Appendix A.5.1.5

Phase 3 Contract 2

N6 Galway City Transport Project Phase 3 Ground Investigation Contract 2,

October 2015 to January 2016

A.5.1.5

Frost Heave

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 448032

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Frost Heave of Unbound Aggregate in accordance with **BS 812: Part 124: 2009 - Annex B (Use of Comparator Specimens)**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**Bulk Samples**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**24/02/2016**
Sampling Location:	**Unknown**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Aggregate**
Target Specification	**SHW Series 800: clause 801.8**

RESULTS:

Were any unrepresentative lumps present? No

Frost Heave Test Result:

Maximum Heave Observed in 96 hours (mm)		
Comparator Specimen 1	11.5	(nearest 0.5mm)
Comparator Specimen 2	12.0	(nearest 0.5mm)
Comparator Specimen 3	12.0	(nearest 0.5mm)
Mean	**11.8**	(nearest 0.1mm)
Test Specimen 1	3.5	(nearest 0.5mm)
Test Specimen 2	2.0	(nearest 0.5mm)
Test Specimen 3	4.5	(nearest 0.5mm)
Mean Frost Heave	**3.3**	**(nearest 0.1mm)**

In accordance with SHW Series 800: clause 801.8 the sample is classified as being
Non Frost Susceptible (mean frost heave ≤ 15mm)

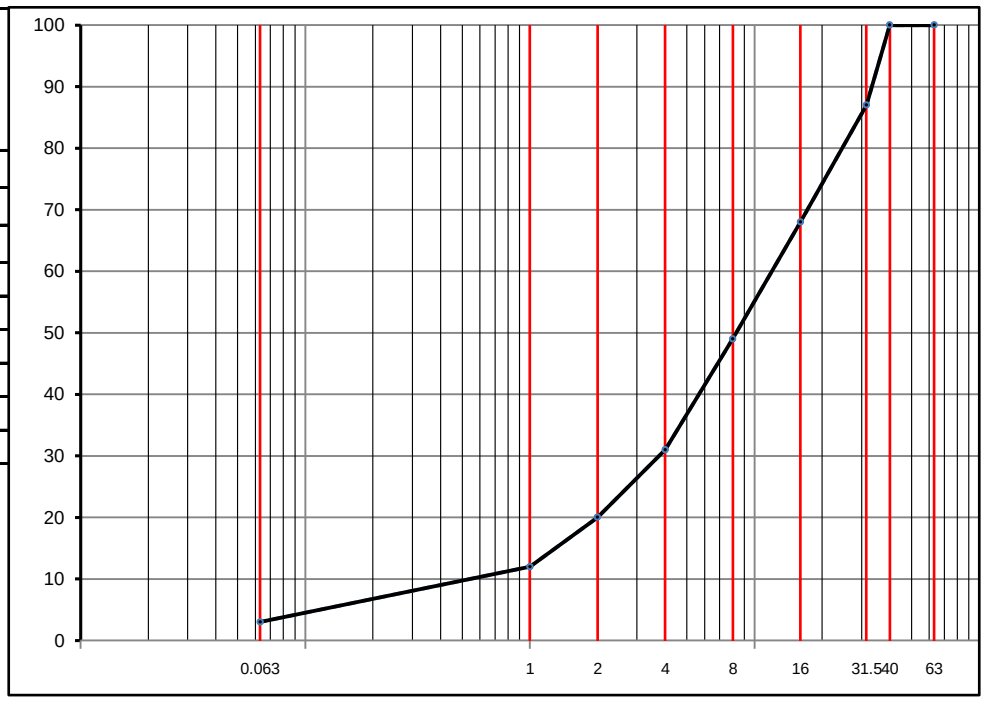
RESULTS CONTINUED:

Laboratory Dry Density & Water Content Test Result

Maximum Dry Density	2.18 Mg/m3
Optimum Water Content	6.5 %
Actual Dry Density	2.18 Mg/m3
Actual Water Content	6.5 %

Particle Size Distribution Test Result

BS Test Sieve Nominal Apperature	As Received Test Portion % Passing	Stable Test Portion % Passing
63.0 mm	100	100
40.0 mm	100	100
31.5 mm	87	87
16.0 mm	68	68
8.0 mm	49	49
4.0 mm	31	31
2.0 mm	20	20
1.0 mm	12	12
0.063 mm	3	3



Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Los Angeles Coefficient

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 29 February 2016
Test Report Ref: STR 448029

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Fragmentation of Aggregate - Los Angeles Test Method in accordance with **BS EN 1097-2: 2010**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**Bulk Sample**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**21/02/2016**
Sampling Location:	**Unknown**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Aggregate**
Target Specification:	**N/A**

RESULTS:

Size fraction from which the test portion was obtained: **14mm to 12.5mm**
12.5mm to 10.0mm

Los Angeles Coefficient (LA) = **28**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Magnesium Sulphate Soundness

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Contract: Lackagh Quarry

Date: 29 February 2016
Test Report Ref: STR 448030

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Magnesium Sulfate Value of aggregate sample within the size range 10mm to 14mm in accordance with **BS EN 1367-2 : 2009**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**Bulk Sample**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**26/02/2016**
Sampling Location:	**Unknown**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Aggregate**
Target Specification:	**N/A**

RESULTS:

Magnesium Sulfate Value Portion 1 (MS_1) = **0.6**
Magnesium Sulfate Value Portion 2 (MS_2) = **0.3**

Mean Magnesium Sulfate Value (MS) = **1**

Comments
Proportion by mass of laboratory sample used for the test portion = 5% (nearest 5%)

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Moisture Content

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447817

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 48861**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:6.70 Depth Base:6.80**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.2**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447830

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 48868**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:13.26 Depth Base:13.35**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.6**

Comments
None

Certificate Prepared by:-
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Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447843

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 48881**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:32.65 Depth Base:32.72**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.4**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447861

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 48897**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:57.30 Depth Base:57.40**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.1**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447862

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 48898**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:61.65 Depth Base:61.75**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.2**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447873

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50865**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:67.07 Depth Base:67.20**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = 1.1

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447876

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50868**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:70.10 Depth Base:70.20**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.3**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

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Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447878

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50870**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:73.03 Depth Base:73.10**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.6**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447879

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50871**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:76.00 Depth Base:76.09**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.2**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447883

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50875**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:80.04 Depth Base:80.12**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.2**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447884

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50876**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:81.70 Depth Base:81.78**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.6**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447885

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50877**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:87.50 Depth Base:87.57**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.8**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Contract: Lackagh Quarry

Date: 24 February 2016
Test Report Ref: STR 447886

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50878**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:39.70 Depth Base:39.80**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = 1.3

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447890

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50882**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:91.63 Depth Base:91.71**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.8**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447894

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50886**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:93.00 Depth Base:93.10**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.5**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447897

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50889**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:94.96 Depth Base:95.05**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.3**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447899

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50891**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:101.36 Depth Base:101.45**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.6**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447904

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50896**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:108.62 Depth Base:108.70**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = 1.2

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447908

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50900**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:113.12 Depth Base:113.19**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.5**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
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Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447912

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50904**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:118.82 Depth Base:118.88**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.9**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447908

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50900**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:113.12 Depth Base:113.19**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.5**

Comments
None

Certificate Prepared by:-
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Approved by: -
Eric Goulden
Technical Manager

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162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447912

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50904**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:118.82 Depth Base:118.88**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.9**

Comments
None

Certificate Prepared by:-
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Approved by: -
Eric Goulden
Technical Manager

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Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447913

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50905**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:123.44 Depth Base:123.55**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **2.2**

Comments
None

Certificate Prepared by:-
Mathew Sayer
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Approved by: -
Eric Goulden
Technical Manager

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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447914

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50906**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:125.90 Depth Base:126.00**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.3**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Technical Manager

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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447915

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50907**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:126.80 Depth Base:126.90**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **2.5**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Technical Manager

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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447919

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50911**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:131.12 Depth Base:131.17**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **2.6**

Comments
None

Certificate Prepared by:-
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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447920

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50912**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:131.60 Depth Base:131.70**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.2**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Technical Manager

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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447921

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50913**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:132.65 Depth Base:132.62**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.8**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Technical Manager

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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447925

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50917**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:134.35 Depth Base:134.44**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.1**

Comments
None

Certificate Prepared by:-
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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447930

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50922**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:142.81 Depth Base:142.91**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.3**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447940

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50931**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:154.60 Depth Base:154.68**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.4**

Comments
None

Certificate Prepared by:-
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Approved by: -
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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447941

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50932**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:155.20 Depth Base:155.28**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.7**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447945

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50936**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:163.49 Depth Base:163.56**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **2.5**

Comments
None

Certificate Prepared by:-
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Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447949

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50940**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:172.96 Depth Base:173.07**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.3**

Comments
None

Certificate Prepared by:-
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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447949

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50940**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:172.96 Depth Base:173.07**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.3**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Technical Manager

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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447957

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50947**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:176.00 Depth Base:176.10**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.2**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Technical Manager

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Dublin 3
Ireland
VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447964

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50954**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:196.19 Depth Base:186.25**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.8**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
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162 Clontarf Road

Dublin 3
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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447975

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50965**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:209.65 Depth Base:209.72**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.7**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

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Dublin 3
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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447979

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50969**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:211.10 Depth Base:211.20**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.4**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Technical Manager

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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447985

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50975**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:218.20 Depth Base:218.28**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.5**

Comments
None

Certificate Prepared by:-
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Approved by: -
Eric Goulden
Technical Manager

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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447986

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50976**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:222.52 Depth Base:222.62**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.0**

Comments
None

Certificate Prepared by:-
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Approved by: -
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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447994

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50984**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:230.13 Depth Base:230.20**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = 2.0

Comments
None

Certificate Prepared by:-
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Approved by: -
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VAT No: 9D53971I

Date: 24 February 2016
Test Report Ref: STR 447999

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50989**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:235.04 Depth Base:235.10**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.3**

Comments
None

Certificate Prepared by:-
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Approved by: -
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VAT No: 9D53971I

Date: 16 February 2016
Test Report Ref: STR 443012

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48901**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 3.5 Depth Base: 3.55**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.2**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443013

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48902**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 5.4 Depth Base: 5.48**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.6**

Comments
None

Certificate Prepared by:- Mathew Sayer
Assistant Laboratory Manager

Approved by: - Eric Goulden
Technical Manager

Priority Construction Ltd
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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443016

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48904**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 9.3 Depth Base: 9.36**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.3**

Comments
None

Certificate Prepared by:-
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Approved by: -
Eric Goulden
Technical Manager

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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443018

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48906**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 11.77 Depth Base: 11.83**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.2**

Comments
None

Certificate Prepared by:-
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Approved by: -
Eric Goulden
Technical Manager

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Dublin 3
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VAT No: 9D53971I

Date: 21 December 2015
Test Report Ref: STR 443020

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Uniaxial Compressive Strength in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. :	**Various**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**08/12/2015**
Sampling Location:	**Various**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See attached

Certificate Prepared by:-
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Approved by: -
Eric Goulden
Technical Manager

BH	Core Diameter (mm)	Height/ Diameter Ratio	Uniaxial compressive strength (MPa)	Mode of Failure	EN ISO 14689-1 Term	Water content (%)
BH04 48908	82	2.6:1	**76**	N	Strong	0.1
BH04 48912	82.3	1.9:1	**86**	N	Strong	0.3
BH04 48921	82.3	1.5:1	**55**	N	Strong	0.1
BH04 48927	82.1	1.6:1	**53**	N	Strong	0.2
BH04 48931	82.2	2.6:1	**111**	N	Very Strong	0.1
BH04 48933	82	2.1:1	**91**	N	Strong	0.2
BH04 48950	82	2.5:1	**76**	N	Strong	0.2
BH04 48957	82	2:1	**78**	N	Strong	0.3
BH04 48963	82.2	2.4:1	**92**	N	Strong	0.1
BH05 48982	82	1.8:1	**91**	N	Strong	0.2
BH05 48986	81.5	2.6:1	**86**	N	Strong	0.4
BH05 48991	81.4	2.5:1	**94**	N	Strong	0.1
BH05 48994	82	1.9:1	**72**	N	Strong	0.2
BH05 48998	82.2	2.6:1	**77**	N	Strong	0.2
BH05 50711	78.5	1.8:1	**79**	N	Strong	0.2
BH05 50729	79	2.5:1	**116**	N	Very Strong	0.3
BH05 50731	81.4	2.6:1	**51**	N	Strong	0.1
BH05 50733	81.6	2.1:1	**54**	N	Strong	0.2
BH05 50737	82	1.5:1	**131**	N	Very Strong	0.2

Comments

1) The uniaxial compressive strength was carried out in accordance with ISRM guidelines.
2) Stress Rate: 0.7Mpa/s.

3)

EN ISO 14689-1 : 2003 Rock Strength Terms	
Compressive Strength mpa	Term
<1.0	Extremely Weak
1 to 5	Very Weak
5 to 25	Weak
25 to 50	Meduim Strong
50 to 100	Strong
100 to 250	Very Strong
> 250	Extremely Strong

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Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443034

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48922**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 20.8 Depth Base: 20.85**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.4**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Technical Manager

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Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443036

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48924**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 21.8 Depth Base: 21.9**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **1.0**

Comments
None

Certificate Prepared by:-
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Approved by: -
Eric Goulden
Technical Manager

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Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443050

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48938**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 28.27 Depth Base: 38.4**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.1**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
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Technical Manager

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Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443067

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Total Sulfur Content of an Aggregate Sample in accordance with **BS EN 1744-1 : 2009 : Clause 11**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48954**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**21/12/2015**
Sampling Location:	**Depth Top: 31.66 Depth Base: 31.7**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Total Sulfur Content as S (%) =	**<0.1**
*95% Confidence limit**	*<0.06% - <0.14%*

Comments / Departure from specified Procedure

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443069

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Oxidisable sulphides (OS) content of an Sample by calculation of **TRL Report 447 Test No. 2 and Test No. 4**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. :	**BH04 - 48956**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**24/12/2015**
Sampling Location:	**Depth Top: 31.84 Depth Base: 31.93**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**<0.5 % SO_4 - If deposited within 500mm of Cementitious Materials** **<0.06 % SO_4 - If deposited within 500mm of Metallic Structural Elements**

RESULTS:

Oxidisable Sulphides (OS) (%) = 0.04 SO_4

Comments

The work was carried out by our accredited, competent, sub contracted laboratory.

Certificate Prepared by:-

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Assistant Laboratory Manager

Approved by: -

Eric Goulden
Technical Manager

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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443072

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the pH Value of Soils in accordance with **BS 1377:Part 3:1990 - Clause 9, Electrometric Method.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48959**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**22/12/2015**
Sampling Location:	**Depth Top: 32.26 Depth Base: 32.35**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

pH Value =	**9.3**
*95% Confidence limit**	*9.06% - 9.54%*

Comments

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-

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Approved by: -

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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443081

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48965**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 33.12 Depth Base: 33.16**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.1**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

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162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443085

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48969**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 34.56 Depth Base: 34.59**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.3**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443086

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48970**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 34.96 Depth Base: 35**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.2**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443087

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 48971**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 0.65 Depth Base: 0.73**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.3**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443088

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 48972**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 0.98 Depth Base: 1.04**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.1**

Comments
None

Certificate Prepared by:-
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Approved by: -
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Technical Manager

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

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VAT No: 9D53971I

Contract: Lackagh Quarry

Date: 15 February 2016
Test Report Ref: STR 443089

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 48973**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 1.41 Depth Base: 1.5**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.1**

Comments

None

Certificate Prepared by:-
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Assistant Laboratory Manager

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Technical Manager

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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443096

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 48980**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 8.9 Depth Base: 8.96**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.1**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443104

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 48988**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 12.92 Depth Base: 13.07**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.3**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443128

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 50712**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 28.75 Depth Base: 28.85**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.1**

Comments
None

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

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VAT No: 9D53971I

Contract: Lackagh Quarry

Date: 15 February 2016
Test Report Ref: STR 443132

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Oxidisable sulphides (OS) content of an Sample by calculation of **TRL Report 447 Test No. 2 and Test No. 4**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. :	**BH05 - 50716**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**24/12/2015**
Sampling Location:	**Depth Top: 29.18 Depth Base: 29.3**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**<0.5 % SO_4 - If deposited within 500mm of Cementitious Materials** **<0.06 % SO_4 - If deposited within 500mm of Metallic Structural Elements**

RESULTS:

Oxidisable Sulphides (OS) (%) = <0.01 SO_4

Comments
The work was carried out by our accredited, competent, sub contracted laboratory.

Certificate Prepared by:-
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Approved by: -
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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443133

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the pH Value of Soils in accordance with **BS 1377:Part 3:1990 - Clause 9, Electrometric Method.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 50717**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**22/12/2015**
Sampling Location:	**Depth Top: 29.3 Depth Base: 29.4**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

pH Value =	**9.2**
*95% Confidence limit**	*8.96% - 9.44%*

Comments

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-

Mathew Sayer
Assistant Laboratory Manager

Approved by: -

Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443134

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 50718**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 30.3 Depth Base: 30.4**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.4**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443137

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 50721**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 30.88 Depth Base: 30.92**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.3**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443142

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 50726**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**15/12/2015**
Sampling Location:	**Depth Top: 32.54 Depth Base: 32.6**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Water Content (%) = **0.2**

Comments
None

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Oxidisable Sulphur

Priority Construction Ltd
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VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447856

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Oxidisable sulphides (OS) content of an Sample by calculation of **TRL Report 447 Test No. 2 and Test No. 4**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. :	**BH01 - 48892**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:55.30 Depth Base:55.40**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**<0.5 % SO_4 - If deposited within 500mm of Cementitious Materials** **<0.06 % SO_4 - If deposited within 500mm of Metallic Structural Elements**

RESULTS:

Oxidisable Sulphides (OS) (%) = <0.01 SO_4

Comments

The work was carried out by our accredited, competent, sub contracted laboratory.

Certificate Prepared by:-

Mathew Sayer
Assistant Laboratory Manager

Approved by: -

Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
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VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447895

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Oxidisable sulphides (OS) content of an Sample by calculation of **TRL Report 447 Test No. 2 and Test No. 4**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. :	**BH01 - 50887**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:94.90 Depth Base:94.96**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**<0.5 % SO_4 - If deposited within 500mm of Cementitious Materials** **<0.06 % SO_4 - If deposited within 500mm of Metallic Structural Elements**

RESULTS:

Oxidisable Sulphides (OS) (%) = <0.01 SO_4

Comments

The work was carried out by our accredited, competent, sub contracted laboratory.

Certificate Prepared by:-

Mathew Sayer
Assistant Laboratory Manager

Approved by: -

Eric Goulden
Technical Manager

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Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447938

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Oxidisable sulphides (OS) content of an Sample by calculation of **TRL Report 447 Test No. 2 and Test No. 4**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. :	**BH01 - 50930**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:153.20 Depth Base:153.30**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**<0.5 % SO_4 - If deposited within 500mm of Cementitious Materials** **<0.06 % SO_4 - If deposited within 500mm of Metallic Structural Elements**

RESULTS:

Oxidisable Sulphides (OS) (%) = <0.01 SO_4

Comments
The work was carried out by our accredited, competent, sub contracted laboratory.

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
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Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447971

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Oxidisable sulphides (OS) content of an Sample by calculation of **TRL Report 447 Test No. 2 and Test No. 4**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. :	**BH01 - 50961**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:201.47 Depth Base:201.55**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**<0.5 % SO_4 - If deposited within 500mm of Cementitious Materials** **<0.06 % SO_4 - If deposited within 500mm of Metallic Structural Elements**

RESULTS:

Oxidisable Sulphides (OS) (%) = <0.01 SO_4

Comments

The work was carried out by our accredited, competent, sub contracted laboratory.

Certificate Prepared by:-

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Assistant Laboratory Manager

Approved by: -

Eric Goulden
Technical Manager

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Contract: Lackagh Quarry

Date: 16 March 2016
Test Report Ref: STR 448010

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Oxidisable sulphides (OS) content of an Sample by calculation of **TRL Report 447 Test No. 2 and Test No. 4**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. :	**BH01 - 51000**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:253.30 Depth Base:253.38**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**<0.5 % SO_4 - If deposited within 500mm of Cementitious Materials** **<0.06 % SO_4 - If deposited within 500mm of Metallic Structural Elements**

RESULTS:

Oxidisable Sulphides (OS) (%) = <0.01 SO_4

Comments
The work was carried out by our accredited, competent, sub contracted laboratory.

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
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Technical Manager

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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443069

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Oxidisable sulphides (OS) content of an Sample by calculation of **TRL Report 447 Test No. 2 and Test No. 4**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. :	**BH04 - 48956**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**24/12/2015**
Sampling Location:	**Depth Top: 31.84 Depth Base: 31.93**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**<0.5 % SO_4 - If deposited within 500mm of Cementitious Materials** **<0.06 % SO_4 - If deposited within 500mm of Metallic Structural Elements**

RESULTS:

Oxidisable Sulphides (OS) (%) = 0.04 SO_4

Comments

The work was carried out by our accredited, competent, sub contracted laboratory.

Certificate Prepared by:-

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Technical Manager

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VAT No: 9D53971I

Contract: Lackagh Quarry

Date: 15 February 2016
Test Report Ref: STR 443132

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Oxidisable sulphides (OS) content of an Sample by calculation of **TRL Report 447 Test No. 2 and Test No. 4**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. :	**BH05 - 50716**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**24/12/2015**
Sampling Location:	**Depth Top: 29.18 Depth Base: 29.3**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**<0.5 % SO_4 - If deposited within 500mm of Cementitious Materials** **<0.06 % SO_4 - If deposited within 500mm of Metallic Structural Elements**

RESULTS:

Oxidisable Sulphides (OS) (%) = <0.01 SO_4

Comments
The work was carried out by our accredited, competent, sub contracted laboratory.

Certificate Prepared by:-
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Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

pH Value

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Contract: Lackagh Quarry

Date: 16 March 2016
Test Report Ref: STR 447857

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the pH Value of Soils in accordance with **BS 1377:Part 3:1990 - Clause 9, Electrometric Method.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 48893**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**09/02/2016**
Sampling Location:	**Depth Top:55.84 Depth Base:55.92**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

pH Value =	**9.1**
*95% Confidence limit**	*8.86% - 9.34%*

Comments

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-

Mathew Sayer
Assistant Laboratory Manager

Approved by: -

Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Contract: Lackagh Quarry

Date: 16 March 2016
Test Report Ref: STR 447896

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the pH Value of Soils in accordance with **BS 1377:Part 3:1990 - Clause 9, Electrometric Method.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50888**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**09/02/2016**
Sampling Location:	**Depth Top:94.96 Depth Base:95.05**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

pH Value =	**9.2**
*95% Confidence limit**	*8.96% - 9.44%*

Comments

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-
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Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447928

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the pH Value of Soils in accordance with **BS 1377:Part 3:1990 - Clause 9, Electrometric Method.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50920**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**09/02/2016**
Sampling Location:	**Depth Top:138.60 Depth Base:138.72**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

pH Value =	**9.2**
*95% Confidence limit**	*8.96% - 9.44%*

Comments

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-

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Approved by: -

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Priority Construction Ltd
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Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447959

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the pH Value of Soils in accordance with **BS 1377:Part 3:1990 - Clause 9, Electrometric Method.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50949**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**09/02/2016**
Sampling Location:	**Depth Top:182.12 Depth Base:182.20**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

pH Value =	**9.3**
*95% Confidence limit**	*9.06% - 9.54%*

Comments

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-

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Approved by: -

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Technical Manager

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VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447984

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the pH Value of Soils in accordance with **BS 1377:Part 3:1990 - Clause 9, Electrometric Method.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50974**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**09/02/2016**
Sampling Location:	**Depth Top:213.80 Depth Base:213.90**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

pH Value =	**9.1**
*95% Confidence limit**	*8.86% - 9.34%*

Comments

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-

Mathew Sayer
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Approved by: -

Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443072

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the pH Value of Soils in accordance with **BS 1377:Part 3:1990 - Clause 9, Electrometric Method.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48959**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**22/12/2015**
Sampling Location:	**Depth Top: 32.26 Depth Base: 32.35**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

pH Value =	**9.3**
*95% Confidence limit**	*9.06% - 9.54%*

Comments

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-

Mathew Sayer
Assistant Laboratory Manager

Approved by: -

Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
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VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443133

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the pH Value of Soils in accordance with **BS 1377:Part 3:1990 - Clause 9, Electrometric Method.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 50717**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**22/12/2015**
Sampling Location:	**Depth Top: 29.3 Depth Base: 29.4**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

pH Value =	**9.2**
*95% Confidence limit**	*8.96% - 9.44%*

Comments

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-

Mathew Sayer
Assistant Laboratory Manager

Approved by: -

Eric Goulden
Technical Manager

Point Load Testing

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443019

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48907**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 12.62 Depth Base: 12.75**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443019 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48907											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	112	20.0	8960	11408	1.75	1.41	2.47	59.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**59.2**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443021

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48909**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 13.1 Depth Base: 13.25**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443021 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48909											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	130	20.0	10400	13242	1.51	1.46	2.20	52.7
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**52.7**

Priority Construction Ltd
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Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443023

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48911**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 14.63 Depth Base: 14.74**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443023 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48911											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	105	15.8	8400	10695	1.48	1.39	2.05	49.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**49.2**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443025

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48913**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 14.97 Depth Base: 15.13**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443025 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48913											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	125	22.1	10000	12732	1.74	1.44	2.50	60.1
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**60.1**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443027

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48915**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 17.74 Depth Base: 17.86**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443027 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48915											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	135	23.5	10800	13751	1.71	1.47	2.51	60.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**60.2**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443029

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48917**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 18.12 Depth Base: 18.2**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443029 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48917											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	85	15.4	6800	8658	1.78	1.32	2.35	56.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**56.5**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443030

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48918**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 19.2 Depth Base: 19.32**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443030 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48918											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	120	13.0	9600	12223	1.06	1.43	1.52	36.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**36.5**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443032

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48920**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 20.12 Depth Base: 20.22**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443032 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48920											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	98	22.5	7840	9982	2.25	1.37	3.08	73.9
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**73.9**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443035

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48923**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 21.2 Depth Base: 21.3**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443035 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48923											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	87	19.0	6960	8862	2.14	1.33	2.85	68.4
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**68.4**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443037

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48925**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 22.2 Depth Base: 22.31**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443037 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48925											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	100	27.9	8000	10186	2.74	1.37	3.76	90.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**90.2**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443038

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48926**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 22.6 Depth Base: 22.78**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443038 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48926											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	142	24.4	11360	14464	1.69	1.48	2.50	60.1
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**60.1**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443040

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48928**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 23.1 Depth Base: 23.2**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443040 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48928											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	100	20.0	8000	10186	1.96	1.37	2.69	64.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**64.6**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443042

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48930**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 23.7 Depth Base: 23.8**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443042 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48930											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	95	23.1	7600	9677	2.39	1.36	3.24	77.7
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**77.7**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443044

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48932**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 24.17 Depth Base: 24.28**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443044 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48932											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	100	22.9	8000	10186	2.25	1.37	3.08	74.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**74.0**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443047

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48934**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 25.08 Depth Base: 25.19**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443047 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48934											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	111	26.0	8880	11306	2.30	1.40	3.23	77.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**77.5**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443049

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48937**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 27.91 Depth Base: 28**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443049 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48937											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	86	24.6	6880	8760	2.81	1.33	3.72	89.4
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**89.4**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443051

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48939**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 28.4 Depth Base: 28.44**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443051 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48939											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	104	21.8	8320	10593	2.06	1.38	2.85	68.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**68.3**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443051

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48939**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 28.4 Depth Base: 28.44**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443051 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48939											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	104	21.8	8320	10593	2.06	1.38	2.85	68.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**68.3**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443054

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48943**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 29.86 Depth Base: 29.94**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443054 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48943											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Lump	b		80	40	14.0	3200	4074	3.44	1.12	3.84	92.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**92.0**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443062

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48949**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 30.93 Depth Base: 30.03**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443062 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48949											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	85	20.9	6800	8658	2.41	1.32	3.19	76.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**76.6**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443064

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48951**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 31.3 Depth Base: 31.4**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443064 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48951											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	112	22.9	8960	11408	2.01	1.41	2.82	67.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**67.8**

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Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443068

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48955**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 31.76 Depth Base: 31.84**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443068 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48955											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	90	17.0	7200	9167	1.85	1.34	2.48	59.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**59.6**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443071

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48958**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 32.15 Depth Base: 32.26**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443071 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48958											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Lump	b		59	125	16.1	7375	9390	1.71	1.35	2.31	55.4
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**55.4**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443075

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48962**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 32.5 Depth Base: 32.57**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443075 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48962											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Lump	b		68	75	17.2	5100	6494	2.65	1.24	3.28	78.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**78.8**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443077

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48964**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 32.85 Depth Base: 32.96**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443077 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48964											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Lump	b		65	90	15.9	5850	7448	2.13	1.28	2.73	65.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**65.5**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443083

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH04 - 48967**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 33.48 Depth Base: 33.6**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443083 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH04 48967											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	115	17.2	9200	11714	1.47	1.42	2.08	49.9
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**49.9**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443091

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48975**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 2.8 Depth Base: 2.96**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443091 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48975											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	170	13.0	13600	17316	0.75	1.55	1.16	27.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**27.8**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443093

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48977**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 7.73 Depth Base: 7.84**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443093 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48977											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	110	21.0	8800	11205	1.87	1.40	2.63	63.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**63.0**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443094

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48978**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 8.1 Depth Base: 8.25**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443094 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48978											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	160	19.5	12800	16297	1.20	1.52	1.82	43.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**43.8**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443095

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48979**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 8.54 Depth Base: 8.66**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443095 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48979											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	120	22.1	9600	12223	1.81	1.43	2.58	62.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**62.0**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443097

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48981**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 9.46 Depth Base: 9.57**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443097 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48981											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	100	28.3	8000	10186	2.78	1.37	3.81	91.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**91.5**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443099

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48983**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 9.77 Depth Base: 9.92**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443099 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48983											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	126	20.5	10080	12834	1.60	1.44	2.31	55.4
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**55.4**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443100

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48984**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 10.2 Depth Base: 10.26**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443100 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48984											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Lump	b		80	48	17.7	3840	4889	3.62	1.16	4.21	101.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**101.0**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443101

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48985**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 11.3 Depth Base: 11.45**
Name of Source:	**Lackagh Quarry Sl**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443101 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48985											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	146	17.9	11680	14871	1.20	1.49	1.80	43.1
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**43.1**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443103

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48987**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 11.72 Depth Base: 11.83**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443103 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48987											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	100	23.9	8000	10186	2.35	1.37	3.22	77.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**77.2**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443105

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48989**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 13.5 Depth Base: 13.6**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443105 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48989											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Lump	b		80	43	22.7	3440	4380	5.18	1.13	5.88	141.1
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**141.1**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443106

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48990**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 13.7 Depth Base: 13.81**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443106 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48990											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	108	22.1	8640	11001	2.01	1.40	2.80	67.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**67.3**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443108

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48992**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 14.07 Depth Base: 14.15**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443108 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48992											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Lump	b		80	70	19.8	5600	7130	2.78	1.27	3.52	84.4
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**84.4**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443109

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48993**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 14.27 Depth Base: 14.4**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443109 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48993											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	95	22.0	7600	9677	2.27	1.36	3.08	74.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**74.0**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443111

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48995**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 15.43 Depth Base: 15.55**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443111 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48995											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	80	21.3	6400	8149	2.61	1.30	3.41	81.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**81.8**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443113

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 48997**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 16.45 Depth Base: 16.55**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443113 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 48997											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	95	20.0	7600	9677	2.07	1.36	2.80	67.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**67.3**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443119

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 50703**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 22.07 Depth Base: 22.21**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443119 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 50703											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	150	23.0	12000	15279	1.51	1.50	2.26	54.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**54.3**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443120

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 50704**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 22.9 Depth Base: 23**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443120 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 50704											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Lump	b		80	55	17.0	4400	5602	3.03	1.20	3.64	87.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**87.3**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443121

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 50705**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 23.94 Depth Base: 24.05**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443121 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 50705											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	100	20.8	8000	10186	2.04	1.37	2.80	67.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**67.2**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443123

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 50707**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 24.73 Depth Base: 24.85**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443123 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 50707											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		75	90	18.0	6750	8594	2.09	1.32	2.77	66.4
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**66.4**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443125

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 50709**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 26 Depth Base: 26.12**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443125 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 50709											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		75	103	23.0	7725	9836	2.34	1.36	3.18	76.4
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**76.4**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443141

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 50725**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 32.44 Depth Base: 32.54**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443141 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 50725											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	80	20.0	6400	8149	2.45	1.30	3.20	76.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**76.8**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443143

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 50727**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 32.83 Depth Base: 32.92**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443143 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 50727											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Lump	b		80	72	16.0	5760	7334	2.18	1.27	2.78	66.7
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**66.7**

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443154

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 50736**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 37.4 Depth Base: 37.5**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443154 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 50736											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	95	24.0	7600	9677	2.48	1.36	3.36	80.7
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**80.7**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 21st December 2015
Test Report Ref:. STR: 443156

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 50738**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**8/12/2015**
Sampling Location:	**Depth Top: 37.82 Depth Base: 37.92**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 443156 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56158											
Date Recived	8.12.15											
Sample Ref	BH05 50738											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	100	23.9	8000	10186	2.35	1.37	3.22	77.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**77.2**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447819

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48862**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:10.36 Depth Base:10.46**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447819 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48862											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	70	14.9	4200	5348	2.79	1.19	3.31	79.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**79.3**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447825

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48864**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:10.69 Depth Base:10.76**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447825 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48864											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	60	13.0	3600	4584	2.84	1.15	3.25	78.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**78.0**

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Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447831

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48869**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:13.35 Depth Base:13.45**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447831 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48869											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	18.1	5100	6494	2.79	1.24	3.46	82.9
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**82.9**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447833

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48871**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:13.70 Depth Base:13.80**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447833 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48871											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	90	16.4	5400	6875	2.39	1.26	3.00	71.9
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**71.9**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447834

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48872**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:16.30 Depth Base:16.40**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447834 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48872											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	95	16.1	5700	7257	2.22	1.27	2.82	67.7
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**67.7**

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Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447836

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48874**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:16.66 Depth Base:16.80**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447836- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48874											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	115	21.1	6900	8785	2.40	1.33	3.19	76.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**76.5**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447839

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48877**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:26.20 Depth Base:26.36**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447839 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48877											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	165	17.2	9900	12605	1.36	1.44	1.96	47.1
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**47.1**

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447841

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48879**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:26.61 Depth Base:26.70**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447841 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48879											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	13.2	5100	6494	2.03	1.24	2.52	60.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**60.5**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447844

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48882**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:34.44 Depth Base:34.48**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447844 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48882											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		39	60	10.6	2340	2979	3.56	1.04	3.70	88.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**88.8**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447846

Order No:

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48884**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:34.73 Depth Base: 34.83**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447846 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48884											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	95	14.8	5700	7257	2.04	1.27	2.59	62.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**62.2**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447848

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48886**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:44.45 Depth Base:44.54**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447848 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48886											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	75	16.8	4500	5730	2.93	1.21	3.53	84.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**84.8**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447851

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48888**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:44.79 Depth Base:44.90**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447851- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48888											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	90	12.1	5400	6875	1.76	1.26	2.21	53.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**53.0**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447858

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48894**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:56.50 Depth Base:56.60**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447858 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48894											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	70	12.1	4200	5348	2.26	1.19	2.68	64.4
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**64.4**

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447860

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48896**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:56.85 Depth Base:56.93**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR :447860 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48896											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	70	12.0	4200	5348	2.24	1.19	2.66	63.9
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**63.9**

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447863

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 48899**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:62.76 Depth Base:62.86**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR :447863- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 48899											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	18.2	5100	6494	2.80	1.24	3.47	83.4
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**83.4**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447865

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50857**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:63.05 Depth Base:63.16**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447865 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50857											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	125	14.6	7500	9549	1.53	1.35	2.07	49.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**49.6**

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Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447870

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50862**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:66.00 Depth Base:66.10**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447870 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50862											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	80	14.5	4800	6112	2.37	1.22	2.90	69.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**69.6**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447872

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50864**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:66.34 Depth Base:66.45**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447872- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50864											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	105	16.1	6300	8021	2.01	1.30	2.61	62.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**62.6**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447880

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50872**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:79.10 Depth Base:79.18**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR :447880 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50872											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	11.3	5100	6494	1.74	1.24	2.16	51.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**51.8**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447882

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50874**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:79.40 Depth Base:79.52**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447882 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50874											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	110	12.8	6600	8403	1.52	1.31	2.00	48.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**48.0**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447891

Order No:

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50883**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:92.35 Depth Base:92.47**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447891- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50883											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	16.0	5100	6494	2.46	1.24	3.05	73.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**73.3**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447893

Order No:

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50885**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:92.70 Depth Base:92.79**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447893- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50885											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	80	14.8	4800	6112	2.42	1.22	2.96	71.1
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**71.1**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447901

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50893**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:108.15 Depth Base:108.22**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447901- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50893											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	70	11.5	4200	5348	2.15	1.19	2.55	61.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**61.2**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447903

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50895**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:108.51 Depth Base:108.62**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447903 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50895											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	75	13.9	4500	5730	2.43	1.21	2.92	70.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**70.2**

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447909

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50901**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:115.89 Depth Base:116.05**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447909- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50901											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	110	14.0	6600	8403	1.67	1.31	2.19	52.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**52.5**

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447911

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50903**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:116.29 Depth Base:116.39**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR :447911- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50903											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	95	14.8	5700	7257	2.04	1.27	2.59	62.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**62.2**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447916

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50908**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:128.80 Depth Base:128.89**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447916- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50908											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	75	16.0	4500	5730	2.79	1.21	3.37	80.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**80.8**

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447918

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50910**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:129.14 Depth Base:129.21**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447918 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50910											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	60	14.0	3600	4584	3.05	1.15	3.50	84.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**84.0**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447922

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50914**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:133.21 Depth Base:133.32**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447922 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50914											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	15.1	5100	6494	2.33	1.24	2.88	69.2
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**69.2**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447924

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50916**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:133.54 Depth Base:133.63**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR :447924 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50916											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	13.5	5100	6494	2.08	1.24	2.58	61.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**61.8**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447931

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50923**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:146.20 Depth BaseBase:146.30**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447931 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50923											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	12.0	5100	6494	1.85	1.24	2.29	55.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**55.0**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447933

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50925**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:146.52 Depth Base146.61**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447933 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50925											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	95	14.9	5700	7257	2.05	1.27	2.61	62.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**62.6**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447942

Order No:

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50933**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:156.33 Depth Base:156.44**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447942- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50933											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	110	11.2	6600	8403	1.33	1.31	1.75	42.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**42.0**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447944

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50935**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:156.68 Depth Base:156.76**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447944- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50935											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	90	10.8	5400	6875	1.57	1.26	1.97	47.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**47.3**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447946

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50937**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:165.17 Depth Base:165.25**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447946 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50937											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	75	15.4	4500	5730	2.69	1.21	3.24	77.7
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**77.7**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447948

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50939**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:166.00 Depth Base:166.10**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447948 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50939											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	14.1	5100	6494	2.17	1.24	2.69	64.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**64.6**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447953

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50944**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:175.18 Depth Base:175.26**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447953 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50944											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	12.8	5100	6494	1.97	1.24	2.44	58.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**58.6**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447956

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50946**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:175.50 Depth Base:175.59**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR :447956- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50944											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	12.8	5100	6494	1.97	1.24	2.44	58.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**58.6**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447961

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50951**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:183.90 Depth Base:184.20**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447961 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50951											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	110	13.0	6600	8403	1.55	1.31	2.03	48.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**48.8**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447963

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50953**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:184.25 Depth Base:184.34**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR :447963- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50953											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	90	16.0	5400	6875	2.33	1.26	2.92	70.1
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**70.1**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447967

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50957**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:194.60 Depth Base:194.67**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447967 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50957											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	60	8.0	3600	4584	1.75	1.15	2.00	48.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**48.0**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447969

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50959**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:194.90 Depth Base:194.99**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447969 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50959											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	80	12.0	4800	6112	1.96	1.22	2.40	57.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**57.6**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447972

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50962**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:204.62 Depth Base:204.70**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447972- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50962											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	80	17.4	4800	6112	2.85	1.22	3.48	83.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**83.6**

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 11th April 2016
Test Report Ref:. STR: 447974

Order No:

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50964**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:204.95 Depth Base:205.02**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447974 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50964											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	13.2	5100	6494	2.03	1.24	2.52	60.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**60.5**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447980

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50970**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:211.77 Depth Base:211.85**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447980- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50970											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	75	11.2	4500	5730	1.95	1.21	2.36	56.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**56.5**

Point load test results
STR : 447982- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50972											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	100	17.0	6000	7639	2.23	1.29	2.86	68.7
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**68.7**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447982

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50972**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:212.10 Depth Base:212.20**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447989

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50979**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:225.65 Depth Base:225.74**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447989- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50979											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	95	19.1	5700	7257	2.63	1.27	3.34	80.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**80.3**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447991

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50981**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:225.95 Depth Base:226.03**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447991 Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50981											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	95	17.2	5700	7257	2.37	1.27	3.01	72.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**72.3**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447995

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50985**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:231.65 Depth Base:231.78**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447994- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50985											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	120	15.1	7200	9167	1.65	1.34	2.21	53.0
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**53.0**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 447997

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50987**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:232.00 Depth Base:232.10**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 447997- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50987											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	70	14.0	4200	5348	2.62	1.19	3.11	74.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**74.6**

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 448003

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50993**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:242.82 Depth Base:242.92**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 448003- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50993											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	95	12.8	5700	7257	1.76	1.27	2.24	53.8
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**53.8**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 448005

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50995**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:243.14 Depth Base:243.23**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 448005 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50995											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	14.1	5100	6494	2.17	1.24	2.69	64.6
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**64.6**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 448007

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50997**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:251.81 Depth Base:251.95**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 448007 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50997											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	110	14.0	6600	8403	1.67	1.31	2.19	52.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**52.5**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 448009

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 50999**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:252.22 Depth Base:252.32**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 448009- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 50999											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	90	14.0	5400	6875	2.04	1.26	2.56	61.4
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**61.4**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 448011

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 51001**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:259.72 Depth Base:259.82**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 448011- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 51001											
Key : -												
D	Always distance between platen contact points							D*D	= 4A/pi for axial (a) and irregular block (b) tests			
W	Smallest width perpendicular to loading direction							P	Load failure in KN			
	ie core diameter for axial tests.							Is	Uncorrected strength index			
	W =(W1 + W2)/2 for irregular blocks.							Is (50)	Point load strength index			
A	W*D minimum x-sectional area							F	Size correction factor			
	For axial or irregular block test 0.3W < D < W							#	Test perpendicular to fabric			
D*D	= D*D for diametral (d) tests							//	Test parallel to fabric			
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	85	14.0	5100	6494	2.16	1.24	2.67	64.1
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**64.1**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 448013

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 51003**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:260.06 Depth Base:260.18**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR :448013- Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 51003											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample	Sample	Test		D	W	P	A	D*D	Is	F	Is (50)	Approx. Compressive
no	type	type		mm	mm	KN	=W*D					Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	120	12.8	7200	9167	1.40	1.34	1.87	44.9
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**44.9**

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 448015

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 51005**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:262.63 Depth Base:262.73**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 448015 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 51005											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	95	16.1	5700	7257	2.22	1.27	2.82	67.7
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**67.7**

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
Killmor
Ballinasloe
Co. Galway
Ireland

Date: 24th February 2016
Test Report Ref:. STR: 448016

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56595**
Client Ref. No.:	**BH01 - 51006**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**18/1/2016**
Date of Start of Test.:	**18/1/2016**
Sampling Location:	**Depth Top:264.80 Depth Base:164.93**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR :448016 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S56595											
Date Recived	18.1.16											
Sample Ref	BH01 51006											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	a		60	100	12.0	6000	7639	1.57	1.29	2.02	48.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**48.5**

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 15th February 2016
Test Report Ref:. STR: 451474

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Point Load Index of Rock in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No.:	**S56158**
Client Ref. No.:	**BH05 - 50740**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab.:	**08/12/2015**
Date of Start of Test.:	**15/12/2015**
Sampling Location:	**Depth Top: 37.92 Depth Base: 38.08**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See Attached

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The specimens were perpendicular to the axis of loading with respect to the existing planes of anisotropy.

Nick Dumbarton – Assistant Laboratory Manager

Point load test results
STR : 451474 - Page 2 of 2

Client	Priority Construction Ltd											
Sample Number	S6158											
Date Recived	8.12.15											
Sample Ref	BH05 50740											
Key : -												
D	Always distance between platen contact points								D*D	= 4A/pi for axial (a) and irregular block (b) tests		
W	Smallest width perpendicular to loading direction								P	Load failure in KN		
	ie core diameter for axial tests.								Is	Uncorrected strength index		
	W =(W1 + W2)/2 for irregular blocks.								Is (50)	Point load strength index		
A	W*D minimum x-sectional area								F	Size correction factor		
	For axial or irregular block test 0.3W < D < W								#	Test perpendicular to fabric		
D*D	= D*D for diametral (d) tests								//	Test parallel to fabric		
Sample no	Sample type	Test type		D mm	W mm	P KN	A =W*D	D*D	Is	F	Is (50)	Approx. Compressive Strength (MPa)
*	*	*	*	*	*	*						
Axial, Block or Lump Tests												
1	Core	d		80	140	21.0	11200	14260	1.47	1.48	2.18	52.3
2												
3												
4												
5												
6												
7												
8												
9												
10												
											Mean	**52.3**

Porosity / Density Testing

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 22nd March 2016
Test Report No: STR: 443026

LABORATORY TEST REPORT

REQUIREMENTS: To determine the Porosity & Density using saturation and calliper in accordance with **ISRM Part 1: Test 2**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref.:	**Various**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**11/02/2016**
Sampling Location:	**Various**
Name of Supplier:	**Lackagh Quarry**
Name and Location of Quarry	**Unknown**
Sampled By:	**Client**
Method of Sampling:	**Rock Testing**

Nick Dumbarton – Laboratory Manager

RESULTS:

Sample ref:	Porosity (%)	Dry Density of Rock (Kg/m^3)
BH4 - 48929	0.4	2.69
BH4 - 48936	0.5	2.65
BH5 - 48974	0.4	2.68
BH5 – 50702	0.4	2.69
BH5 – 50730	0.6	2.69

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 22nd March 2016
Test Report No: STR: 443115

LABORATORY TEST REPORT

REQUIREMENTS: To determine the Porosity & Density using saturation and buoyancy in accordance with **ISRM Part 1: Test 3**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref.:	**Various**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**11/02/2016**
Sampling Location:	**Various**
Name of Supplier:	**Lackagh Quarry**
Name and Location of Quarry	**Unknown**
Sampled By:	**Client**
Method of Sampling:	**Rock Testing**

Nick Dumbarton – Laboratory Manager

RESULTS:

Sample ref:	Porosity (%)	Dry Density of Rock (Kg/m^3)
BH4 - 48914	0.2	2.72
BH4 - 48968	0.4	2.69
BH5 - 48976	0.3	2.65
BH5 - 48999	0.3	2.69
BH5 - 50735	0.4	2.68

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date:17th March 2016
Test Report No: STR: 447826

LABORATORY TEST REPORT

REQUIREMENTS: To determine the Porosity & Density using saturation and buoyancy in accordance with **ISRM Part 1: Test 3**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref.:	**Various**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/1/2016**
Date of Start of Test:	**21/2/2016**
Sampling Location:	**Various**
Name of Supplier:	**Lackagh Quarry**
Name and Location of Quarry	**Unknown**
Sampled By:	**Client**
Method of Sampling:	**Rock Testing**

Nick Dumbarton – Laboratory Manager

Test Report No: STR: 447826 Page 1 of 2

RESULTS:

Sample ref:	Porosity (%)	Dry Density of Rock (Kg/m^3)
BH01 - 48865	0.5	2.63
BH01 - 48876	1.2	2.70
BH01 - 48889	0.5	2.68
BH01 - 50860	0.2	2.72
BH01 - 50867	0.2	2.63
BH01 - 50881	1.0	2.70
BH01 - 50898	0.7	2.59
BH01 - 50919	0.3	2.63
BH01 - 50928	0.7	2.67
BH01 - 50942	0.4	2.72
BH01 - 50960	0.5	2.71
BH01 - 50967	0.3	2.85
BH01 - 50978	0.3	2.63
BH01 - 50983	0.4	2.65
BH01 - 51009	0.5	2.64

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 17th March 2016
Test Report No: STR: 447828

LABORATORY TEST REPORT

REQUIREMENTS: To determine the Porosity & Density using saturation and calliper in accordance with **ISRM Part 1: Test 2**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref.:	**Various**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**21/02/2016**
Sampling Location:	**Various**
Name of Supplier:	**Lackagh Quarry**
Name and Location of Quarry	**Unknown**
Sampled By:	**Client**
Method of Sampling:	**Rock Testing**

Nick Dumbarton – Laboratory Manager

Test Report No: STR: 447828 Page 1 of 2

RESULTS:

Sample ref:	Porosity (%)	Dry Density of Rock (Kg/m^3)
BH01 - 48866	0.47	2.69
BH01 - 48875	0.58	2.65
BH01 - 48885	0.54	2.70
BH01 - 50861	0.64	2.69
BH01 - 50866	0.57	2.71
BH01 - 50880	0.49	2.71
BH01 - 50897	0.57	2.69
BH01 - 50918	0.76	2.81
BH01 - 50927	0.61	2.75
BH01 - 50941	0.49	2.68
BH01 - 50956	0.54	2.69
BH01 - 50966	0.65	2.69
BH01 - 50977	0.56	2.75
BH01 - 50982	0.64	2.70
BH01 - 51008	0.63	2.65

Polish Stone Value

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INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 01 March 2016
Test Report Ref: STR 448027

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Polished Stone Value (PSV) of aggregate sample in accordance with **BS EN 1097-8 : 2009**

SAMPLE DETAILS:

Certificate of sampling received:	**No**	Name of Source:	**Lackagh Quarry**
Laboratory Ref. No:	**S56595**	Method of Sampling:	**Unknown**
Client Ref. No:	**Bulk Sample**	Sampled By:	**Client**
Date and Time of Sampling:	**Unknown**		
Date of Receipt at Lab:	**18/01/2016**		
Date of Start of Test:	**23/02/2016**		
Sampling Location:	**Unknown**		
Material Description:	**Aggregate**		

RESULTS:

Recorded Polished Stone Value

Test Specimen	Test Run 1	(i)	35.3	Mean
		(ii)	35.7	Recorded
	Test Run 2	(iii)	35.0	Value (S)
		(iv)	37.0	= **35.8**
Control Stone	Test Run 1	(i)	47.7	Mean
		(ii)	47.3	Recorded
	Test Run 2	(iii)	47.0	Value (C)
		(iv)	46.7	= **47.2**

Corrected Polished Stone Value: S + 49* - C = **38**

Comments

*New Control Stone

Certificate Prepared by:-

Mathew Sayer
Assistant Laboratory Manager

Approved by: -

Eric Goulden
Technical Manager

Slake Durability

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 29 February 2016
Test Report Ref: STR 448028

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Slake Durability Index of an aggregate sample in accordance with **ISRM guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. :	**Bulk Sample**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**18/02/2016**
Sampling Location:	**Unknown**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Aggregate**
Target Specification:	**N/A**

RESULTS:

Slake Durability Index = **99.4 %**

Comments
None

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Soil Testing

PRIORITY GEOTECHNICAL	Natural Moisture Content/Atterberg Limits Summary BS 1377 : Part 2 : 1990 : Clause 3	Job Ref
Location	Galway PDL	P16005

Hole ID	Sample Ref	Depth (m)	Sample Type	Sample Description	MC	LL	PL	PI	% Pass 425
BH03		13.65	B		26				
BH03		13.73	B			34	NP	NP	100
BH03		19.1	B			29	NP	NP	100
BH03		19.25	B		30				
BH03		19.9	B		30				
BH03		21.3	B		30				
BH03		27.45	B			28	NP	NP	100
BH03		31.2	B		25				
BH03		33.95	B		27				
BH03		38.6	B		36				
BH03		39.25	B			56	44	12	100
BH03		39.8	B		38				
BH03		40.65	B			27	20	7	100
BH03		42.3	B		31				
BH03		47.2	B		32				
BH03		48.2	B			54	43	11	100
BH03		49.3	B		37				
BH03		63.5	B		20				
BH03		64.3	B		29				
BH03		65.5	B		24				
BH03		66.95	B		38				
BH03		68.4	B		37				

PRIORITY GEOTECHNICAL	Natural Moisture Content/Atterberg Limits Summary BS 1377 : Part 2 : 1990 : Clause 3	Job Ref
Location	Galway PDL	P16005

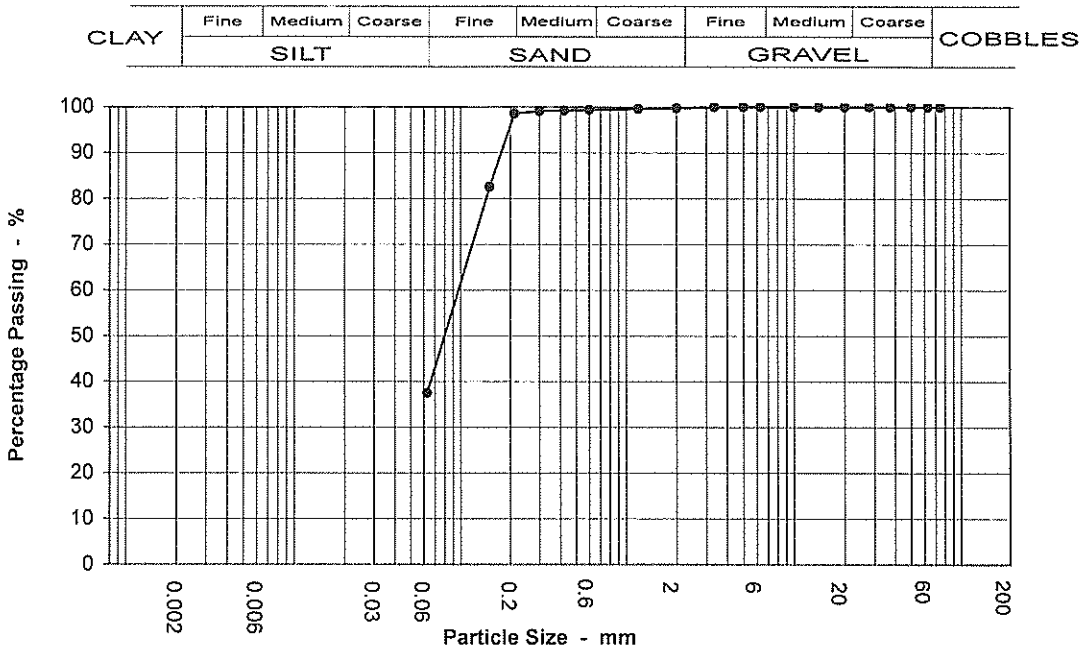
Hole ID	Sample Ref	Depth (m)	Sample Type	Sample Description	MC	LL	PL	PI	% Pass 425
BH03		70.4	B		21				
BH03		70.75	B		21				
BH03		71.6	B		25				
BH06		16.6	B		22				
BH06		16.7	B			38	27	11	100
BH06		18.25	B		28				
BH06		18.65	B			49	38	11	100
BH06		21.45	B		26				
BH06		21.52	B			39	30	9	100

PRIORITY GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	P16005
		Borehole / Pit No	BH03
Location	Galway PDL	Sample No	0
		Depth	14.90 m
Soil Description		Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	82		
0.063	38		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.3
Sand	62.2
Silt & Clay	37.5

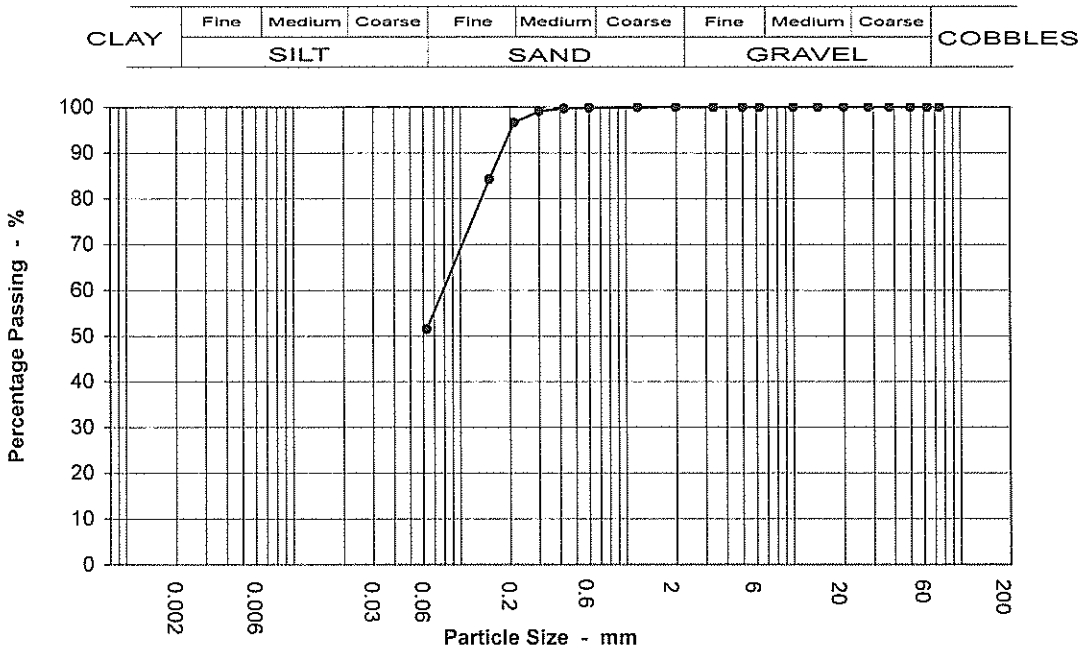
Grading Analysis	
D100	3.350
D60	0.106
D10	
Uniformity Coefficient	N/A

PRIORITY GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P16005**
		Borehole / Pit No	BH03
Location	**Galway PDL**	Sample No	0
		Depth	19.00 m
Soil Description		Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	97		
0.15	84		
0.063	51		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	48.5
Silt & Clay	51.5

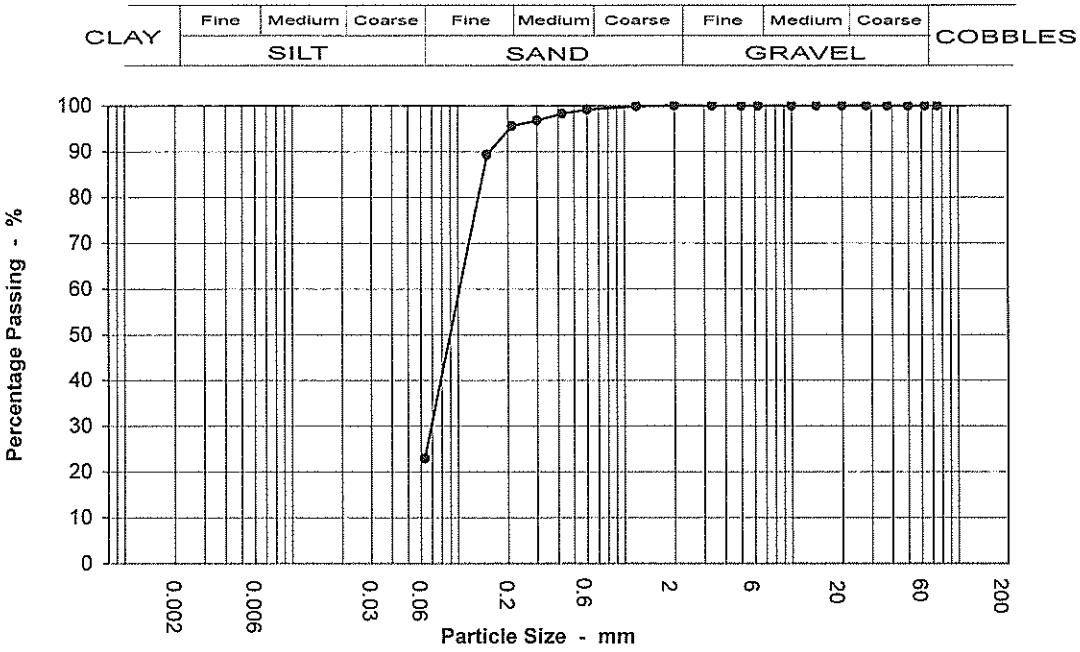
Grading Analysis	
D100	2.000
D60	0.086
D10	
Uniformity Coefficient	N/A

PRIORITY GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P16005**
		Borehole / Pit No	BH03
Location	**Galway PDL**	Sample No	0
		Depth	25.50 m
Soil Description		Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	98		
0.3	97		
0.212	95		
0.15	89		
0.063	23		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	77.1
Silt & Clay	22.9

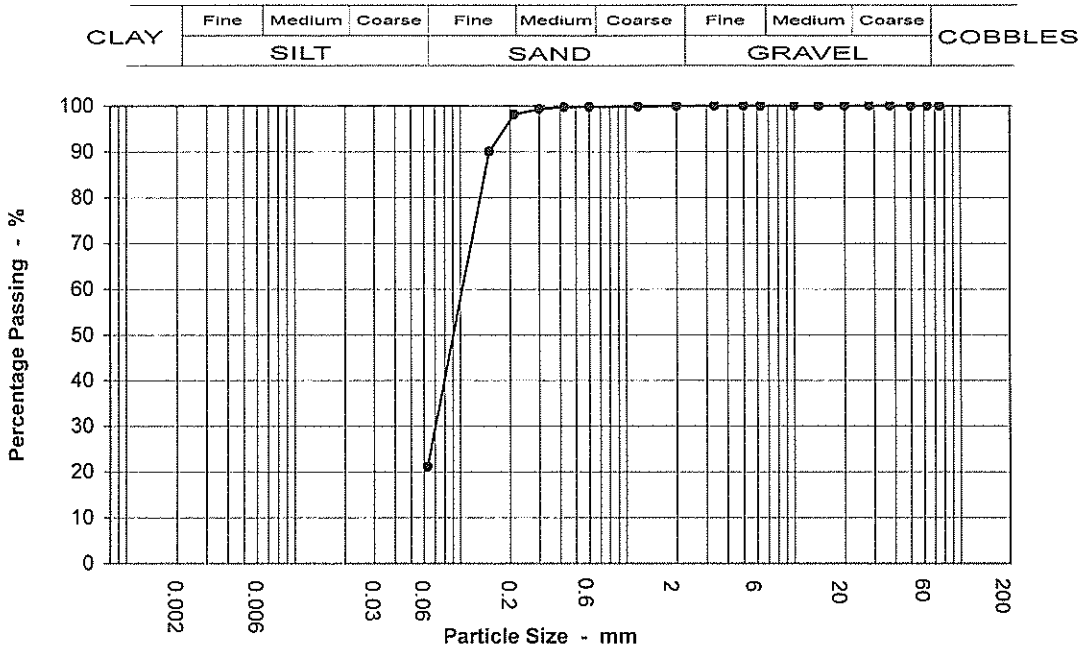
Grading Analysis	
D100	2.000
D60	0.112
D10	
Uniformity Coefficient	N/A

PRIORITY GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P16005**
		Borehole / Pit No	BH03
Location	**Galway PDL**	Sample No	0
		Depth	25.80 m
Soil Description		Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	98		
0.15	90		
0.063	21		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	78.8
Silt & Clay	21.2

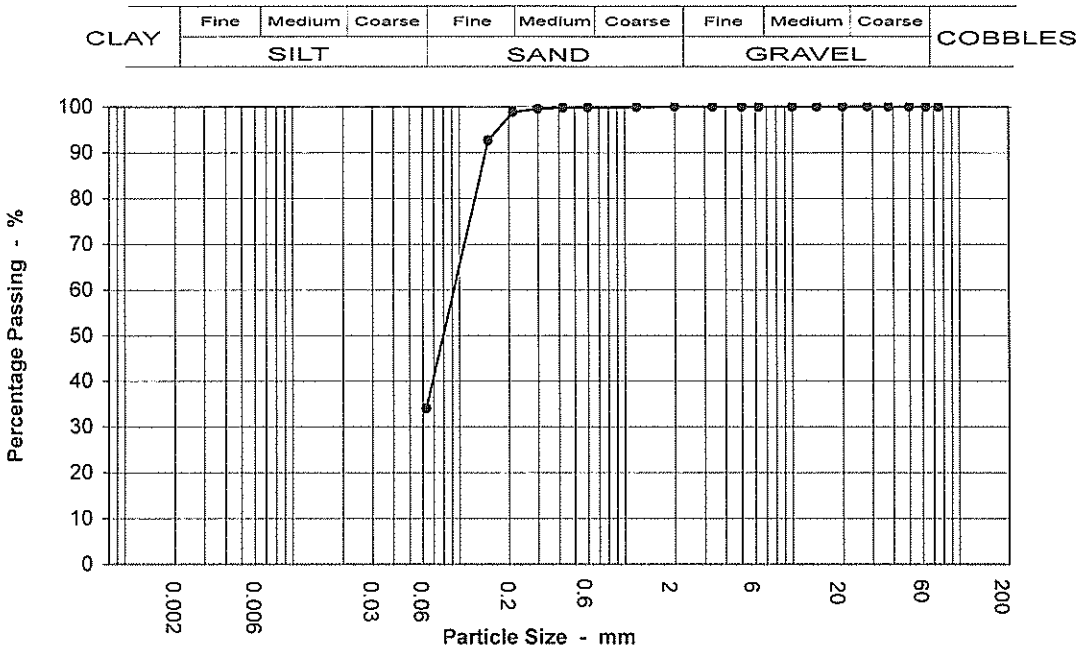
Grading Analysis	
D100	3.350
D60	0.112
D10	
Uniformity Coefficient	N/A

PRIORITY GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	P16005
		Borehole / Pit No	BH03
Location	Galway PDL	Sample No	0
		Depth	26.50 m
Soil Description		Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	99		
0.15	93		
0.063	34		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	66.0
Silt & Clay	34.0

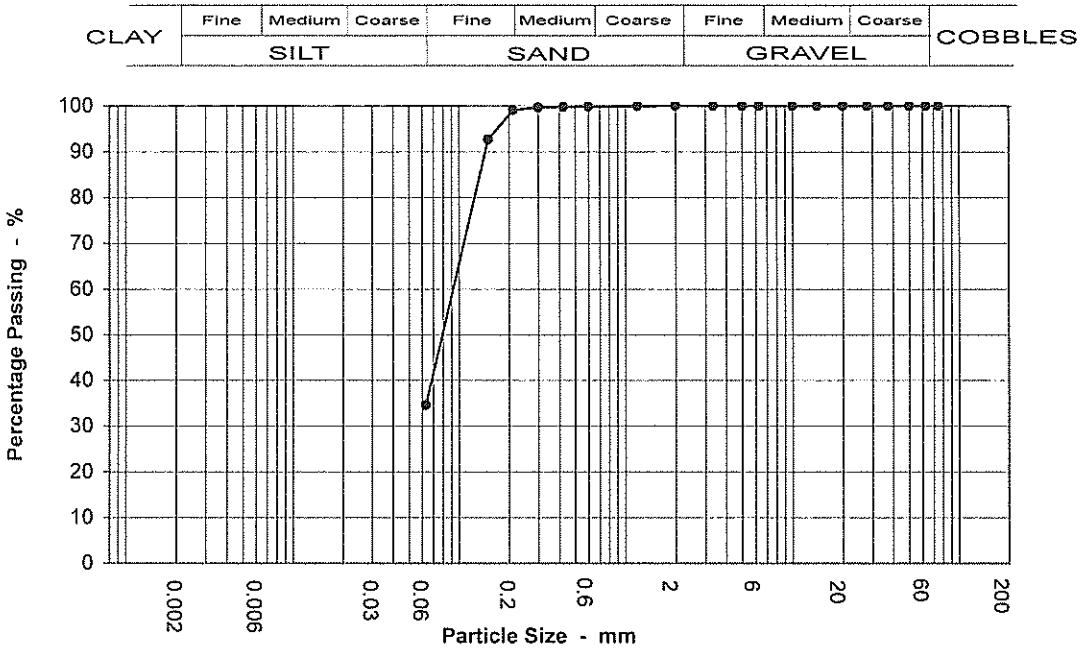
Grading Analysis	
D100	2.000
D60	0.102
D10	
Uniformity Coefficient	N/A

PRIORITY GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	P16005
		Borehole / Pit No	BH03
Location	Galway PDL	Sample No	0
		Depth	26.70 m
Soil Description		Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	99		
0.15	93		
0.063	35		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	65.4
Silt & Clay	34.6

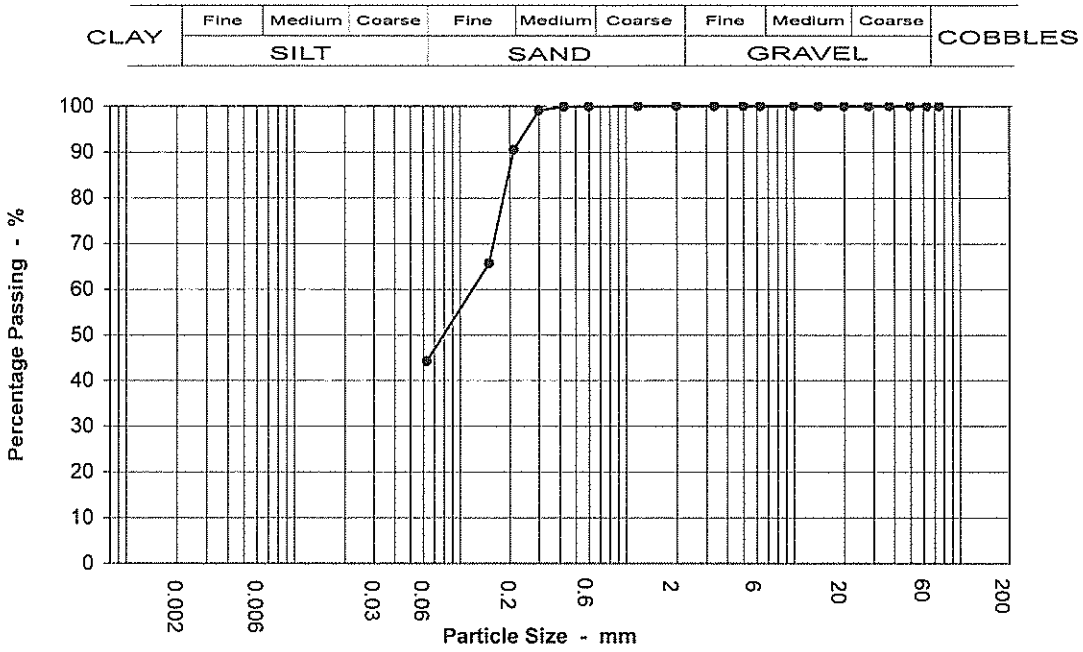
Grading Analysis	
D100	2.000
D60	0.101
D10	
Uniformity Coefficient	N/A

PRIORITY GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P16005**
		Borehole / Pit No	BH03
Location	**Galway PDL**	Sample No	0
		Depth	27.55 m
Soil Description		Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	99		
0.212	90		
0.15	66		
0.063	44		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	55.8
Silt & Clay	44.2

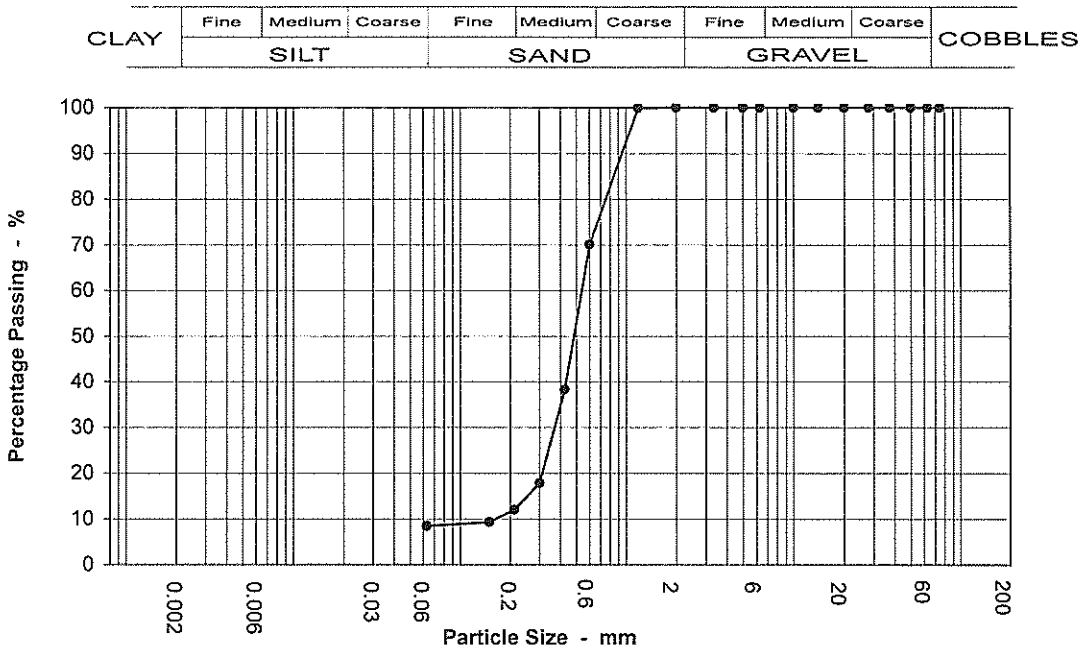
Grading Analysis	
D100	2.000
D60	0.127
D10	
Uniformity Coefficient	N/A

PRIORITY GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	P16005
		Borehole / Pit No	BH03
Location	Galway PDL	Sample No	0
		Depth	30.25 m
Soil Description		Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	70		
0.425	38		
0.3	18		
0.212	12		
0.15	9		
0.063	8		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	91.5
Silt & Clay	8.4

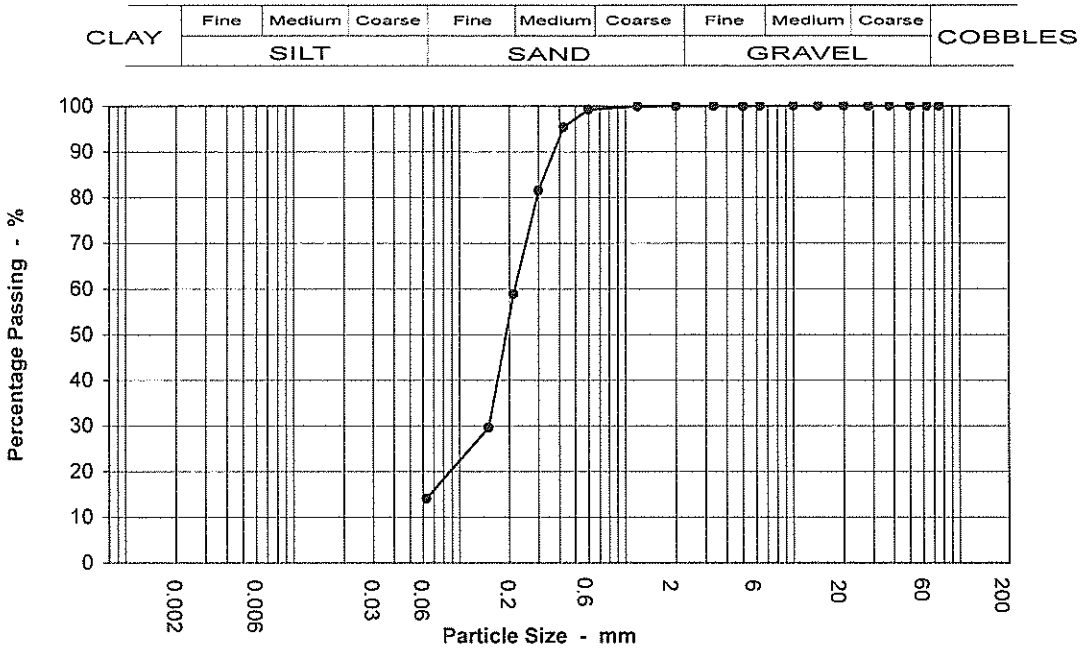
Grading Analysis	
D100	3.350
D60	0.545
D10	0.165
Uniformity Coefficient	3

PRIORITY GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

		Job Ref	**P16005**
		Borehole / Pit No	BH03
Location	**Galway PDL**	Sample No	0
		Depth	36.70 m
Soil Description		Sample type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	95		
0.3	81		
0.212	59		
0.15	30		
0.063	14		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.1
Sand	85.8
Silt & Clay	14.1

Grading Analysis	
D100	6.300
D60	0.217
D10	
Uniformity Coefficient	N/A

PRIORITY GEOTECHNICAL

Sulphate Content & pH Value

BS 1377 : Part 3 : 1990 : Clause 5.5 & 9.5

Job Ref

Location	Galway PDL	P16005

Hole ID	Sample Ref	Depth (m)	Sample Type	Sample Description	% < 2.0 mm	pH Value	Sulphate Content as SO3			Sulphate Content as SO4		
							GW g/L	Total Sulphate %	Water Soluble g/L	GW g/L	Total Sulphate %	Water Soluble g/L
BH03		20.95	B			9.08						
BH03		27.20	B			8.93						
BH03		41.20	B			8.27						
BH03		47.00	B			7.77						
BH03		63.38	B			7.5						

PRIORITY GEOTECHNICAL

Organic Matter Content

BS 1377 : Part 3 : 1990 : Clause 3

Job Ref

Location: Galway PDL

P16005

Hole ID	Sample Ref	Depth (m)	Sample Type	Sample Description	% Mass < 2 mm	Organic Matter Content %
BH03		38.95	B		100	8.85
BH03		39.45	B		100	5.63
BH03		42.35	B		100	7.04
BH03		46.20	B		100	15.12
BH03		47.45	B		99.97	6.64
BH03		49.00	B		100	6.49
BH03		63.15	B		98.97	10.22
BH03		63.90	B		100	5.99
BH03		64.90	B		99.3	7.68
BH06		17.13	B		99.51	3.15
BH06		18.95	B		99.5	3.17
BH06		21.75	B		99.93	12.51

UNDRAINED TRIAXIAL COMPRESSION

BS 1377 : Part 7 : 1990 Clause 8

		Job Ref	P16005
		Borehole / Pit No	BH03
Location	Galway PDL	Sample No	
Soils Description		Depth	4.15 m
		Date	

Sample Details **Specimen** 1

Sample Condition		Undisturbed
Height	mm	185.0
Diameter	mm	82.0
Moisture Content	%	7.9
Bulk Density	Mg/m³	2.34
Dry Density	Mg/m³	2.17

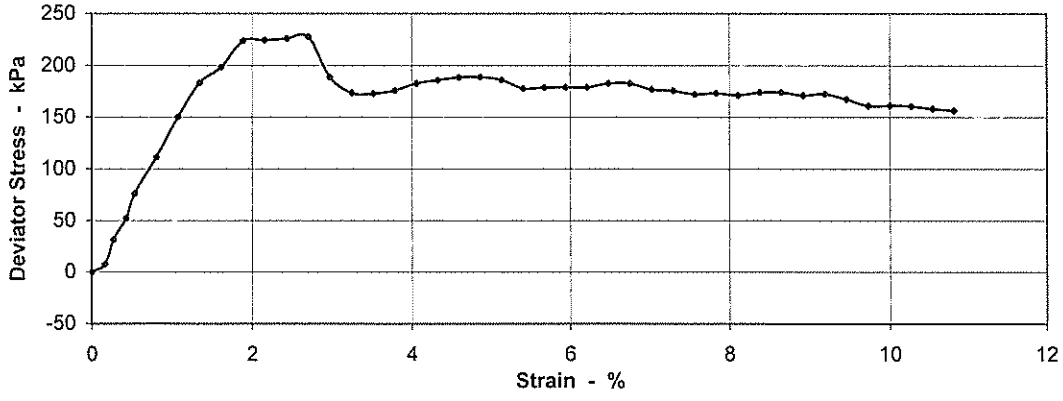
Test Details

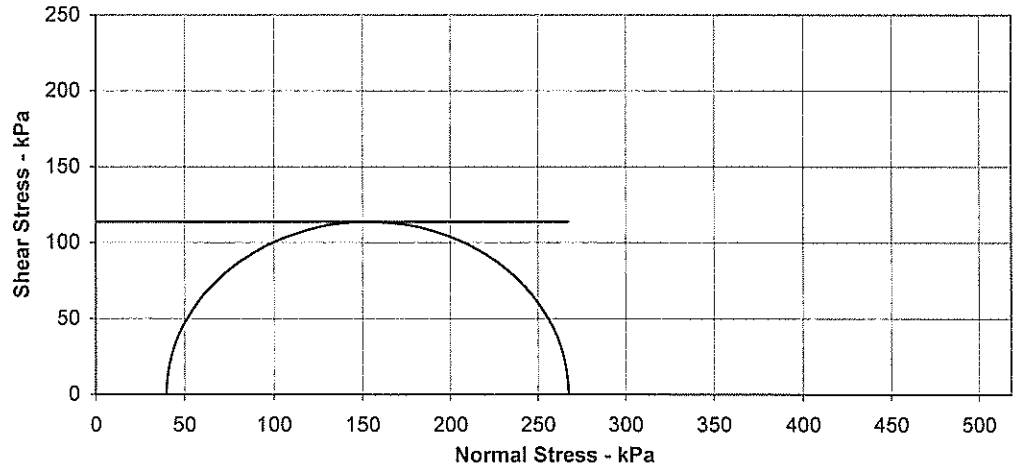
Membrane Thickness	mm	0.36
Membrane Correction	kPa	0.33
Rate of Axial Displacement	%/min	1.62
Cell Pressure	kPa	40
Strain at Failure	%	2.7
Maximum Deviator Stress	kPa	227
Shear Strength	kPa	114
Mode of Failure		Brittle

Position and orientation within the original sample

Shear Strength Parameters	
C	114 kPa
Phi	0.0 °

Specimen 1





UNDRAINED TRIAXIAL COMPRESSION

BS 1377 : Part 7 : 1990 Clause 8

Location	Galway PDL	Job Ref	P16005
		Borehole / Pit No	BH03
		Sample No	
Soils Description		Depth	41.85 m
		Date	

Sample Details **Specimen 1**

Sample Condition		Undisturbed
Height	mm	208.0
Diameter	mm	83.0
Moisture Content	%	41
Bulk Density	Mg/m³	1.78
Dry Density	Mg/m³	1.26

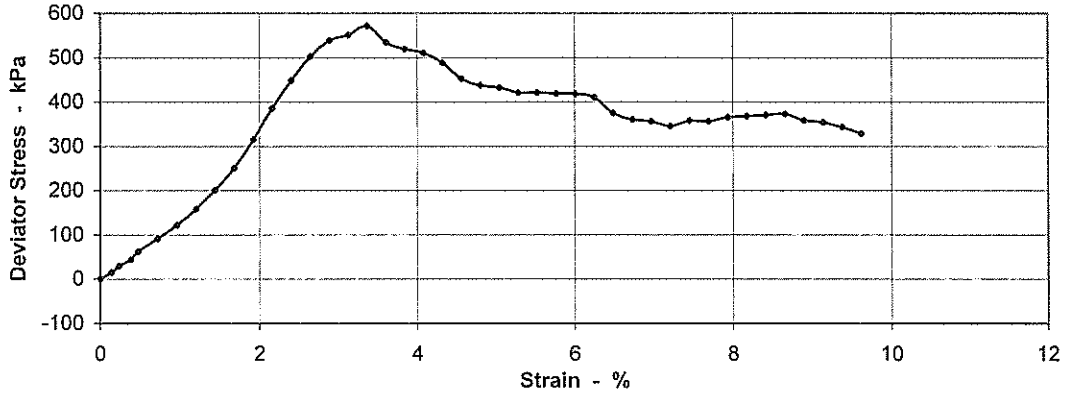
Test Details

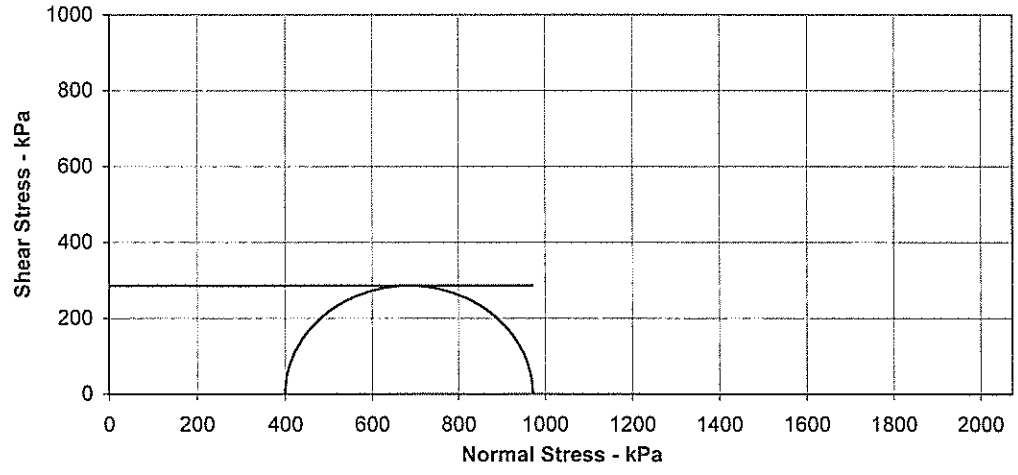
Membrane Thickness	mm	0.36
Membrane Correction	kPa	0.40
Rate of Axial Displacement	%/min	1.44
Cell Pressure	kPa	400
Strain at Failure	%	3.4
Maximum Deviator Stress	kPa	571
Shear Strength	kPa	286
Mode of Failure		Brittle

Position and orientation within the original sample

Shear Strength Parameters	
C	286 kPa
Phi	0.0 °

Specimen 1





UNDRAINED TRIAXIAL COMPRESSION

BS 1377 : Part 7 : 1990 Clause 8

Location	Galway PDL	Job Ref	P16005
		Borehole / Pit No	BH03
		Sample No	
Soils Description		Depth	42.81 m
		Date	

Sample Details **Specimen 1**

Sample Condition		Undisturbed
Height	mm	205.0
Diameter	mm	83.0
Moisture Content	%	43
Bulk Density	Mg/m³	1.95
Dry Density	Mg/m³	1.36

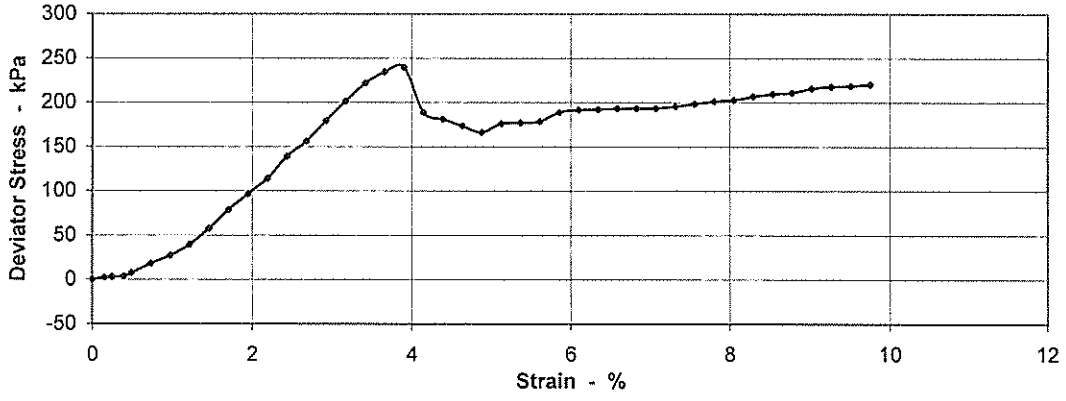
Test Details

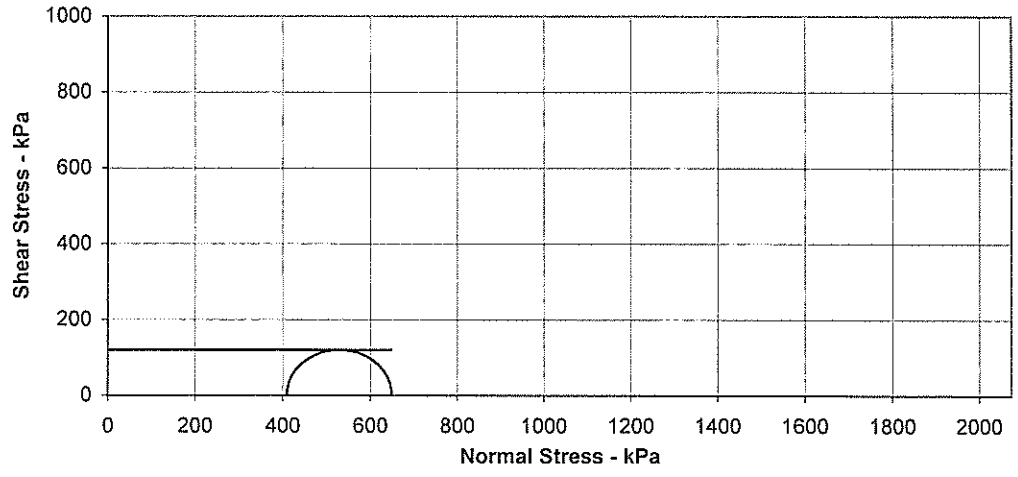
Membrane Thickness	mm	0.36
Membrane Correction	kPa	0.45
Rate of Axial Displacement	%/min	1.46
Cell Pressure	kPa	410
Strain at Failure	%	3.9
Maximum Deviator Stress	kPa	239
Shear Strength	kPa	120
Mode of Failure		Brittle

Position and orientation within the original sample

Shear Strength Parameters	
C	120 kPa
Phi	0.0 °

Specimen 1





UNDRAINED TRIAXIAL COMPRESSION

BS 1377 : Part 7 : 1990 Clause 8

		Job Ref	P16005
		Borehole / Pit No	BH03
Location	Galway PDL	Sample No	
Soils Description		Depth	46.43 m
		Date	

Sample Details **Specimen 1**

Sample Condition		Undisturbed
Height	mm	201.0
Diameter	mm	80.0
Moisture Content	%	38
Bulk Density	Mg/m³	1.73
Dry Density	Mg/m³	1.26

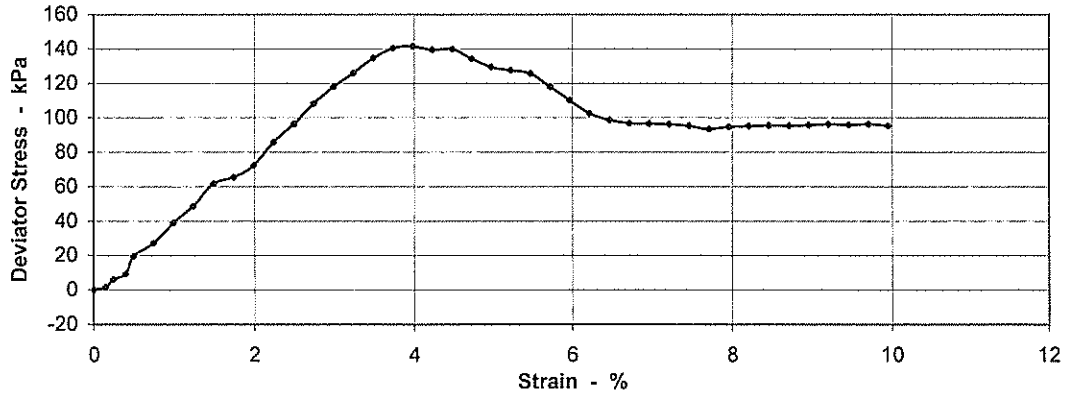
Test Details

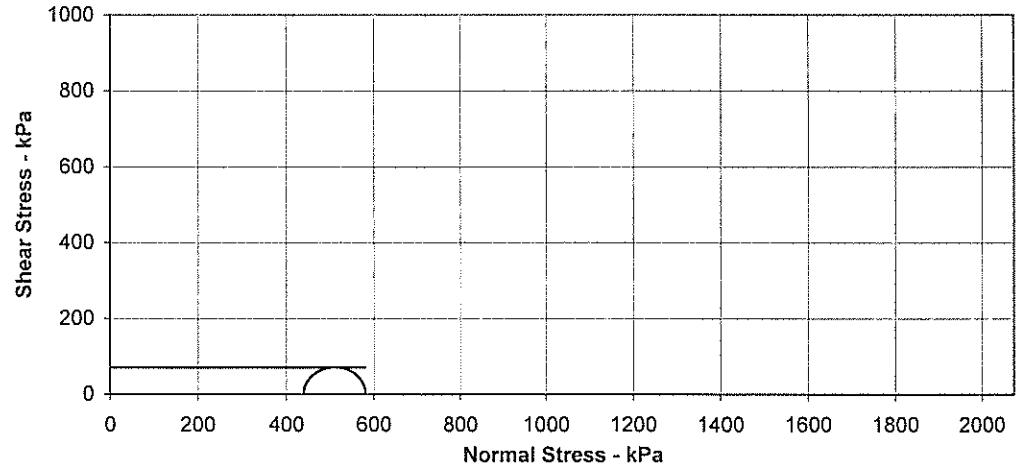
Membrane Thickness	mm	0.36
Membrane Correction	kPa	0.48
Rate of Axial Displacement	%/min	1.49
Cell Pressure	kPa	440
Strain at Failure	%	4.0
Maximum Deviator Stress	kPa	141
Shear Strength	kPa	71
Mode of Failure		Compound

Position and orientation within the original sample

Shear Strength Parameters	
C	71 kPa
Phi	0.0 °

Specimen 1





UNDRAINED TRIAXIAL COMPRESSION

BS 1377 : Part 7 : 1990 Clause 8

		Job Ref	P16005
		Borehole / Pit No	BH03
Location	Galway PDL	Sample No	
Soils Description		Depth	48.45 m
		Date	

Sample Details **Specimen** 1

Sample Condition		Undisturbed
Height	mm	210.0
Diameter	mm	83.0
Moisture Content	%	31
Bulk Density	Mg/m³	1.92
Dry Density	Mg/m³	1.47

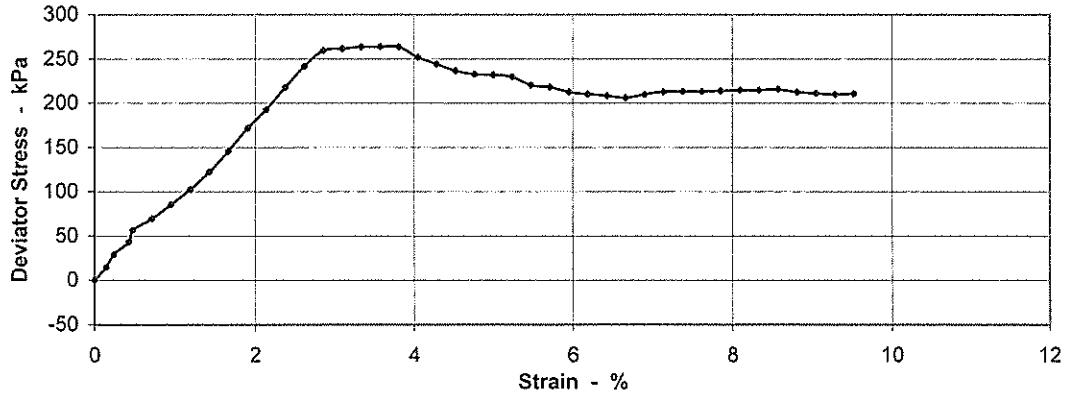
Test Details

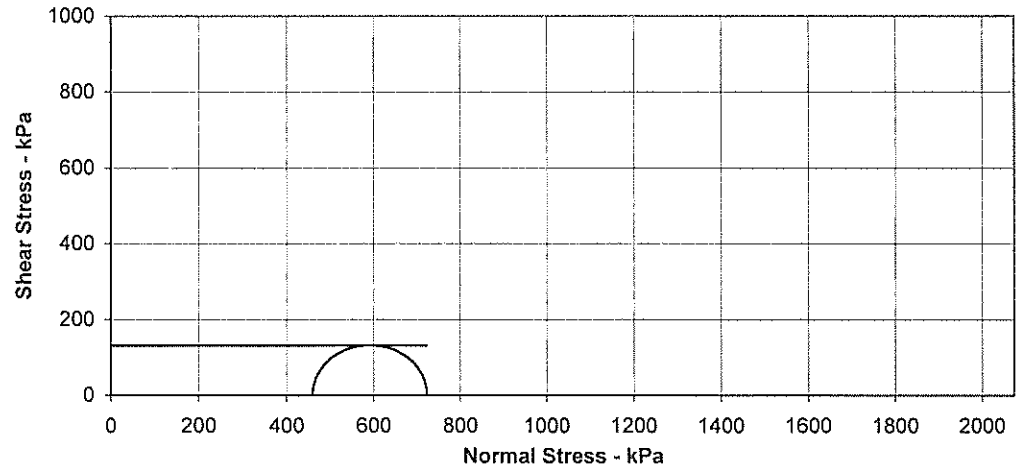
Membrane Thickness	mm	0.36
Membrane Correction	kPa	0.44
Rate of Axial Displacement	%/min	1.43
Cell Pressure	kPa	460
Strain at Failure	%	3.8
Maximum Deviator Stress	kPa	264
Shear Strength	kPa	132
Mode of Failure		Brittle

Position and orientation within the original sample

Shear Strength Parameters	
C	132 kPa
Phi	0.0 °

Specimen 1





UNDRAINED TRIAXIAL COMPRESSION

BS 1377 : Part 7 : 1990 Clause 8

Location	Galway PDL	Job Ref	P16005
		Borehole / Pit No	BH06
		Sample No	
Soils Description		Depth	5.25 m
		Date	

Sample Details **Specimen 1**

Sample Condition		Undisturbed
Height	mm	196.0
Diameter	mm	82.0
Moisture Content	%	6.1
Bulk Density	Mg/m³	2.39
Dry Density	Mg/m³	2.26

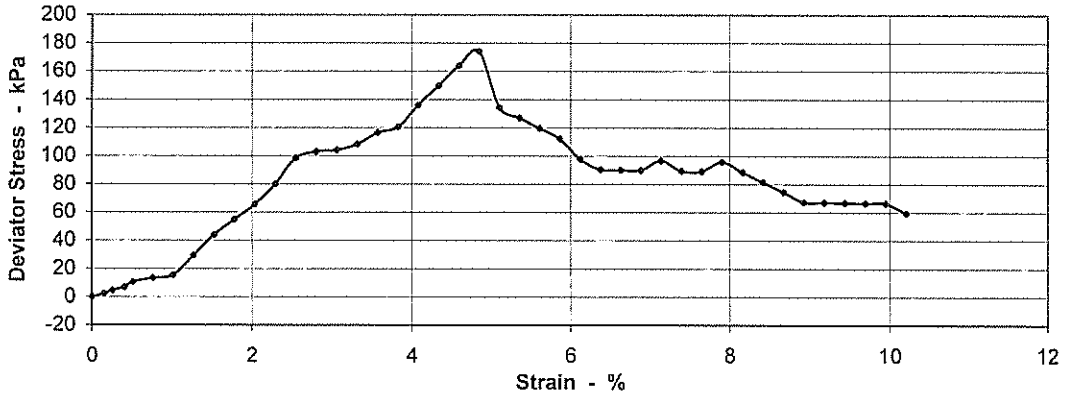
Test Details

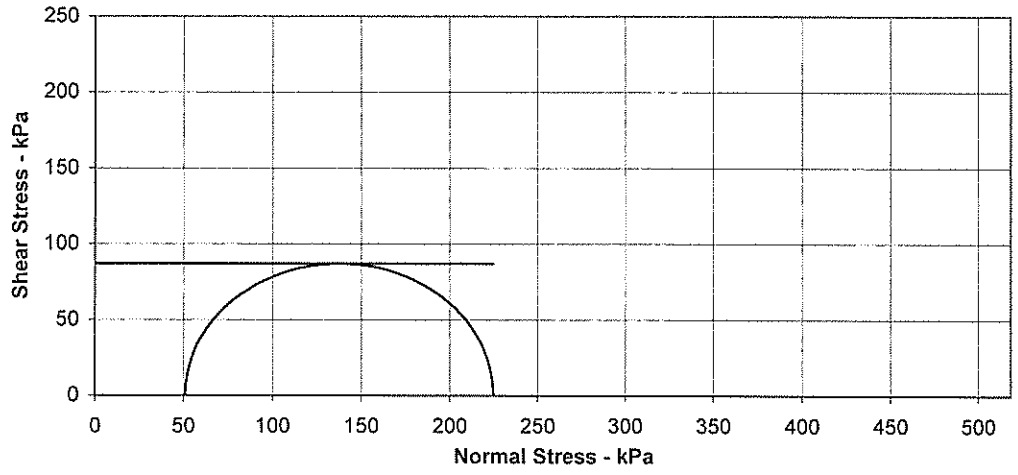
Membrane Thickness	mm	0.36
Membrane Correction	kPa	0.55
Rate of Axial Displacement	%/min	1.53
Cell Pressure	kPa	51
Strain at Failure	%	4.8
Maximum Deviator Stress	kPa	174
Shear Strength	kPa	87
Mode of Failure		Brittle

Position and orientation within the original sample

Shear Strength Parameters	
C	87 kPa
Phi	0.0 °

Specimen 1





UNDRAINED TRIAXIAL COMPRESSION

BS 1377 : Part 7 : 1990 Clause 8

		Job Ref	P16005
		Borehole / Pit No	BH06
Location	Galway PDL	Sample No	
Soils Description		Depth	18 m
		Date	

Sample Details **Specimen** 1

Sample Condition		Undisturbed
Height	mm	206.0
Diameter	mm	82.0
Moisture Content	%	30
Bulk Density	Mg/m³	2.09
Dry Density	Mg/m³	1.61

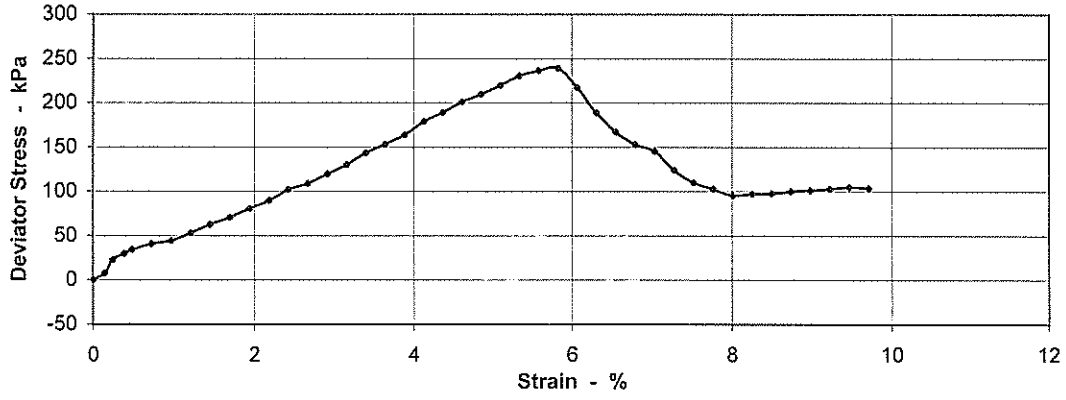
Test Details

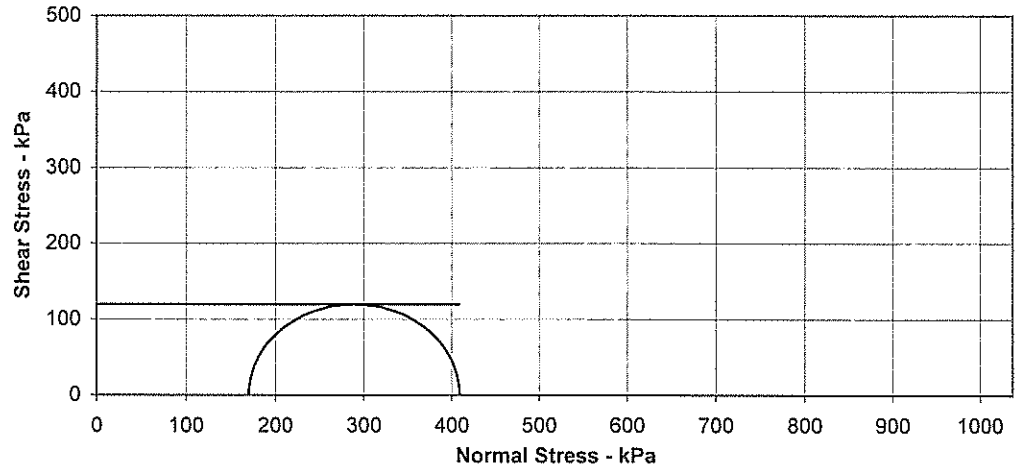
Membrane Thickness	mm	0.36
Membrane Correction	kPa	0.65
Rate of Axial Displacement	%/min	1.46
Cell Pressure	kPa	170
Strain at Failure	%	5.8
Maximum Deviator Stress	kPa	239
Shear Strength	kPa	119
Mode of Failure		Brittle

Position and orientation within the original sample

Shear Strength Parameters	
C	119 kPa
Phi	0.0 °

Specimen 1





Laboratory Report

2788

GEO Site & Testing Services Ltd

Contract Number: 30522

Client's Reference: **P16005**

Report Date: **09-05-2016**

Client **Priority Geotechnical Limited**
Unit 12
Owenacurra Business Park
Midleton
Co. Cork.

Contract Title: **N6 Galway Bypass**

For the attention of: **Colette Kelly**

Date Received: **07-04-2016**

Date Commenced: **07-04-2016**

Date Completed: **09-05-2016**

Test Description	Qty
One-dimensional Consolidation 75mm or 50mm diameter specimens (5 days) 1377 : 1990 Part 5 : 3 - * UKAS	7
As 4.01 each additional day 1377 : 1990 Part 5 : 3	18
Disposal of Samples on Project	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - denotes test included in laboratory scope of accreditation**
 # - denotes test carried out by approved contractor
@ - denotes non accredited tests

Approved Signatories:
Alex Wynn (Associate Director) - Benjamin Sharp (Contracts Manager) - Emma Sharp (Office Manager)
Paul Evans (Quality/Technical Manager) - Vaughan Edwards (Managing Director)

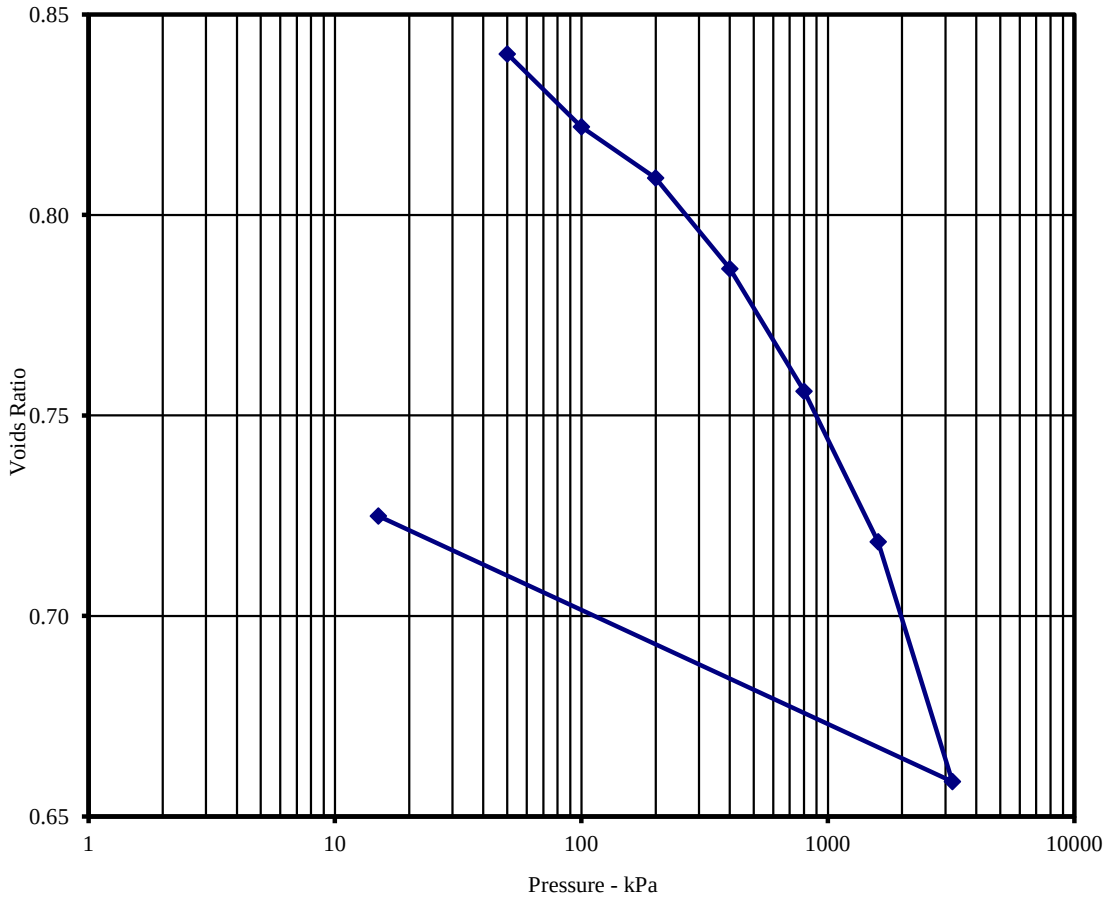
GEO Site & Testing Services Ltd
Unit 4, Heol Aur, Dafen Ind Estate, Dafen, Llanelli, Carmarthenshire SA14 8QN
Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

ONE DIMENSIONAL CONSOLIDATION

BS1377: Part 5: 1990

Client ref: **P16005**
Location: **N6 Galway Bypass**
Contract Number: **30522-070416**
Hole/Sample Number: **BH03**
Depth (m): **41.30 - 41.50**
Sample Type: **B**

Initial Conditions		Pressure Range			Mv	Cv	Method of time fitting used
Moisture Content (%):	33	kPa			m2/MN	m2/yr	Cv Calculated using t90
Bulk Density (Mg/m3):	1.89	0	-	50	0.20	23	Nominal Laboratory Temperature
Dry Density (Mg/m3):	1.43	50	-	100	0.20	15	20'C
Voids Ratio:	0.8590	100	-	200	0.070	24	Location of specimen with sample
Degree of saturation:	101.4	200	-	400	0.063	13	top
Height (mm):	19.96	400	-	800	0.043	7.4	Remarks:
Diameter (mm)	50.06	800	-	1600	0.027	9.8	
Particle Density (Mg/m3):	2.65	1600	-	3200	0.022	11	
Assumed		3200	-	15	0.013	20	



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Checked By **Date** 09/05/16

Approved By **Date** 09/05/16

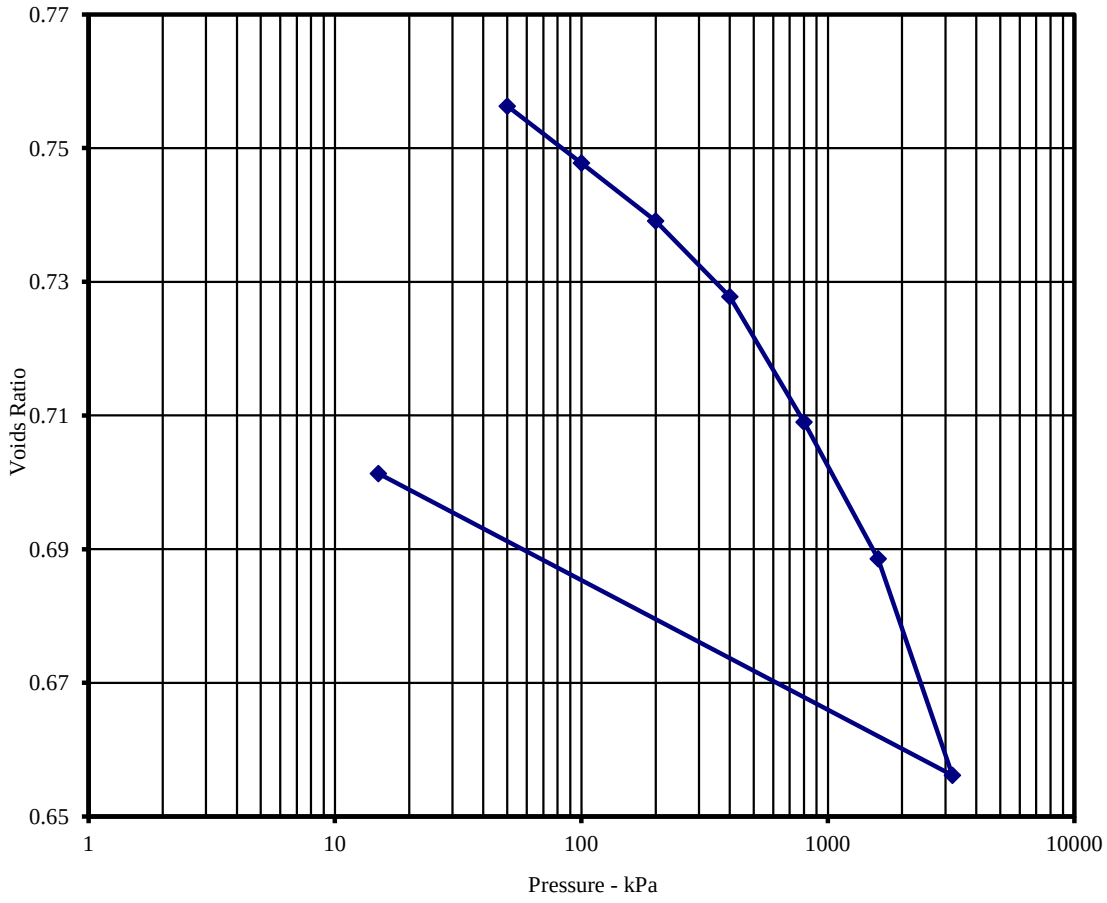
UKAS TESTING 2788

ONE DIMENSIONAL CONSOLIDATION

BS1377: Part 5: 1990

Client ref: P16005
Location: N6 Galway Bypass
Contract Number: 30522-070416
Hole/Sample Number: BH03
Depth (m): 42.97 - 43.00
Sample Type: B

Initial Conditions		Pressure Range			Mv	Cv	Method of time fitting used
Moisture Content (%):	29	kPa			m2/MN	m2/yr	Cv Calculated using t90
Bulk Density (Mg/m3):	1.93	0	-	50	0.18	31	Nominal Laboratory Temperature
Dry Density (Mg/m3):	1.50	50	-	100	0.10	11	20'C
Voids Ratio:	0.7721	100	-	200	0.050	36	Location of specimen with sample
Degree of saturation:	99.6	200	-	400	0.033	11	top
Height (mm):	20.02	400	-	800	0.027	12	Remarks:
Diameter (mm)	50.05	800	-	1600	0.015	25	
Particle Density (Mg/m3):	2.65	1600	-	3200	0.012	10	
Assumed		3200	-	15	0.0086	31	



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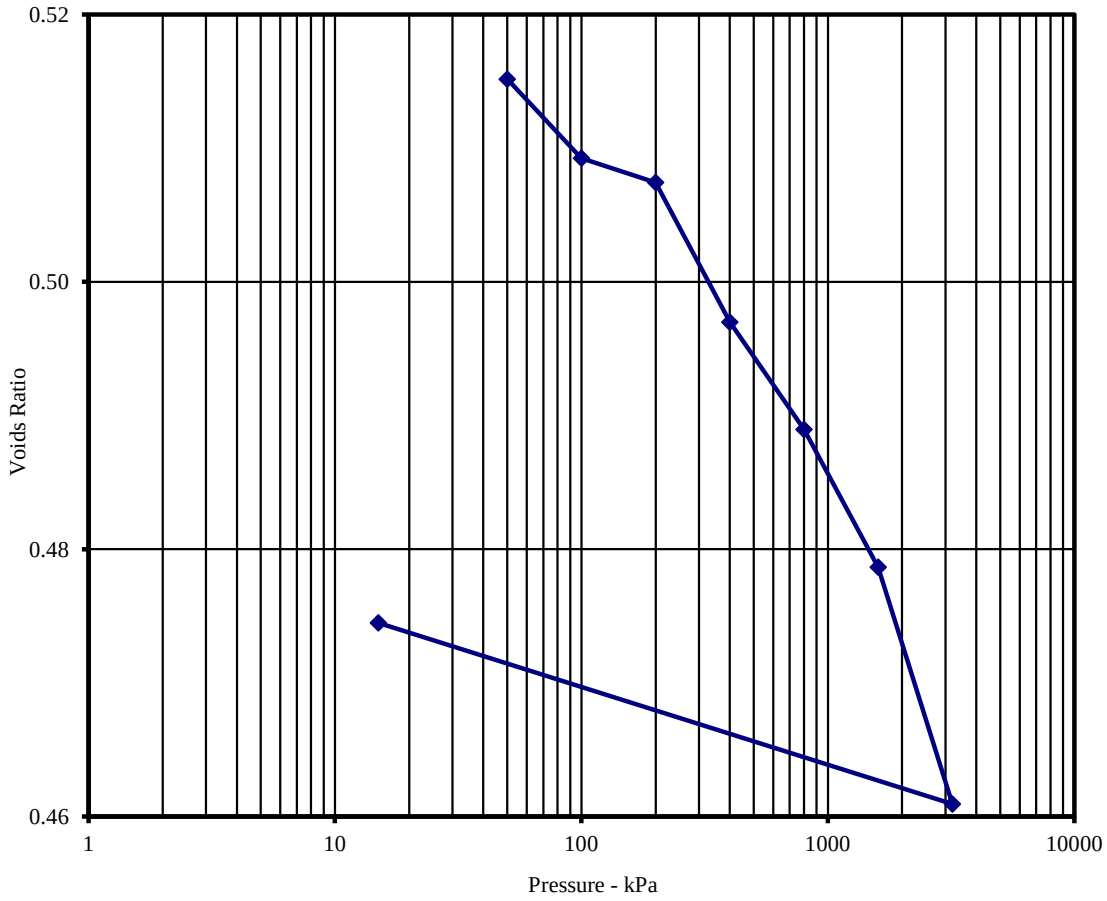
ONE DIMENSIONAL CONSOLIDATION

BS1377: Part 5: 1990

Client ref: P16005
Location: N6 Galway Bypass
Contract Number: 30522-070416
Hole/Sample Number: BH03
Depth (m): 44.05 - 44.20
Sample Type: B

Initial Conditions		Pressure Range			Mv	Cv	Method of time fitting used
Moisture Content (%):	21	kPa			m2/MN	m2/yr	Cv Calculated using t90
Bulk Density (Mg/m3):	2.11	0	-	50	0.025	19	Nominal Laboratory Temperature
Dry Density (Mg/m3):	1.75	50	-	100	0.078	0.53	20'C
Voids Ratio:	0.5171	100	-	200	0.012	19	Location of specimen with sample
Degree of saturation:	105.2	200	-	400	0.035	4.8	top
Height (mm):	20.03	400	-	800	0.013	6.2	Remarks:
Diameter (mm)	50	800	-	1600	0.0086	19	
Particle Density (Mg/m3):	2.65	1600	-	3200	0.0075	10	
Assumed		3200	-	15	0.0029	53	



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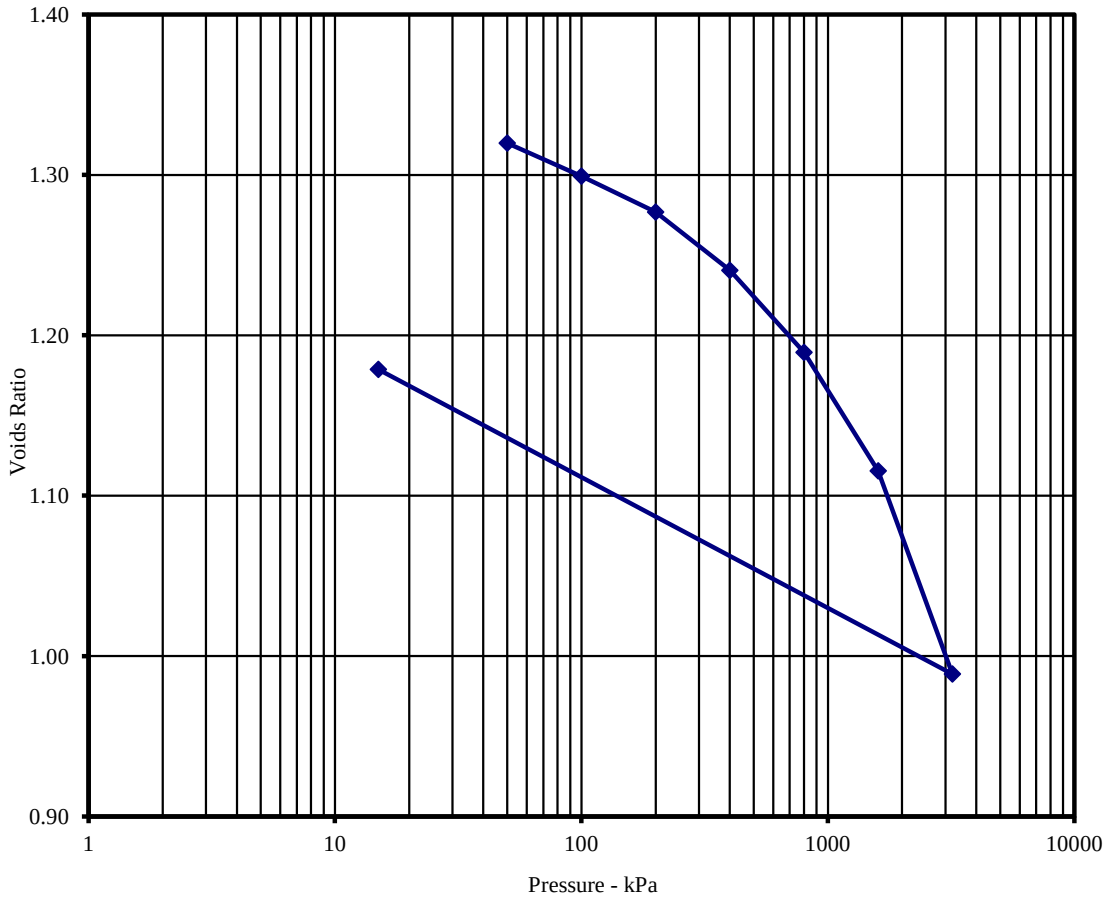
ONE DIMENSIONAL CONSOLIDATION

BS1377: Part 5: 1990

Client ref: P16005
Location: N6 Galway Bypass
Contract Number: 30522-070416
Hole/Sample Number: BH03
Depth (m): 47.85 - 48.02
Sample Type: B

Initial Conditions		Pressure Range			Mv	Cv	Method of time fitting used
Moisture Content (%):	40	kPa			m2/MN	m2/yr	Cv Calculated using t90
Bulk Density (Mg/m3):	1.59	0	-	50	0.13	18	Nominal Laboratory Temperature
Dry Density (Mg/m3):	1.14	50	-	100	0.18	5.6	20'C
Voids Ratio:	1.3346	100	-	200	0.097	18	Location of specimen with sample
Degree of saturation:	79.1	200	-	400	0.080	4.1	top
Height (mm):	20.04	400	-	800	0.057	0.63	Remarks:
Diameter (mm)	50.02	800	-	1600	0.042	15	
Particle Density (Mg/m3):	2.65	1600	-	3200	0.037	9.2	
Assumed		3200	-	15	0.030	2.8	



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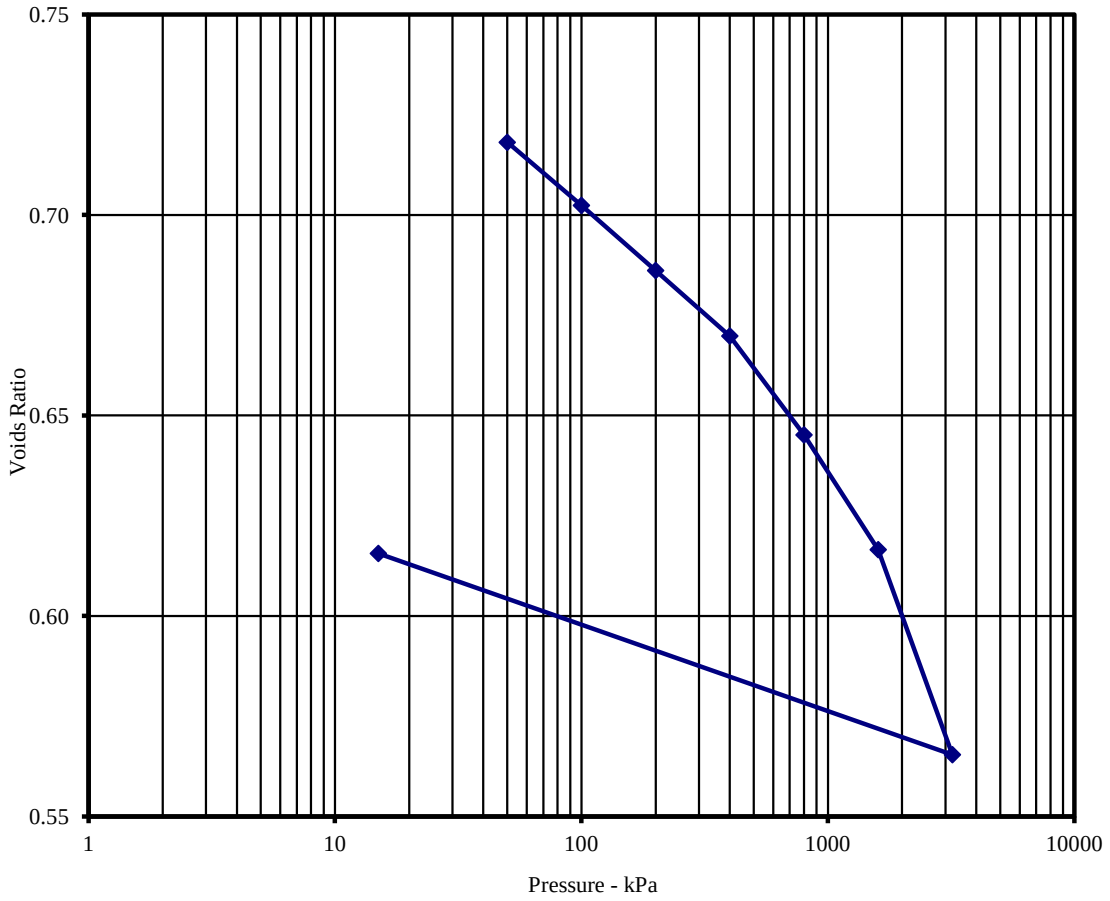
ONE DIMENSIONAL CONSOLIDATION

BS1377: Part 5: 1990

Client ref: P16005
Location: N6 Galway Bypass
Contract Number: 30522-070416
Hole/Sample Number: BH06
Depth (m): 16.20 - 16.50
Sample Type: B

Initial Conditions		Pressure Range			Mv	Cv	Method of time fitting used
Moisture Content (%):	26	kPa			m2/MN	m2/yr	Cv Calculated using t90
Bulk Density (Mg/m3):	1.95	0	-	50	0.046	17	Nominal Laboratory Temperature
Dry Density (Mg/m3):	1.54	50	-	100	0.18	12	20'C
Voids Ratio:	0.7221	100	-	200	0.10	10	Location of specimen with sample
Degree of saturation:	96.9	200	-	400	0.048	16	top
Height (mm):	20.04	400	-	800	0.037	6.2	Remarks:
Diameter (mm)	50.02	800	-	1600	0.022	11	
Particle Density (Mg/m3):	2.65	1600	-	3200	0.020	14	
Assumed		3200	-	15	0.010	10	



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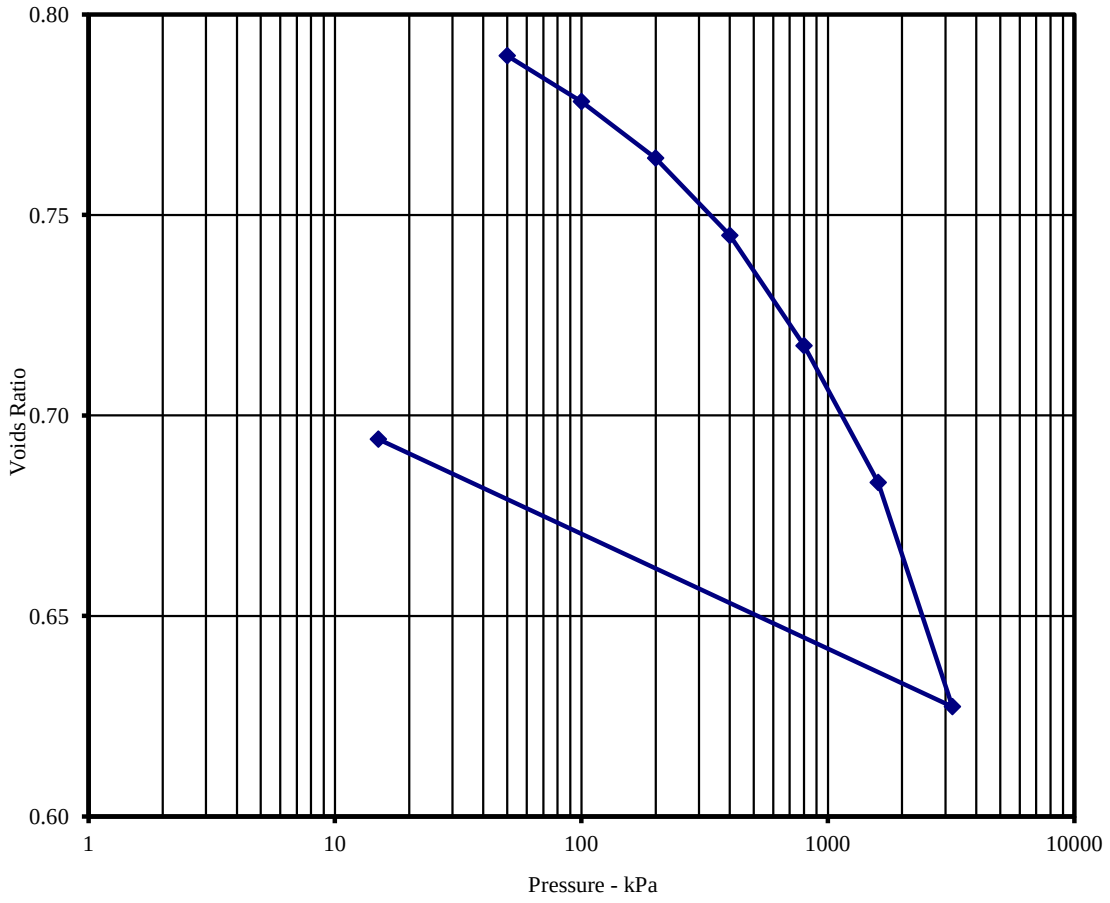
ONE DIMENSIONAL CONSOLIDATION

BS1377: Part 5: 1990

Client ref: **P16005**
Location: **N6 Galway Bypass**
Contract Number: **30522-070416**
Hole/Sample Number: **BH06**
Depth (m): **19.70 - 19.95**
Sample Type: **B**

Initial Conditions		Pressure Range			Mv	Cv	Method of time fitting used
Moisture Content (%):	27	kPa			m2/MN	m2/yr	Cv Calculated using t90
Bulk Density (Mg/m3):	1.87	0	-	50	0.084	12	Nominal Laboratory Temperature
Dry Density (Mg/m3):	1.47	50	-	100	0.13	12	20'C
Voids Ratio:	0.7973	100	-	200	0.079	27	Location of specimen with sample
Degree of saturation:	90.1	200	-	400	0.055	11	top
Height (mm):	20.13	400	-	800	0.039	4.3	Remarks:
Diameter (mm)	50.01	800	-	1600	0.025	16	
Particle Density (Mg/m3):	2.65	1600	-	3200	0.021	15	
Assumed		3200	-	15	0.013	16	



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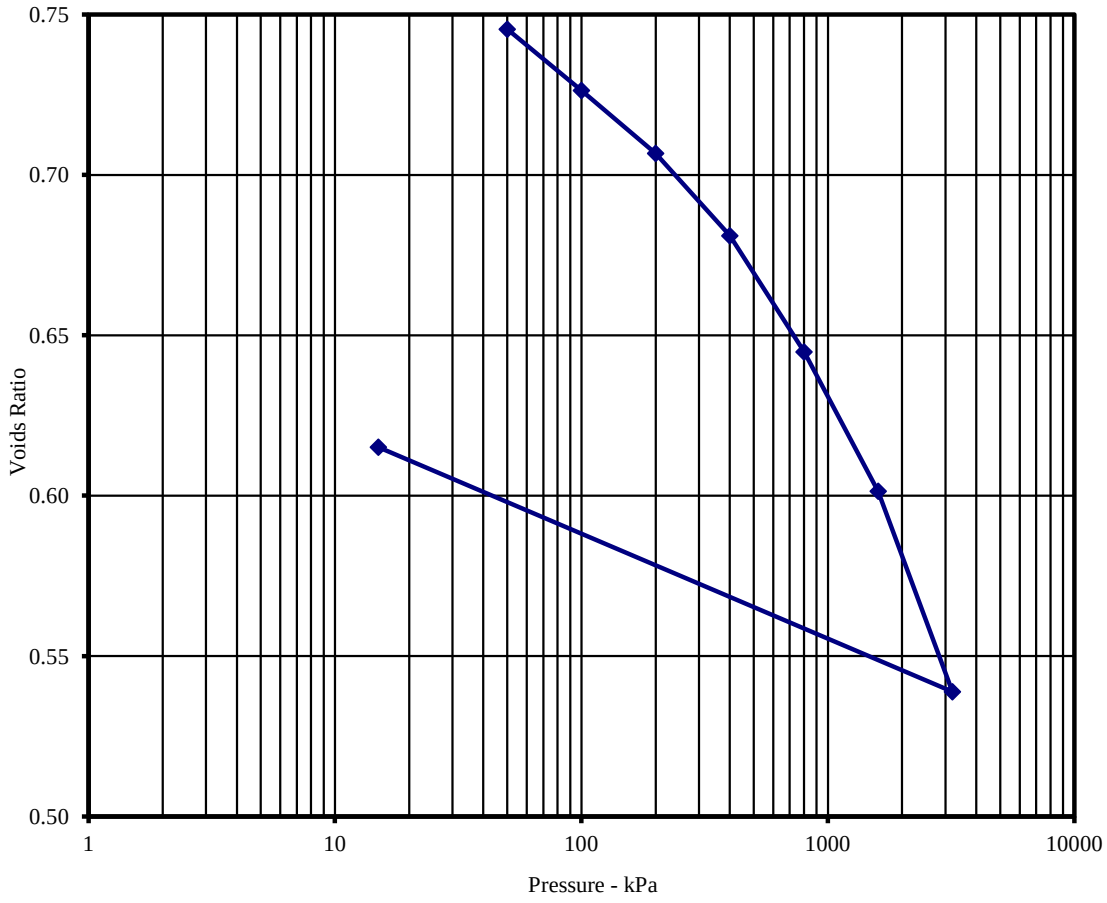
UKAS TESTING 2788

ONE DIMENSIONAL CONSOLIDATION

BS1377: Part 5: 1990

Client ref: P16005
Location: N6 Galway Bypass
Contract Number: 30522-070416
Hole/Sample Number: BH06
Depth (m): 20.00 - 20.25
Sample Type: B

Initial Conditions		Pressure Range			Mv	Cv	Method of time fitting used
Moisture Content (%):	30	kPa			m2/MN	m2/yr	Cv Calculated using t90
Bulk Density (Mg/m3):	1.94	0	-	50	0.35	18	Nominal Laboratory Temperature
Dry Density (Mg/m3):	1.49	50	-	100	0.22	15	20'C
Voids Ratio:	0.7762	100	-	200	0.11	27	Location of specimen with sample
Degree of saturation:	101.7	200	-	400	0.075	16	top
Height (mm):	19.92	400	-	800	0.054	7.0	Remarks:
Diameter (mm)	50.02	800	-	1600	0.033	21	
Particle Density (Mg/m3):	2.65	1600	-	3200	0.024	14	
Assumed		3200	-	15	0.016	7.1	



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Checked By **Date** 09/05/16

Approved By **Date** 09/05/16

UKAS TESTING 2788

Thin Section / Petrography

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 16th February 2016
Test Report Ref.: 443031

LABORATORY TEST REPORT

Test Requirements: Petrographic Examination of Natural Stone in accordance with BS EN 12047:2007

Sample details:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48919**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**29/1/2016**
Date of Start of Test.:	**21/1/2016**
Sampling Location:	**Depth Top: 20.05 Depth Base: 20.12**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The work was carried out by our accredited, competent, sub contracted laboratory.

RESULTS

See Attached

Nick Dumbarton – Assistant Laboratory Manager

Petrographic Examination Natural Stone– BS EN 12407:2007

HAND SPECIMEN DESCRIPTION

The sample was hard, fine to very coarse grained, anisotropic limestone breccia. The sample exhibited small to very large, medium grey limestone clasts (up to >70mm across), cemented or surrounded by dark grey materials comprising chiefly much smaller limestone and calcite grains, and including some clay materials. The sample did not appear macroporous.

MICROSCOPICAL DESCRIPTION

Constituents[1]	Visual Estimated Proportions[2] %	Range of Crystal/Grain Size	Petrographic Details	Origin
Calcite	94	Up to 4mm	Fresh, angular to well rounded calcium carbonate, including abundant bioclasts. The sample was partially stained in accordance with Dickson's method. This suggested that the calcite was non-ferroan.	Primary
Clay materials	2-3	<4µm	Very fine grained materials beyond the conclusive resolution of the petrographic microscope, which could be better investigated by scanning electron microscopy (SEM).	Primary
Opaque minerals	1-2	Up to 800µm	Irregular, anhedral to euhedral, fresh to partially oxidised isotropic minerals apparently comprising both framboidal and facetted, probably pyritic materials. Scanning electron microscopy should be used if necessary for better resolution and description of the opaque minerals.	Primary
Iron oxide compounds	<<1	N/A	Small amorphous by-products of the partial or complete oxidation of opaque minerals.	Secondary

The sample was a fine to very coarse grained LIMESTONE BRECCIA, comprising chiefly calcium carbonate (chiefly as limestone clasts), with a minor proportion of clay materials and trace to minor proportion of opaque minerals.

The individual limestone constituents were typically fine to medium grained. The dark grey areas of the sample comprised chiefly smaller calcium carbonate, with a minor proportion of clay materials. The opaque minerals were unevenly distributed and were frequently observed concentrated in thin, irregular and randomly orientated layers within the dark grey areas of the sample.

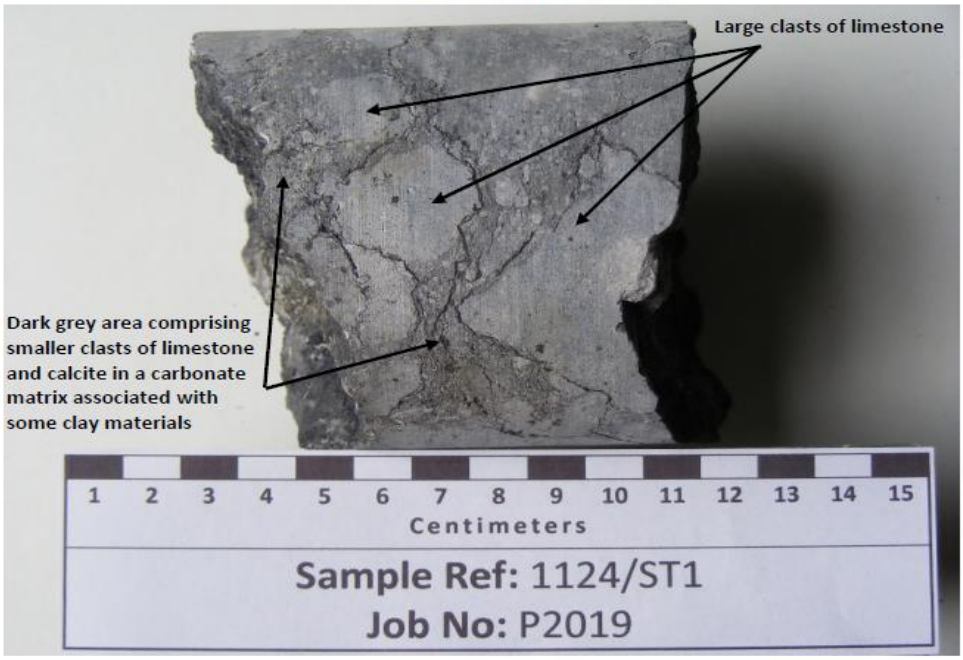
The sample fractured relatively easily along irregular and randomly distributed fracture surfaces within the dark grey areas of the sample during the cutting process to produce the thin section slice. This suggested that the dark grey areas of the sample exhibited frequent planes of weakness, which were probably associated with clay materials and the irregular layers of opaque minerals.

Only rare voids up to 0.4mm were observed. These voids appeared chiefly associated with loss of materials during the sampling process and did not appear interconnected. The void content was visually estimated as being well below 1%.

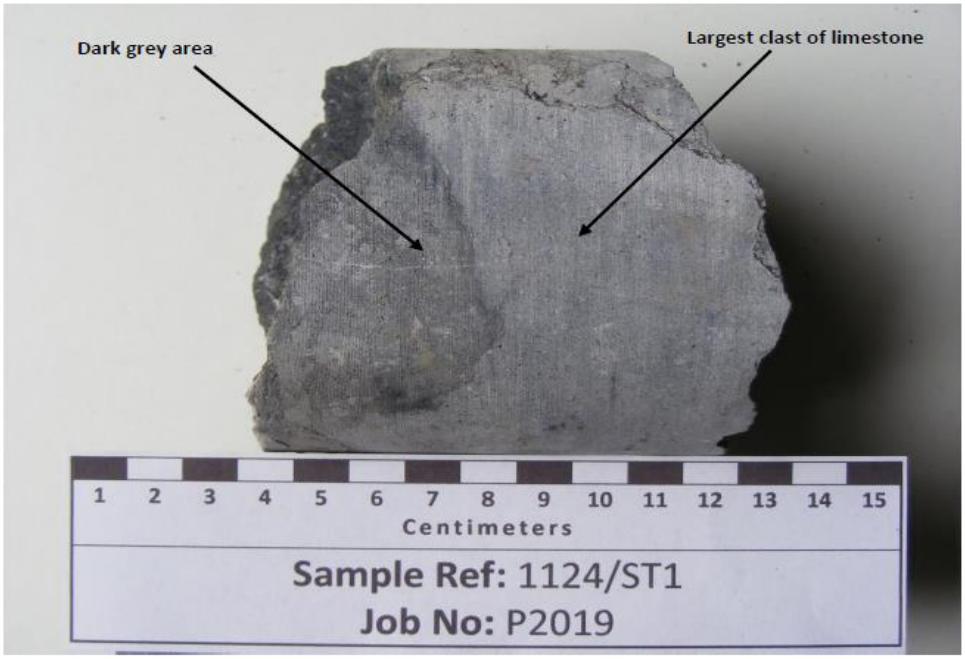
The sample was fresh and exhibited Grade I weathering.

Petrographic Examination Natural Stone– BS EN 12407:2007

Profile view of the sample as received



Another profile view of the sample as received



Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH

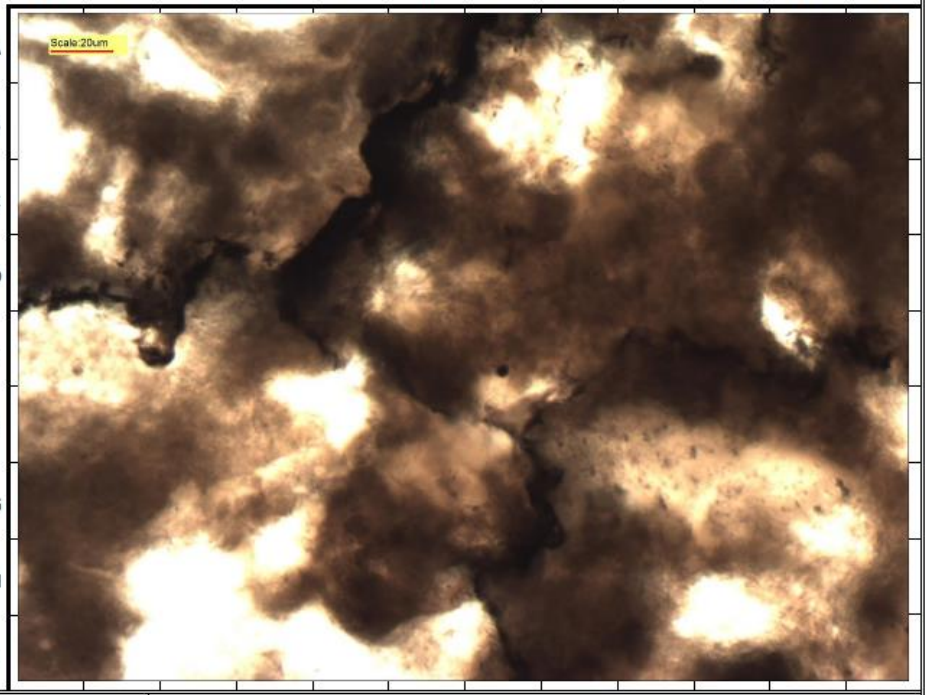
Viewing Light	Cross-polarised

Description

View of a section through the limestone, showing limestone and calcite clasts (grey/pale brown/white, pale pink/greyish brown: B2, B6, B9, B12, F2 and H6) and section of the dark grey areas (greyish black: A8, D3 and I2) comprising smaller limestone and calcite clasts/grains and some clay materials.

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



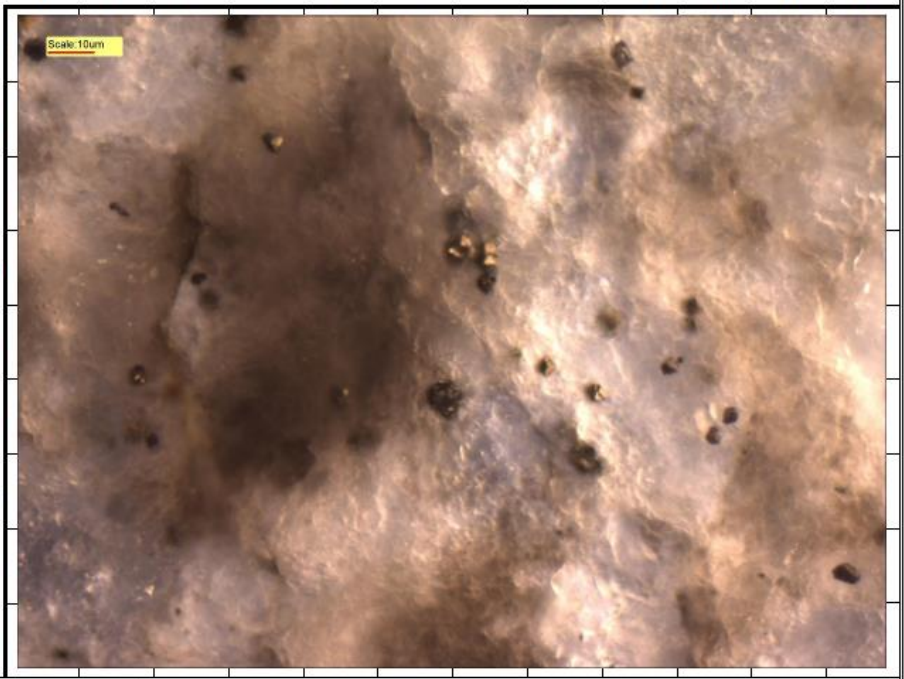
Viewing Light	Plane-polarised

Description

Closer view of a section through a dark grey area of the sample, showing clay materials (brown: A6, A11 and G1) and randomly distributed layers of opaque minerals (black: A7 to D1, D4 to F7 and E12 to I7).

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



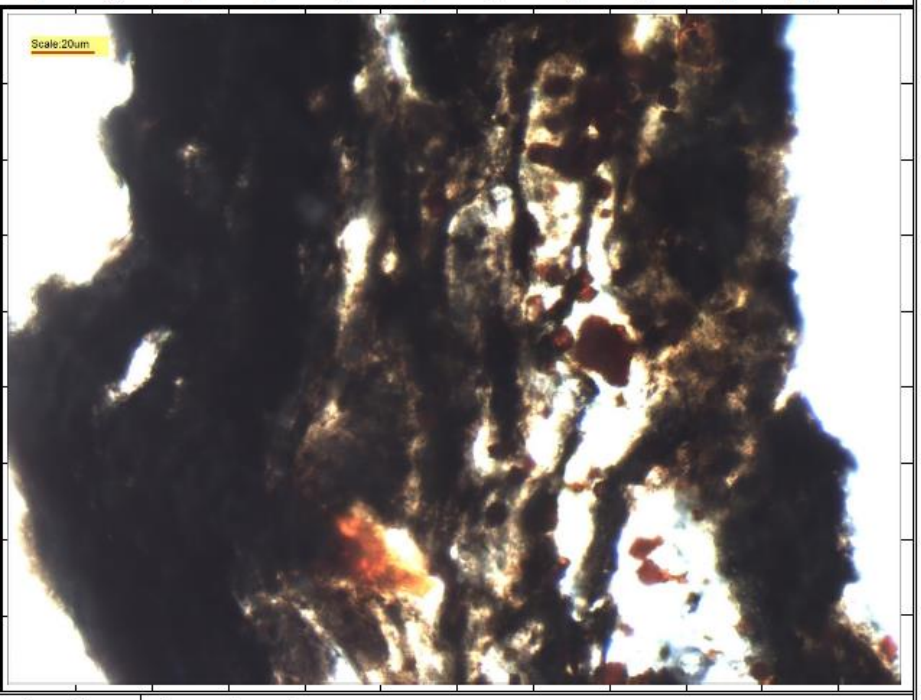
Viewing Light	Reflected light

Description

Closer view of a section through the sample, showing faceted opaque minerals (brass coloured: A9, B4, D7 and F8) and apparent framboidal opaque minerals (black/brass: A1, D7 and F6).

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



Viewing Light	Plane-polarised

Description

View of a section through the sample, showing opaque minerals (black: A3, A6 and C9) an oxidised opaque minerals (dusky red, reddish orange: A10, E8, H5/6 and H9irregular voids (yellow: B6, D6 and H9).

Petrographic Examination Natural Stone– BS EN 12407:2007

Glossary of Terms Used in the Descriptions

Proportions	**Major**: constituent present at a level ≥10%; **Minor**: constituent present at level ≥2% but <10; **Trace**: constituent present at <2% level
Frequency	• Rare – only found by thorough searching • Sporadic – only occasionally observed during normal examination • Common – easily observed during normal examination • Frequent – easily observed with minimal examination • Abundant – immediately apparent to initial examination
Hardness	• Very soft: can be penetrated easily by a finger • Soft: scores with a fingernail • Moderately soft: scores using a copper coin • Moderately hard: scores easily with a penknife • Hard: not easily scored with a penknife • Very hard: cannot be scored with a steel point or knife.
Weathering/ alteration	• Grade I (**Fresh**): Unchanged from original state • Grade II (**Slightly Weathered**): Slight discoloration, slight weakening; • Grade III (**Moderately Weathered**): Considerably weakened, penetrative discoloration, large pieces cannot be broken by hand • Grade IV (**Highly Weathered**): large pieces can be broken by hand, does not readily disaggregate (slake) when dry sample immersed in water • Grade V (**Completely Weathered**): considerably weakened, slakes, original texture apparent; Grade VI (**Residual Soil**) • Soil derived by in-situ weathering but retaining none of the original texture or fabric.
Origin	• **Primary constituents:** Constituents present within the rock at its formation. • **Secondary constituents:** Constituents formed by the alteration of pre-existing primary constituents or introduced from an external source after the rock was formed
Size	**Mega**: >60mm; **Macro**: 2-60mm; **Meso**: 60µm-2mm; **Micro**: 2-60µm; **Crypto**: <2µm; **Glassy**: without visible crystallinity
Bedding/Layering	**Thick**: >600mm; **Medium**: 200-600mm; **Thin**: 60-200mm; **Very thin**: 20-60mm
Lamination	**Thick**: 6-20mm; **Thin**: 2-6mm; **Very thin**: 600µm-2mm; **Extremely thin**: <600µm
Cleavage	**Extremely wide**: >2mm; **Very wide**: 600µm-2mm; **Wide**: 200-600µm; **Medium**: 60-200µm; **Close**: 20-60µm; **Very close**: 6-20µm; **Extremely close**: <6µm.
Cracks	• Fine microcracks (<1µm wide) • Microcracks (1-10µm wide) • Fine cracks (10-100µm wide) • Cracks (100µm-1mm wide) • Large cracks (>1mm wide).
Limestone Classification Schemes	**Folk**, R. L. 1959. Practical petrographic classification of limestones. *Bull. Am. Ass. Petro. Geol.* **43**, 1-38. **Dunham**, R. J. 1962. Classification of carbonate rocks according to depositional texture. In: Classification of Carbonate Rocks (Ed. By W. E. Ham), pp. 108-121. *Mem. Am. Ass. Petrol. Geol.* **1**, Tulsa.

Priority Construction Ltd
162 Clontarf Road
Dublin 3
Ireland
VAT No: 9D53971I

Date: 16th February 2016
Test Report Ref.: 443144

LABORATORY TEST REPORT

Test Requirements: Petrographic Examination of Natural Stone in accordance with BS EN 12047:2007

Sample details:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 50728**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**29/1/2016**
Date of Start of Test.:	**21/1/2016**
Sampling Location:	**Depth Top: 32.92 Depth Base: 33**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The work was carried out by our accredited, competent, sub contracted laboratory.

RESULTS

See Attached

Nick Dumbarton – Assistant Laboratory Manager

Petrographic Examination Natural Stone– BS EN 12407:2007

HAND SPECIMEN DESCRIPTION

The sample was hard, fine grained, massive, not macroporous limestone. The sample was almost isotropic, except for the presence of a small stylolite (irregular suture) typically <200µm across, running more or less perpendicular to the coring direction. Sporadic small irregular voids up to approximately 1mm across were observed chiefly associated with apparent loss of materials along the stylolite.

MICROSCOPICAL DESCRIPTION

Constituents[1]	Visual Estimated Proportions[2] %	Range of Crystal/Grain Size	Petrographic Details	Origin
Calcite	99	Up to 800µm	Fresh, angular to well rounded calcium carbonate, including frequent bioclasts. The sample was partially stained in accordance with Dickson's method. This suggested that the calcite was non-ferroan.	Primary
Opaque minerals	<1	Up to 80µm	Fresh to partially altered, chiefly euhedral isotropic minerals apparently comprising facetted, probably pyritic materials. SEM should be used if necessary for better resolution and description of the opaque minerals.	Primary
Iron oxide compounds	<<1	N/A	Rare amorphous by-products of the partial or complete oxidation of opaque minerals.	Secondary

The sample was a fine grained LIMESTONE, comprising almost entirely calcium carbonate, with trace amounts of opaque minerals and associated iron oxide compounds.

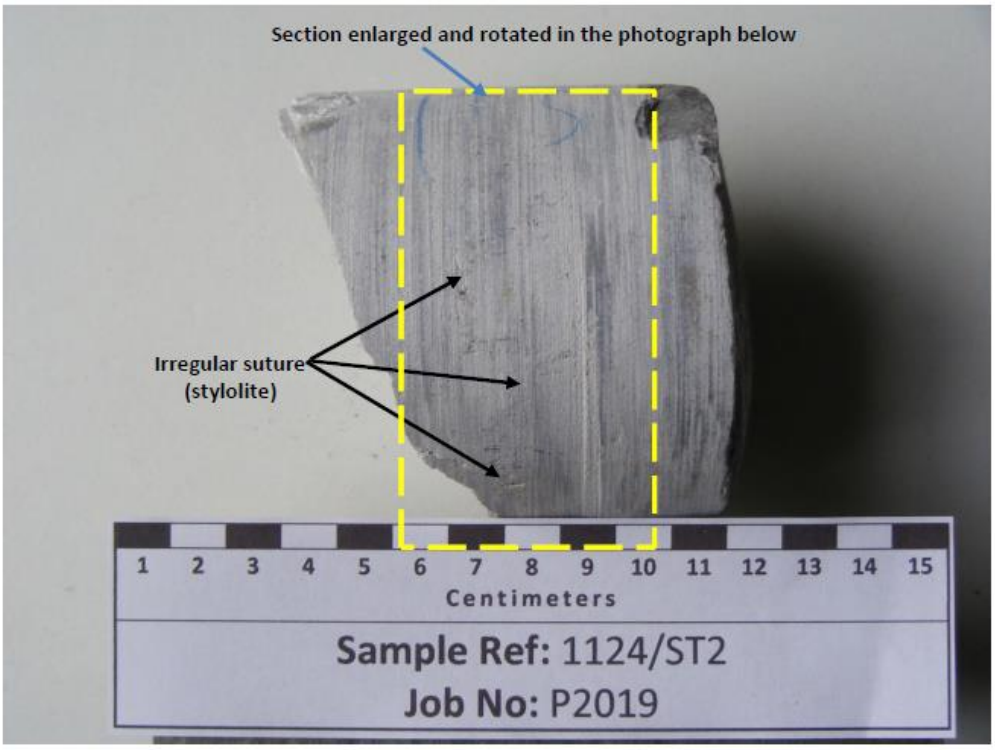
The sample exhibited stylolite comprising coarser crystals of calcite.

The sporadic voids observed associated with the stylolite did not appeared interconnected. The void content was visually estimated as being well below 1%.

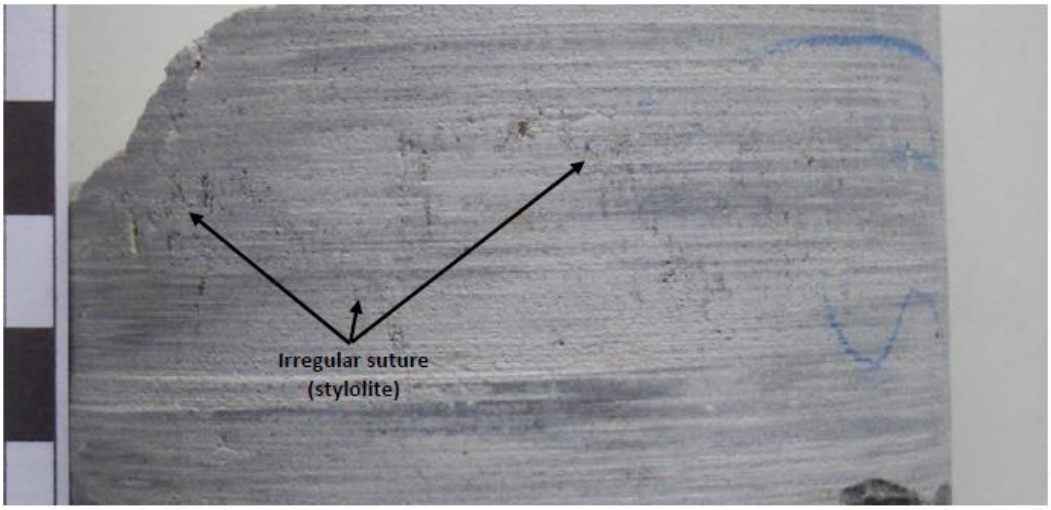
The sample was fresh and exhibited Grade I weathering.

Petrographic Examination Natural Stone– BS EN 12407:2007

Profile view of the sample as received

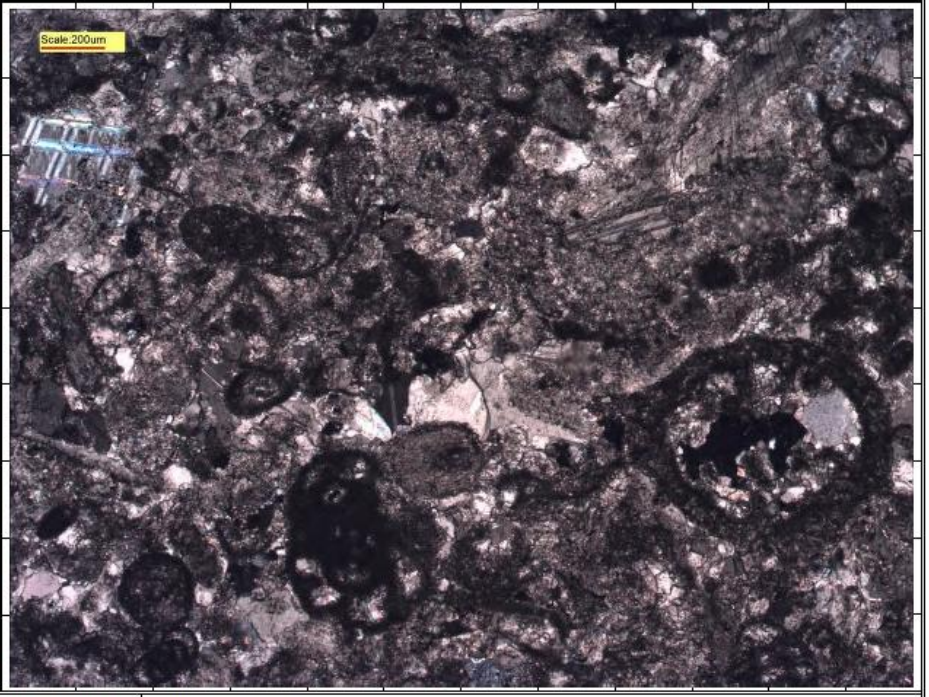


Closer view of the stylolite with 90 degrees rotation of the photograph



Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



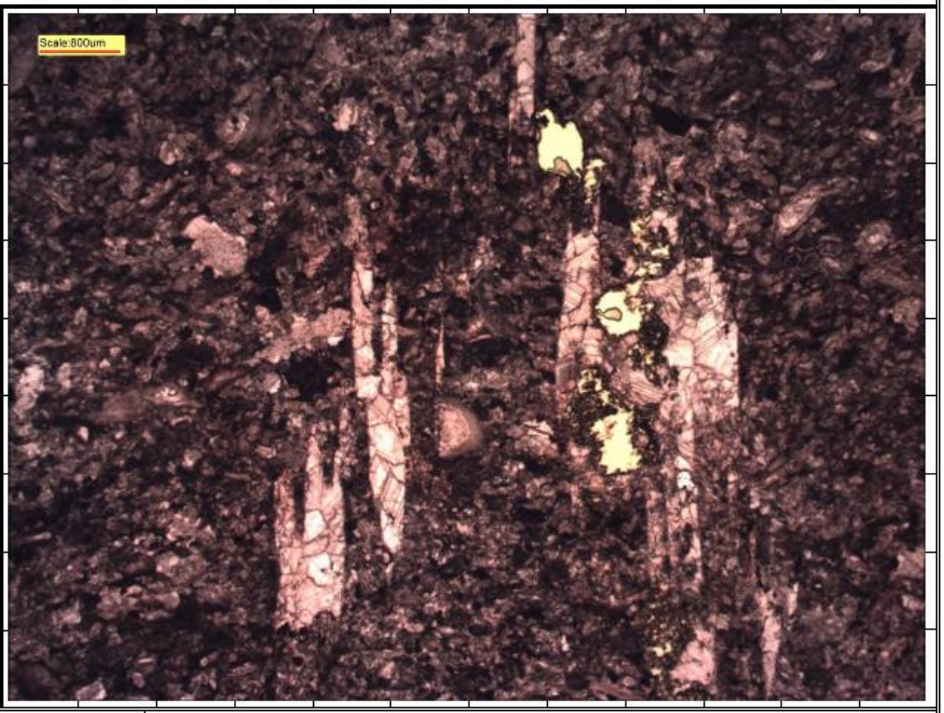
Viewing Light	Cross-polarised

Description

View of a section through the limestone particles showing almost entire calcium carbonate (brown, dusky brown, greyish brown, grey/blue/green, pale pink: A9, B/C1, C9, F7 and G5), including bioclasts (dusky brown/greyish black: A5, C/D4, F10 and G5).

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



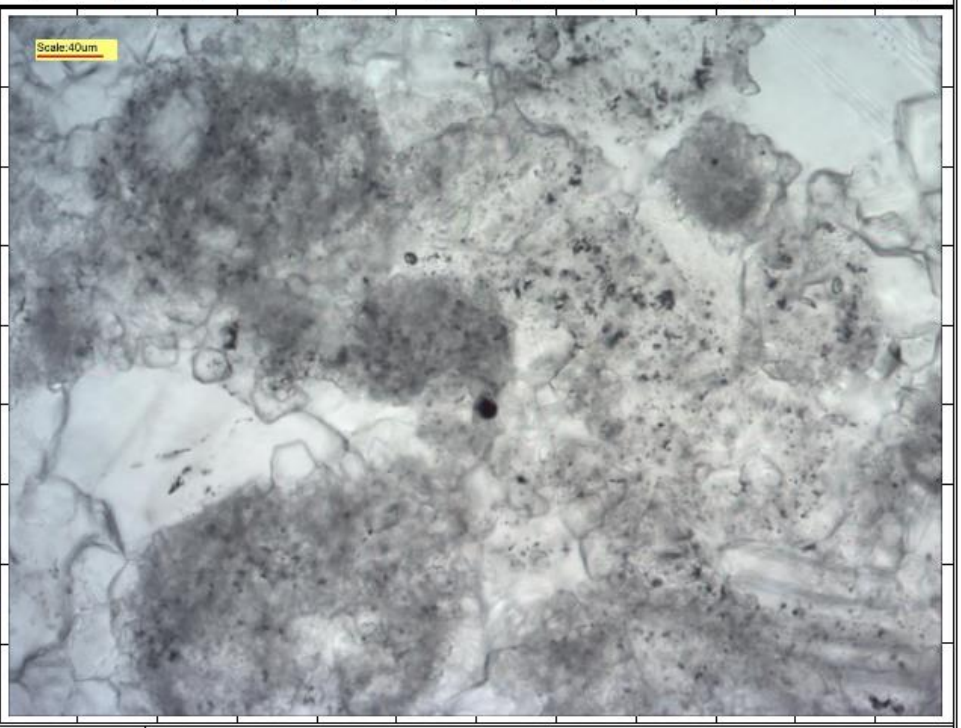
Viewing Light	Cross-polarised

Description

Closer view of a section through the limestone, showing sections of the stylolite (pale pink: A7, E5, E9, H4 and I9) and voids (yellow: B7/8, D8, F8 and I9) associated with the stylolite.

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



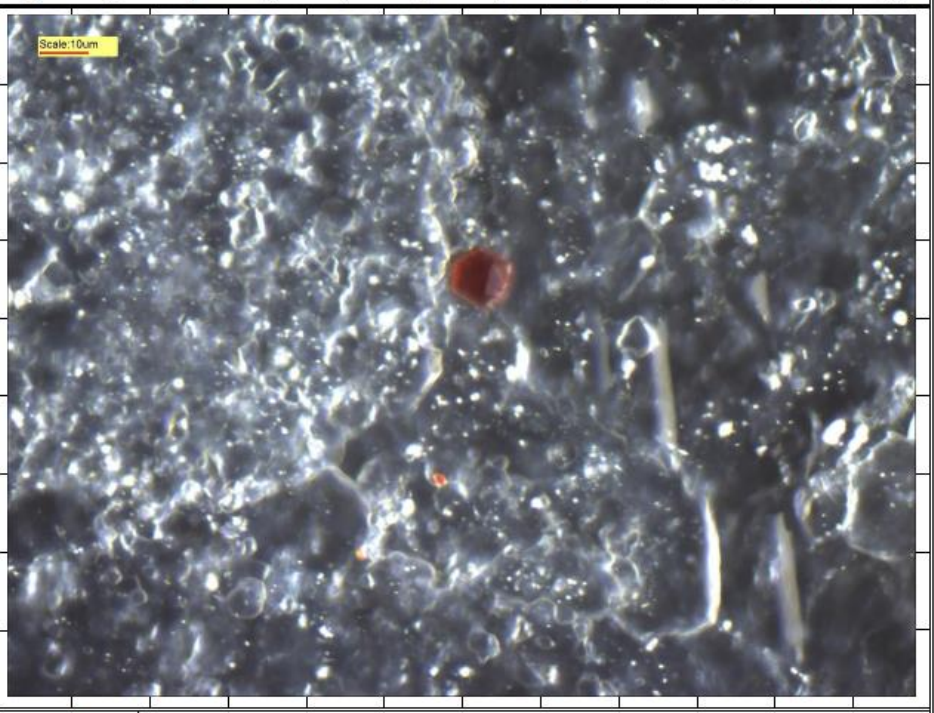
Viewing Light	Plane-polarised

Description

View of a section through the limestone, showing opaque minerals (black: E/F7).

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



Viewing Light	Reflected light

Description

View of a section through the limestone, showing partially oxidised opaque mineral (red: D7) and iron oxide compounds (reddish orange: G6 and G/H5).

Petrographic Examination Natural Stone– BS EN 12407:2007

Glossary of Terms Used in the Descriptions

Proportions	**Major**: constituent present at a level ≥10%; **Minor**: constituent present at level ≥2% but <10; **Trace**: constituent present at <2% level
Frequency	• Rare – only found by thorough searching • Sporadic – only occasionally observed during normal examination • Common – easily observed during normal examination • Frequent – easily observed with minimal examination • Abundant – immediately apparent to initial examination
Hardness	• Very soft: can be penetrated easily by a finger • Soft: scores with a fingernail • Moderately soft: scores using a copper coin • Moderately hard: scores easily with a penknife • Hard: not easily scored with a penknife • Very hard: cannot be scored with a steel point or knife.
Weathering/ alteration	• Grade I (**Fresh**): Unchanged from original state • Grade II (**Slightly Weathered**): Slight discoloration, slight weakening; • Grade III (**Moderately Weathered**): Considerably weakened, penetrative discoloration, large pieces cannot be broken by hand • Grade IV (**Highly Weathered**): large pieces can be broken by hand, does not readily disaggregate (slake) when dry sample immersed in water • Grade V (**Completely Weathered**): considerably weakened, slakes, original texture apparent; Grade VI (**Residual Soil**) • Soil derived by in-situ weathering but retaining none of the original texture or fabric.
Origin	• **Primary constituents:** Constituents present within the rock at its formation. • **Secondary constituents:** Constituents formed by the alteration of pre-existing primary constituents or introduced from an external source after the rock was formed
Size	**Mega**: >60mm; **Macro**: 2-60mm; **Meso**: 60µm-2mm; **Micro**: 2-60µm; **Crypto**: <2µm; **Glassy**: without visible crystallinity
Bedding/Layering	**Thick**: >600mm; **Medium**: 200-600mm; **Thin**: 60-200mm; **Very thin**: 20-60mm
Lamination	**Thick**: 6-20mm; **Thin**: 2-6mm; **Very thin**: 600µm-2mm; **Extremely thin**: <600µm
Cleavage	**Extremely wide**: >2mm; **Very wide**: 600µm-2mm; **Wide**: 200-600µm; **Medium**: 60-200µm; **Close**: 20-60µm; **Very close**: 6-20µm; **Extremely close**: <6µm.
Cracks	• Fine microcracks (<1µm wide) • Microcracks (1-10µm wide) • Fine cracks (10-100µm wide) • Cracks (100µm-1mm wide) • Large cracks (>1mm wide).
Limestone Classification Schemes	**Folk**, R. L. 1959. Practical petrographic classification of limestones. *Bull. Am. Ass. Petro. Geol.* **43**, 1-38. **Dunham**, R. J. 1962. Classification of carbonate rocks according to depositional texture. In: Classification of Carbonate Rocks (Ed. By W. E. Ham), pp. 108-121. *Mem. Am. Ass. Petrol. Geol.* **1**, Tulsa.

Priority Drilling Ltd.
Killimor
Ballinasloe
Co Galway
Ireland
8D23036i

Date: 6th April 2016
Test Report Ref.: 447907

LABORATORY TEST REPORT

Test Requirements: Petrographic Examination of Natural Stone in accordance with BS EN 12047:2007

Sample details:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50899**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test.:	**18/03/2016**
Sampling Location:	**Depth Top:113.00 Depth Base:113.08**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The work was carried out by our accredited, competent, sub contracted laboratory.

RESULTS

See Attached

Nick Dumbarton – Assistant Laboratory Manager

Petrographic Examination Natural Stone– BS EN 12407:2007

HAND SPECIMEN DESCRIPTION

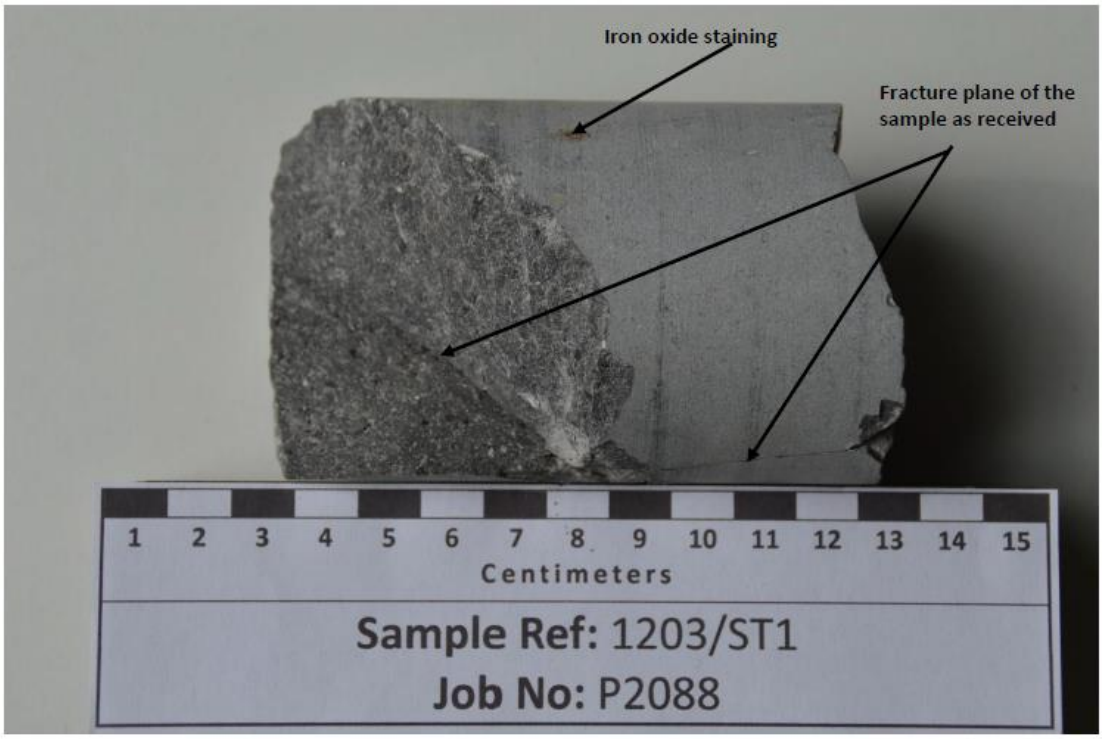
The sample was a moderately hard, fine to medium grained, massive, not macroporous limestone. The sample was chiefly medium dark grey, but exhibited common, randomly distributed, very light grey to medium grey grains that constituted the medium sized grains of the rock. The sample was almost isotropic, except for the presence of sporadic, randomly orientated small dark grey apparent stylolite (irregular suture) typically <500µm across and rare vein <400µm. Sporadic unevenly distributed patches of iron oxide compounds were observed.

MICROSCOPICAL DESCRIPTION

Constituents[1]	Visual Estimated Proportions[2] %	Range of Crystal/Grain Size	Petrographic Details	Origin
Calcite	99	Up to 2500µm	Fresh, anhedral to euhedral crystals comprising chiefly microcrystalline calcite (calcite crystals <4µm), with a lesser proportion of sparry calcite (calcite crystals >4µm) and large discrete calcium carbonate grains. The sparry calcite and larger discrete calcium carbonate grains were chiefly observed within randomly distributed, abundant bioclasts and rare calcite veins. The sample was partially stained in accordance with Dickson's method. This suggested that the calcite was predominantly non-ferroan, with a trace amount of possibly ferroan calcite.	Primary
Opaque minerals	<1	Up to 50µm	Fresh, chiefly anhedral isotropic minerals apparently comprising chiefly framboidal, probably pyritic grains. Scanning electron microscopy (SEM) should be used if necessary for better resolution and description of the opaque minerals.	Primary
Iron oxide compounds	<<1	N/A	Rare amorphous by-products of the oxidation of opaque minerals on the surface of the rock core.	Secondary
The sample was a fine to medium grained bioclastic LIMESTONE, comprising almost entirely calcium carbonate, with trace amounts of opaque minerals. No iron oxide compounds was observed in the thin section, suggesting that the patches observed on the hand specimen were superficial oxidation of the opaque minerals exposed to the element. The sample exhibited sporadic, unevenly distributed and randomly orientated stylolites comprising abundant opaque minerals. Rare irregular voids up to 100µm across were only observed associated with stylolites. The void content was visually estimated as being approximately 0%. The sample was fresh and exhibited Grade I weathering.				

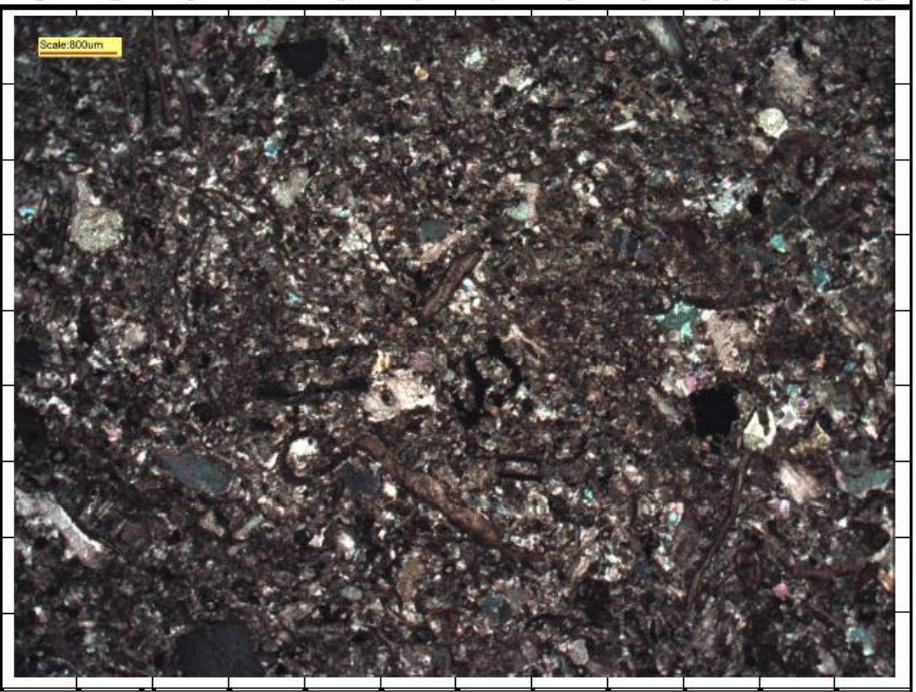
Petrographic Examination Natural Stone– BS EN 12407:2007

Profile view of the sample as received



Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



Viewing Light	Cross-polarised

Description

View of a section through the sample, showing bioclasts (brown, yellowish grey, pale green: A9, B3, C/D2, D6, G2, G6 and G10), discrete calcite (dark grey (I2/3) cemented by microcrystalline calcite matrix (brown/dusky brown: A8, E8 and H3).

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH

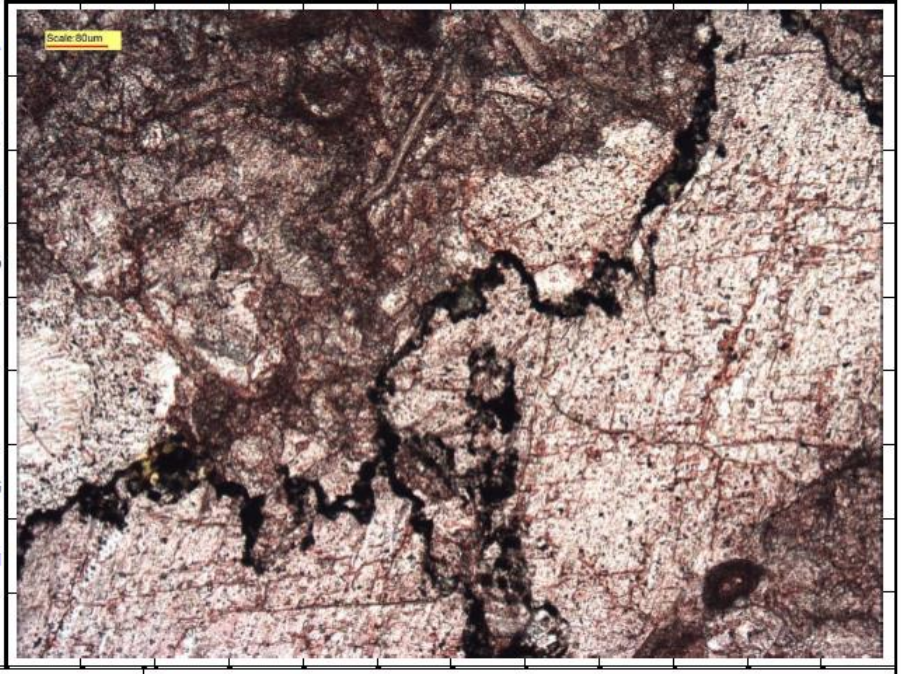
Viewing Light	Cross-polarised

Description

View of a section through the sample, showing calcite vein (C112 to H1)

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



Viewing Light	Plane-polarised

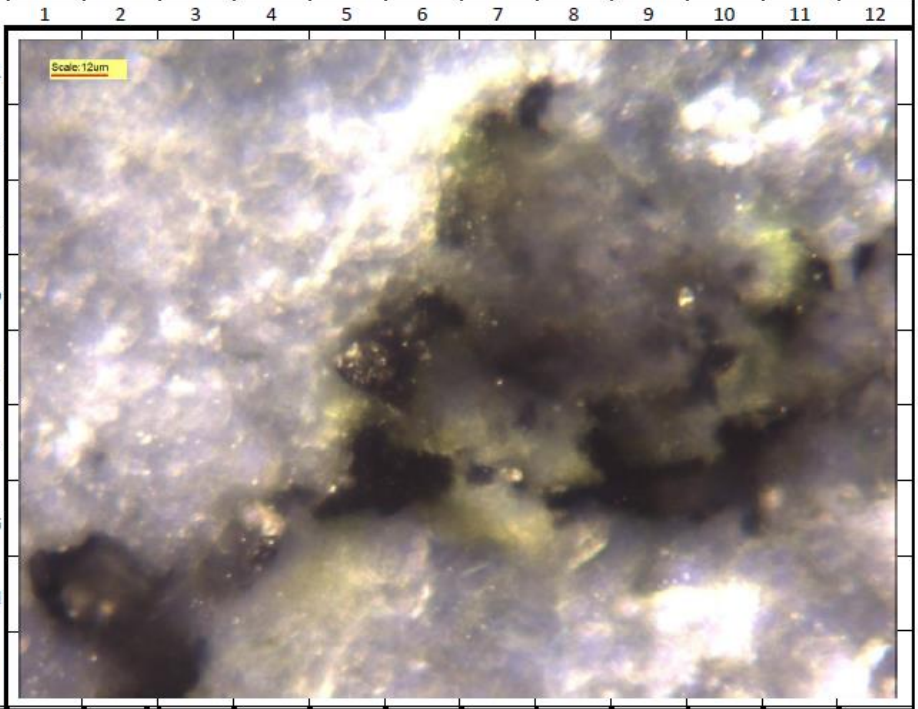
Description

View through the stained section of the sample, showing stylolite rich in opaque minerals (black: A10 to H1, A11 to B12 and G6 to I7).

The reddish brown colours (F3) observed throughout the field of view are due to the staining compound used and not due to oxidation.

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



Viewing Light	Reflected light

Description

Closer view of the section through a stylolite, showing apparent framboidal pyritic grains (black, bras coloured: E5, F6 and G4).

Petrographic Examination Natural Stone– BS EN 12407:2007

Glossary of Terms Used in the Descriptions

Proportions	**Major**: constituent present at a level ≥10%; **Minor**: constituent present at level ≥2% but <10; **Trace**: constituent present at <2% level
Frequency	• Rare – only found by thorough searching • Sporadic – only occasionally observed during normal examination • Common – easily observed during normal examination • Frequent – easily observed with minimal examination • Abundant – immediately apparent to initial examination
Hardness	• Very soft: can be penetrated easily by a finger • Soft: scores with a fingernail • Moderately soft: scores using a copper coin • Moderately hard: scores easily with a penknife • Hard: not easily scored with a penknife • Very hard: cannot be scored with a steel point or knife.
Weathering/ alteration	• Grade I **(Fresh)**: Unchanged from original state • Grade II **(Slightly Weathered)**: Slight discoloration, slight weakening; • Grade III **(Moderately Weathered)**: Considerably weakened, penetrative discoloration, large pieces cannot be broken by hand • Grade IV **(Highly Weathered)**: large pieces can be broken by hand, does not readily disaggregate (slake) when dry sample immersed in water • Grade V **(Completely Weathered)**: considerably weakened, slakes, original texture apparent; Grade VI **(Residual Soil)** • Soil derived by in-situ weathering but retaining none of the original texture or fabric.
Origin	• **Primary constituents:** Constituents present within the rock at its formation. • **Secondary constituents:** Constituents formed by the alteration of pre-existing primary constituents or introduced from an external source after the rock was formed
Size	**Mega**: >60mm; **Macro**: 2-60mm; **Meso**: 60µm-2mm; **Micro**: 2-60µm; **Crypto**: <2µm; **Glassy**: without visible crystallinity
Bedding/Layering	**Thick**: >600mm; **Medium**: 200-600mm; **Thin**: 60-200mm; **Very thin**: 20-60mm
Lamination	**Thick**: 6-20mm; **Thin**: 2-6mm; **Very thin**: 600µm-2mm; **Extremely thin**: <600µm
Cleavage	**Extremely wide**: >2mm; **Very wide**: 600µm-2mm; **Wide**: 200-600µm; **Medium**: 60-200µm; **Close**: 20-60µm; **Very close**: 6-20µm; **Extremely close**: <6µm.
Cracks	• Fine microcracks (<1µm wide) • Microcracks (1-10µm wide) • Fine cracks (10-100µm wide) • Cracks (100µm-1mm wide) • Large cracks (>1mm wide).
Colour	Description based on geological rock-color chart, produced by Munsell Color, 2009 Revised, 2011 Production.
Limestone Classification Schemes	**Folk**, R. L. 1959. Practical petrographic classification of limestones. *Bull. Am. Ass. Petro. Geol.* **43**, 1-38. **Dunham**, R. J. 1962. Classification of carbonate rocks according to depositional texture. In: Classification of Carbonate Rocks (Ed. By W. E. Ham), pp. 108-121. *Mem. Am. Ass. Petrol. Geol.* **1**, Tulsa.

Priority Drilling Ltd.
Killimor
Ballinasloe
Co Galway
Ireland
8D23036i

Date: 6th April 2016
Test Report Ref.: 447934

LABORATORY TEST REPORT

Test Requirements: Petrographic Examination of Natural Stone in accordance with BS EN 12047:2007

Sample details:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50926**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test.:	**18/03/2016**
Sampling Location:	**Depth Top:148.97 Depth Base:149.05**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

COMMENTS/ DEPARTURE FROM SPECIFIED PROCEDURE

The work was carried out by our accredited, competent, sub contracted laboratory.

RESULTS

See Attached

Nick Dumbarton – Assistant Laboratory Manager

Petrographic Examination Natural Stone– BS EN 12407:2007

HAND SPECIMEN DESCRIPTION

The sample was a moderately hard, fine to very coarse grained, not macroporous limestone. The sample was anisotropic. The sample exhibited medium grey to greyish black variously thick band/layers, unevenly distributed white bioclastic calcite materials up to 8mm across and a large irregular pyritic material up to approximated 2mm across. The sample also exhibited sporadic, randomly distributed and randomly orientated calcite veins up to <200µm across.

MICROSCOPICAL DESCRIPTION

Constituents[1]	Visual Estimated Proportions[2] %	Range of Crystal/Grain Size	Petrographic Details	Origin
Calcite	97	Up to 1600µm	Fresh, anhedral to euhedral crystals comprising significant amounts of both microcrystalline calcite (calcite crystals <4µm) and sparry calcite (calcite crystals >4µm), with minor proportion of discrete calcium carbonate grains that appeared to have replaced bioclasts. The bioclasts chiefly comprised both microcrystalline calcite and sparry calcite. The sample was partially stained in accordance with Dickson's method. The result of the staining process suggests that the calcite was chiefly non-ferroan	Primary
Opaque minerals	1-2	Up to 2000µm	Fresh, chiefly anhedral isotropic minerals apparently comprising almost entirely framboidal, probably pyritic grains. Scanning electron microscopy (SEM) should be used if necessary for better resolution and description of the opaque minerals.	Primary
Clay materials	1-2	<4µm	Very fine grained materials associated with abundant microcrystalline calcite, thus beyond the conclusive resolution of the petrographic microscope. This could be investigated further by scanning electron microscopy (SEM).	Primary

The sample was a fine to very coarse grained bioclastic LIMESTONE, comprising almost entirely calcium carbonate, with trace to minor proportions of opaque minerals, and trace to minor proportions of potentially clay minerals that were beyond the resolution of the petrographic microscope.

The limestone also exhibited abundant intraclasts (apparently reworked limestone fragments probably from nearby sediments).

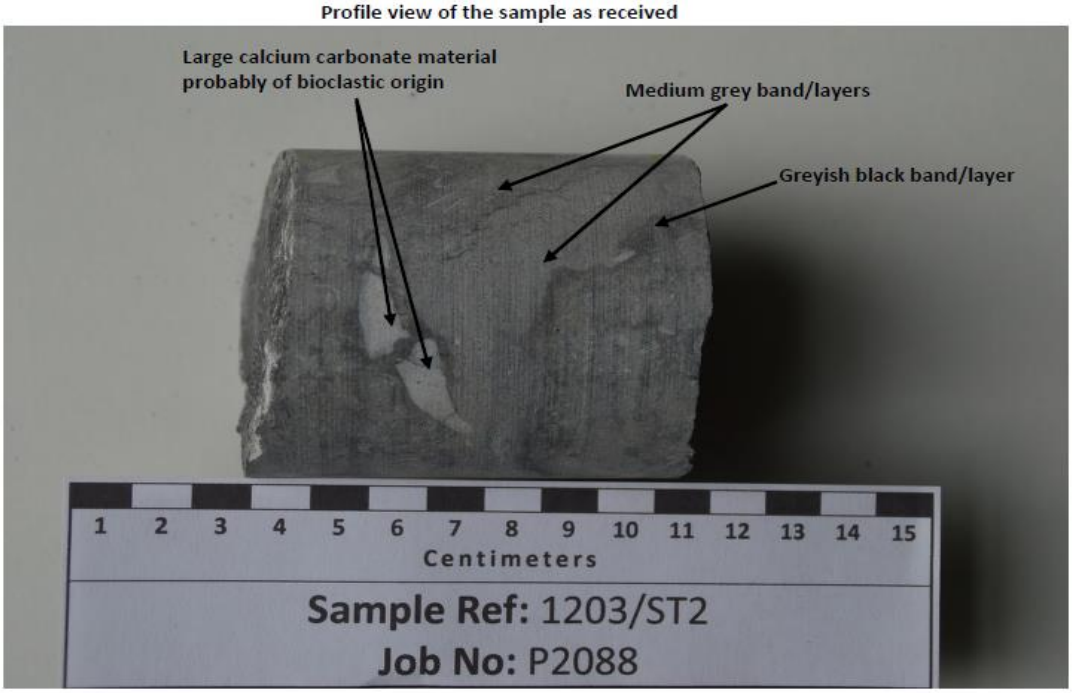
The greyish black bands/layers appeared brecciated as they comprised limestone fragments and discrete calcite grains cemented by very fine grained matrix comprising chiefly microcrystalline calcite, with trace to minor proportions of opaque minerals and possibly trace to minor proportions of clay materials.

No void was observed. The void content was visually estimated as being 0%.

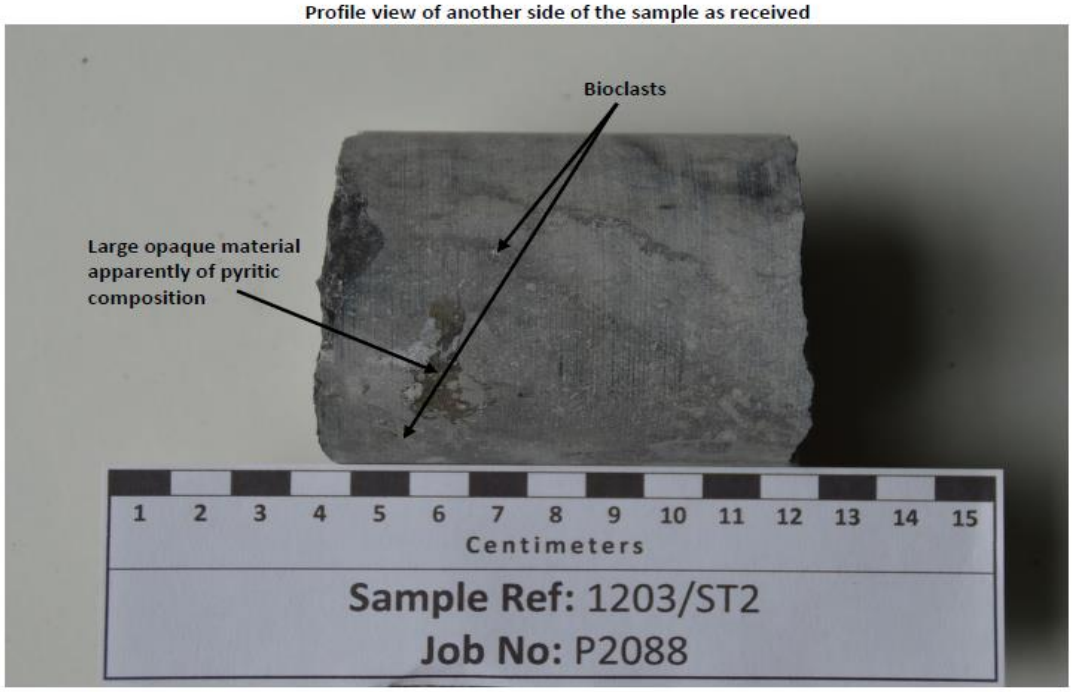
The sample was fresh and exhibited Grade I weathering.

Petrographic Examination Natural Stone– BS EN 12407:2007

Profile view of the sample as received



Profile view of another side of the sample as received



Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH

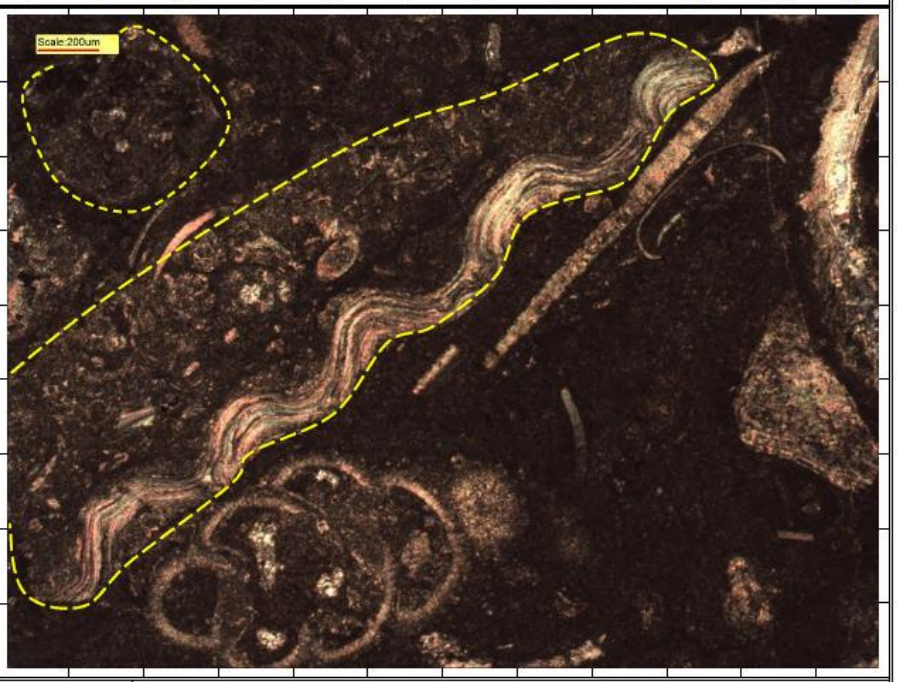
Viewing Light	Cross-polarised

Description

View of a section through a part-stained section of the sample, showing bioclasts (pink, pale ink, light brown, purple/green: A3, A11, B5, D5, E6 and E11) and calcite vein (light brown/pale pink/white: C12 to H1).

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



Viewing Light	Cross-polarised

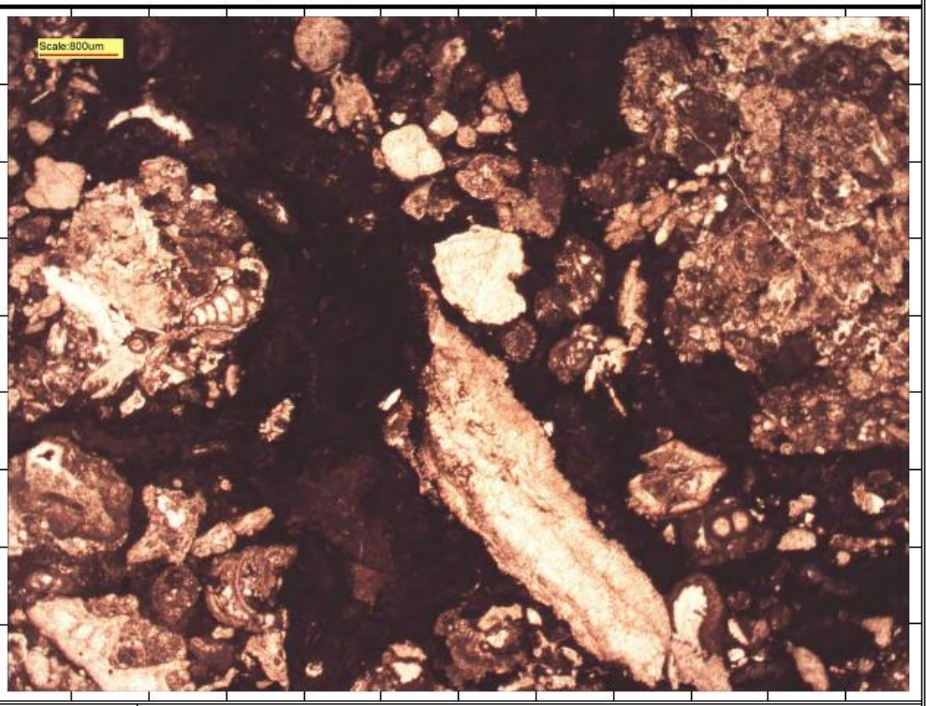
Description

View through a typical medium grey section of the sample, showing bioclasts (pale pink, light brown, pale yellow: D3, D5, D7, D8, D12 and H5) cemented by chiefly microcrystalline calcite (brownish grey: E9).

An apparent intraclasts are highlighted in yellow.

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



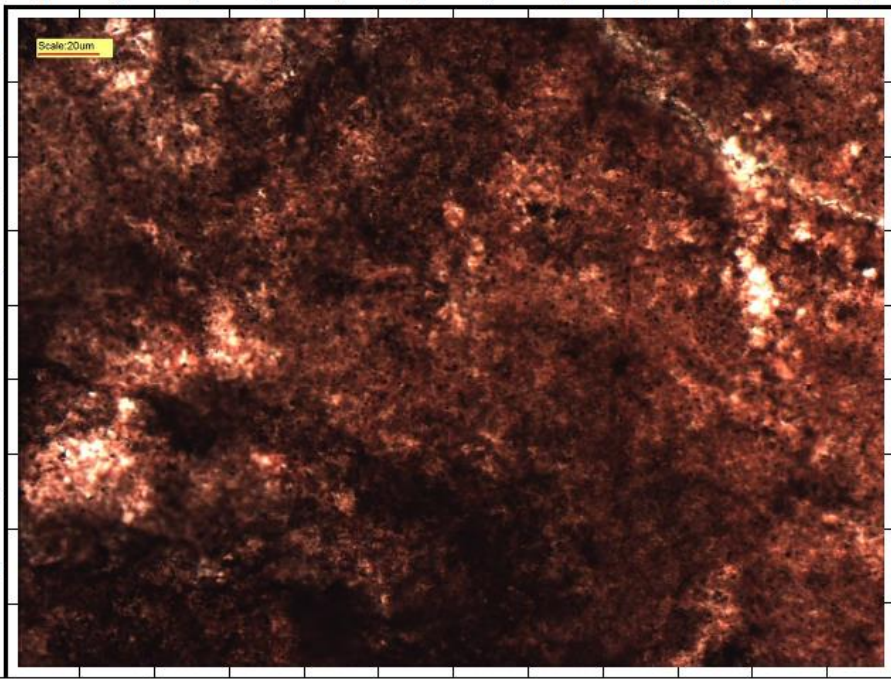
Viewing Light	Plane-polarised

Description

View of a section through a greyish black band/layer, showing apparent limestone fragments (pale pink, light brown, pale yellow: A5, C1, D2, D7, D11, G7 and G9), cemented by very fine grained matrix (dusky brown: A8, E5 and H12).

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



Viewing Light	Plane-polarised

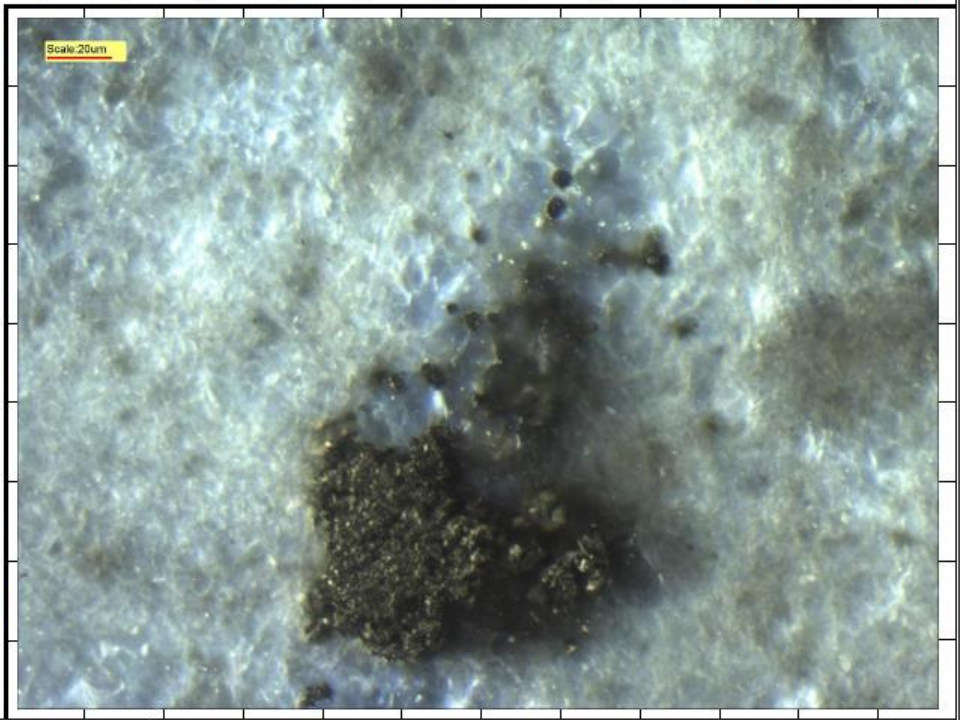
Description

Closer view through the matrix of the greyish black section of the sample, showing very fine grained materials beyond the conclusive resolution of the petrographic microscope. Opaque minerals appear black (A5 and E6). The remainder of the field of view appear to comprise both microcrystalline calcite and possibly some clay minerals.

The moderate red colour (D9) observed throughout the photomicrograph are due to the staining compound used and not due to oxidation.

Petrographic Examination Natural Stone– BS EN 12407:2007

RECORD PHOTOMICROGRAPH



Viewing Light	Reflected light

Description

Closer view of the section through the sample, showing framboidal pyritic grains (brass colour: C7 and G5).

Petrographic Examination Natural Stone– BS EN 12407:2007

Glossary of Terms Used in the Descriptions

Proportions	**Major**: constituent present at a level ≥10%; **Minor**: constituent present at level ≥2% but <10; **Trace**: constituent present at <2% level
Frequency	• Rare – only found by thorough searching • Sporadic – only occasionally observed during normal examination • Common – easily observed during normal examination • Frequent – easily observed with minimal examination • Abundant – immediately apparent to initial examination
Hardness	• Very soft: can be penetrated easily by a finger • Soft: scores with a fingernail • Moderately soft: scores using a copper coin • Moderately hard: scores easily with a penknife • Hard: not easily scored with a penknife • Very hard: cannot be scored with a steel point or knife.
Weathering/ alteration	• Grade I (**Fresh**): Unchanged from original state • Grade II (**Slightly Weathered**): Slight discoloration, slight weakening; • Grade III (**Moderately Weathered**): Considerably weakened, penetrative discoloration, large pieces cannot be broken by hand • Grade IV (**Highly Weathered**): large pieces can be broken by hand, does not readily disaggregate (slake) when dry sample immersed in water • Grade V (**Completely Weathered**): considerably weakened, slakes, original texture apparent; Grade VI (**Residual Soil**) • Soil derived by in-situ weathering but retaining none of the original texture or fabric.
Origin	• **Primary constituents:** Constituents present within the rock at its formation. • **Secondary constituents:** Constituents formed by the alteration of pre-existing primary constituents or introduced from an external source after the rock was formed
Size	**Mega**: >60mm; **Macro**: 2-60mm; **Meso**: 60µm-2mm; **Micro**: 2-60µm; **Crypto**: <2µm; **Glassy**: without visible crystallinity
Bedding/Layering	**Thick**: >600mm; **Medium**: 200-600mm; **Thin**: 60-200mm; **Very thin**: 20-60mm
Lamination	**Thick**: 6-20mm; **Thin**: 2-6mm; **Very thin**: 600µm-2mm; **Extremely thin**: <600µm
Cleavage	**Extremely wide**: >2mm; **Very wide**: 600µm-2mm; **Wide**: 200-600µm; **Medium**: 60-200µm; **Close**: 20-60µm; **Very close**: 6-20µm; **Extremely close**: <6µm.
Cracks	• Fine microcracks (<1µm wide) • Microcracks (1-10µm wide) • Fine cracks (10-100µm wide) • Cracks (100µm-1mm wide) • Large cracks (>1mm wide).
Colour	Description based on geological rock-color chart, produced by Munsell Color, 2009 Revised, 2011 Production.
Limestone Classification Schemes	**Folk**, R. L. 1959. Practical petrographic classification of limestones. *Bull. Am. Ass. Petro. Geol.* **43**, 1-38. **Dunham**, R. J. 1962. Classification of carbonate rocks according to depositional texture. In: Classification of Carbonate Rocks (Ed. By W. E. Ham), pp. 108-121. *Mem. Am. Ass. Petrol. Geol.* **1**, Tulsa.

Total Sulphur

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447855

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Total Sulfur Content of an Aggregate Sample in accordance with **BS EN 1744-1 : 2009 : Clause 11**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 48891**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**19/02/2016**
Sampling Location:	**Depth Top:53.80 Depth Base:453.93**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

Total Sulfur Content as S (%) =	**<0.1**
*95% Confidence limit**	*<0.06% - <0.14%*

Comments / Departure from specified Procedure

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447867

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Total Sulfur Content of an Aggregate Sample in accordance with **BS EN 1744-1 : 2009 : Clause 11**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50859**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:65.40 Depth Base:65.50**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

Total Sulfur Content as S (%) =	**<0.1**
*95% Confidence limit**	*<0.06% - <0.14%*

Comments / Departure from specified Procedure

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447887

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Total Sulfur Content of an Aggregate Sample in accordance with **BS EN 1744-1 : 2009 : Clause 11**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50879**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**19/02/2016**
Sampling Location:	**Depth Top:91.10 Depth Base:91.20**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

Total Sulfur Content as S (%) =	**<0.1**
*95% Confidence limit**	*<0.06% - <0.14%*

Comments / Departure from specified Procedure

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447937

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Total Sulfur Content of an Aggregate Sample in accordance with **BS EN 1744-1 : 2009 : Clause 11**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50929**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:152.97 Depth Base:153.04**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

Total Sulfur Content as S (%) =	**<0.1**
*95% Confidence limit**	*<0.06% - <0.14%*

Comments / Departure from specified Procedure

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 447965

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Total Sulfur Content of an Aggregate Sample in accordance with **BS EN 1744-1 : 2009 : Clause 11**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50955**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:193.60 Depth Base:193.68**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

Total Sulfur Content as S (%) =	**<0.1**
*95% Confidence limit**	*<0.06% - <0.14%*

Comments / Departure from specified Procedure

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-
Mathew Sayer
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Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 16 March 2016
Test Report Ref: STR 448000

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Total Sulfur Content of an Aggregate Sample in accordance with **BS EN 1744-1 : 2009 : Clause 11**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. No:	**BH01 - 50990**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**17/02/2016**
Sampling Location:	**Depth Top:235.64 Depth Base:235.73**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Testing**
Target Specification:	**N/A**

RESULTS:

Total Sulfur Content as S (%) =	**<0.1**
*95% Confidence limit**	*<0.06% - <0.14%*

Comments / Departure from specified Procedure

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 15 February 2016
Test Report Ref: STR 443067

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Total Sulfur Content of an Aggregate Sample in accordance with **BS EN 1744-1 : 2009 : Clause 11**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH04 - 48954**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**21/12/2015**
Sampling Location:	**Depth Top: 31.66 Depth Base: 31.7**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Total Sulfur Content as S (%) =	**<0.1**
*95% Confidence limit**	*<0.06% - <0.14%*

Comments / Departure from specified Procedure

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Contract: Lackagh Quarry

Date: 15 February 2016
Test Report Ref: STR 443131

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Total Sulfur Content of an Aggregate Sample in accordance with **BS EN 1744-1 : 2009 : Clause 11**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. No:	**BH05 - 50715**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**21/12/2015**
Sampling Location:	**Depth Top: 29.09 Depth Base: 29.18**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

Total Sulfur Content as S (%) =	**<0.1**
*95% Confidence limit**	*<0.06% - <0.14%*

Comments / Departure from specified Procedure

*95% Confidence limit is the expanded uncertainty which is the combined uncertainty standard multiplied by a factor (k) of 2

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

UCS

Priority Drilling Ltd,
Killimor,
Ballinasloe,
Co. Galway,
Ireland

Date: 10 March 2016
Test Report Ref: STR 447821a
Revision 1

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Uniaxial Compressive Strength in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56595**
Client Ref. :	**Various**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**18/01/2016**
Date of Start of Test:	**18/01/2016**
Sampling Location:	**Various**
Name of Source:	**Lackagh Quarry**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Rock Cores**
Target Specification:	**N/A**

RESULTS:

See attached

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

BH	Core Diameter (mm)	Height/ Diameter Ratio	Uniaxial compressive strength (MPa)	Mode of Failure	EN ISO 14689-1 Term	Water content (%)
BH01 48863	60.7	3.5:1	**97**	N	Strong	0.3
Bh01 48870	60.8	3.5:1	**59**	N	Strong	0.2
BH01 48873	60.7	3.5:1	**73**	N	Strong	0.1
BH01 48878	60.7	3:1	**100**	N	Strong	0.1
BH01 48883	60.7	3:1	**69**	N	Strong	0.3
BH01 48887	60.7	3:1	**83**	N	Strong	0.2
BH01 50943	60.8	3:1	**76**	N	Strong	0.1
BH01 48895	61	3.4:1	**138**	N	Very Strong	0.3
BH01 48900	60.8	2.5:1	**65**	N	Strong	0.1
BH01 50863	60.6	1.7:1	**104**	N	Very Strong	0.2
BH01 50873	60.7	3:1	**62**	N	Strong	0.2
BH01 50884	60.6	3:1	**76**	N	Strong	0.2
BH01 50894	60.7	3.4:1	**107**	N	Very Strong	0.2
BH01 50902	60.7	3:1	**104**	N	Very Strong	0.1
BH01 50909	60.8	2.1:1	**79**	N	Strong	0.2
Bh01 50915	60.8	3.1:1	**110**	N	Very Strong	0.3
Bh01 50924	60.7	1.4:1	**100**	N	Very Strong	0.2
BH01 50934	60.7	3.1:1	**86**	N	Strong	0.4
BH01 50938	60.6	3.4:1	**83**	N	Strong	0.2
BH01 50945	60.8	3.4:1	**86**	N	Strong	0.2
BH01 50952	60.6	3.2:1	**97**	N	Strong	0.5
BH01 50958	60.8	3.2:1	**114**	N	Very Strong	0.3
BH01 50963	60.6	3.1:	**132**	N	Very Strong	0.2
BH01 50968	60.6	3.3:1	**111**	N	Very Strong	0.1
BH01 50971	60.5	3.5:1	**52**	N	Strong	0.3
BH01 50980	60.5	2.8:1	**77**	N	Strong	0.2
BH01 50986	60.5	3:1	**111**	N	Very Strong	0.4
BH01 50991	60.6	3.5:1	**80**	N	Strong	0.2
BH01 50992	60.6	2.3:1	**76**	N	Strong	0.2
BH01 50994	60.6	3:1	**118**	N	Very Strong	0.2
BH01 50998	60.7	2.1:1	**121**	N	Very Strong	0.3
BH01 51002	60.4	3.3:1	**143**	N	Very Strong	0.2

BH01 51004	60.4	2.6:	**66**	N	Strong	0.2
BH01 51007	60.8	2.5:1	**83**	N	Strong	0.3
BH01 51010	60.6	2.5:1	**90**	N	Strong	0.3
BH01 51011	60.3	2.9:1	**91**	N	Strong	0.2

Comments

1) The uniaxial compressive strength was carried out in accordance with ISRM guidelines.
2) Stress Rate: 0.7Mpa/s.

3)

EN ISO 14689-1 : 2003 Rock Strength Terms	
Compressive Strength mpa	Term
<1.0	Extremely Weak
1 to 5	Very Weak
5 to 25	Weak
25 to 50	Meduim Strong
50 to 100	Strong
100 to 250	Very Strong
> 250	Extremely Strong

Priority Construction Ltd
162 Clontarf Road

Dublin 3
Ireland
VAT No: 9D53971I

Date: 21 December 2015
Test Report Ref: STR 443020

Contract: Lackagh Quarry

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Uniaxial Compressive Strength in accordance with **ISRM Guidelines**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S56158**
Client Ref. :	**Various**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**08/12/2015**
Date of Start of Test:	**08/12/2015**
Sampling Location:	**Various**
Name of Source:	**Lackagh Quarry SI**
Method of Sampling:	**Unknown**
Sampled By:	**Client**
Material Description:	**Core**
Target Specification:	**N/A**

RESULTS:

See attached

Certificate Prepared by:-
Mathew Sayer
Assistant Laboratory Manager

Approved by: -
Eric Goulden
Technical Manager

BH	Core Diameter (mm)	Height/ Diameter Ratio	Uniaxial compressive strength (MPa)	Mode of Failure	EN ISO 14689-1 Term	Water content (%)
BH04 48908	82	2.6:1	**76**	N	Strong	0.1
BH04 48912	82.3	1.9:1	**86**	N	Strong	0.3
BH04 48921	82.3	1.5:1	**55**	N	Strong	0.1
BH04 48927	82.1	1.6:1	**53**	N	Strong	0.2
BH04 48931	82.2	2.6:1	**111**	N	Very Strong	0.1
BH04 48933	82	2.1:1	**91**	N	Strong	0.2
BH04 48950	82	2.5:1	**76**	N	Strong	0.2
BH04 48957	82	2:1	**78**	N	Strong	0.3
BH04 48963	82.2	2.4:1	**92**	N	Strong	0.1
BH05 48982	82	1.8:1	**91**	N	Strong	0.2
BH05 48986	81.5	2.6:1	**86**	N	Strong	0.4
BH05 48991	81.4	2.5:1	**94**	N	Strong	0.1
BH05 48994	82	1.9:1	**72**	N	Strong	0.2
BH05 48998	82.2	2.6:1	**77**	N	Strong	0.2
BH05 50711	78.5	1.8:1	**79**	N	Strong	0.2
BH05 50729	79	2.5:1	**116**	N	Very Strong	0.3
BH05 50731	81.4	2.6:1	**51**	N	Strong	0.1
BH05 50733	81.6	2.1:1	**54**	N	Strong	0.2
BH05 50737	82	1.5:1	**131**	N	Very Strong	0.2

Comments

1) The uniaxial compressive strength was carried out in accordance with ISRM guidelines.
2) Stress Rate: 0.7Mpa/s.

3)

EN ISO 14689-1 : 2003 Rock Strength Terms	
Compressive Strength mpa	Term
<1.0	Extremely Weak
1 to 5	Very Weak
5 to 25	Weak
25 to 50	Meduim Strong
50 to 100	Strong
100 to 250	Very Strong
> 250	Extremely Strong

Water Tests

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number:	**2165l01**	**Analysis Number:**	**99A/89470**

Customer ID:	BRG.L1	**Analysis Type:**	Misc. Tests (99A)
Contact Name:	DAVID BLANEY	**Delivery By:**	An Post
Company Name:	BRG LTD	**Sample Card Number:**	AAAQ1194/3
Address:	8B UNIT 3 ATHY BUSINESS CAMPUS ATHY CO KILDARE	**Sample Condition:**	Acceptable
Sample Type:	Ground Water	**Date Sample Received:**	15/03/2016
Sample Reference:	GROUND WATER	**Date Analysis Commenced:**	15/03/2016
Sample Description:	BH-04	**Date Certificate Issued:**	29/03/2016

Parameter	Method	Result	Unit
Calcium	ICP-MS	82.9	mg/l
Chloride	Konelab Aquakem SOP 2065	32.10	mg/l
Potassium	ICP-MS	0.94	mg/l
Magnesium	ICP-MS	2.50	mg/l
Sodium	ICP-MS	17.1	mg/l
Nitrite	Konelab Aquakem SOP 2059	<0.03	mg/l NO2
Sulphate	Konelab Aquakem SOP 2062	6.26	mg/l SO4

Signed: WD McCall Date: 29/03/2016

Wendy McCall - Laboratory Manager

*** = not INAB Accredited** **^ = Subcontracted**

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES, Unit 4 Bagenalstown Bus. Park, Bagenalstown, Co. Carlow,

Phone: 00353 59 9721022 Fax: 00353 59 9721897 Email: ias@iaslabs.ie Web: www.iaslabs.ie

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number:	**2165I02**	**Analysis Number:**	**99A/89471**

Customer ID:	BRG.L1	**Analysis Type:**	Misc. Tests (99A)
Contact Name:	DAVID BLANEY	**Delivery By:**	An Post
Company Name:	BRG LTD	**Sample Card Number:**	AAAQ1194/3
Address:	8B UNIT 3 ATHY BUSINESS CAMPUS ATHY CO KILDARE	**Sample Condition:**	Acceptable
Sample Type:	Ground Water	**Date Sample Received:**	15/03/2016
Sample Reference:	GROUND WATER	**Date Analysis Commenced:**	15/03/2016
Sample Description:	BH-05	**Date Certificate Issued:**	29/03/2016

Parameter	Method	Result	Unit
Calcium	ICP-MS	92.6	mg/l
Chloride	Konelab Aquakem SOP 2065	25.38	mg/l
Potassium	ICP-MS	6.26	mg/l
Magnesium	ICP-MS	2.98	mg/l
Sodium	ICP-MS	14.4	mg/l
Nitrite	Konelab Aquakem SOP 2059	0.03	mg/l NO2
Sulphate	Konelab Aquakem SOP 2062	15.41	mg/l SO4

Signed: WD McCall Date: 29/03/2016

Wendy McCall - Laboratory Manager

*** = not INAB Accredited** **^ = Subcontracted**

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.2751

IAS LABORATORIES, Unit 4 Bagenalstown Bus. Park, Bagenalstown, Co. Carlow,

Phone: 00353 59 9721022 Fax: 00353 59 9721897 Email: ias@iaslabs.ie Web: www.iaslabs.ie

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number:	**2165I03**	**Analysis Number:**	**99A/89472**

Customer ID:	BRG.L1	**Analysis Type:**	Misc. Tests (99A)
Contact Name:	DAVID BLANEY	**Delivery By:**	An Post
Company Name:	BRG LTD	**Sample Card Number:**	AAAQ1194/3
Address:	8B UNIT 3 ATHY BUSINESS CAMPUS ATHY CO KILDARE	**Sample Condition:**	Acceptable
Sample Type:	Ground Water	**Date Sample Received:**	15/03/2016
Sample Reference:	GROUND WATER	**Date Analysis Commenced:**	15/03/2016
Sample Description:	BH-06	**Date Certificate Issued:**	29/03/2016

Parameter	Method	Result	Unit
Calcium	ICP-MS	430.1	mg/l
Chloride	Konelab Aquakem SOP 2065	152.22	mg/l
Potassium	ICP-MS	39.3	mg/l
Magnesium	ICP-MS	<0.5	mg/l
Sodium	ICP-MS	306.1	mg/l
Nitrite	Konelab Aquakem SOP 2059	1.02	mg/l NO2
Sulphate	Konelab Aquakem SOP 2062	36.32	mg/l SO4

Signed: WD McCall Date: 29/03/2016

Wendy McCall - Laboratory Manager

*** = not INAB Accredited** **^ = Subcontracted**

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.2751

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Phone: 00353 59 9721022 Fax: 00353 59 9721897 Email: ias@iaslabs.ie Web: www.iaslabs.ie

APPENDIX VIII

Monitoring Well Sampling Log

Well Number:BH-04

Project Details

Project No.:	Lackagh	Location (GPS):	530150 728400
Date:	12-3-16	Sampler:	Ronan Doyle

Sample Details

Well No.:	BH-04	Measurement Point:	TOR
Stick Up:		T.O.C Elevation:	
Water Level:	19.65m	Well Depth:	33.06m
Head:	13.41m	Well Diameter:	
Volume in Well (L):		Volume Purged (L):	Pumped for 1 hr
Decon. Procedure:		Bailer Type:	Watterra Pump
Containers Used:			

Field Parameters

Observed Colour:	Brown Tint	Odour:	None
Temperature (°C):	10.5C	Conductivity (µS):	295
pH:	7.47	pHMV:	-58mv ORP=231mv

Comments

DO=0.21mg/l 1.8%

Ronan Doyle Monitoring Solutions,

Castlebar Road, Ballinrobe, County Mayo.

Monitoring Well Sampling Log

Well Number:BH-05

Project Details

Project No.:	Lackagh	Location (GPS):	530186 728378
Date:	12-3-16	Sampler:	Ronan Doyle

Sample Details

Well No.:	BH-05	Measurement Point:	TOR
Stick Up:		T.O.C Elevation:	
Water Level:	21.70m	Well Depth:	39.53m
Head:	17.83m	Well Diameter:	
Volume in Well (L):		Volume Purged (L):	Pumped for 1 hr
Decon. Procedure:		Bailer Type:	Watterra Pump
Containers Used:			

Field Parameters

Observed Colour:	Brown Tint	Odour:	None
Temperature (°C):	10.5C	Conductivity (µS):	420
pH:	7.77	pHMV:	-74.8mv ORP=216.9mv

Comments

DO=0.8mg/l 9.2%

Ronan Doyle Monitoring Solutions,

Castlebar Road, Ballinrobe, County Mayo.

Monitoring Well Sampling Log

Well Number:BH-06

Project Details

Project No.:	Lackagh	Location (GPS):	530125 728383
Date:	12-3-16	Sampler:	Ronan Doyle

Sample Details

Well No.:	BH-06	Measurement Point:	TOR
Stick Up:		T.O.C Elevation:	
Water Level:	4.02m	Well Depth:	7.48m
Head:	3.46m	Well Diameter:	
Volume in Well (L):		Volume Purged (L):	Pumped for 30min
Decon. Procedure:		Bailer Type:	Watterra Pump
Containers Used:			

Field Parameters

Observed Colour:	Milky brown	Odour:	None
Temperature (°C):	9.8C	Conductivity (µS):	6187
pH:	12.53	pHMV:	-333mv ORP=51.7mv

Comments

DO=0.8mg/l 9.4%

Ronan Doyle Monitoring Solutions,

Castlebar Road, Ballinrobe, County Mayo.

APPENDIX IX

Borehole ID	**BH5**
Water Level Start	**19.45m**
Water volume inserted	**215 ltrs**

Time (min)	Water Level (m)
1	18.1
1.5	18.52
2	18.82
2.5	19
3	19.14
3.5	19.22
4	19.26
4.5	19.29
5	19.31
5.5	19.32
6	19.33
8	19.35
11	19.38
14	19.39
18	19.4
22	19.405
26	19.41
30	19.41
34	19.415
40	19.42

Borehole ID **BH5**

Water Level Start **19.42m**

Water volume inserted **1000 ltrs**

Time (min)	Water Level (m)	Comments
1	17.62	
1.5	18.22	
2	18.51	
2.5	18.74	
3	18.93	
3.5	19.04	
4	19.11	
4.5	19.17	
5	19.21	
5.5	19.24	
6	19.26	
6.5	19.28	
7.5	19.29	
9	19.31	
12	19.33	
14	19.335	
17	19.34	
20	19.345	
24	19.345	
30	19.35	
40	19.34	Could feel material in the hole test stopped - driller reports clearing clay after test in oreder to install piezometer.

APPENDIX X

BH04 - Packer Test 18/12/15 **Water Depth** **Start** 16.8m **Finish** 16.8m

Depth Top	Bottom	Midpoint	Packer Pressure (psi)	Pressure (psi)	Flow (litres)	Time minutes 1	2	3	4	5	6	7	8	9	10		
28	30	29	175	49		59	113	168	225	282	343	399	456	518	579	**Total**	
						59	57	56	56	56	57	57	57	58	58	**l/m**	Unable to continue at
24	26	25	175	50		18.5	35	52	70	86	103	121	138	155.6	174	**Total**	
						19	18	17	18	17	17	17	17	17	17	**l/m**	
				65		29	58	87	117	147	176	207	236	267	297	**Total**	
						29	29	29	29	29	29	30	30	30	30	**l/m**	
				84		44	89	134	179	224	270	316	363	410	456	**Total**	
						44	45	45	45	45	45	45	45	46	46	**l/m**	
				65		32	73	113	152	193	232	273	313	354	395	**Total**	
						32	37	38	38	39	39	39	39	39	40	**l/m**	
				50		34	67	101	135	169	202	236	270	303	337	**Total**	
						34	34	34	34	34	34	34	34	34	34	**l/m**	
21	23	22	175	40		60	120	179	237	296	355	414	473	533	591	**Total**	
						60	60	60	59	59	59	59	59	59	59	**l/m**	
				50		67	134	200	266	331	397	464	530	576	662	**Total**	
						67	67	67	67	66	66	66	66	64	66	**l/m**	Unable to continue at
18	20	19	160	40		20	42	66	91	115	140	164	189	214	240	**Total**	
						20	21	22	23	23	23	23	24	24	24	**l/m**	
				60		31	64	96	128	160	192	225	257	289	322	**Total**	
						31	32	32	32	32	32	32	32	32	32	**l/m**	
				80		37	75	113	152	190	228	267	306	345	383	**Total**	
						37	38	38	38	38	38	38	38	38	38	**l/m**	
				60		33	66	99	132	165	198	231	264	297	328	**Total**	
						33	33	33	33	33	33	33	33	33	33	**l/m**	
				40		25	50	75	101	126	150	175	200	224	249	**Total**	
						25	25	25	25	25	25	25	25	25	25	**l/m**	

BH05 - Packer Test 6/1/16 **Water Depth Start** 19.26m **Finish** 19.2

Depth Top	Bottom	Midpoint	Packer Pressure (psi)	Pressure (psi)	Flow (litres)	Time minutes 1	2	3	4	5	6	7	8	9	10	
36	38	37	160	30		58.9	117.1	176.1	234.4	292.9	350.1	408.7	466.7	524.9	581.7	Total
						59	59	59	59	59	58	58	58	58	58	l/m
				45		70.1	139.9	209.1	279.1	348.7	417.9	485.1	554.6	620.5	686.1	Total
						70	70	70	70	70	70	69	69	69	69	l/m
				60		76.8	153.7	231.2	304.4	383.7	461.5	537.7	613.7	691.6	768.4	Total
						77	77	77	76	77	77	77	77	77	77	l/m
				45		73	145.7	212.8	278.1	351.5	421.4	493.3	564.4	634.6	705.9	Total
						73	73	71	70	70	70	70	71	71	71	l/m
				30		64.2	128.6	192.7	256.3	319.1	383.6	448.5	513.7	576.7	641.5	Total
						59	59	59	59	59	58	58	58	58	58	l/m
30	32	31	175	30		54.2	110.3	166.4	222.2	278.7	335.7	392.4	448.1	505.2	561.7	Total
						54	55	55	56	56	56	56	56	56	56	l/m
				45		67.3	135.1	204.1	273.5	342.4	411.7	481.2	530.4	619.3	688.1	Total
						67	68	68	68	68	69	69	66	69	69	l/m
				60		78.7	155.8	234.8	311.7	390.1	468.4	546.7	633.5	701.3	779.4	Total
						79	78	78	78	78	78	78	79	78	78	l/m
				45		69.7	139.7	209.6	286.5	346.5	414.5	481.7	550.7	621.8	693	Total
						70	70	70	72	69	69	69	69	69	69	l/m
				30		61.1	122.4	184.7	247.5	309.7	372.5	435.1	498.3	563.5	626.7	Total
						61	61	62	62	62	62	62	62	63	63	l/m
24	27	25.5	175	30		54.1	111.4	166.5	222.3	277	332.4	387.4	462.1	497.1	551.7	Total
						54	56	56	56	55	55	55	58	55	55	l/m
				45		67.1	135.4	200.4	268.2	335.3	402.1	468.3	535.3	602.7	667.1	Total
						67	68	67	67	67	67	67	67	67	67	l/m
				60		77.3	153.7	231.2	308.9	385.7	463.7	540.1	617.5	695	772.6	Total
						77	77	77	77	77	77	77	77	77	77	l/m
				45		65.6	130.5	196.3	261.1	326.7	391.6	457.5	512.9	587.2	652.5	Total
						66	65	65	65	65	65	65	64	65	65	l/m
				30		56.9	112.5	167.7	223.5	279.4	335.2	390.1	446	501.7	557.1	Total
						57	56	56	56	56	56	56	56	56	56	l/m
20	23	21.5	175	30		54.2	108.5	162	216.7	270.3	324.5	378	421.7	480	539	Total
						54	54	54	54	54	54	54	53	53	54	l/m
				45		65.6	131.8	197.3	262.5	328.3	394.5	459.8	524.7	590.3	655.7	Total
						66	66	66	66	66	66	66	66	66	66	l/m
				60		77.1	154.1	230.4	306.9	383.7	459.7	536.2	611.9	688.5	764.1	Total
						77	77	77	77	77	77	77	76	77	76	l/m
				45		67.7	135.2	203.1	271.4	337.9	403.3	468.2	530.7	592.8	656.7	Total
						68	68	68	68	68	67	67	66	66	66	l/m
				30		57.7	115.4	173.2	230.8	287.1	342.9	399.1	455.5	512.5	567.1	Total
						58	58	58	58	57	57	57	57	57	57	l/m

APPENDIX XI

	BH3	BH4	BH5	BH6
Elavation	26.256	32.167	34.138	30.799

Date	BH3 bgl	BH3 aod	BH4 bgl	BH4 aod	BH5 bgl	BH5 aod	BH6 bgl	BH6 aod	Comments
08/11/2015					1.31	32.83			Hole at deth of 3.15m
09/11/2015					Dry				Hole at deth of 7.4m
12/11/2015			5.34	26.827					Morning
12/11/2015			Dry						Evening
13/11/2015			17.46	14.707					Rods in hole
13/11/2015	0.65	25.606							Hole at 5.3m. Rods in Hole
16/11/2015	0.11	26.146							Hole at 5.3m. Rods in Hole
17/11/2015	7.51	18.746							Hole at 25.2m. Rods in Hole, Casing to 15m
18/11/2015	6.5	19.756							Hole at 25.2m. Rods in Hole, Casing to 15m
18/11/2015			15.76	16.407					Rods to EOH 35.0m
18/11/2015					17.69	16.45			Rods to EOH 40.3m
21/11/2015	7.5	18.756							Hole at 25.2m. Rods in Hole, Casing to 21m
21/11/2015			17.52	14.647					Rods to EOH 35.0m
21/11/2015					19.5	14.64			Rods to EOH 40.3m
23/11/2015	9	17.256							Hole at 50m. Rods in Hole, Casing to 21m
23/11/2015			18.79	13.377					Rods to EOH 35.0m
23/11/2015					20.56	13.58			Rods to EOH 40.3m
24/11/2015	8.5	17.756							Hole at 57.15m. Rods in Hole, Casing to 21m
24/11/2015			18.84	13.327					Rods to EOH 35.0m
24/11/2015					20.58	13.56			Rods to EOH 40.3m
25/11/2015	12	14.256							Hole at 65.78m. Rods in Hole, Casing to 21m
25/11/2015			18.92	13.247					Rods to EOH 35.0m
25/11/2015					20.72	13.42			Rods to EOH 40.3m
26/11/2015	13.21	13.046							Hole at 79.54m. Rods in Hole, Casing to 50m
26/11/2015			19.04	13.127					Rods to EOH 35.0m
26/11/2015					20.86	13.28			Rods to EOH 40.3m
02/12/2015	12.38	13.876							Hole at 104.95m. Rods in Hole, Casing to 50m
02/12/2015			16.02	16.147					Rods to EOH 35.0m
02/12/2015					17.77	16.37			Rods to EOH 40.3m

08/12/2015			16.14	16.027					Rods to EOH 35.0m
09/12/2015					17.33	16.81			Rods to EOH 40.3m
10/12/2015			15.47	16.697					Rods to EOH 35.0m
10/12/2015					16.98	17.16			Rods to EOH 40.3m
11/12/2015			17.56	14.607					Rods to EOH 35.0m
11/12/2015					16.99	17.15			Rods to EOH 40.3m
14/12/2015			15.65	16.517					Rods to EOH 35.0m
14/12/2015					15.49	18.65			Rods to EOH 40.3m
15/12/2015			16.48	15.687					Rods to EOH 35.0m
15/12/2015					15.51	18.63			Rods to EOH 40.3m
15/12/2015							15.6	15.199	Hole at deth of 45m Rods in hole
17/12/2015			16.87	15.297					Rods to EOH 35.0m
17/12/2015					15.58	18.56			Rods to EOH 40.3m
04/01/2016							2.81	27.989	Piezometer Installed
04/01/2016					14.46	19.68			Rods to EOH 40.3m
05/01/2016							2.83	27.969	Piezometer Installed
05/01/2016					14.68	19.46			Rods to EOH 40.3m
05/01/2016			17.88	14.287					Rods out of hole
06/01/2016					19.45	14.69			Rods out of hole
08/01/2016			16.46	15.707			3.39	27.409	Piezometer Installed
11/01/2016			16.43	15.737	17.48	16.658	3.05	27.749	Piezometer Installed
11/03/2016			18.96	13.207	20.86	13.278	3.59	27.209	Piezometer Installed

aod - Above Ordnance Datum (Sea Level)