



Photo 1: Western corner of property



Photo 2: View looking towards South East (Western half of property)



Photo 3: View towards South and neighbouring properties



Photo 4: Drainage channel flowing towards South East boundary



Photo 5: View of Northern extent of property



Photo 6: View of homeshead



Date taken	8/02/12	Client	Survus Consultants Ltd		
Taken by	JK	Project	474 Bradleys Road, Ohoka, Canterbury		
Approved by	MW	Description	Site Photographs		
Scale	N/A	Photo No.	1 to 6	Project Number	12034_2

APPENDIX 3

Test Pit Logs

Engineering Log - Test Pit

Test Pit No. **TP01**
 Sheet **1 of 1**
 Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator				Survey Method: Handheld GPS				Northing: 5,761,007.00						
Excavation Dimensions: 2.00 by 3.00								Easting: 2,475,831.00						
Vane No.: N/A														
Excavation Information				Material Substance										
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)				
						Soil - soil type, colour, structure, grading, bedding, plasticity, sensitivity; Secondary and minor components Rock - colour, fabric, rock type; discontinuities; additional information								
TOPSOIL			0.2		ML	SILT; dark brown. Low plasticity. [TOPSOIL]	M	F						
			0.4		ML	SILT; light brown with orange and grey mottles. Low plasticity.	M	St						
			0.6		GP	Sandy fine to medium GRAVEL; brown, rounded. Sand is coarse.	M-W	D						
			0.8											
			1		GP	Sandy fine GRAVEL; grey, rounded, poorly graded. Sand is coarse.	W	D						
			1.2											
			1.4											
			1.6											
			1.8											
			2		GP	Sandy fine to coarse GRAVEL; bluish grey, rounded, well graded. Sand is coarse.	S	VD						
			2.2											
			2.4											
			2.6											

EOH: 2.7 m
Termination: Practical refusal
Notes:
 Test pit terminated at 2.7 m due to hole collapsing.
 Groundwater encountered at 1.4 m.

Sketch/Photo



Engineering Log - Test Pit

Test Pit No. **TP02**
Sheet **1 of 1**
Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator				Survey Method: Handheld GPS				Northing: 5,760,876.00						
Excavation Dimensions: 2.00 by 3.00								Easting: 2,476,017.00						
Vane No.: N/A														
Excavation Information				Material Substance										
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material Soil - soil type, colour, structure, grading, bedding, plasticity, sensitivity; Secondary and minor components Rock - colour, fabric, rock type; discontinuities; additional information	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)				
										2	4	6	8	
DPSO			0.2		ML	SILT; dark brown. Low plasticity. [TOPSOIL]	D	F						
			0.4		ML	SILT; light brown with orange and grey mottles. Low plasticity.	D	St						
			0.6		GP	Sandy fine to coarse GRAVEL; brown, rounded, well graded. Sand is medium.	M	MD						
			0.8											
			1		SP	Fine to medium SAND; grey. Poorly graded.	W	MD						
			1.2		GW	Sandy fine to coarse GRAVEL; grey, rounded, well graded.	W-S	D						
			1.4											
			1.6		GW	Sandy fine to coarse GRAVEL; bluish grey, rounded, well graded.	S	VD						
			1.8											
			2											
			2.2											

EOH: 2.2 m

Termination: Practical refusal

Notes:

Test pit terminated at 2.2 m due to hole collapsing.

Groundwater encountered at 1.3 m.

Sketch/Photo






Engineering Log - Test Pit

Test Pit No. **TP03**
 Sheet **1 of 1**
 Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator
Excavation Dimensions: 2.00 by 3.00
Vane No.: N/A
Survey Method: Handheld GPS
Northing: 5,760,696.00
Easting: 2,476,153.00

Excavation Information				Material Substance						
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)
DPSO			0.2		ML	SILT with trace fine sand; dark brown. Low plasticity. [TOPSOIL]	D	F		
			0.4		ML	SILT; light brown with orange and grey mottles. Low plasticity.	M	St		
			0.6		GW	Sandy fine to medium GRAVEL; grey, rounded, poorly graded. Sand is coarse.	M	D		
		0.8								
		1								
		1.2								
		1.4								
			1.6							
			1.8							
			2		GW	Sandy fine to coarse GRAVEL; bluish grey, rounded, well graded. Sand is coarse.	S	VD		
			2.2							

EOH: 2.3 m
Termination: Practical refusal
Notes:
 Test pit terminated at 2.3 m due to hole collapsing.
 Groundwater encountered at 1.1 m.

Sketch/Photo



Engineering Log - Test Pit

Test Pit No. **TP04**
Sheet **1 of 1**
Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator				Survey Method: Handheld GPS				Northing: 5,761,462.00					
Excavation Dimensions: 2.00 by 3.00								Easting: 2,476,366.00					
Vane No.: N/A													
Excavation Information				Material Substance									
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)			
						Soil - soil type, colour, structure, grading, bedding, plasticity, sensitivity; Secondary and minor components Rock - colour, fabric, rock type; discontinuities; additional information				2	4	6	8
DPSO			0.2		ML	SILT; dark brown. Low plasticity. [TOPSOIL]	M	F					
			0.4		ML	SILT; yellowish brown with orange mottles. Low plasticity.	D	St					
			0.6		GP	Sandy fine to medium GRAVEL; brown, rounded, poorly graded. Sand is coarse.	M	D					
			0.8										
			1			Sandy fine to medium GRAVEL; grey, rounded, poorly graded.	W	D					
			1.2										
			1.4		GP								
			1.6										
			1.8										
			2										
			2.2										
			2.4										
			2.6										
					GW	Sandy fine to coarse GRAVEL; bluish grey, rounded, well graded. Sand is coarse.	S	VD					

EOH: 2.8 m
Termination: Practical refusal
Notes:
Test pit terminated at 2.8 m due to hole collapsing.
Groundwater encountered at 1.4 m.

Sketch/Photo



Engineering Log - Test Pit

Test Pit No. **TP05**
Sheet **1 of 1**
Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator				Survey Method: Handheld GPS				Northing: 5,760,845.00					
Excavation Dimensions: 2.00 by 3.00								Easting: 2,476,342.00					
Vane No.: N/A													
Excavation Information				Material Substance									
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material Soil - soil type, colour, structure, grading, bedding, plasticity, sensitivity; Secondary and minor components Rock - colour, fabric, rock type; discontinuities; additional information	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)			
										2	4	6	8
DPSO 													

EOH: 2.5 m
Termination: Practical refusal
Notes:
Test pit terminated at 2.5 m due to hole collapsing.
Groundwater encountered at 1.9 m.

Sketch/Photo














Engineering Log - Test Pit

Test Pit No. **TP07**
 Sheet **1 of 1**
 Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator				Survey Method: Handheld GPS				Northing: 5,760,688.00					
Excavation Dimensions: 2.00 by 3.00								Easting: 2,476,424.00					
Vane No.: N/A													
Excavation Information				Material Substance									
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)			
						Soil - soil type, colour, structure, grading, bedding, plasticity, sensitivity; Secondary and minor components							
						Rock - colour, fabric, rock type; discontinuities; additional information							
										2	4	6	8
DPSO			0.2		ML	SILT; dark brown. Low plasticity. [TOPSOIL]	D	S-F					
			0.4		ML	SILT; light brown with orange and grey mottles. Low plasticity.	D	St					
			0.6		GW	Sandy fine to coarse GRAVEL; grey, rounded, well graded. Sand is coarse.	M	D					
			0.8			Becomes wet.	W						
			1										
			1.2			Turns bluish grey and becomes saturated.	S	VD					
			1.4										
			1.6										
			1.8										
			2										
			2.2										

EOH: 2.4 m
Termination: Practical refusal
Notes:
 Test pit terminated at 2.4 m due to hole collapsing.
 Groundwater encountered at 1.2 m.

Sketch/Photo



Engineering Log - Test Pit

Test Pit No. **TP08**
 Sheet **1 of 1**
 Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator				Survey Method: Handheld GPS				Northing: 5,760,916.00					
Excavation Dimensions: 2.00 by 3.00								Easting: 2,476,536.00					
Vane No.: N/A													
Excavation Information				Material Substance									
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)			
						Soil - soil type, colour, structure, grading, bedding, plasticity, sensitivity; Secondary and minor components							
						Rock - colour, fabric, rock type; discontinuities; additional information							
										2	4	6	8
DPSO			0.2		ML	SILT; dark brown. Low plasticity. [TOPSOIL]	D	F					
			0.4		ML	SILT; light brown with orange and grey mottles. Low plasticity.	D	St					
			0.6		GW	Sandy fine to medium GRAVEL; grey with brown layers, rounded, well graded. Sand is coarse.	D	D					
			0.8										
			1										
			1.2				M						
			1.4				W						
			1.6				S						
			1.8										
			2										
			2.2										

EOH: 2.4 m
Termination: Practical refusal
Notes:
 Test pit terminated at 2.4 m due to hole collapsing.
 Groundwater encountered at 1.1 m.

Sketch/Photo



Engineering Log - Test Pit

Test Pit No. **TP09**
 Sheet **1 of 1**
 Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator				Survey Method: Handheld GPS				Northing: 5,760,808.00					
Excavation Dimensions: 2.00 by 3.00								Easting: 2,476,765.00					
Vane No.: N/A													
Excavation Information				Material Substance									
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)			
						Soil - soil type, colour, structure, grading, bedding, plasticity, sensitivity; Secondary and minor components							
						Rock - colour, fabric, rock type; discontinuities; additional information							
DPSO			0.2	TS	ML	SILT; dark brown. Low plasticity. [TOPSOIL]	D	F-St					
			0.4		GW	Sandy fine to coarse GRAVEL; grey, rounded, well graded. Sand is coarse.	D	D-VD					
			0.6										
			0.8										
			1										
			1.2				M						
			1.4			Becomes wet.	W						
			1.6			Becomes saturated.	S						
			1.8										
			2										
			2.2										
			2.4										
			2.6										
			2.8										
			3										

EOH: 3 m
Termination: Practical refusal
Notes:
 Test pit terminated at 3.0 m due to hole collapsing.
 Groundwater encountered at 1.3 m.

Sketch/Photo



Engineering Log - Test Pit

Test Pit No. **TP10**
Sheet **1 of 1**
Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator				Survey Method: Handheld GPS				Northing: 5,761,043.00					
Excavation Dimensions: 2.00 by 3.00								Easting: 2,476,845.00					
Vane No.: N/A													
Excavation Information				Material Substance									
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)			
						Soil - soil type, colour, structure, grading, bedding, plasticity, sensitivity; Secondary and minor components Rock - colour, fabric, rock type; discontinuities; additional information				2	4	6	8
DPSO			0.2		ML	SILT; dark brown. Low plasticity. [TOPSOIL]	D	F					
			0.4		ML	SILT; light brown with orange mottles. Low plasticity.	D	St					
			0.6		GW	Sandy fine to medium GRAVEL; brown, rounded, well graded. Sand is gravel.	M-W	D					
			0.8										
			1										
			1.2										
			1.4			Becomes saturated.	S						
			1.6										
			1.8										
			2		GW	Sandy fine to coarse GRAVEL; bluish grey, rounded, well graded. Sand is coarse.	S	VD					
			2.2										
			2.4										
			2.6										
			2.8										
			3										
			3.2										
			3.4										

EOH: 3.4 m
Termination: Practical refusal
Notes:
Test pit terminated at 3.4 m due to hole collapsing.
Groundwater encountered at 1.3 m.

Sketch/Photo





Engineering Log - Test Pit

Test Pit No. **TP11**
Sheet **1 of 1**
Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator Excavation Dimensions: 2.00 by 3.00 Vane No.: N/A				Survey Method: Handheld GPS				Northing: 5,761,160.00 Easting: 2,476,766.00					
Excavation Information				Material Substance									
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)			
										2	4	6	8
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			0.4		ML	SILT; light brown with orange and grey mottles. Low plasticity.	D	St					
			0.6										
			0.8										
			1.0										
			1.2										
			1.4										
			1.6										
			1.8										
			2.0										
			2.2										
			2.4										
		2.6											
		2.8											
		3.0											
		3.2											

EOH: 3.3 m
Termination: Practical refusal
Notes:
 Test pit terminated at 3.3 m due to hole collapsing.
 Groundwater encountered at 1.7 m.

Sketch/Photo



Engineering Log - Test Pit

Test Pit No. **TP12**
 Sheet **1 of 1**
 Project No. **12034**

Client: P & A Bagrie
Principal: C/- Survus Consultants Ltd
Project: 474 Bradleys Road, Ohoka
Test Pit Location: Refer to Site Location Plan

Date Started: 22/03/2012
Date Completed: 22/03/2012
Logged By: JC
Checked By: JK

Machine Type: 21 Tonne Excavator				Survey Method: Handheld GPS				Northing: 5,761,113.00					
Excavation Dimensions: 2.00 by 3.00								Easting: 2,477,195.00					
Vane No.: N/A													
Excavation Information				Material Substance									
Material	Water	Notes, samples, tests etc	Depth (m)	Graphic Log	Classification Symbol	Material	Moisture Condition	Consistency / Density Index	Shear Vane (Dial Readings kPa)	Scala (Blows/100mm)			
						Soil - soil type, colour, structure, grading, bedding, plasticity, sensitivity; Secondary and minor components							
						Rock - colour, fabric, rock type; discontinuities; additional information							
										2	4	6	8
TOPSOIL			0.2		ML	SILT; dark brown. Low plasticity. [TOPSOIL]	D	F					
			0.4		ML	SILT; light brown with orange and grey mottles. Low plasticity.	D	St					
			0.6										
			0.8		GW	Sandy fine to coarse GRAVEL; brown, rounded, well graded. Sand is coarse.	D	D					
			1										
			1.2				M						
			1.4										
			1.6										
			1.8										
			2			Sandy fine to coarse GRAVEL; bluish grey, rounded, well graded. Sand is coarse.	S	VD					
			2.2										
			2.4		GW								
			2.6										
			2.8										
			3										

EOH: 3 m
Termination: Practical refusal
Notes:
 Test pit terminated at 3.0 m due to hole collapsing.
 Groundwater encountered at 1.7 m.

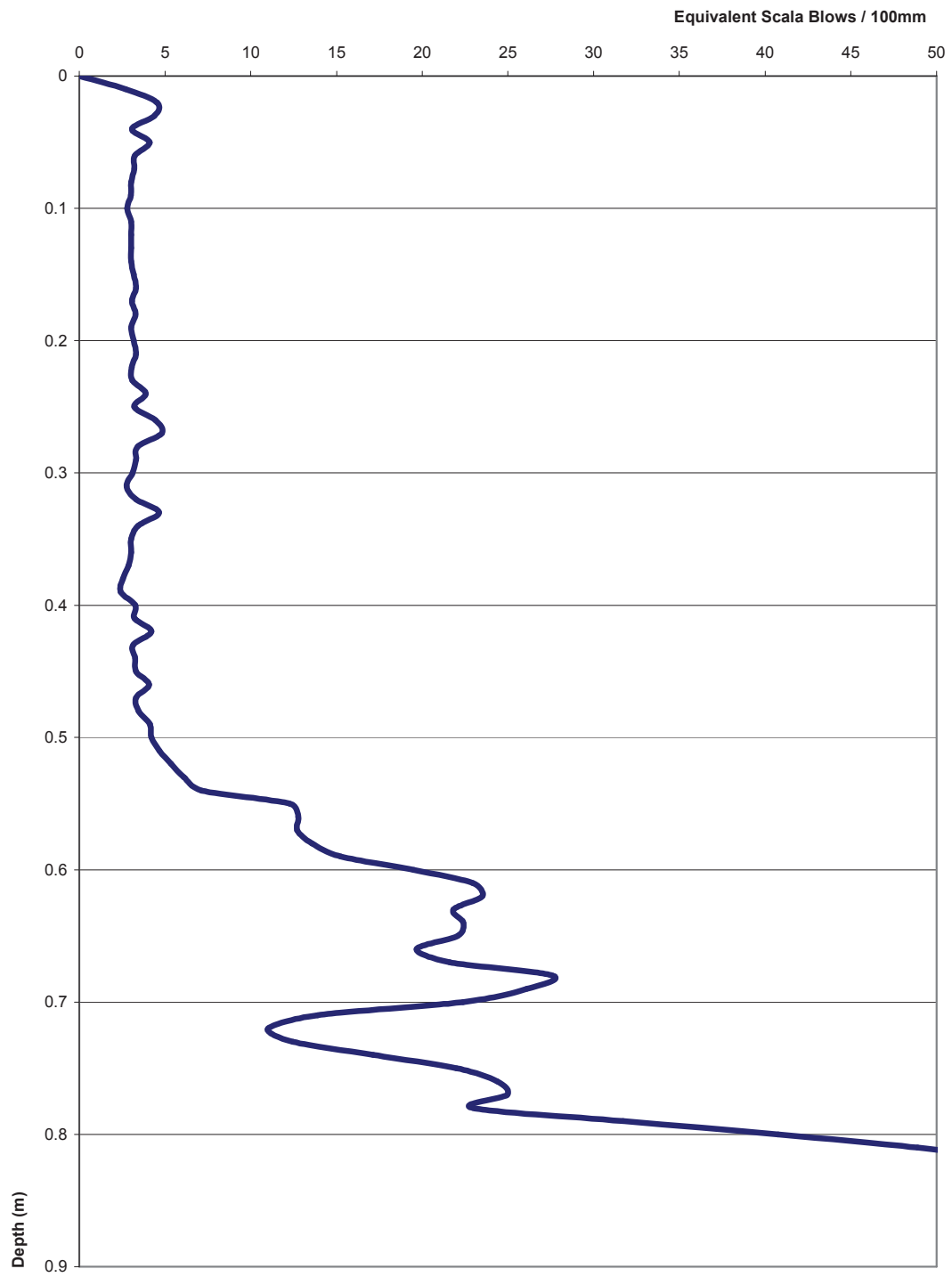
Sketch/Photo



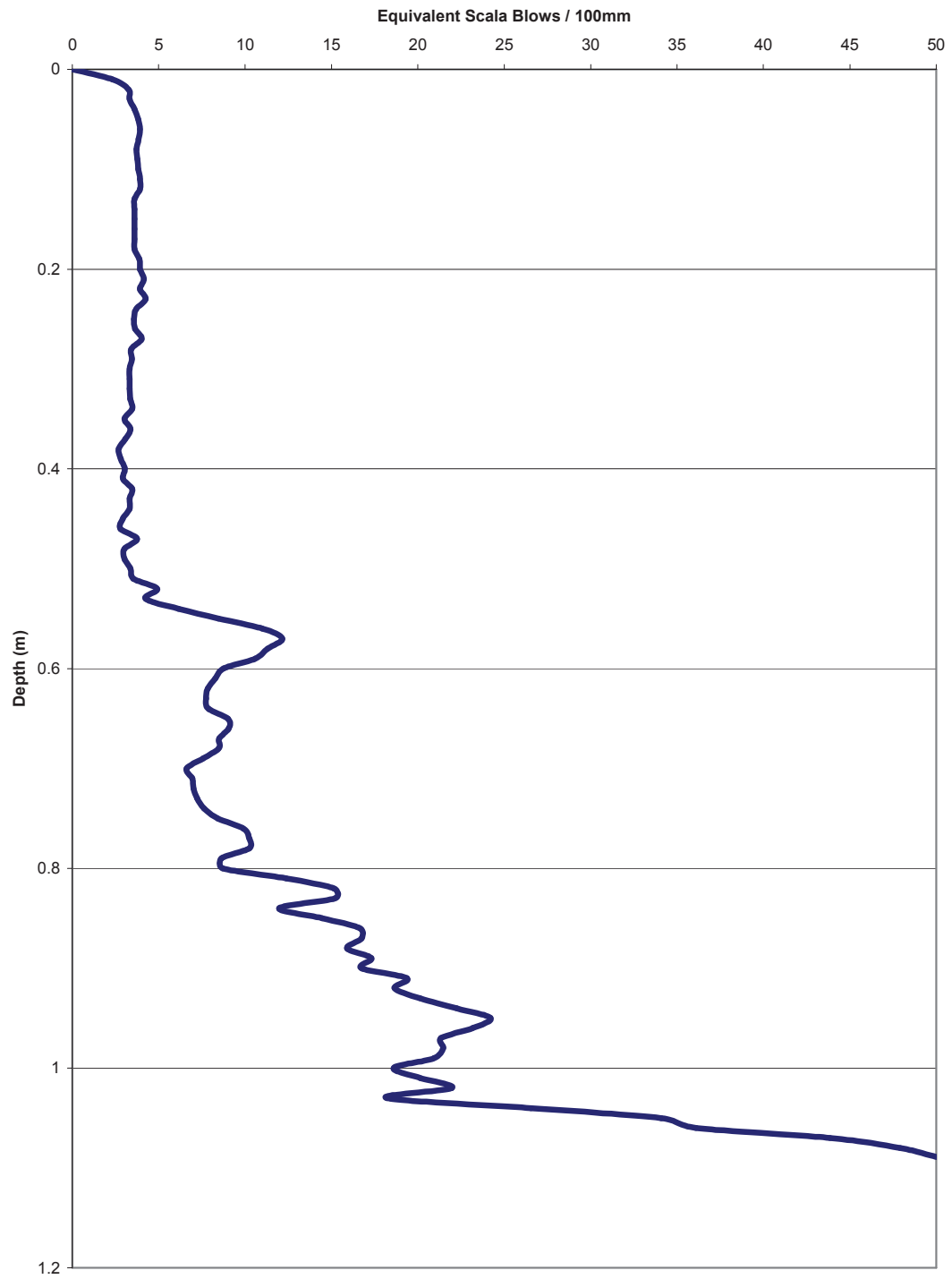
APPENDIX 4

AutoScala Penetrometer Results

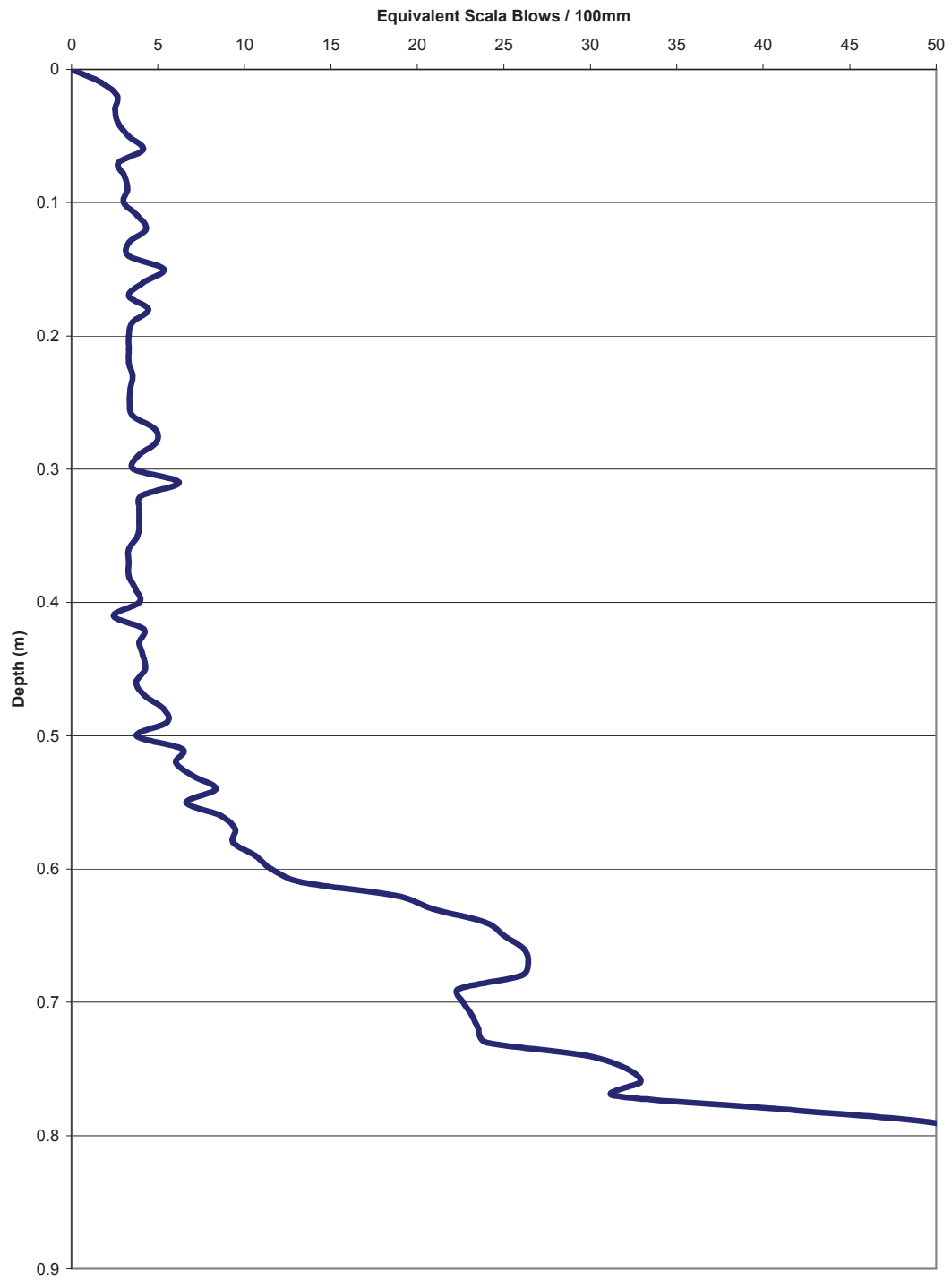
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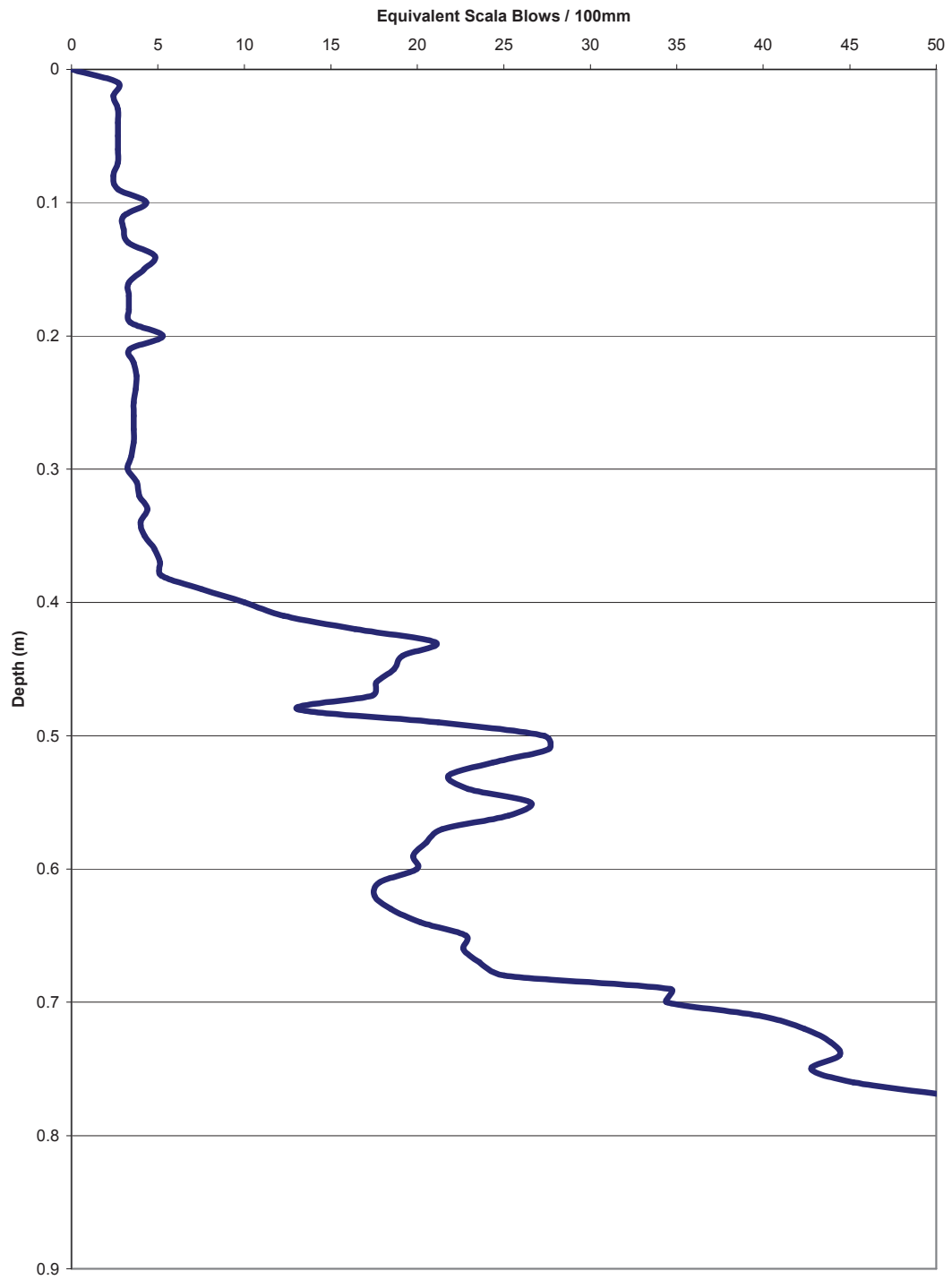
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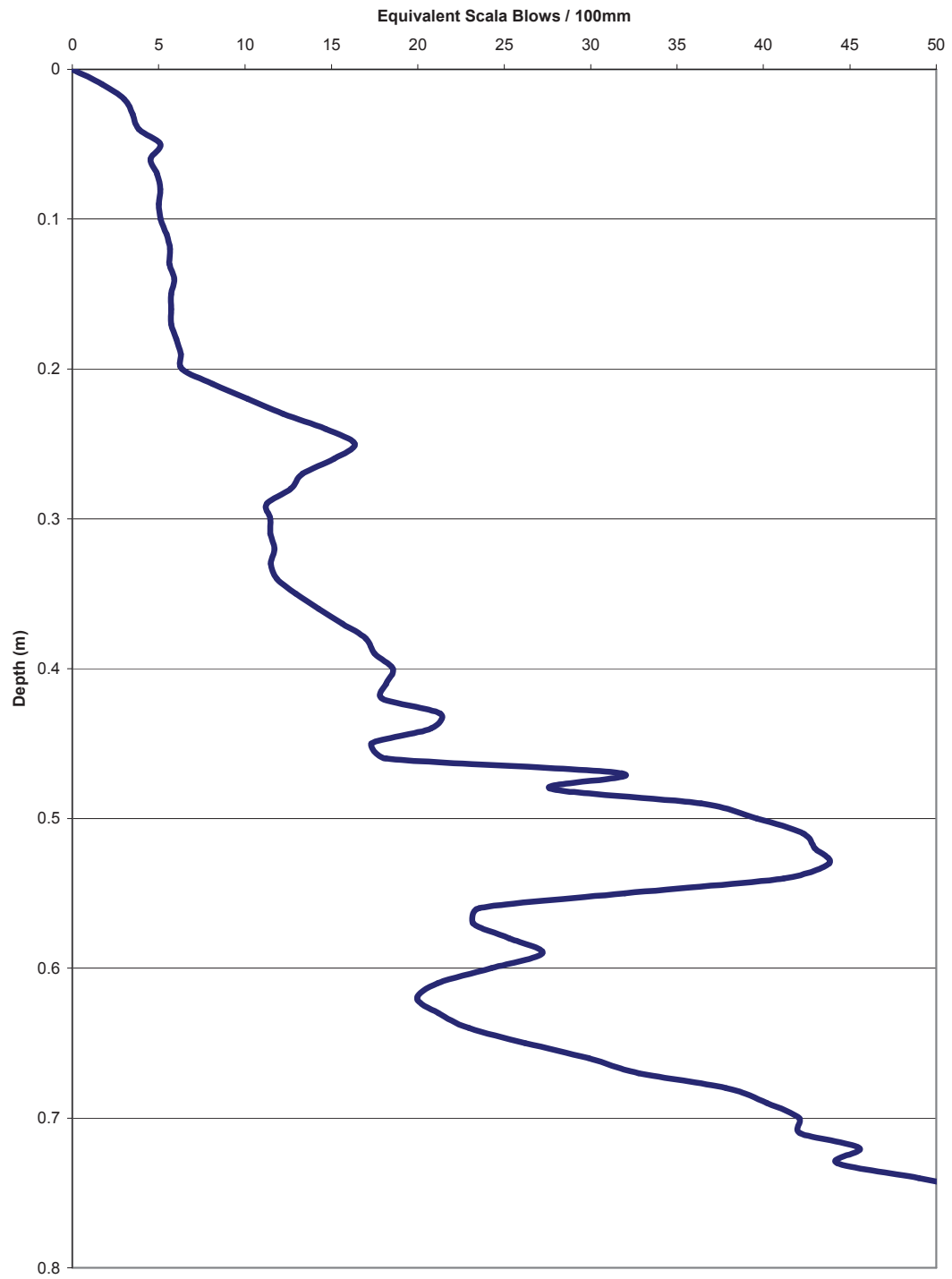
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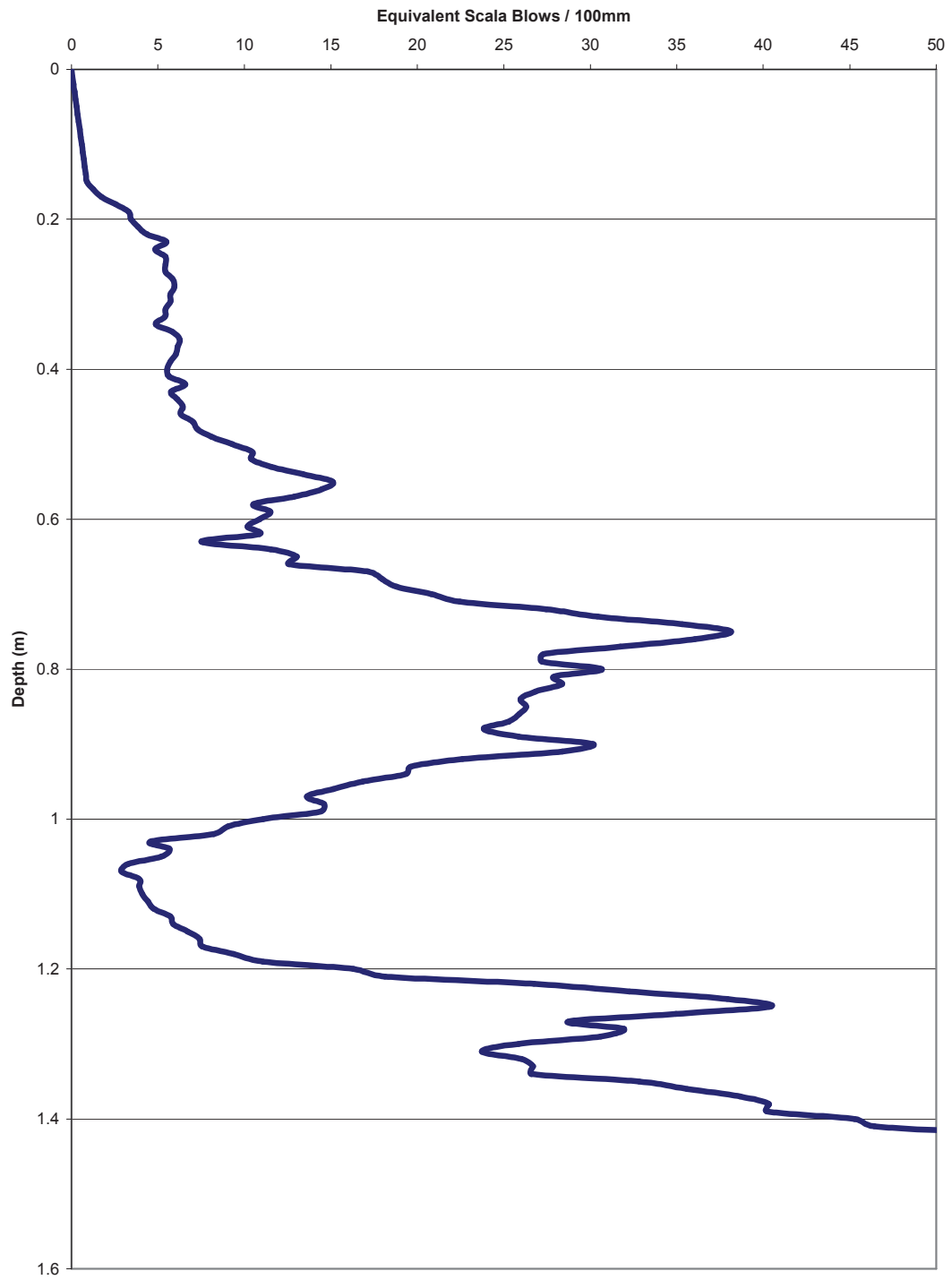
474 Bradleys Road, Ohoka, Site 4



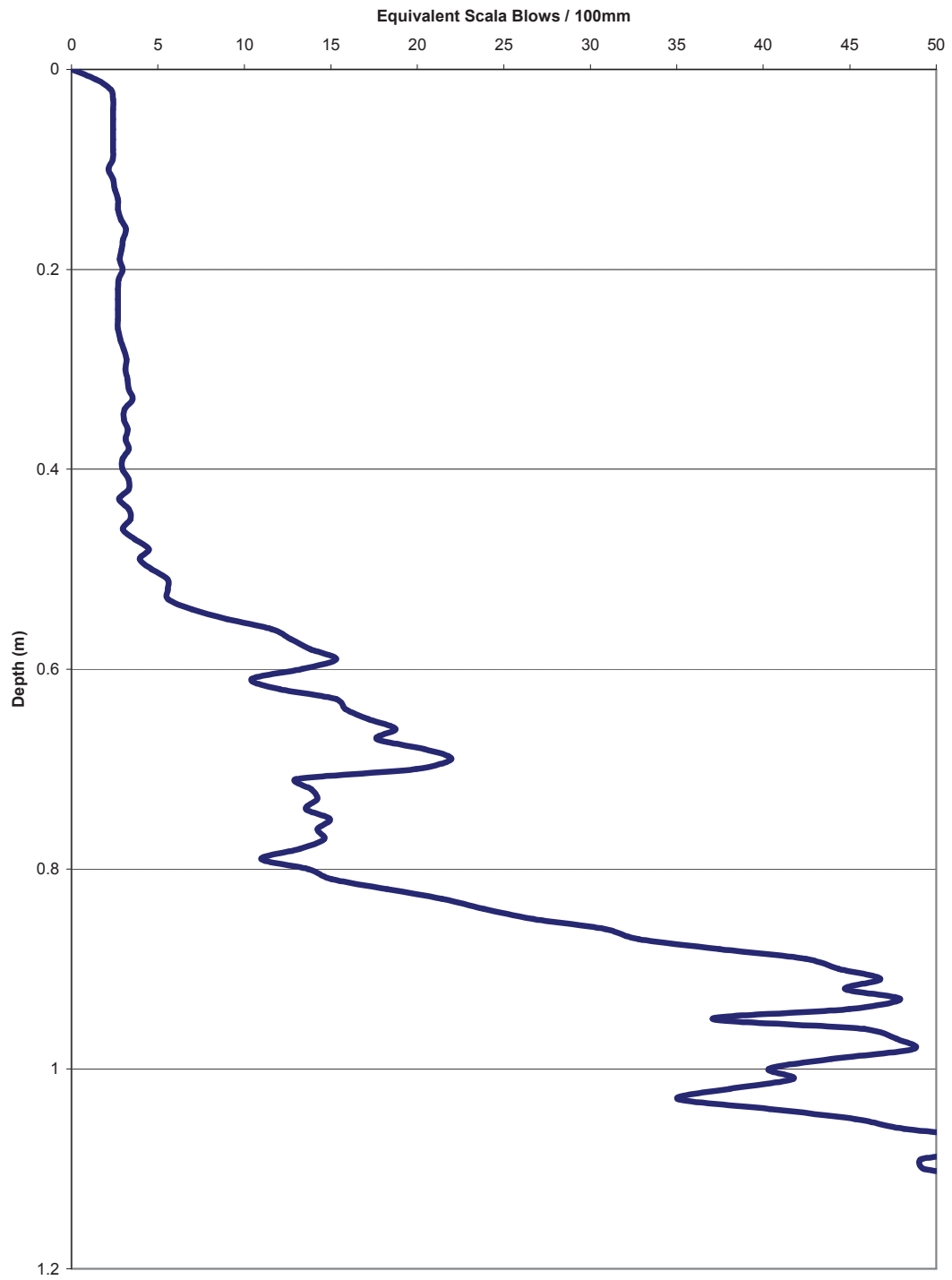
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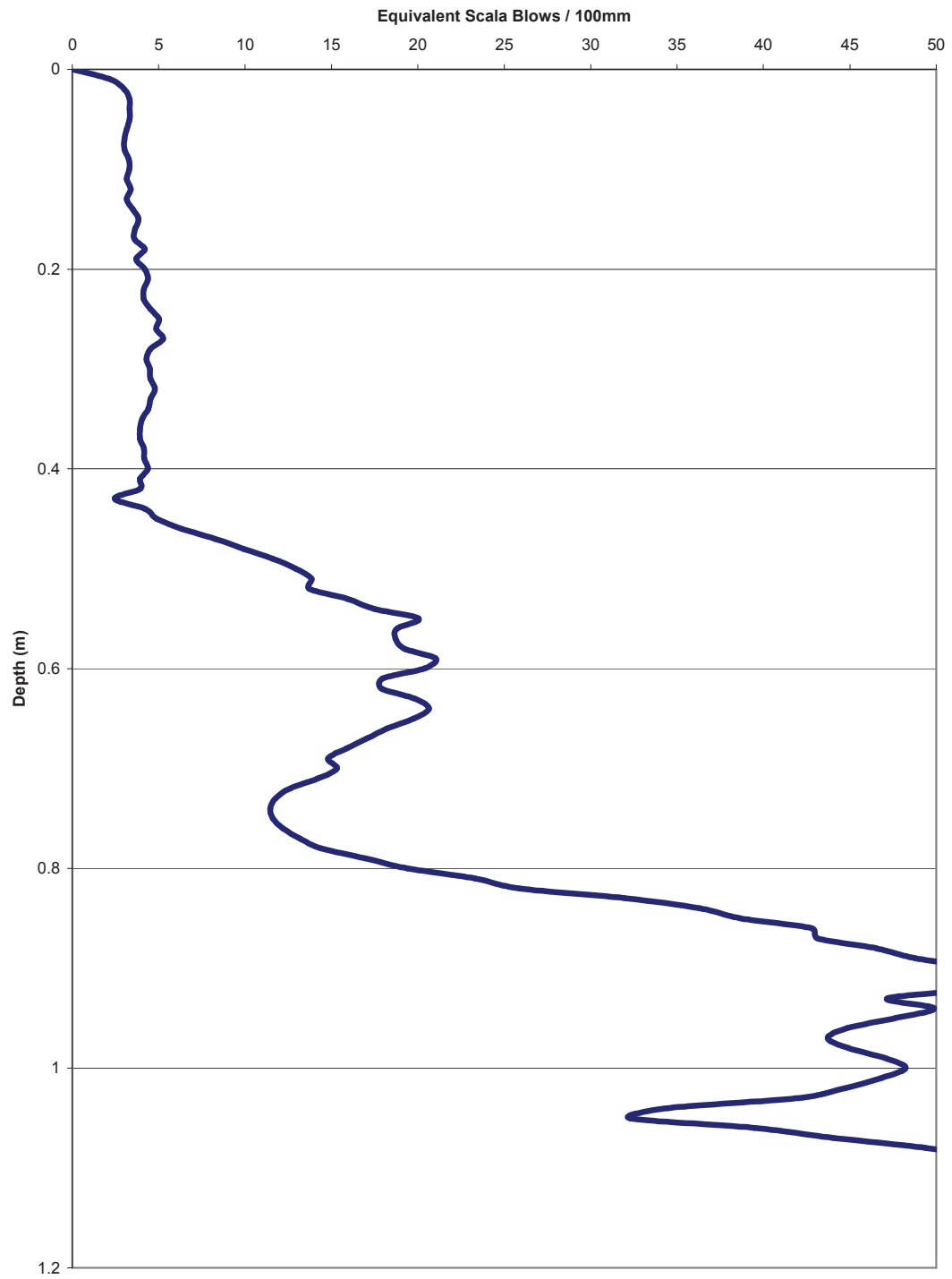
474 Bradleys Road, Ohoka, Site 6



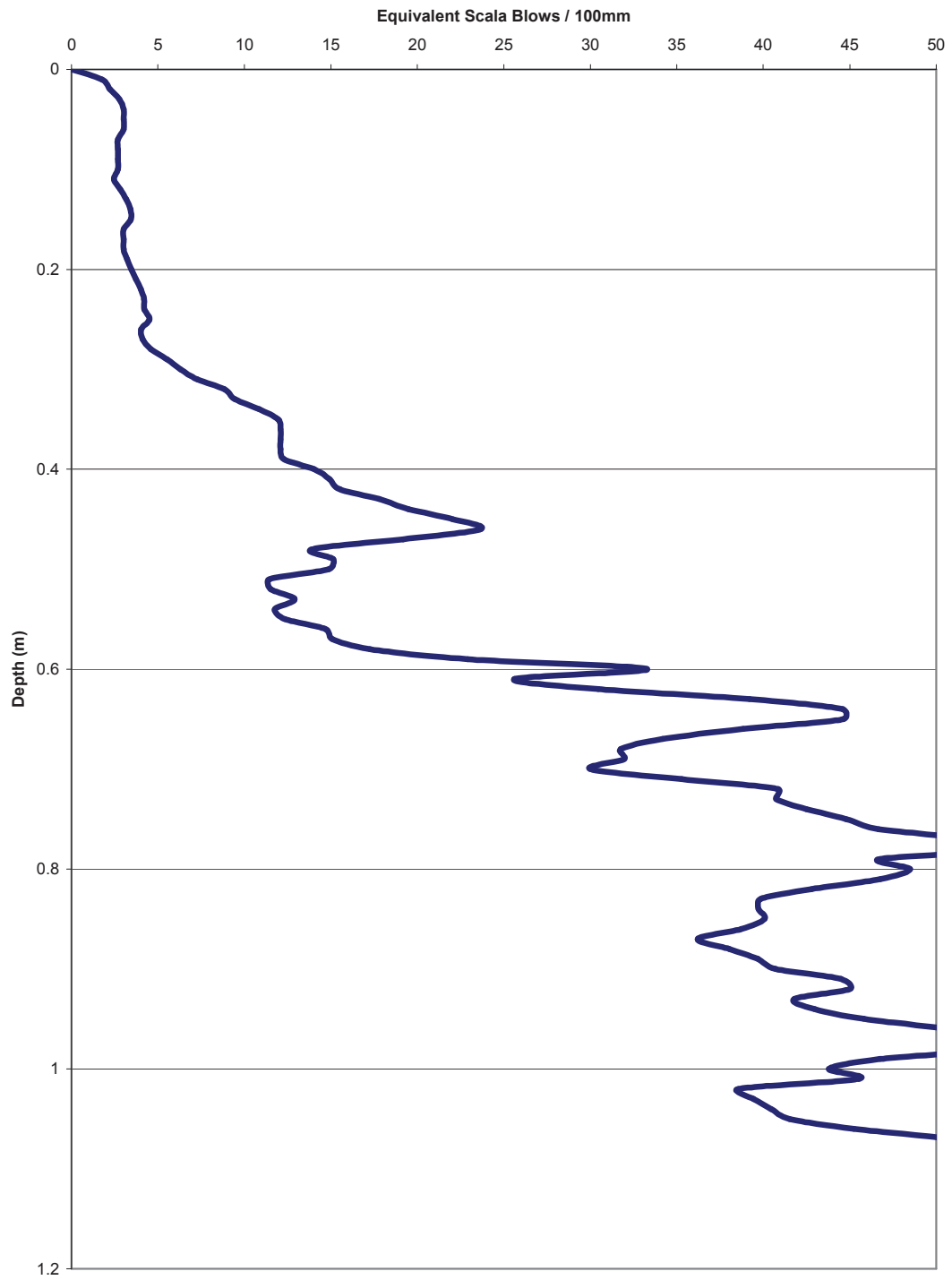
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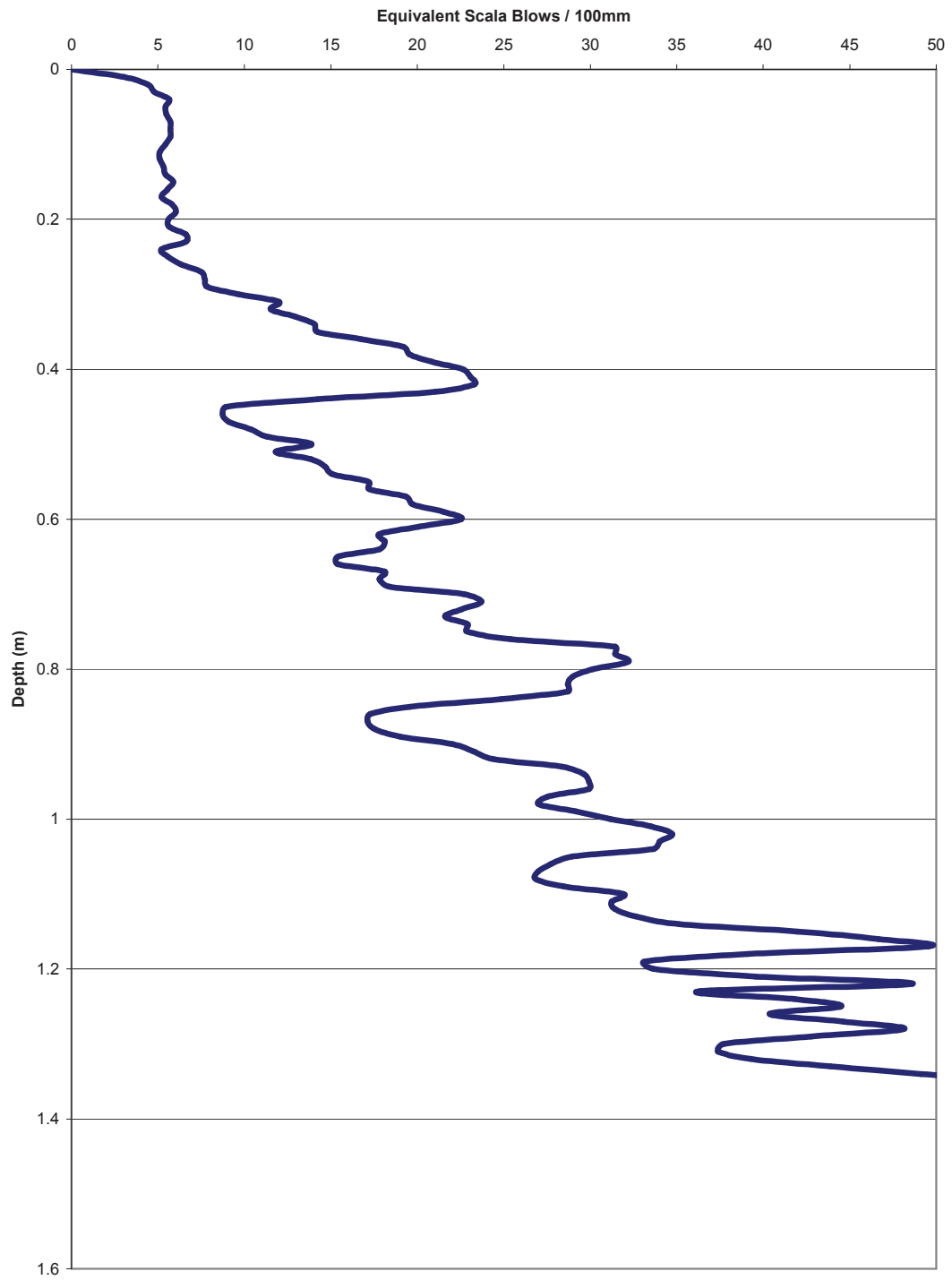
474 Bradleys Road, Ohoka, Site 8



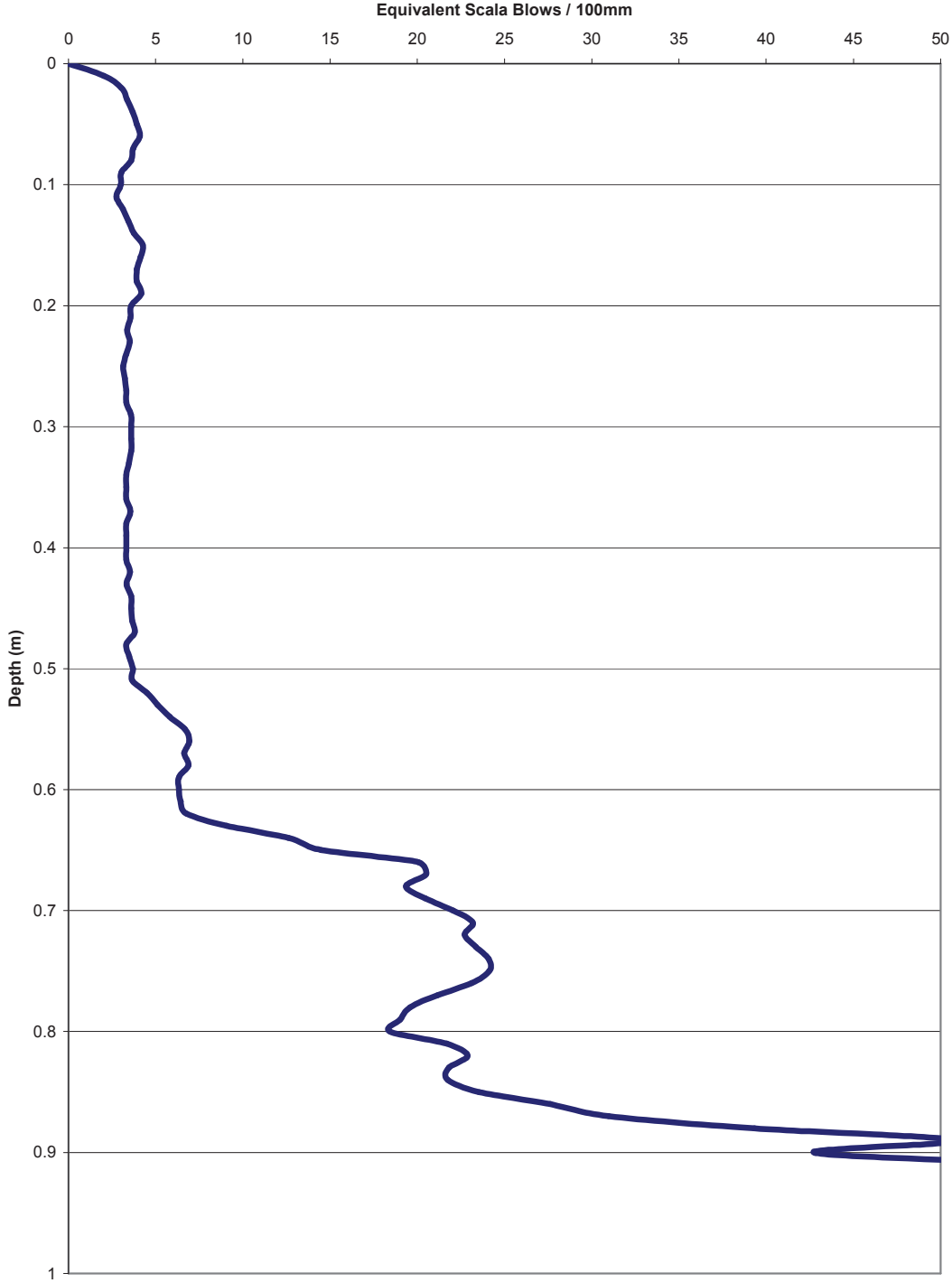
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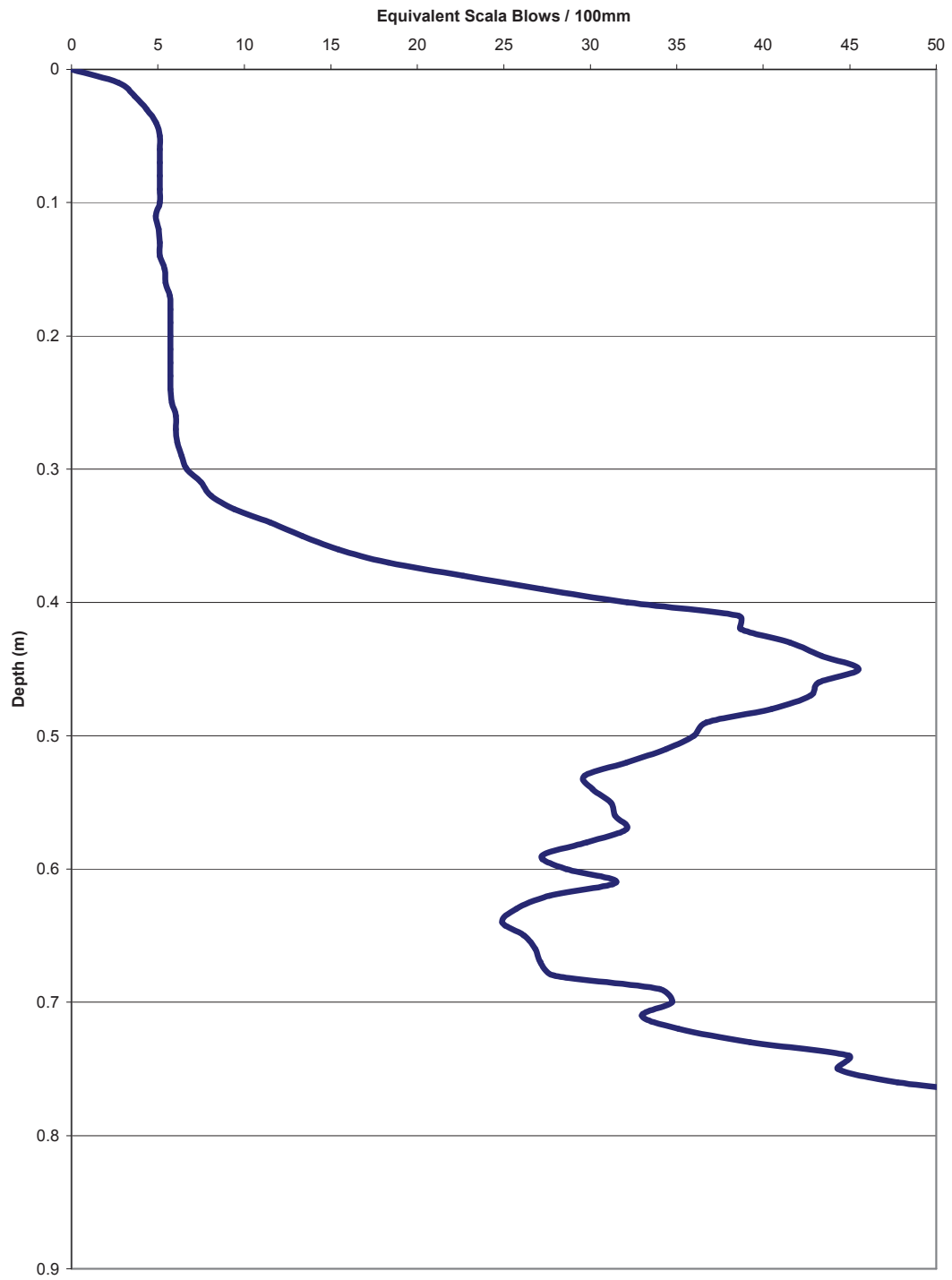
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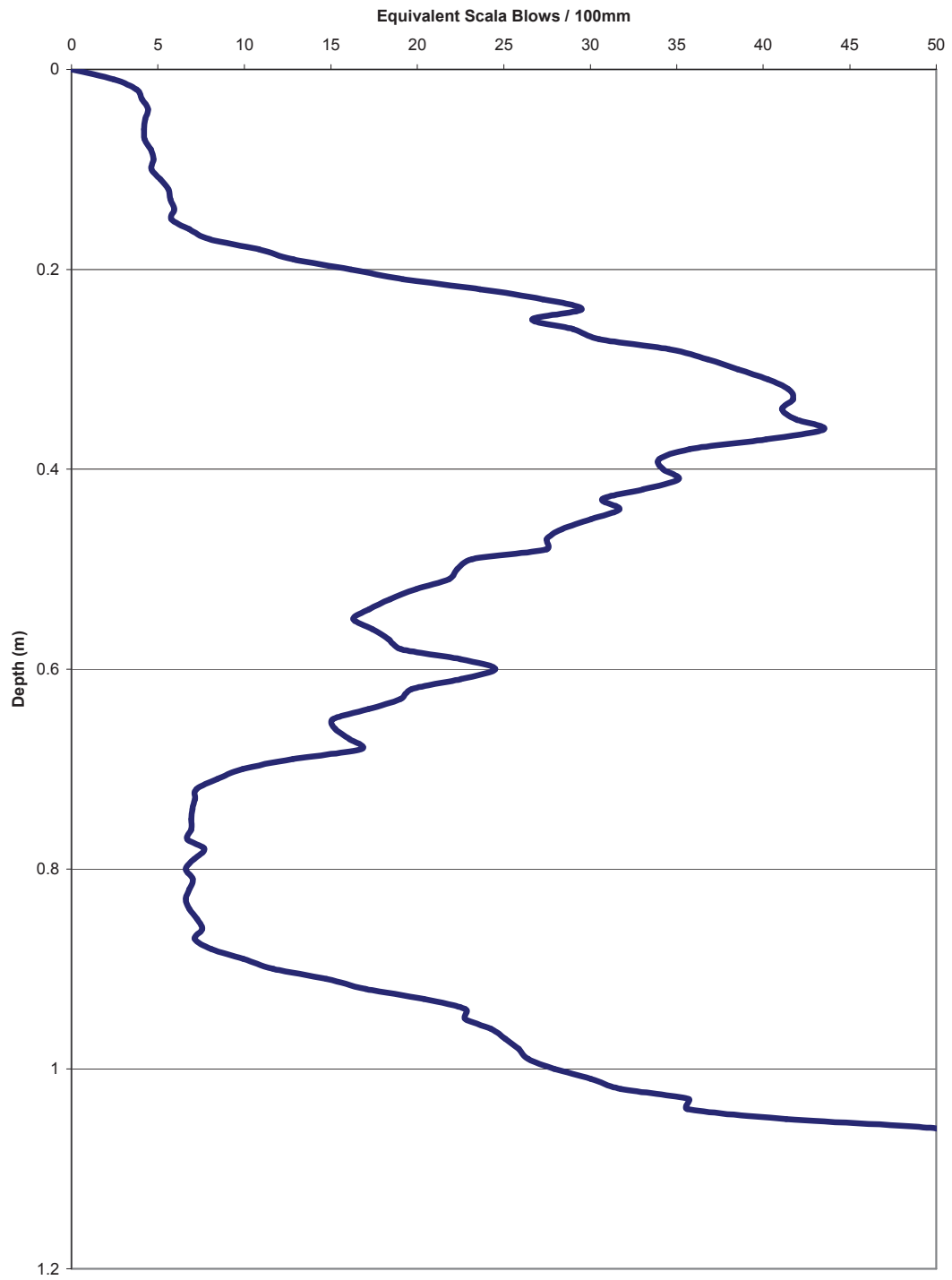
474 Bradleys Road, Ohoka, Site 11



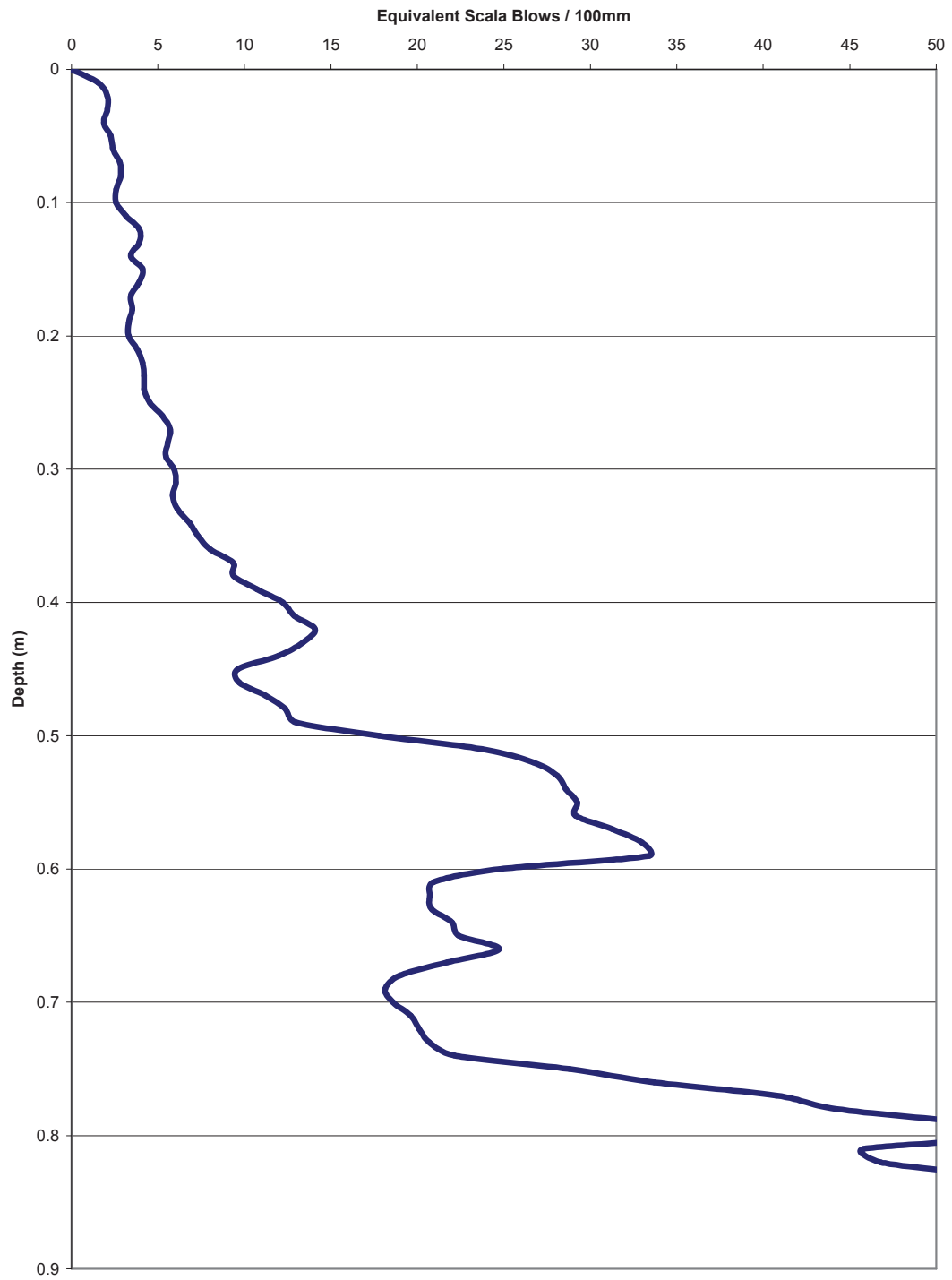
474 Bradleys Road, Ohoka, Site 12



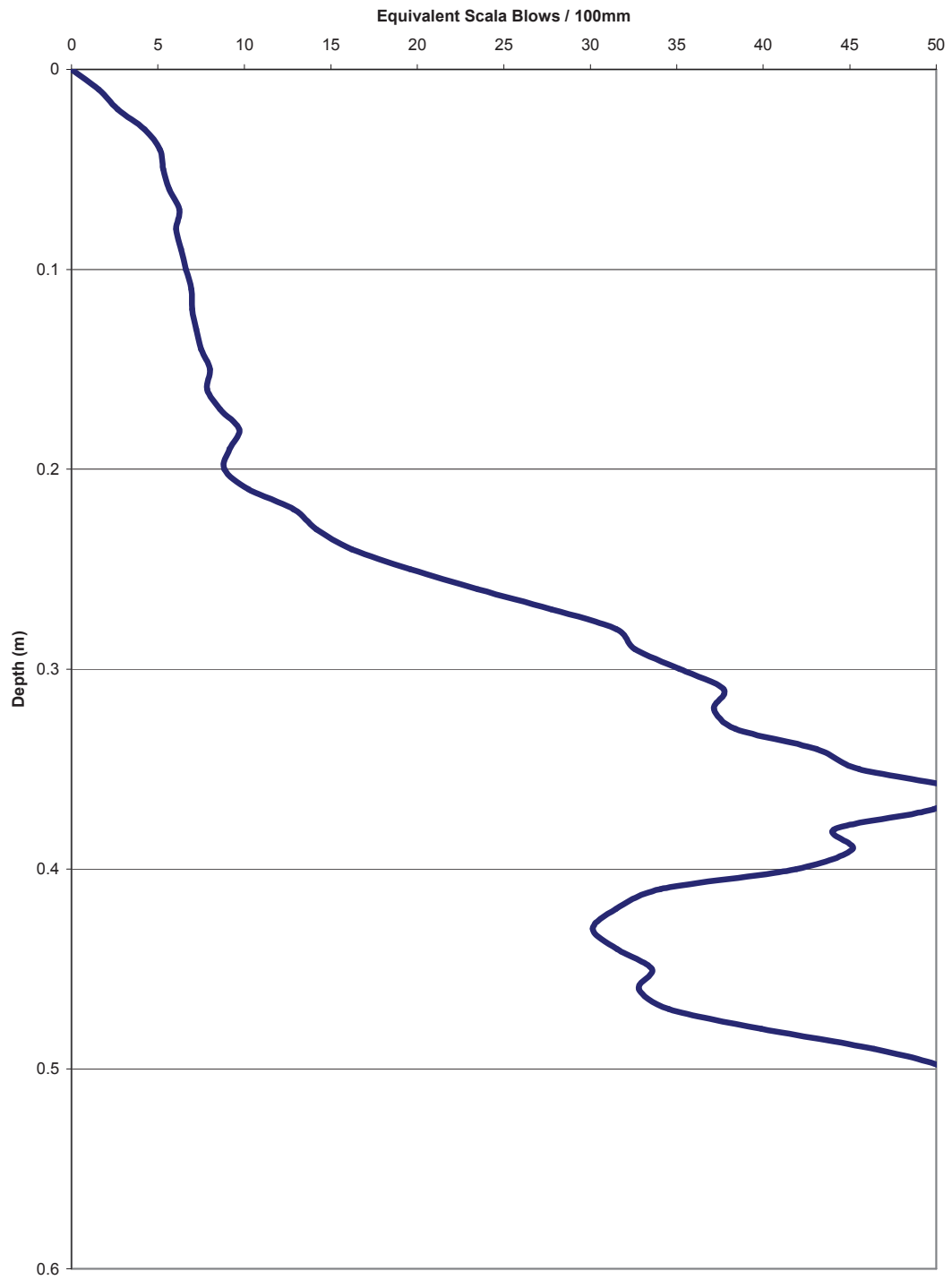
474 Bradleys Road, Ohoka, Site 13



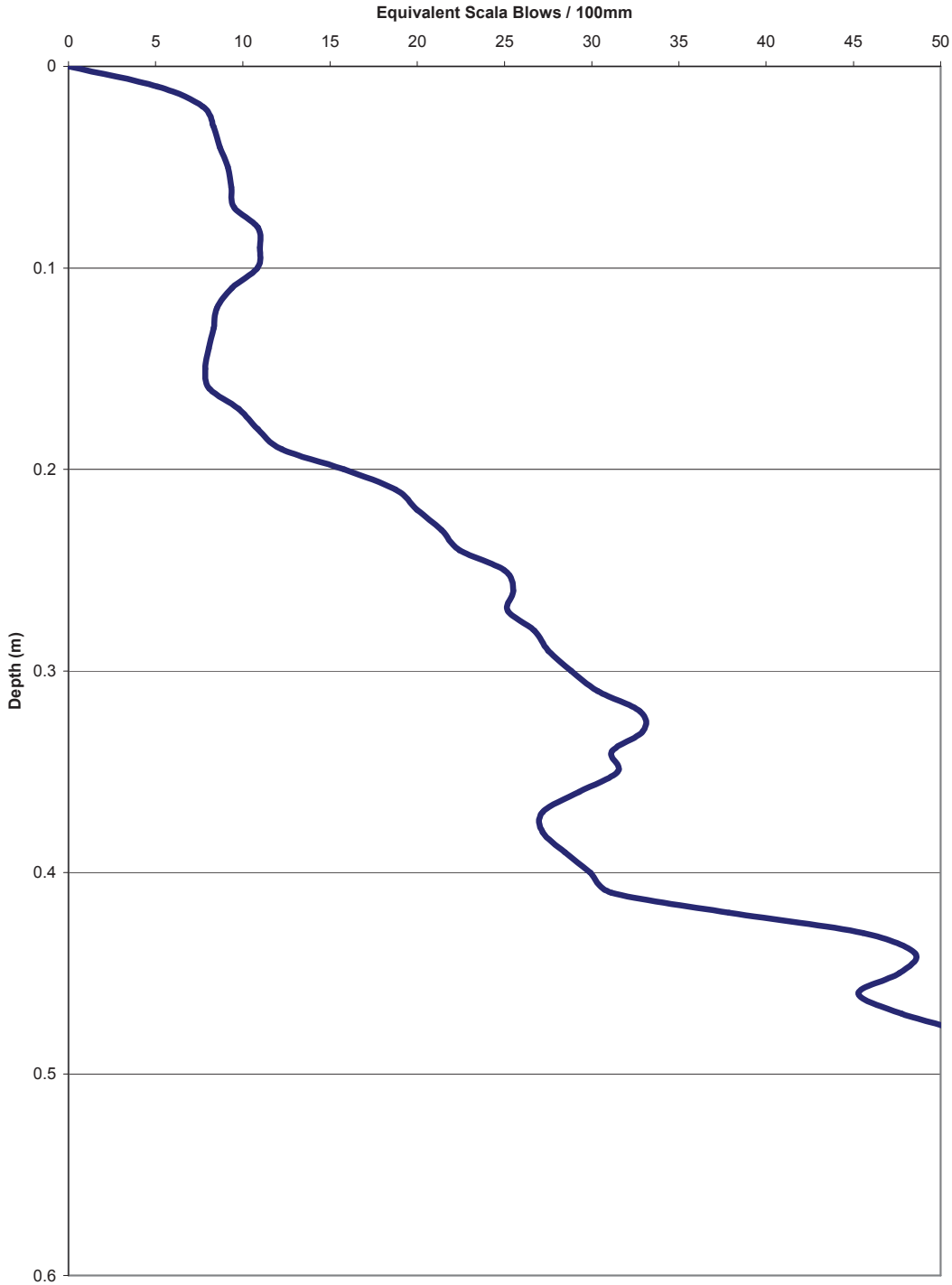
474 Bradleys Road, Ohoka, Site 14



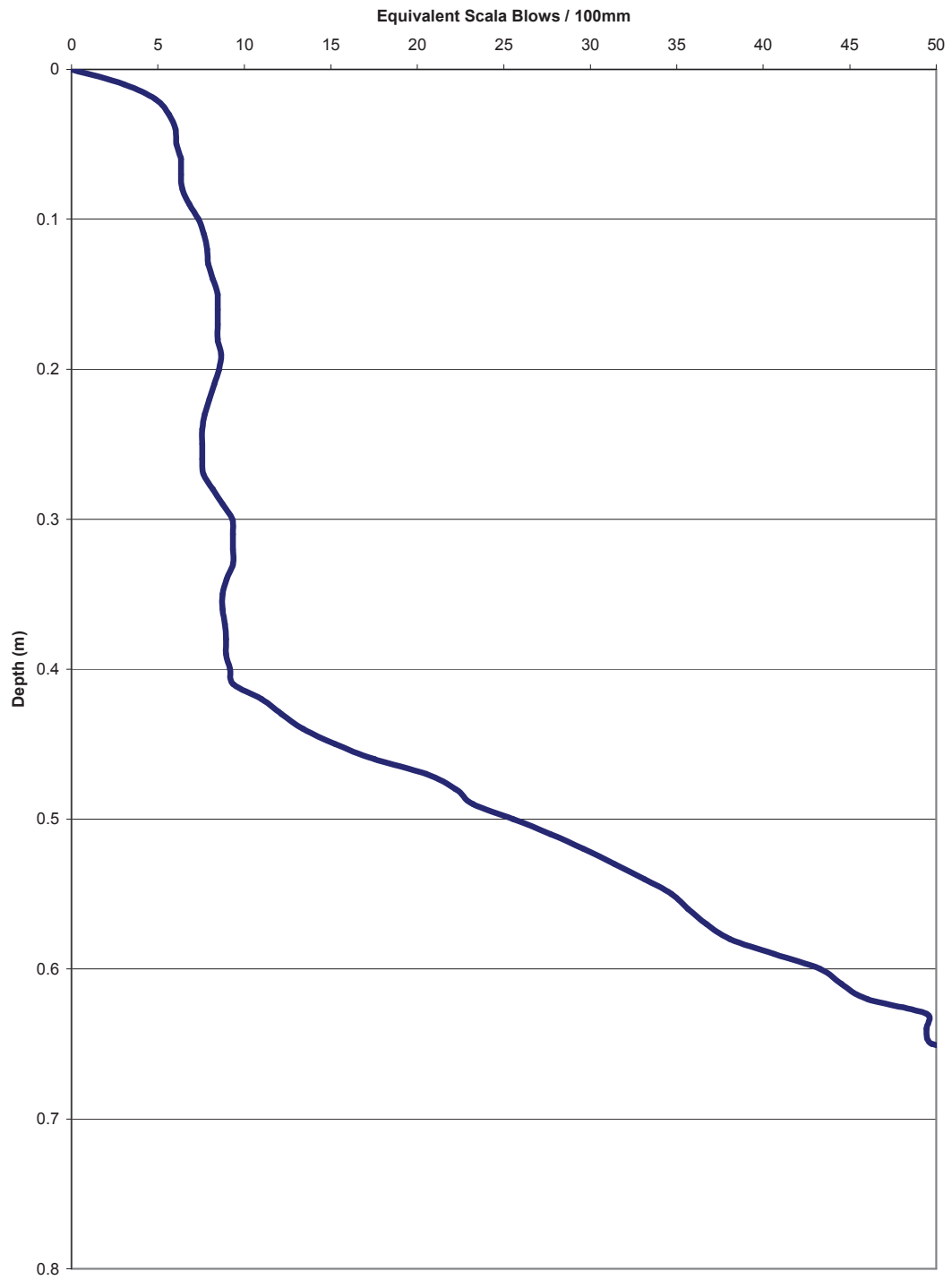
474 Bradleys Road, Ohoka, Site 15



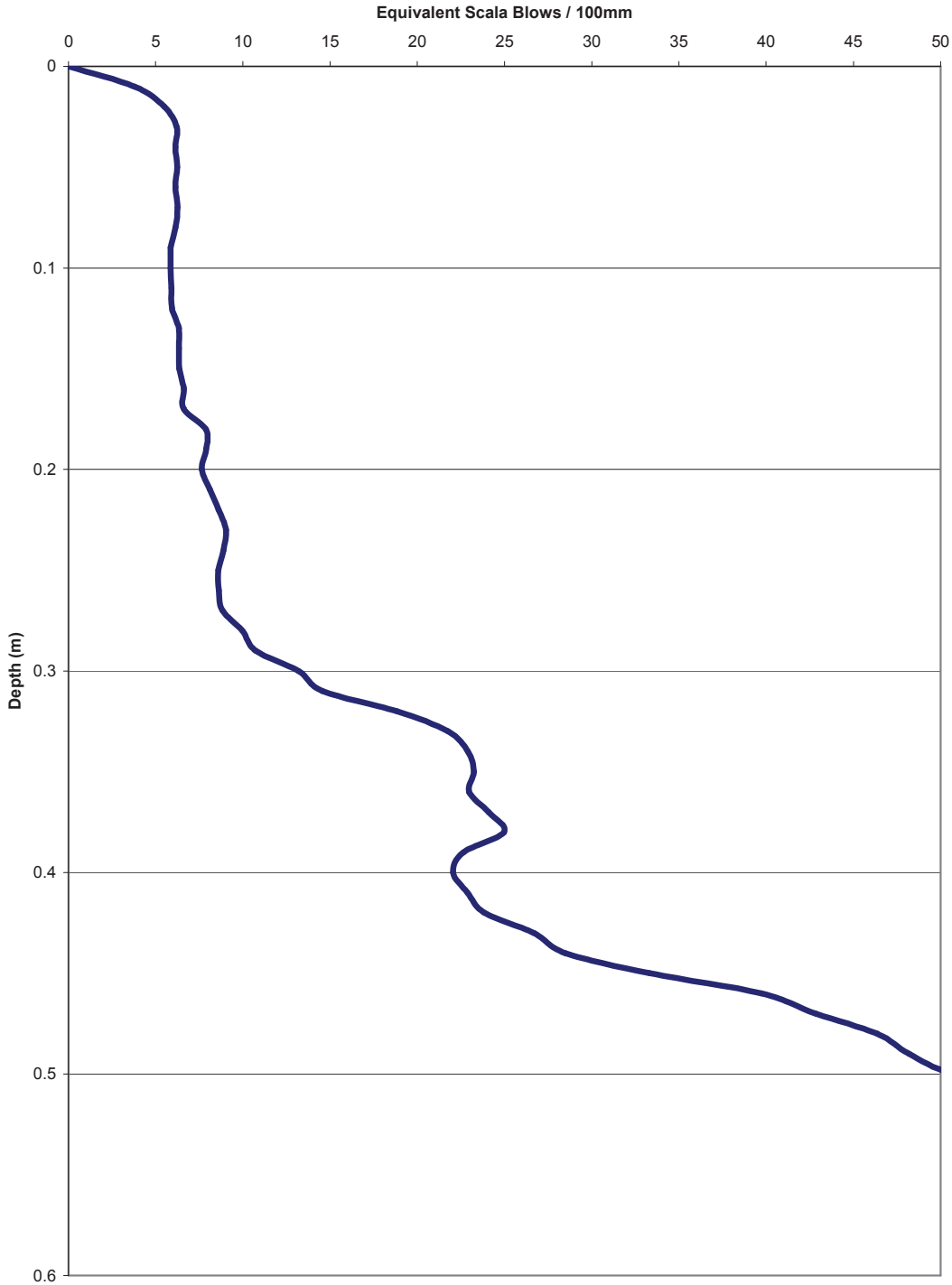
474 Bradleys Road, Ohoka, Site 16



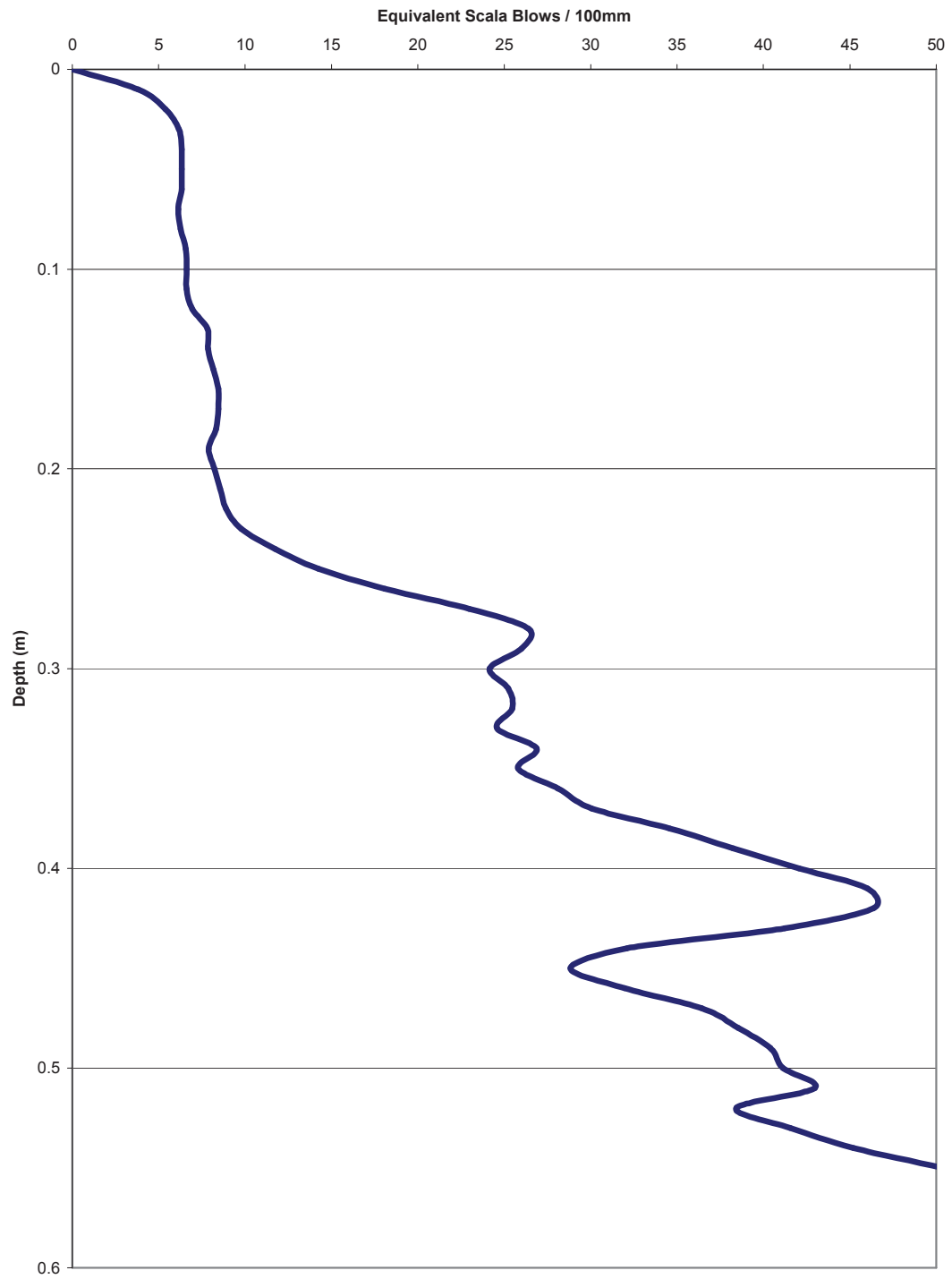
474 Bradleys Road, Ohoka, Site 17



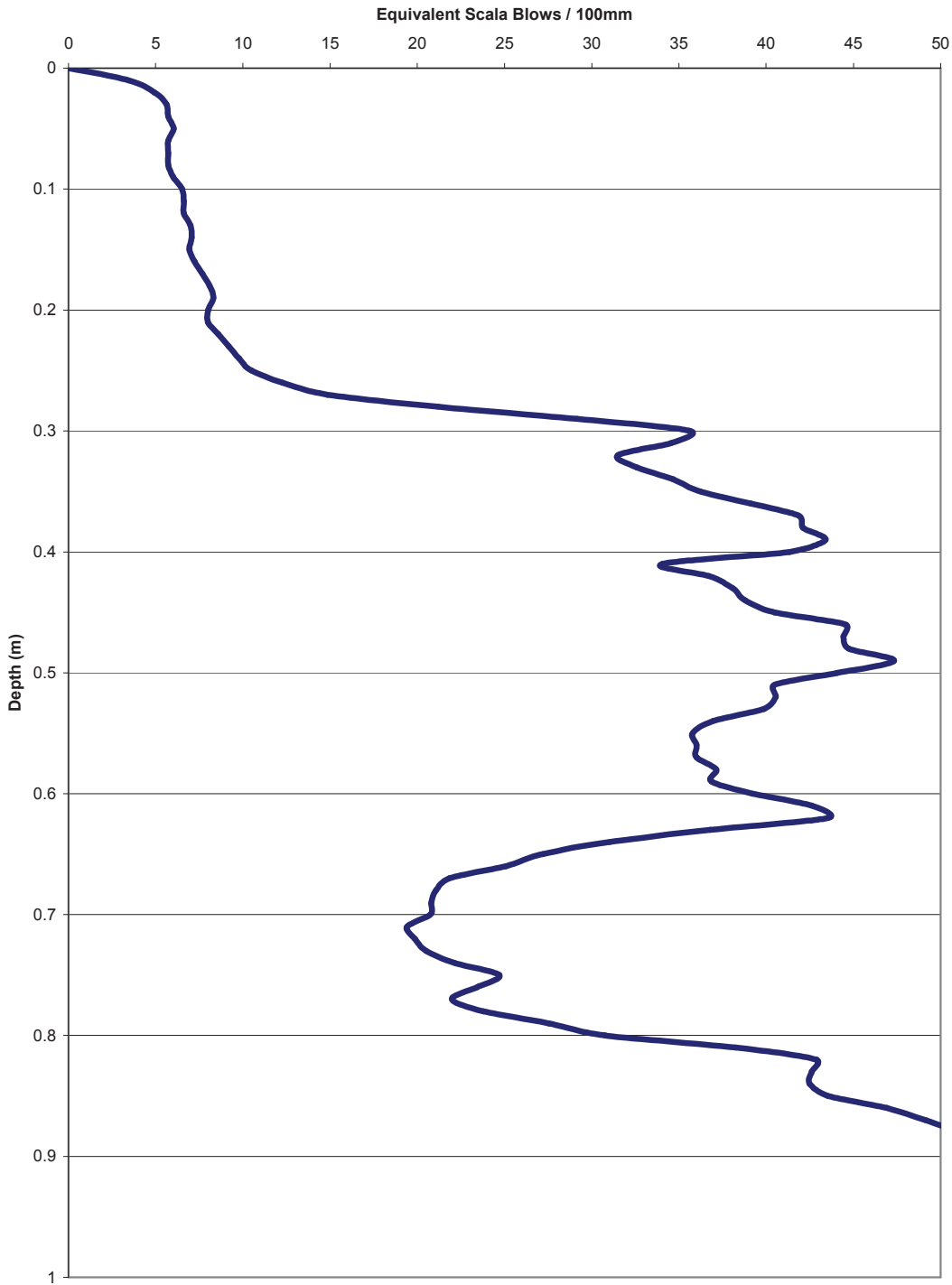
474 Bradleys Road, Ohoka, Site 18



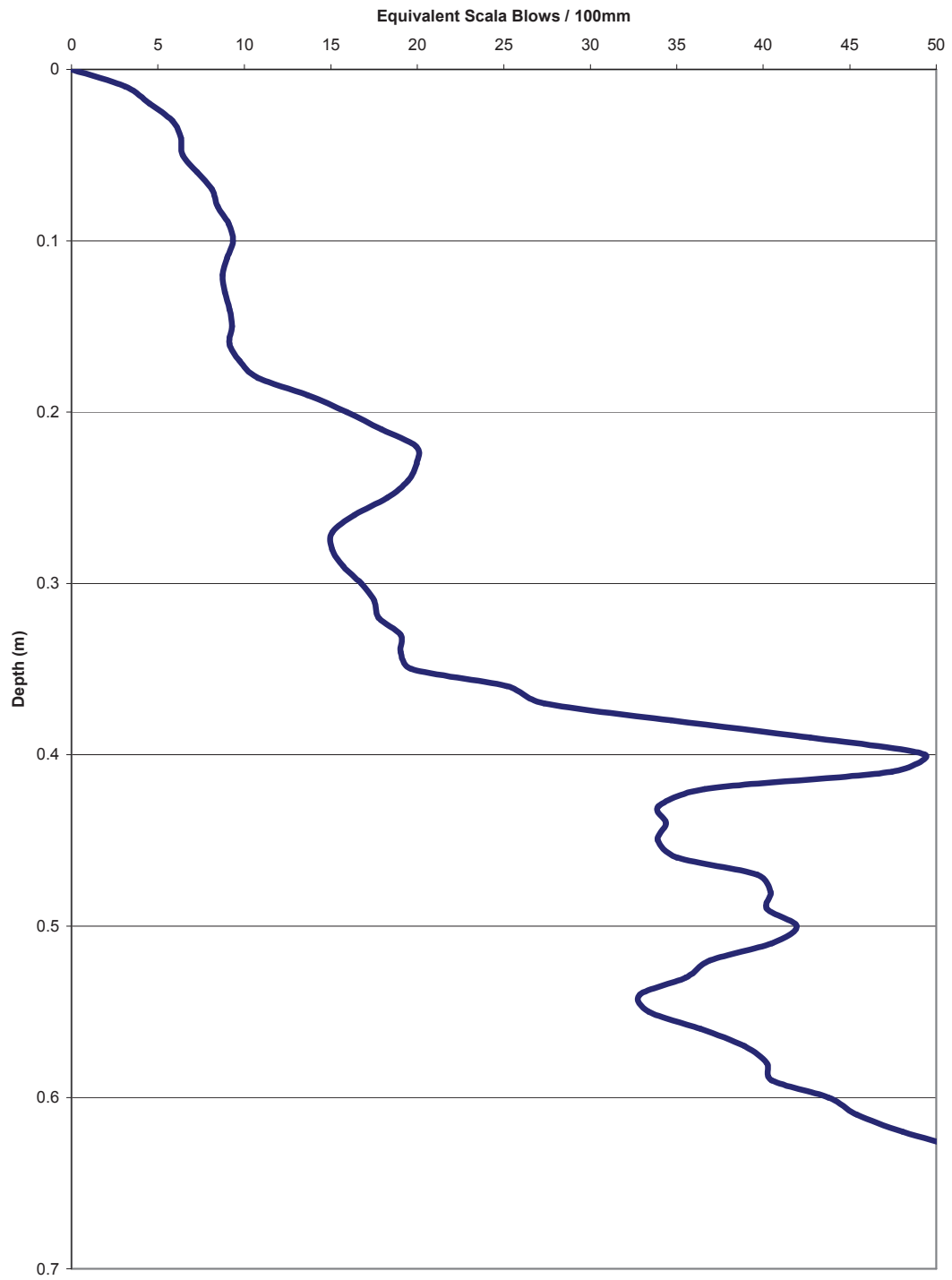
474 Bradleys Road, Ohoka, Site 19



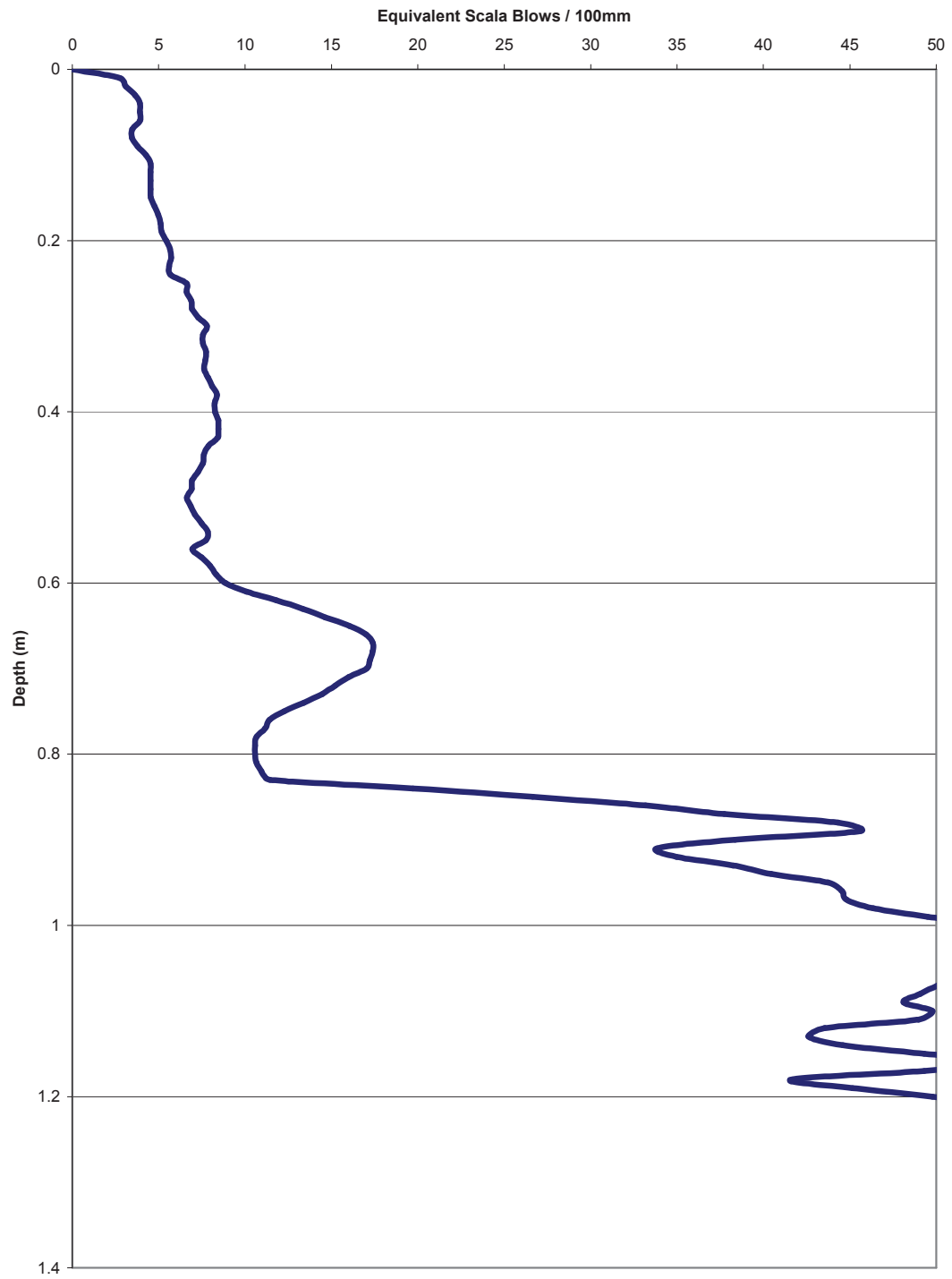
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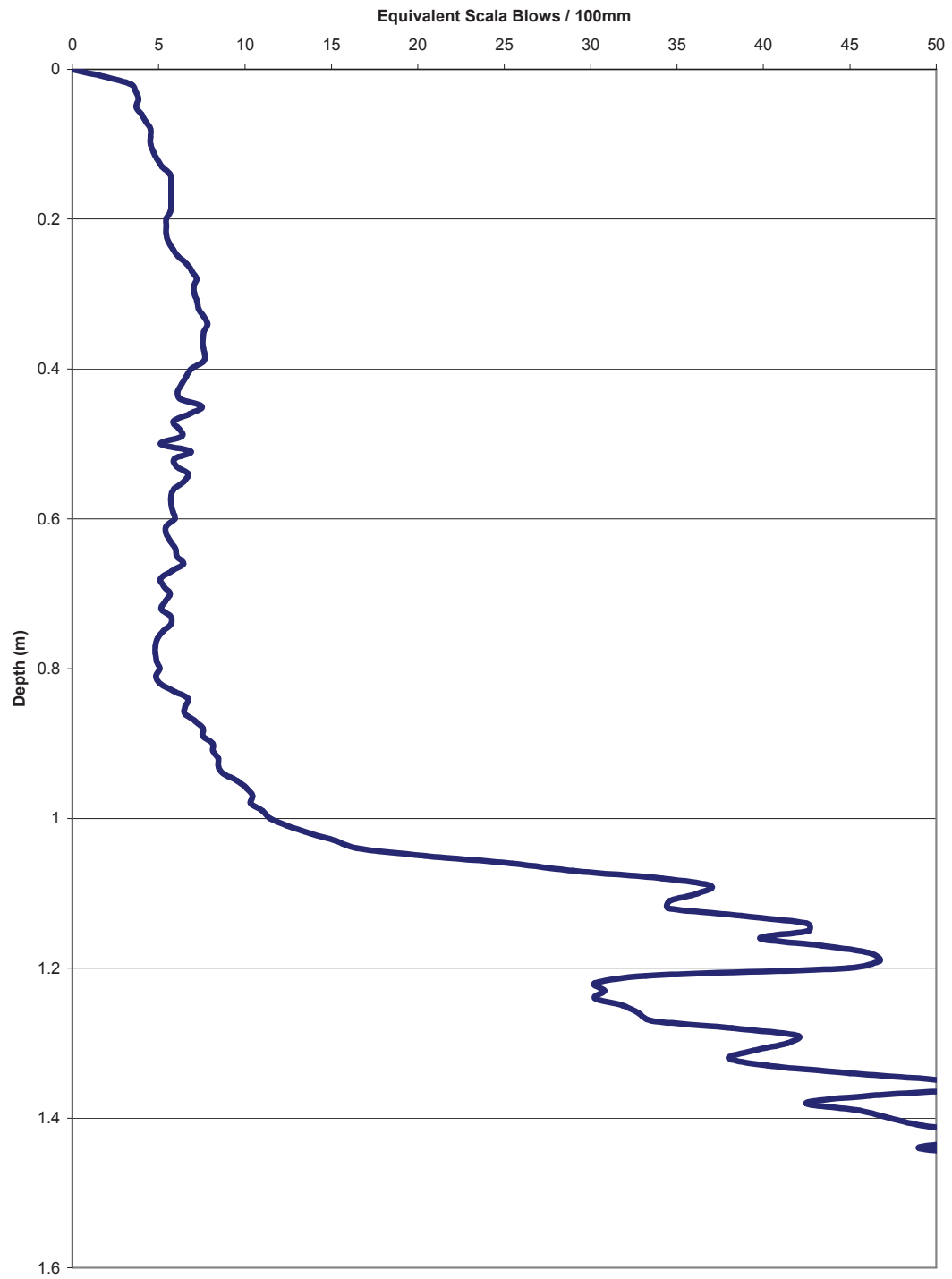
474 Bradleys Road, Ohoka, Site 21



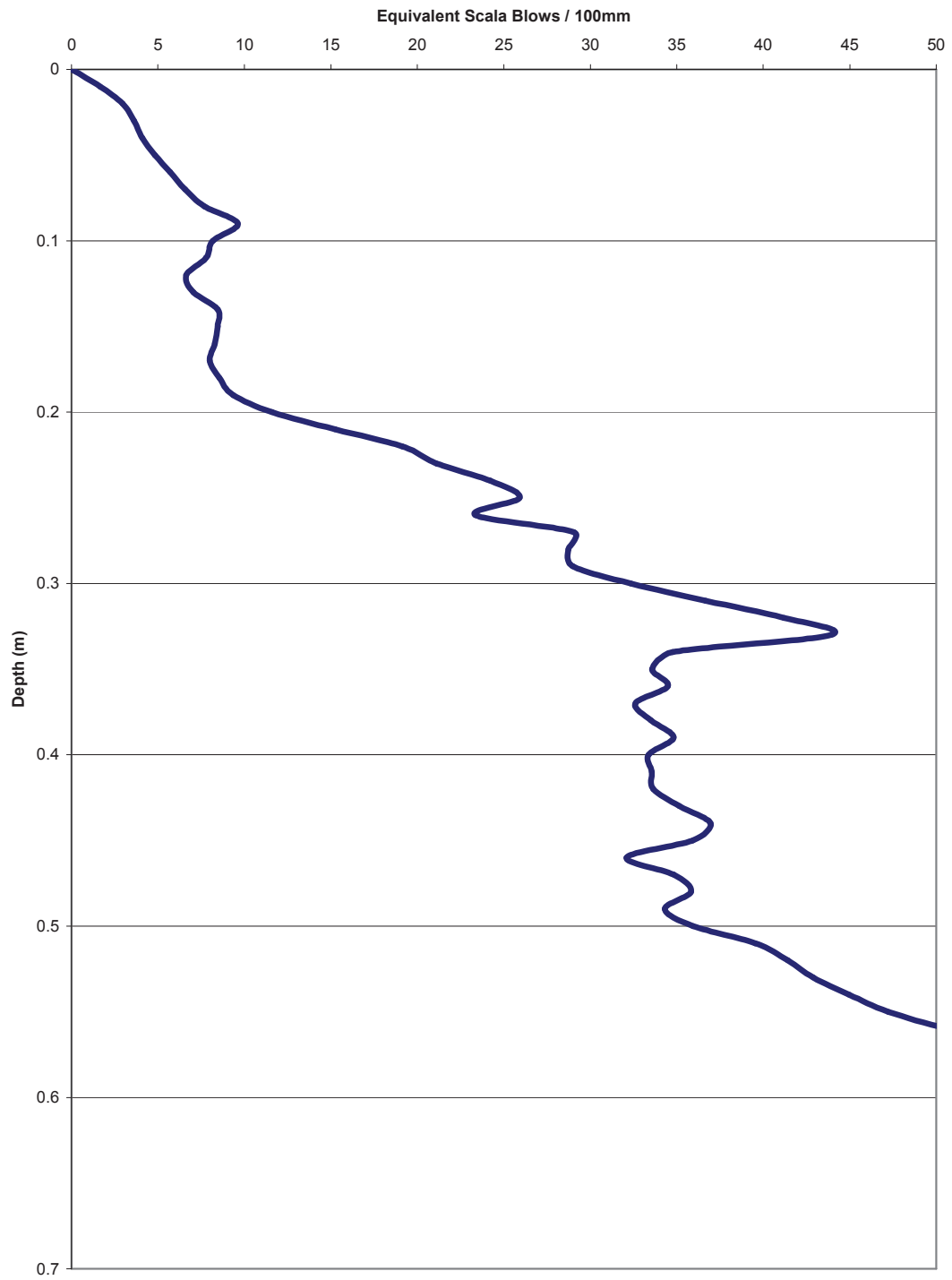
474 Bradleys Road, Ohoka, Site 22



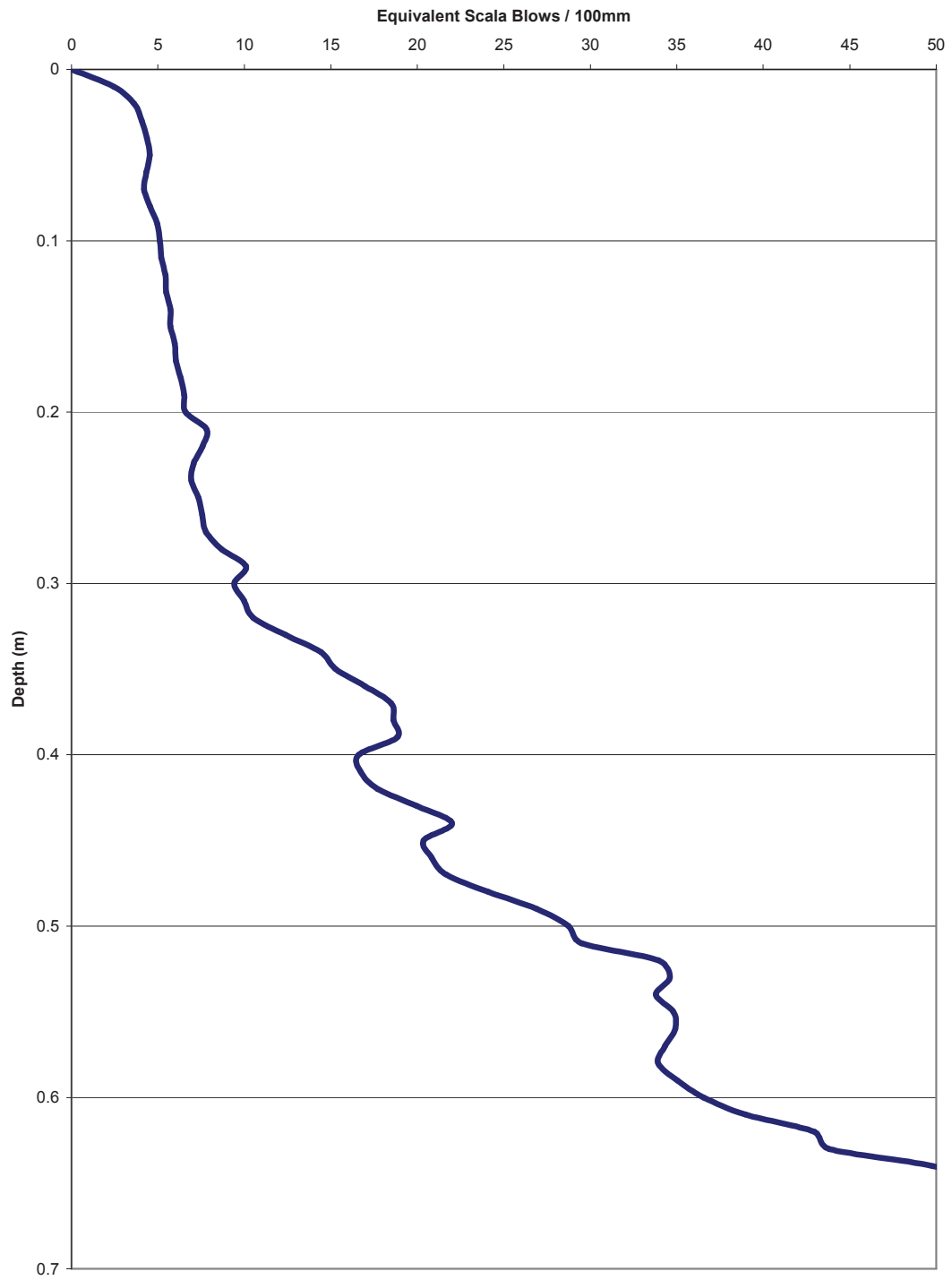
474 Bradleys Road, Ohoka, Site 23



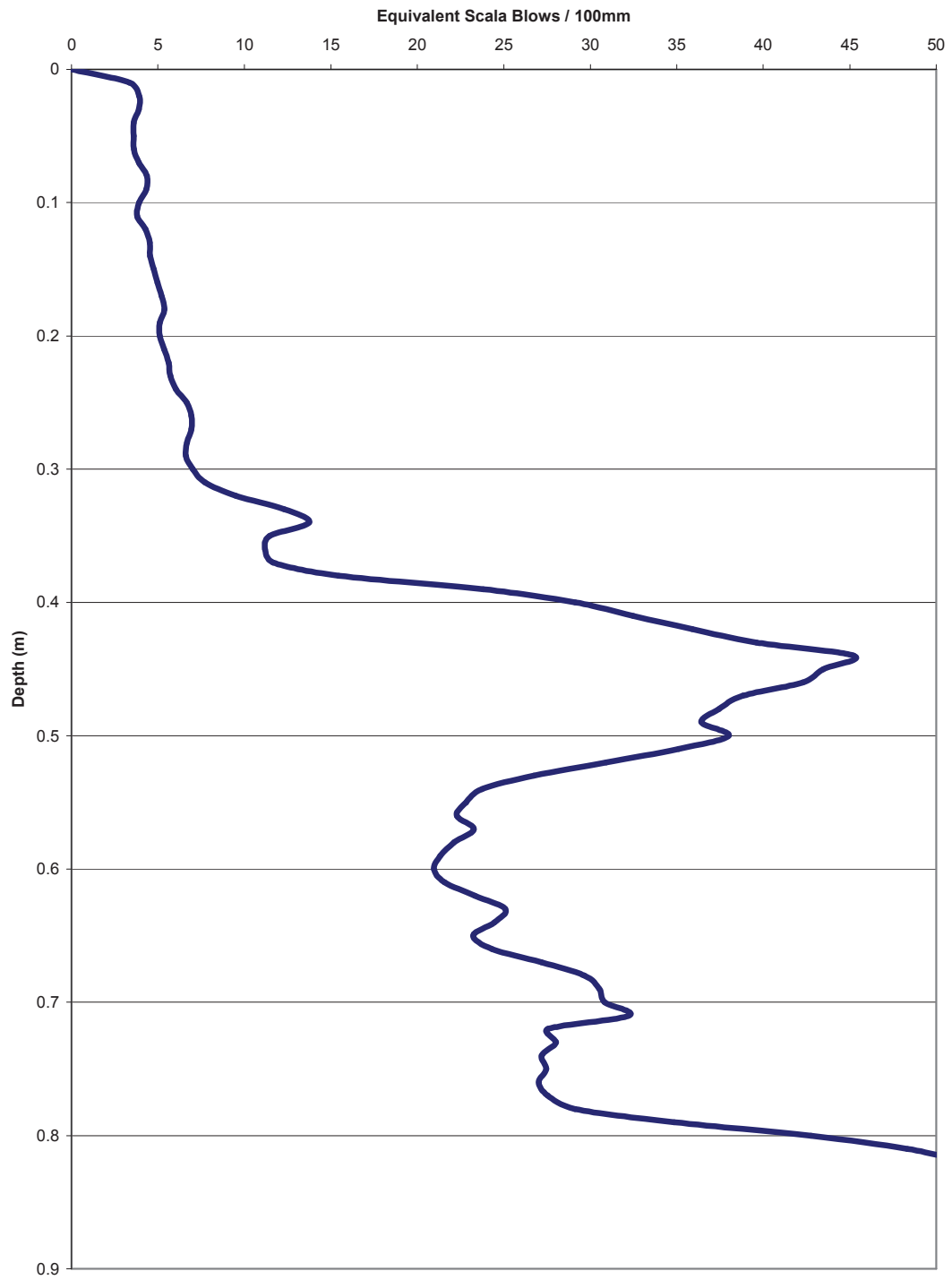
474 Bradleys Road, Ohoka, Site 24



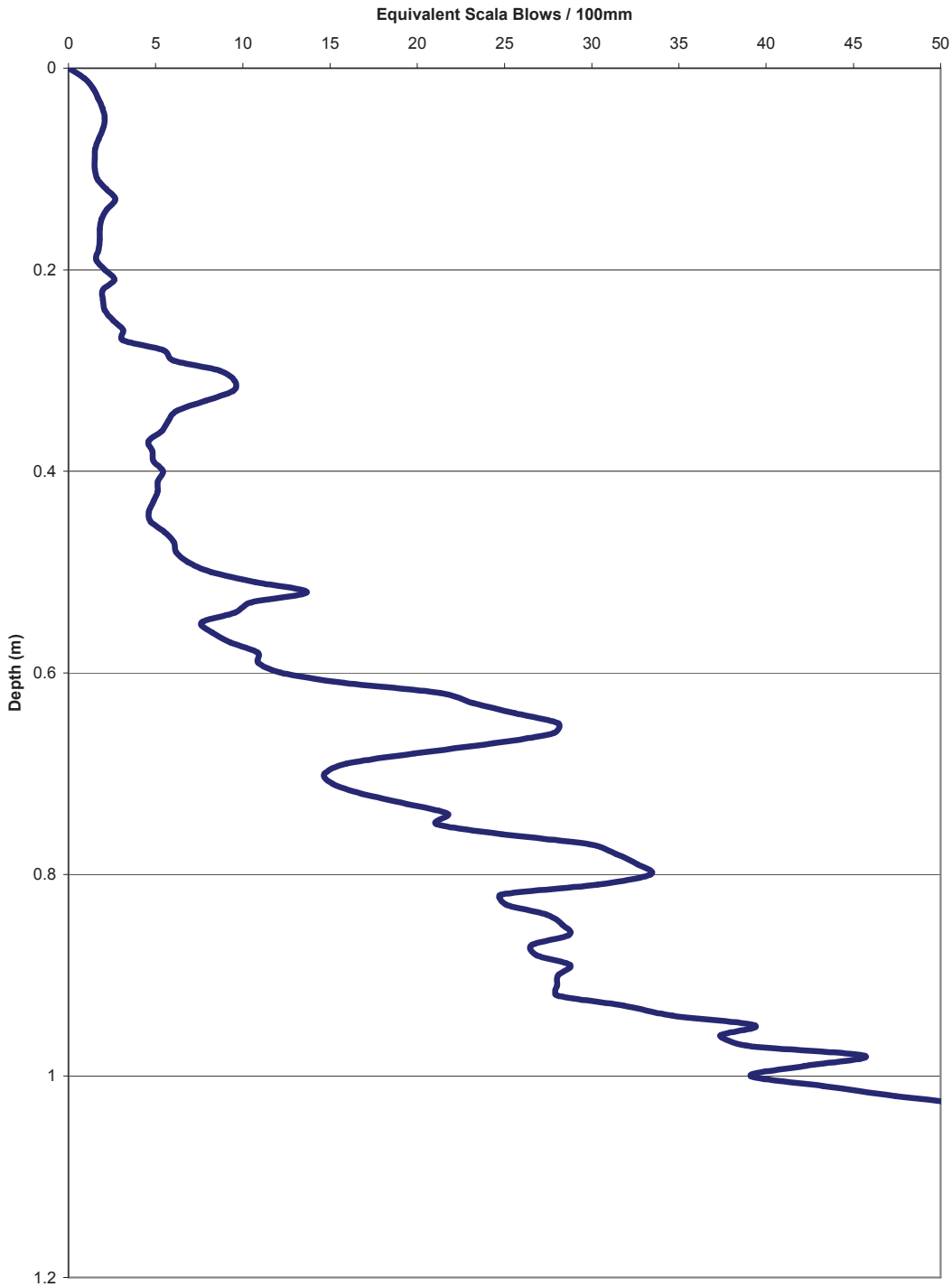
474 Bradleys Road, Ohoka, Site 25



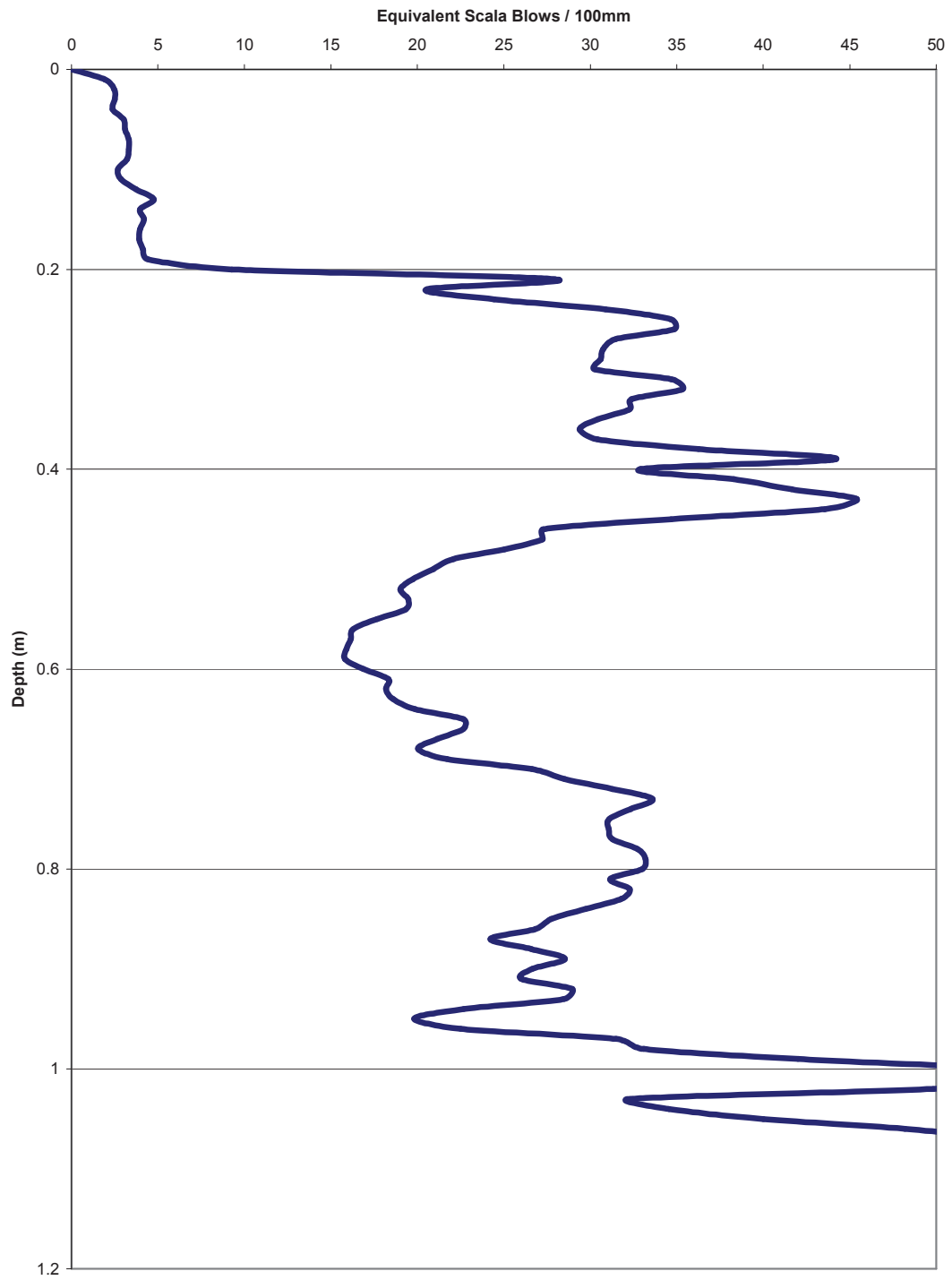
474 Bradleys Road, Ohoka, Site 26



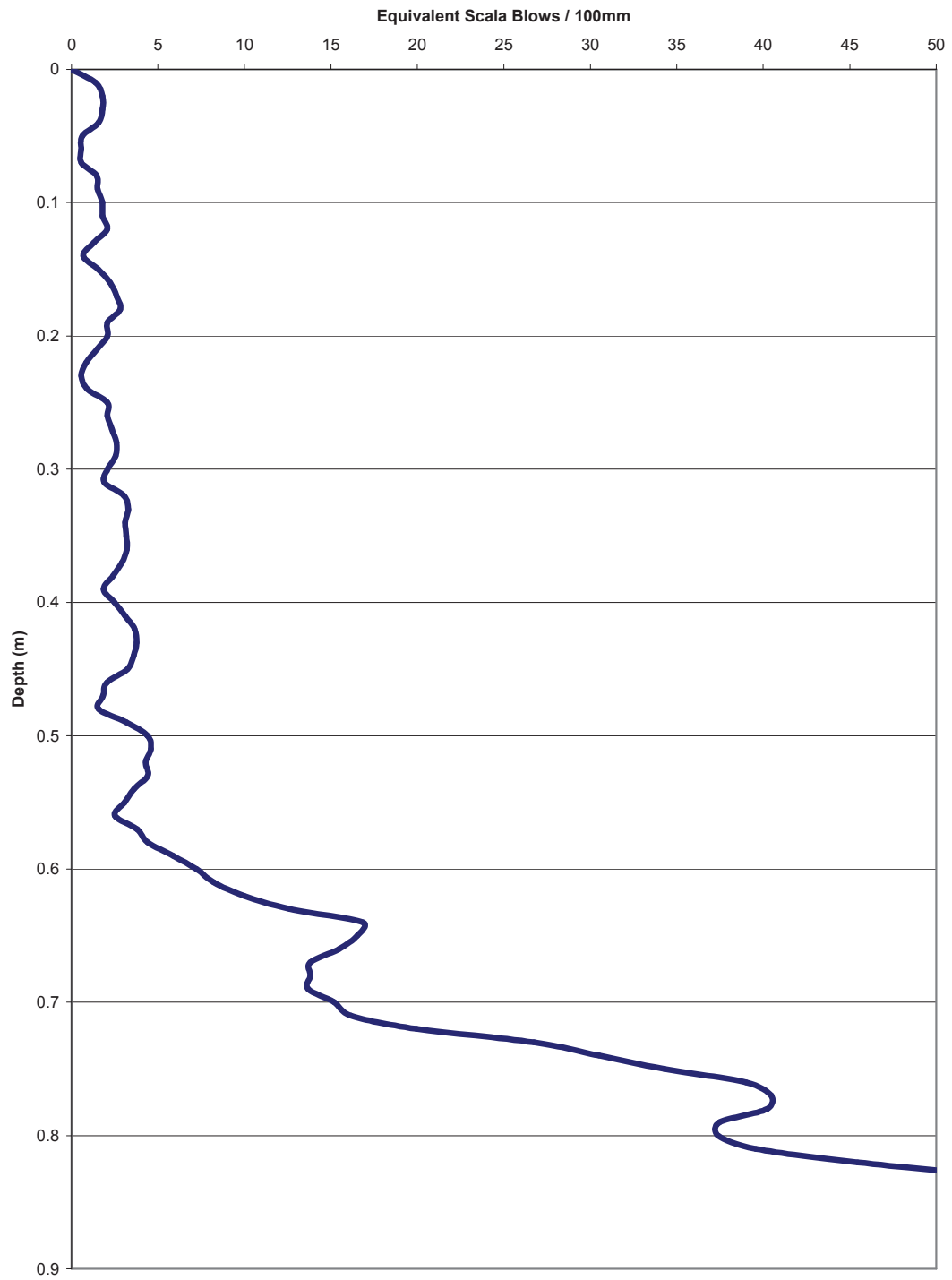
474 Bradleys Road, Ohoka, Site 27



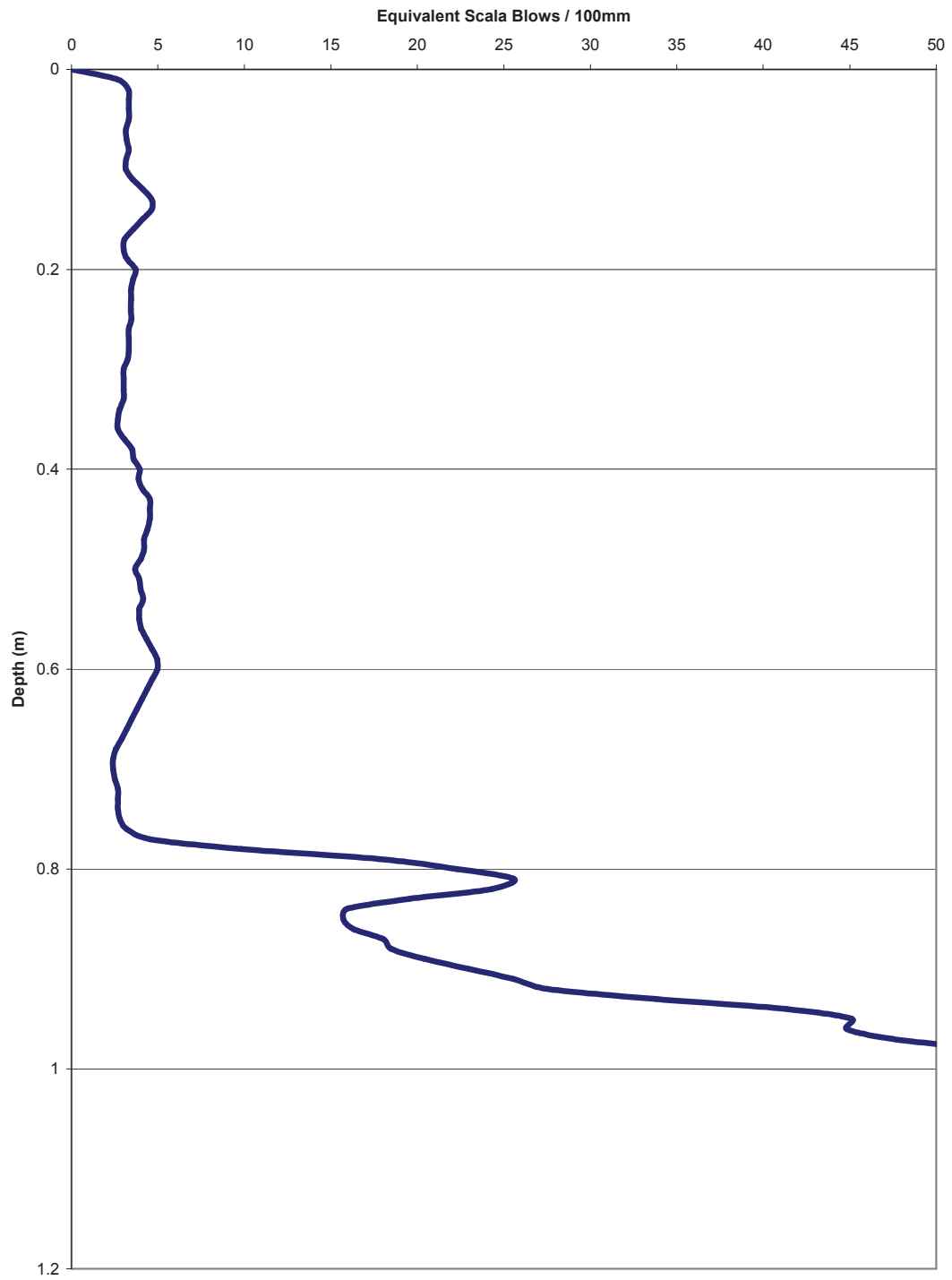
474 Bradleys Road, Ohoka, Site 28



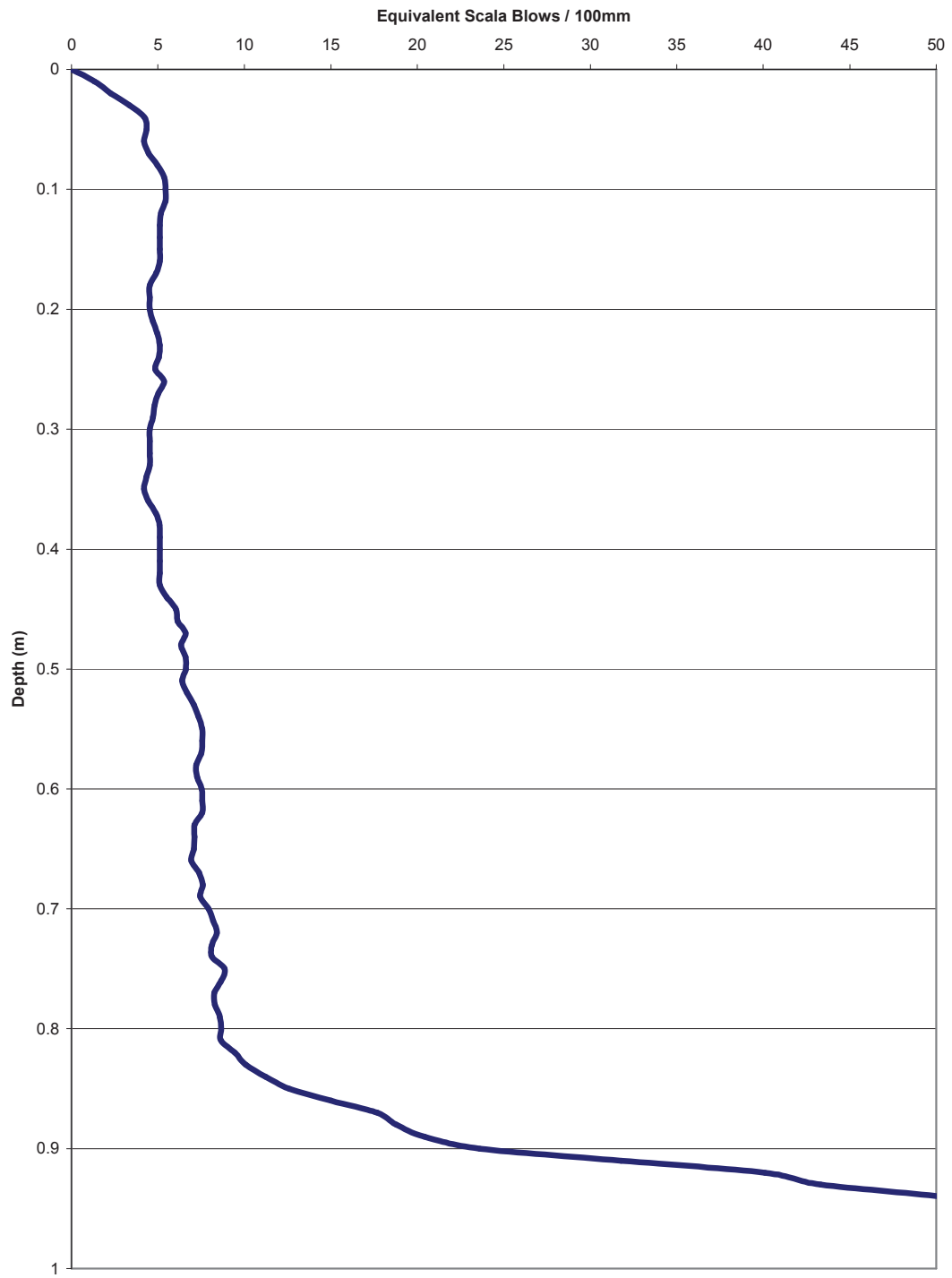
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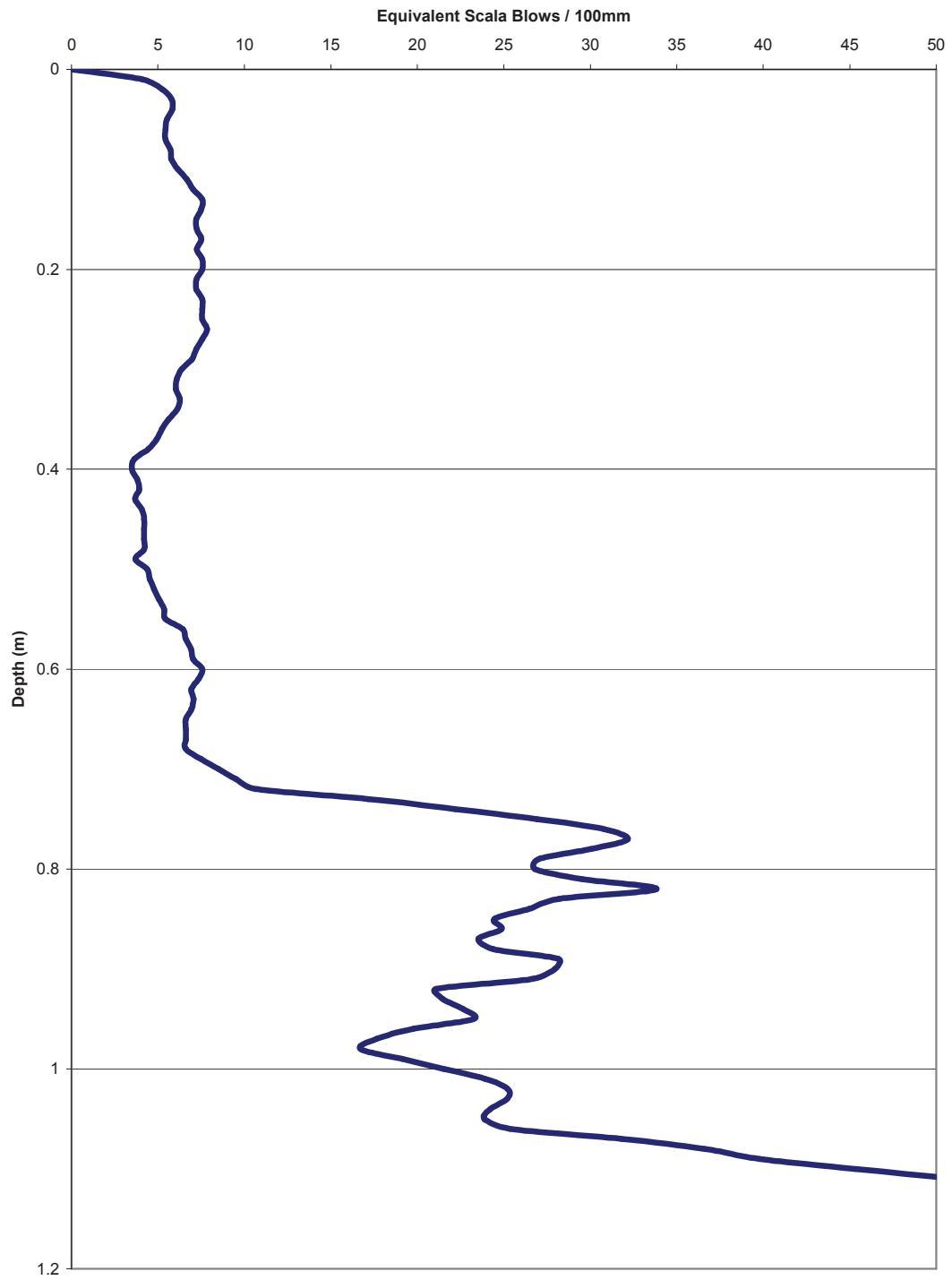
474 Bradleys Road, Ohoka, Site 30



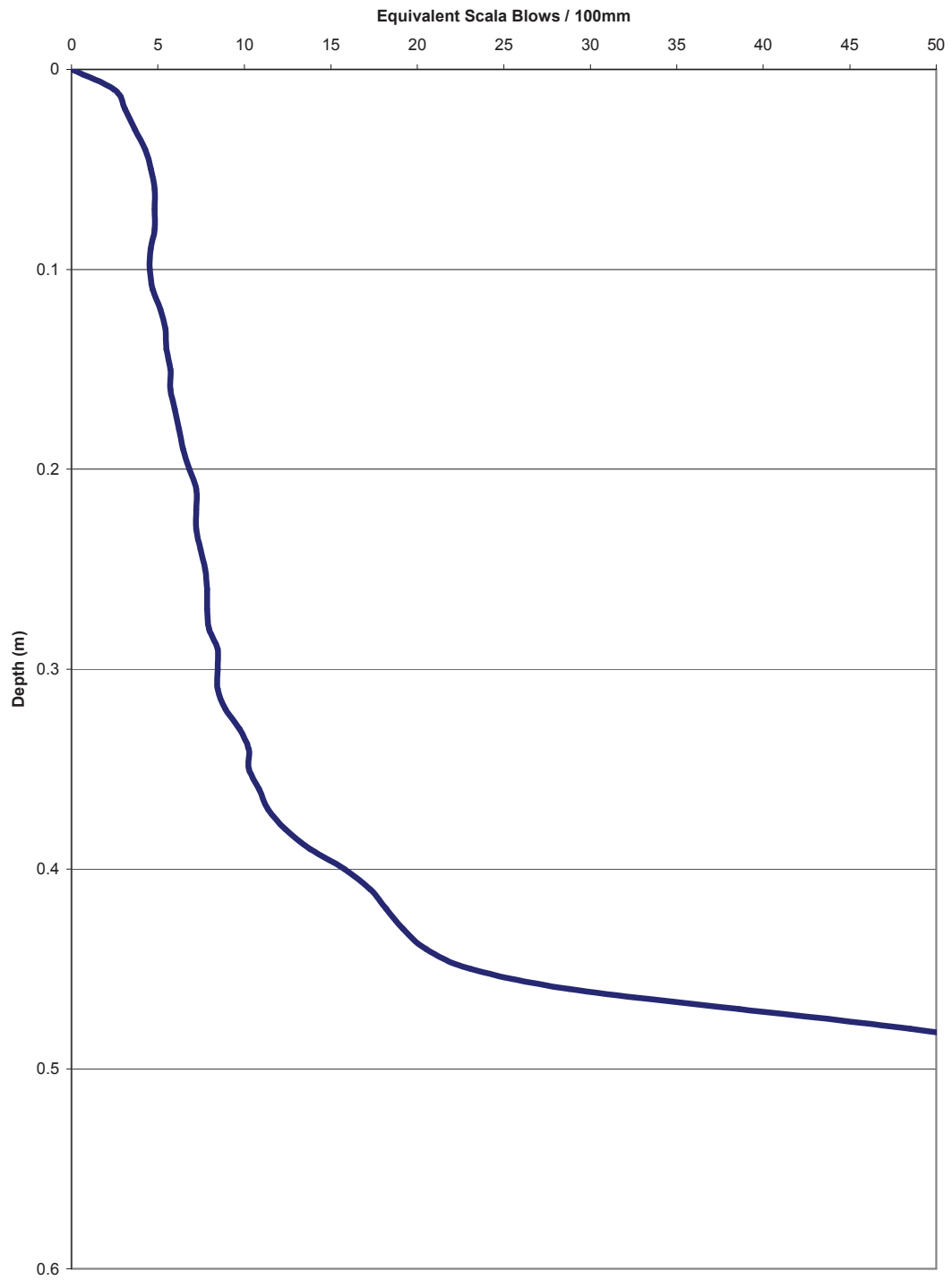
474 Bradleys Road, Ohoka, Site 31



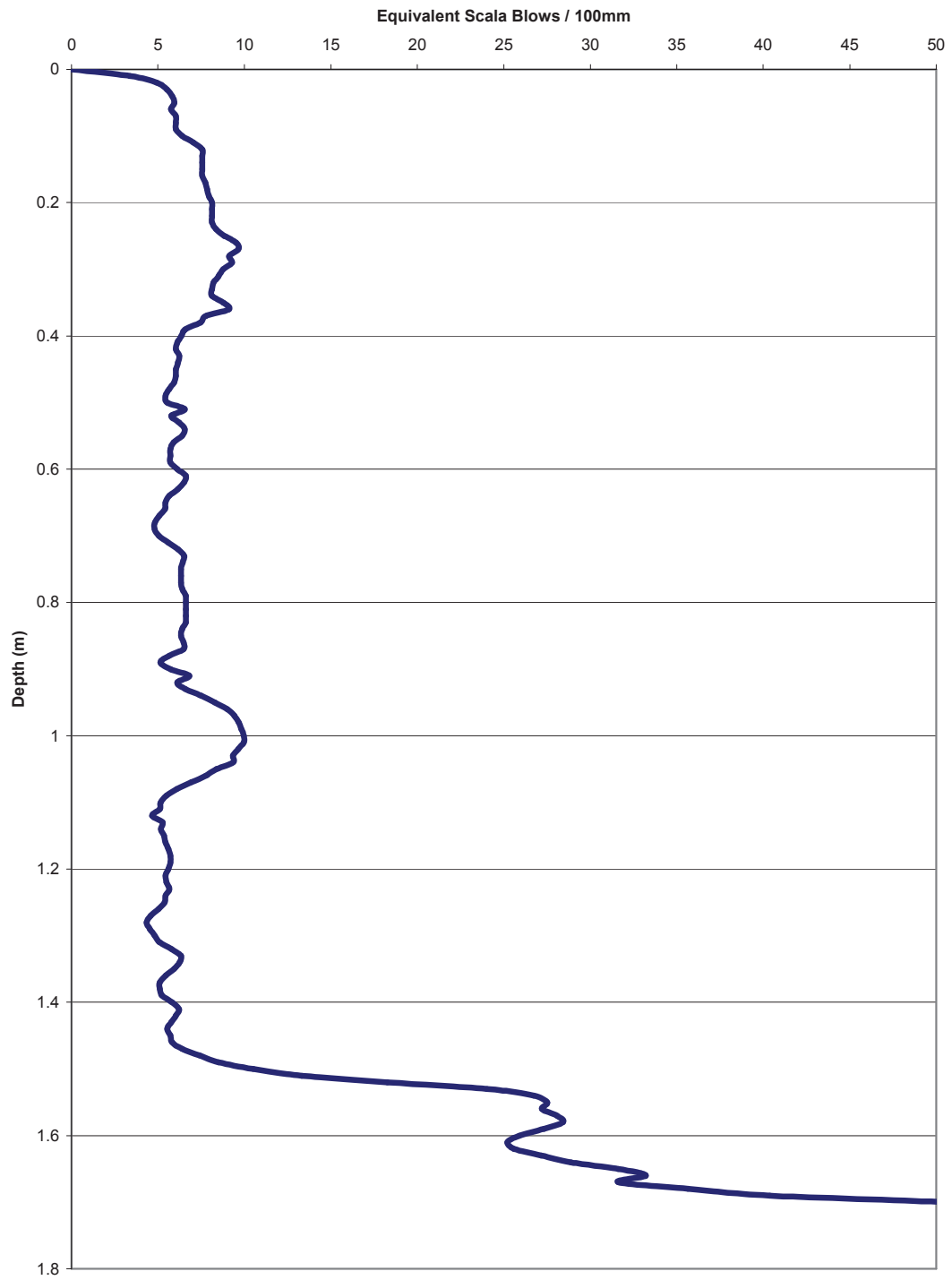
474 Bradleys Road, Ohoka, Site 32



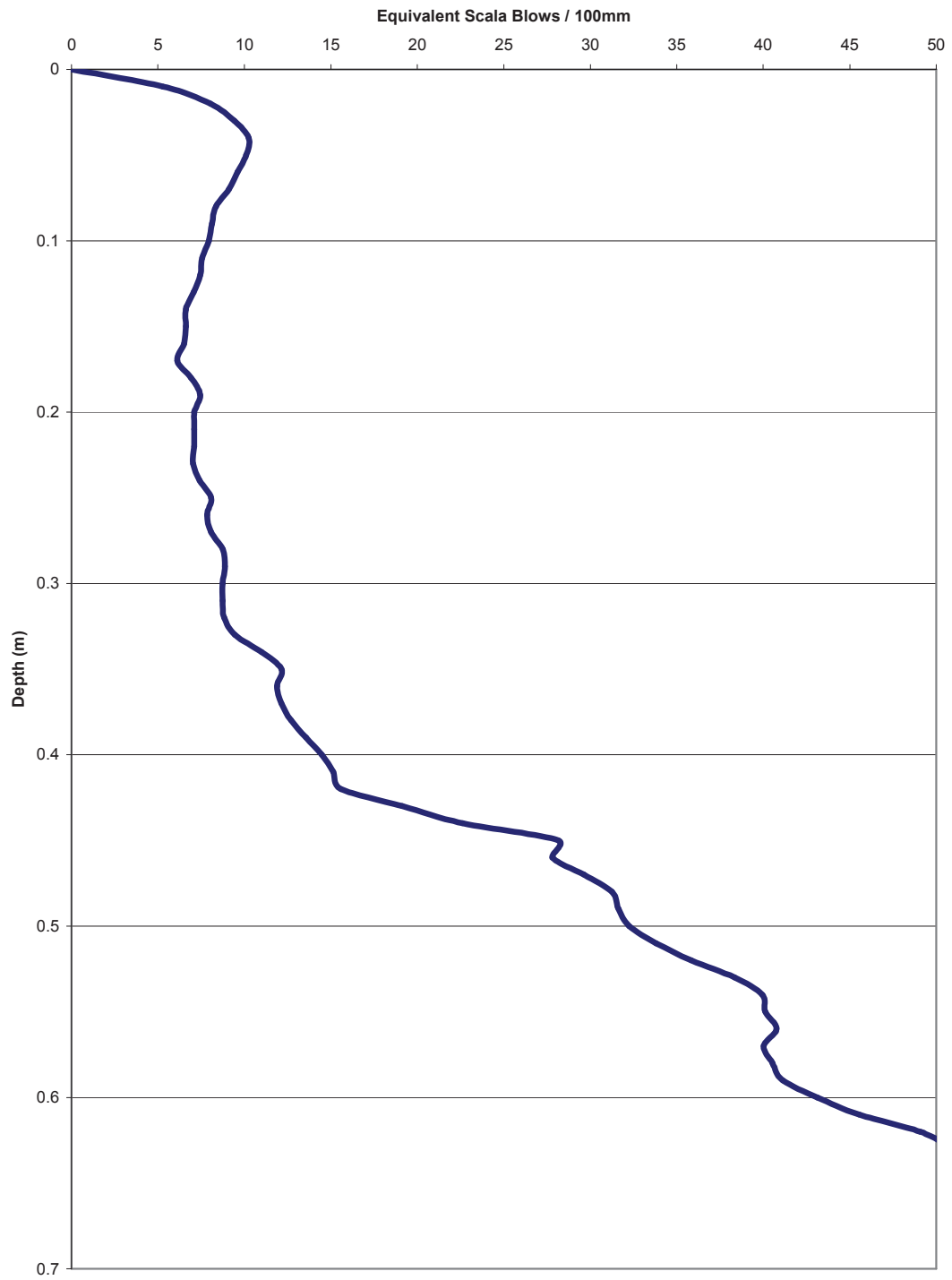
474 Bradleys Road, Ohoka, Site 33



474 Bradleys Road, Ohoka, Site 34



474 Bradleys Road, Ohoka, Site 35



474 Bradleys Road, Ohoka, Site 36

