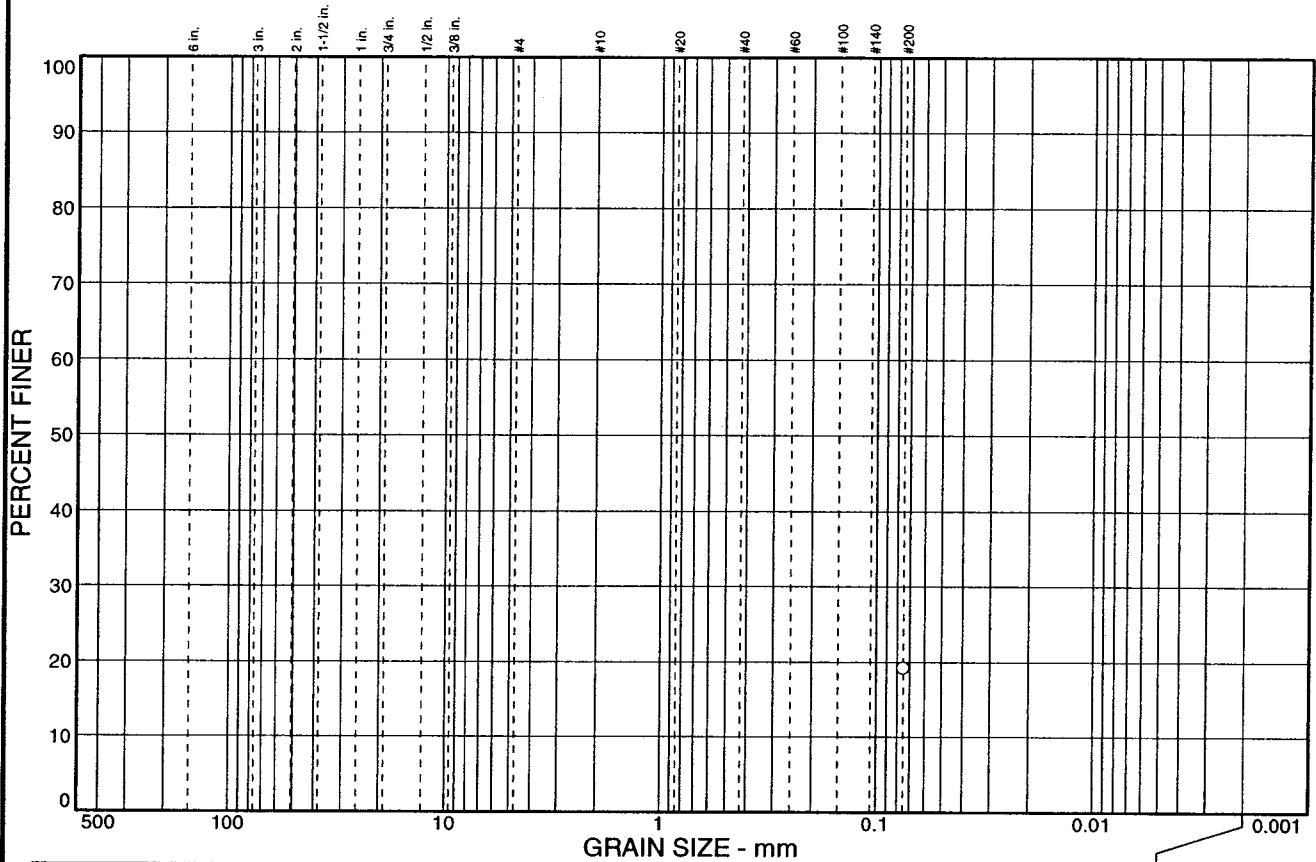
Sample No.: B3
Location: 3

Source of Sample:

Date: 2/19/04
Elev./Depth: --

<p style="text-align: center;">CDM Jessberger</p> <p style="text-align: center;">Geotechnical Engineering Laboratory</p>	<p>Client: Aquacalma L.P. Project: C44-Resevior</p> <p>Project No: 24752-40911</p>	<p>Plate</p>
--	--	--------------

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						19.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	19.2		

Soil Description

PL= NP **Atterberg Limits** LL= NP PI= NP

Coefficients

D₈₅= D₆₀= D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

USCS= **Classification** AASHTO= --

Remarks

As received moisture content = 13.6%

* (no specification provided)

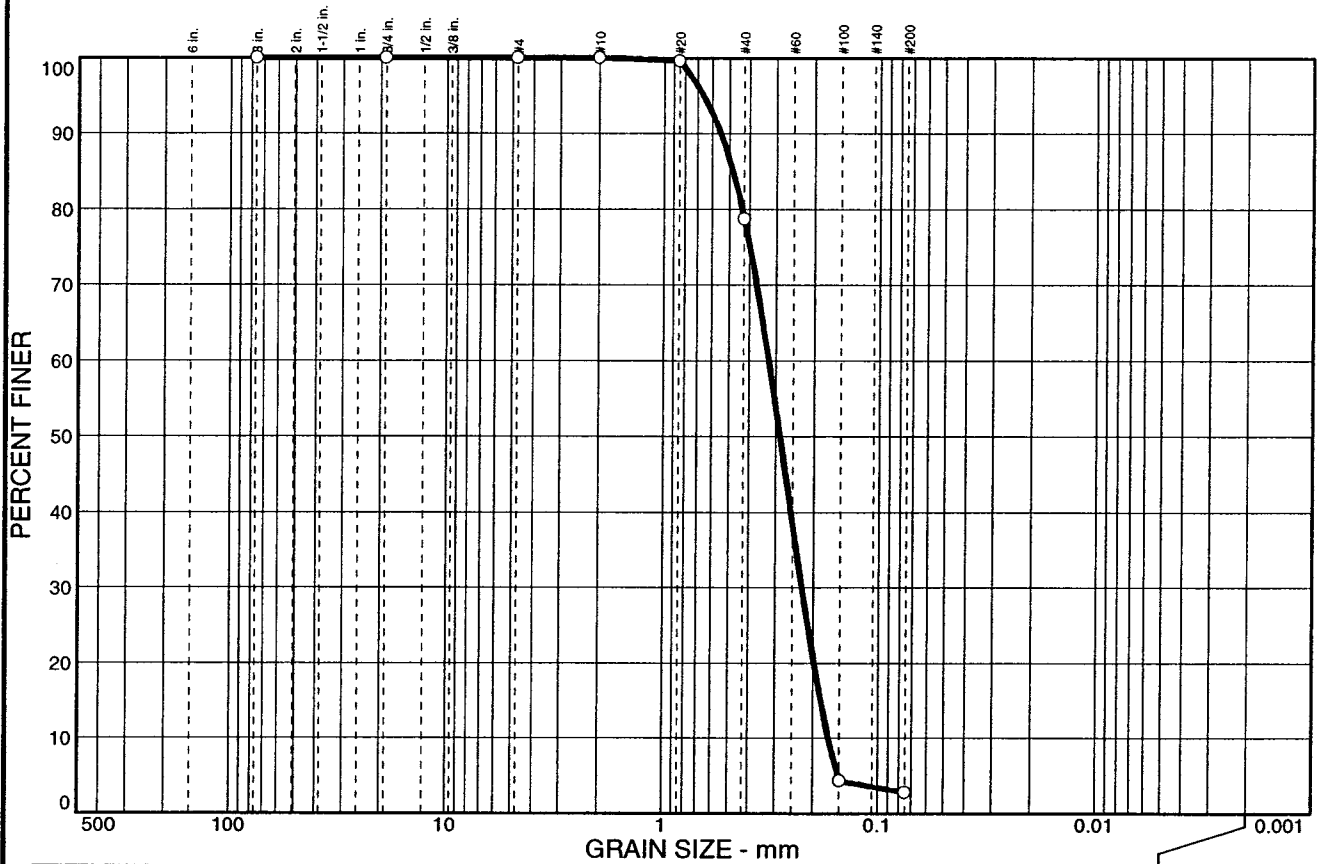
Sample No.: B3
Location: 5

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	21.3	75.9	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	78.7		
#100	4.3		
#200	2.8		

Soil Description

Poorly graded sand

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.481 D₆₀= 0.325 D₅₀= 0.288
D₃₀= 0.226 D₁₅= 0.184 D₁₀= 0.169
C_u= 1.92 C_c= 0.93

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 20.3%
Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

* (no specification provided)

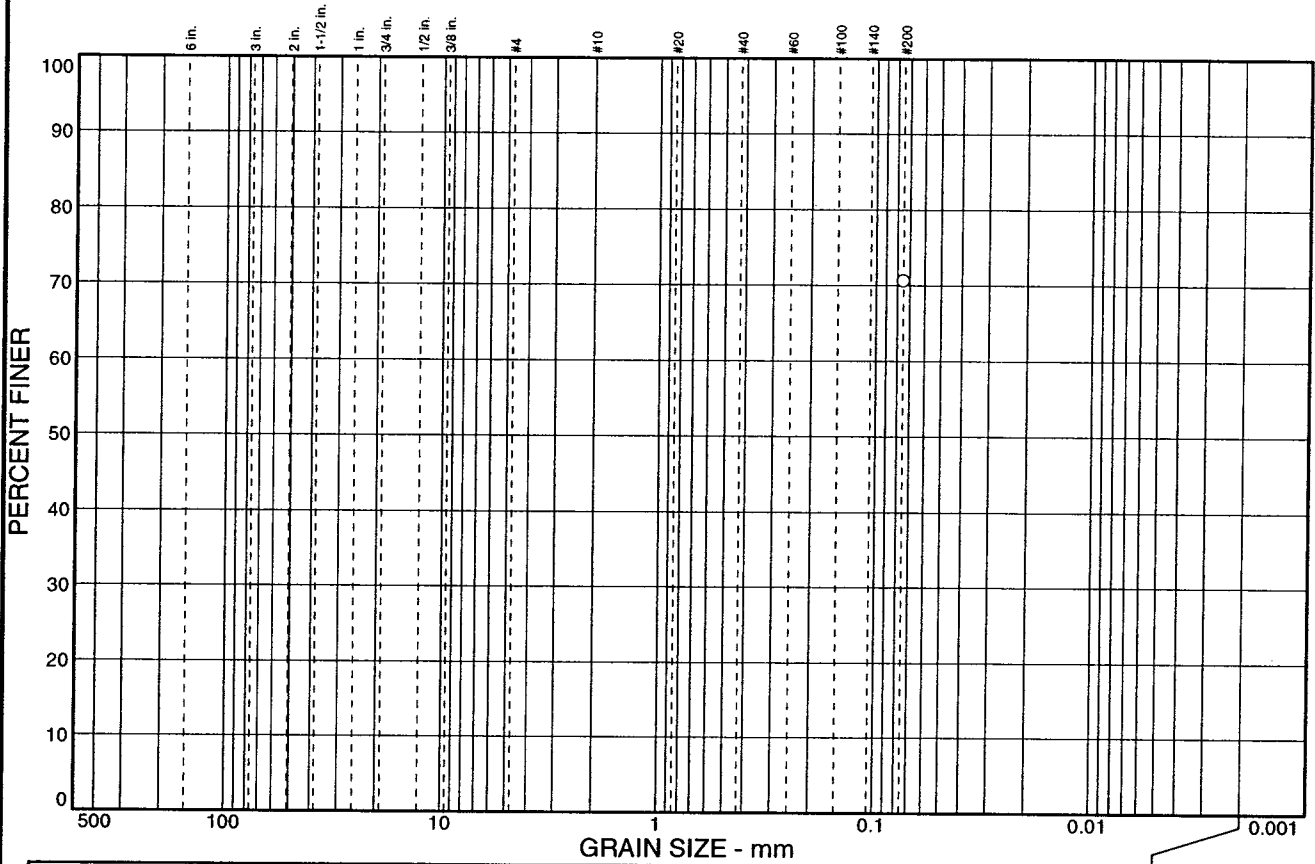
Sample No.: B3
Location: 6

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						70.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	70.6		

Soil Description

Atterberg Limits

PL= 12 LL= 26 PI= 14

Coefficients

D₈₅= D₆₀= D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= AASHTO= --

Remarks

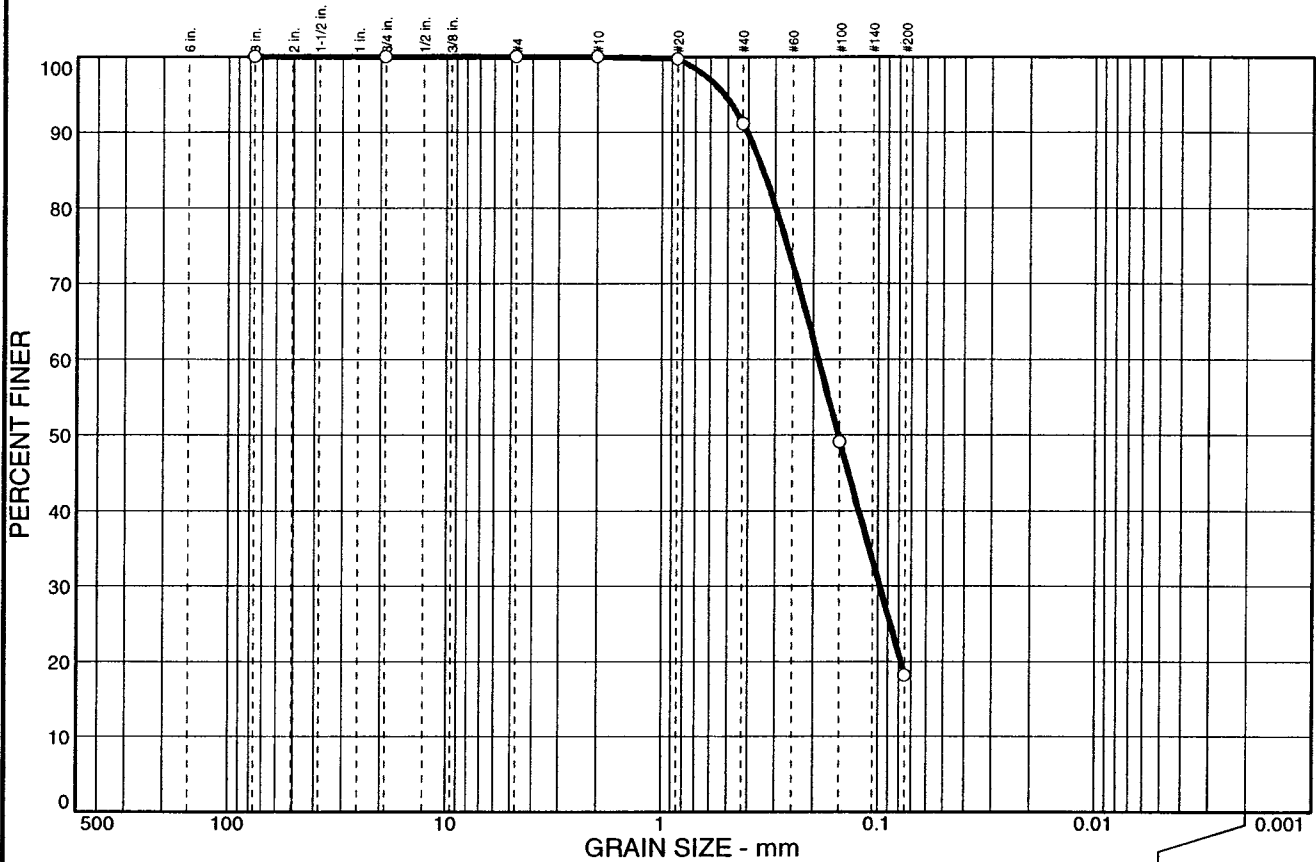
As received moisture content = 7.8%

* (no specification provided)

Sample No.: B5 Source of Sample: Date: 2/19/04
Location: 3 Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	8.9	73.0	18.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	91.1		
#100	49.1		
#200	18.1		

Soil Description
Silty sand

Atterberg Limits
 PL= -- LL= -- PI= --

Coefficients
 D₈₅= 0.344 D₆₀= 0.189 D₅₀= 0.153
 D₃₀= 0.0983 D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SM AASHTO= --

Remarks
 As received moisture content = 10.9%
 Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

* (no specification provided)

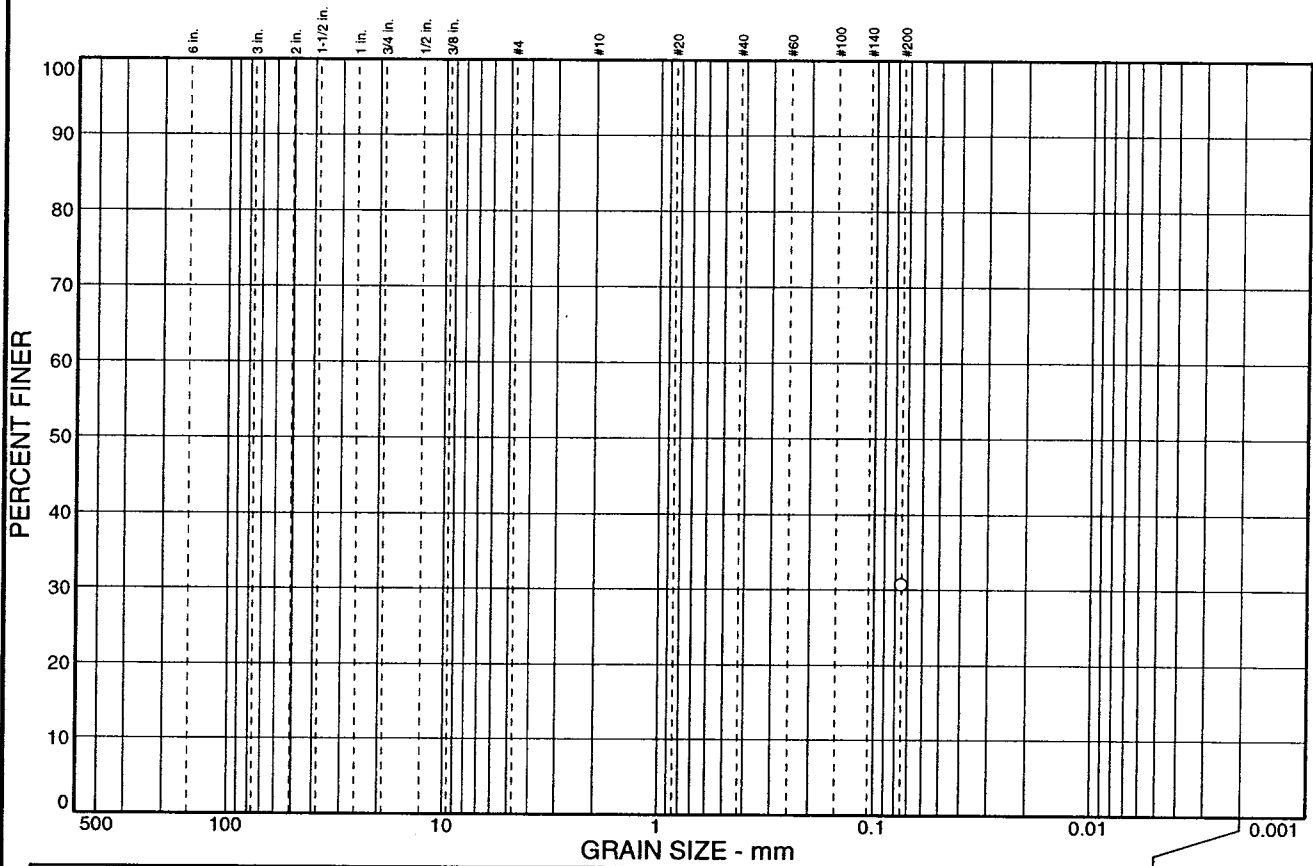
Sample No.: B6
Location: 2

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						30.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	30.7		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks
 As received moisture content = 7.7%

* (no specification provided)

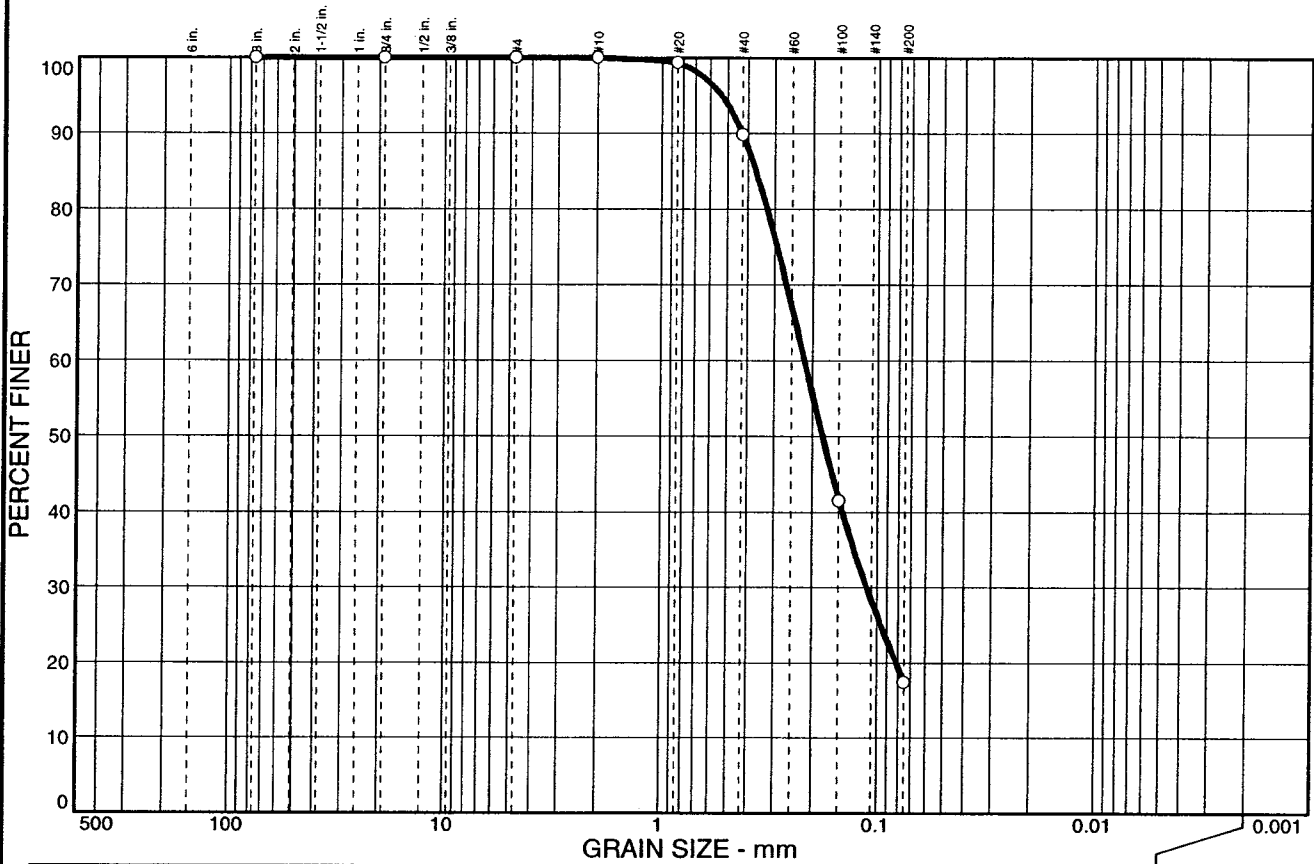
Sample No.: B6
Location: 4

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	10.2	72.4	17.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.4		
#40	89.8		
#100	41.5		
#200	17.4		

Soil Description
Silty sand

Atterberg Limits
PL= -- LL= -- PI= --

Coefficients
D₈₅= 0.369 D₆₀= 0.218 D₅₀= 0.180
D₃₀= 0.112 D₁₅= D₁₀=
C_u=

Classification
USCS= SM AASHTO= --

Remarks
As received moisture content = 9.8%
Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

* (no specification provided)

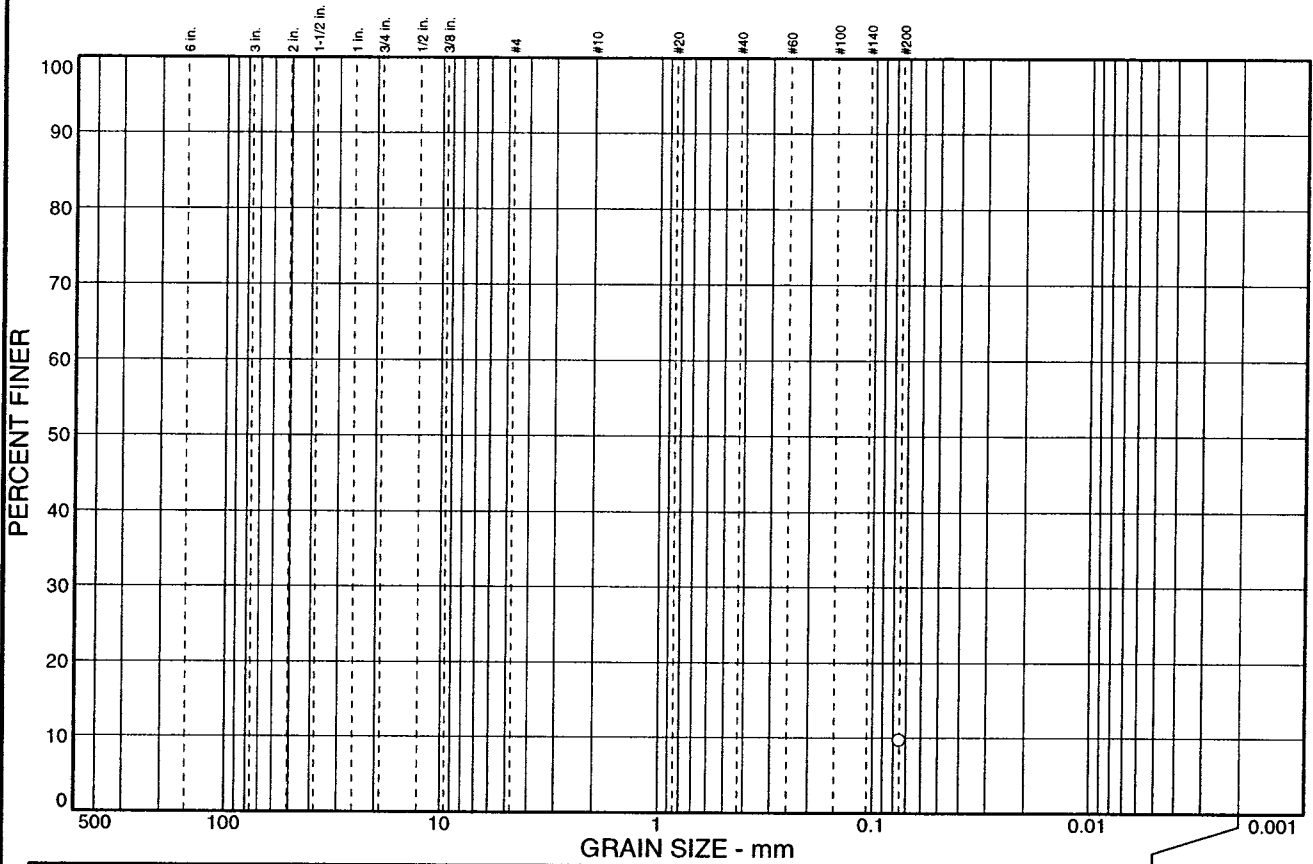
Sample No.: B8
Location: 2

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						9.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	9.7		

Soil Description

PL= NP **Atterberg Limits** LL= NP PI= NP

Coefficients

D₈₅= D₆₀= D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

USCS= **Classification** AASHTO= --

Remarks

As received moisture content = 9.8%

* (no specification provided)

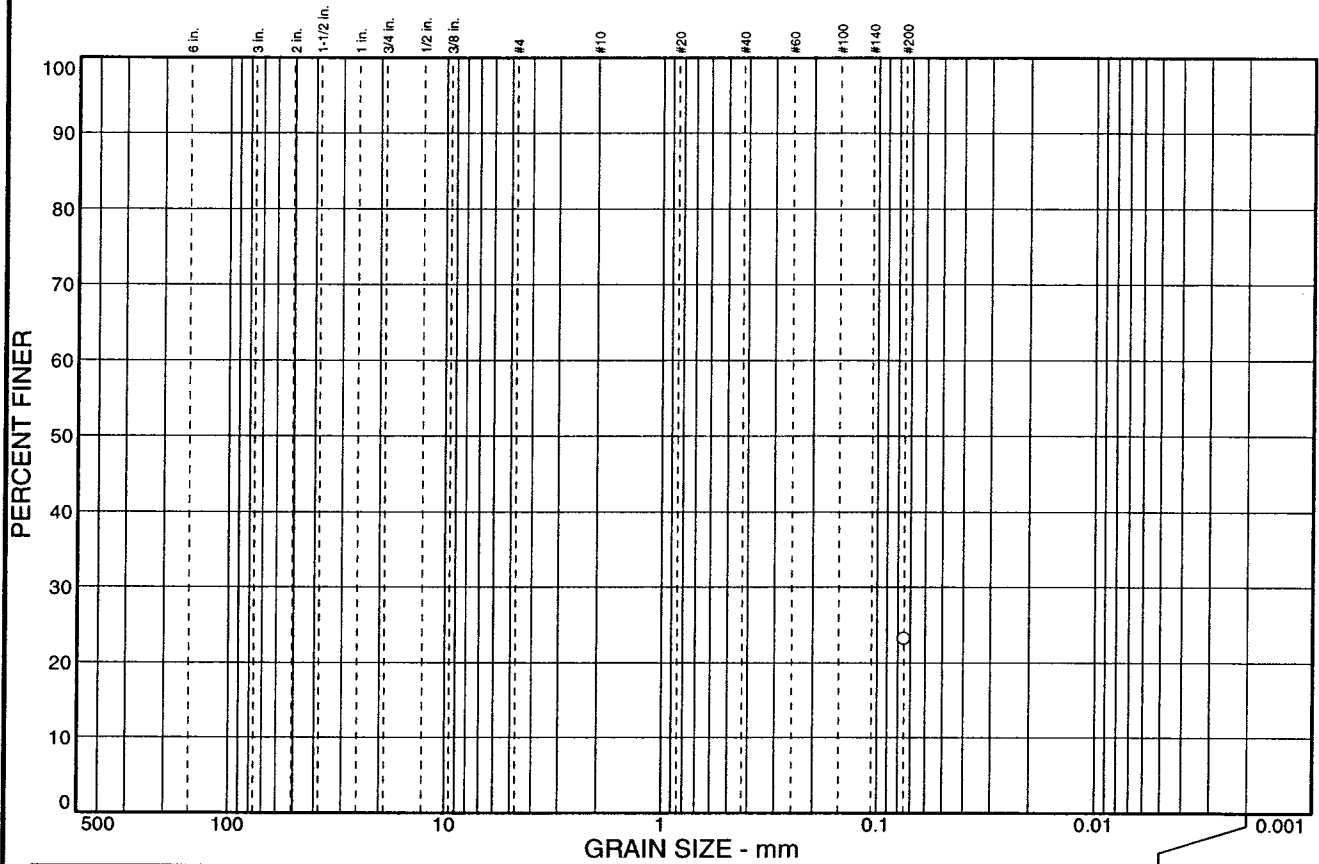
Sample No.: B9
Location: 1

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						23.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	23.2		

Soil Description

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D₈₅= D₆₀= D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= AASHTO= --

Remarks

As received moisture content = 19.0%

* (no specification provided)

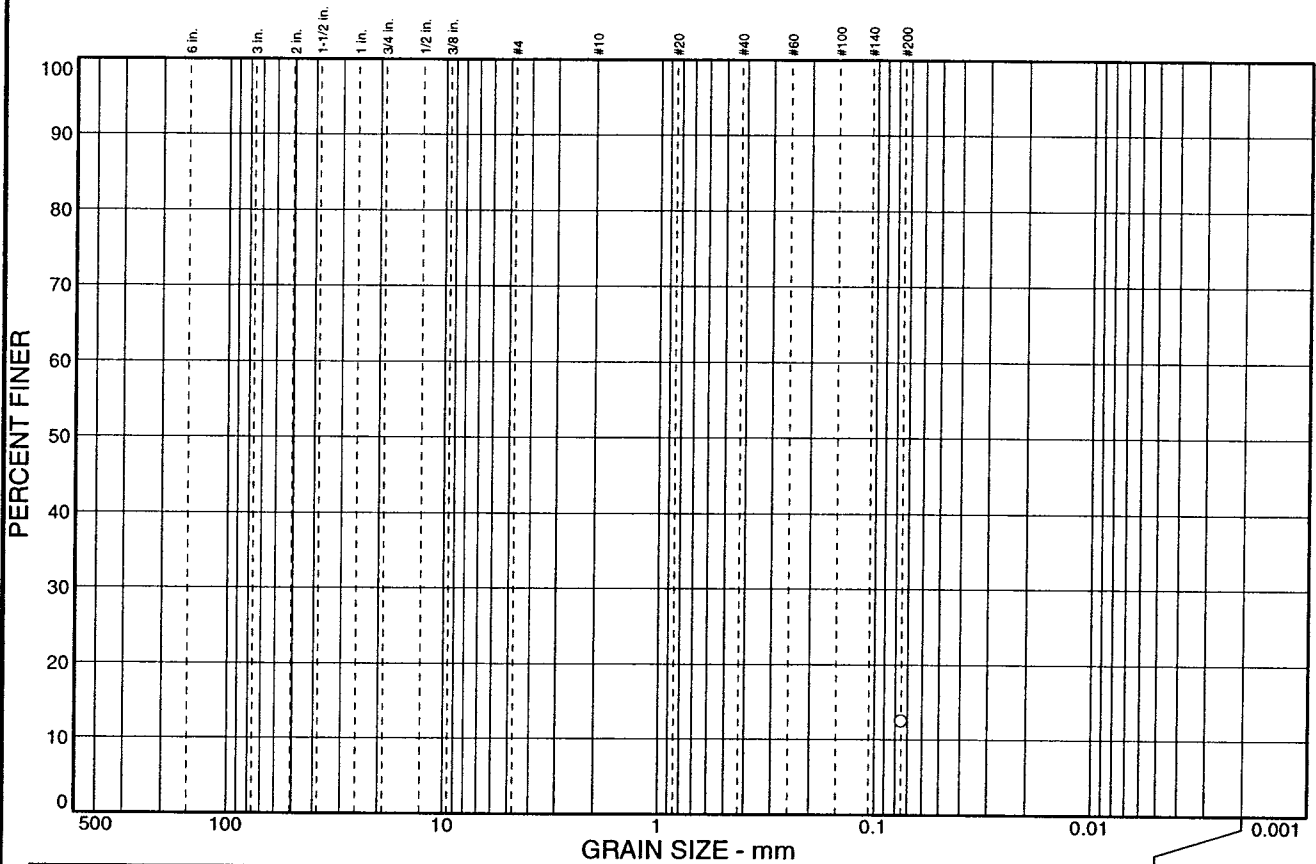
Sample No.: B9
Location: 3

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						12.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	12.5		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks
 As received moisture content = 13.7%

* (no specification provided)

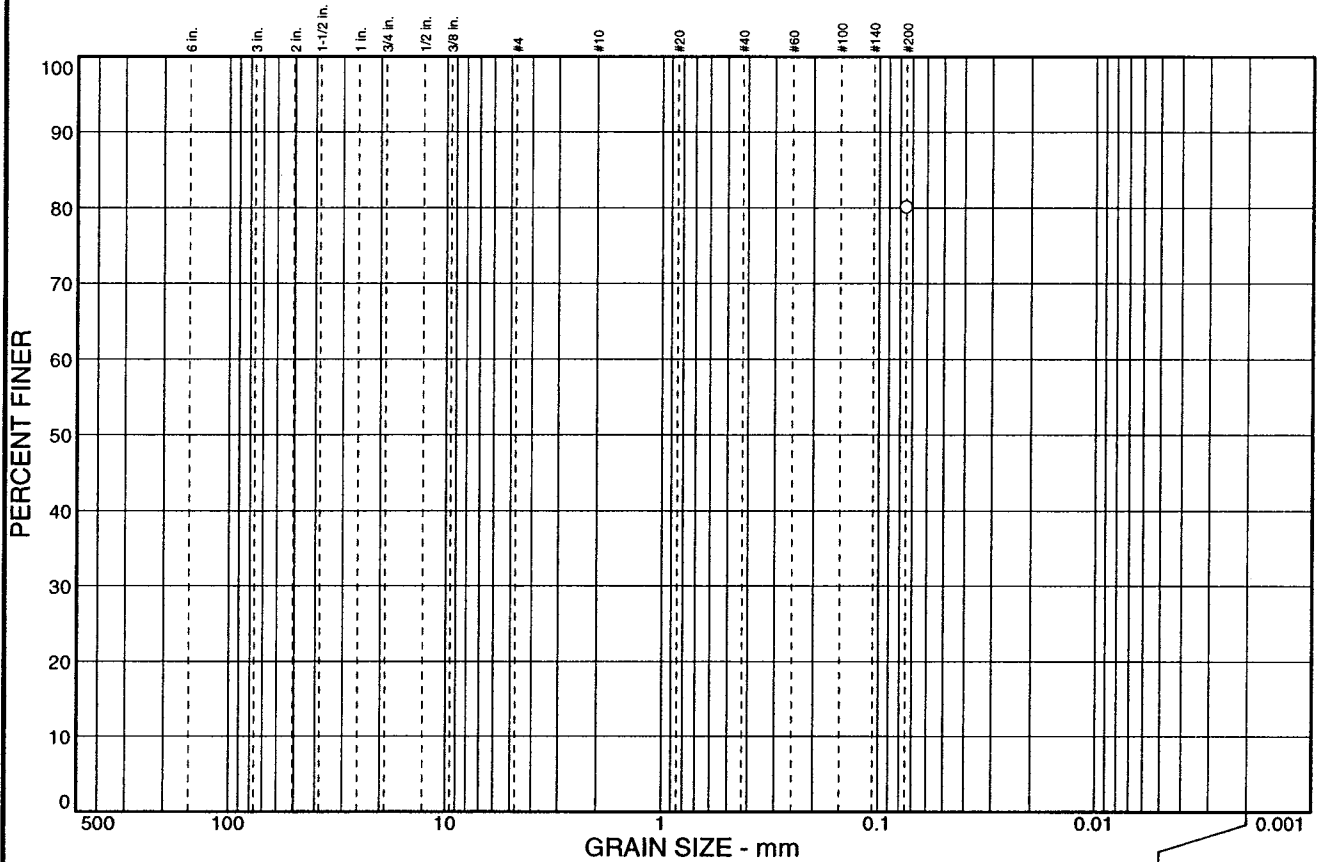
Sample No.: B9
 Location: 5

Source of Sample:

Date: 2/19/04
 Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Reservoir Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						80.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	80.1		

Soil Description

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D₈₅= D₆₀= D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= AASHTO= --

Remarks

As received moisture content = 12.7%

* (no specification provided)

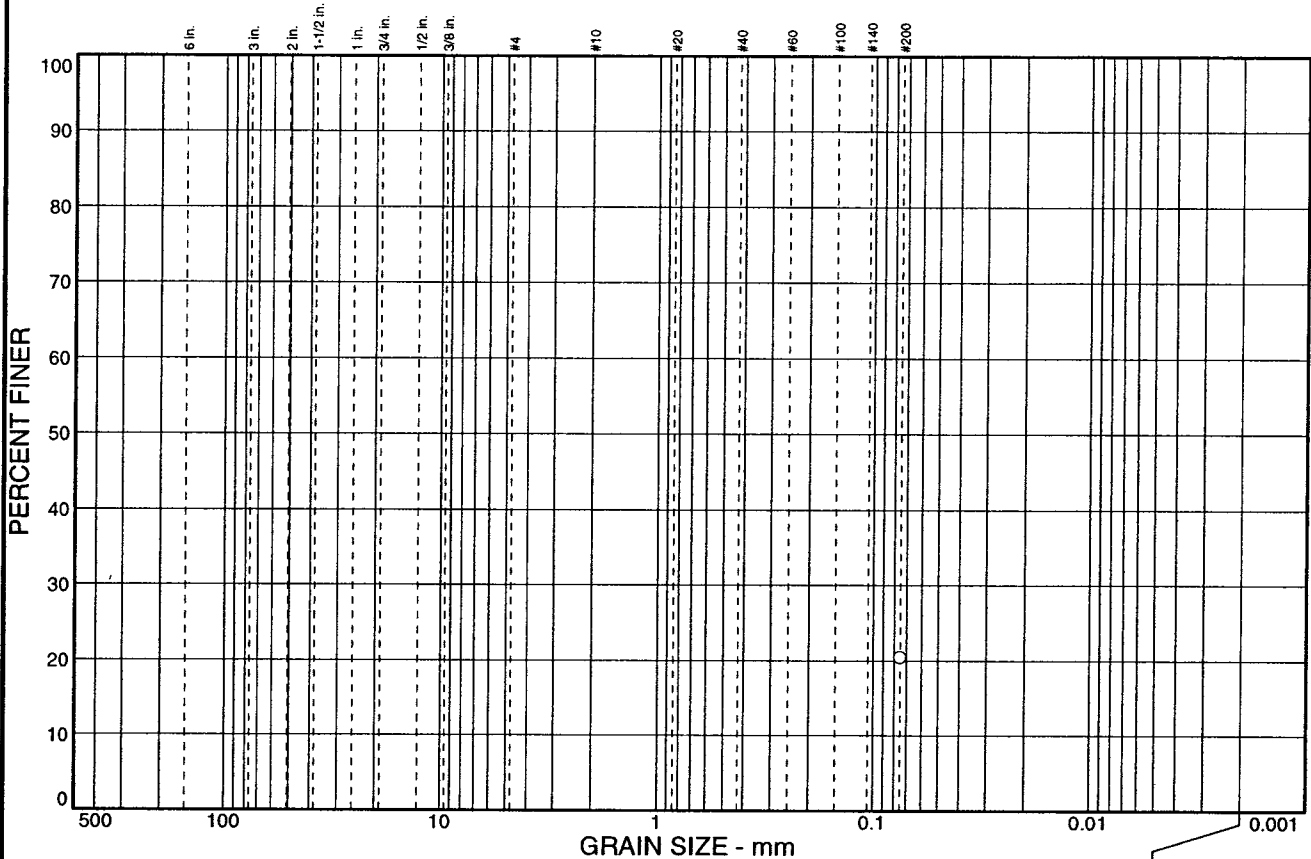
Sample No.: B11
Location: 7

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						20.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	20.4		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

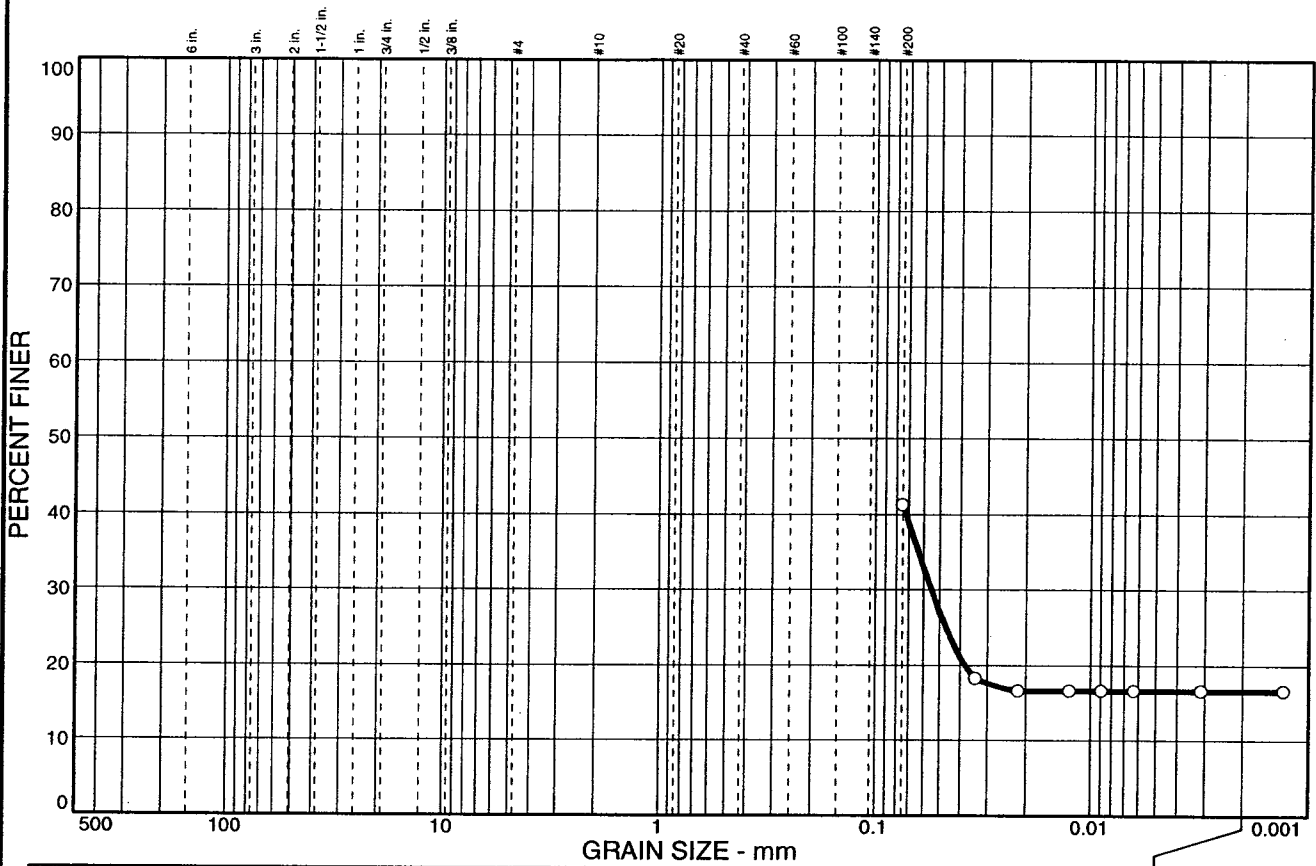
Remarks
 As received moisture content = 5.0%

* (no specification provided)

Sample No.: B13 **Source of Sample:** **Date:** 2/19/04
Location: 1 **Elev./Depth:** --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						24.6	16.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	41.2		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅=
 D₃₀= 0.0550 D₆₀= D₅₀=
 C_u= D₁₅= D₁₀=
 C_c=

Classification
 USCS= AASHTO= --

Remarks
 As received moisture content = 14.6%

* (no specification provided)

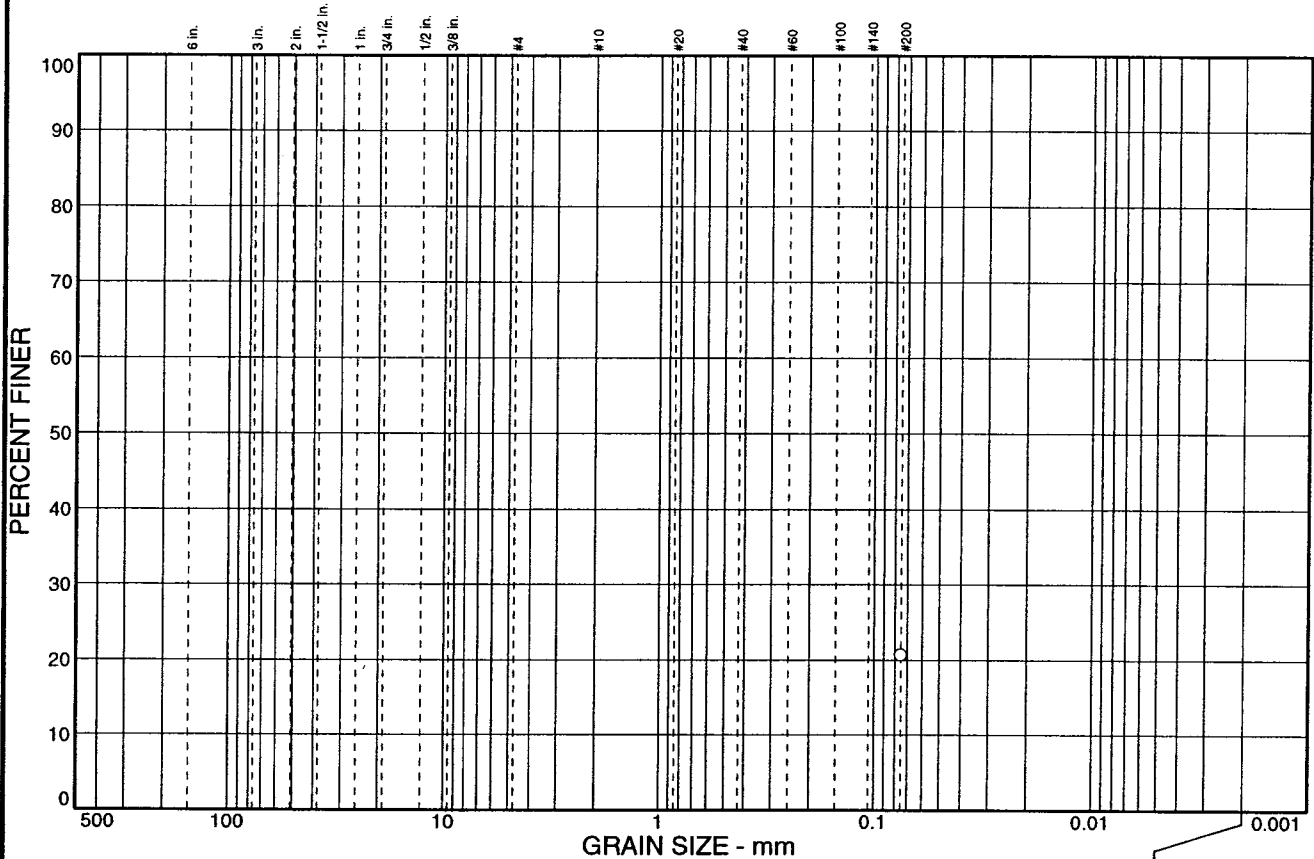
Sample No.: B13
 Location: 4

Source of Sample:

Date:
 Elev./Depth: --

CDM Jessberger	Client: Aquacalma L.P.
Geotechnical Engineering Laboratory	Project: C44-Resevior
	Project No: 24752-40911 Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						20.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	20.7		

Soil Description

PL= NP **Atterberg Limits** LL= NP PI= NP

Coefficients

D₈₅= D₆₀= D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= AASHTO= --

Remarks

As received moisture content = 13.7%

* (no specification provided)

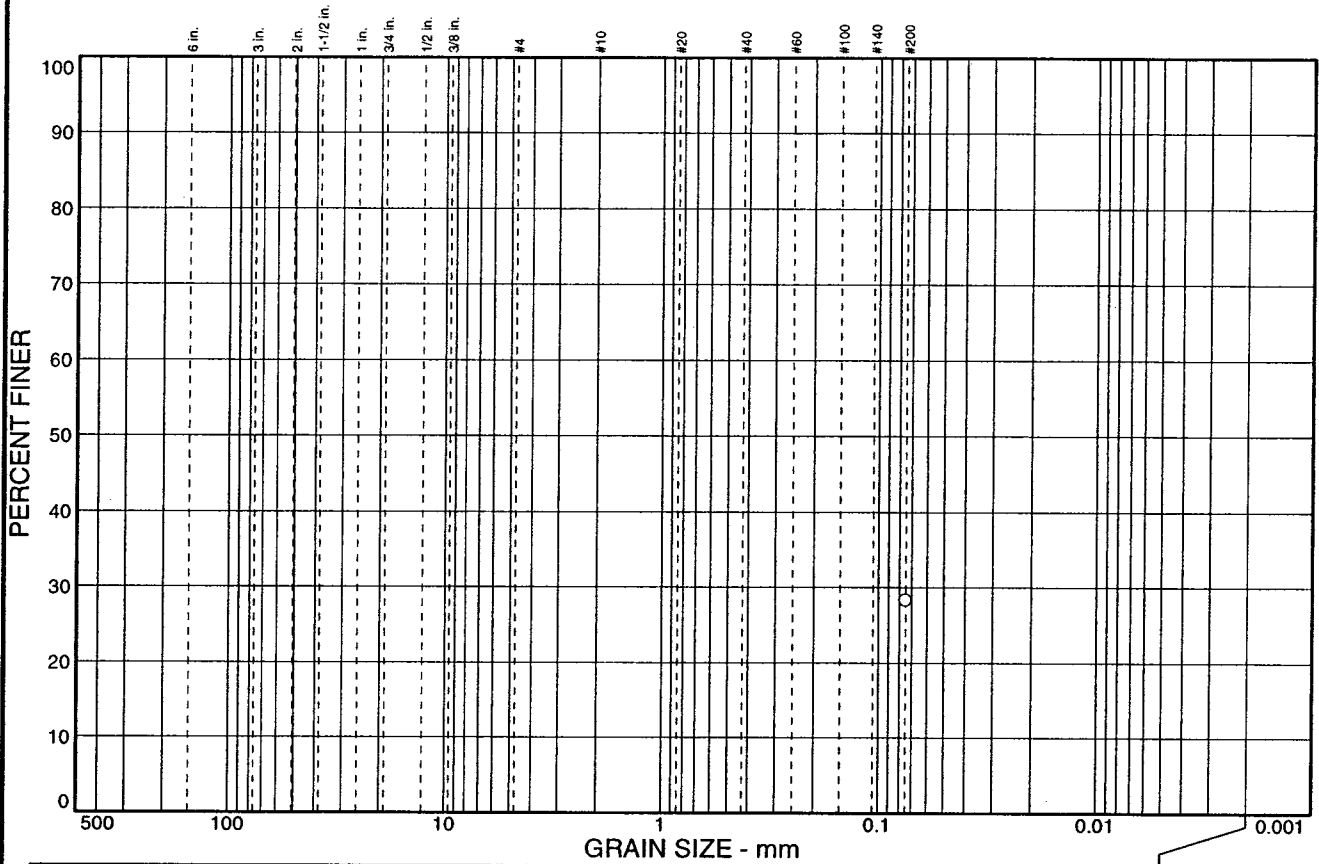
Sample No.: B16
 Location: 3

Source of Sample:

Date: 2/19/04
 Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911 Plate
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PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						28.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	28.3		

* (no specification provided)

Soil Description

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D₈₅= D₆₀= D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= AASHTO= --

Remarks

As received moisture content = 12.2%

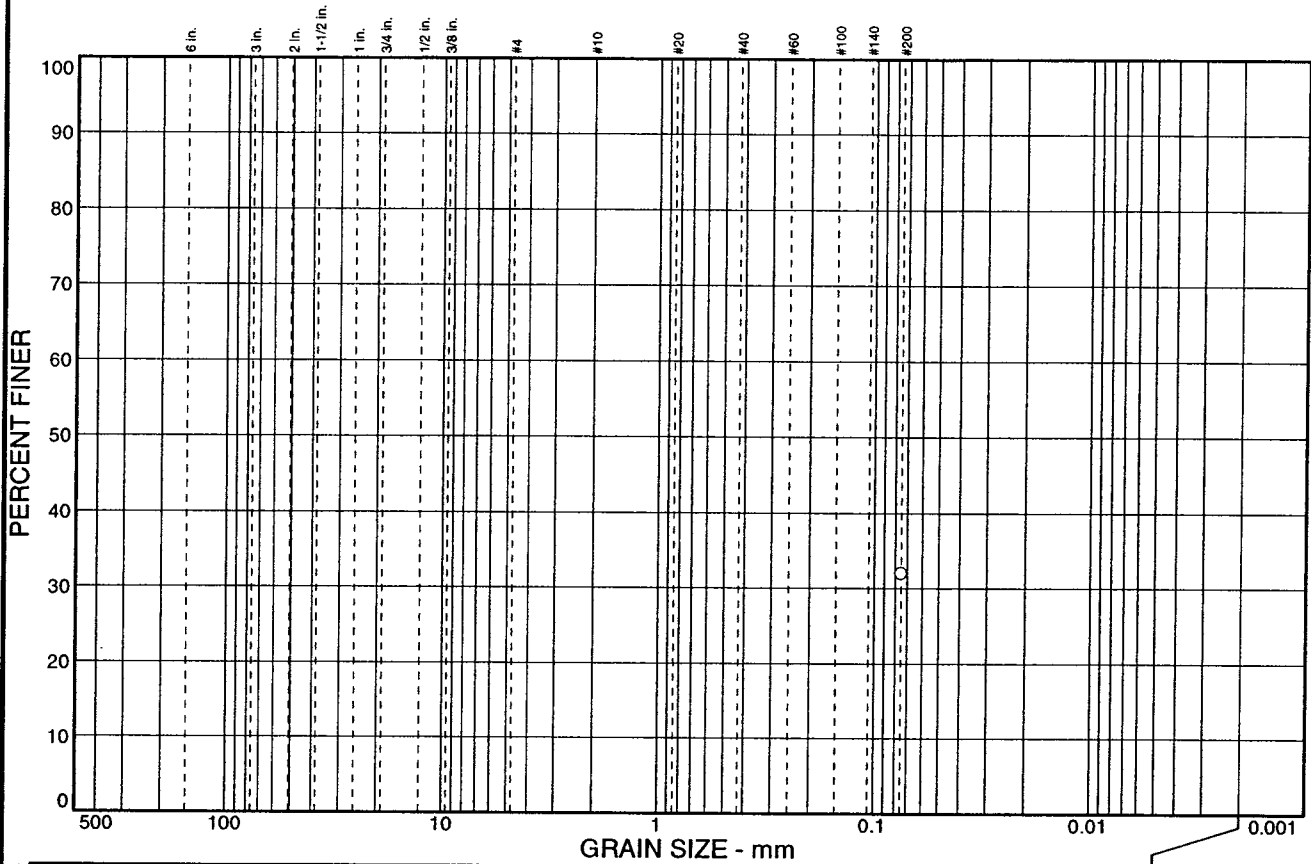
Sample No.: B16
Location: 4

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						32.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	32.0		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks
 As received moisture content = 12.4%

* (no specification provided)

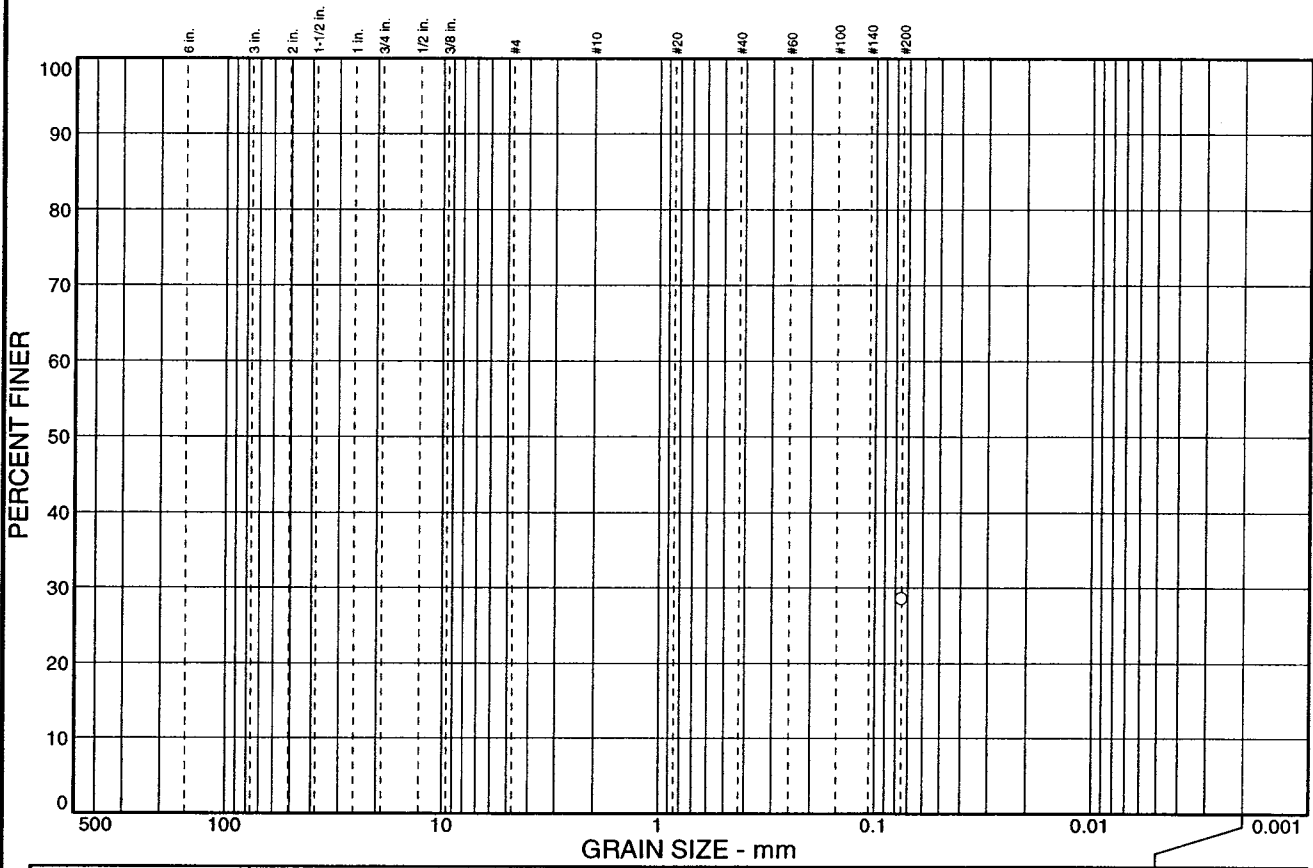
Sample No.: B17
Location: 2

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						28.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	28.6		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks
 As received moisture content = 7.4%

* (no specification provided)

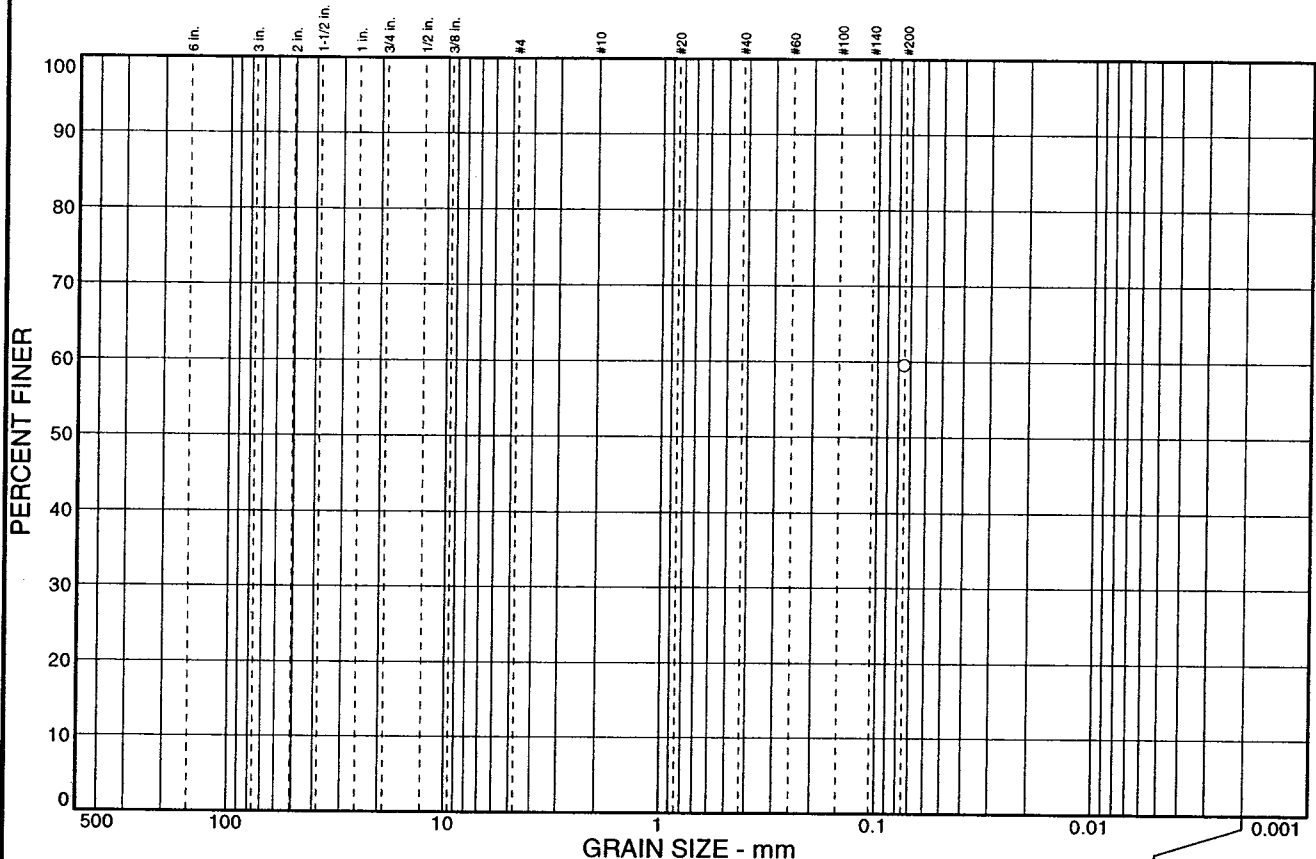
Sample No.: B19
Location: 4

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND		% FINES		
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						59.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	59.5		

Soil Description

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO=

Remarks
 As received moisture content = 65.6%

* (no specification provided)

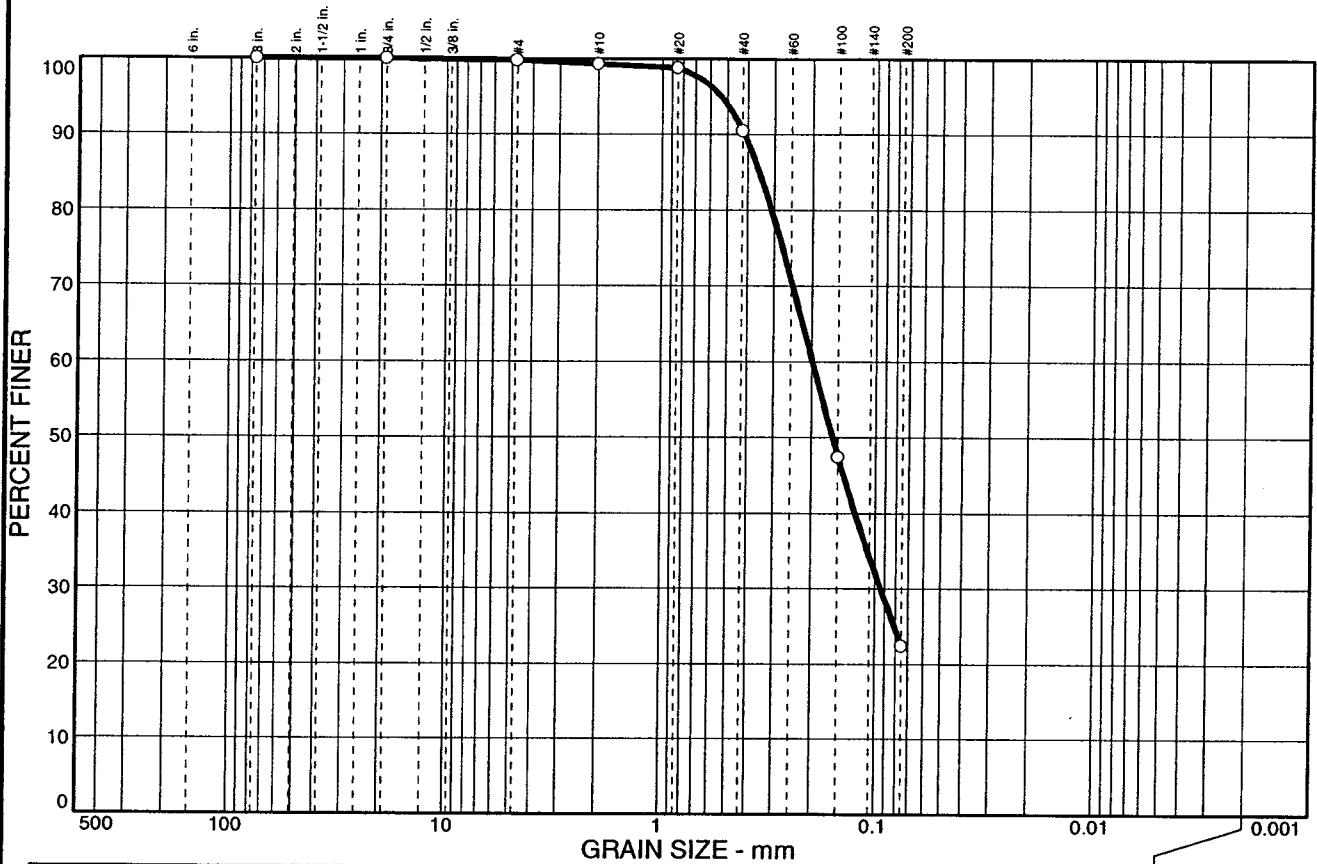
Sample No.: B21
 Location: 1

Source of Sample:

Date: 2/19/04
 Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.2	0.5	8.8	68.1	22.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	99.8		
#10	99.3		
#20	98.8		
#40	90.5		
#100	47.4		
#200	22.4		

Soil Description
Silty sand

Atterberg Limits
 PL= -- LL= -- PI= --

Coefficients
 D₈₅= 0.355 D₆₀= 0.199 D₅₀= 0.159
 D₃₀= 0.0942 D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SM AASHTO= --

Remarks
 As received moisture content = 10.2%
 Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

* (no specification provided)

Sample No.: B23

Source of Sample:

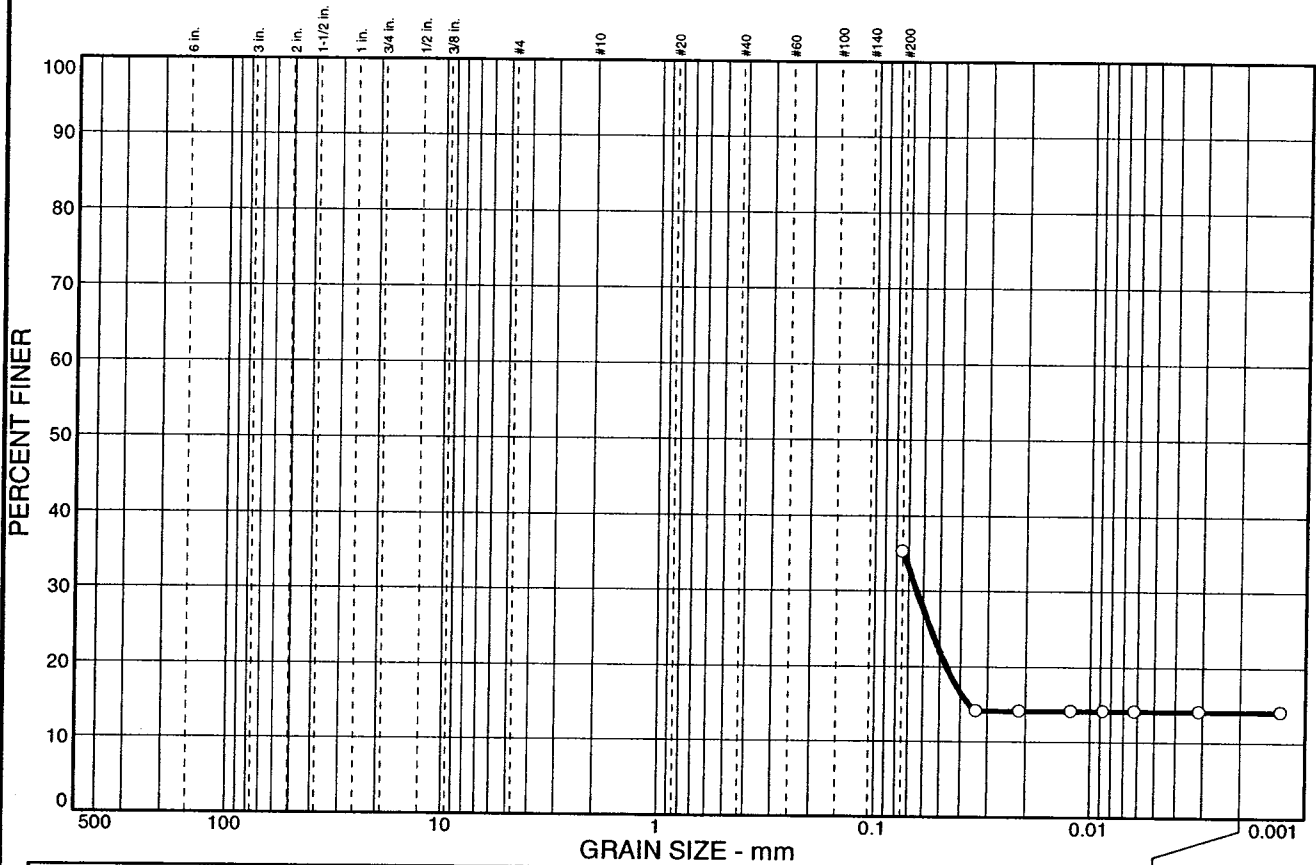
Date: 2/19/04

Location: 1

Elev./Depth: --

<p>CDM Jessberger</p> <p>Geotechnical Engineering Laboratory</p>	<p>Client: Aquacalma L.P.</p> <p>Project: C44-Resevior</p> <p>Project No: 24752-40911</p> <p style="text-align: right;">Plate</p>
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PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						21.2	14.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	35.3		

Soil Description

PL= NP **Atterberg Limits** LL= NP PI= NP
 D₈₅= **Coefficients** D₆₀= D₅₀=
 D₃₀= 0.0645 D₁₅= 0.0366 D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks

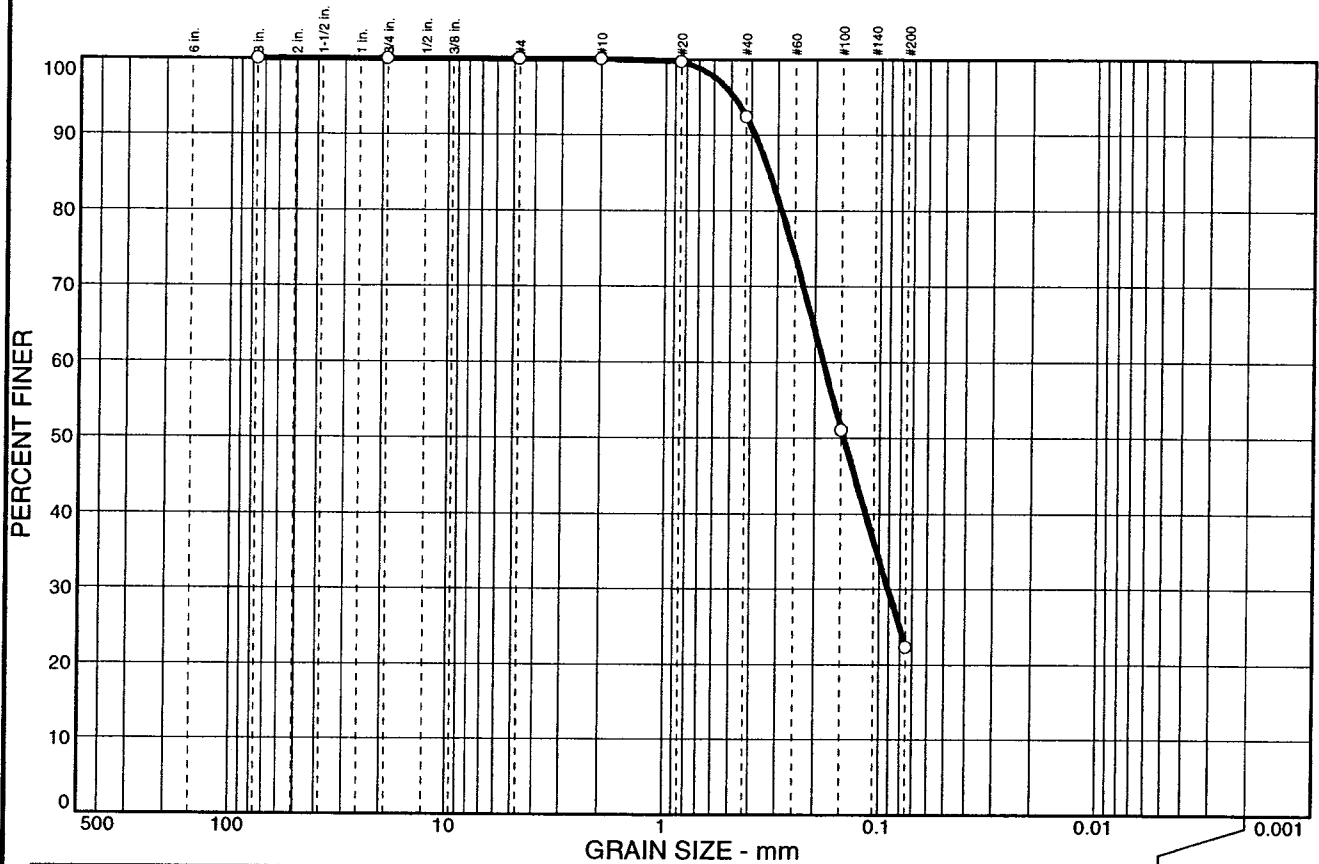
As received moisture content = 7.2%

* (no specification provided)

Sample No.: B23 **Source of Sample:** **Date:** 2/19/04
Location: 4 **Elev./Depth:** --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	7.6	70.1	22.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	92.4		
#100	51.0		
#200	22.3		

Soil Description
Silty sand

Atterberg Limits
PL= -- LL= -- PI= --

Coefficients
D₈₅= 0.330 D₆₀= 0.183 D₅₀= 0.147
D₃₀= 0.0909 D₁₅= D₁₀=
C_u= C_c=

Classification
USCS= SM AASHTO= --

Remarks
As received moisture content = 3.3%
Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

* (no specification provided)

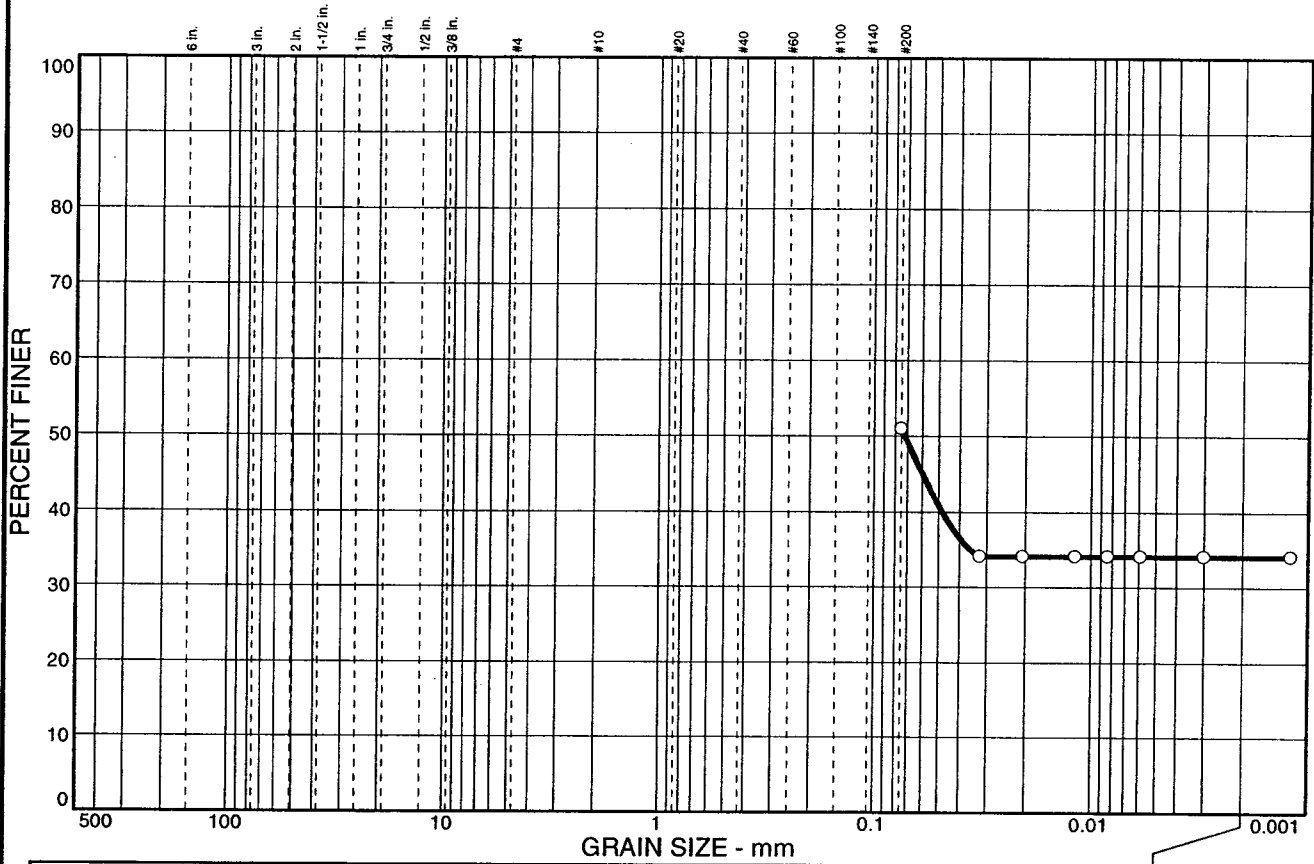
Sample No.: B26
Location: 3

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						16.9	34.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	51.0		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀= 0.0723
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks
 As received moisture content = 31.2%

* (no specification provided)

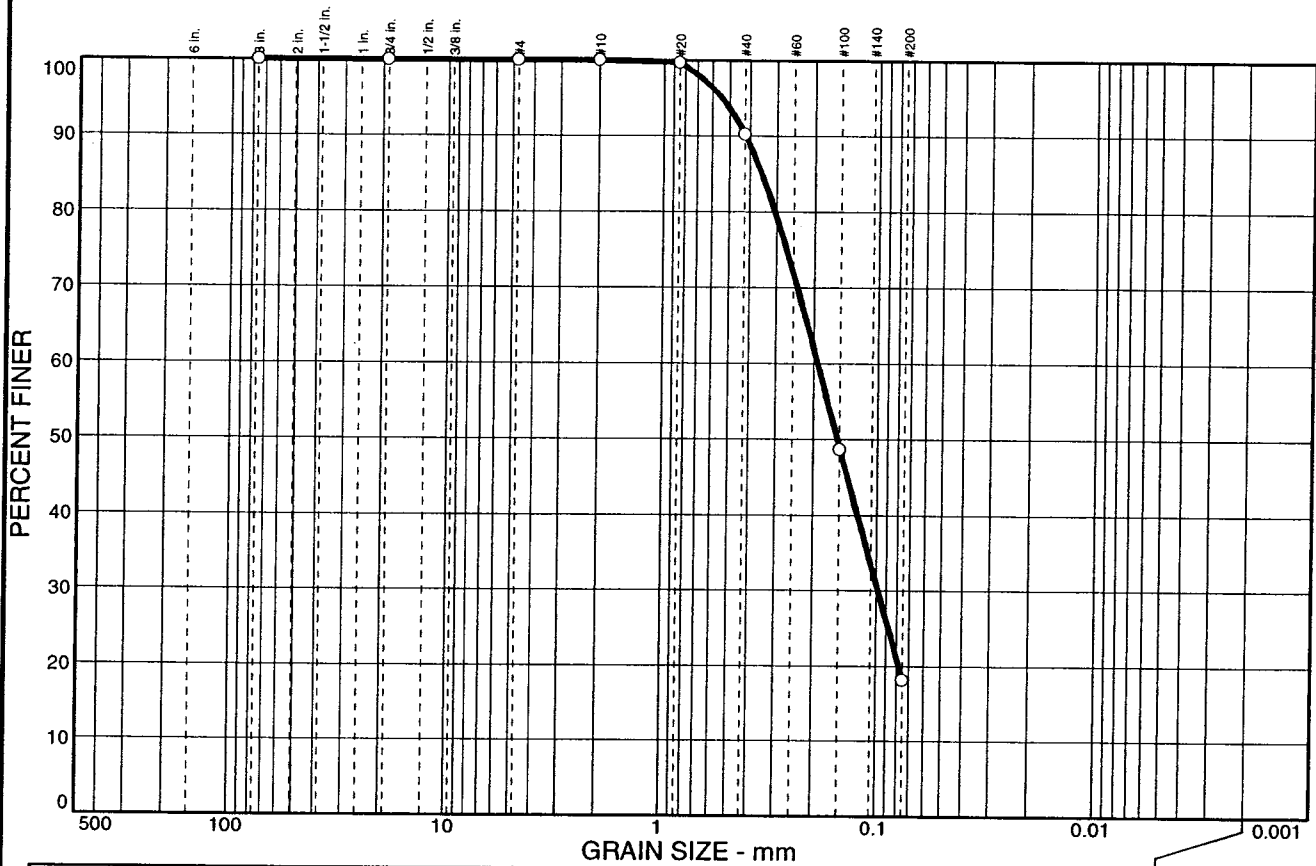
Sample No.: B26
Location: 6

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	9.8	72.1	18.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	90.2		
#100	48.7		
#200	18.1		

Soil Description
Silty sand

Atterberg Limits
 PL= -- LL= -- PI= --

Coefficients
 D₈₅= 0.354 D₆₀= 0.192 D₅₀= 0.154
 D₃₀= 0.0986 D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SM AASHTO= --

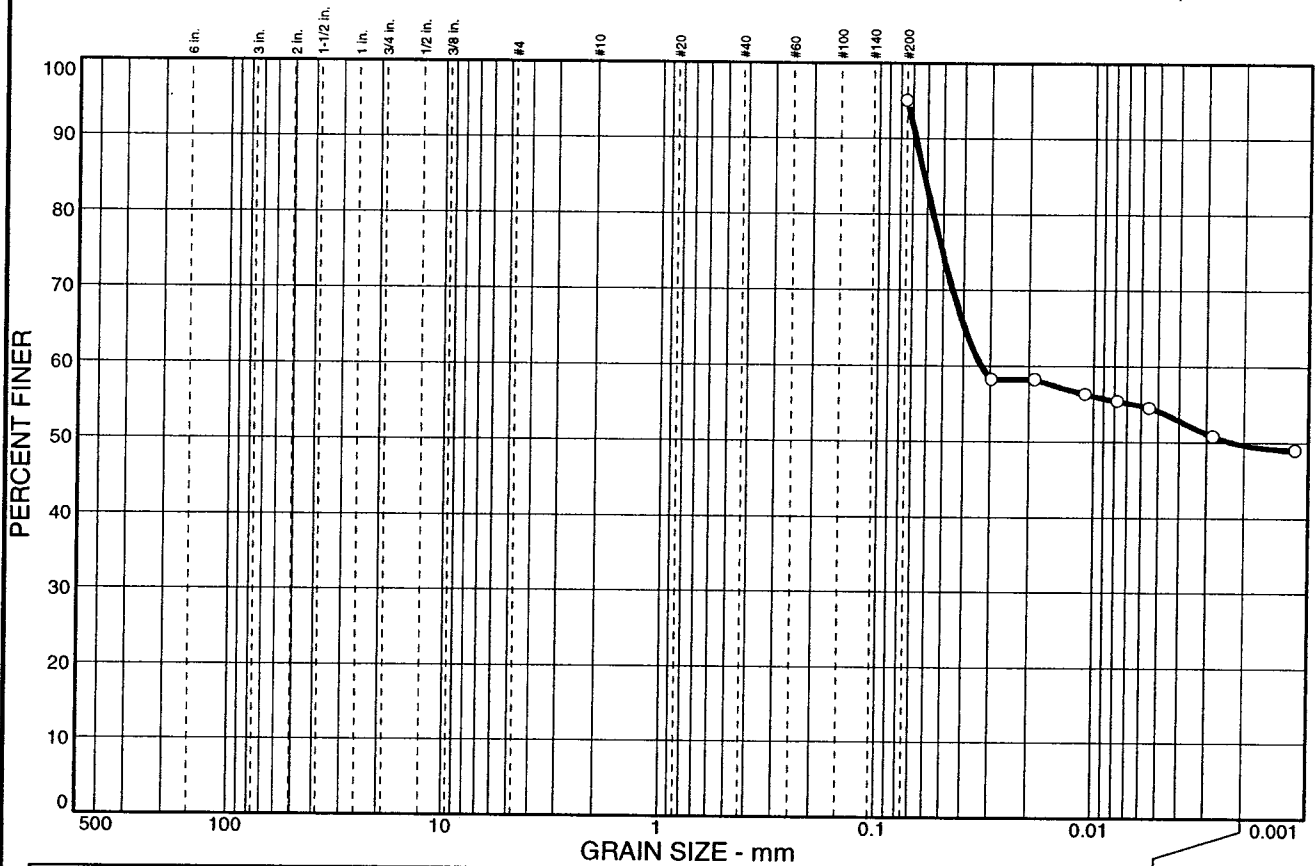
Remarks
 As received moisture content = 12.0%
 Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

* (no specification provided)

Sample No.: B29 Source of Sample: Date: 2/19/04
 Location: 2 Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911 Plate
---	--

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						45.3	49.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	95.0		

Soil Description

Atterberg Limits
 PL= 36 LL= 124 PI= 88

Coefficients
 D₈₅= 0.0621 D₆₀= 0.0331 D₅₀= 0.0023
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks
 As received moisture content = 88.8%

* (no specification provided)

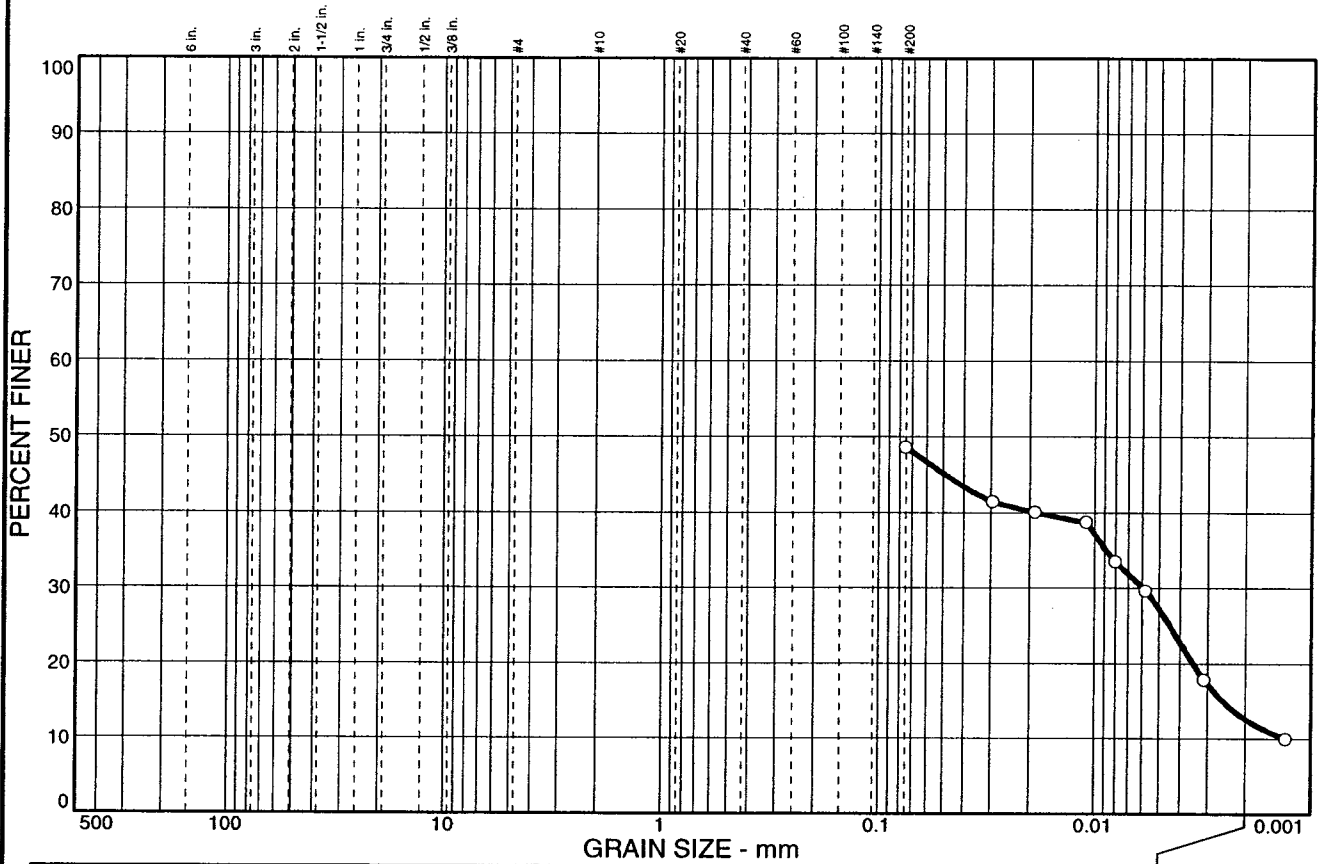
Sample No.: B32
 Location: 3

Source of Sample:

Date: 2/19/04
 Elev./Depth:

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						36.0	12.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	48.6		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= 0.0060 D₁₅= 0.0026 D₁₀= 0.0013
 C_u= C_c=

Classification
 USCS= ML AASHTO= --

Remarks
 As received moisture content = 8.5%

* (no specification provided)

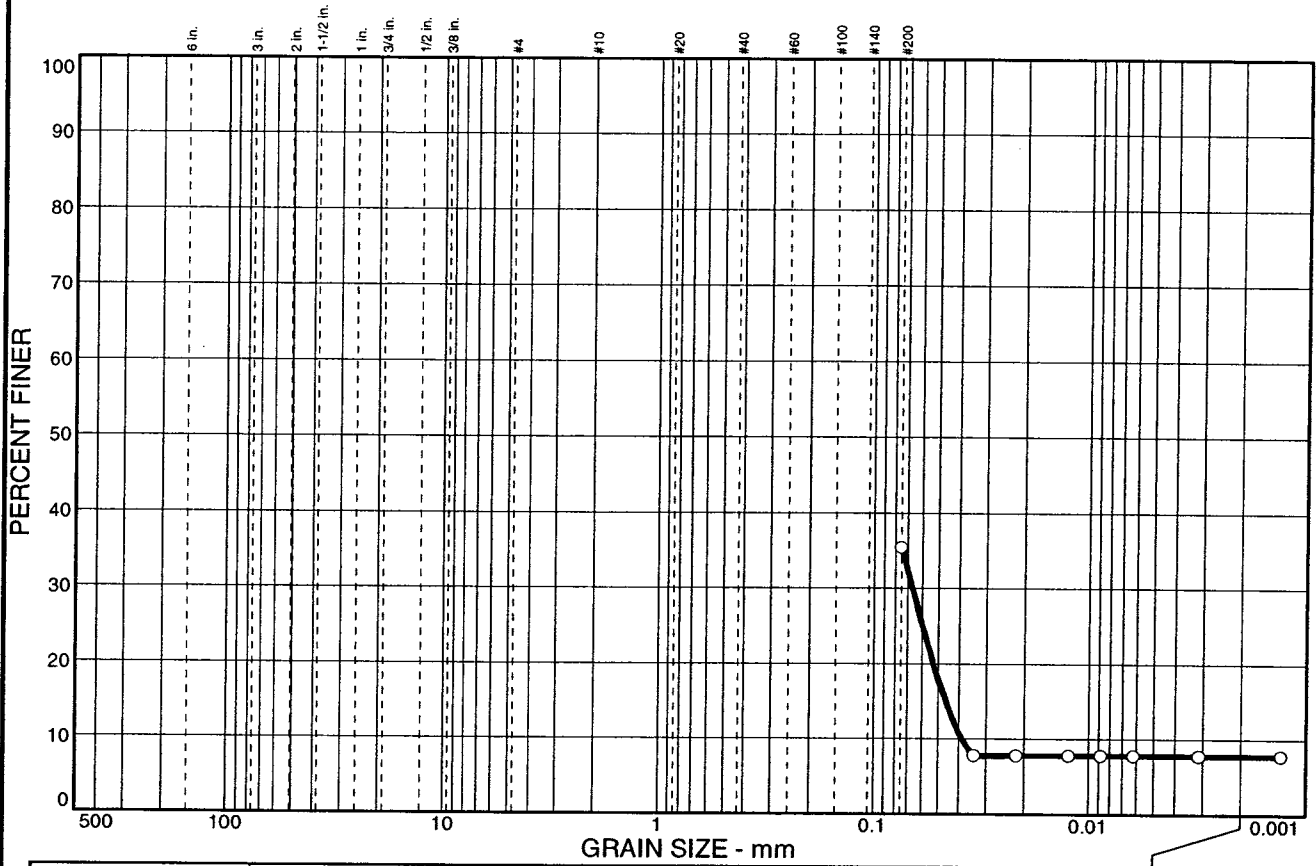
Sample No.: B33
 Location: 3

Source of Sample:

Date: 2/16/04
 Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						27.6	7.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	35.4		

Soil Description

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= D₆₀= D₅₀=
D₃₀= 0.0668 D₁₅= 0.0464 D₁₀= 0.0389
C_u= C_c=

Classification

USCS= AASHTO= --

Remarks

As received moisture content = 10.6%

* (no specification provided)

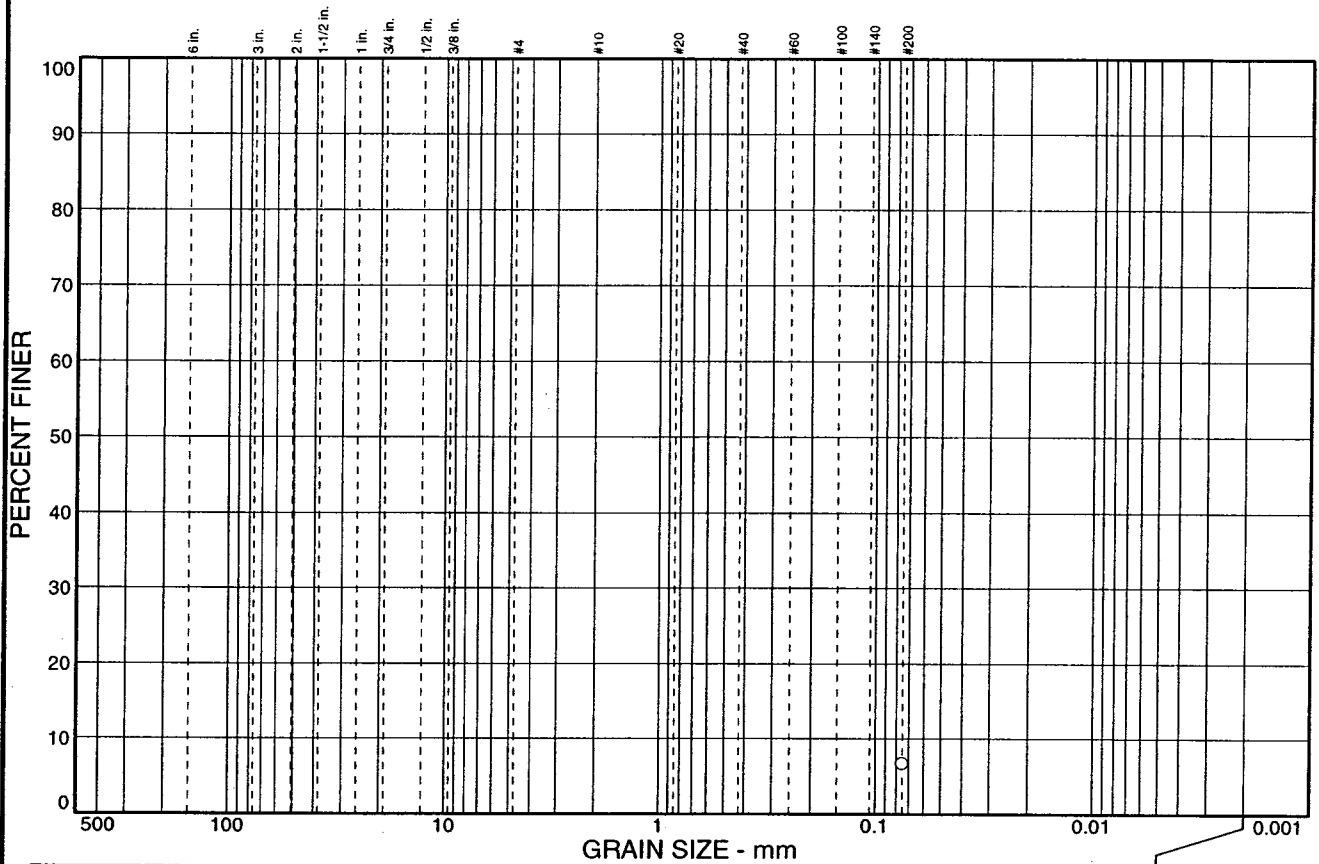
Sample No.: B39
Location: 1

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Reservoir Project No: 24752-40911	Plate
---	--	--------------

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	6.7		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks
 As received moisture content = 24.1%

* (no specification provided)

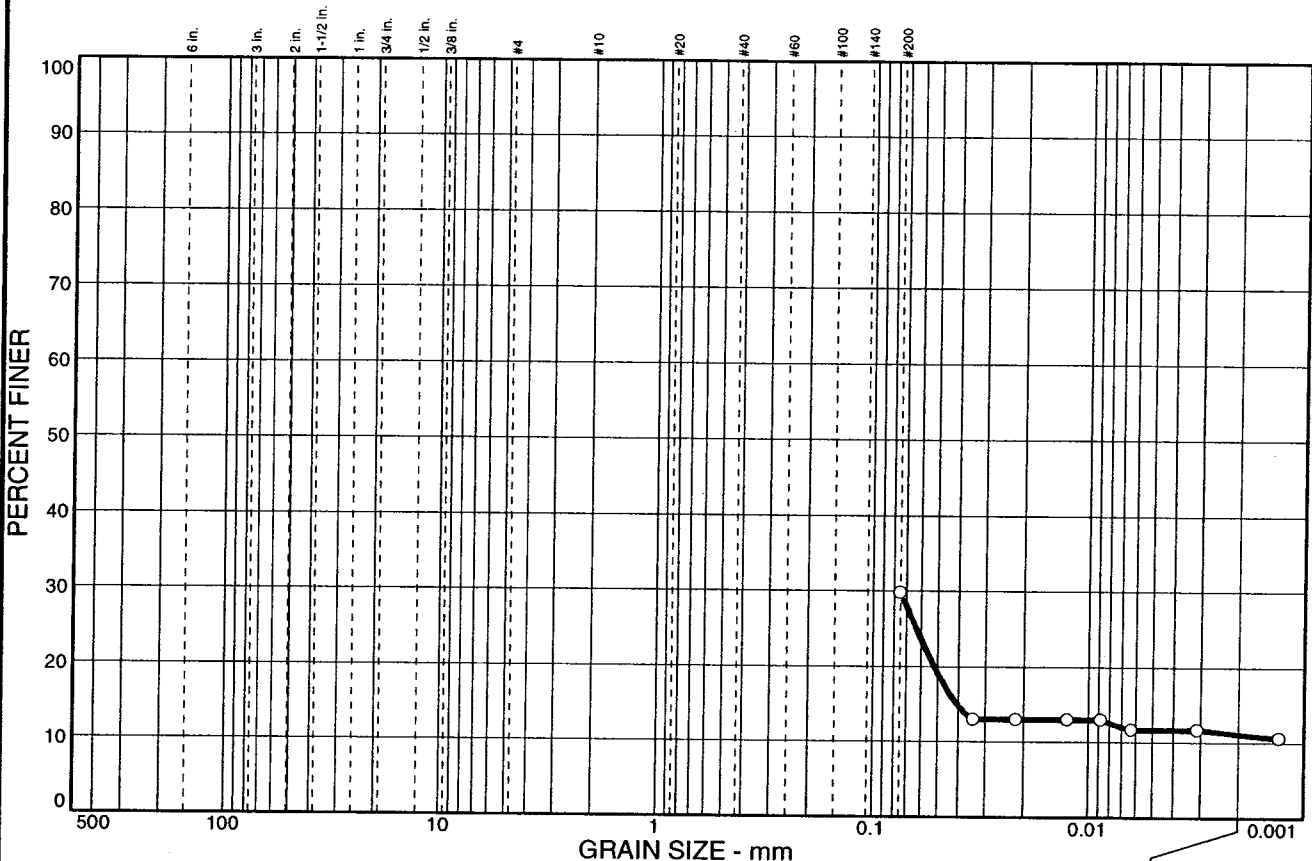
Sample No.: B39
Location: 2

Source of Sample:

Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						18.7	11.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	29.8		

Soil Description

PL= NP **Atterberg Limits** LL= NP PI= NP

Coefficients

D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= 0.0407 D₁₀=
 C_u= C_c=

Classification

USCS= AASHTO= --

Remarks

As received moisture content = 17.0%

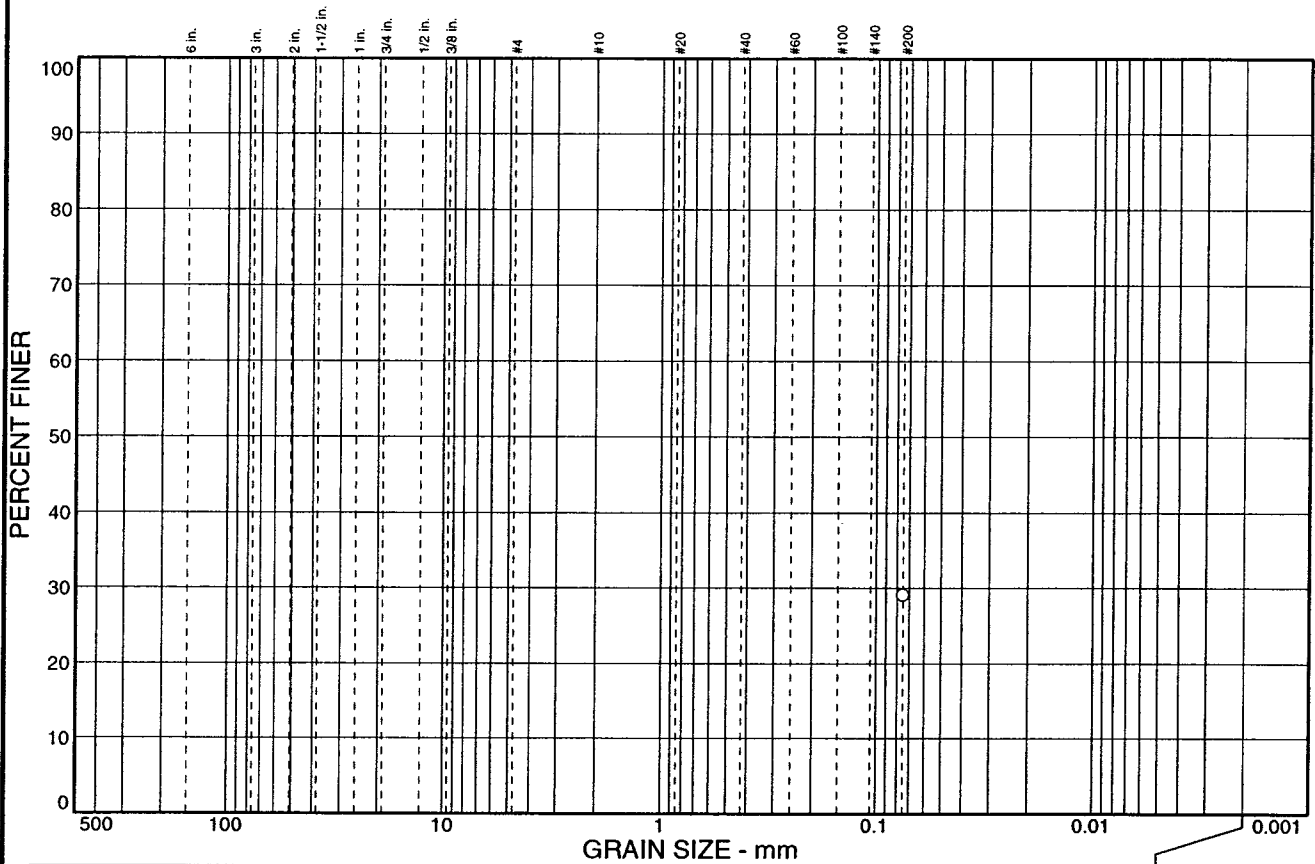
* (no specification provided)

Sample No.: B39 **Source of Sample:** **Date:** 2/19/04
Location: 6 **Elev./Depth:** --

<p>CDM Jessberger</p> <p>Geotechnical Engineering Laboratory</p>	<p>Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911</p>
--	--

Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
						29.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	29.1		

Soil Description

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= D₆₀= D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= AASHTO= --

Remarks
 As received moisture content = 30.3%

* (no specification provided)

Sample No.: B41
Location: 3

Source of Sample:

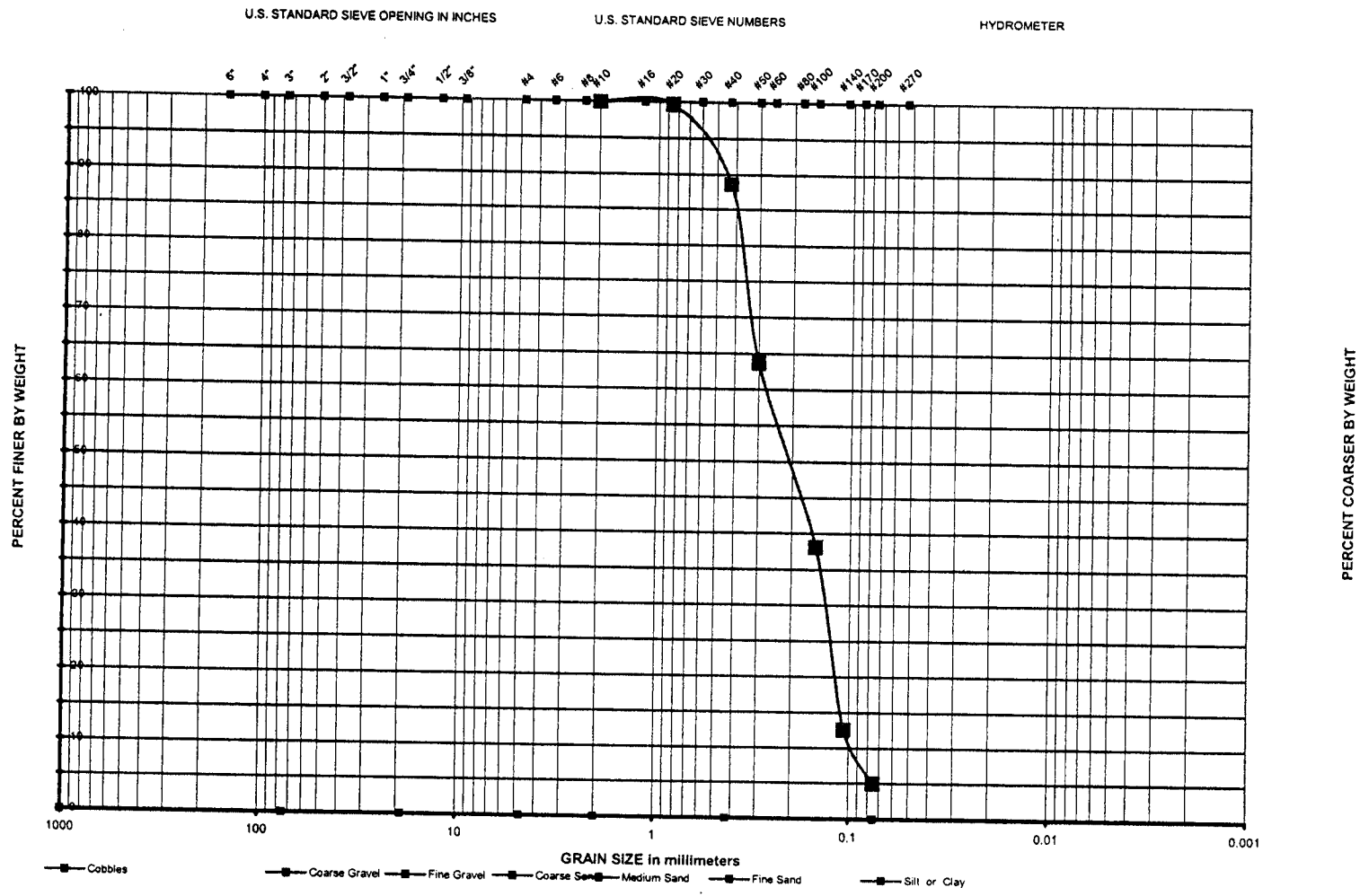
Date: 2/19/04
Elev./Depth: --

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

LABORATORY TESTING BY NODARSE

LABORATORY TEST RESULTS
MONITORING WELL INSTALLATION AND GEOTECHNICAL SERVICES
PROJECT No:P03-G-124
INDIAN TOWN, FLORIDA
N&A

Boring Number	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		Specific Gravity	U.S.C.S. Classification
		10	40	60	100	200			LL	PI		
W-105	9.0'-11.5'	-	-	-	-	-	31	-	-	-	2.64	SP
B-102	2.5'	100	89	64	38	5	16	0.3	-	-	-	SP-SM
B-102	3.5'	100	89	65	43	17	16	1.3	-	-	-	SM-SC
B-102	6.5'	100	77	32	18	15	15	-	24	6	-	SM-SC
B-104	4.5'	98	89	64	34	24	19	-	33	15	-	SC

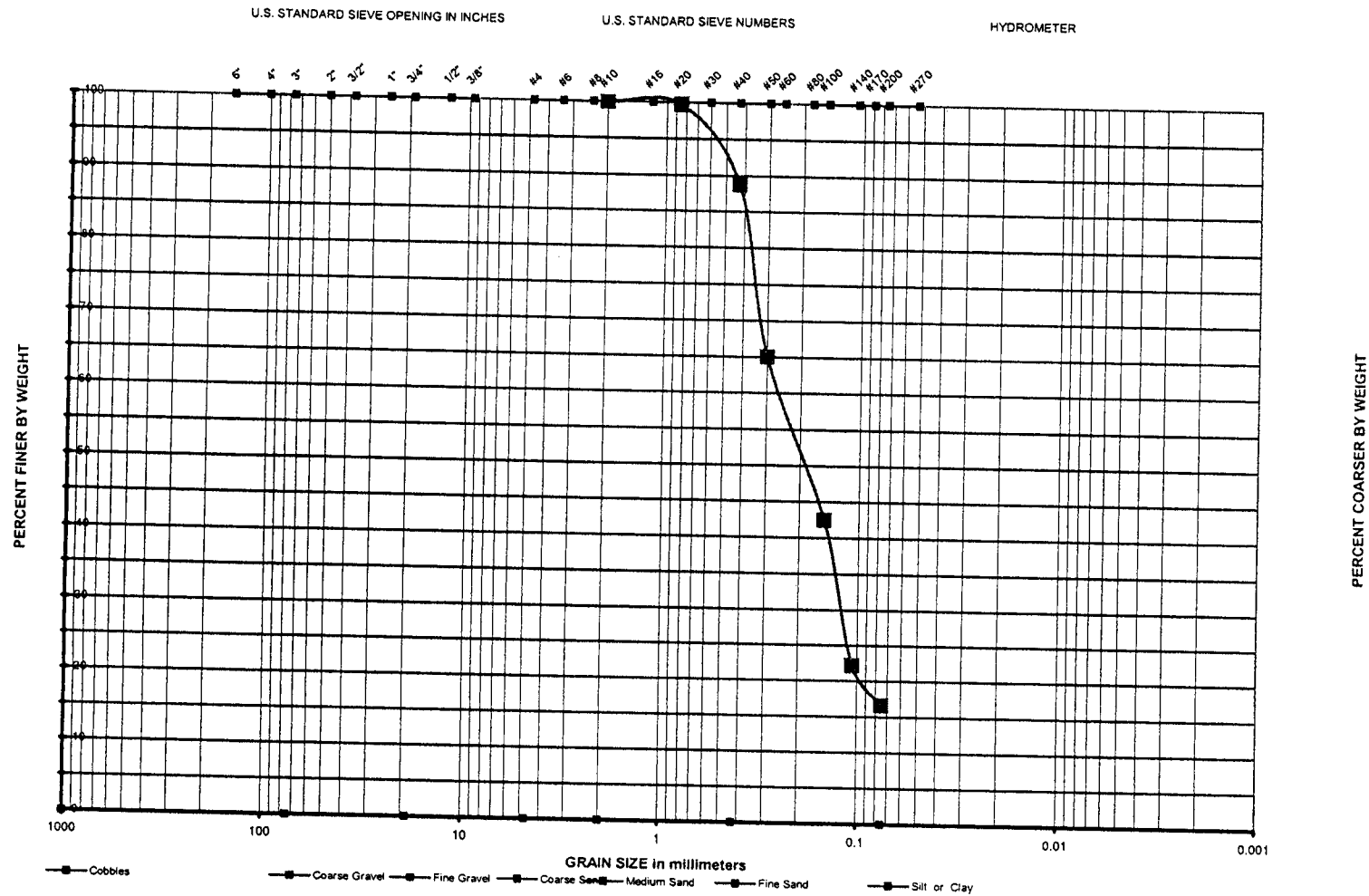


GRADATION CURVES

Project: Monitoring Well Installation and Geotechnical Services
 Indian Town, Florida
 Date: 2/19/2004 N&A Project No. P03-G-124
 Figure No. _____

No.	Sample Location	Classification	w %	LL	PL	PI
1	B-102@2.5'	SP-SM (U.S.C.S.) Organic Content : 0.3% Poorly graded SAND with silt	16	-	-	-





GRADATION CURVES

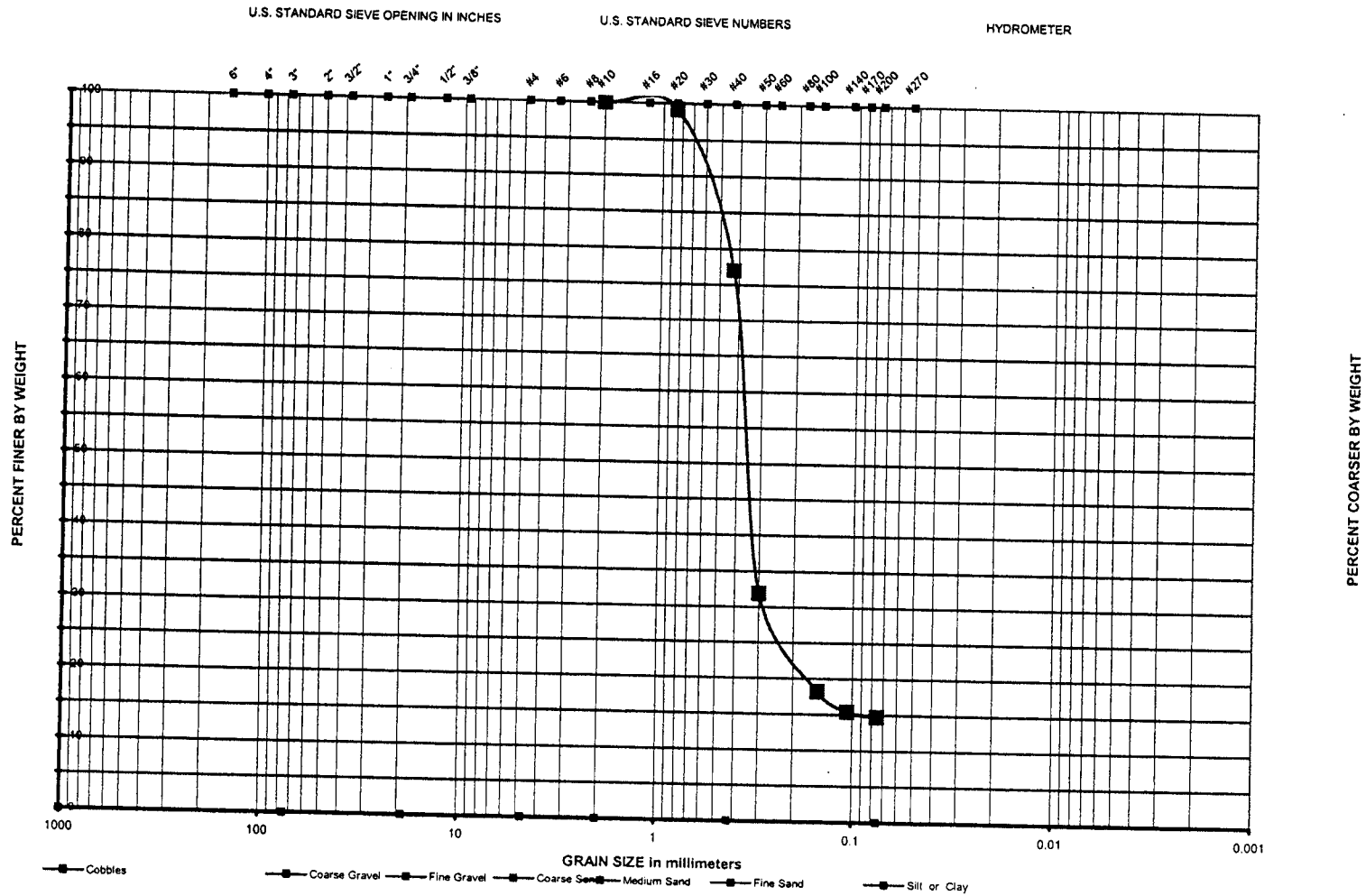
Project: Monitoring Well Installation and Geotechnical Services
Indian Town, Florida

Date: 2/19/2004 N&A Project No. P03-G-124

Figure No. _____

No.	Sample Location	Classification	w %	LL	PL	PI
1	B-102@3.5'	SM-SC (U.S.C.S.) Organic Content : 1.3% Poorly graded SAND with silty clay (ASTM D 2487)	16	-	-	-





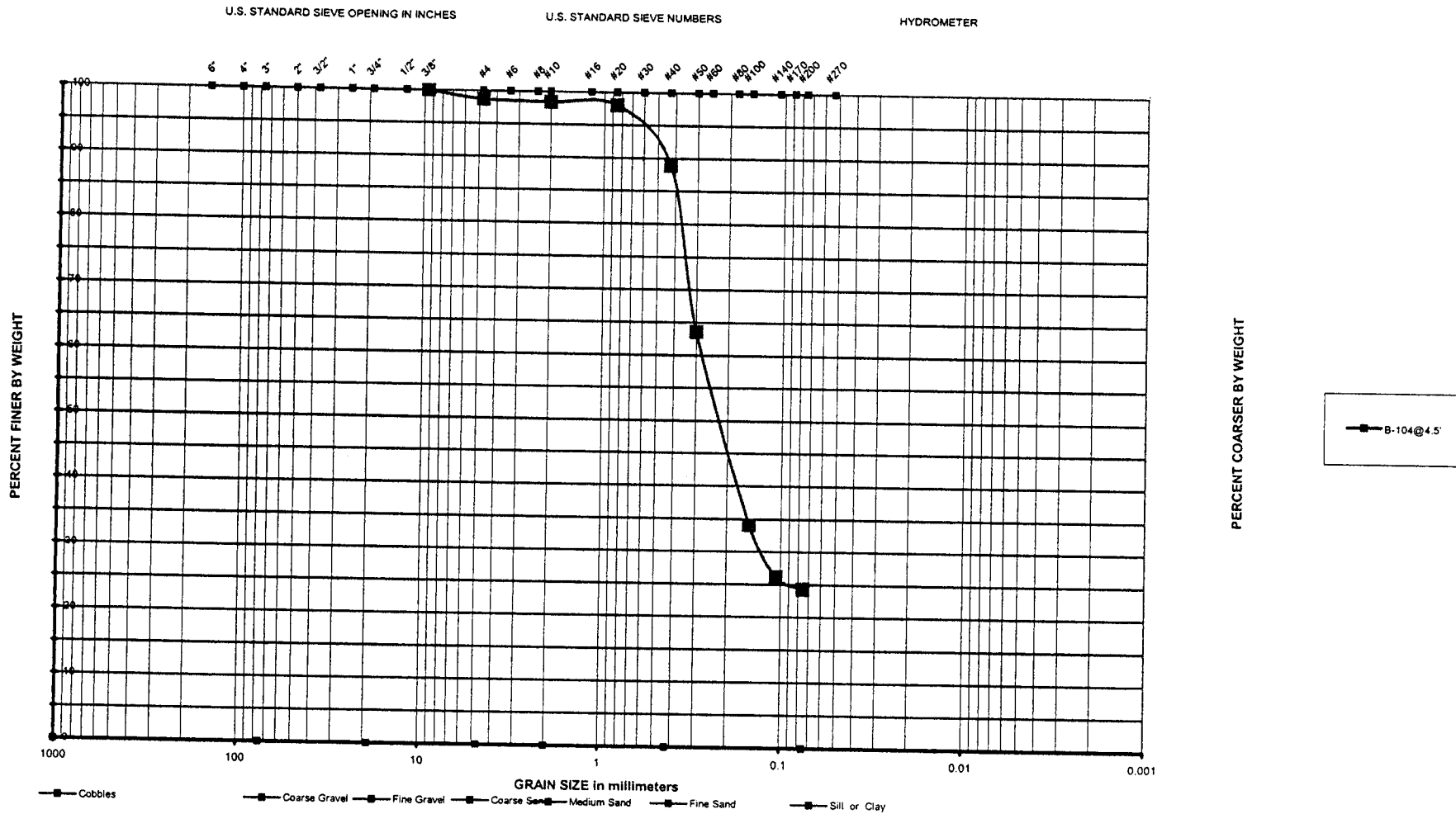
GRADATION CURVES

Project: Monitoring Well Installation and Geotechnical Services
Indian Town, Florida

Date: 2/19/2004 N&A Project No. P03-G-124
Figure No. _____

No.	Sample Location	Classification	w %	LL	PL	PI
1	B-102@6.5'	SM-SC (U.S.C.S.) Silty, clayey SAND (ASTM D 2487)	15	24	18	6





GRADATION CURVES

Project: Monitoring Well Installation and Geotechnical Services
Indian Town, Florida

Date: 2/19/2004 N&A Project No. P03-G-124

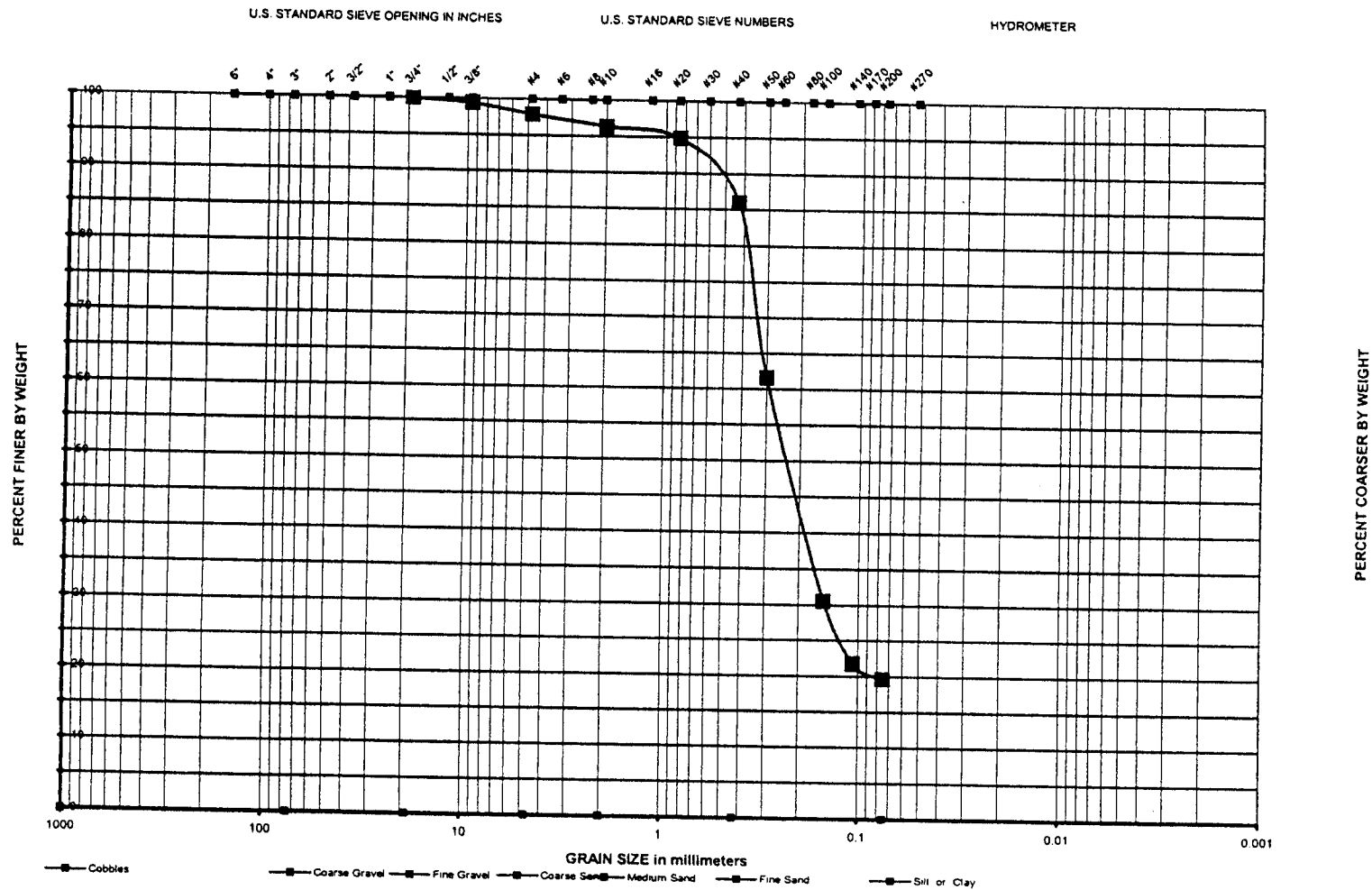
Figure No. _____

No.	Sample Location	Classification	w %	LL	PL	PI
1	B-104@4.5'	SC (U.S.C.S.) Clayey SAND (ASTM 2487)	19	33	18	15



**LABORATORY TEST RESULTS FOR
MONITORING WELL INSTALLATION AND GEOTECHNICAL SERVICES
C-44 INVESTIGATION
PROJECT No: P03-G-124
INDIAN TOWN, FLORIDA
N&A**

Boring Number	Sample Depth (feet)	ASTM Classification	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		Unit Weight	Specific Gravity	Hydraulic Conductivity (cm/sec)
			10	40	60	100	200			LL	PI			
W-104	1.5'-3.5'	SC	96	86	62	31	20	14	1	-	-	140.2	2.678	-
W-104	7.0'-9.0'	CL	100	99	97	95	94	14	-	21	10	96.9	-	3x10 ⁻⁸
W-105	2.0'-4.3'	SC	90	77	58	41	26	21	2	-	-	133.4	2.657	-
W-107	2.0'-4.0'	SM-SC	100	91	72	39	16	22	2	-	-	135.0	2.659	-
W-107	5.0'-7.0'	CL	100	85	59	42	22	15	-	28	11	144.6	-	1.0x10 ⁻⁸
W-106	1.0'-3.0'	SP	100	87	61	36	2	12	0.5	N/A	N/A	102.7	2.650	7.5x10 ⁻³



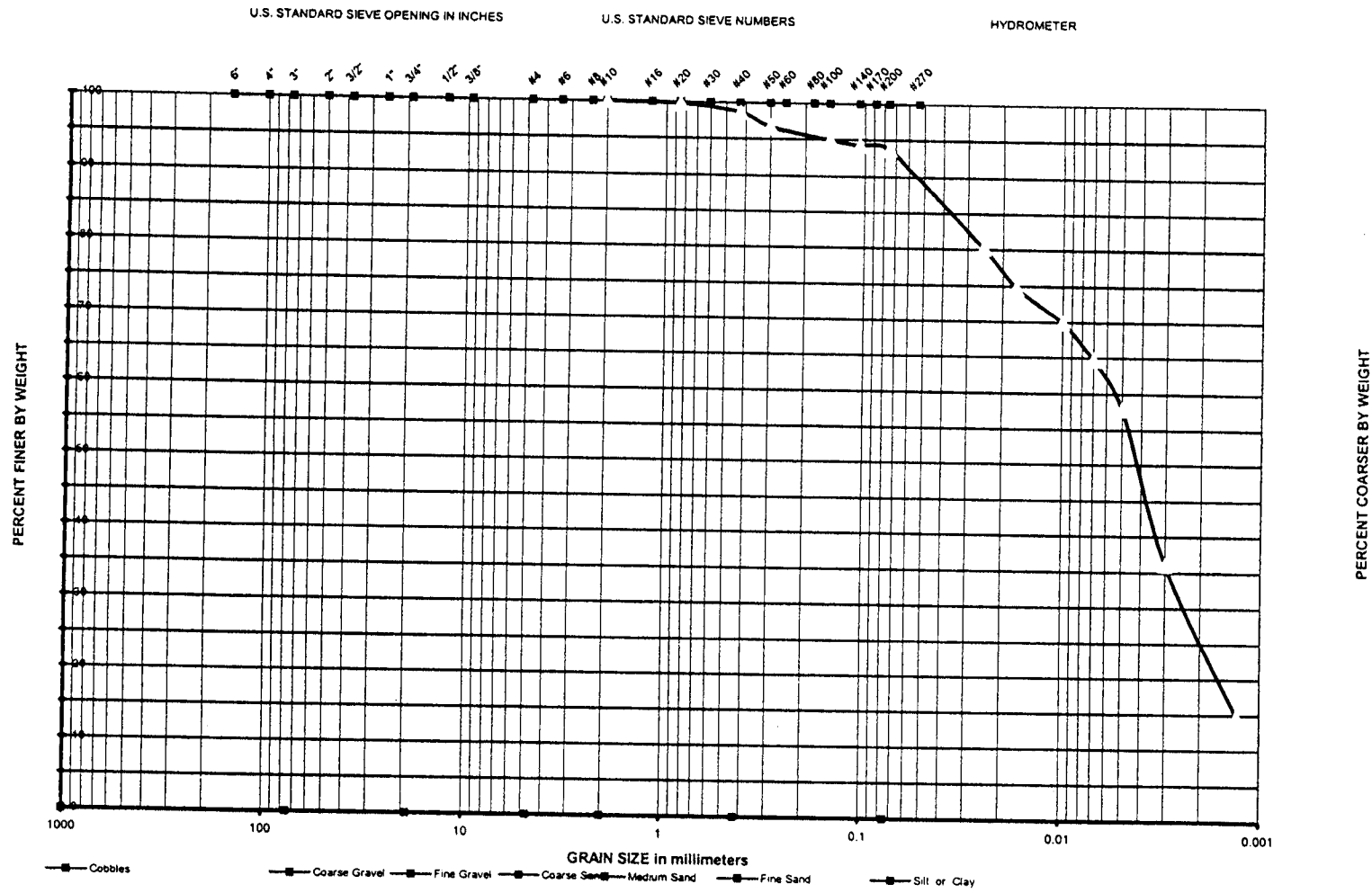
GRADATION CURVES

Project: Monitoring Well Installation and Geotechnical Services. C
 Indian Town, Florida

Date: 2/19/2004 N&A Project No. P03-G-036
 Figure No. _____

No.	Sample Location	Classification	w %	LL	PL	PI
1	W-104@1.5'-3.5'	Clayey SAND (SC) ASTM D 2487	14	-	-	-
		Organic Content: 1 %				
		Unit Weight: 140.16 pcf				
		Specific Gravity: 2.678				



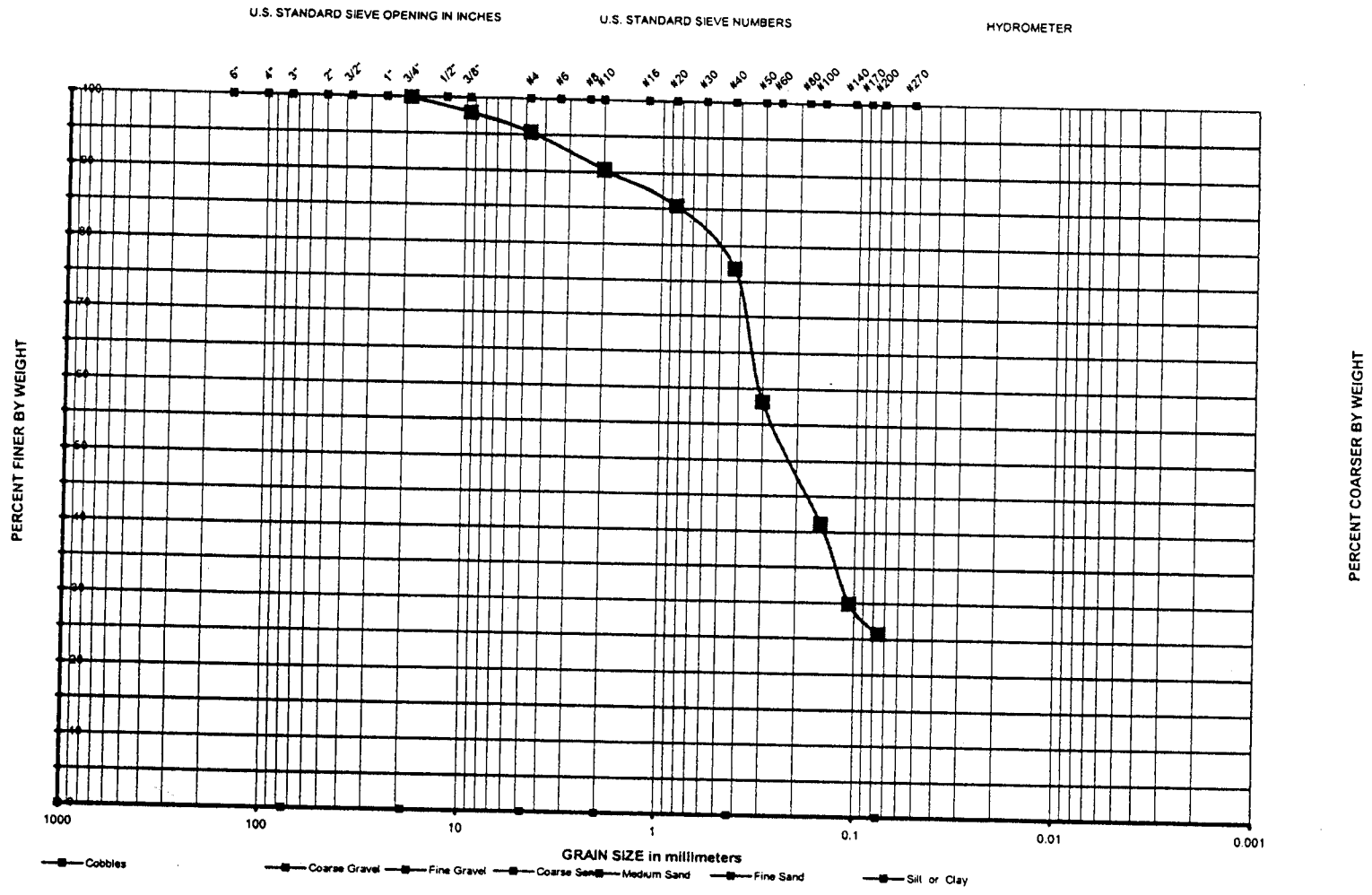


GRADATION CURVES

Project: Monitoring Well Installation and Geotechnical Services. C
 Indian Town, Florida
 Date: 2/19/2004 N&A Project No. P03-G-036
 Figure No. _____

No.	Sample Location	Classification	w %	LL	PL	PI
1	W-104@7.0'-9.0'	Lean Clay (CL) ASTM D 2487	14	21.4	11.8	9.6





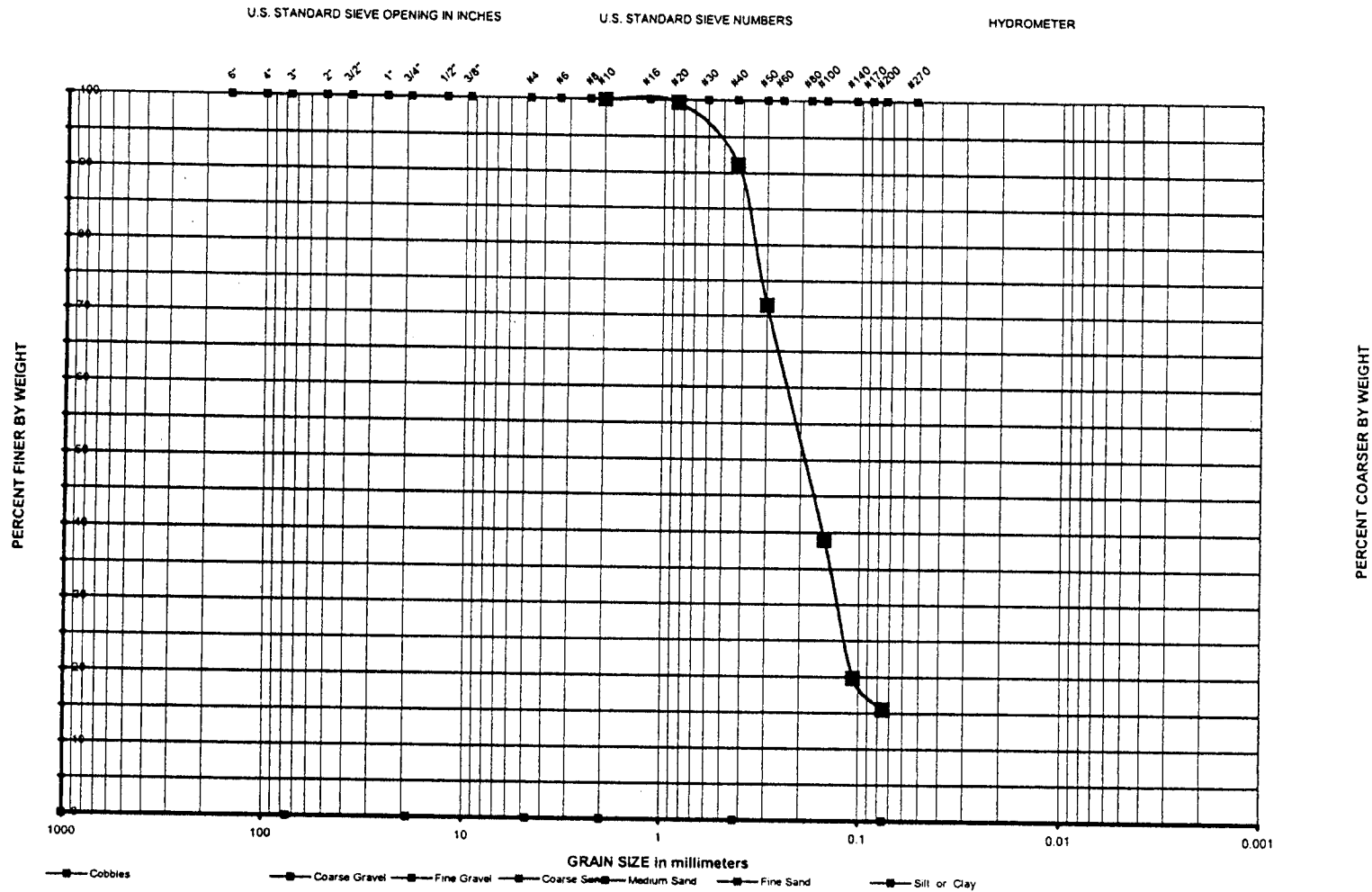
GRADATION CURVES

Project: Monitoring Well Installation and Geotechnical Services. C
 Indian Town, Florida

Date: 2/19/2004 N&A Project No. P03-G-036
 Figure No. _____

No.	Sample Location	Classification	w %	LL	PL	PI
1	W-105@2.0'-4.3'	Clayey SAND (SC) ASTM D 2487	21	-	-	-
		Organic Content: 2 %				
		Unit Weight: 133.4 pcf				
		Specific Gravity: 2.657				





GRADATION CURVES

Project: Monitoring Well Installation and Geotechnical Services. C

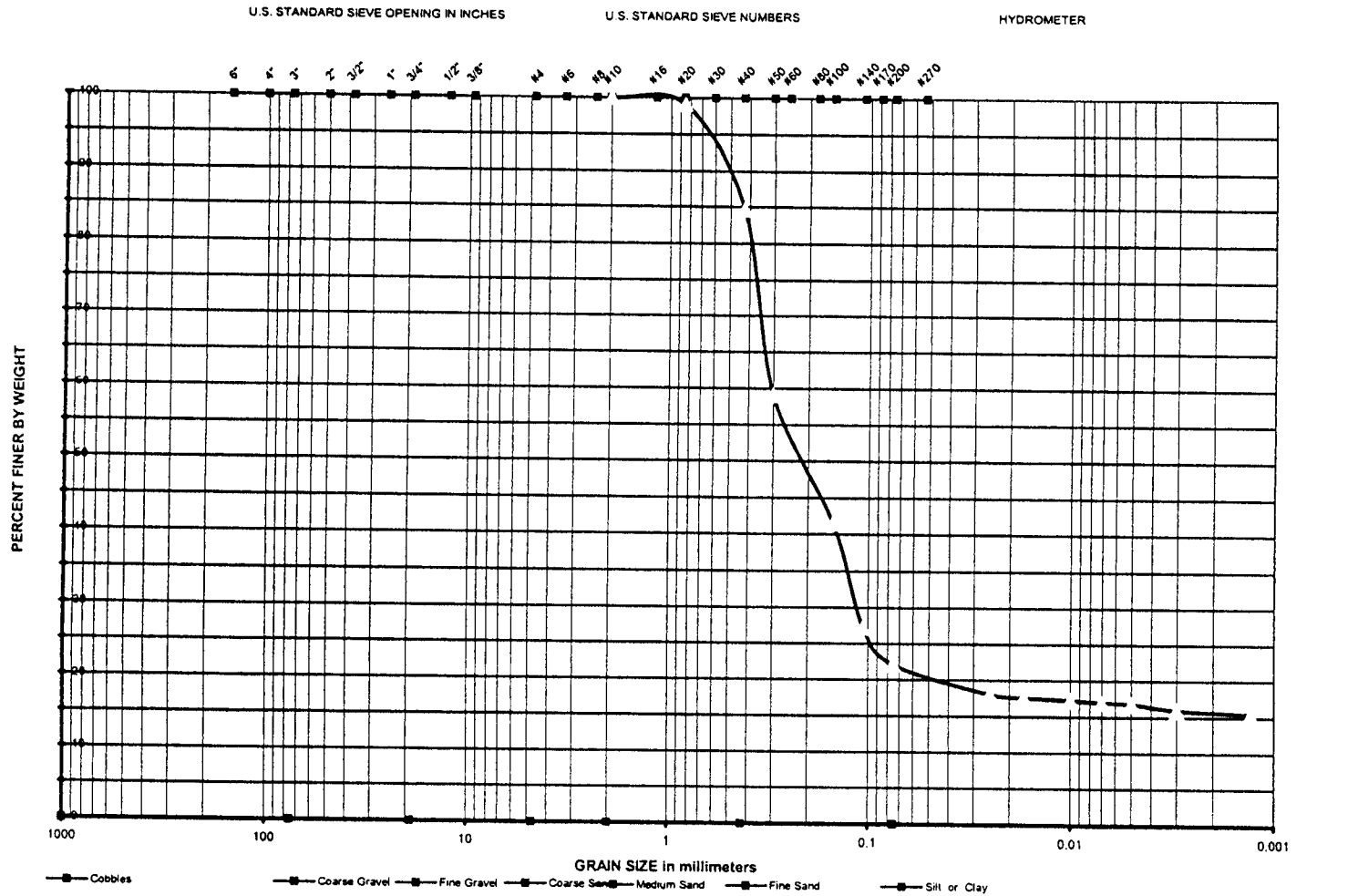
Indian Town, Florida

Date: 2/19/2004 N&A Project No. P03-G-036

Figure No.

No.	Sample Location	Classification	w %	LL	PL	PI
1	W-107@2.0'-4.0'	Silty, clayey SAND (SC-SM) ASTM D 2487	22	-	-	-
		Organic Content: 2%				
		Unit Weight: 135.0 pcf				
		Specific Gravity: 2.659				





GRADATION CURVES

Project: Monitoring Well Installation and Geotechnical Services, C

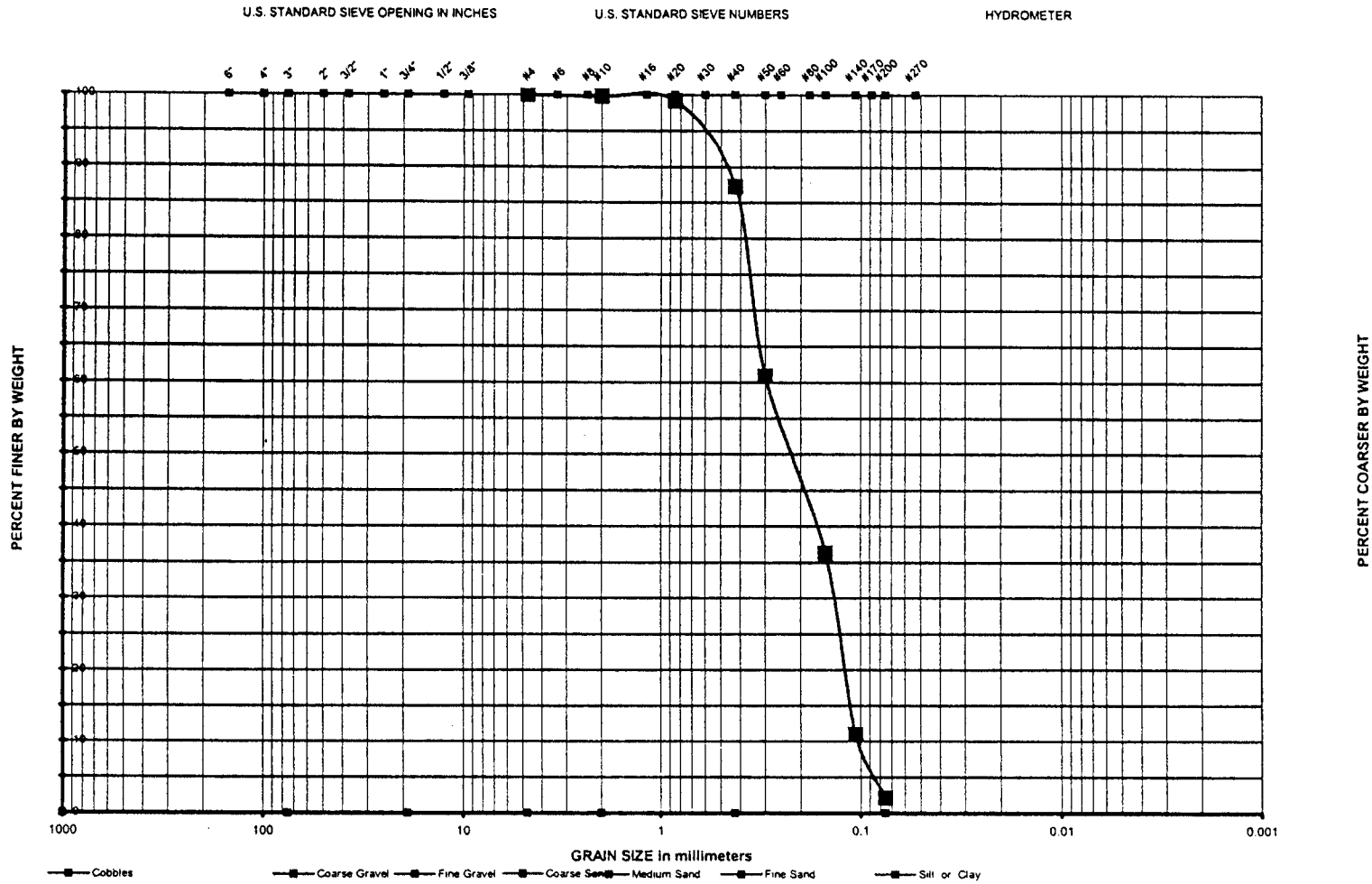
Indian Town, Florida

Date: 2/19/2004 N&A Project No. P03-G-036

Figure No. _____

No.	Sample Location	Classification	w %	LL	PL	PI
1	W-107@5.0'-7.0'	Sandy Lean Clay (CL) ASTM D 2487	15	27.7	16.6	11.1



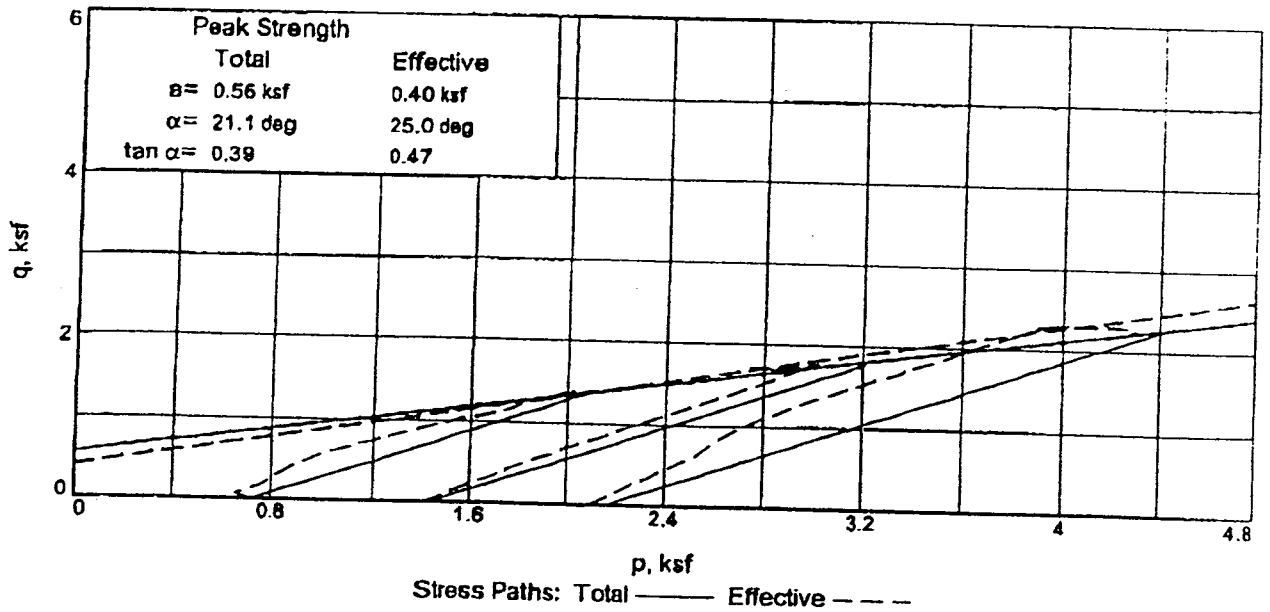
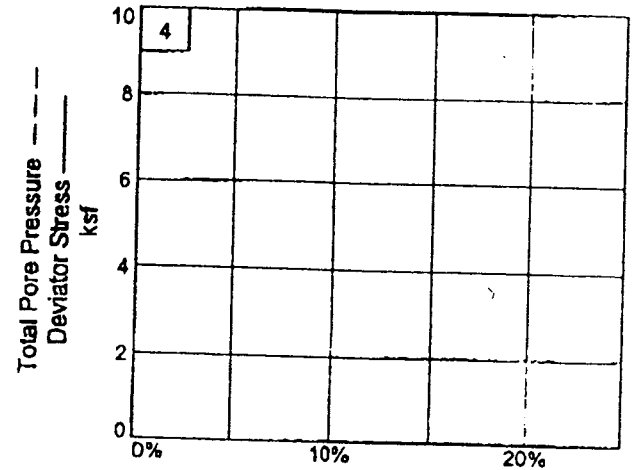
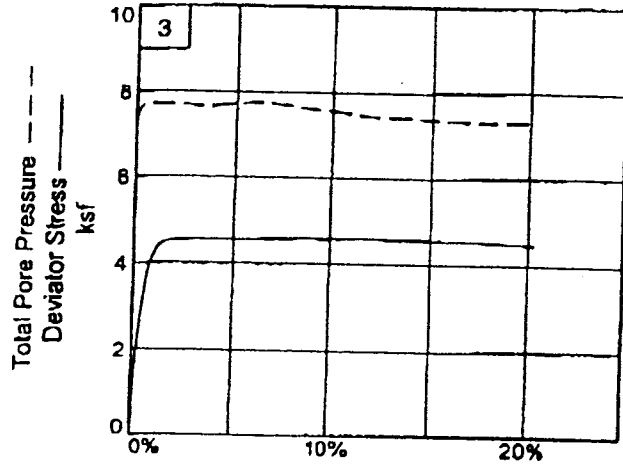
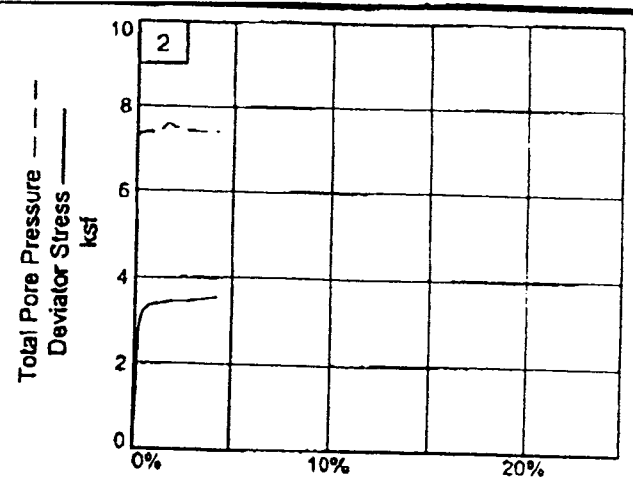
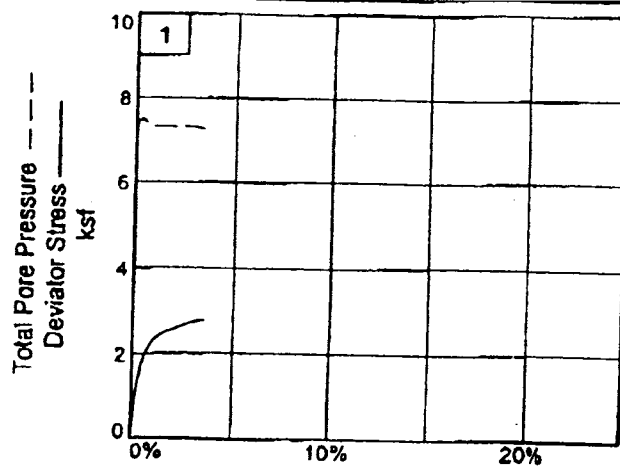


GRADATION CURVES

Project: Monitoring Well Installation and Geotechnical Services. C
 Indian Town, Florida
 Date: 2/19/2004 N&A Project No. P03-G-036
 Figure No.

No.	Sample Location	Classification	w %	LL	PL	PI
1	W-106@1.0'-3.0'	Poorly Graded SAND (SP) ASTM D 2487	12	-	-	-
		Organic Content: 0.5 %				
		Unit Weight : 102.7 %				
		Specific Gravity: 2.650				





Client: Nodarse and Associates, Inc.

Project: Lab Testing-Nodarse

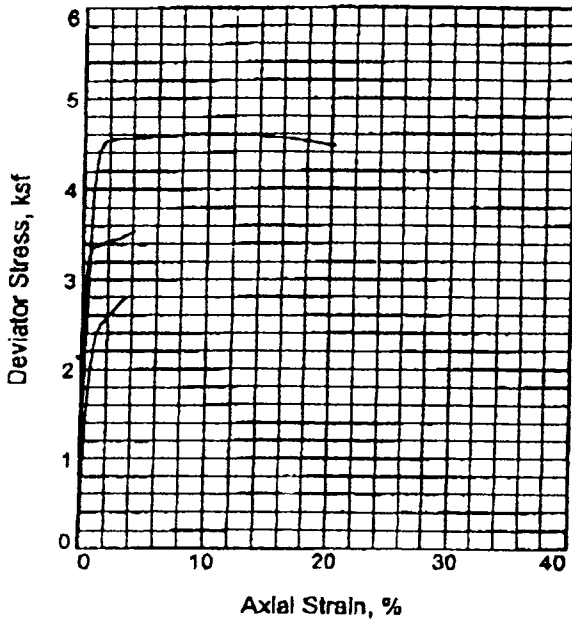
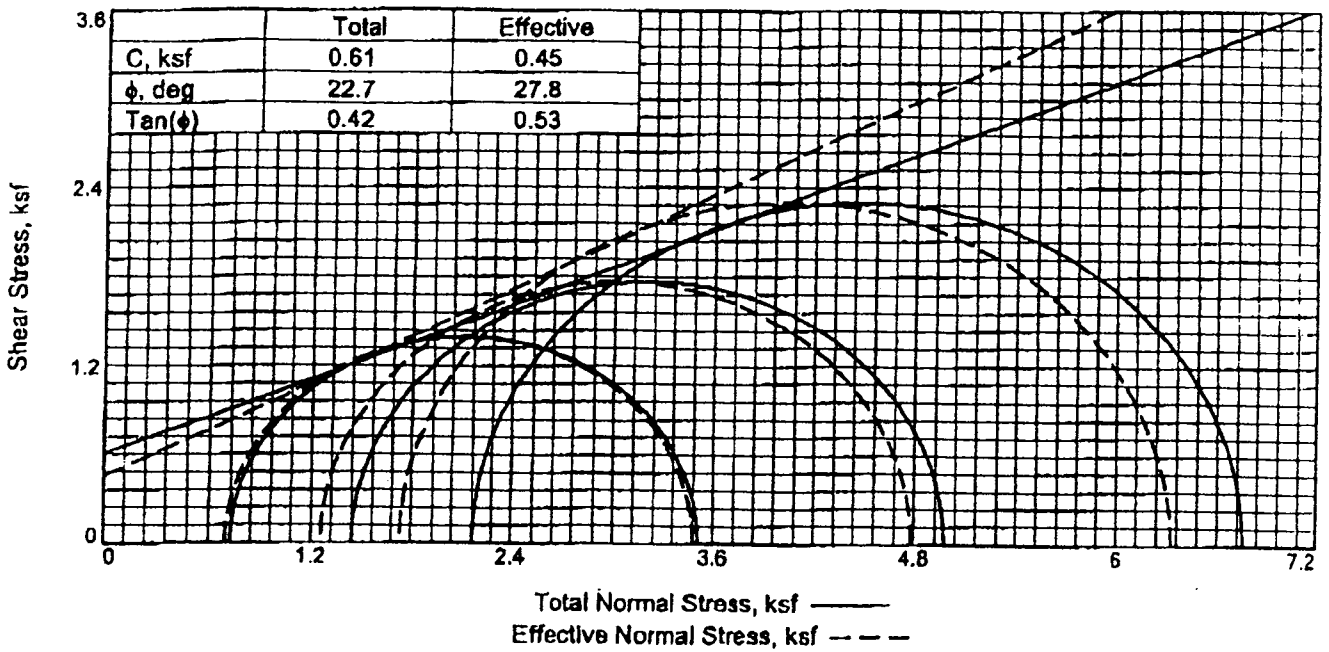
Sample Number: UD

Project No.: 6738-03-4326

Reviewed By: _____

MACTEC Engineering and Consulting, Inc.

Tested By: MC _____



Sample No.	1	2	3
Initial			
Water Content,	17.8	17.8	17.8
Dry Density, pcf	113.9	113.9	113.9
Saturation,	100.3	100.3	100.3
Void Ratio	0.4801	0.4801	0.4801
Diameter, in.	2.85	2.85	2.85
Height, in.	6.50	6.50	6.50
At Test			
Water Content,	15.7	15.7	15.7
Dry Density, pcf	118.5	118.5	118.5
Saturation,	100.0	100.0	100.0
Void Ratio	0.4226	0.4226	0.4226
Diameter, in.	2.81	2.86	2.93
Height, in.	6.42	6.19	5.93
Strain rate, in./min.	0.05	0.05	0.05
Back Pressure, ksf	7.20	7.20	7.20
Cell Pressure, ksf	7.92	8.64	9.36
Fall. Stress, ksf	2.79	3.53	4.60
Total Pore Pr., ksf	7.23	7.39	7.63
Ult. Stress, ksf			
Total Pore Pr., ksf			
$\bar{\sigma}_1$ Failure, ksf	3.48	4.79	6.33
$\bar{\sigma}_3$ Failure, ksf	0.69	1.25	1.73

Type of Test:
CU with Pore Pressures

Sample Type: UD

Description: Light Gray-Tan Clayey Fine SAND

Specific Gravity = 2.70 ← assumed

Remarks: Staged Loaded

Reviewed By: _____

Client: Nodarse and Associates, Inc.

Project: Lab Testing-Nodarse

Sample Number: UD

Proj. No.: 6738-03-4326

Date: 4/6/04

TRIAXIAL SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC

Tested By: MC _____

LABORATORY TESTING OF TEST PIT SAMPLES

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Specific Gravity (ASTM D854)**

Client: Aquacalma L.P
Project Name: C-44 Reservoir Project
Project Location: Indiantown, FL
Project Number: 24752-40911
Sample Number: S-1
Sample Location: TP-11
Sample Depth(ft): .5-4'
Lab Sample ID: 4929

Tested By: ADT
Test Date: 3/18/2004
Checked By: KS

Specific Gravity of Soils	
Test Procedure	A
Calibration Temperature T_a , (°C)	26.0
Weight of flask M_f , (g)	150.53
Weight of oven-dry soil M_o , (g)	25.33
Weight of flask and distilled water at test temperature M_a , (g)	414.15
Weight of flask, soil and distilled water at test temperature M_b , (g)	430.14
Test Temperature T_b , (°C)	26.0
Specific gravity at test temperature.	2.71
Specific gravity at 20°C	2.71

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Specific Gravity (ASTM D854)**

Client: Aquacalma L.P
Project Name: C-44 Reservoir Project
Project Location: Indiantown, FL
Project Number: 24752-40911
Sample Number: S-2
Sample Location: TP-11
Sample Depth(ft): 4-5.5'
Lab Sample ID: 4930

Tested By: ADT
Test Date: 3/18/2004
Checked By: KS

Specific Gravity of Soils	
Test Procedure	A
Calibration Temperature T_a , (°C)	26.0
Weight of flask M_f , (g)	153.80
Weight of oven-dry soil M_o , (g)	29.81
Weight of flask and distilled water at test temperature M_a (g)	411.69
Weight of flask, soil and distilled water at test temperature M_b , (g)	430.34
Test Temperature T_b , (°C)	26.0
Specific gravity at test temperature.	2.67
Specific gravity at 20°C	2.67

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Specific Gravity (ASTM D854)**

Client: Aquacalma L.P
Project Name: C-44 Reservoir Project
Project Location: Indiantown, FL
Project Number: 24752-40911
Sample Number: S-1
Sample Location: TP-16
Sample Depth(ft): 1.5-4'
Lab Sample ID: 4939

Tested By: ADT
Test Date: _____
Checked By: KS

Specific Gravity of Soils	
Test Procedure	A
Calibration Temperature T_a , (°C)	25.0
Weight of flask M_f , (g)	143.41
Weight of oven-dry soil M_o , (g)	27.72
Weight of flask and distilled water at test temperature M_a , (g)	418.49
Weight of flask, soil and distilled water at test temperature M_b , (g)	435.74
Test Temperature T_b , (°C)	25.0
Specific gravity at test temperature.	2.65
Specific gravity at 20°C	2.64

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Specific Gravity (ASTM D854)**

Client: Aquacalma L.P
Project Name: C-44 Reservoir Project Tested By: ADT
Project Location: Indiantown, FL Test Date: _____
Project Number: 24752-40911 Checked By: KS
Sample Number: S-2
Sample Location: TP-16
Sample Depth(ft): 4-9'
Lab Sample ID: 4940

Specific Gravity of Soils	
Test Procedure	A
Calibration Temperature T_a , (°C)	25.0
Weight of flask M_f , (g)	153.10
Weight of oven-dry soil M_o , (g)	26.37
Weight of flask and distilled water at test temperature M_a , (g)	414.46
Weight of flask, soil and distilled water at test temperature M_b , (g)	431.27
Test Temperature T_b , (°C)	25.0
Specific gravity at test temperature.	2.76
Specific gravity at 20°C	2.76

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Specific Gravity (ASTM D854)**

Client: Aquacalma L.P
Project Name: C-44 Reservoir Project Tested By: ADT
Project Location: Indiantown, FL Test Date: _____
Project Number: 24752-40911 Checked By: KS
Sample Number: S-1
Sample Location: TP-19
Sample Depth(ft): 1-4'
Lab Sample ID: 4945

Specific Gravity of Soils	
Test Procedure	A
Calibration Temperature T_a , (°C)	25.0
Weight of flask M_f , (g)	149.90
Weight of oven-dry soil M_o , (g)	25.30
Weight of flask and distilled water at test temperature M_a , (g)	420.78
Weight of flask, soil and distilled water at test temperature M_b , (g)	436.60
Test Temperature T_b , (°C)	25.0
Specific gravity at test temperature.	2.67
Specific gravity at 20°C	2.67

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Specific Gravity (ASTM D854)**

Client: Aquacalma L.P
Project Name: C-44 Reservoir Project Tested By: ADT
Project Location: Indiantown, FL Test Date: _____
Project Number: 24752-40911 Checked By: KS
Sample Number: S-2
Sample Location: TP-19
Sample Depth(ft): 4-7'
Lab Sample ID: 4946

Specific Gravity of Soils	
Test Procedure	A
Calibration Temperature T_a , (°C)	25.0
Weight of flask M_f , (g)	153.73
Weight of oven-dry soil M_o , (g)	27.34
Weight of flask and distilled water at test temperature M_a ,(g)	411.77
Weight of flask, soil and distilled water at test temperature M_b , (g)	428.76
Test Temperature T_b , (°C)	25.0
Specific gravity at test temperature.	2.64
Specific gravity at 20°C	2.64

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Specific Gravity (ASTM D854)**

Client: Aquacalma L.P
Project Name: C-44 Reservoir Project Tested By: ADT
Project Location: Indiantown, FL Test Date: _____
Project Number: 24752-40911 Checked By: KS
Sample Number: S-1
Sample Location: TP-20
Sample Depth(ft): .5-3'
Lab Sample ID: 4947

Specific Gravity of Soils	
Test Procedure	A
Calibration Temperature T_a , (°C)	26.0
Weight of flask M_f , (g)	143.41
Weight of oven-dry soil M_o , (g)	26.31
Weight of flask and distilled water at test temperature M_a , (g)	418.42
Weight of flask, soil and distilled water at test temperature M_b , (g)	434.84
Test Temperature T_b , (°C)	26.0
Specific gravity at test temperature.	2.66
Specific gravity at 20°C	2.66

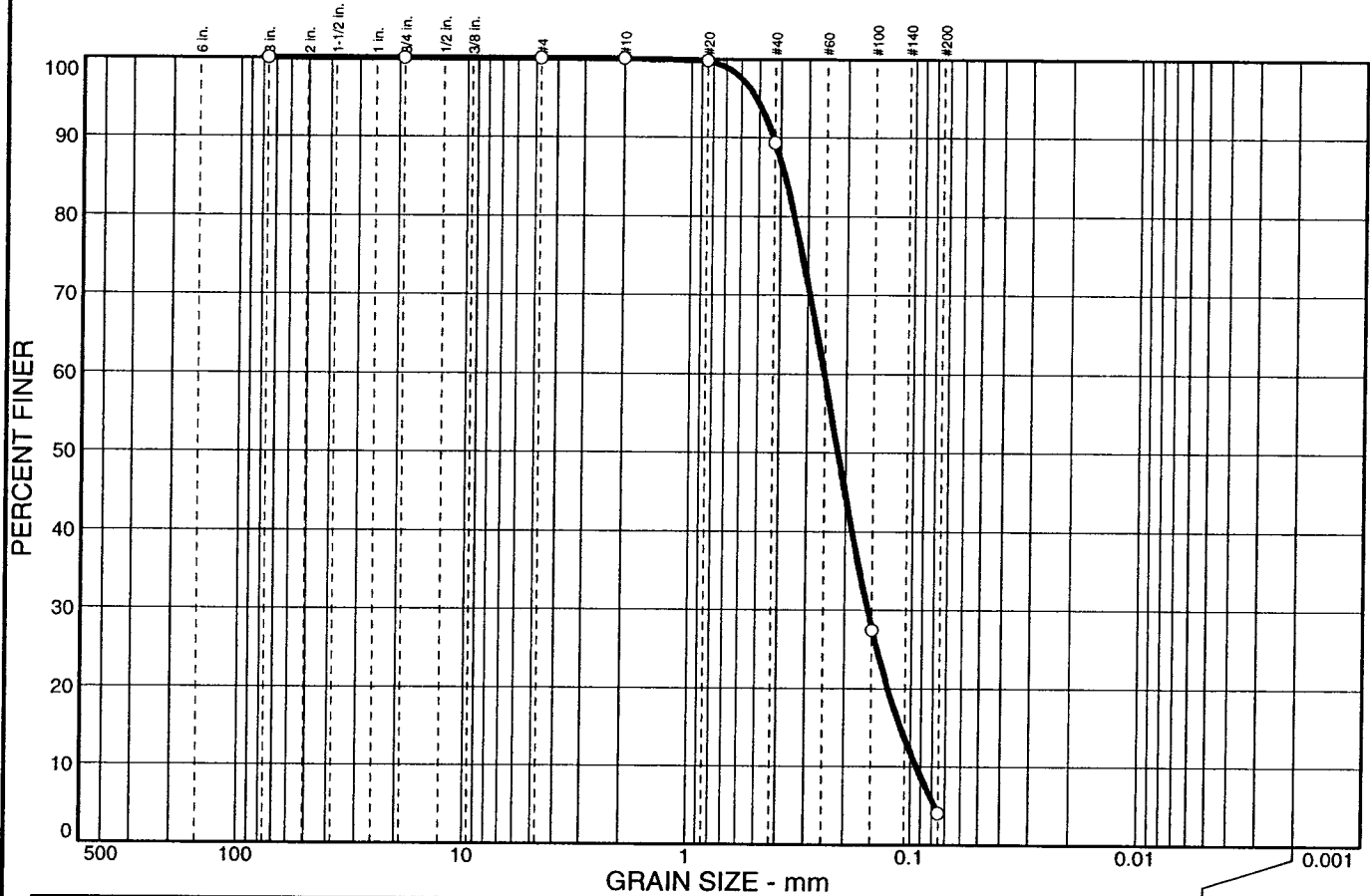
CDM**Geotechnical Engineering Laboratory****Standard Test Method for Specific Gravity (ASTM D854)**

Client: Aquacalma L.P
Project Name: C-44 Reservoir Project
Project Location: Indiantown, FL
Project Number: 24752-40911
Sample Number: S-3
Sample Location: TP-20
Sample Depth(ft): 5-12'
Lab Sample ID: 4949

Tested By: ADT
Test Date: 3/18/2004
Checked By: KS

Specific Gravity of Soils	
Test Procedure	A
Calibration Temperature T_a , ($^{\circ}\text{C}$)	26.0
Weight of flask M_f , (g)	149.38
Weight of oven-dry soil M_o , (g)	27.60
Weight of flask and distilled water at test temperature M_a , (g)	420.83
Weight of flask, soil and distilled water at test temperature M_b , (g)	438.17
Test Temperature T_b , ($^{\circ}\text{C}$)	26.0
Specific gravity at test temperature.	2.69
Specific gravity at 20 $^{\circ}\text{C}$	2.69

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	10.7	85.3	4.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	89.3		
#100	27.4		
#200	4.0		

* (no specification provided)

Soil Description

Poorly graded sand

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.384 D₆₀= 0.252 D₅₀= 0.218
 D₃₀= 0.158 D₁₅= 0.111 D₁₀= 0.0943
 C_u= 2.68 C_c= 1.04

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 7.0%

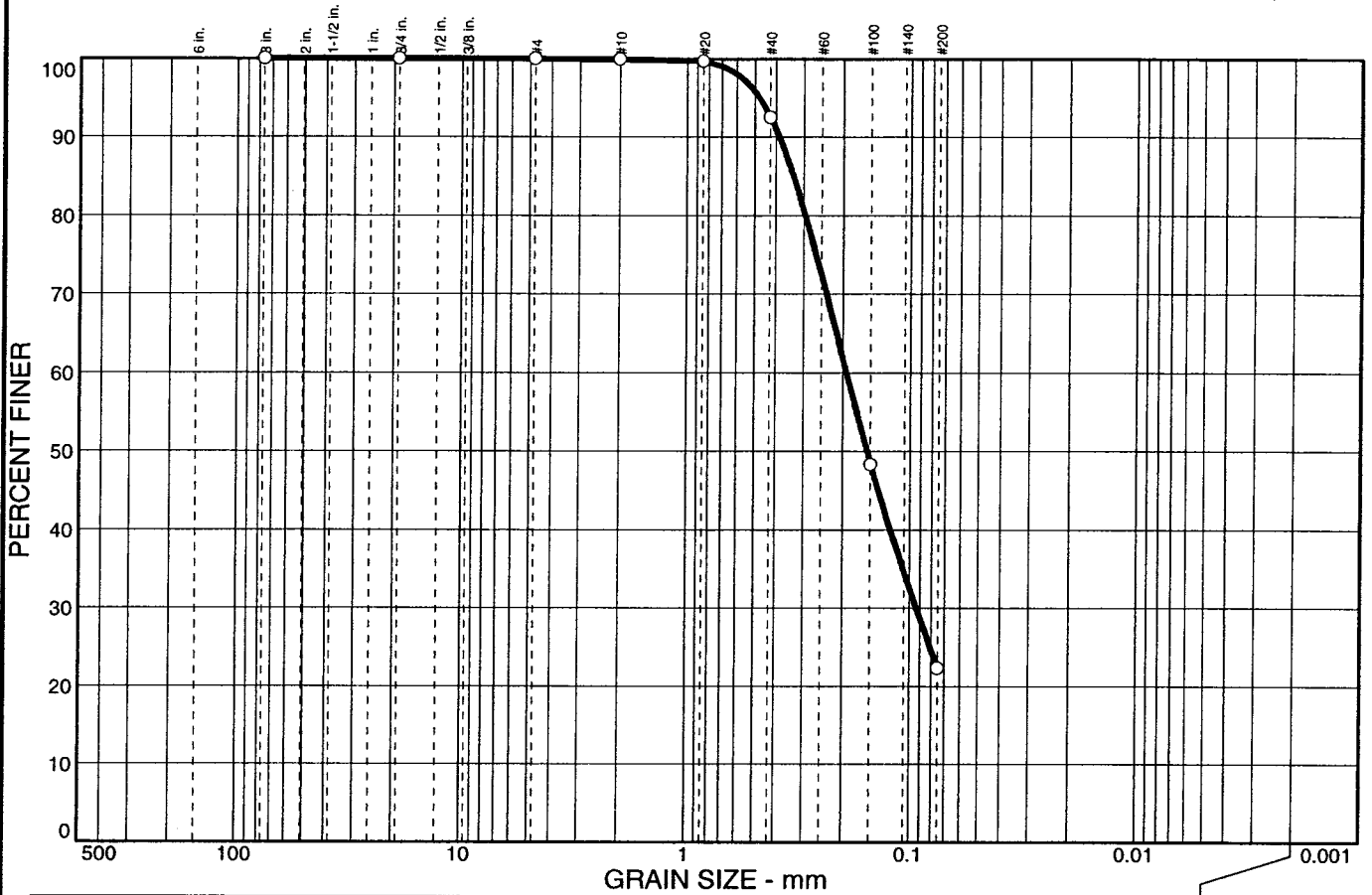
Sample No.: S-1
 Location: TP-8

Source of Sample:

Date: 3/9/04
 Elev./Depth: .5-3

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	7.4	70.2	22.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	92.5		
#100	48.3		
#200	22.3		

Soil Description
Clayey sand

Atterberg Limits
PL= 19 LL= 27 PI= 8

Coefficients
 D₈₅= 0.336 D₆₀= 0.193 D₅₀= 0.156
 D₃₀= 0.0937 D₁₅= D₁₀=
 C_u= C_c=

Classification
USCS= SC AASHTO= --

Remarks
As received moisture content = 17.9%

* (no specification provided)

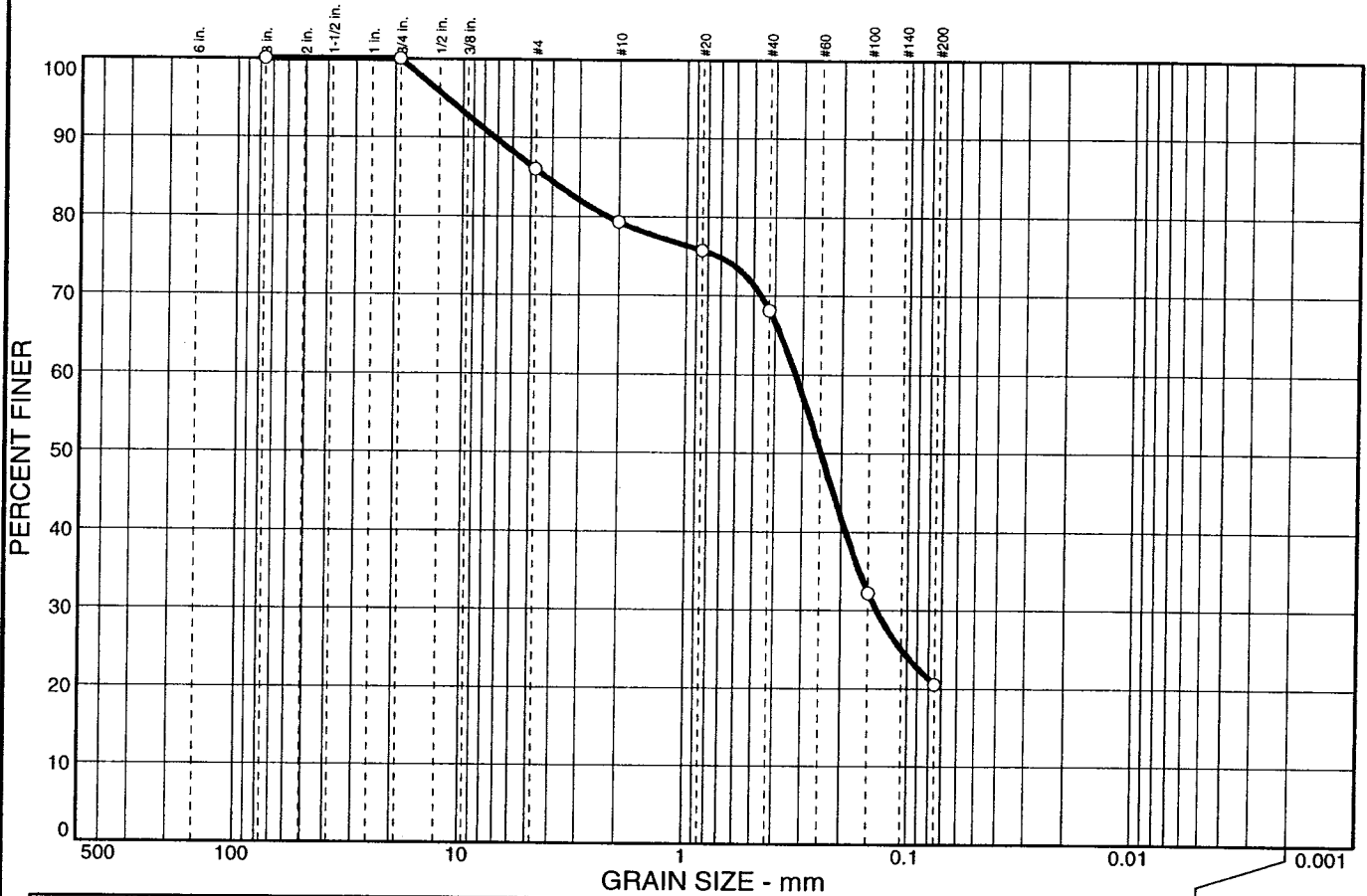
Sample No.: S-2
Location: TP-8

Source of Sample:

Date: 3/9/04
Elev./Depth: 3-5

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	14.0	6.7	11.2	47.6	20.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	86.0		
#10	79.3		
#20	75.7		
#40	68.1		
#100	32.2		
#200	20.5		

* (no specification provided)

Soil Description

Silty, Clayey sand

Atterberg Limits

PL= 17 LL= 24 PI= 7

Coefficients

D₈₅= 4.26 D₆₀= 0.324 D₅₀= 0.248
D₃₀= 0.138 D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= SC-SM AASHTO= --

Remarks

As received moisture content = 14.2%

Sample No.: S-1A
 Location: TP-9

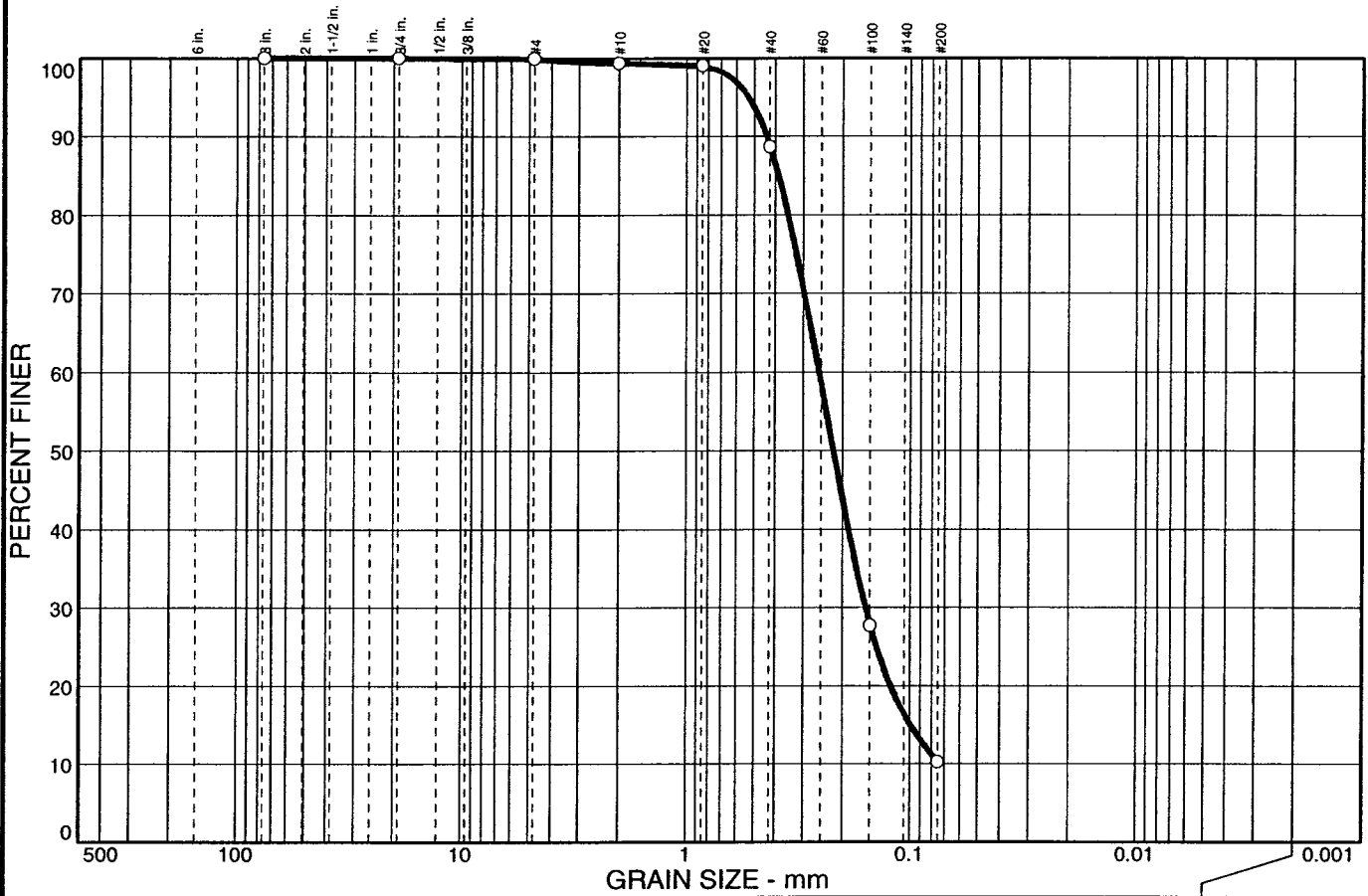
Source of Sample:

Date: 3/9/04
 Elev./Depth: .5-2

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
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Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.1	0.5	10.7	78.5	10.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	99.9		
#10	99.4		
#20	99.0		
#40	88.7		
#100	27.7		
#200	10.2		

* (no specification provided)

Soil Description

Poorly graded sand with silt

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.390 D₆₀= 0.256 D₅₀= 0.220
D₃₀= 0.157 D₁₅= 0.0998 D₁₀=
C_u= C_c=

Classification

USCS= SP-SM AASHTO= --

Remarks

As received moisture content = 13.6%
Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

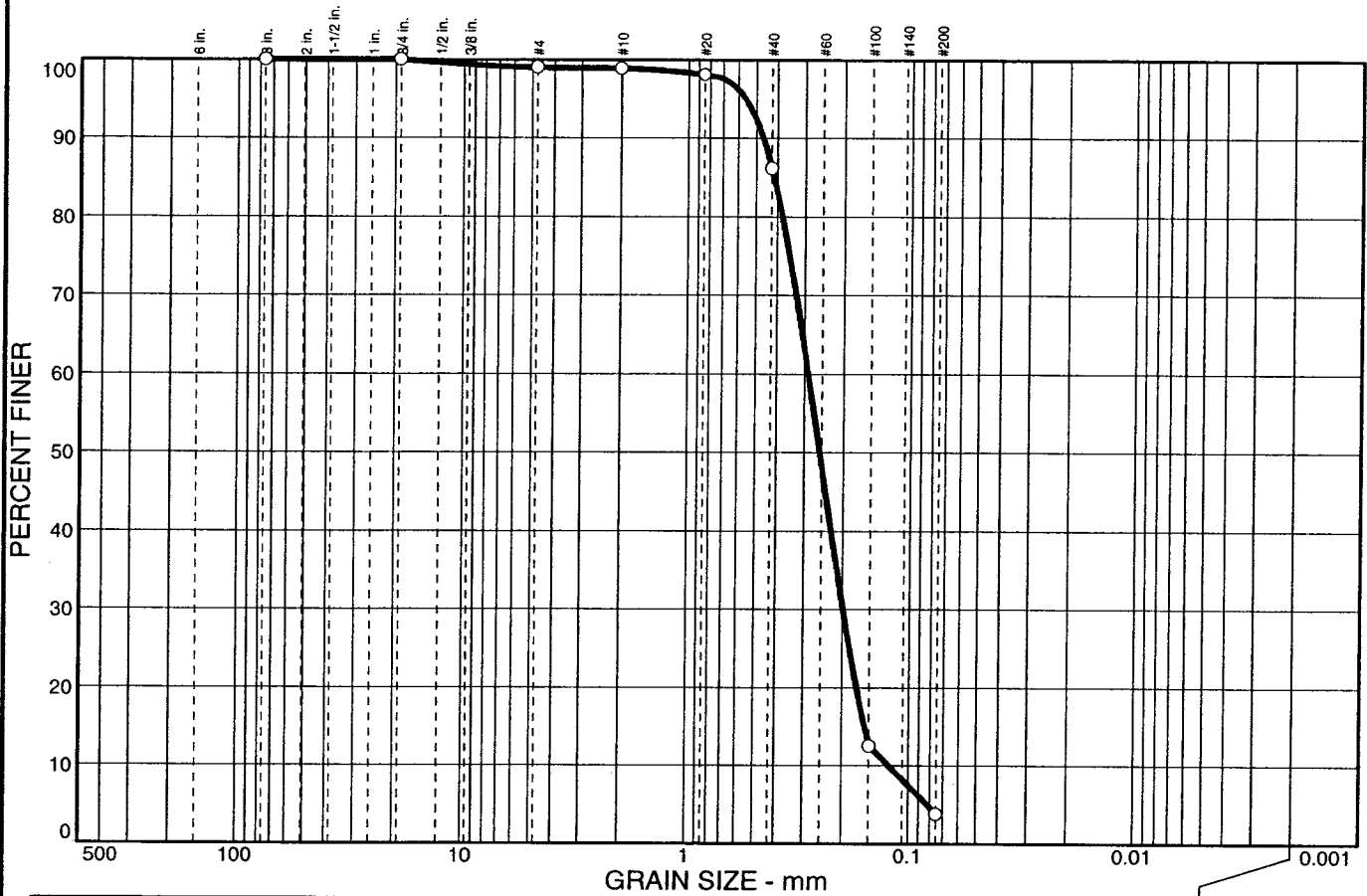
Sample No.: S-1
Location: TP-9

Source of Sample:

Date: 3/9/04
Elev./Depth: 2-5.5

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	1.0	0.1	12.8	82.3	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	99.0		
#10	98.9		
#20	98.1		
#40	86.1		
#100	12.5		
#200	3.8		

Soil Description

Poorly graded sand

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.416 D₆₀= 0.289 D₅₀= 0.256
 D₃₀= 0.199 D₁₅= 0.158 D₁₀= 0.123
 C_u= 2.35 C_c= 1.12

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 8.1%

* (no specification provided)

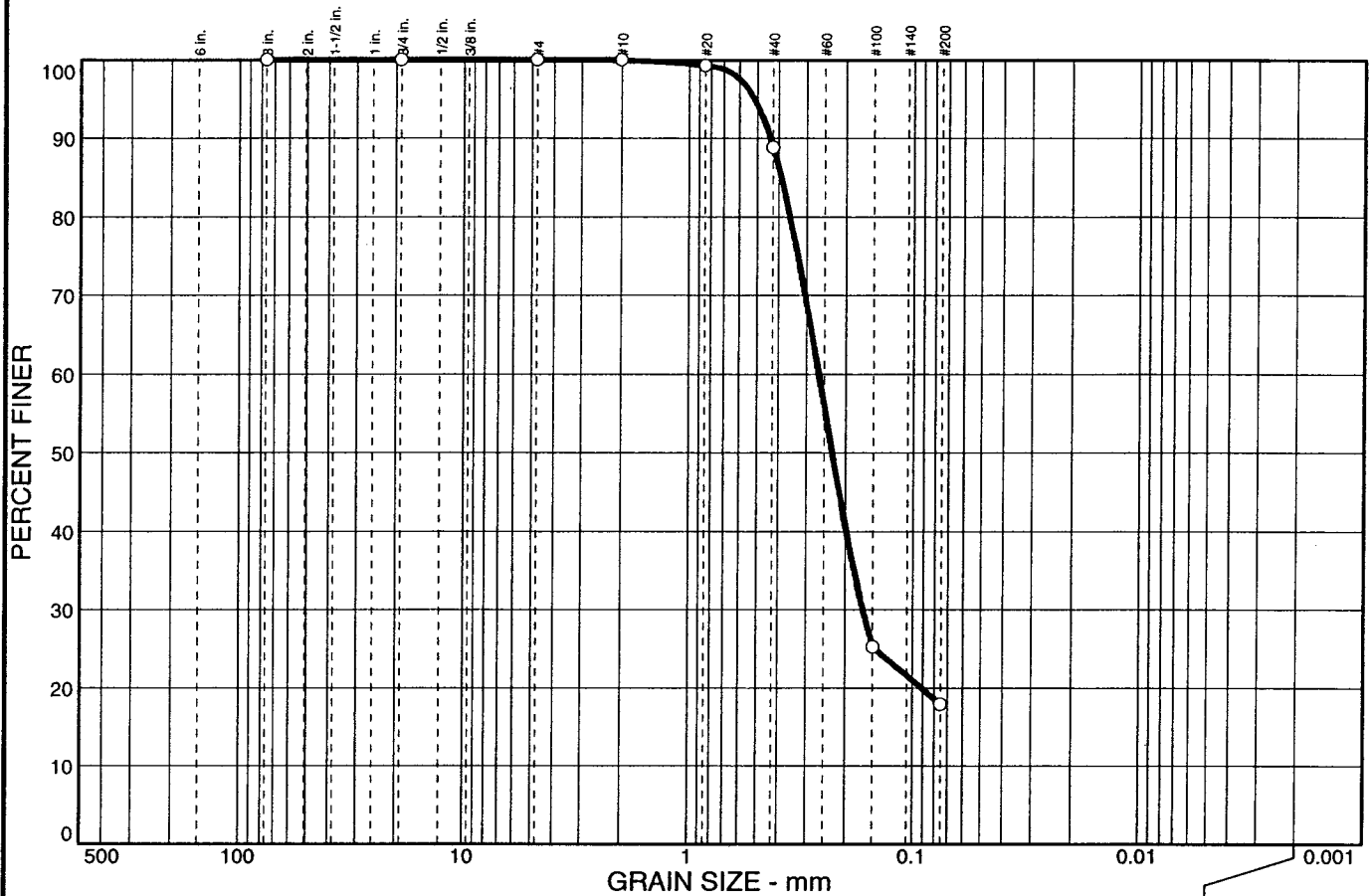
Sample No.: S-1
 Location: TP-10

Source of Sample:

Date: 3/9/04
 Elev./Depth: .5-3

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	11.2	70.9	17.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.3		
#40	88.8		
#100	25.2		
#200	17.9		

Soil Description
Clayey sand

Atterberg Limits
 PL= 18 LL= 30 PI= 12

Coefficients
 D₈₅= 0.392 D₆₀= 0.265 D₅₀= 0.230
 D₃₀= 0.167 D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SC AASHTO= --

Remarks
 As received moisture content = 17.2%

* (no specification provided)

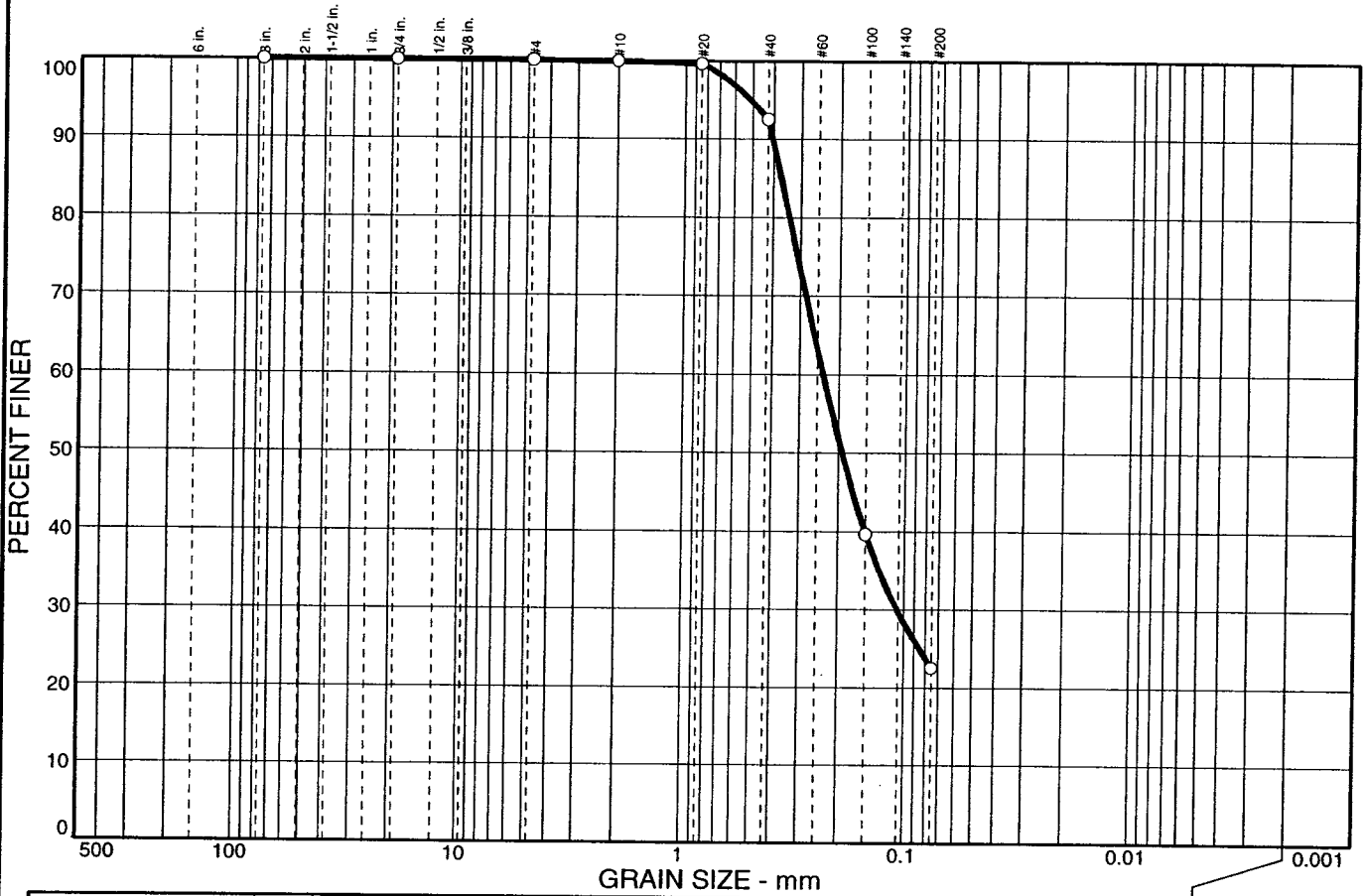
Sample No.: S-2
 Location: TP-10

Source of Sample:

Date: 3/9/04
 Elev./Depth: 3-6

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	7.4	70.0	22.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	92.5		
#100	39.6		
#200	22.5		

* (no specification provided)

Soil Description
Silty sand

Atterberg Limits
 PL= -- LL= -- PI= --

Coefficients
 D₈₅= 0.371 D₆₀= 0.236 D₅₀= 0.193
 D₃₀= 0.108 D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SM AASHTO= --

Remarks
 As received moisture content = 5.6%
 Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

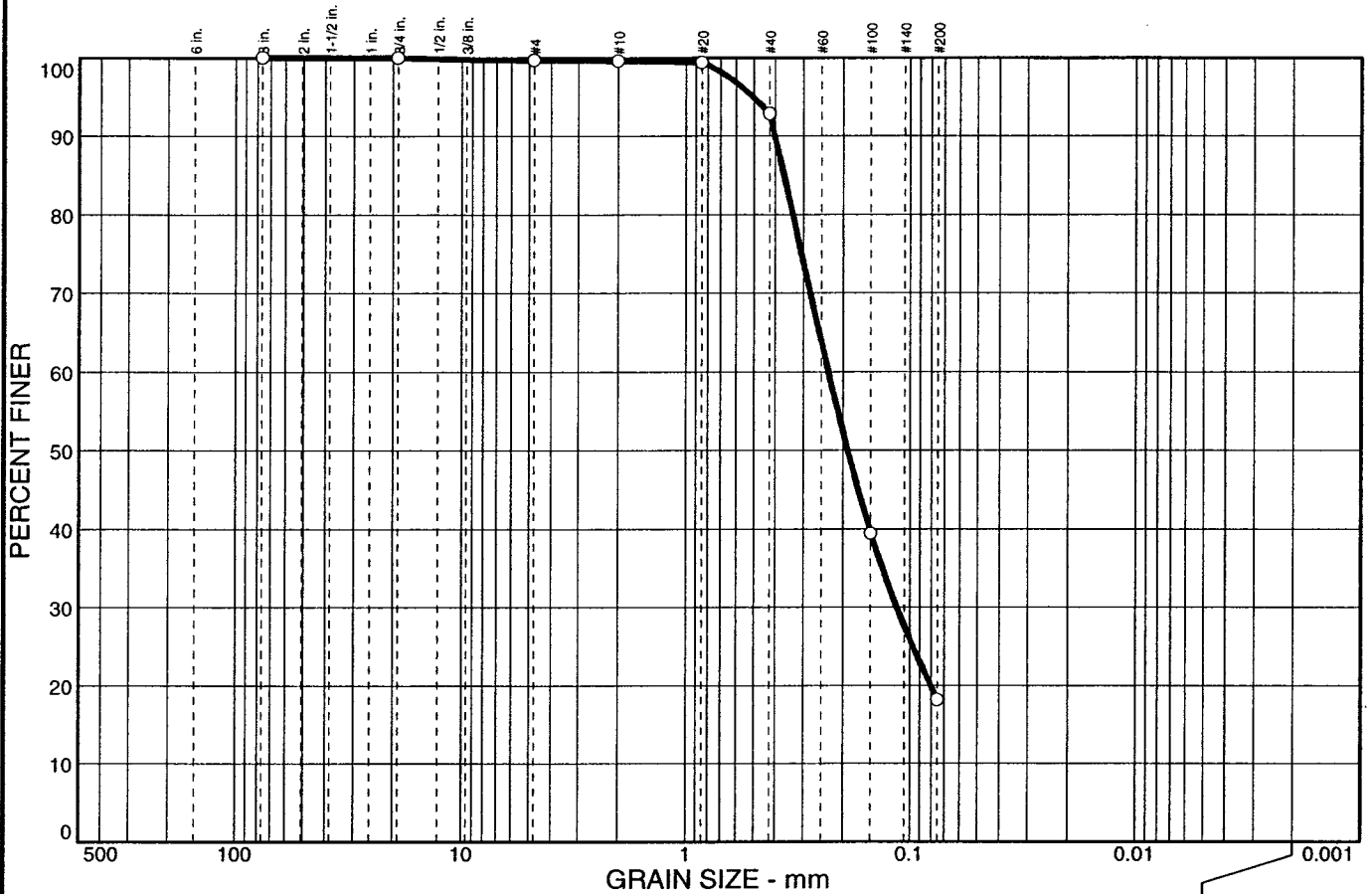
Sample No.: S-1
Location: TP-11

Source of Sample:

Date: 3/9/04
Elev./Depth: .5-4

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.3	0.1	6.8	74.7	18.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	99.7		
#10	99.6		
#20	99.4		
#40	92.8		
#100	39.4		
#200	18.1		

Soil Description
Clayey sand

Atterberg Limits
 PL= 14 LL= 31 PI= 17

Coefficients
 D₈₅= 0.368 D₆₀= 0.233 D₅₀= 0.191
 D₃₀= 0.115 D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SC AASHTO= --

Remarks
 As received moisture content = 16.9%

* (no specification provided)

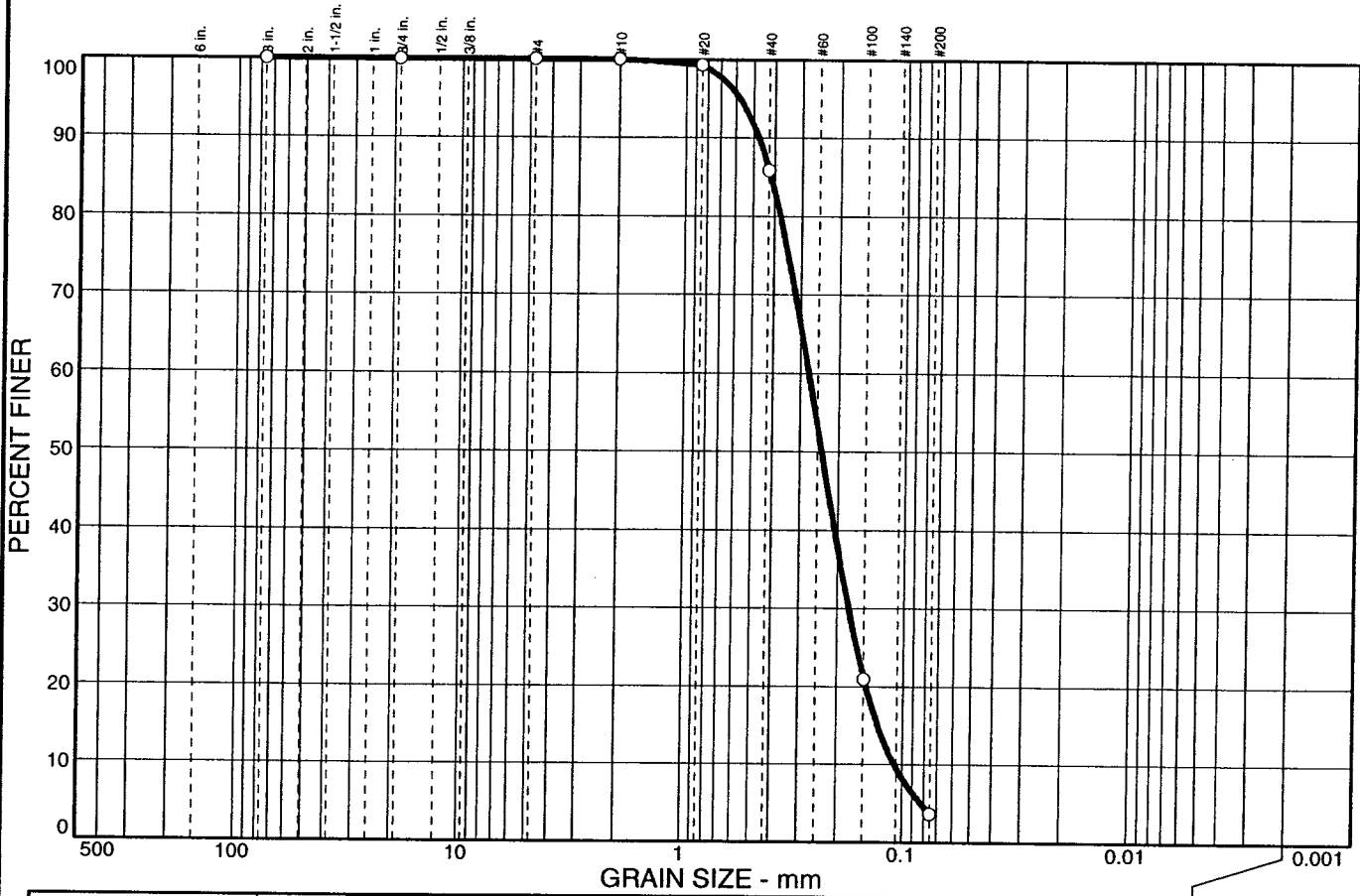
Sample No.: S-2
Location: TP-11

Source of Sample:

Date: 3/9/04
Elev./Depth: 4-5.5

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	14.2	82.2	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.3		
#40	85.8		
#100	20.9		
#200	3.6		

Soil Description

Poorly graded sand

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.417 D₆₀= 0.276 D₅₀= 0.239
 D₃₀= 0.177 D₁₅= 0.130 D₁₀= 0.109
 C_u= 2.53 C_c= 1.05

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 12.4%

* (no specification provided)

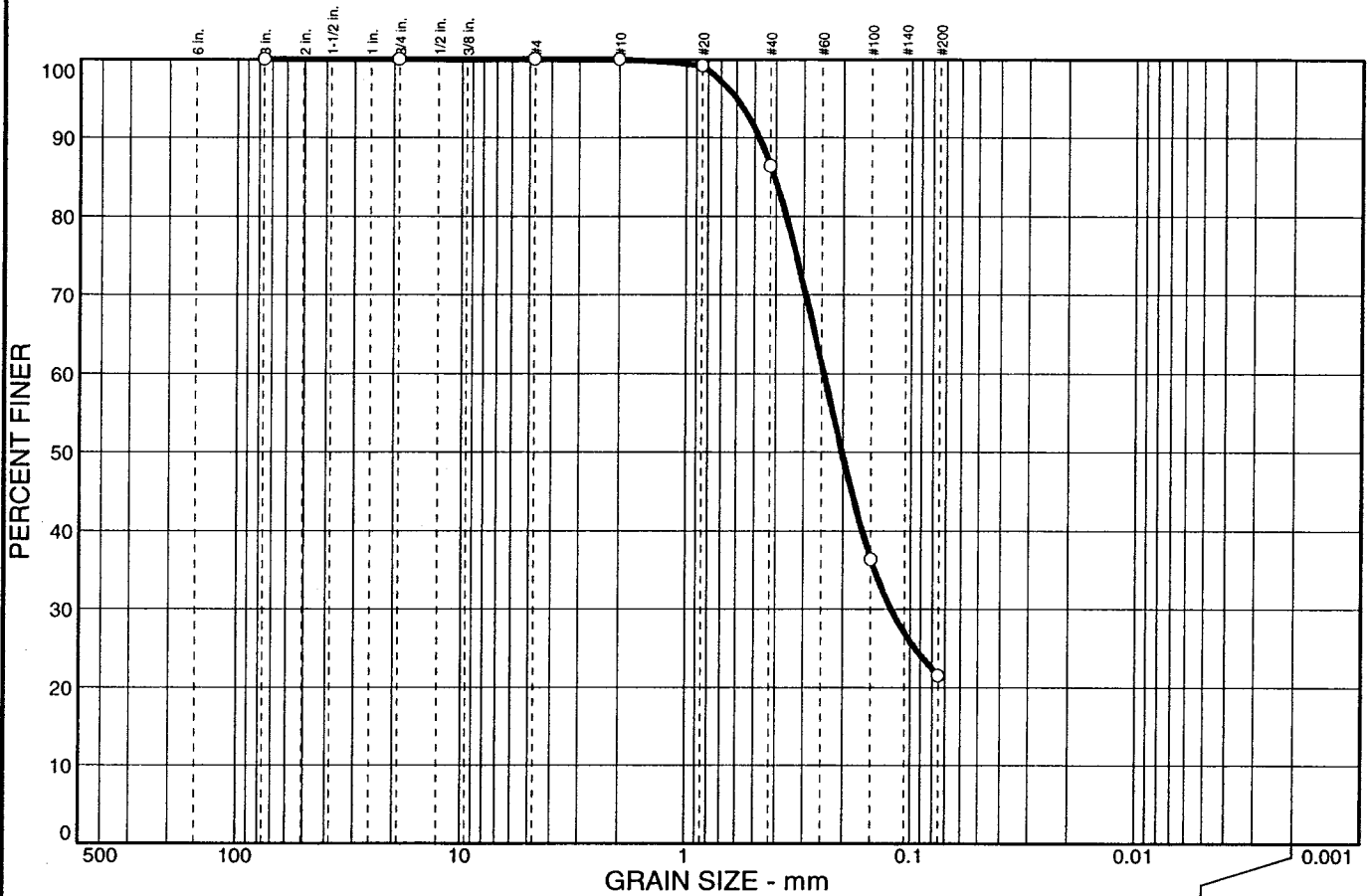
Sample No.: S-1
 Location: TP-12

Source of Sample:

Date: 3/9/04
 Elev./Depth: .5-4

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	13.6	64.9	21.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.2		
#40	86.4		
#100	36.3		
#200	21.5		

Soil Description
Silty sand

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= 0.409 D₆₀= 0.245 D₅₀= 0.203
 D₃₀= 0.122 D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 As received moisture content = 18.7%

* (no specification provided)

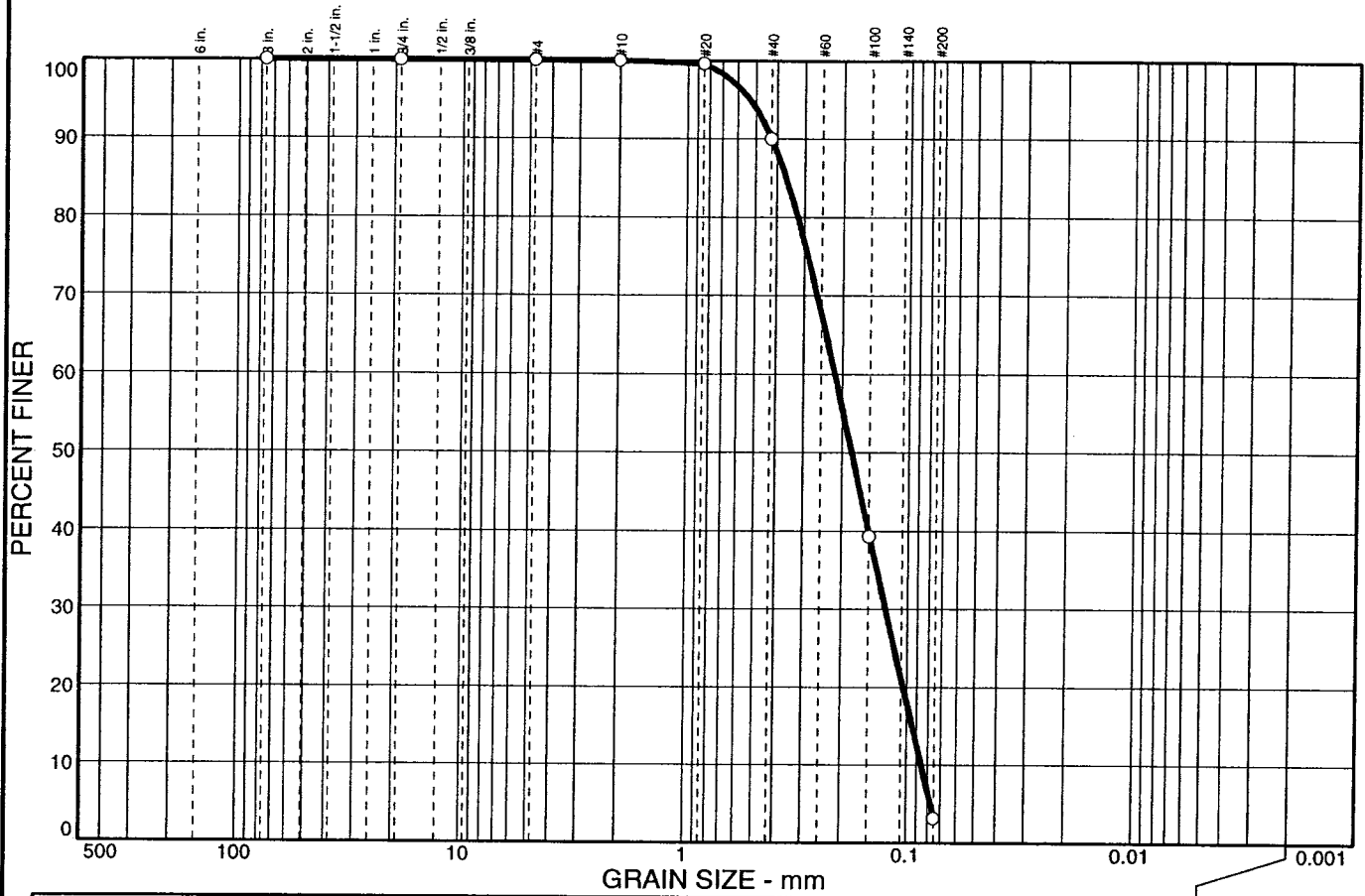
Sample No.: S-2
Location: TP-12

Source of Sample:

Date: 3/9/04
Elev./Depth: 4-5.5

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	10.0	86.9	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	90.0		
#100	39.3		
#200	3.1		

Soil Description

Poorly graded sand

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.366 D₆₀= 0.217 D₅₀= 0.182
 D₃₀= 0.126 D₁₅= 0.0948 D₁₀= 0.0859
 C_u= 2.53 C_c= 0.86

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 16.8%

* (no specification provided)

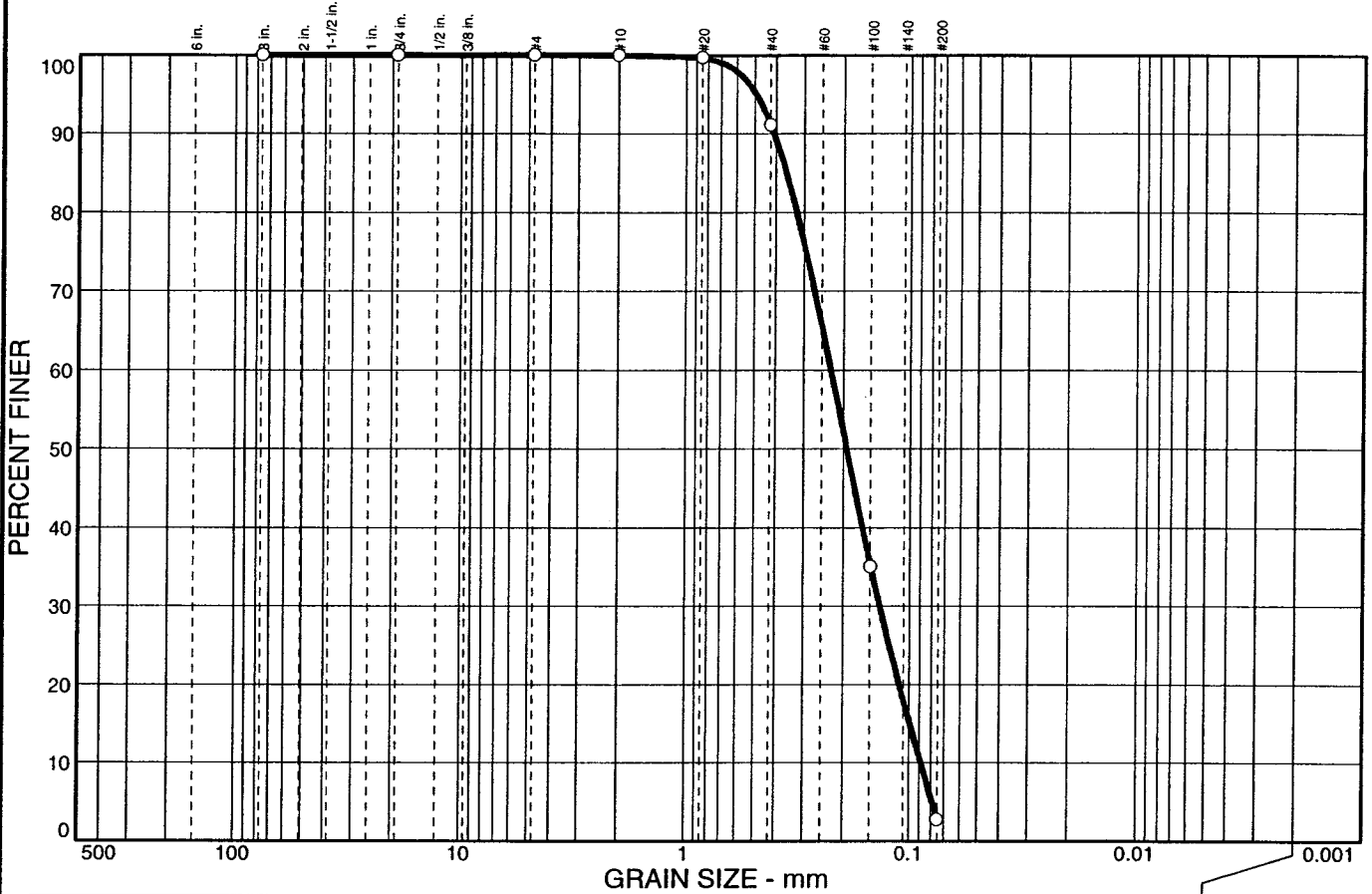
Sample No.: S-1
 Location: TP-13

Source of Sample:

Date: 3/9/04
 Elev./Depth: .5-4

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	8.9	88.4	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	91.1		
#100	35.0		
#200	2.7		

Soil Description

Poorly graded sand

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.362 D₆₀= 0.228 D₅₀= 0.194
 D₃₀= 0.137 D₁₅= 0.0998 D₁₀= 0.0890
 C_u= 2.56 C_c= 0.92

Classification

USCS= SP AASHTO= --

Remarks

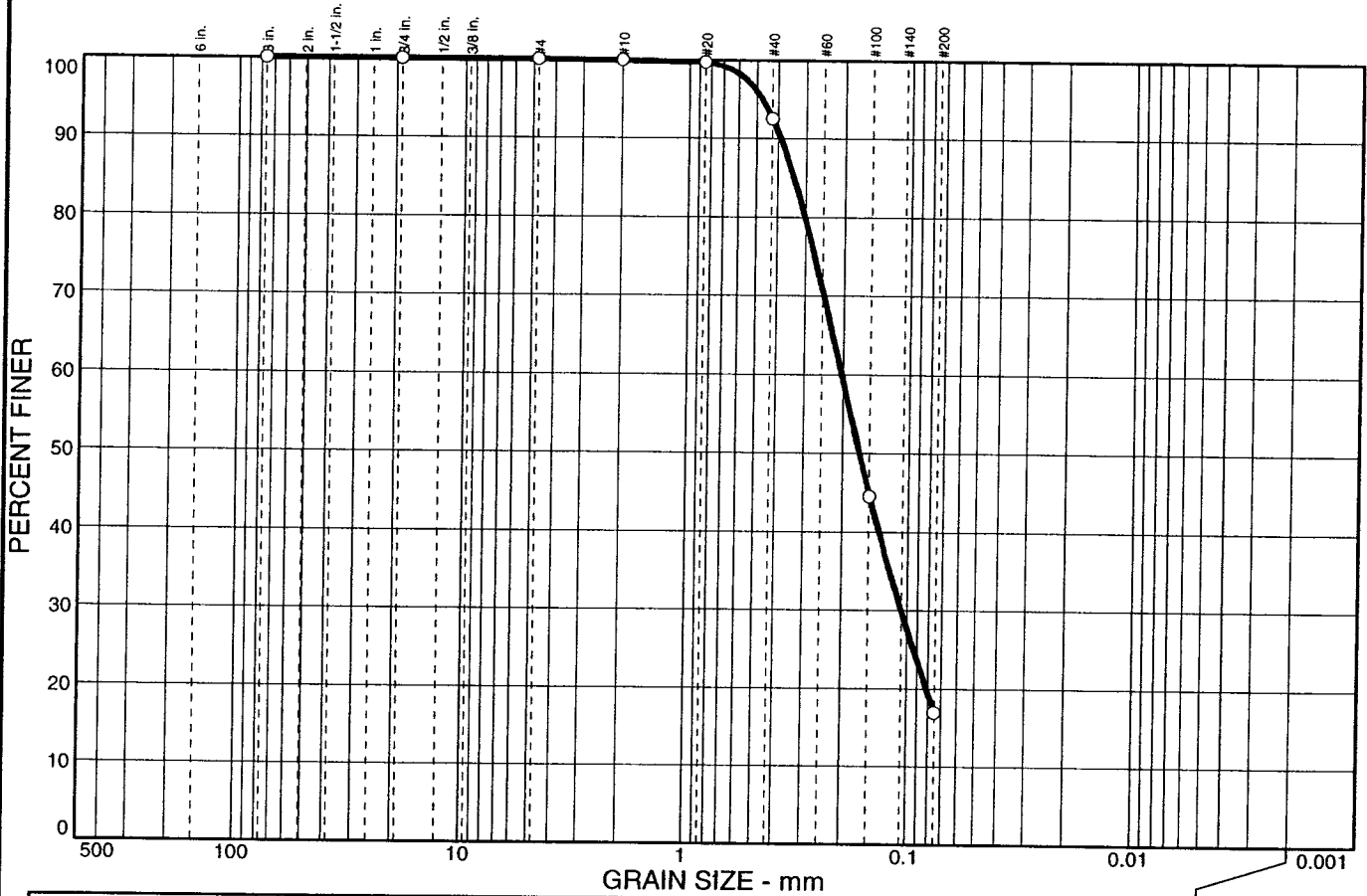
As received moisture content = 8.0%

* (no specification provided)

Sample No.: S-1 **Source of Sample:** **Date:** 3/9/04
Location: TP-14 **Elev./Depth:** 1-2

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911 Plate
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PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	7.4	75.6	16.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	92.5		
#100	44.5		
#200	16.9		

Soil Description

Clayey sand

Atterberg Limits

PL= 16 LL= 27 PI= 11

Coefficients

D₈₅= 0.341 D₆₀= 0.204 D₅₀= 0.168
D₃₀= 0.107 C_u= D₁₀=

Classification

USCS= SC AASHTO= --

Remarks

As received moisture content = 16.0%

* (no specification provided)

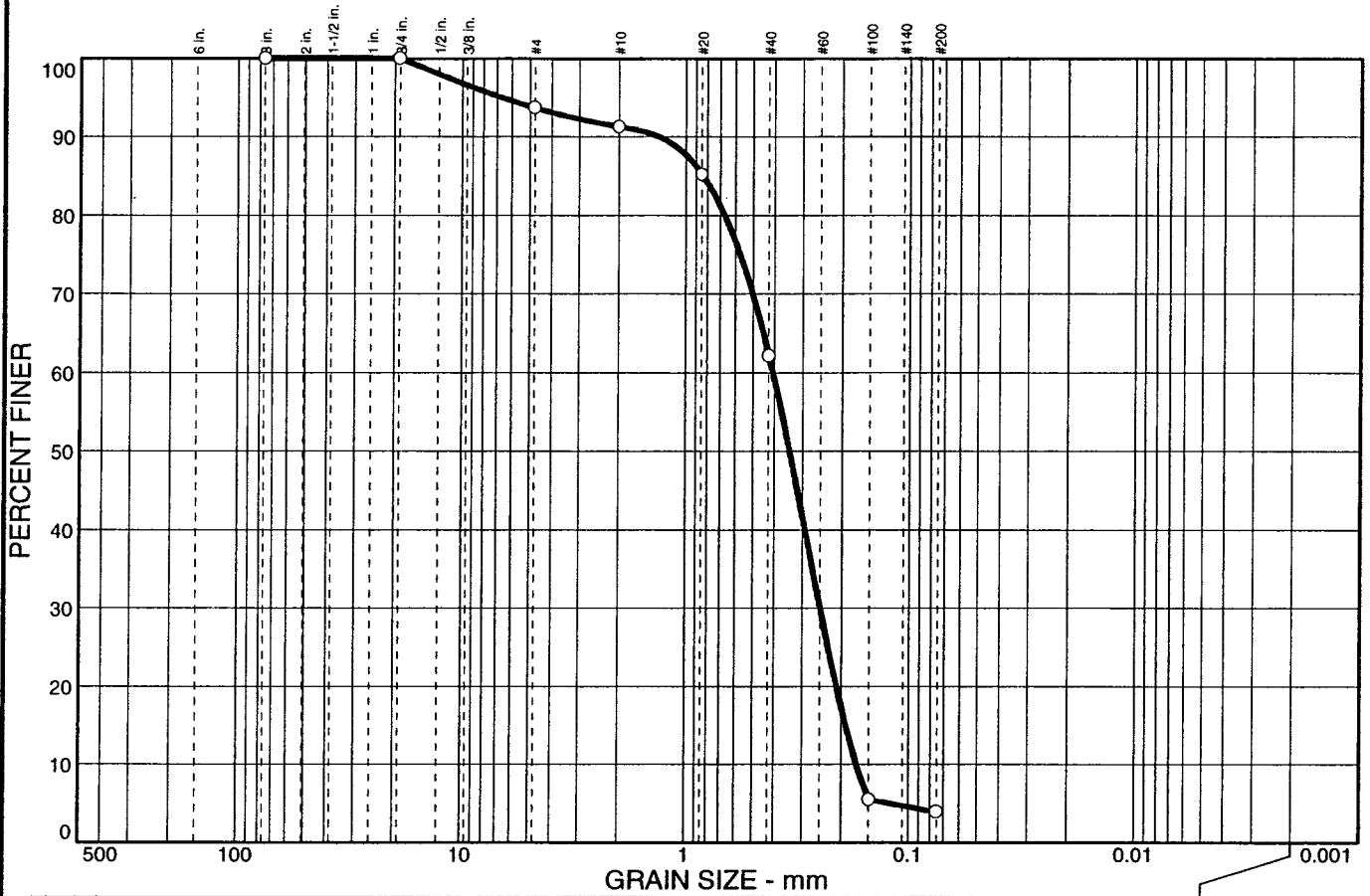
Sample No.: S-2
Location: TP-14

Source of Sample:

Date: 3/9/04
Elev./Depth: 2-5

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	6.3	2.4	29.2	58.2	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	93.7		
#10	91.3		
#20	85.2		
#40	62.1		
#100	5.5		
#200	3.9		

Soil Description

Poorly graded sand

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D₈₅= 0.841 D₆₀= 0.408 D₅₀= 0.344
D₃₀= 0.250 D₁₅= 0.191 D₁₀= 0.171
C_u= 2.39 C_c= 0.89

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 29.6%

* (no specification provided)

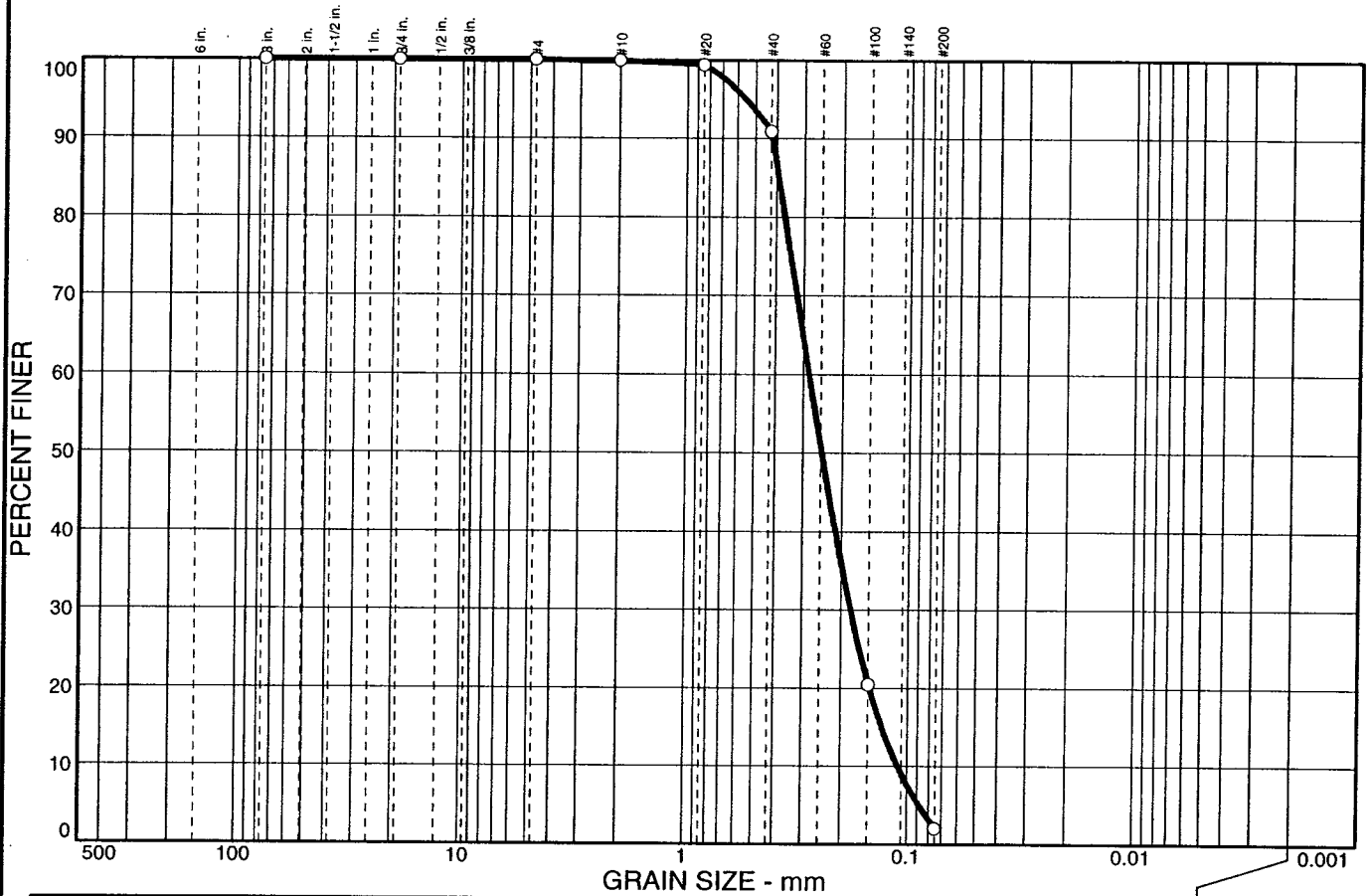
Sample No.: S-3
Location: TP-14

Source of Sample:

Date: 3/9/04
Elev./Depth: 5-8

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	9.0	88.9	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	99.9		
#20	99.4		
#40	90.9		
#100	20.4		
#200	2.0		

Soil Description

Poorly graded sand

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.393 D₆₀= 0.283 D₅₀= 0.247
D₃₀= 0.181 D₁₅= 0.131 D₁₀= 0.111
C_u= 2.56 C_c= 1.05

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 13.3%

* (no specification provided)

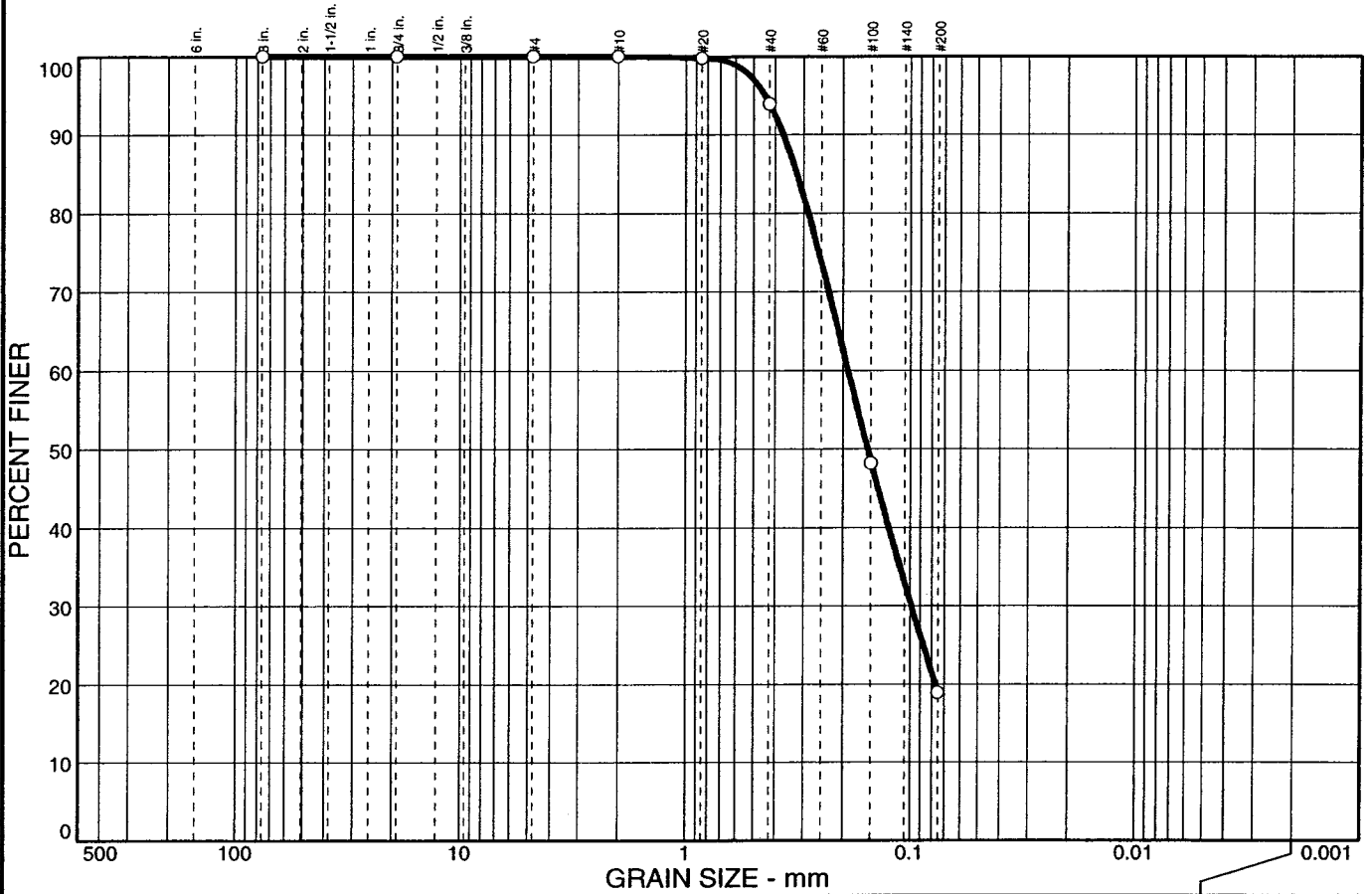
Sample No.: S-1
Location: TP-15

Source of Sample:

Date: 3/9/04
Elev./Depth: 2-4

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	6.1	75.0	18.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	93.9		
#100	48.2		
#200	18.9		

Soil Description

Clayey sand

Atterberg Limits

PL= 17 LL= 28 PI= 11

Coefficients

D₈₅= 0.323 D₆₀= 0.190 D₅₀= 0.156
 D₃₀= 0.0990 D₁₅= D₁₀=
 C_u= C_c=

Classification

USCS= SC AASHTO= --

Remarks

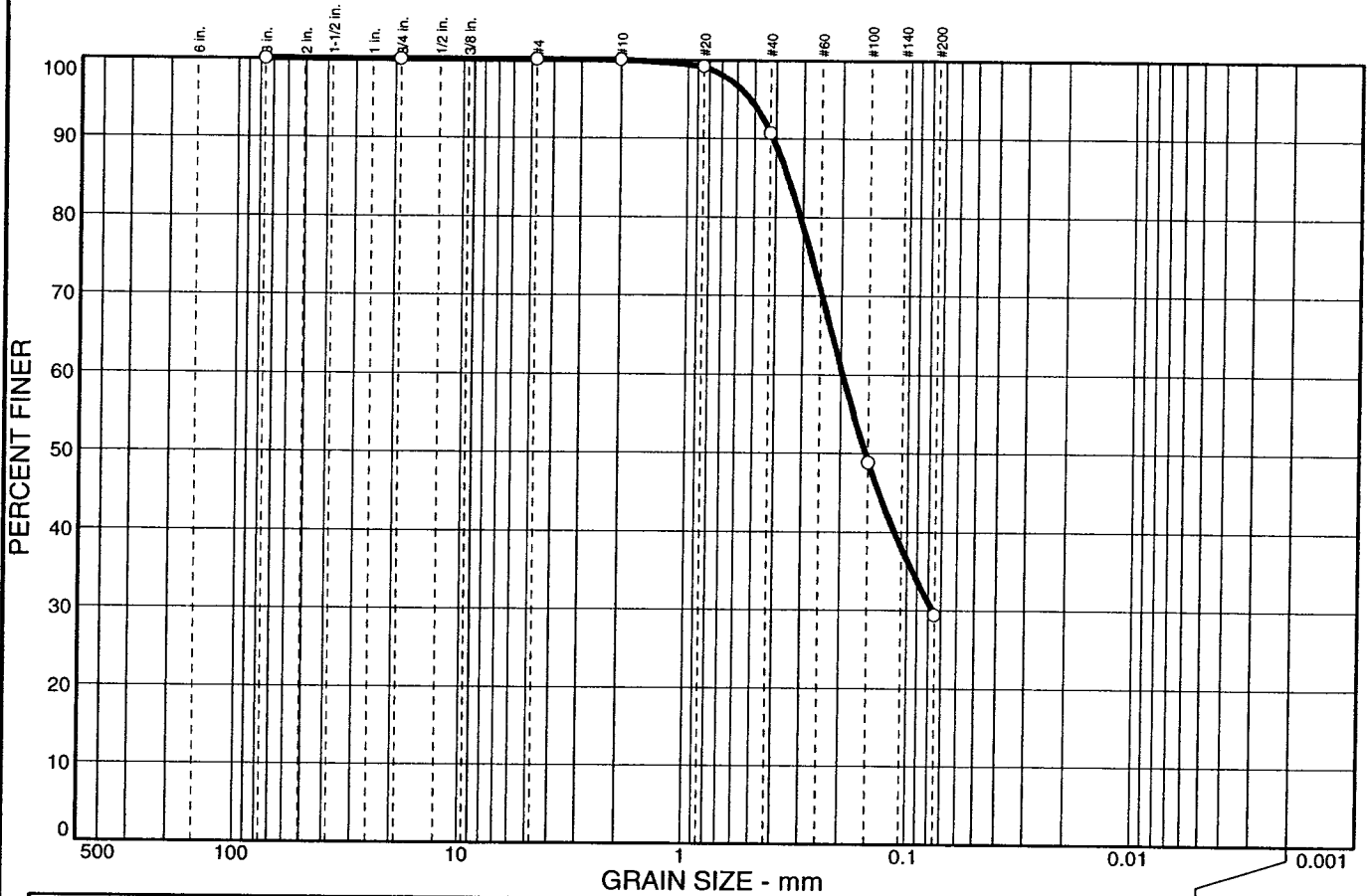
As received moisture content = 19.4%

* (no specification provided)

Sample No.: S-2 **Source of Sample:** **Date:** 3/9/04
Location: TP-15 **Elev./Depth:** 4-7

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911 Plate
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PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	9.3	61.3	29.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.2		
#40	90.7		
#100	48.8		
#200	29.4		

* (no specification provided)

Soil Description
Silty sand

Atterberg Limits
 PL= -- LL= -- PI= --

Coefficients
 D₈₅= 0.354 D₆₀= 0.197 D₅₀= 0.155
 D₃₀= 0.0769 D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SM AASHTO= --

Remarks
 As received moisture content = 18.3%
 Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

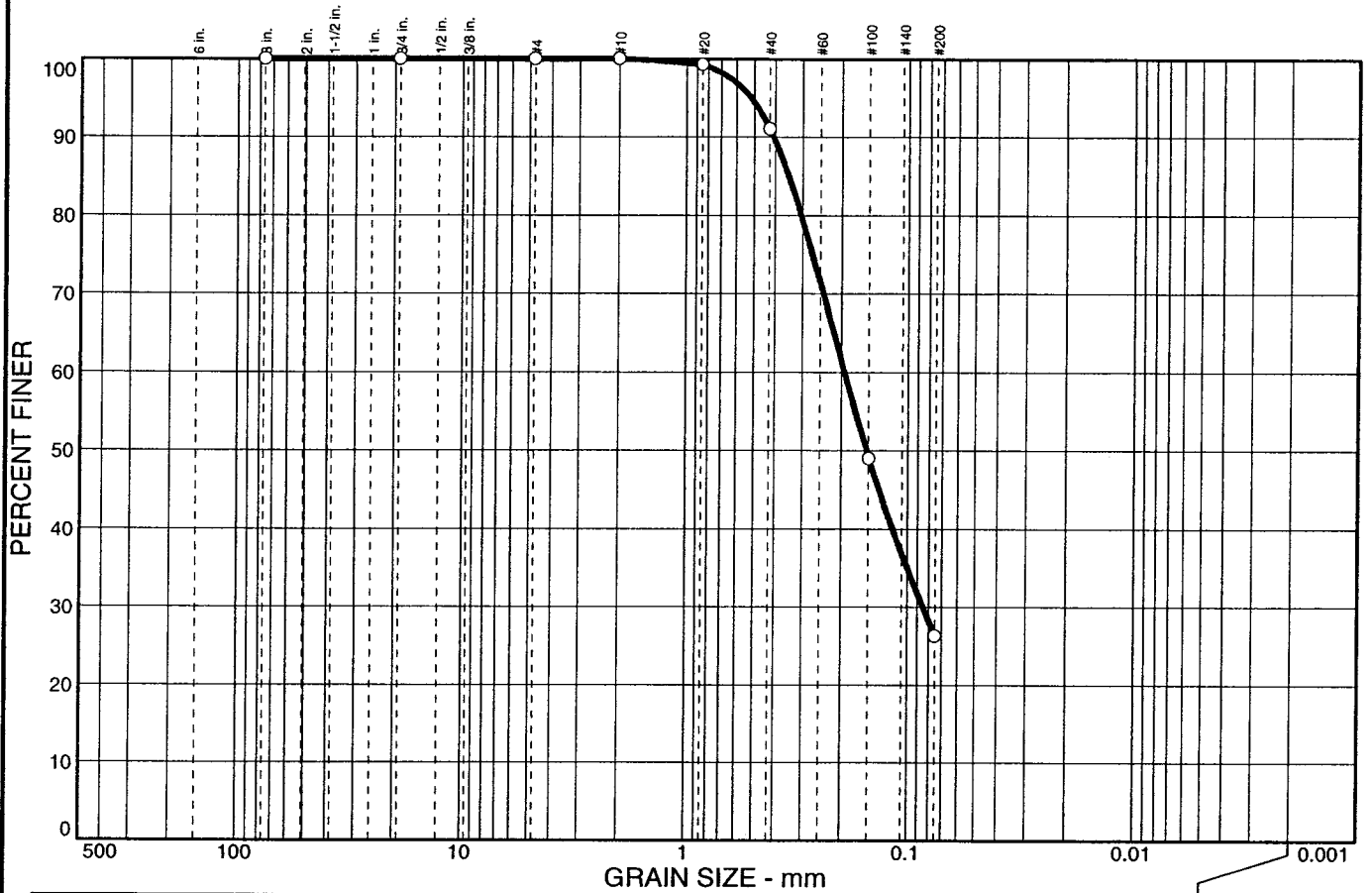
Sample No.: S-1
Location: TP-16

Source of Sample:

Date: 3/9/04
Elev./Depth: 1.4-4

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Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	9.0	64.7	26.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.3		
#40	91.0		
#100	49.0		
#200	26.3		

Soil Description
clayey sand

Atterberg Limits
PL= 20 LL= 29 PI= 9

Coefficients
 D₈₅= 0.349 D₆₀= 0.194 D₅₀= 0.154
 D₃₀= 0.0851 D₁₅= D₁₀=
 C_u= C_c=

Classification
USCS= SC AASHTO= --

Remarks
As received moisture content = 10.6%

* (no specification provided)

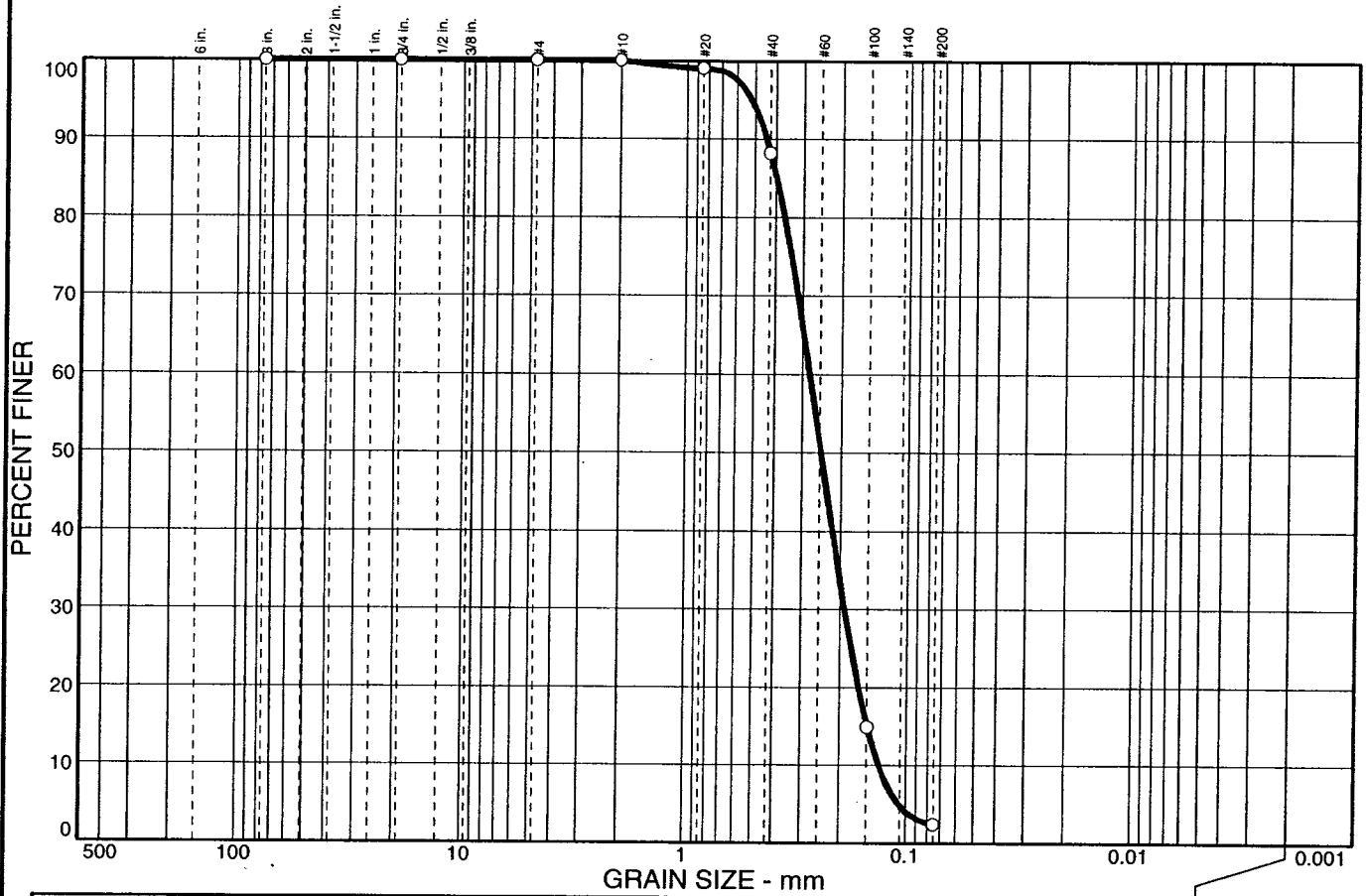
Sample No.: S-2
Location: TP-16

Source of Sample:

Date: 3/9/04
Elev./Depth: 4-9

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	11.8	85.8	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.0		
#40	88.2		
#100	14.9		
#200	2.4		

Soil Description

Poorly graded sand

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.399 D₆₀= 0.279 D₅₀= 0.247
D₃₀= 0.192 D₁₅= 0.150 D₁₀= 0.133
C_u= 2.10 C_c= 0.99

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 10.2%

* (no specification provided)

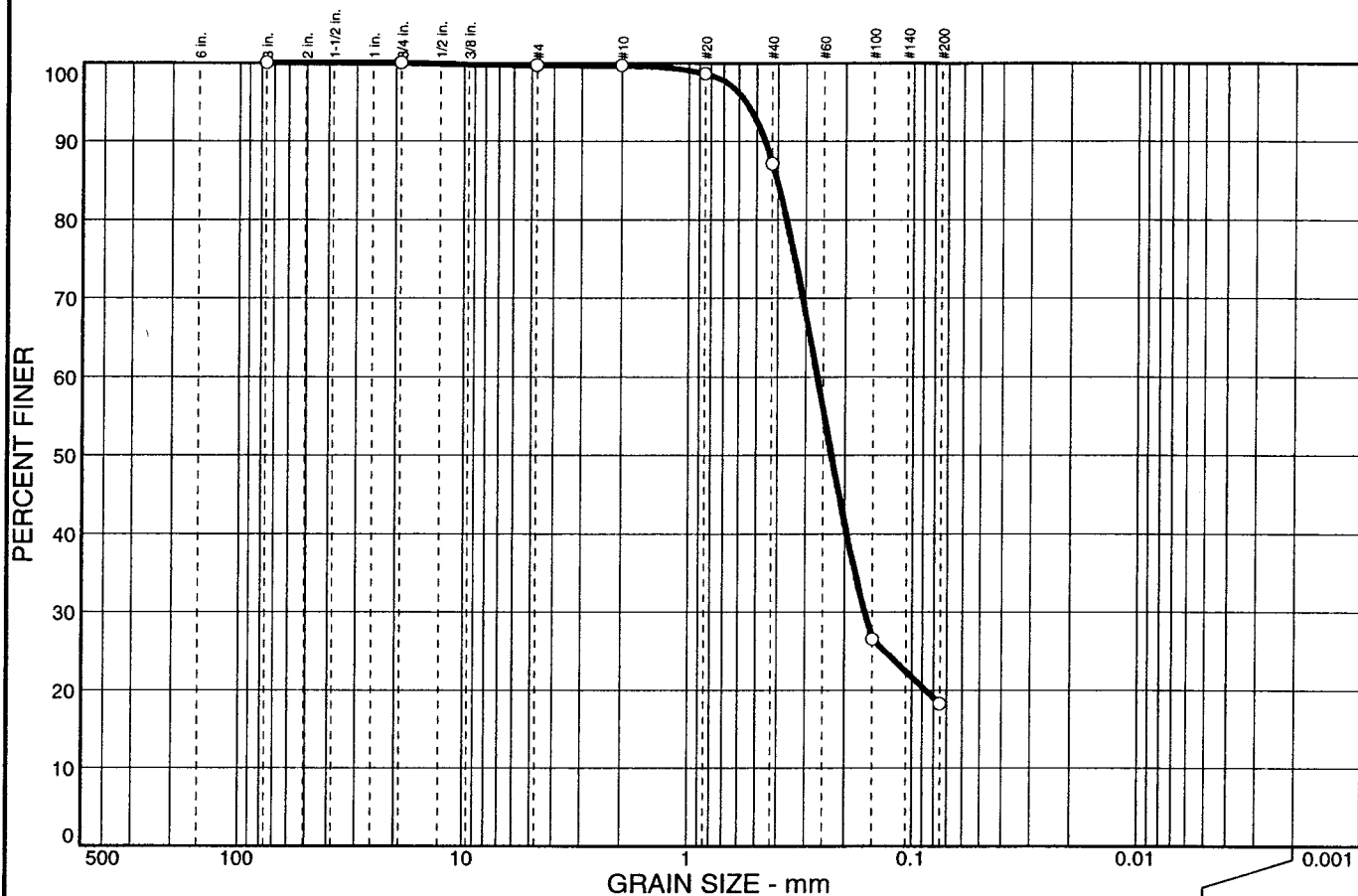
Sample No.: S-1
Location: TP-17

Source of Sample:

Date: 3/9/04
Elev./Depth: 1-3

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.3	0.0	12.6	68.9	18.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	99.7		
#10	99.7		
#20	98.6		
#40	87.1		
#100	26.5		
#200	18.2		

Soil Description

Silty, clayey sand

Atterberg Limits

PL= 20 LL= 24 PI= 4

Coefficients

D₈₅= 0.405 D₆₀= 0.267 D₅₀= 0.230
D₃₀= 0.163 D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= SC-SM AASHTO= --

Remarks

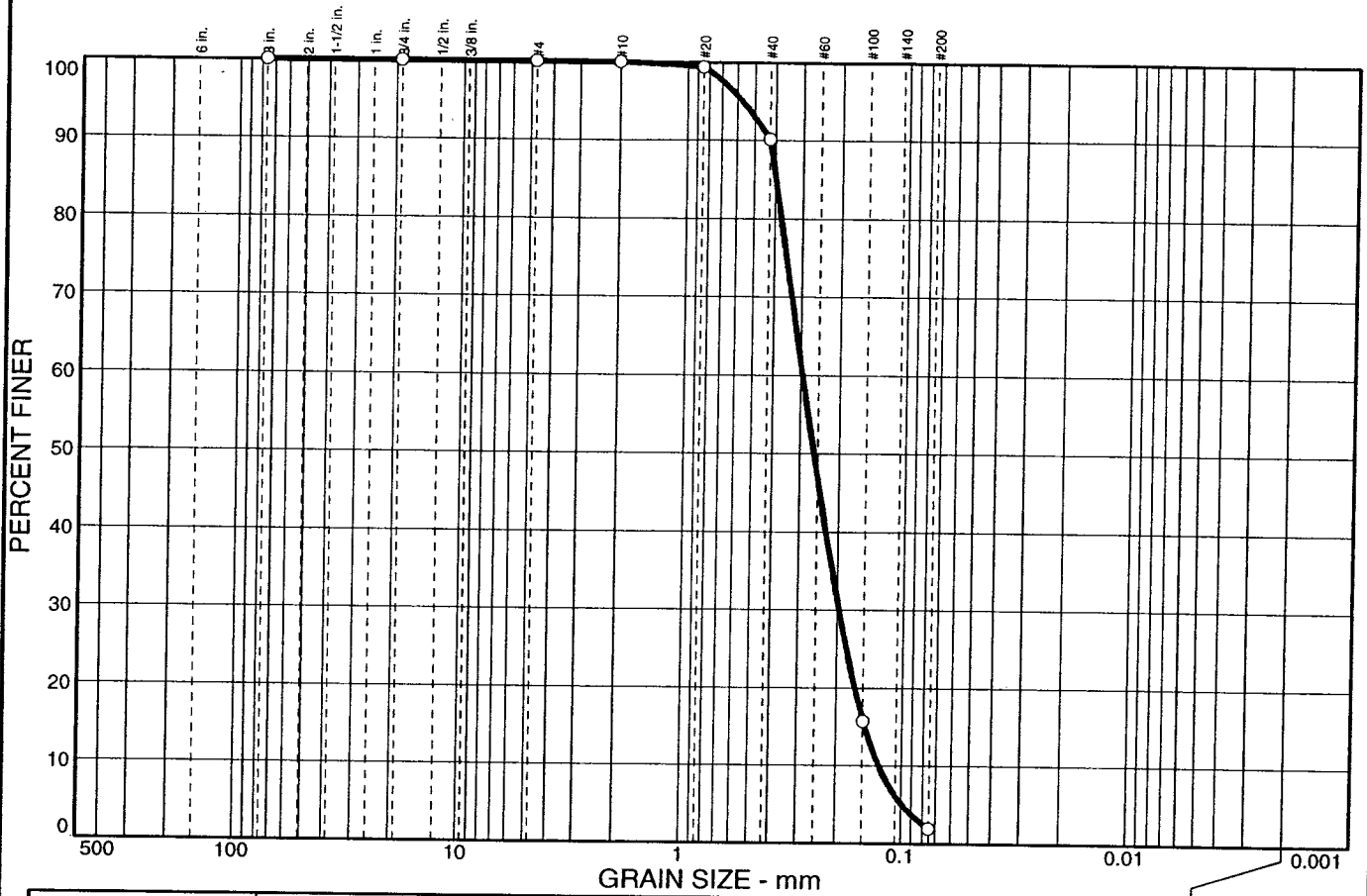
As received moisture content = 18.7%

* (no specification provided)

Sample No.: S-3 Source of Sample: Date: 3/9/04
Location: TP-17 Elev/Depth: 5-8

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911 Plate
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PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	9.9	88.2	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.4		
#40	90.1		
#100	15.7		
#200	1.9		

Soil Description

Poorly graded sand

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.400 D₆₀= 0.295 D₅₀= 0.260
D₃₀= 0.196 D₁₅= 0.147 D₁₀= 0.127
C_u= 2.32 C_c= 1.03

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 3.9%

* (no specification provided)

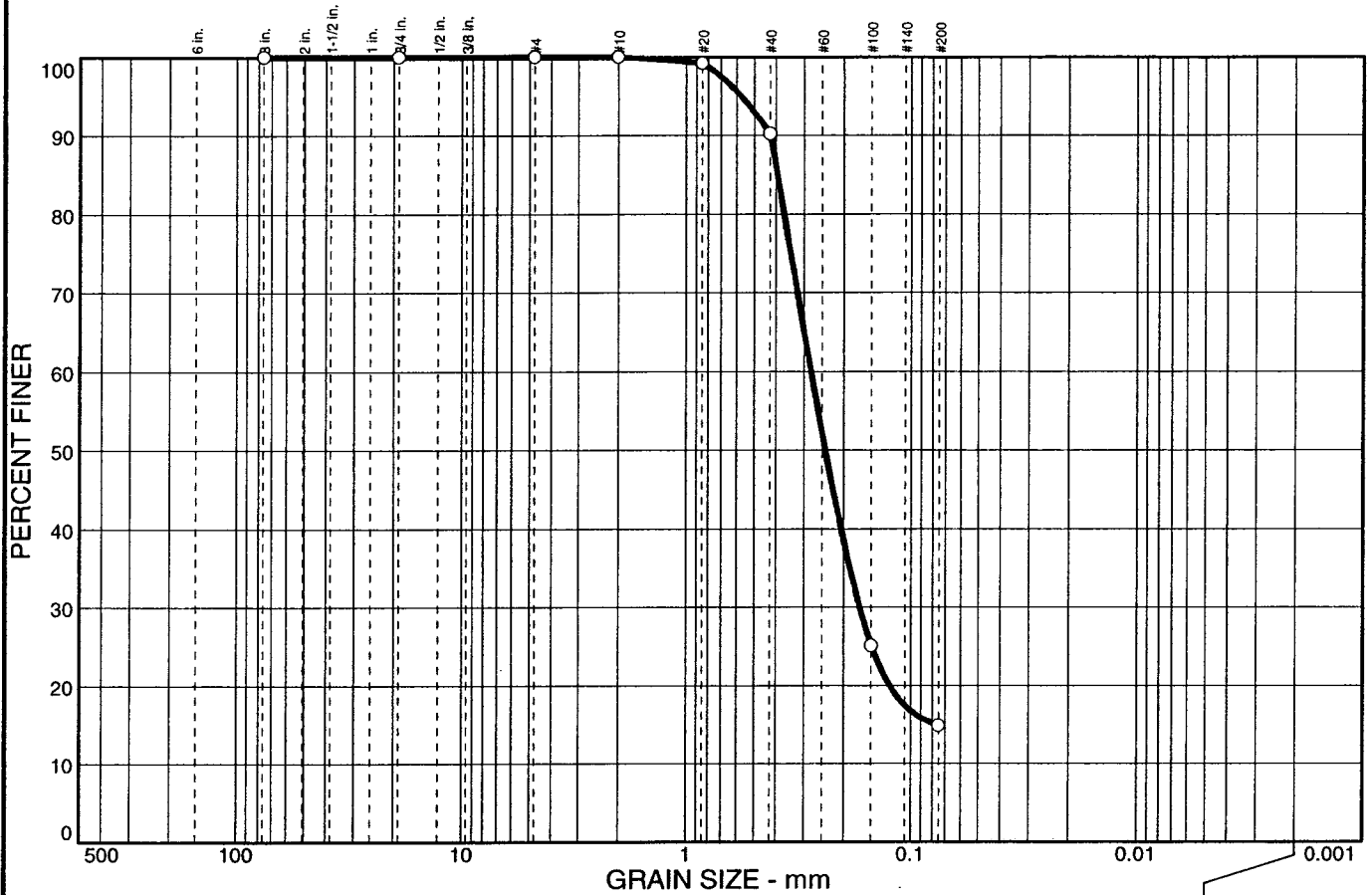
Sample No.: S-1
Location: TP-18

Source of Sample:

Date: 3/9/04
Elev./Depth: 3-6

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	9.8	75.3	14.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.2		
#40	90.2		
#100	25.1		
#200	14.9		

Soil Description

Silty, clayey sand

Atterberg Limits

PL= 20 LL= 27 PI= 7

Coefficients

D₈₅= 0.396 D₆₀= 0.280 D₅₀= 0.242
D₃₀= 0.170 D₁₅= 0.0766 D₁₀=
C_u= C_c=

Classification

USCS= SC-SM AASHTO= --

Remarks

As received moisture content = 16.5%

* (no specification provided)

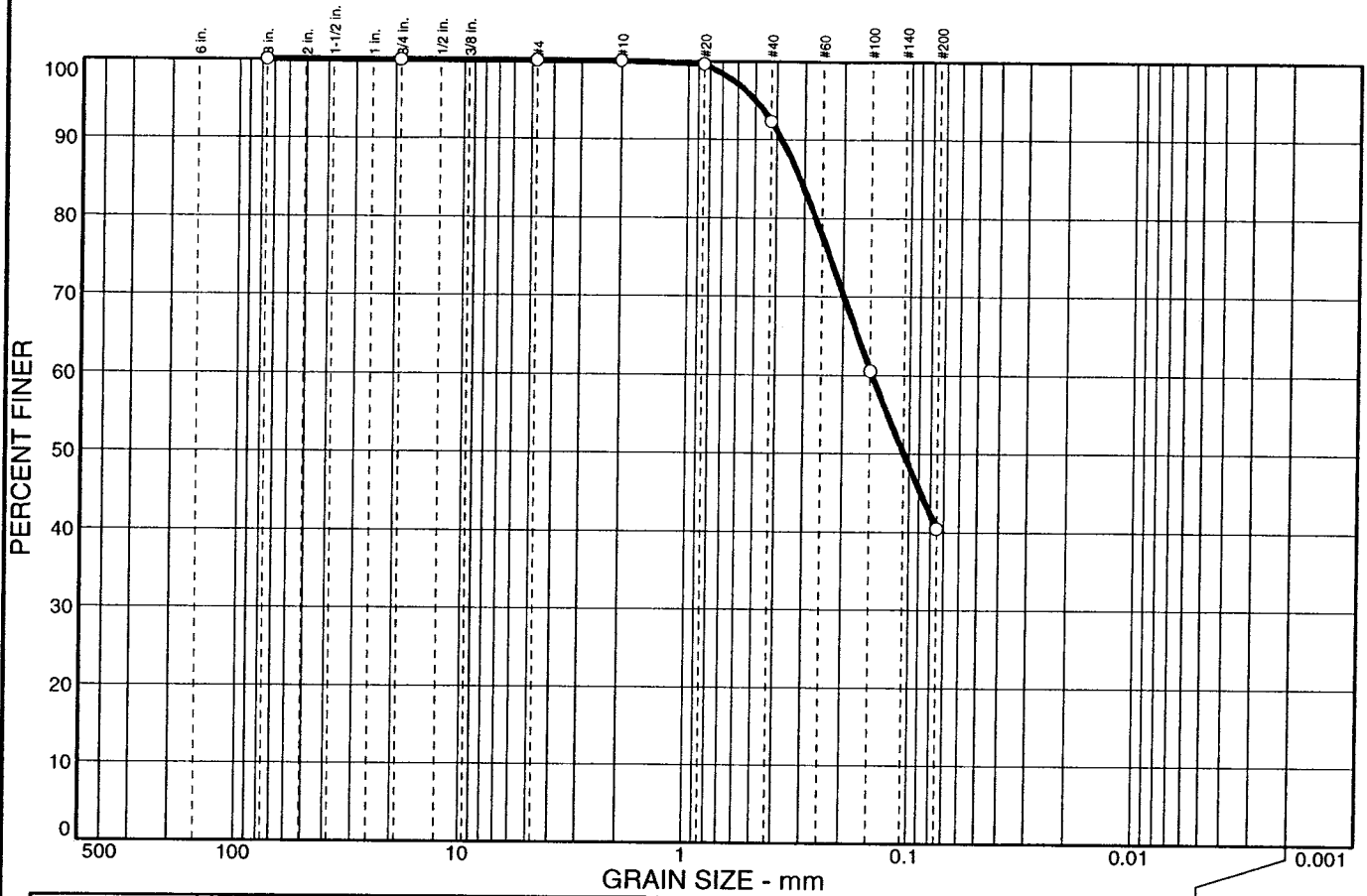
Sample No.: S-2
Location: TP-18

Source of Sample:

Date: 3/9/04
Elev./Depth: 6-11

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	7.7	51.9	40.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	92.3		
#100	60.5		
#200	40.4		

Soil Description
Silty sand

Atterberg Limits
PL= -- LL= -- PI= --

Coefficients
D₈₅= 0.316 D₆₀= 0.148 D₅₀= 0.106
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification
USCS= SM AASHTO= --

Remarks
As received moisture content = 21.9%
Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

* (no specification provided)

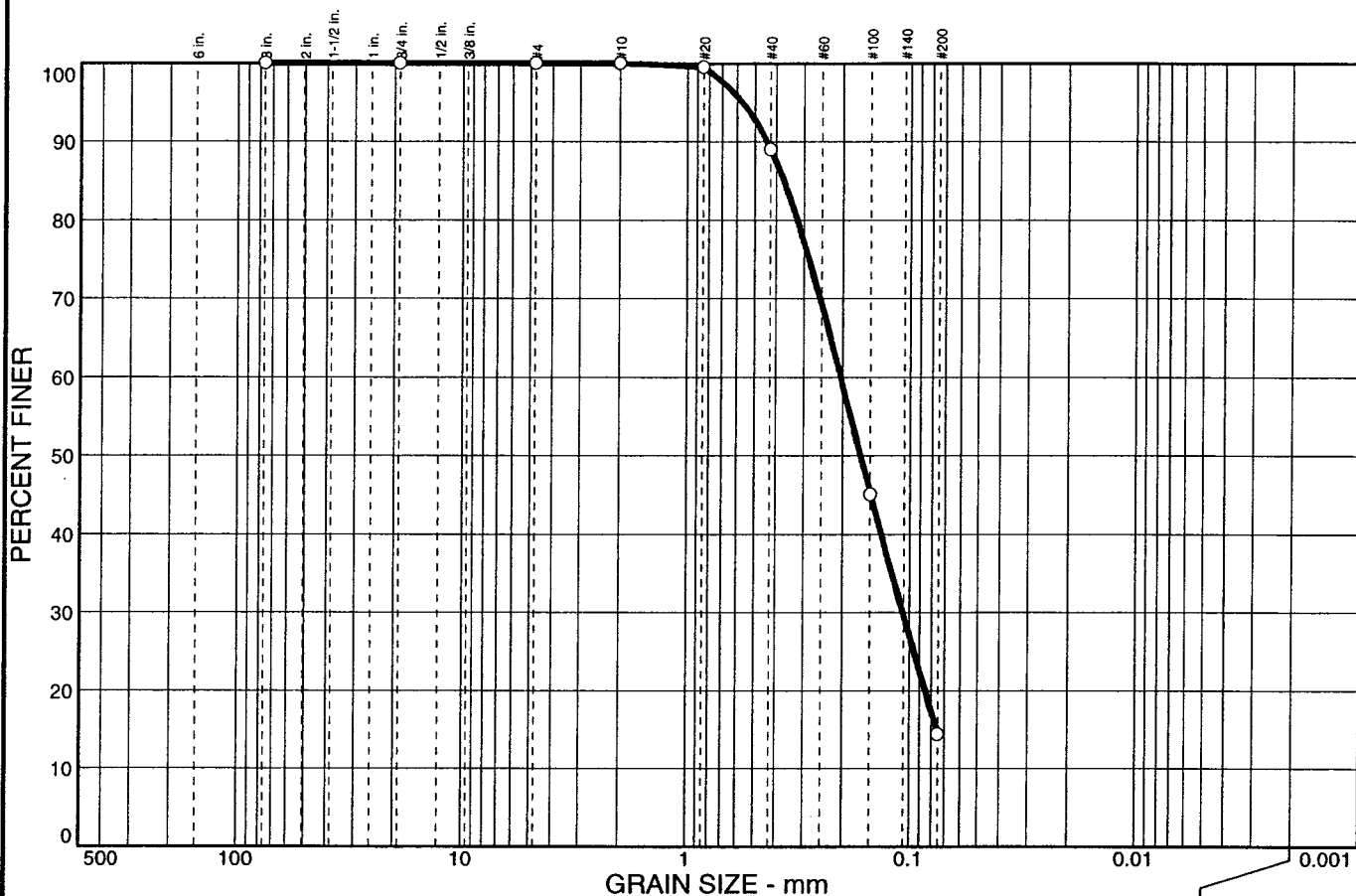
Sample No.: S-1
Location: TP-19

Source of Sample:

Date: 3/9/04
Elev./Depth: 1-4

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No.: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	11.0	74.6	14.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	89.0		
#100	45.1		
#200	14.4		

Soil Description

Clayey sand

Atterberg Limits

PL= 14 LL= 28 PI= 14

Coefficients

D₈₅= 0.372 D₆₀= 0.205 D₅₀= 0.166
D₃₀= 0.107 D₁₅= 0.0761 D₁₀=
C_u= C_c=

Classification

USCS= SC AASHTO= --

Remarks

As received moisture content = 8.5%

* (no specification provided)

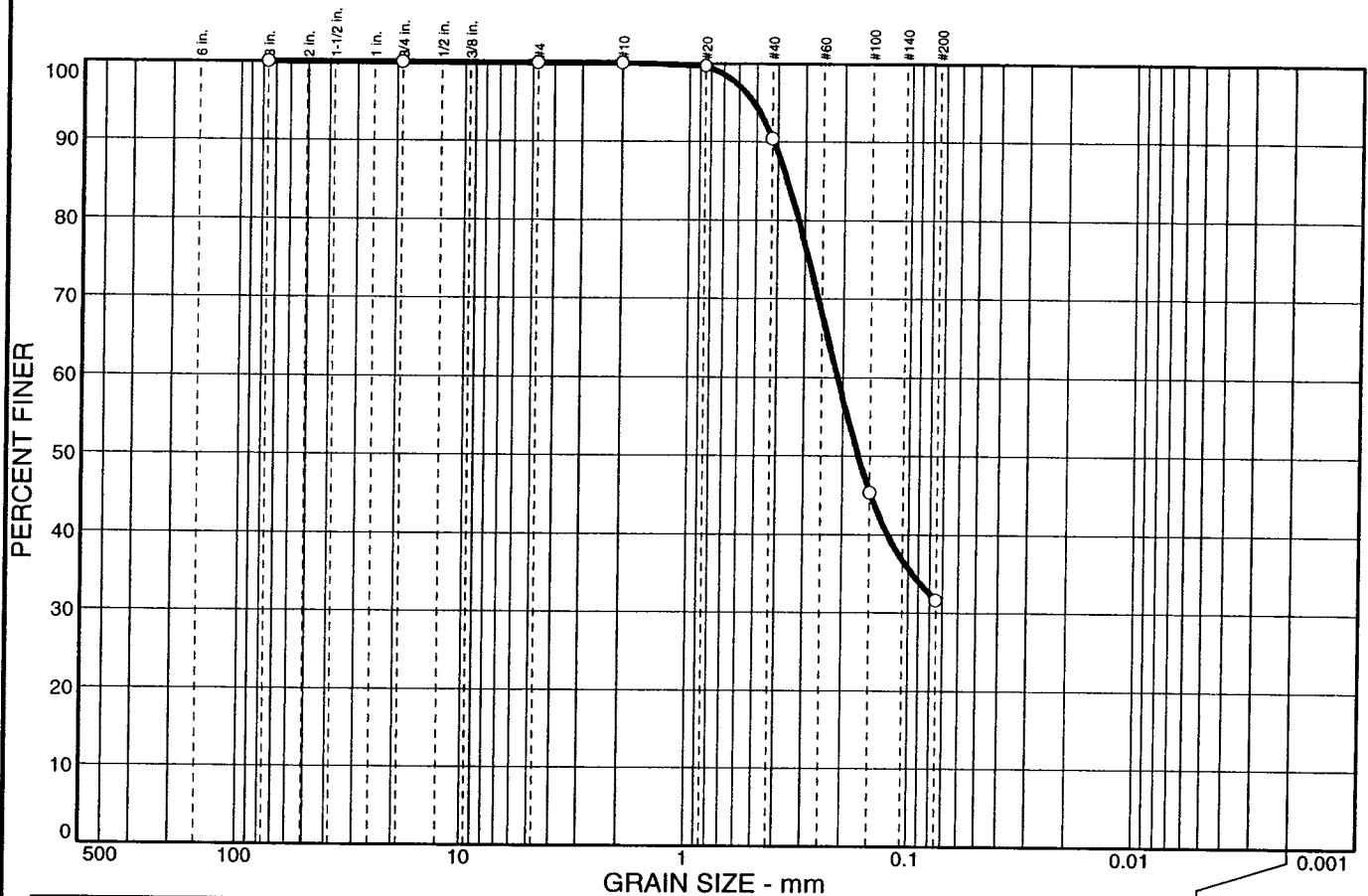
Sample No.: S-2
Location: TP-19

Source of Sample:

Date: 3/9/04
Elev/Depth: 4-7

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
	Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	9.6	58.8	31.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	90.4		
#100	45.3		
#200	31.6		

Soil Description
Silty sand

Atterberg Limits
 PL= -- LL= -- PI= --

Coefficients
 D₈₅= 0.364 D₆₀= 0.212 D₅₀= 0.170
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SM AASHTO= --

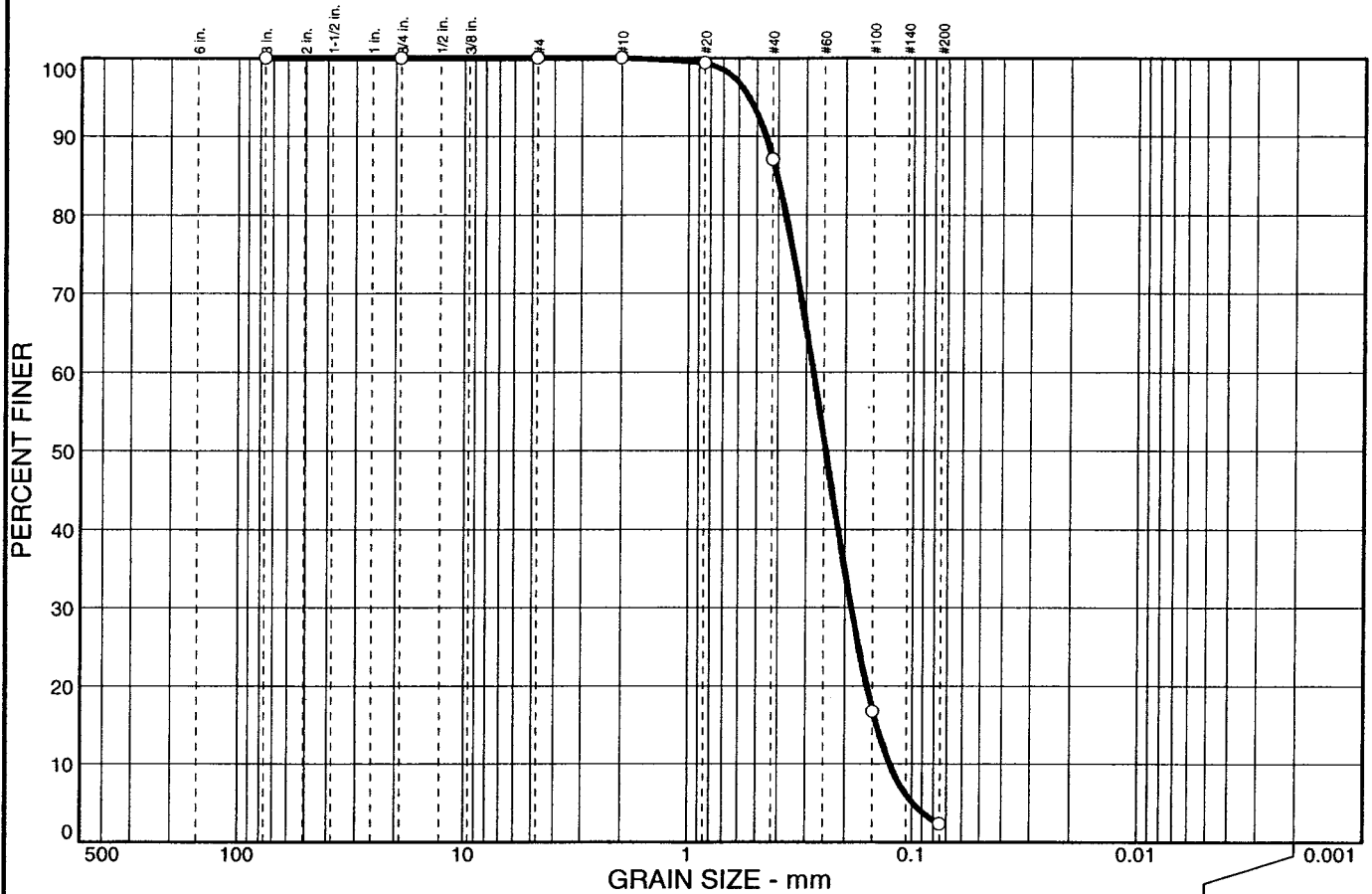
Remarks
 As received moisture content = 15.6%
 Soil classification and description based on Visual-Manual Procedure (ASTM-D2488)

* (no specification provided)

Sample No.: S-1 Source of Sample: Date: 3/9/04
 Location: TP-20 Elev./Depth: .5-3

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	13.0	84.7	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.4		
#40	87.0		
#100	16.7		
#200	2.3		

Soil Description

Poorly graded sand

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D₈₅= 0.408 D₆₀= 0.280 D₅₀= 0.246
 D₃₀= 0.188 D₁₅= 0.145 D₁₀= 0.126
 C_u= 2.22 C_c= 1.00

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 6.9%

* (no specification provided)

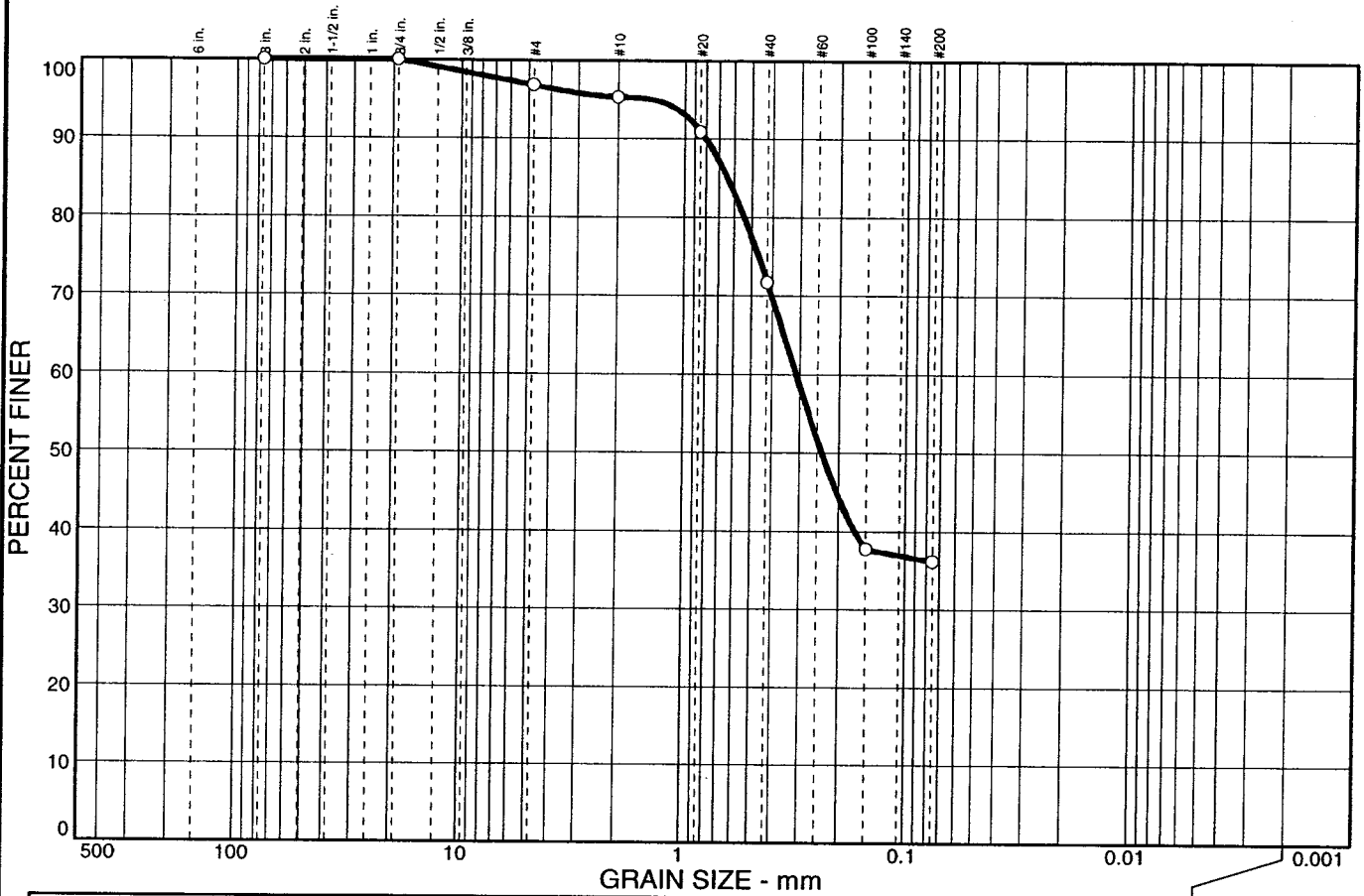
Sample No.: S-2
 Location: TP-20

Source of Sample:

Date: 3/9/04
 Elev./Depth: 3-5

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	3.2	1.5	23.6	35.5	36.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	96.8		
#10	95.3		
#20	90.9		
#40	71.7		
#100	37.7		
#200	36.2		

* (no specification provided)

Soil Description

Clayey sand

Atterberg Limits

PL= 12 LL= 37 PI= 25

Coefficients

D₈₅= 0.645 D₆₀= 0.313 D₅₀= 0.239
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= SC AASHTO= --

Remarks

As received moisture content = 17.2%

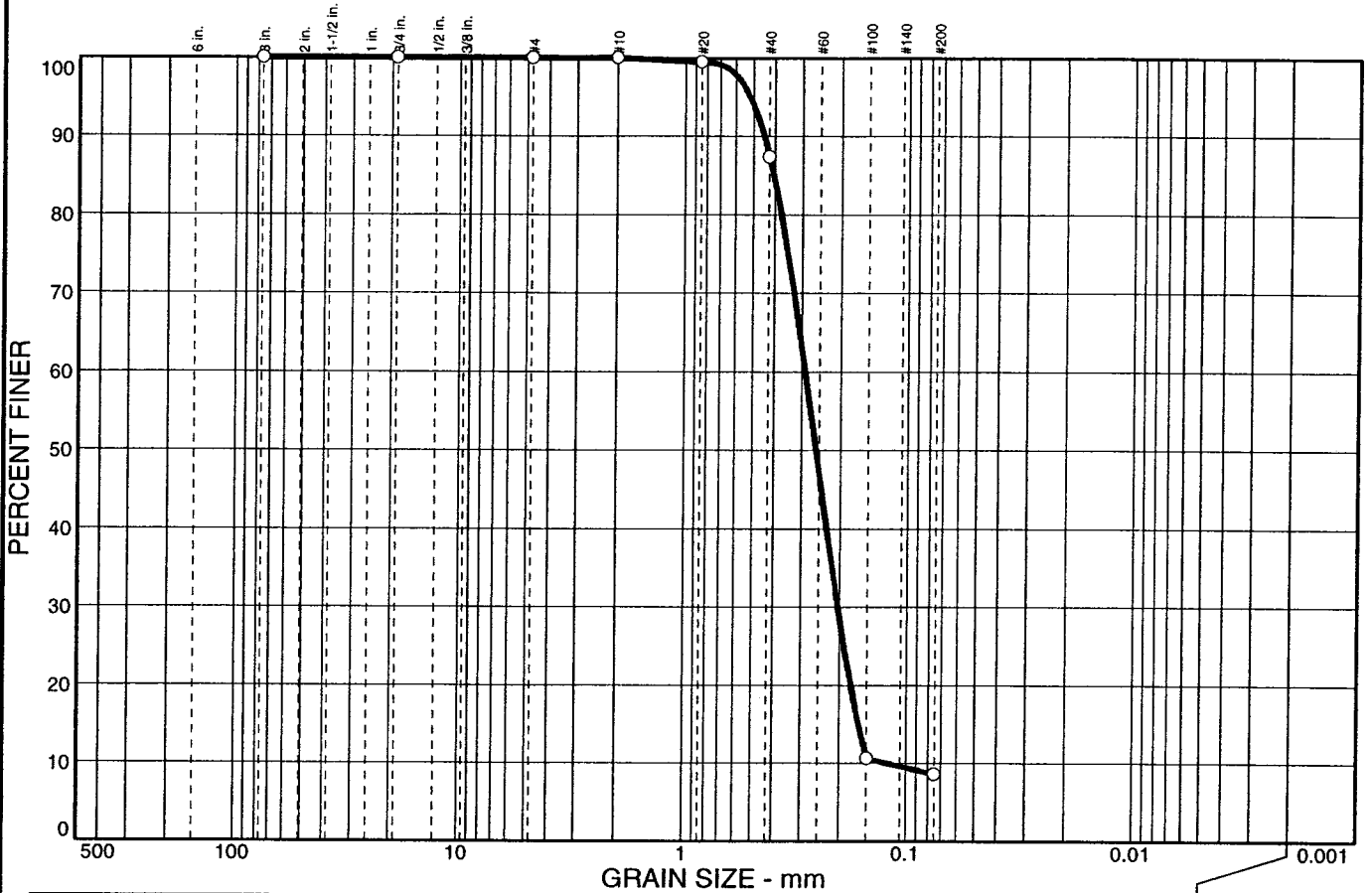
Sample No.: S-3
Location: TP-20

Source of Sample:

Date: 3/9/04
Elev./Depth: 5-12

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911	Plate
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PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	12.6	78.8	8.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	87.4		
#100	10.6		
#200	8.6		

* (no specification provided)

Soil Description

Poorly graded sand with silt

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D ₈₅ = 0.407	D ₆₀ = 0.291	D ₅₀ = 0.259
D ₃₀ = 0.205	D ₁₅ = 0.164	D ₁₀ = 0.122
C _u = 2.39	C _c = 1.18	

Classification

USCS= SP-SM AASHTO= --

Remarks

As received moisture content = 14.8%
Soil classification and description based
on Visual-Manual Procedure (ASTM-D2488)

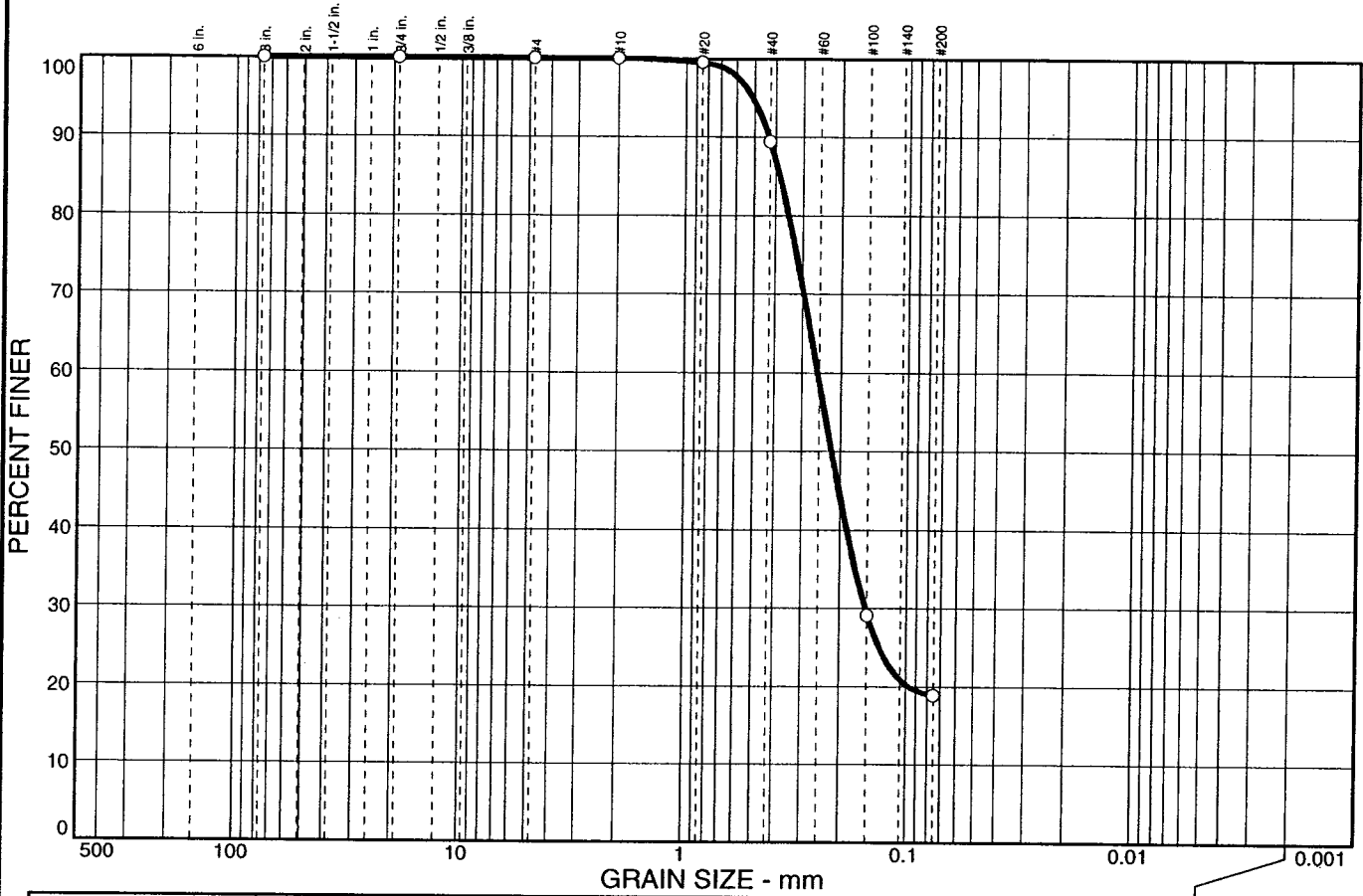
Sample No.: S-1
Location: TP-22

Source of Sample:

Date: 3/9/04
Elev./Depth: .5-3

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911 Plate
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PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	10.6	70.5	18.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	89.4		
#100	29.1		
#200	18.9		

Soil Description

Clayey sand

Atterberg Limits

PL= 14 LL= 25 PI= 11

Coefficients

D₈₅= 0.385 D₆₀= 0.255 D₅₀= 0.220
D₃₀= 0.153 D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= SC AASHTO= --

Remarks

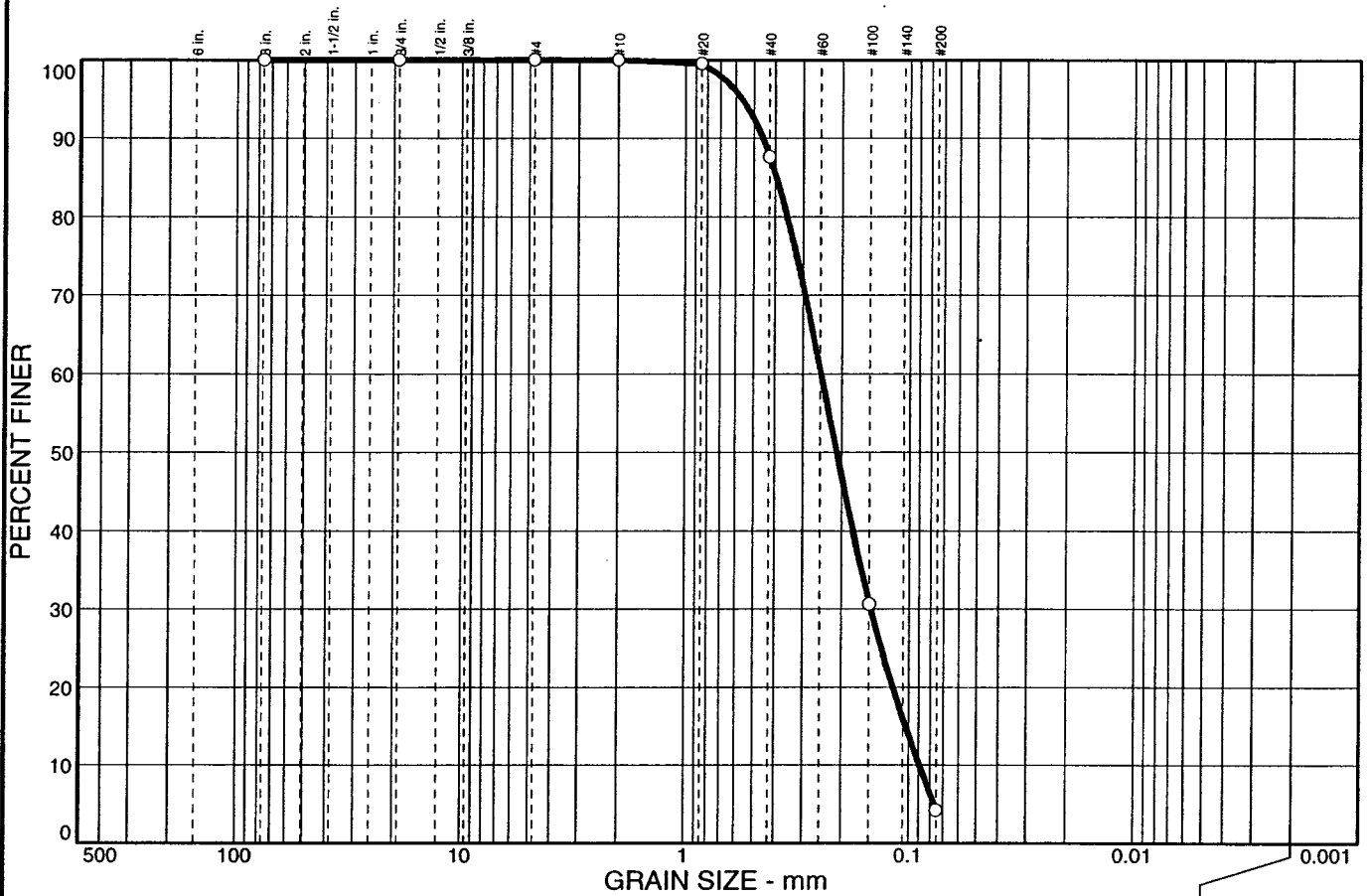
As received moisture content = 21.2%

* (no specification provided)

Sample No.: S-2 Source of Sample: Date: 3/9/04
Location: TP-22 Elev./Depth: 3-6

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	12.4	83.4	4.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	87.6		
#100	30.6		
#200	4.2		

Soil Description

Poorly graded sand

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 0.397 D₆₀= 0.248 D₅₀= 0.211
D₃₀= 0.148 D₁₅= 0.104 D₁₀= 0.0897
C_u= 2.77 C_c= 0.99

Classification

USCS= SP AASHTO= --

Remarks

As received moisture content = 11.1%

* (no specification provided)

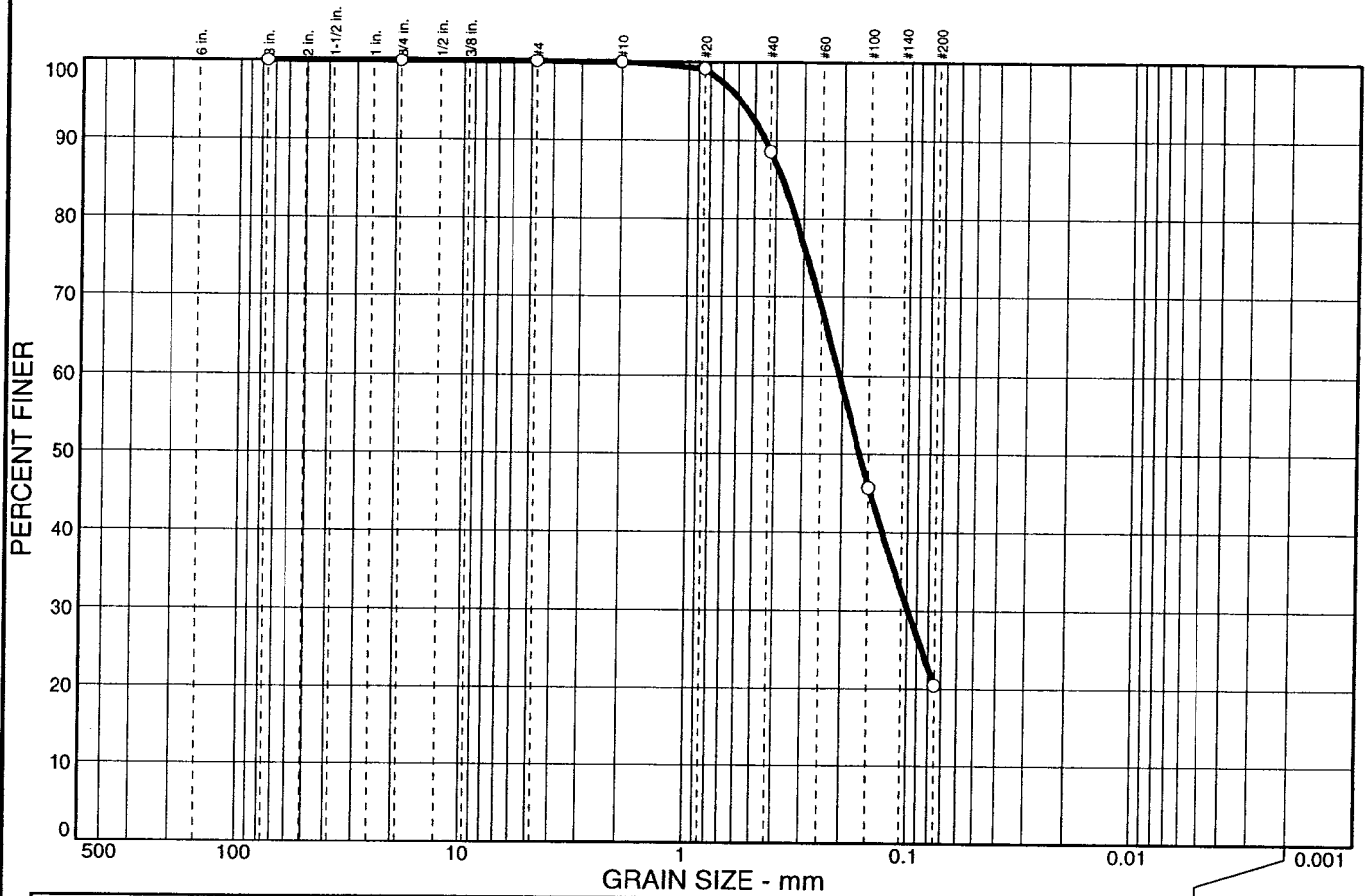
Sample No.: S-1
 Location: TP-23

Source of Sample:

Date: 3/9/04
 Elev./Depth: .5-3

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	11.3	68.2	20.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
3/4 in.	100.0		
#4	100.0		
#10	99.9		
#20	99.1		
#40	88.6		
#100	45.7		
#200	20.4		

Soil Description
Silty sand

Atterberg Limits
 PL= NP LL= NP PI= NP

Coefficients
 D₈₅= 0.377 D₆₀= 0.207 D₅₀= 0.166
 D₃₀= 0.0993 D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= SM AASHTO= --

Remarks
 As received moisture content = 28.7%

* (no specification provided)

Sample No.: S-2
 Location: TP-23

Source of Sample:

Date: 3/9/04
 Elev./Depth: 3-5

CDM Jessberger Geotechnical Engineering Laboratory	Client: Aquacalma L.P. Project: C44-Resevior Project No: 24752-40911
Plate	

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)**

Client: Aquacalma L.P
 Project Name: C-44 Reservoir Project
 Project Location: Indiantown, FL
 Project Number: 24752-40911
 Sample Number: S-1
 Sample Depth(ft): .5-4'
 Sample Date: 3/9/2004
 Sample Location: TP-11
 Lab ID Number: 4929

Tested By: ADT
 Test Date: _____

Procedure: C
 Temperature: 440 °C

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	QR6
Tin Mass (g)	9.4
Wet Mass of Sample & Tin (g)	329.8
Dry Mass of Sample & Tin (g)	312.8
Mass of Water (g)	17.0
Mass of Dry Soil (g)	303.5
Moisture Content (%)	5.6

ASH CONTENT	
Porcelain Dish Identity	KY
Porcelain Dish Mass (g)	19.4
Porcelain Dish + Oven Dried Soil (g)	51.3
Mass of Oven Dried Soil (g)	31.9
Mass of Dish & Burned Soil (g)	51.1
Mass of Burned Soil (g)	31.7
Mass of Organic Material (g)	0.2
Ash Content (%)	99.3

Organic Content, (%)

0.7

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils (ASTM D2974)**

Client: Aquacalma L.P
 Project Name: C-44 Reservoir Project
 Project Location: Indiantown, FL
 Project Number: 24752-40911
 Sample Number: S-1
 Sample Depth(ft): 1.5-4
 Sample Date: 3/9/2004
 Sample Location: TP-16
 Lab ID Number: 4939

Tested By: ADT
 Test Date: _____

Procedure: C
 Temperature: 440 °C

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	JP3
Tin Mass (g)	9.0
Wet Mass of Sample & Tin (g)	67.0
Dry Mass of Sample & Tin (g)	59.1
Mass of Water (g)	7.9
Mass of Dry Soil (g)	50.1
Moisture Content (%)	15.7

ASH CONTENT	
Porcelain Dish Identity	T
Porcelain Dish Mass (g)	19.1
Porcelain Dish + Oven Dried Soil (g)	50.8
Mass of Oven Dried Soil (g)	31.7
Mass of Dish & Burned Soil (g)	50.4
Mass of Burned Soil (g)	31.3
Mass of Organic Material (g)	0.4
Ash Content (%)	98.7

Organic Content, (%)

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils (ASTM D2974)**

Client: Aquacalma L.P
Project Name: C-44 Reservoir Project
Project Location: Indiantown, FL
Project Number: 24752-40911
Sample Number: S-1
Sample Depth(ft): 1-4'
Sample Date: 3/9/2004
Sample Location: TP-19
Lab ID Number: 4945

Tested By: ADT
Test Date: _____
Procedure: C
Temperature: 440 °C

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	116
Tin Mass (g)	9.1
Wet Mass of Sample & Tin (g)	271.3
Dry Mass of Sample & Tin (g)	224.2
Mass of Water (g)	47.1
Mass of Dry Soil (g)	215.1
Moisture Content (%)	21.9

ASH CONTENT	
Porcelain Dish Identity	PP
Porcelain Dish Mass (g)	17.7
Porcelain Dish + Oven Dried Soil (g)	47.4
Mass of Oven Dried Soil (g)	29.8
Mass of Dish & Burned Soil (g)	46.8
Mass of Burned Soil (g)	29.2
Mass of Organic Material (g)	0.6
Ash Content (%)	97.9

Organic Content, (%)

2.1

CDM**Geotechnical Engineering Laboratory****Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils (ASTM D2974)**

Client: Aquacalma L.P.
Project Name: C-44 Reservoir Project
Project Location: Indiantown, FL
Project Number: 24752-40911
Sample Number: S-1
Sample Depth(ft): .5-3'
Sample Date: 3/9/2004
Sample Location: TP-20
Lab ID Number: 4947

Tested By: ADT
Test Date: _____
Procedure: C
Temperature: 440 °C

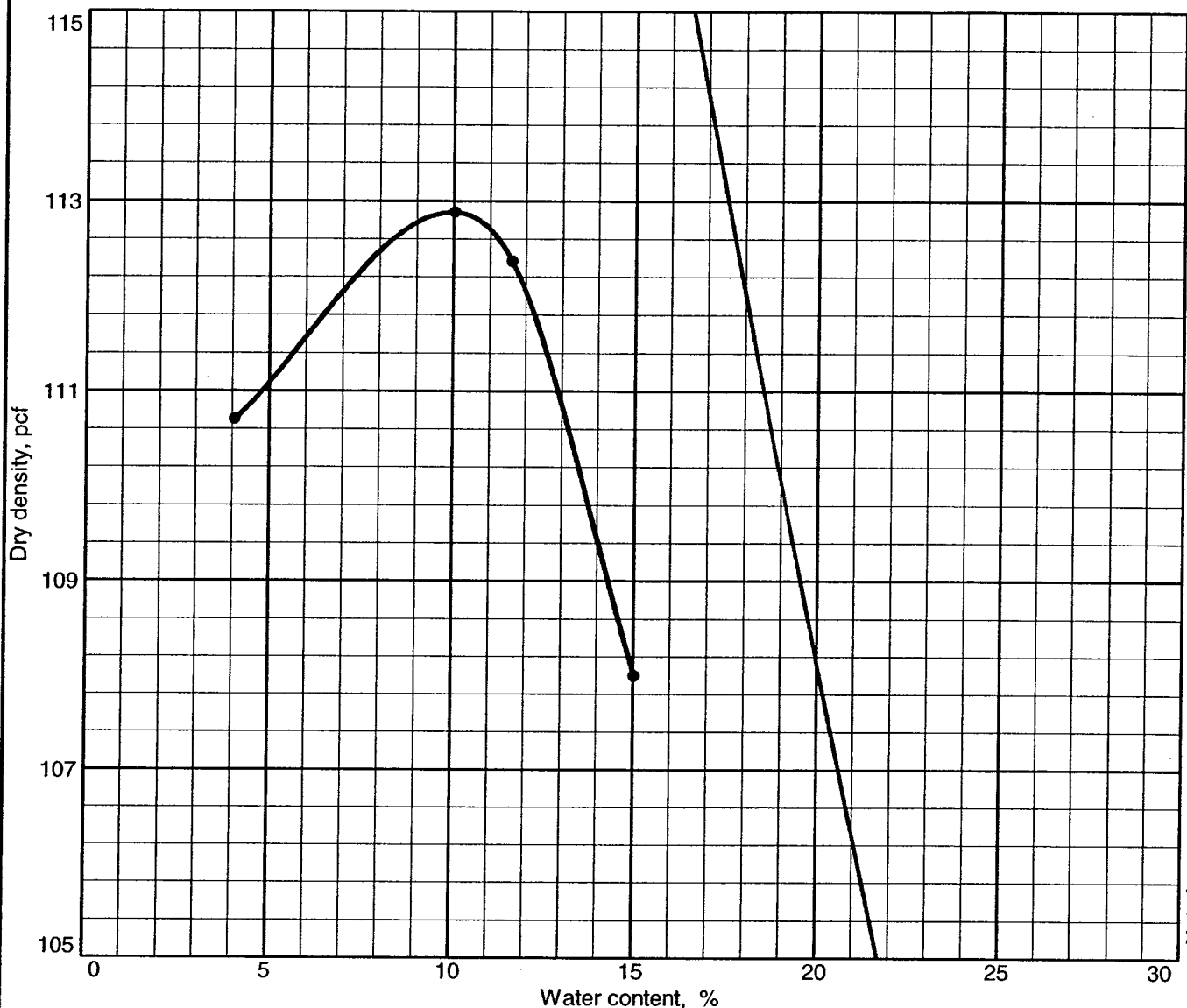
AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	QR8
Tin Mass (g)	9.4
Wet Mass of Sample & Tin (g)	290.3
Dry Mass of Sample & Tin (g)	252.5
Mass of Water (g)	37.9
Mass of Dry Soil (g)	243.1
Moisture Content (%)	15.6

ASH CONTENT	
Porcelain Dish Identity	K
Porcelain Dish Mass (g)	18.6
Porcelain Dish + Oven Dried Soil (g)	41.1
Mass of Oven Dried Soil (g)	22.5
Mass of Dish & Burned Soil (g)	41.1
Mass of Burned Soil (g)	22.5
Mass of Organic Material (g)	0.0
Ash Content (%)	99.8

Organic Content, (%)

0.2

COMPACTION TEST REPORT



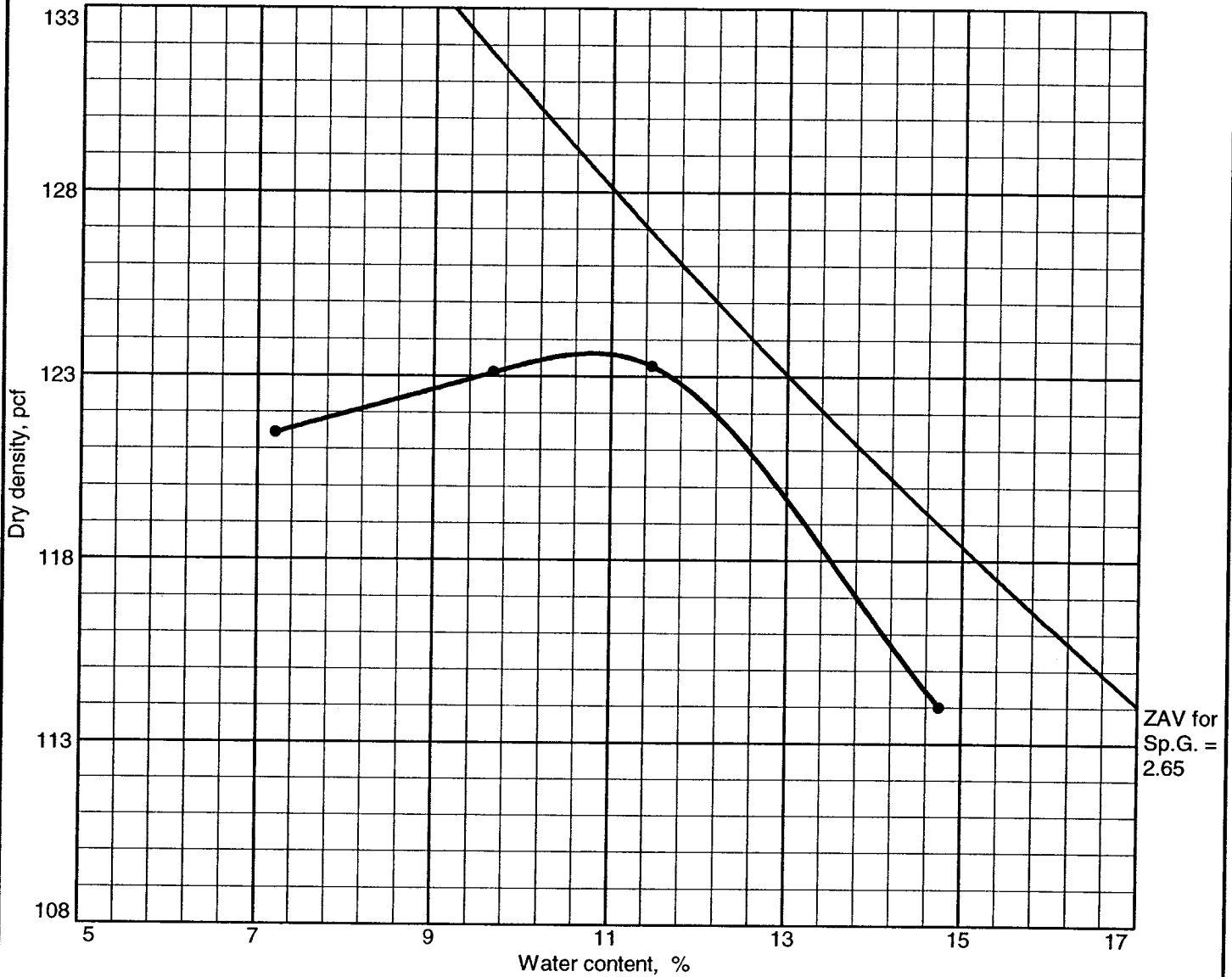
ZAV for
Sp.G. =
2.65

Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
.5-4	SM	--		2.65	--	--	0.0	22.5

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 112.9 pcf Optimum moisture = 10.0 %	Silty sand
Project No. 24752-40911 Client: Aquacalma L.P. Project: C44-Resevior Location: TP-11	Remarks: TP-11 S-1 0.5'-4'
COMPACTION TEST REPORT CDM Jessberger Geotechnical Engineering Laboratory	Plate

COMPACTION TEST REPORT

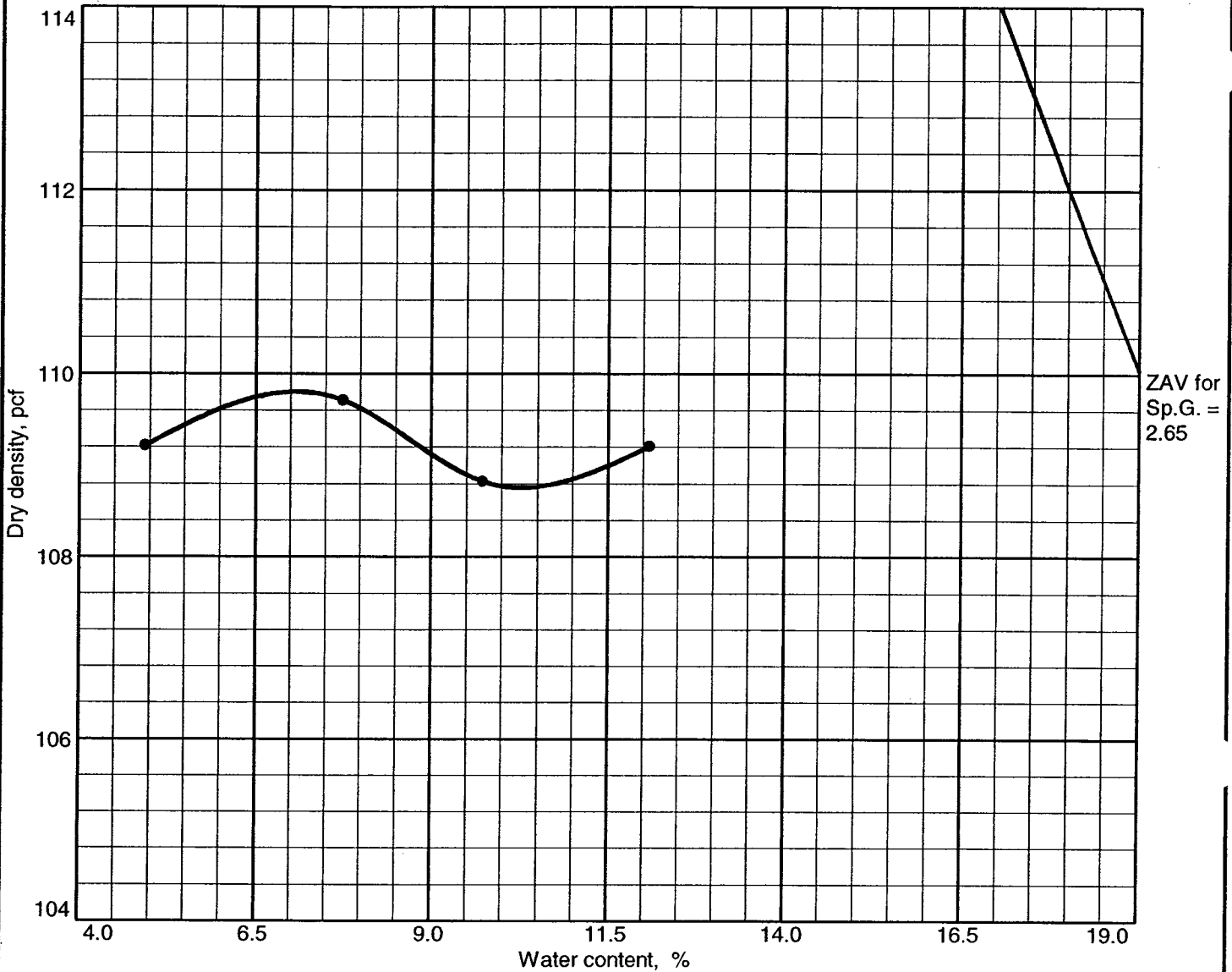


Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% >	% < No.200
	USCS	AASHTO						
4-5.5	SM	--		2.65	--	--	0.3	18.1

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 123.6 pcf Optimum moisture = 10.8 %	Silty sand
Project No. 24752-40911 Client: Aquacalma L.P. Project: C44-Resevior ● Location: TP-11	Remarks: TP-11 S-2 4'-5.5'
COMPACTION TEST REPORT CDM Jessberger Geotechnical Engineering Laboratory	Plate

COMPACTION TEST REPORT

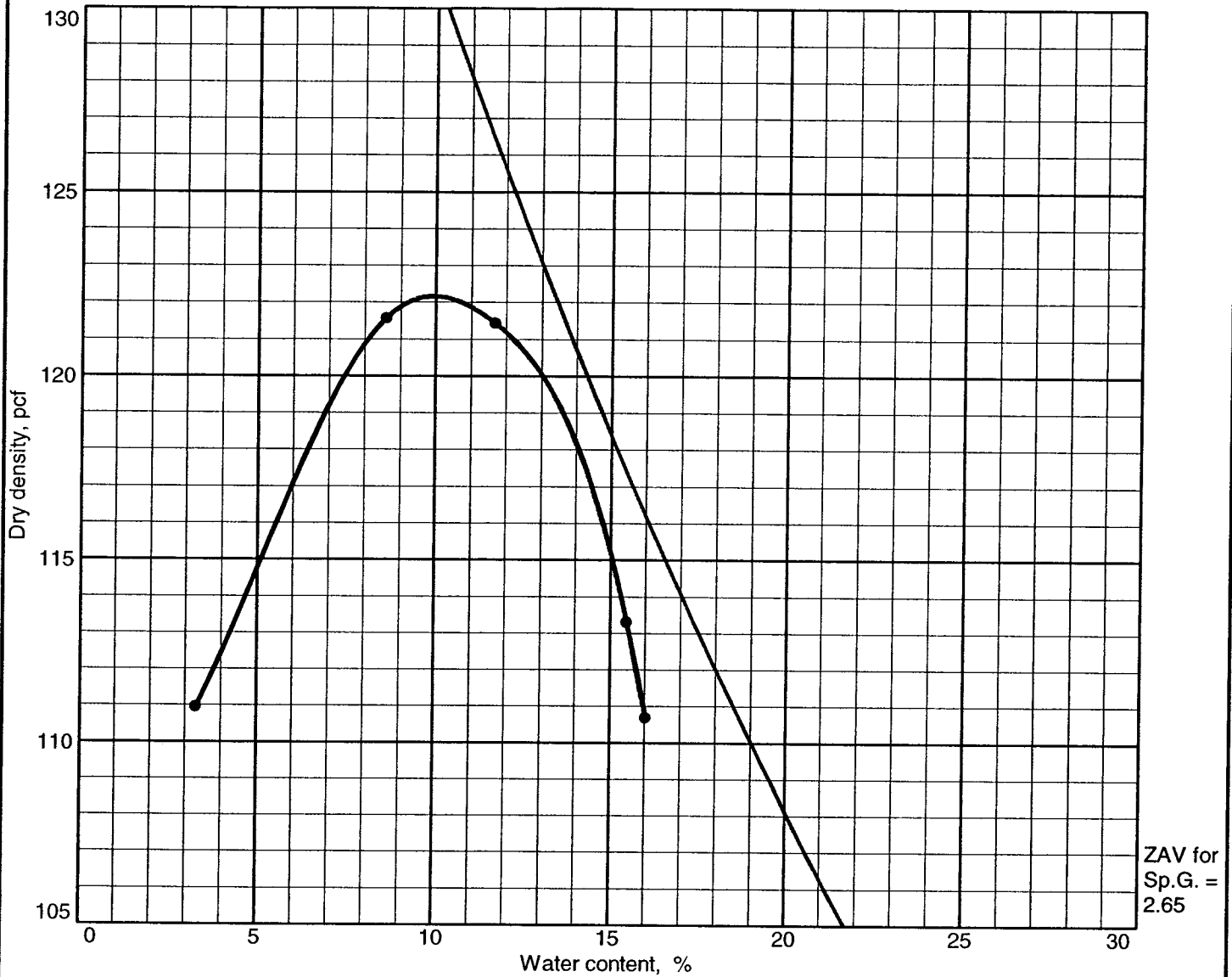


Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
1.4-4	SM	--		2.65	--	--	0.0	29.4

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 109.8 pcf Optimum moisture = 7.1 %	Silty sand
Project No. 24752-40911 Client: Aquacalma L.P. Project: C44-Resevior ● Location: TP-16	Remarks: TP-16 S-1 Depth: 1.5'-4'
COMPACTON TEST REPORT CDM Jessberger Geotechnical Engineering Laboratory	

COMPACTION TEST REPORT

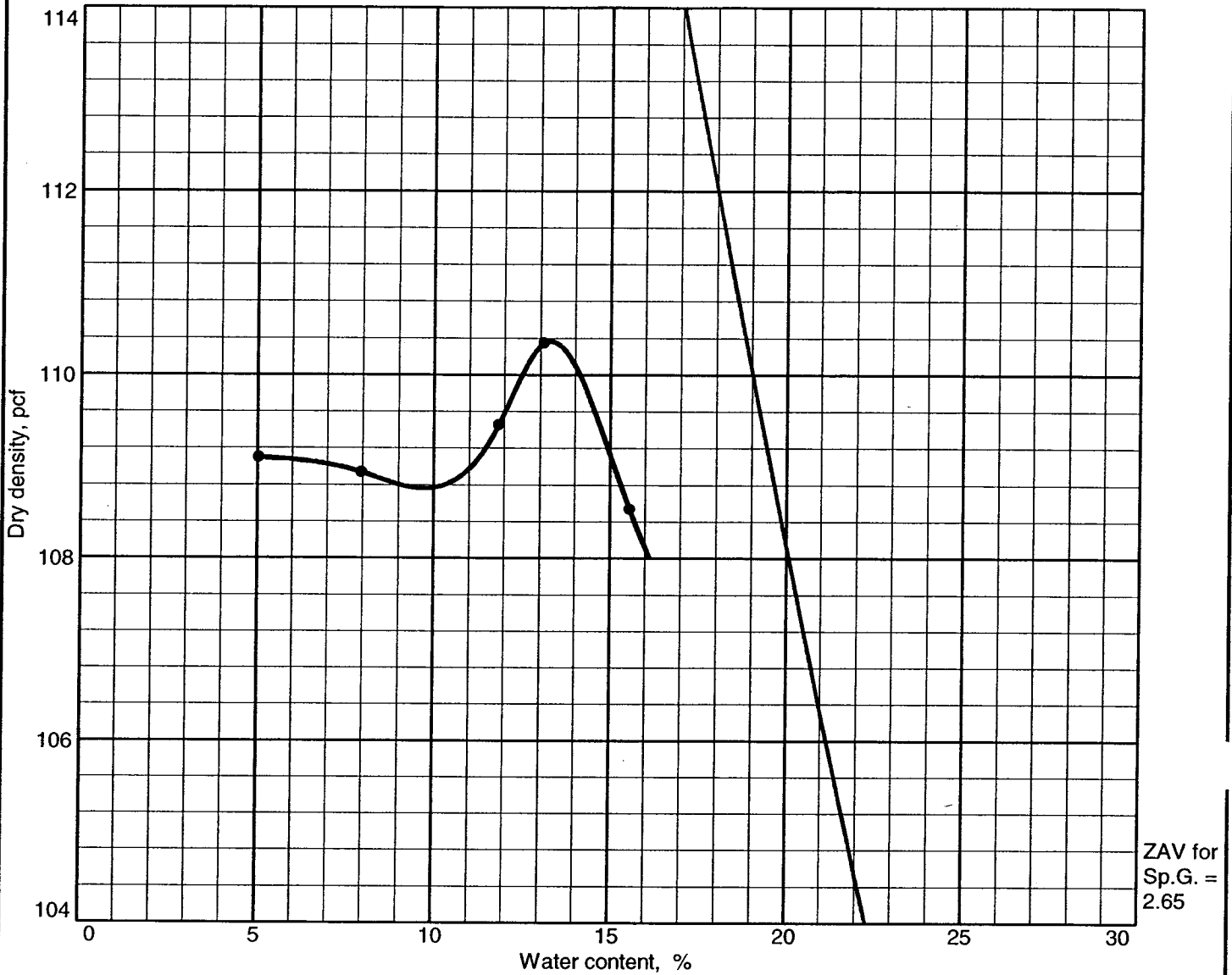


Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
4-9	SM	--		2.65	--	--	0.0	26.3

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 122.2 pcf Optimum moisture = 9.9 %	Silty sand
Project No. 24752-40911 Client: Aquacalma L.P. Project: C44-Resevior ● Location: TP-16	Remarks: TP-16 S-2 Depth: 4'-9'
COMPACTION TEST REPORT CDM Jessberger Geotechnical Engineering Laboratory	Plate

COMPACTION TEST REPORT

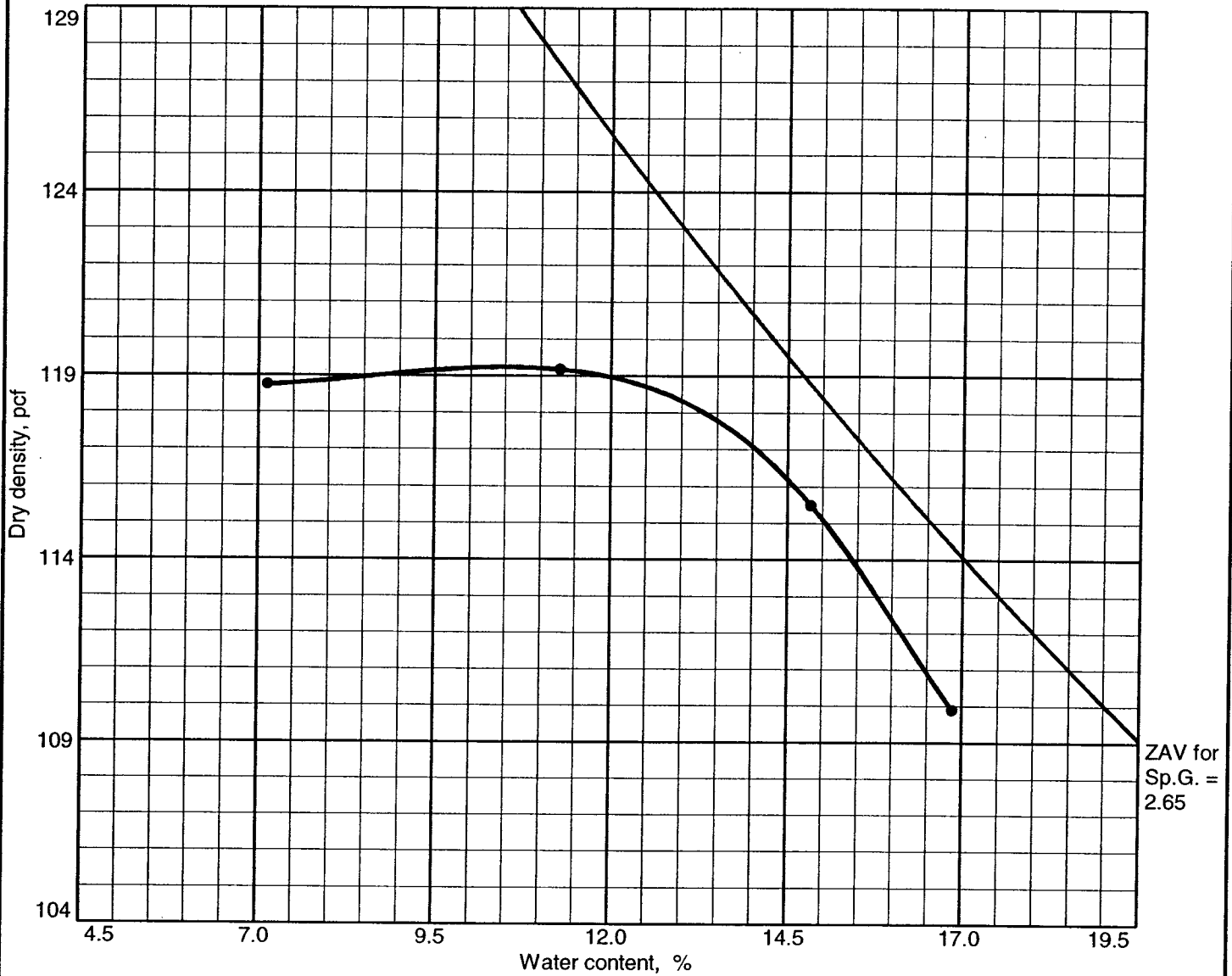


Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
1-4	SM	--		2.65	--	--		40.4

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 110.4 pcf Optimum moisture = 13.3 %	Silty sand
Project No. 24752-40911 Client: Aquacalma L.P. Project: C44-Resevior ● Location: TP-19	Remarks: TP-19 S-1 Depth: 1'-4'
COMPACTION TEST REPORT CDM Jessberger Geotechnical Engineering Laboratory	Plate

COMPACTION TEST REPORT

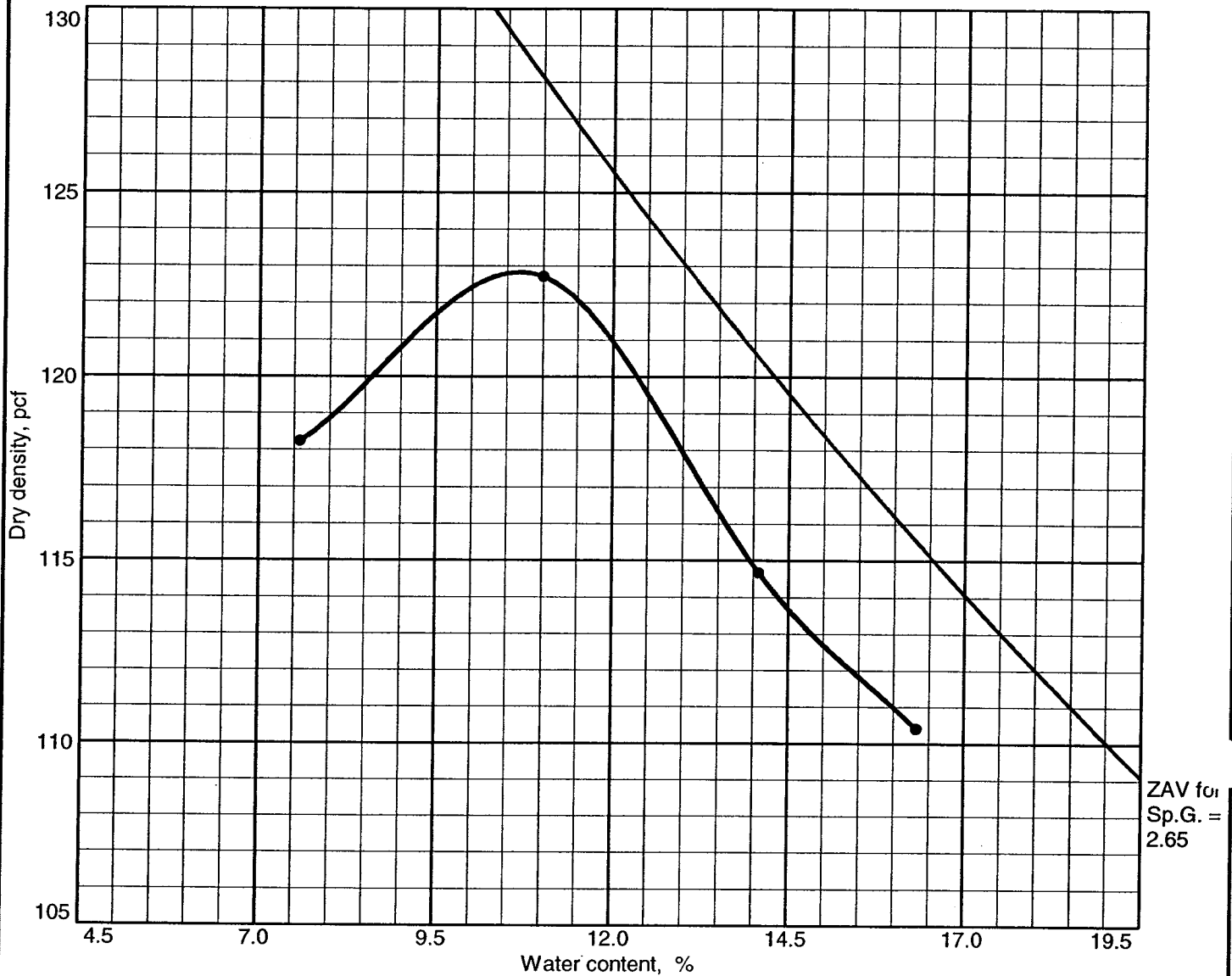


Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
4-7	SM	--		2.65	--	--	0.0	14.4

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 119.2 pcf Optimum moisture = 10.5 %	Silty sand
Project No. 24752-40911 Client: Aquacalma L.P. Project: C44-Resevior Location: TP-19	Remarks: TP-19 S-2 Depth: 4'-7'
COMPACTION TEST REPORT CDM Jessberger Geotechnical Engineering Laboratory	Plate

COMPACTION TEST REPORT



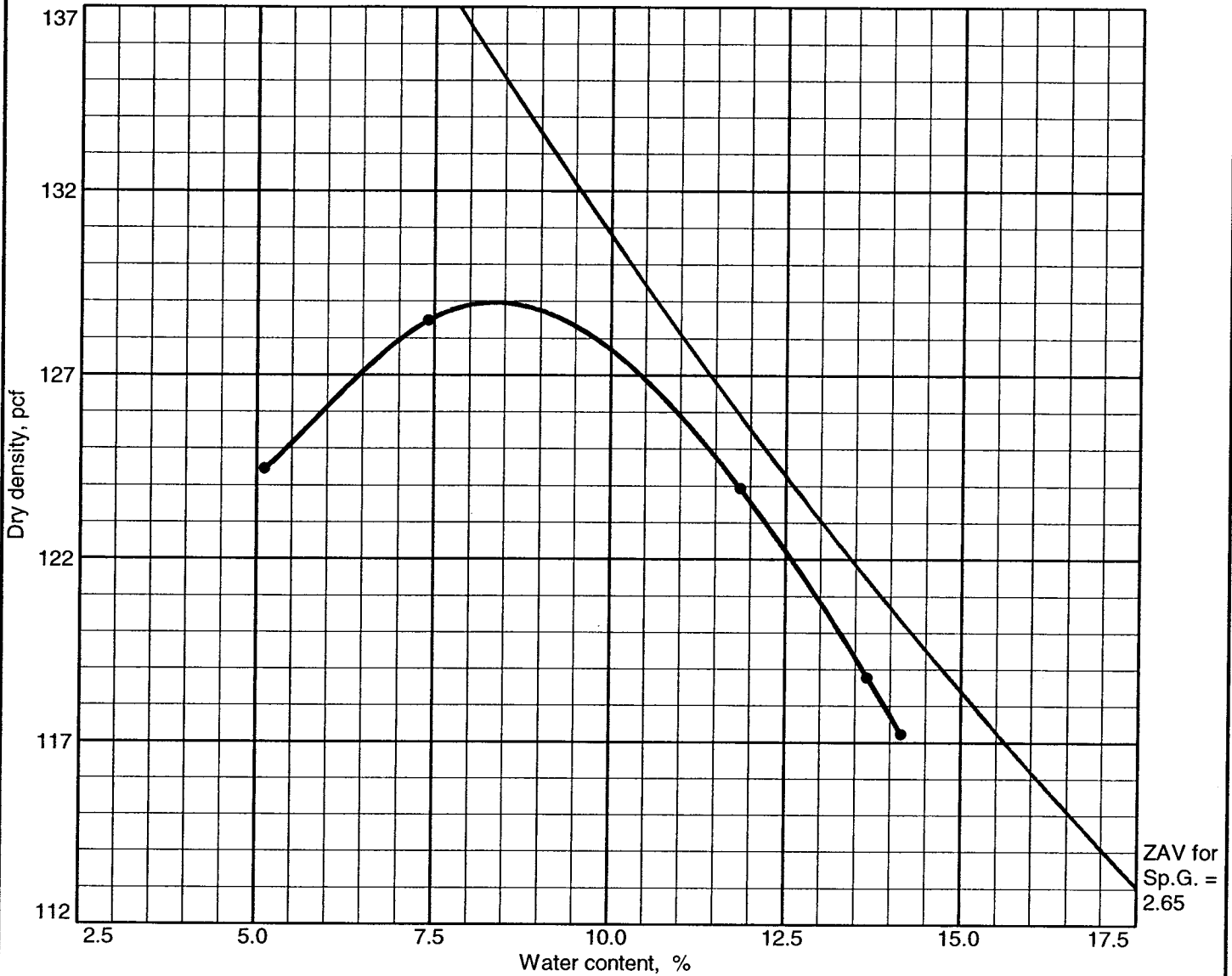
Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
5-3	SM	--		2.65	--	--	0.0	31.6

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 122.8 pcf Optimum moisture = 10.7 %	Silty sand

Project No. 24752-40911 Client: Aquacalma L.P. Project: C44-Resevior Location: TP-20	Remarks: TP-20 S-1 0.5'-3'
--	--

COMPACTION TEST REPORT



Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
5-12	SM	--		2.65	--	--	3.2	36.2

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 129.0 pcf Optimum moisture = 8.4 %	Silty sand
Project No. 24752-40911 Client: Aquacalma L.P. Project: C44-Resevior Location: TP-20	Remarks: TP-20 S-3 5'-12'
COMPACTION TEST REPORT CDM Jessberger Geotechnical Engineering Laboratory	

Plate

**CDM Jessberger
Geotechnical Engineering Laboratory**

Hydraulic Conductivity Using Flexible Wall Permeameter (ASTM D5084)

Client: Aquacalma L.P
 Project Name: C-44 Reservoir Project
 Project Location: Indiantown, FL
 Project Number: 24752-40911
 Sample Number: S-2
 Sample Location: TP-11
 Depth (ft): 38086
 Lab I.D. Number: 4930
 Sample Description: 0
 Test Type: Constant Head (Method A)

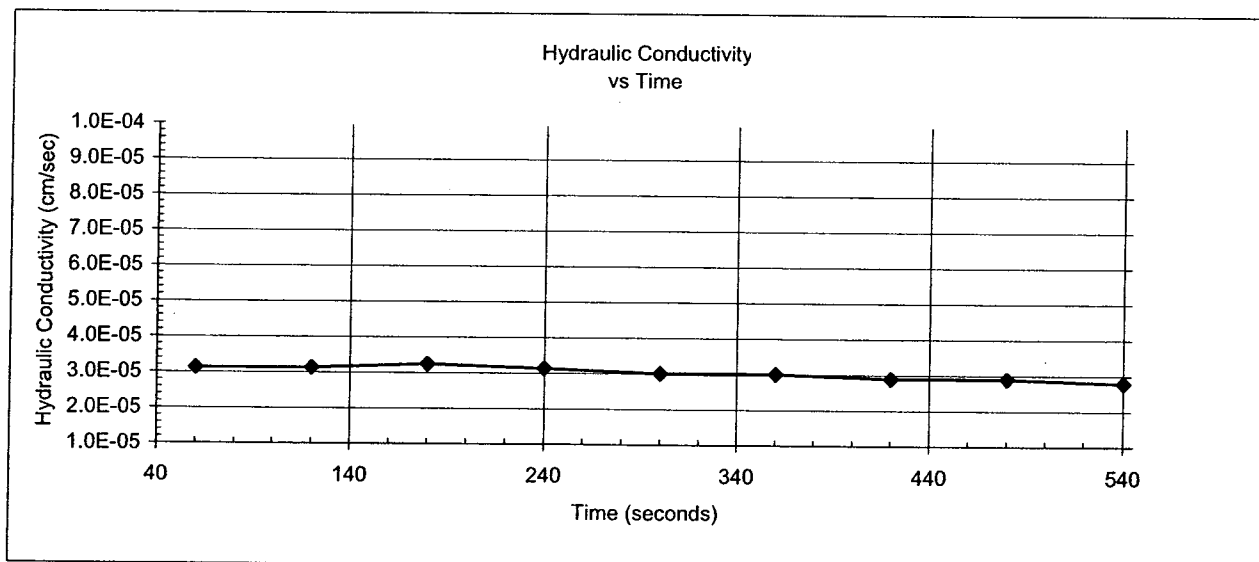
Tested by: ADT
 Checked by: 0
 Start Test Date: 4/9/2004
 Permeant Fluid: De-aired water
 Sample Preparation Procedures: 0
0

Sample Characteristics	Initial	Final
Avg. length of specimen (in)	4.93	4.93
Avg. dia. of specimen (in)	2.43	2.43
Area (sq in)	4.64	4.64
Volume (cubic in)	22.83	22.83
Moist mass (g)	759.5	759.5
Moist unit weight (pcf)	126.7	126.7
Moisture content (%)	10.9	10.9
Dry density (pcf)	114.3	114.3
Specific gravity (assumed)	2.65	2.65
Void ratio	0.45	0.45

Test Specifications	
B-Value (%)	100.0
Consolidation stress (psi)	10.0
Gradient (in/in)	25.0
Cell pressure (psi)	59.1
Head pressure (psi)	51.4
Tail pressure (psi)	46.9
Max effective stress (psi)	12.2
Min effective stress (psi)	7.8

Comments: Sample was divided vertically in quarters.
No observed anomalies (ie rocks, voids, etc.).

Hydraulic Conductivity at 20 °C = **2.7E-05** cm/sec



**CDM Jessberger
Geotechnical Engineering Laboratory**

Hydraulic Conductivity Using Flexible Wall Permeameter (ASTM D5084)

Client: Aquacalma L.P
 Project Name: C-44 Reservoir Project
 Project Location: Indiantown, FL
 Project Number: 24752-40911
 Sample Number: S-2
 Sample Location: TP-16
 Depth (ft): 38086
 Lab I.D. Number: 4940
 Sample Description: 0
 Test Type: Constant Head (Method A)

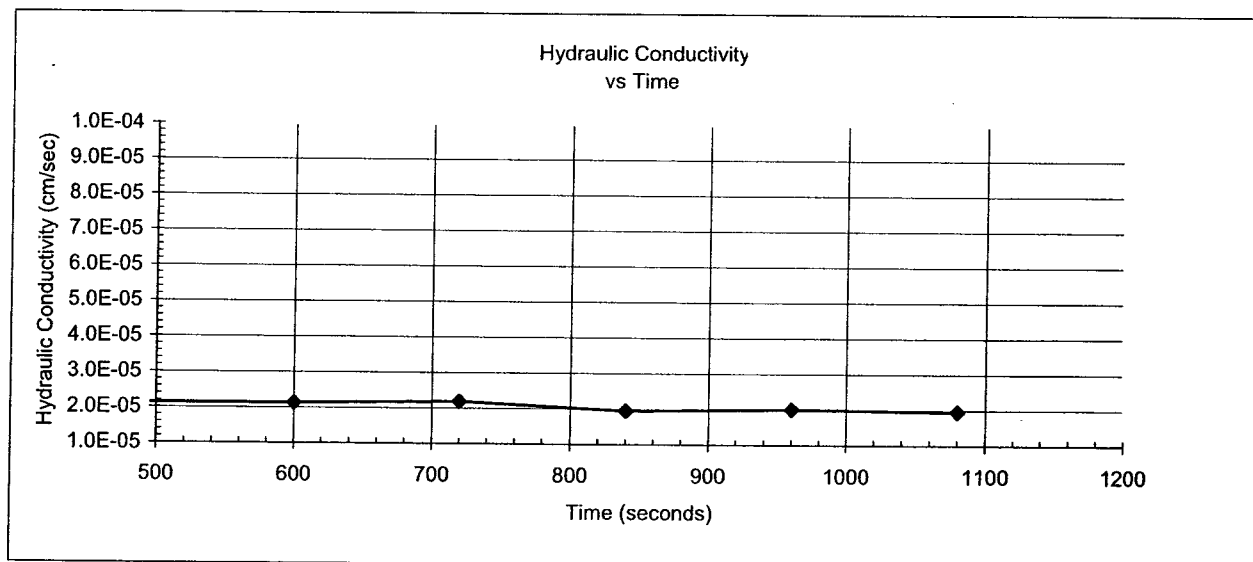
Tested by: ADT
 Checked by: 0
 Start Test Date: 4/9/2004
 Permeant Fluid: De-aired water
 Sample Preparation Procedures: 0
0

Sample Characteristics	Initial	Final
Avg. length of specimen (in)	4.90	4.90
Avg. dia. of specimen (in)	2.43	2.43
Area (sq in)	4.64	4.64
Volume (cubic in)	22.71	22.71
Moist mass (g)	749.2	749.2
Moist unit weight (pcf)	125.7	125.7
Moisture content (%)	10.5	10.5
Dry density (pcf)	113.7	113.7
Specific gravity (assumed)	2.65	2.65
Void ratio	0.45	0.45

Test Specifications	
B-Value (%)	88.0
Consolidation stress (psi)	10.0
Gradient (in/in)	25.0
Cell pressure (psi)	42.4
Head pressure (psi)	34.6
Tail pressure (psi)	30.2
Max effective stress (psi)	12.2
Min effective stress (psi)	7.8

Comments: Sample was divided vertically in quarters.
No observed anomalies (ie rocks, voids, etc.).

Hydraulic Conductivity at 20 °C = 1.9E-05 cm/sec



**CDM Jessberger
Geotechnical Engineering Laboratory**

Hydraulic Conductivity Using Flexible Wall Permeameter (ASTM D5084)

Client: Aquacalma L.P
 Project Name: C-44 Reservoir Project
 Project Location: Indiantown, FL
 Project Number: 24752-40911
 Sample Number: S-2
 Sample Location: TP-19
 Depth (ft): 38086
 Lab I.D. Number: 4946
 Sample Description: 0
 Test Type: Constant Head (Method A)

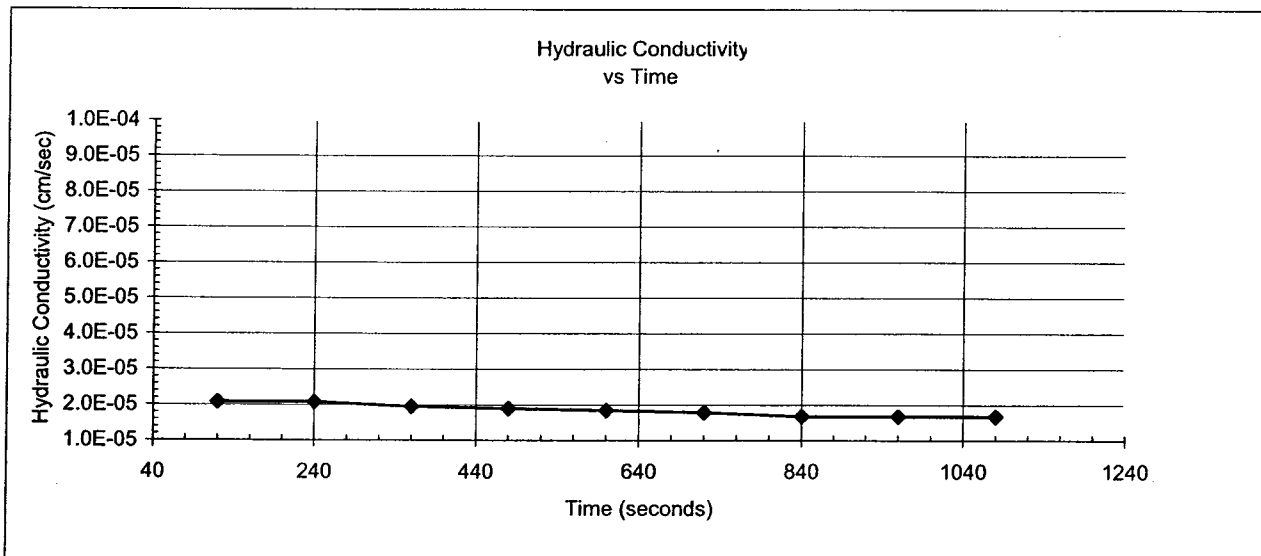
Tested by: ADT
 Checked by: 0
 Start Test Date: 4/9/2004
 Permeant Fluid: De-aired water
 Sample Preparation Procedures: 0
0

Sample Characteristics	Initial	Final
Avg. length of specimen (in)	4.91	4.91
Avg. dia. of specimen (in)	2.43	2.43
Area (sq in)	4.63	4.63
Volume (cubic in)	22.71	22.71
Moist mass (g)	735.1	735.1
Moist unit weight (pcf)	123.3	123.3
Moisture content (%)	10.6	10.6
Dry density (pcf)	111.5	111.5
Specific gravity (assumed)	2.65	2.65
Void ratio	0.48	0.48

Test Specifications	
B-Value (%)	100.0
Consolidation stress (psi)	10.0
Gradient (in/in)	25.0
Cell pressure (psi)	56.4
Head pressure (psi)	48.6
Tail pressure (psi)	44.2
Max effective stress (psi)	12.2
Min effective stress (psi)	7.8

Comments: Sample was divided vertically in quarters.
No observed anomalies (ie rocks, voids, etc.).

Hydraulic Conductivity at 20 °C = **1.6E-05** cm/sec



**CDM Jessberger
Geotechnical Engineering Laboratory**

Hydraulic Conductivity Using Flexible Wall Permeameter (ASTM D5084)

Client: Aquacalma L.P
 Project Name: C-44 Reservoir Project
 Project Location: Indiantown, FL
 Project Number: 24752-40911
 Sample Number: S-1
 Sample Location: TP-20
 Depth (ft): 38086
 Lab I.D. Number: 4947
 Sample Description: 0
 Test Type: Constant Head (Method A)

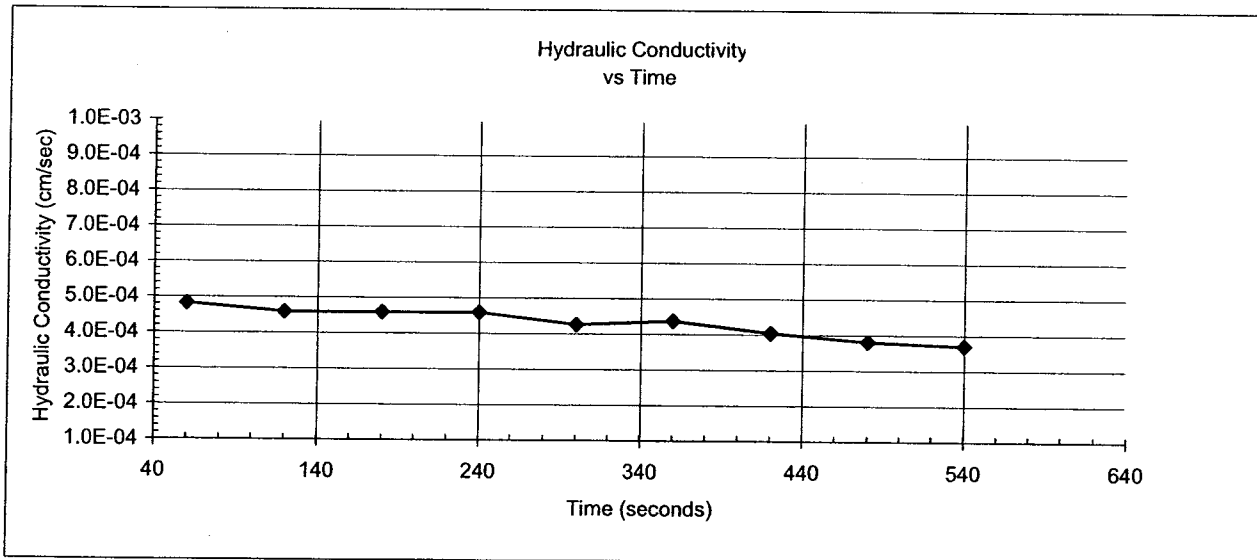
Tested by: ADT
 Checked by: 0
 Start Test Date: 4/9/2004
 Permeant Fluid: De-aired water
 Sample Preparation Procedures: 0
0

Sample Characteristics	Initial	Final
Avg. length of specimen (in)	4.86	4.86
Avg. dia. of specimen (in)	2.43	2.43
Area (sq in)	4.63	4.63
Volume (cubic in)	22.50	22.50
Moist mass (g)	731.1	731.1
Moist unit weight (pcf)	123.8	123.8
Moisture content (%)	9.9	9.9
Dry density (pcf)	112.7	112.7
Specific gravity (assumed)	2.65	2.65
Void ratio	0.47	0.47

Test Specifications	
B-Value (%)	51.0
Consolidation stress (psi)	10.0
Gradient (in/in)	10.0
Cell pressure (psi)	70.6
Head pressure (psi)	61.5
Tail pressure (psi)	59.7
Max effective stress (psi)	10.9
Min effective stress (psi)	9.1

Comments: Sample was divided vertically in quarters.
No observed anomalies (ie rocks, voids, etc.).

Hydraulic Conductivity at 20 °C = **3.7E-04** cm/sec



**CDM Jessberger
Geotechnical Engineering Laboratory**

Hydraulic Conductivity Using Flexible Wall Permeameter (ASTM D5084)

Client: Aquacalma L.P
 Project Name: C-44 Reservoir Project
 Project Location: Indiantown, FL
 Project Number: 24752-40911
 Sample Number: S-3
 Sample Location: TP-20
 Depth (ft): 5-12
 Lab I.D. Number: 4949
 Sample Description: 0
 Test Type: Constant Head (Method A)

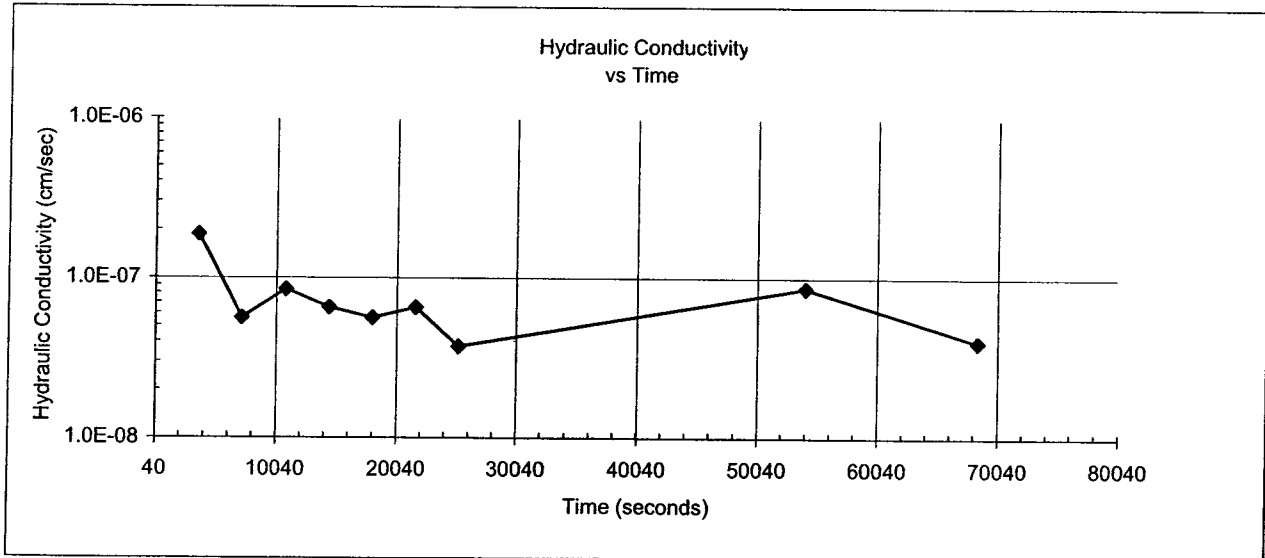
Tested by: ADT
 Checked by: 0
 Start Test Date: 4/9/2004
 Permeant Fluid: De-aired water
 Sample Preparation Procedures: 0
0

Sample Characteristics	Initial	Final
Avg. length of specimen (in)	4.75	4.75
Avg. dia. of specimen (in)	2.43	2.43
Area (sq in)	4.63	4.63
Volume (cubic in)	21.97	21.97
Moist mass (g)	776.9	776.9
Moist unit weight (pcf)	134.7	134.7
Moisture content (%)	8.5	8.5
Dry density (pcf)	124.1	124.1
Specific gravity (assumed)	2.65	2.65
Void ratio	0.33	0.33

Test Specifications	
B-Value (%)	100.0
Consolidation stress (psi)	10.0
Gradient (in/in)	25.0
Cell pressure (psi)	58.8
Head pressure (psi)	51.0
Tail pressure (psi)	46.7
Max effective stress (psi)	12.1
Min effective stress (psi)	7.9

Comments: Sample was divided vertically in quarters.
No observed anomalies (ie rocks, voids, etc.).

Hydraulic Conductivity at 20 °C = **5.3E-08** cm/sec



**CDM Jessberger
Geotechnical Engineering Laboratory**

Hydraulic Conductivity Test on Granular Soils (ASTM D 2434)

Client: Aquacalma LP
 Project Name: C-44 Reservoir Project
 Project Location: Indiantown, FL
 Project Number: 24752-40911
 Sample Number: TP-11
 Sample Location: S-1
 Sample Depth (ft): 0
 Lab ID Number: 4929

Tested By: 0
 Test Date: 1/0/1900
 Permeant Fluid: Tap Water
 Sample Preparation Procedures:
Client requested sample to be compacted to 90% of the maximum dry density and 2% wet of optimum moisture content of the modified Proctor.
 Sample Description:

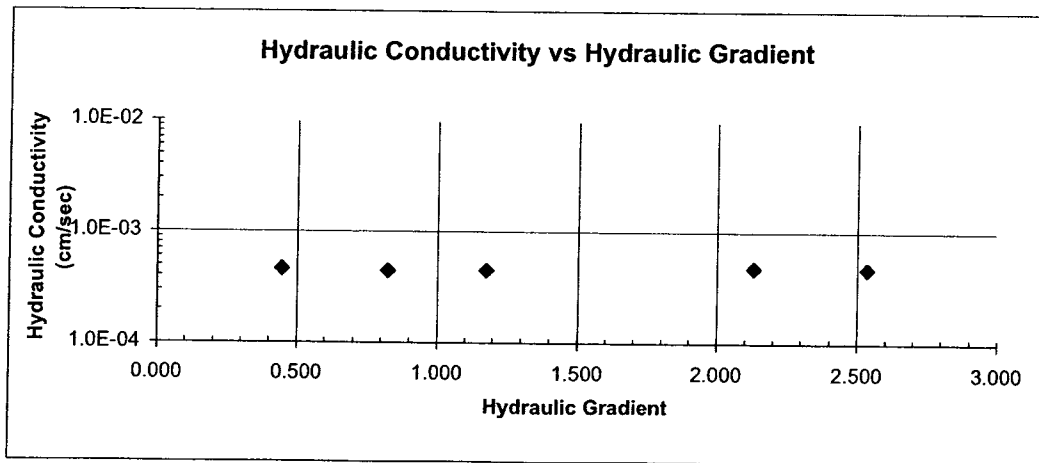
Sample Characteristics

As received moisture content (%) 5.6
 Moisture content at compaction (%) 9.6
 Length of specimen (in) 7.00
 Diameter of specimen (in) 4.37
 Area (sqin) 14.96
 Moist unit weight (pcf) 118.1
 Dry unit weight (pcf) 107.7

Silty Sand with Gravel
 Length between manometers(in) 4.52
 % retained on 3/4-inch sieve: ---
 Initial void ratio: 0.54
 Specific gravity of solids (assumed): 2.65
 Comments: Test performed on 3/4" minus material. Fines washed out of sample throughout test.

Test No.	Manometers		Head h (cm)	Flow Quantity Q (cm ³)	Elapsed Time t (sec)	Velocity Q/At (cm/sec)	Gradient h/L (no units)	Temp Correct. Factor	Hydraulic Cond. K @ 20 °C (cm/sec)
	Top h ₁ (cm)	Bot h ₂ (cm)							
1	12.6	7.5	5.1	1.3375	60.0	0.0002	0.4	0.8886	4.6E-04
2	34.6	10.2	24.5	6.6	60.0	0.0011	2.1	0.8886	4.8E-04
3	17.5	8.1	9.5	2.4	60.0	0.0004	0.8	0.8886	4.4E-04
4	39.7	10.6	29.1	7.7	60.0	0.0013	2.5	0.8886	4.6E-04
5	22.1	8.6	13.5	3.4	60.0	0.0006	1.2	0.8886	4.5E-04

Hydraulic Conductivity at 20°C = 4.6E-04 cm/sec



**CDM Jessberger
Geotechnical Engineering Laboratory**

Hydraulic Conductivity Test on Granular Soils (ASTM D 2434)

Client: Aquacalma LP
 Project Name: C-44 Reservoir Project
 Project Location: Indiantown, FL
 Project Number: 24752-40911
 Sample Number: TP-16
 Sample Location: S-1
 Sample Depth (ft): 0
 Lab ID Number: 4939

Tested By: 0
 Test Date: 1/0/1900
 Permeant Fluid: Tap Water
 Sample Preparation Procedures:
Client requested sample to be compacted to 90% of the maximum dry density and 2% wet of optimum moisture content of the modified Proctor.
 Sample Description:

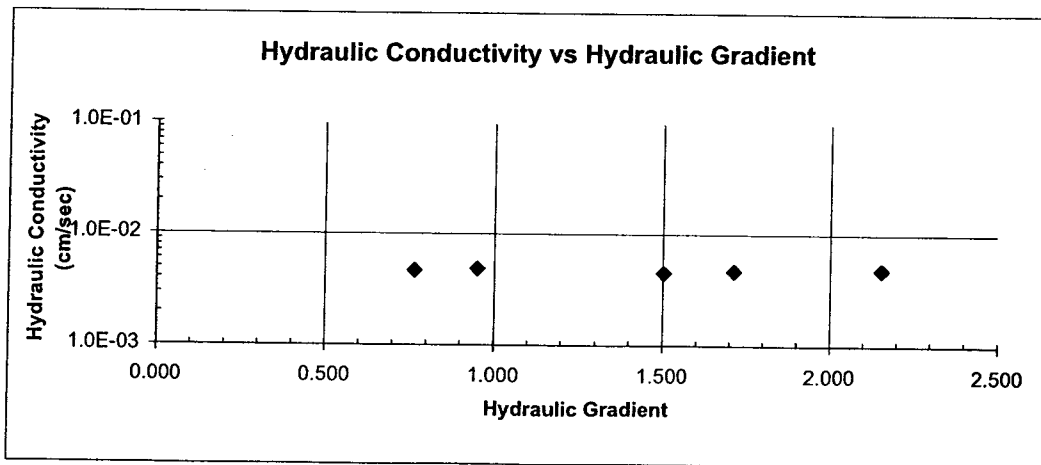
Sample Characteristics

As received moisture content (%) 10.6
 Moisture content at compaction (%) 7.9
 Length of specimen (in) 7.00
 Diameter of specimen (in) 4.37
 Area (sqin) 14.96
 Moist unit weight (pcf) 111.8
 Dry unit weight (pcf) 103.7

Silty Sand with Gravel
 Length between manometers(in) 4.52
 % retained on 3/4-inch sieve: ---
 Initial void ratio: 0.60
 Specific gravity of solids (assumed): 2.65
 Comments: Test performed on 3/4" minus material. Fines washed out of sample throughout test.

Test No.	Manometers		Head h (cm)	Flow Quantity Q (cm ³)	Elapsed Time t (sec)	Velocity Q/At (cm/sec)	Gradient h/L (no units)	Temp Correct. Factor	Hydraulic Cond. K @ 20 °C (cm/sec)
	Top h ₁ (cm)	Bot h ₂ (cm)							
1	44.3	19.6	24.7	66.9275	60.0	0.0116	2.2	0.8886	4.8E-03
2	24.7	13.8	10.9	30.1	60.0	0.0052	0.9	0.8886	4.9E-03
3	36.5	16.9	19.7	51.7	60.0	0.0089	1.7	0.8886	4.6E-03
4	20.8	12.0	8.8	23.2	60.0	0.0040	0.8	0.8886	4.7E-03
5	32.9	15.7	17.3	43.7	60.0	0.0075	1.5	0.8886	4.5E-03

Hydraulic Conductivity at 20°C = 4.7E-03 cm/sec



**CDM Jessberger
Geotechnical Engineering Laboratory**

Hydraulic Conductivity Test on Granular Soils (ASTM D 2434)

Client: Aquacalma LP
 Project Name: C-44 Reservoir Project
 Project Location: Indiantown, FL
 Project Number: 24752-40911
 Sample Number: TP-19
 Sample Location: S-1
 Sample Depth (ft): 0
 Lab ID Number: 4945

Tested By: adt
 Test Date: 1/0/1900
 Permeant Fluid: Tap Water
 Sample Preparation Procedures:
Client requested sample to be compacted to 90% of the maximum dry density and 2% wet of optimum moisture content of the modified Proctor.
 Sample Description:

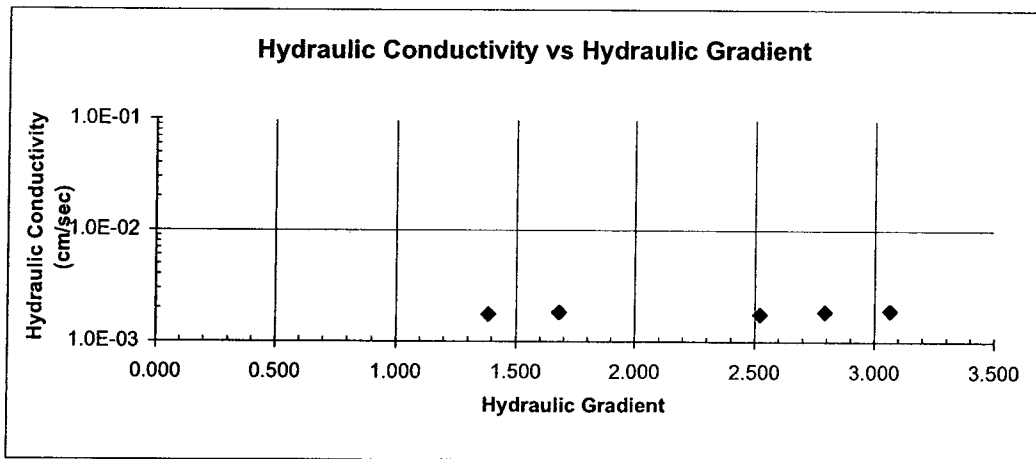
Sample Characteristics

As received moisture content (%) 21.9
 Moisture content at compaction (%) 15.0
 Length of specimen (in) 7.00
 Diameter of specimen (in) 4.37
 Area (sqin) 14.96
 Moist unit weight (pcf) 118.9
 Dry unit weight (pcf) 103.4

Silty Sand with Gravel
 Length between manometers(in) 4.52
 % retained on 3/4-inch sieve: ---
 Initial void ratio: 0.60
 Specific gravity of solids (assumed): 2.65
 Comments: Test performed on 3/4" minus material. Fines washed out of sample throughout test.

Test No.	Manometers		Head h (cm)	Flow Quantity Q (cm ³)	Elapsed Time t (sec)	Velocity Q/At (cm/sec)	Gradient h/L (no units)	Temp Correct. Factor	Hydraulic Cond. K @ 20 °C (cm/sec)
	Top h ₁ (cm)	Bot h ₂ (cm)							
1	47.1	12.0	35.2	38.1225	60.0	0.0066	3.1	0.8886	1.9E-03
2	27.2	7.9	19.3	20.0	60.0	0.0035	1.7	0.8886	1.8E-03
3	42.8	10.7	32.1	33.6	60.0	0.0058	2.8	0.8886	1.8E-03
4	23.1	7.2	15.9	15.8	60.0	0.0027	1.4	0.8886	1.8E-03
5	39.0	10.0	29.0	29.0	60.0	0.0050	2.5	0.8886	1.8E-03

Hydraulic Conductivity at 20°C = 1.8E-03 cm/sec



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Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D4318)

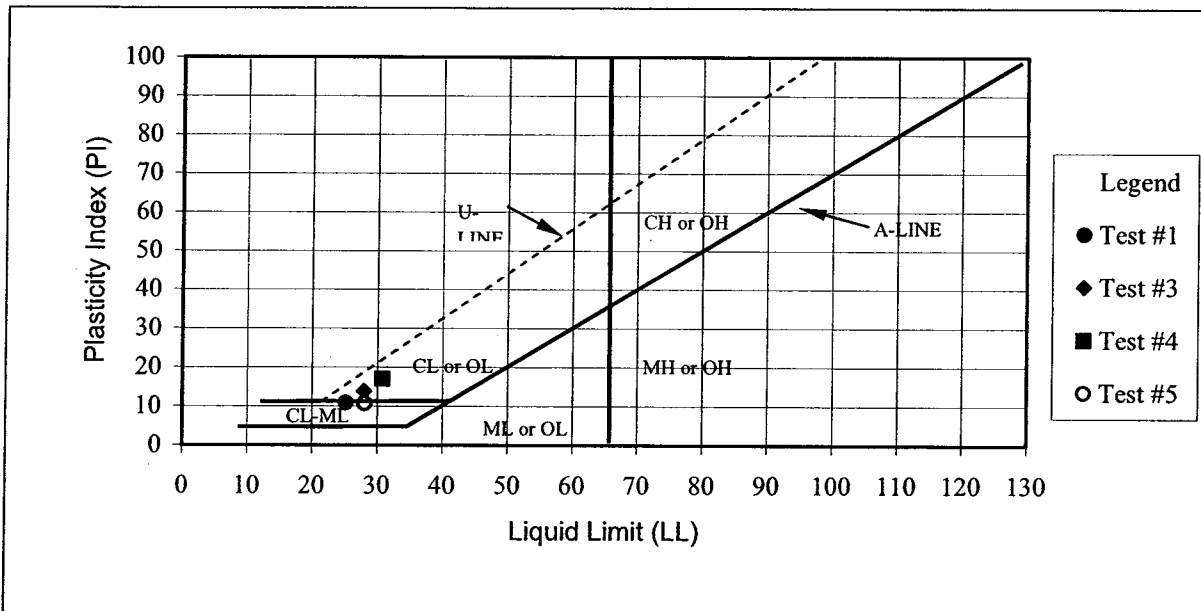
Client: Aquacalma L.P.
Project Name: C44-Reservoir
Project Location: Indiantown, FL
Project Number: 24752-40911

Results

Test Number:	1	2	3	4	5
Sample Number:	S-2	S-2	S-2	S-2	S-2
Sample Location:	TP-22	TP-20	TP-19	TP-11	TP-15
Lab ID Number:	4952	4948	4946	4930	4938
Tested By:	ADT	ADT	ADT	ADT	ADT
Test Date:	3/29/04	3/29/04	3/29/04	3/29/04	3/29/04
Sample Depth (ft):	0.0	0.0	0.0	0.0	0.0
As Rec'd Water Cont. (%):	21.2	6.9	8.5	16.9	19.4
Liquid Limit (LL)	25	NP	28	31	28
Plastic Limit (PL)	14	NP	14	14	17
Plasticity Index (PI)	11	NP	14	17	11

Plasticity Chart

For classification of fine-grained soils and fine-grained fraction of coarse-grained soils.



Reference: ASTM D 2487

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Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D4318)

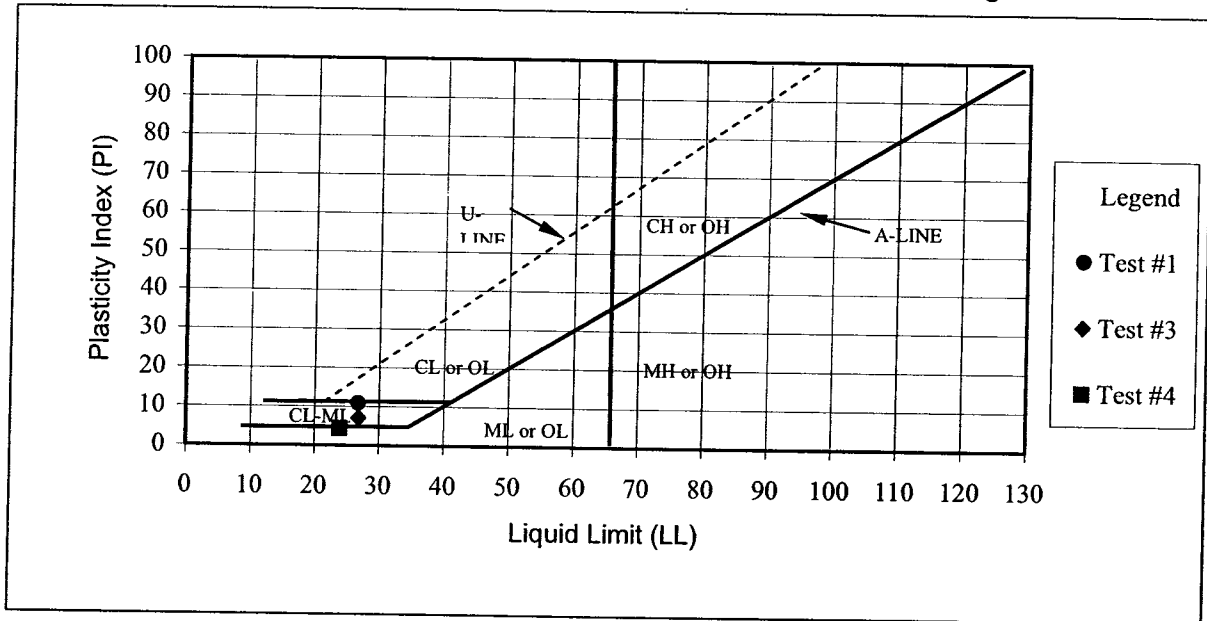
Client:	Aquacalma L.P.
Project Name:	C44-Resevior
Project Location:	Indiantown, FL
Project Number:	24752-40911

Results

Test Number:	1	2	3	4	5
Sample Number:	S-2	S-2	S-2	S-3	S-2
Sample Location:	TP-14	TP-23	TP-18	TP-17	TP-12
Lab ID Number:	4935	4954	4944	4942	4932
Tested By:	ADT	ADT	ADT	ADT	0
Test Date:	3/29/04	3/29/04	3/29/04	3/29/04	4/5/04
Sample Depth (ft):	2-5'	3-5'	6-11'	5-8'	4-5.5'
As Rec'd Water Cont. (%):	16.0	28.7	16.5	18.7	18.7
Liquid Limit (LL)	27	NP	27	24	NP
Plastic Limit (PL)	16	NP	20	20	NP
Plasticity Index (PI)	11	NP	7	4	NP

Plasticity Chart

For classification of fine-grained soils and fine-grained fraction of coarse-grained soils.



Reference: ASTM D 2487

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Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D4318)

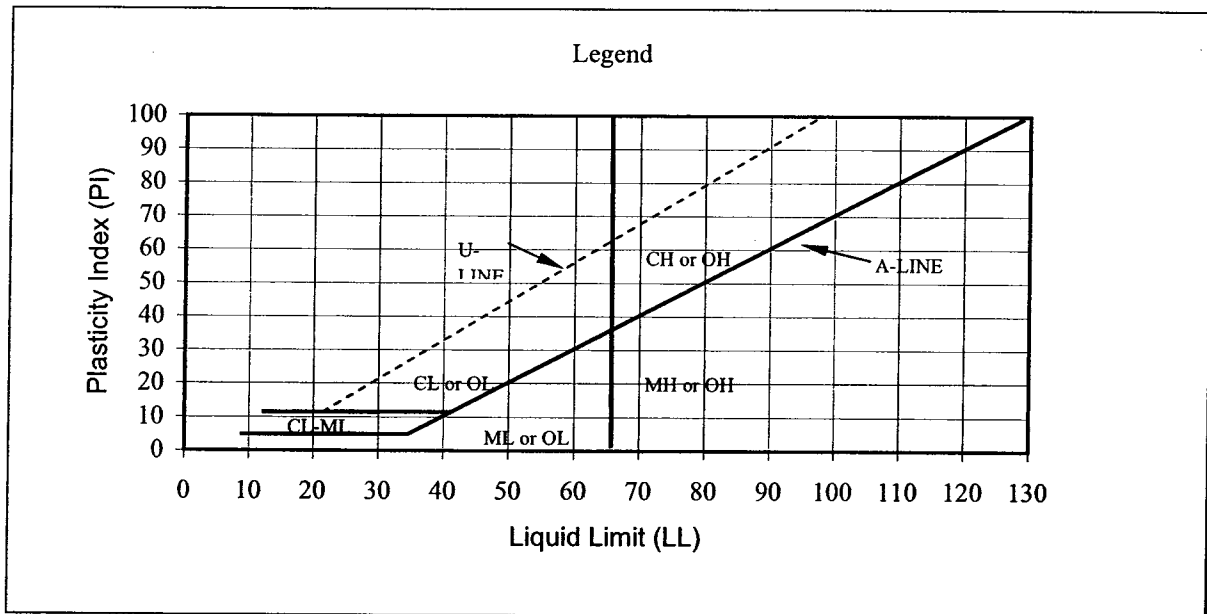
Client: Aquacalma L.P.
Project Name: C44-Resevior
Project Location: Indiantown, FL
Project Number: 24752-40911

Results

Test Number:	1
Sample Number:	S-3
Sample Location:	TP-14
Lab ID Number:	4936
Tested By:	ADT
Test Date:	3/29/04
Sample Depth (ft):	5-8'
As Rec'd Water Cont. (%):	29.6
Liquid Limit (LL)	NP
Plastic Limit (PL)	NP
Plasticity Index (PI)	NP

Plasticity Chart

For classification of fine-grained soils and fine-grained fraction of coarse-grained soils.



Reference: ASTM D 2487

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Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D4318)

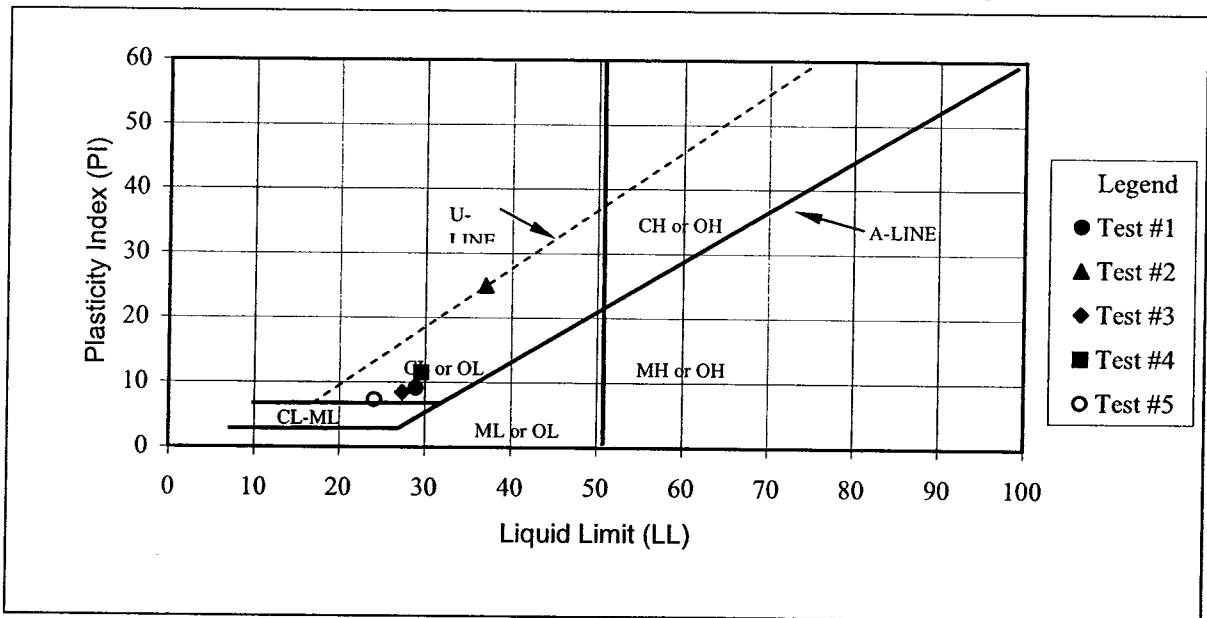
Client:	Aquacalma L.P
Project Name:	C-44 Reservoir Project
Project Location:	Indiantown, FL
Project Number:	24752-40911

Results

Test Number:	1	2	3	4	5
Sample Number:	S-2	S-3	S-2	S-2	S-1A
Sample Location:	TP-16	TP-20	TP-8	TP-10	TP-9
Lab ID Number:	4940	4949	4924	4928	4925
Tested By:	ADT	ADT	ADT	ADT	ADT
Test Date:	4/5/04	4/5/04	4/6/04	4/6/04	4/6/04
Sample Depth (ft):	4-9'	5-12'	3-5'	3-6'	5-2'
As Rec'd Water Cont. (%):	18.3	17.2	17.9	17.2	14.2
Liquid Limit (LL)	29	37	27	30	24
Plastic Limit (PL)	20	12	19	18	17
Plasticity Index (PI)	9	25	8	12	7

Plasticity Chart

For classification of fine-grained soils and fine-grained fraction of coarse-grained soils.



Reference: ASTM D 2487

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Consolidated Undrained Triaxial Compression Test for Cohesive Soils - ASTM D4767 Testing Summary

Client: Aquacalma, LP
 Project: C-44
 Location: hdiantaw, E
 Project No: 24752-40911

Test Date: 4/14/2004
 Exploration No: TP-11
 Sample No: S-1
 Depth (ft): 0.5-4
 Sample Description: Silty Sand

	<u>Initial</u>	<u>PreShear</u>
Water Content:	10.9%	18.3%
Wet Mass (g):	719.9	762.9
Dry Density (pcf):	108.2	107.7
Height (in):	4.93	4.92
Diameter (in):	2.43	2.43
Specific Gravity:	2.75	2.75
Voids Ratio:	0.587	0.594
Max Obliquity, R:	4.60	
p' @ R _{max} (psi):	22.20	
q @ R _{max} (psi):	14.28	
ε @ R _{max} :	0.86%	

Plasticity Indices:

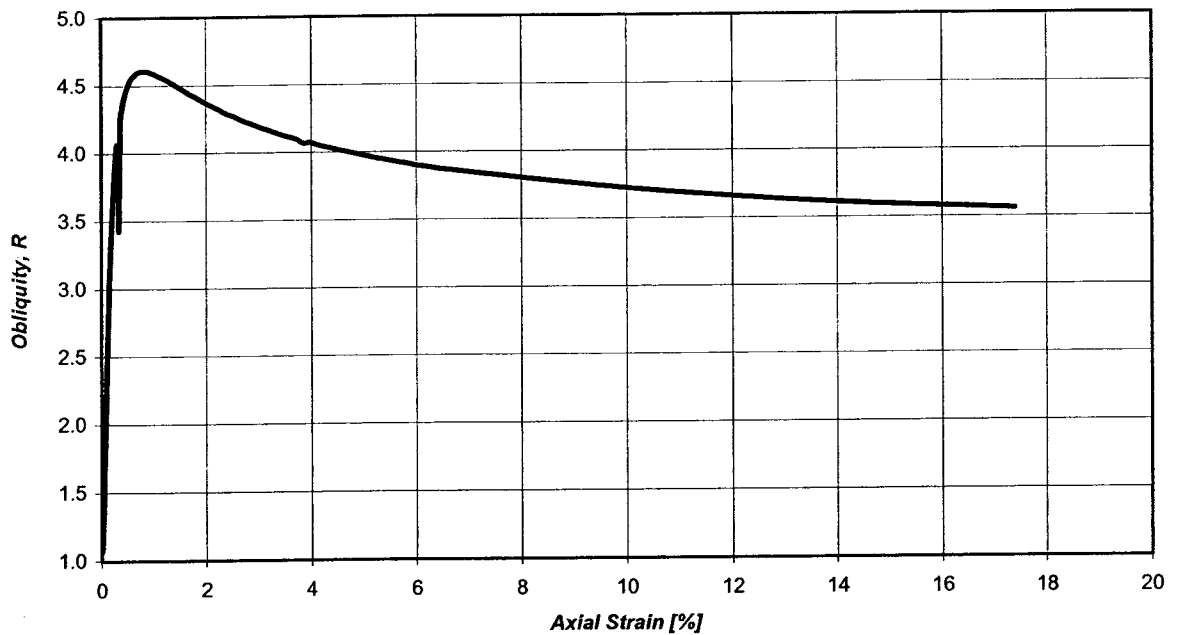
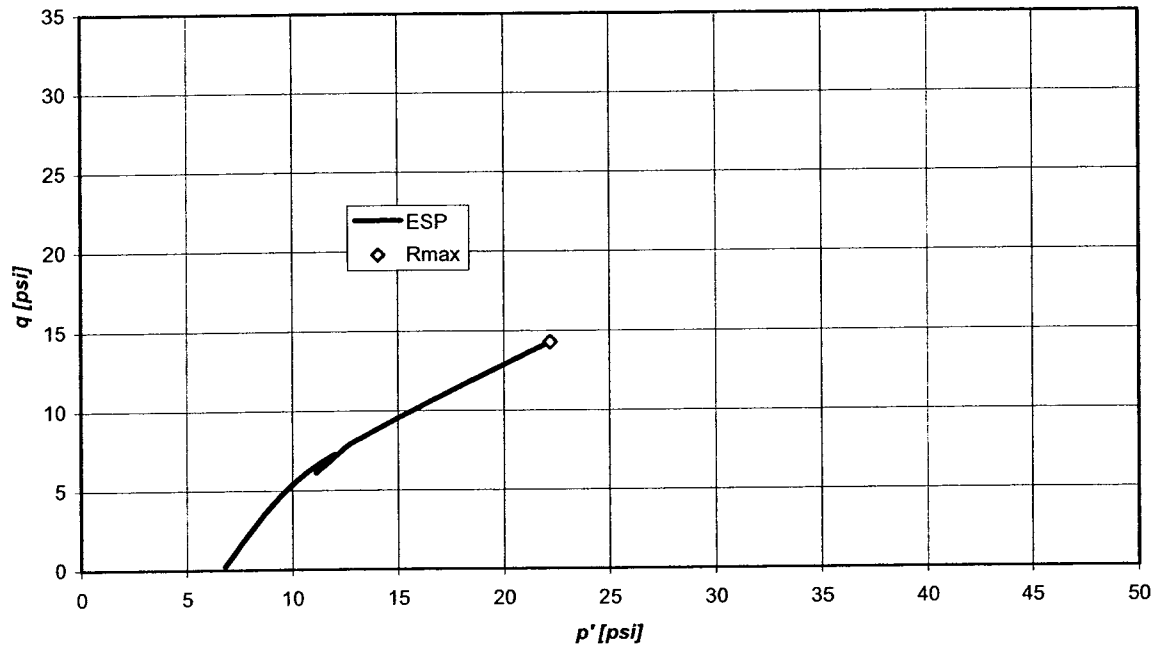
LL : -
 PL : -
 PI : -

Preconsolidation Pressure (psi): -
 Vertical Consol Stress (psi): 6.58
 Over Consolidation Ratio: -
 B-Coefficient: 95
 Back Pressure (psi): 60.44

Axial Strain (%)	σ'_1 (psi)	σ'_3 (psi)	p' (psi)	q (psi)	Excess Pore Press (psi)	Obliquity R
0.1	11.7	5.3	8.5	3.2	1.3	2.207
1.0	41.3	9.0	25.1	16.1	-2.4	4.586
2.0	77.1	17.6	47.3	29.7	-11.0	4.381
3.0	112.6	26.8	69.7	42.9	-20.3	4.199
5.0	156.1	39.2	97.7	58.5	-32.6	3.984
7.0	175.1	45.3	110.2	64.9	-38.7	3.868
9.0	175.1	45.3	110.2	64.9	-38.7	3.868
11.0	194.5	52.4	123.4	71.1	-45.7	3.715
13.0	194.5	52.4	123.4	71.1	-45.7	3.715
15.0	201.8	55.8	128.8	73.0	-49.2	3.614

Notes:

1. Consolidation performed in accordance with ASTM D435.



Exploration No: TP-11
 Sample No: S-1
 Depth (ft): 0.5-4
 Sample Description: Silty Sand

Preconsolidation Pressure (psi): -
 Vertical Consol Stress (psi): 6.6
 Over Consolidation Ratio: -
 Maximum Obliquity, R: 4.60
 $q @ R_{max}$ (psi): 14.28

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Client: Aquacalma, LP
 Project: C-44
 Project No: 24752-40911

CIUC Triaxial Test
 ASTM D4767

CDM Geotechnical Engineering Laboratory

Consolidated Undrained Triaxial Compression Test for Cohesive Soils - ASTM D4767 Testing Summary

Client: Aquacalma, LP	Test Date: 4/6/2004
Project: C-44	Exploration No: TP-16
Location: Indiantown, FL	Sample No: S-2
Project No: 24752-40911	Depth (ft): 4-9
	Sample Description: Clayey Sand

	<u>Initial</u>	<u>PreShear</u>
Water Content:	10.7%	16.8%
Wet Mass (g):	748.4	793.2
Dry Density (pcf):	113.4	113.8
Height (in):	4.90	4.90
Diameter (in):	2.43	2.43
Specific Gravity:	2.75	2.75
Voids Ratio:	0.514	0.508
Max Obliquity, R:	4.11	
p' @ R_{max} (psi):	13.09	
q @ R_{max} (psi):	7.97	
ε @ R_{max}:	1.11%	

Plasticity Indices:

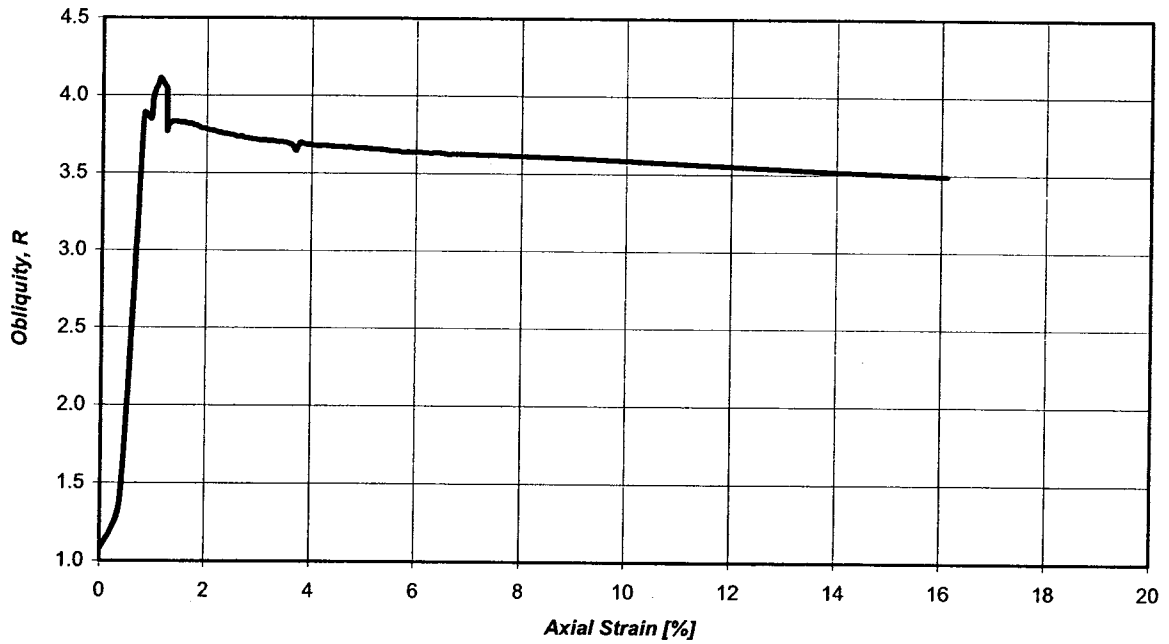
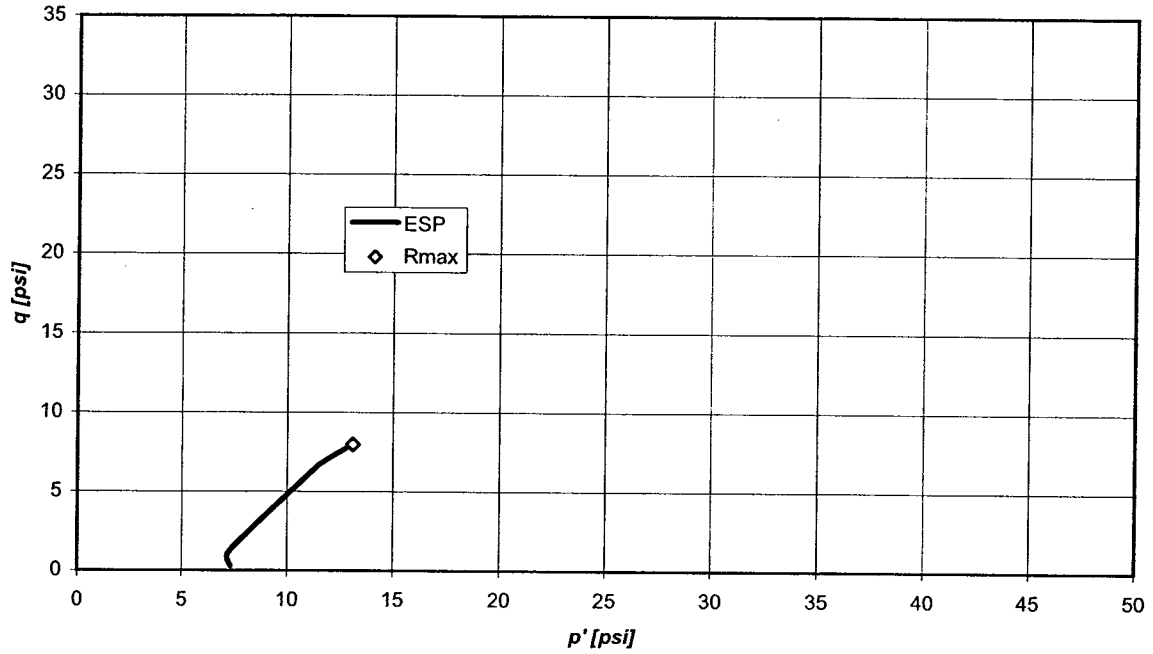
LL : -
PL : -
PI : -

Preconsolidation Pressure (psi): -
Vertical Consol Stress (psi): 7.06
Over Consolidation Ratio: -
B-Coefficient: 95
Back Pressure (psi): 60.00

Axial Strain (%)	σ'_1 (psi)	σ'_3 (psi)	p' (psi)	q (psi)	Excess Pore Press (psi)	Obliquity R
0.1	7.6	7.1	7.3	0.3	0.0	1.080
1.0	19.5	4.9	12.2	7.3	2.1	3.967
2.0	27.5	7.3	17.4	10.1	-0.3	3.788
3.0	33.0	8.9	21.0	12.1	-1.8	3.715
5.0	41.1	11.2	26.1	14.9	-4.0	3.663
7.0	47.0	13.0	30.0	17.0	-5.9	3.625
9.0	47.0	13.0	30.0	17.0	-5.9	3.625
11.0	54.3	15.1	34.7	19.6	-8.6	3.600
13.0	61.4	17.2	39.3	22.1	-10.7	3.560
15.0	67.9	19.3	43.6	24.3	-12.7	3.521

Notes:

1. Consolidation phase performed in general accordance with ASTM D2435.



Exploration No:	TP-16	Preconsolidation Pressure (psi):	-
Sample No:	S-2	Vertical Consol Stress (psi):	7.1
Depth (ft):	4-9	Over Consolidation Ratio:	-
Sample Description:	Clayey Sand	Maximum Obliquity, R:	4.11
		q @ R _{max} (psi):	7.97

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Geotechnical Engineering
Laboratory

Client: Aquacalma, LP
Project: C-44
Project No: 24752-40911

CIUC Triaxial Test
ASTM D4767

CDM Geotechnical Engineering Laboratory

Consolidated Undrained Triaxial Compression Test for Cohesive Soils - ASTM D4767 Testing Summary

Client: Aquacalma, LP
 Project: C-44
 Location: Indiantown, FL
 Project No: 24752-40911

Test Date: 4/6/2004
 Exploration No: TP-19
 Sample No: S-2
 Depth (ft): 4-7
 Sample Description: Clayey Sand

	<u>Initial</u>	<u>PreShear</u>
Water Content:	11.1%	17.1%
Wet Mass (g):	735.2	780.4
Dry Density (pcf):	111.4	112.8
Height (in):	4.89	4.86
Diameter (in):	2.43	2.43
Specific Gravity:	2.75	2.75
Voids Ratio:	0.541	0.522
Max Obliquity, R:	4.66	
p' @ R _{max} (psi):	10.92	
q @ R _{max} (psi):	7.05	
ε @ R _{max} :	2.08%	

Plasticity Indices:

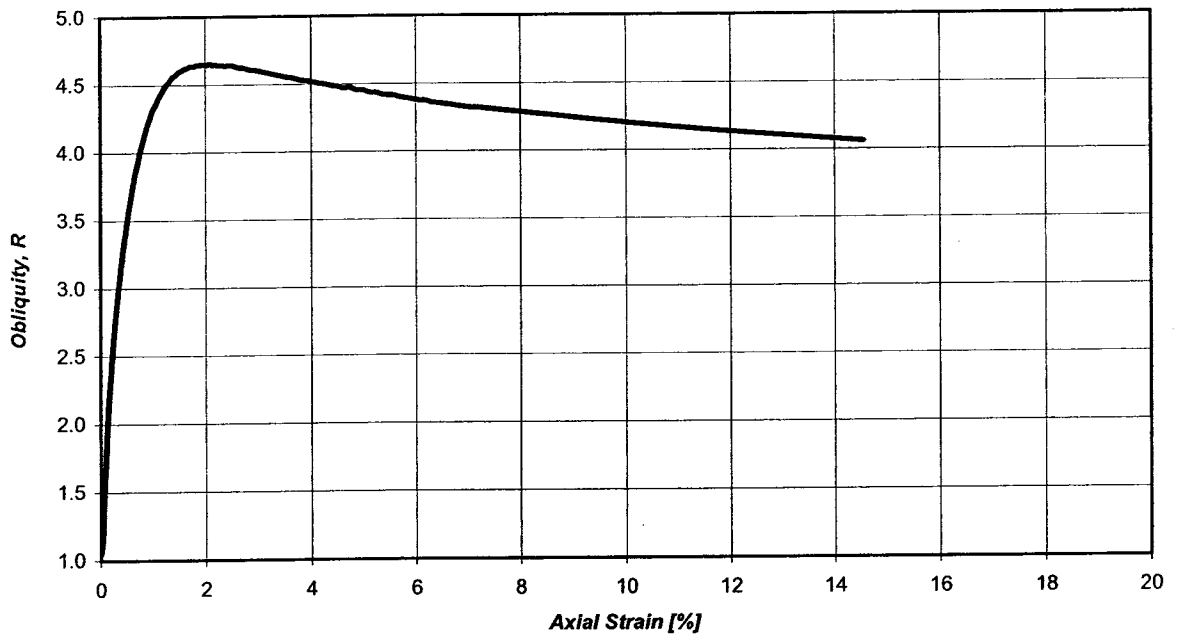
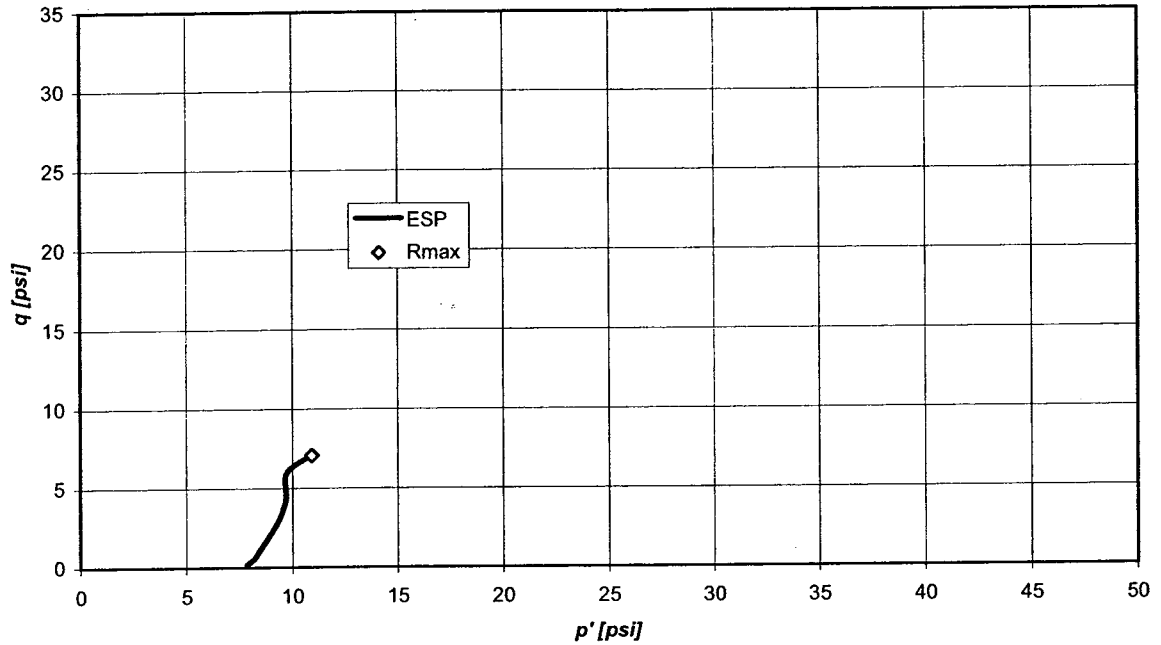
LL : -
 PL : -
 PI : -

Preconsolidation Pressure (psi): -
 Vertical Consol Stress (psi): 7.66
 Over Consolidation Ratio: -
 B-Coefficient: 95
 Back Pressure (psi): 59.49

Axial Strain (%)	σ'_1 (psi)	σ'_3 (psi)	p' (psi)	q (psi)	Excess Pore Press (psi)	Obliquity R
0.1	11.6	6.7	9.1	2.5	1.0	1.742
1.0	15.9	3.7	9.8	6.1	3.9	4.303
2.0	17.8	3.8	10.8	7.0	3.7	4.646
3.0	19.5	4.2	11.9	7.6	3.3	4.604
5.0	22.5	5.1	13.8	8.7	2.5	4.455
7.0	24.9	5.8	15.4	9.6	1.8	4.328
9.0	25.2	5.8	15.5	9.7	1.7	4.320
11.0	29.0	7.0	18.0	11.0	0.6	4.171
13.0	29.0	7.0	18.0	11.0	0.6	4.171
15.0	32.0	7.9	20.0	12.1	-0.4	4.060

Notes:

1. Consolidation phase performed in general accordance with ASTM D2435.



Exploration No: TP-19
 Sample No: S-2
 Depth (ft): 4-7
 Sample Description: Clayey Sand

Preconsolidation Pressure (psi): -
 Vertical Consol Stress (psi): 7.7
 Over Consolidation Ratio: -
 Maximum Obliquity, R : 4.66
 $q @ R_{max}$ (psi): 7.05

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Geotechnical Engineering
 Laboratory

Client: Aquacalma, LP
 Project: C-44
 Project No: 24752-40911

CIUC Triaxial Test
 ASTM D4767

CDM Geotechnical Engineering Laboratory

Consolidated Undrained Triaxial Compression Test for Cohesive Soils - ASTM D4767 Testing Summary

Client: Aquacalma, LP
 Project: C-44
 Location: hdiantw, E
 Project No: 24752-40911

Test Date: 4/13/2004
 Exploration No: TP-20
 Sample No: S-1
 Depth (ft): 0.5-3
 Sample Description: Silty Sand

	<u>Initial</u>	<u>PreShear</u>
Water Content:	8.4%	17.3%
Wet Mass (g):	742.5	792.2
Dry Density (pcf):	114.4	113.1
Height (in):	4.92	4.90
Diameter (in):	2.43	2.43
Specific Gravity:	2.75	2.75
Voids Ratio:	0.501	0.517
Max Obliquity, R:	4.86	
p' @ R _{max} (psi):	15.20	
q @ R _{max} (psi):	10.01	
ε @ R _{max} :	0.58%	

Plasticity Indices:

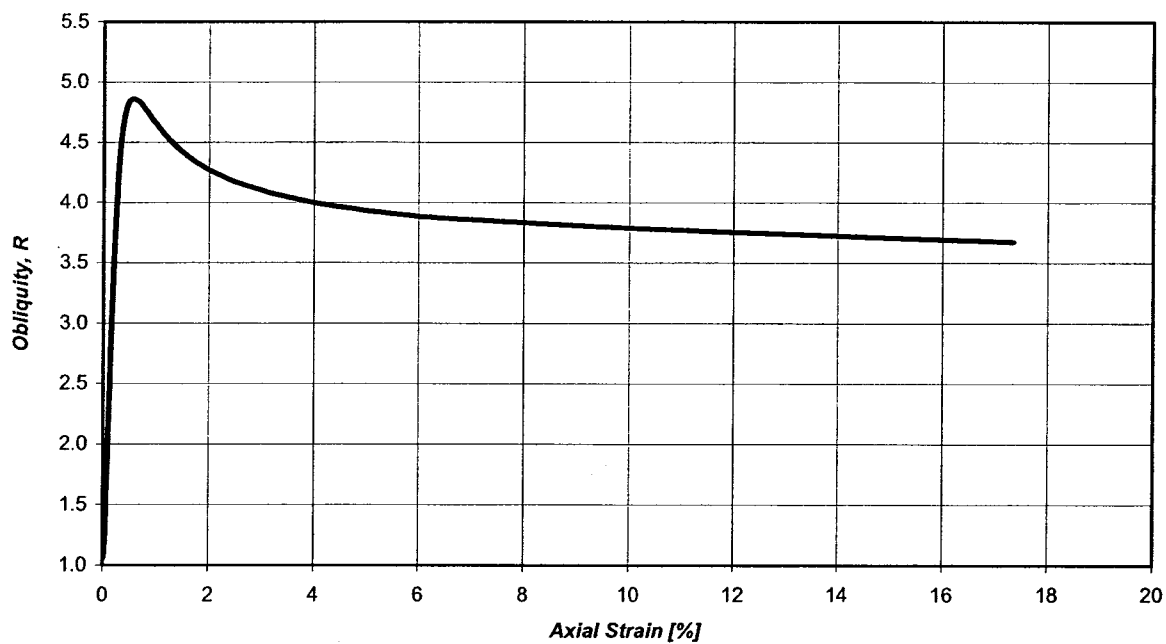
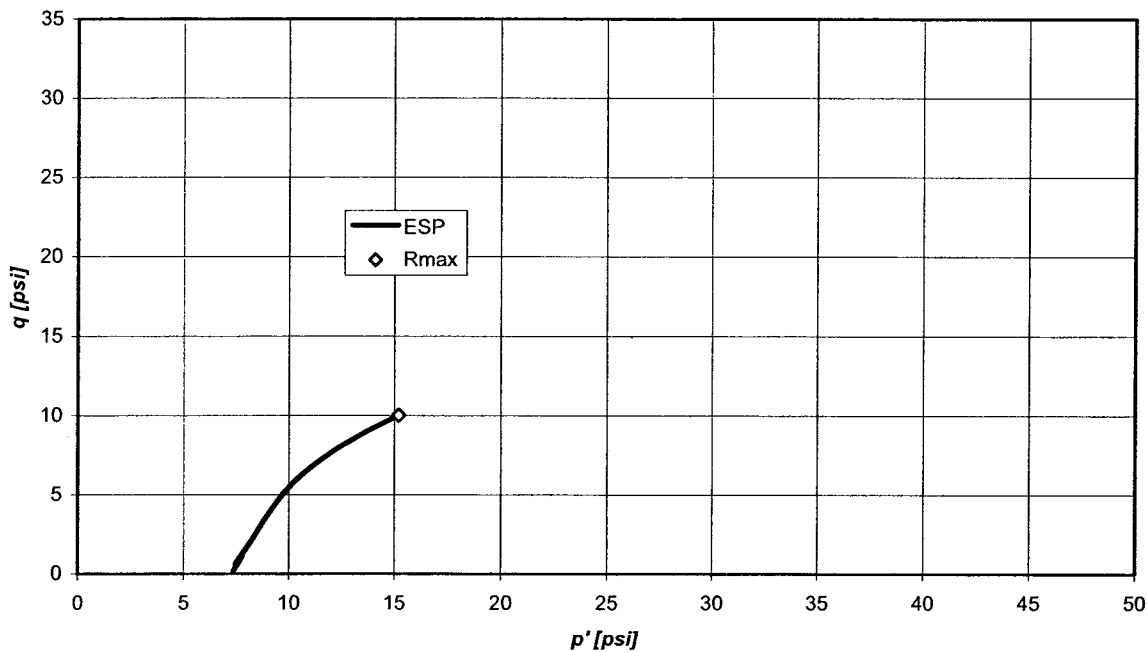
LL : -
 PL : -
 PI : -

Preconsolidation Pressure (psi): -
 Vertical Consol Stress (psi): 7.15
 Over Consolidation Ratio: -
 B-Coefficient: 95
 Back Pressure (psi): 60.08

Axial Strain (%)	σ'_1 (psi)	σ'_3 (psi)	p' (psi)	q (psi)	Excess Pore Press (psi)	Obliquity R
0.1	10.6	6.0	8.3	2.3	1.2	1.766
1.0	33.8	7.3	20.5	13.3	-0.1	4.654
2.0	49.0	11.5	30.2	18.8	-4.3	4.275
3.0	60.1	14.6	37.3	22.7	-7.4	4.115
5.0	79.0	20.1	49.5	29.5	-12.9	3.939
7.0	90.9	23.5	57.2	33.7	-16.3	3.870
9.0	90.9	23.5	57.2	33.7	-16.3	3.870
11.0	114.2	30.1	72.2	42.0	-23.0	3.788
13.0	114.2	30.1	72.2	42.0	-23.0	3.788
15.0	132.5	35.5	84.0	48.5	-28.4	3.730

Notes:

1. Consolidation performed in accordance with ASTM D435.



Exploration No: TP-20
 Sample No: S-1
 Depth (ft): 0.5-3
 Sample Description: Silty Sand

Preconsolidation Pressure (psi): -
 Vertical Consol Stress (psi): 7.2
 Over Consolidation Ratio: -
 Maximum Obliquity, R : 4.86
 $q @ R_{max}$ (psi): 10.01

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Geotechnical Engineering
 Laboratory

Client: Aquacalma, LP
 Project: C-44
 Project No: 24752-40911

CIUC Triaxial Test
 ASTM D4767