



Report No: MAT:CTS26S-00077

Issue No: 1

Material Test Report

Client:

WSP New Zealand Limited
PO Box 5848
Victoria Street West

Auckland 1142
NZ

Project: Northland Corridor - Alternative to Brynderwyn Hills Section



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samples that were tested

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Approved Signatory: Lance Smith
(Key Technical Person)
IANZ Accreditation No:434
Date of Issue: 23/01/2026

Sample Details

Sample ID: CTS26S-00077
Client Sample ID: WL4708/40-Slake
Material: Greywacke SANDSTONE
Sample Source: Insitu
Site/Sampled From: BH2B_1111, (42.00 - 48.00m)
Date Sampled: 26/09/2025
Specification: No Specification
Sampled By: NC Site Team
Sampling Method: Core
Technician: Lance Smith
Sampling Endorsed?: No

Test Results

Description	Method	Result	Limits
Start test date	ASTM D4644 - 16	6/01/2026	
End test date		8/01/2026	
Lowest Water Temperature		20.4	
Highest Water Temperature		20.6	
Average Water Temperature		20.5	
Water Content As received (%)		0.5	
Slake Durability Index (%)		99.5	
Fragment Description	Type 1/2 - Retained Material Remains Virtually Unchanged / Consists of Large and Small Fragments		
Sample Depth (m)		42.00 - 48.00	
Date Tested		8/01/2026	

Comments

Order No: 1-C21466.16
Date Received: 1-Dec-25



Material Test Report

Report No: MAT:CTS26S-00077**Issue No: 1****Client:**WSP New Zealand Limited
PO Box 5848
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(Key Technical Person)
IANZ Accreditation No:434
Date of Issue: 23/01/2026**Slake Durability BH2B_1111 - Before & After**



Report No: MAT:CTS26S-00080

Issue No: 1

Material Test Report

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PO Box 5848
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(Key Technical Person)
IANZ Accreditation No:434
Date of Issue: 23/01/2026

Sample Details

Sample ID: CTS26S-00080
Client Sample ID: WL4708/83-Slake
Material: Greywacke/SANDSTONE
Sample Source: Insitu
Site/Sampled From: BH2B_1144, (21.46 - 25.50m)
Date Sampled: 22/08/2025
Specification: No Specification
Sampled By: NC Site Team
Sampling Method: Core
Technician: Lance Smith
Sampling Endorsed?: No

Test Results

Description	Method	Result	Limits
Start test date	ASTM D4644 - 16	6/01/2026	
End test date		8/01/2026	
Lowest Water Temperature		20.9	
Highest Water Temperature		21.1	
Average Water Temperature		21.0	
Water Content As received (%)		0.3	
Slake Durability Index (%)		99.7	
Fragment Description	Type 1/2 - Retained Material Remains Virtually Unchanged / Consists of Large and Small Fragments		
Sample Depth (m)		21.46 - 25.50	
Date Tested		8/01/2026	

Comments

Order No: 1-C21466.16
Date Received: 1-Dec-25



Material Test Report

Report No: MAT:CTS26S-00080**Issue No: 1****Client:**

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IANZ Accreditation No:434
Date of Issue: 23/01/2026



Slake Durability BH2B_1144 - Before & After



Report No: MAT:CTS26S-00083

Issue No: 1

Material Test Report

Client:

WSP New Zealand Limited
PO Box 5848
Victoria Street West

Auckland 1142
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Project: Northland Corridor - Alternative to Brynderwyn Hills Section



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(Key Technical Person)
IANZ Accreditation No:434
Date of Issue: 23/01/2026

Sample Details

Sample ID: CTS26S-00083
Client Sample ID: WL4708/86-Slake
Material: Greywacke/SANDSTONE
Sample Source: Insitu
Site/Sampled From: BH2B_1144, (48.20 - 50.55m)
Date Sampled: 27/08/2025
Specification: No Specification
Sampled By: NC Site Team
Sampling Method: Core
Technician: Lance Smith
Sampling Endorsed?: No

Test Results

Description	Method	Result	Limits
Start test date	ASTM D4644 - 16	7/01/2026	
End test date		9/01/2026	
Lowest Water Temperature		23.1	
Highest Water Temperature		23.8	
Average Water Temperature		23.5	
Water Content As received (%)		0.4	
Slake Durability Index (%)		99.6	
Fragment Description	Type 1/2 - Retained Material Remains Virtually Unchanged / Consists of Large and Small Fragments		
Sample Depth (m)		48.20 - 50.55	
Date Tested		9/01/2026	

Comments

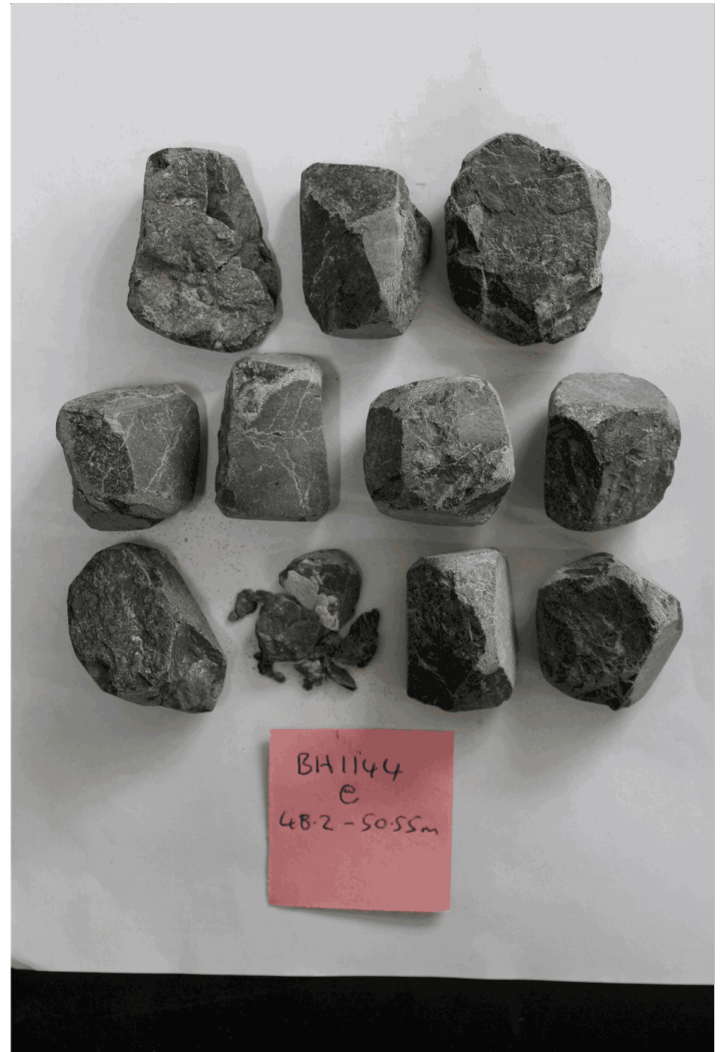
Order No: 1-C21466.16
Date Received: 1-Dec-25



Material Test Report

Report No: MAT:CTS26S-00083**Issue No: 1****Client:**WSP New Zealand Limited
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NZ**Project:**

Northland Corridor - Alternative to Brynderwyn Hills Section

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IANZ Accreditation No:434
Date of Issue: 23/01/2026**Slake Durability BH2B_1144 - Before & After**



Report No: MAT:CTS26S-00082

Issue No: 1

Material Test Report

Client:

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PO Box 5848
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Project: Northland Corridor - Alternative to Brynderwyn Hills Section



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(Key Technical Person)
IANZ Accreditation No:434
Date of Issue: 23/01/2026

Sample Details

Sample ID: CTS26S-00082
Client Sample ID: WL4708/85-Slake
Material: Greywacke/SANDSTONE
Sample Source: Insitu
Site/Sampled From: BH2B_1144, (41.10 - 46.50m)
Date Sampled: 26/08/2025
Specification: No Specification
Sampled By: NC Site Team
Sampling Method: Core
Technician: Lance Smith
Sampling Endorsed?: No

Test Results

Description	Method	Result	Limits
Start test date	ASTM D4644 - 16	7/01/2026	
End test date		9/01/2026	
Lowest Water Temperature		22.9	
Highest Water Temperature		23.3	
Average Water Temperature		23.1	
Water Content As received (%)		0.4	
Slake Durability Index (%)		99.6	
Fragment Description	Type 1/2 - Retained Material Remains Virtually Unchanged / Consists of Large and Small Fragments		
Sample Depth (m)		41.10 - 46.50	
Date Tested		9/01/2026	

Comments

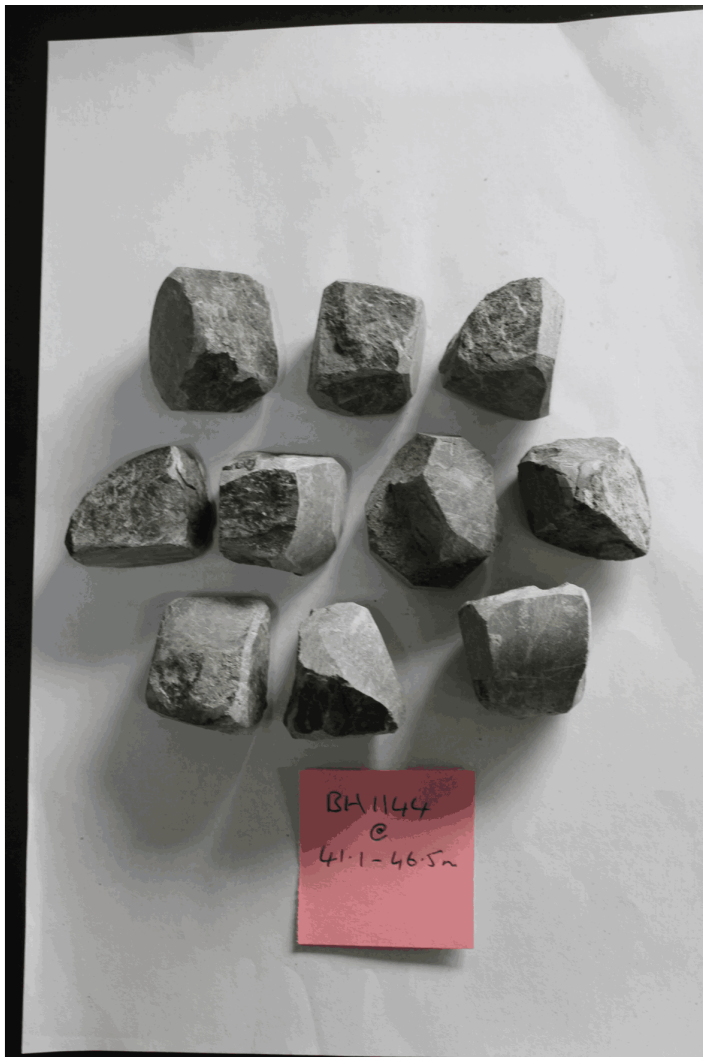
Order No: 1-C21466.16
Date Received: 1-Dec-25



Material Test Report

Report No: MAT:CTS26S-00082**Issue No: 1****Client:**WSP New Zealand Limited
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Northland Corridor - Alternative to Brynderwyn Hills Section

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(Key Technical Person)
IANZ Accreditation No:434
Date of Issue: 23/01/2026**Slake Durability BH2B_1144 - Before & After**



Report No: MAT:CTS26S-00081

Issue No: 1

Material Test Report

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Project: Northland Corridor - Alternative to Brynderwyn Hills Section



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(Key Technical Person)
IANZ Accreditation No:434
Date of Issue: 23/01/2026

Sample Details

Sample ID: CTS26S-00081
Client Sample ID: WL4708/84-Slake
Material: Greywacke/SANDSTONE
Sample Source: Insitu
Site/Sampled From: BH2B_1144, (26.50 - 31.20m)
Date Sampled: 22/08/2025
Specification: No Specification
Sampled By: NC Site Team
Sampling Method: Core
Technician: Lance Smith
Sampling Endorsed?: No

Test Results

Description	Method	Result	Limits
Start test date	ASTM D4644 - 16	7/01/2026	
End test date		9/01/2026	
Lowest Water Temperature		22.9	
Highest Water Temperature		23.3	
Average Water Temperature		23.1	
Water Content As received (%)		0.6	
Slake Durability Index (%)		99.4	
Fragment Description	Type 1/2 - Retained Material Remains Virtually Unchanged / Consists of Large and Small Fragments		
Sample Depth (m)		26.50 - 31.20	
Date Tested		9/01/2026	

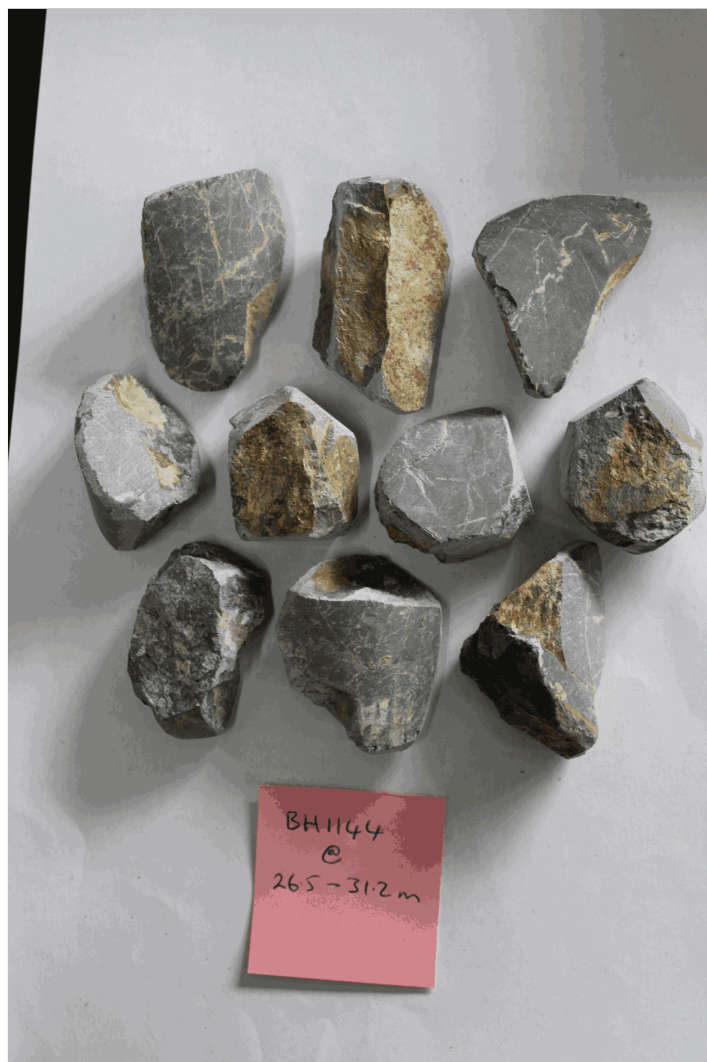
Comments

Order No: 1-C21466.16
Date Received: 1-Dec-25

Material Test Report

Report No: MAT:CTS26S-00081**Issue No: 1****Client:**WSP New Zealand Limited
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IANZ Accreditation No:434
Date of Issue: 23/01/2026**Slake Durability BH2B_1144 - Before & After**



Report No: MAT:CTS26S-00078

Issue No: 1

Material Test Report

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(Key Technical Person)
IANZ Accreditation No:434
Date of Issue: 23/01/2026

Sample Details

Sample ID: CTS26S-00078
Client Sample ID: WL4708/136-Slake
Material: Conglomeratic SANDSTONE
Sample Source: Insitu
Site/Sampled From: BH2B_1130, (15.08 - 25.18m)
Date Sampled: 16/09/2025
Specification: No Specification
Sampled By: NC Site Team
Sampling Method: Core
Technician: Lance Smith
Sampling Endorsed?: No

Test Results

Description	Method	Result	Limits
Start test date	ASTM D4644 - 16	6/01/2026	
End test date		8/01/2026	
Lowest Water Temperature		20.4	
Highest Water Temperature		20.6	
Average Water Temperature		20.5	
Water Content As received (%)		6.3	
Slake Durability Index (%)		94.6	
Fragment Description	Type 1/2 - Retained Material Remains Virtually Unchanged / Consists of Large and Small Fragments		
Sample Depth (m)		15.08 - 25.18	
Date Tested		8/01/2026	

Comments

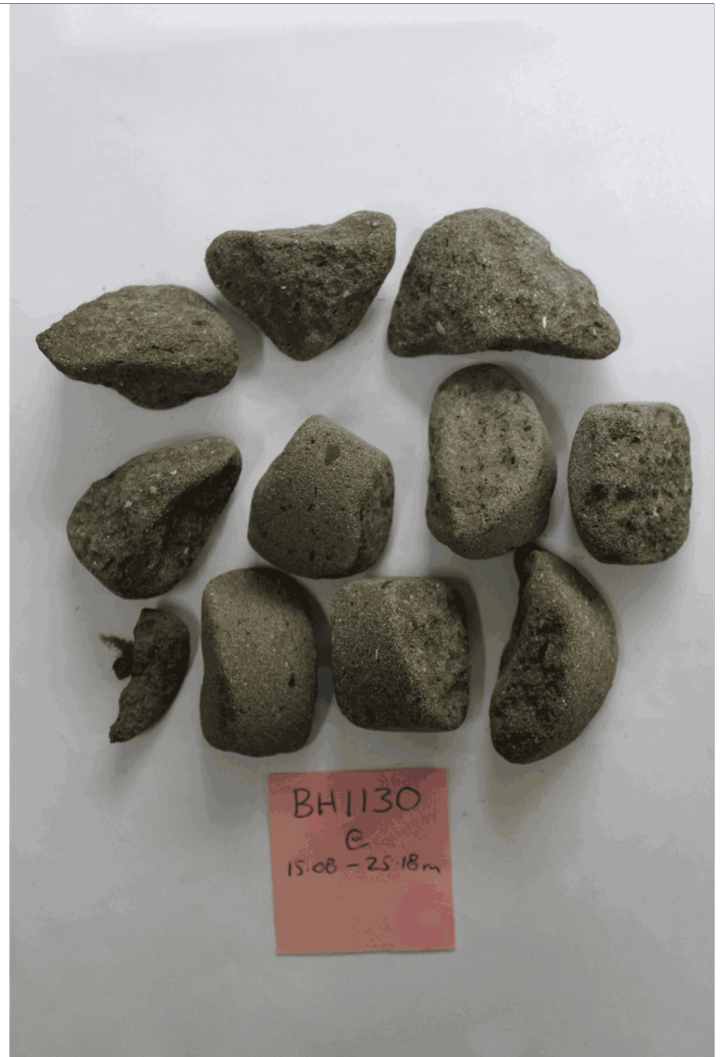
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Date Received: 1-Dec-25



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IANZ Accreditation No:434
Date of Issue: 23/01/2026**Slake Durability BH2B_1130 - Before & After**



Report No: MAT:CTS26S-00079

Issue No: 1

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IANZ Accreditation No:434
Date of Issue: 23/01/2026

Sample Details

Sample ID: CTS26S-00079
Client Sample ID: WL4708/137-Slake
Material: Interbedded SILTSTONE/SANDSTONE
Sample Source: Insitu
Site/Sampled From: BH2B_1145, (33.00 - 37.50m)
Date Sampled: 04/09/2025
Specification: No Specification
Sampled By: NC Site Team
Sampling Method: Core
Technician: Lance Smith
Sampling Endorsed?: No

Test Results

Description	Method	Result	Limits
Start test date	ASTM D4644 - 16	6/01/2026	
End test date		8/01/2026	
Lowest Water Temperature		20.9	
Highest Water Temperature		21.1	
Average Water Temperature		21.0	
Water Content As received (%)		7.1	
Slake Durability Index (%)		96.1	
Fragment Description	Type 1 - Retained Material Remains Virtually Unchanged		
Sample Depth (m)		33.00 - 37.50	
Date Tested		8/01/2026	

Comments

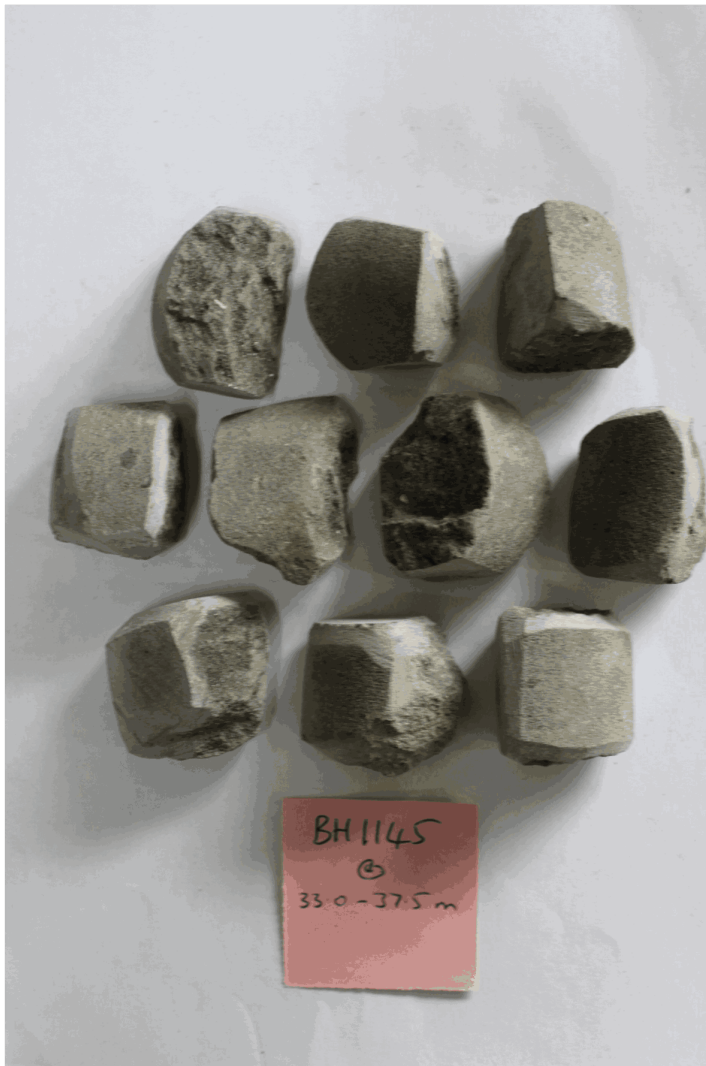
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Date of Issue: 23/01/2026**Slake Durability BH2B_1145 - Before & After**



Report No: MAT:CTS26S-00076

Issue No: 1

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IANZ Accreditation No:434
Date of Issue: 23/01/2026

Sample Details

Sample ID: CTS26S-00076
Client Sample ID: WL4708/135-Slake
Material: Siltstone
Sample Source: Insitu
Site/Sampled From: BH2B_1114, (8.05 - 13.50m)
Date Sampled: 29/09/2025
Specification: No Specification
Sampled By: NC Site Team
Sampling Method: Core
Technician: Lance Smith
Sampling Endorsed?: No

Test Results

Description	Method	Result	Limits
Start test date	ASTM D4644 - 16	9/12/2025	
End test date		11/12/2025	
Lowest Water Temperature		19.8	
Highest Water Temperature		20.5	
Average Water Temperature		20.0	
Water Content As received (%)		11.6	
Slake Durability Index (%)		49.2	
Fragment Description	Type 2 - Retained Material Consists of Large and Small Fragments		
Sample Depth (m)		8.05 - 13.50	
Date Tested		11/12/2025	

Comments

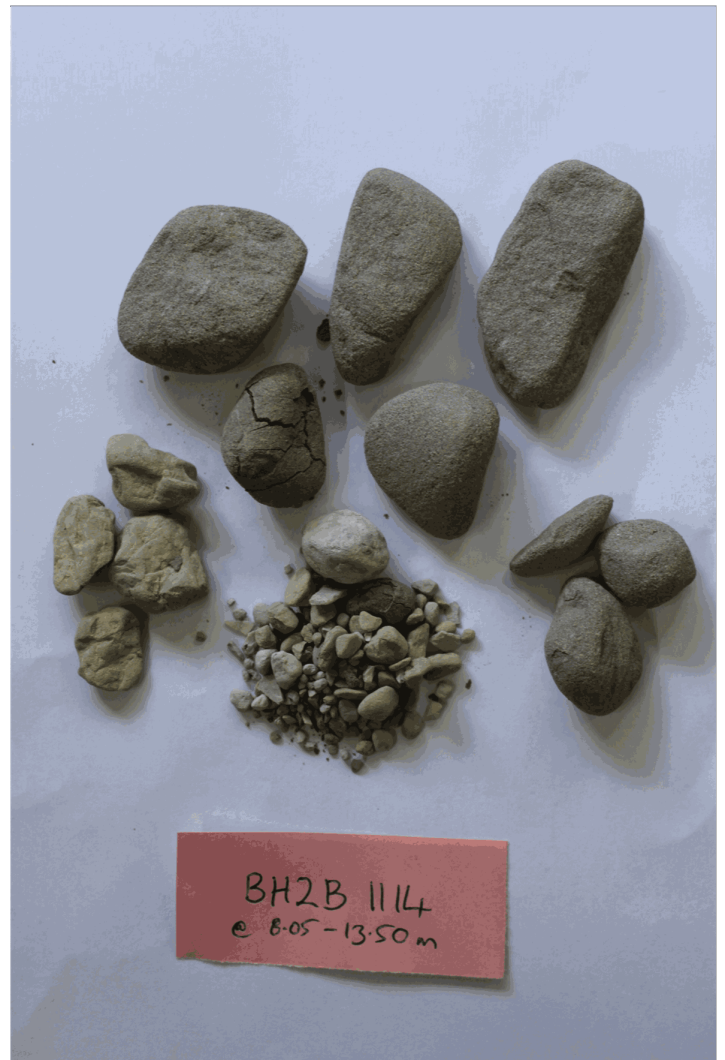
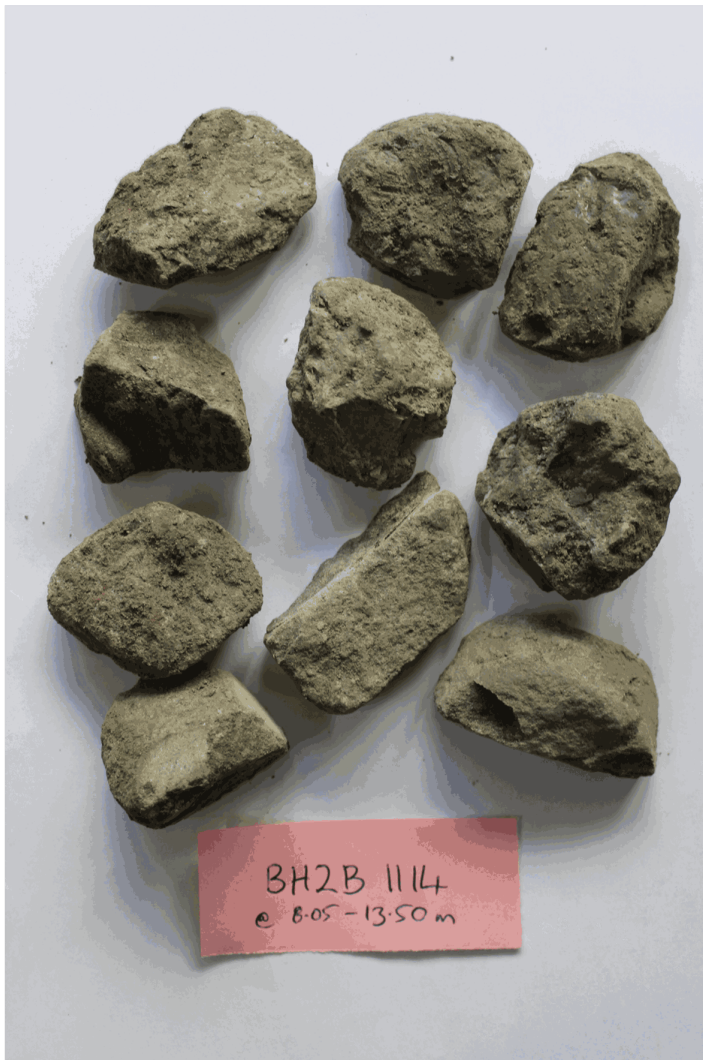
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IANZ Accreditation No:434
Date of Issue: 23/01/2026**Slake Durability BH2B_1114 - Before & After**