



HIGHWAY AUTHORITIES & UTILITIES COMMITTEE

Advice Note No. 2012/01

HAUC(UK) Good Practice Guide

to

IMPLEMENTING A STRUCTURED CORING PROGRAMME

1st Edition

England and Wales

31st January 2012

Version:	V1
Control Document No.:	1
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Date of Document:	31 st January 2012

Foreword

This Good Practice Guide has been written by a HAUC(UK) working party consisting of;

- | | |
|----------------------|------------------------------------|
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This Good Practice Guide provides guidance for the implementation of a structured coring programme as part of a compliance audit regime in respect to reinstatements following any works in the public highway.

A structured coring programme is defined as a predetermined random sample of reinstatements, which represent a Work Promoters typical street works activity, notified to the Works Promoter or Street Authority in advance of programme commencement.

A consistent approach to investigatory sampling and testing, and in particular coring, will provide a comparative measure of compliance with the applicable version of the Specification for the Reinstatement of Openings in Highways. The analysis of comparative data can be used as a driver for positive change and may also provide valuable asset management information.

Undertaking a structured programme of core sampling, testing, analysis and reporting using the principles recommended in this Good Practice Guide will generate comparative data which can be collated and shared, with confidence.

It is recognised that Street Authorities may consider it necessary to carry out other coring programmes which are targeted in order to investigate specific concerns relating to reinstatement and compliance. These targeted coring programmes are not covered within this document. However, the processes and principles of this document should be followed when undertaking such programmes.

All references to British and European standards, Codes of Practice and other document references contained within this document refer to those documents current at the time of publication or their subsequent revisions.

Signed by the HAUC UK Chairs

Jerry McConkey Highway Authority Chair



Date: 2nd March 2012

Mark Ostheimer Utility Chair



Date: 2nd March 2012

HAUC(UK) Good Practice Guide

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1.0 History

- 1.1 Since the inception of the New Roads and Street Works Act 1991, (NRSWA), and its associated Regulations and Codes of Practice there has been a statutory requirement that all excavations conducted in the public highway as part of street works must be reinstated to the requirements contained in the Specification for the Reinstatement of Openings in Highways, (SROH), current at the time of reinstatement. The responsibility for complying with those requirements lies with the Works Promoter.
- 1.2 Street Authorities carry out inspections of work promoter's work to determine compliance with the SROH. These inspections include visual inspections in line with Section 72 of NRSWA and/or detailed investigatory sampling and testing.
- 1.3 A visual inspection will look primarily at the surface characteristics of a reinstatement and will compare them against the intervention levels as detailed within the SROH.
- 1.4 The long term performance of a reinstatement is dependant, not only on the surface characteristics but also on the underlying properties of that reinstatement and the correct placement of the reinstated materials.

2.0 Background

- 2.1 Street Authorities are placing a greater emphasis on asset management and asset protection. This has led to a gradual increase in the number of Street Authorities engaging in structured coring programmes of reinstatements.
- 2.2 This shift in focus, along with local variations in the implementation and interpretation of coring programmes and their results, has resulted in a number of challenges and questions from Works Promoters.
- 2.3 HAUC(UK) has produced this Good Practice Guide to provide clarity, promote consistency, maximise the benefits to be gained from such programmes and to reduce the potential for dispute.
- 2.4 It is recommended that the principles established in this Good Practice Guide be adopted by all parties implementing a structured coring programme. This includes Street Authorities and Works Promoters.

3.0 Introduction

- 3.1 Reporting results from coring programmes will increase the awareness of compliance/non-compliance with the SROH throughout the industry.
- 3.2 Some of the benefits associated with a structured coring programme are;
 - A better understanding of overall compliance with the SROH
 - An opportunity to share results in order to drive continuous improvement
 - A mechanism to promote best practice initiatives and to improve competence
 - To develop key performance indicators through nationally recognised data-sets
 - Management and protection of the highway asset

3.3 This Good Practice Guide gives guidance for undertaking a structured coring programme including;

- Site selection process
- Scale and detail of programme
- Notification of intention to undertake a coring programme
- Core extraction, labelling, transportation and storage
- Core testing and recording
- Analysis and reporting
- Section 72 defect notices and remediation
- Cost recovery

4.0 Programme size

- 4.1 Each Street Authority or Works Promoter can determine the scale of its own structured coring programme. The sample size should however reflect the variable workload and relative performance of each Works Promoter and the asset management aspirations of the Street Authority.
- 4.2 A sample size of 2% of suitable permanent reinstatements registered by each Works Promoter during the chosen sample period is recommended as the optimum number with which to achieve a representative sample size, or a minimum of ten cores, whichever is the greater (see also note accompanying 5.3).
- 4.3 The results achieved from a sample size of less than that shown in 4.2 should not be reported for use as comparative data at national or regional level.

5.0 Sample selection and identification

- 5.1 The selection of sites for inclusion in a structured coring programme is an important process with the aim being to gain a representative sample of a Works Promoter's reinstatements.
- 5.2 Suitable reinstatements for inclusion within a structured coring programme should be extracted from the Street Works Register. Typically the sample will be selected from those reinstatements that would be considered as either B sample inspections or C sample inspections except where imminent surface treatment works make earlier coring necessary. The area of selected reinstatements should represent a Work Promoters typical street works activity.

NOTE: - *The benefits set out in 3.2 are likely to be maximised where coring is undertaken in line with category B sample inspections.*

- 5.3 Reinstatements should typically be selected from those placed in flexible carriageways and footways, but may also be selected from those placed in composite and rigid roads. Reinstatements selected may include reinstatements placed using permanent cold-lay surfacing material.

NOTE: - *where sampling is to take place in either composite or rigid construction, a core should also be taken from the adjacent existing construction layers for comparative analysis.*

- 5.4 A sample distribution in proportion to the number of registered carriageway and footway reinstatements should be considered.
- 5.5 All reinstatements included within a structured coring programme must be visually compliant with the performance requirements of the SROH. Those reinstatements inspected as part of the sample process that are agreed not to be visually compliant with the SROH must not be included as part of a structured core programme until remediation is completed. (Refer also to 6.3 and Appendix A1)
- 5.6 Where permanent cold-lay surfacing materials are identified, those reinstatements should not be wet flushed cored until at least 6 months after the date of registration, **(Ref SROH -A.8.3)**
- 5.7 Where positive traffic management is required to extract any core sample, this should be determined at the time that the sample is identified and referenced on the notification of the structured coring programme.
- 5.8 It is recommended that, at the time of sample identification, the sample should be identified by;
- Marking the reinstatement clearly with a “paint mark” (this is not necessarily the core location)
 - Taking appropriate photograph(s) showing the position of the reinstatement in the street and the “paint mark”
- 5.9 The reinstatements selected for inclusion in a structured coring programme should be clearly identified within the programme format by;
- Identifying the NRSWA reference number
 - Detailing the location
 - Recording an accurate grid reference, preferably by GPS location
 - Detailing the dimensions of the reinstatement and its position within the highway, (e.g.: c/way or f/way)
 - Recording the Road Categories, (types 0 – 4), for carriageway reinstatements
- 5.10 The reinstatements selected for inclusion in a structured coring programme should be selected from within those areas where the existing adjacent surfaces are of a generally sound condition.

6.0 Programme notification

- 6.1 It is considered essential to inform Works Promoters of the Street Authority's intention to undertake a coring programme, giving at least one month's advance notification. Similarly, where Works Promoters undertake their own coring programmes they should also inform the Street Authority, serving notices/permits where appropriate.
- 6.2 A list of all sites to be sampled should be included with the notification of intention to carry out a structured coring programme.

- 6.3 In advance of the notified structured coring programme start date, Works Promoters should inform the Street Authority of any anomalies with identified sites, for example where those reinstatements
- Do not relate to the associated works reference.
 - Do not relate to works that your company have completed.
 - Are not considered to be a permanent reinstatement.
 - Are visually non-compliant with the SROH.
 - Do not fairly represent your typical works activity

Such anomalies should be notified to the Street Authority within a reasonable period, typically 10 working days in advance of the start date of the structured coring programme.

7.0 Core extraction and recording

- 7.1 All sampling and testing shall be carried out by a laboratory holding current UKAS accreditation covering the specified method of sampling & testing, unless otherwise agreed and documented between all parties. (*Ref SROH – S2.7.1*).
- 7.2 All core samples shall be nominal 100mm diameter with a maximum tolerance of 100mm - 2mm (making a core of 98mm in diameter acceptable).
- 7.3 When carrying out core extraction, works sites must be set out in accordance with the requirements of the “Safety at Street Works and Roads Works” Code of Practice current at the time including, where appropriate, traffic control measures.
- 7.4 Before carrying out core extraction, a risk assessment must be completed including the identification and location of underground apparatus.
- 7.5 It is recommended for structured coring programmes that no part of any core should be within 75mm of the edge of a reinstatement or within 100mm of any surface apparatus.

NOTE: - *Cores not extracted in accordance with 7.5 should not be used as comparative data at national or regional level.*

- 7.6 The extraction process must be in accordance with the principles of BS12697 – Part 27. The coring machine must be maintained perpendicular to the surface and any dust must be suppressed using appropriate methods.
- 7.7 Cores must be extracted from the hole and removed from the core barrel with care so that no material is lost or the core damaged or distorted in any way.
- 7.8 Cores should be taken through the full depth of the bound layers. For Type 1 and Type 0 roads, where the required reinstatement depth is greater than 300mm, specific information on the depth of the apparatus must be obtained in advance of coring and form part of the site risk assessment.
- 7.9 Cores should be placed in individual sealed pre-labelled containers with relevant details recorded on a “sample detail form”. If the core breaks up on extraction all recovered material should be placed in the sample container.

- 7.10 The core/cores should be transported to the appointed laboratory for testing in a suitable container as to prevent damage or material loss to the core and stored in accordance with British Standard requirements so that the quality of the sample is not compromised.
- 7.11 Preliminary analysis of extracted cores should not take place on site unless agreed by both parties. Cores should be transported to a materials laboratory for full analysis.
- 7.12 All core holes should be reinstated in accordance with the SROH - S11.6 and the site left in a clean and tidy condition. All arisings must be cleared from site.
- 7.13 Works Promoters and/or Street Authorities should be afforded the opportunity to attend site during the structured coring programme to view the core sampling process (see also 6.1).
- 7.14 To determine the in-situ air void content core samples shall be taken at a rate of 1 per 6m² or part thereof. The average void content shall be calculated for each reinstatement covered by a single notice (*Ref SROH – S10.2.3 (4)*).

8.0 Testing and interpretation of cores

- 8.1 Works Promoters and/or Street Authorities should be afforded the opportunity to attend the appointed materials laboratory during the structured coring programme to view the core testing and analysis processes.
- 8.2 The appointed materials laboratory must have current UKAS accreditation covering the specified methods of testing.
- 8.3 Core samples shall be tested for compliance against the specification for depth and air voids appropriate to the edition of the SROH current at the time that the reinstatement was placed.
- 8.4 Core samples may also be assessed to determine whether the correct materials were used for the reinstatement. The presence of contamination, lack of bond between layers, etc should also be noted & recorded.
- 8.5 Reinstatements are considered to be non compliant where the core(s) tested prove that there is a failure to meet the minimum standards required under the SROH.

8.6 Depth Measurement

Each core sample shall be measured to determine the thickness of the individual layer(s) (and lifts where appropriate) as well as the overall depth of the recovered core. All depth measurements should be carried out in accordance with BS EN12697. For consistency it is recommended that where the size of the reinstatement exceeds 6sqm, core samples should be extracted in accordance with the SROH - S10.2.3 (4).

Measurements must be taken in a well lit environment and should be taken with the specimen (either the intact core or the individual layer(s) standing firmly on its upper face in a vertical position. As an alternative, the specimen may be laid on a level surface in a horizontal position and rolled as necessary to permit the taking of all measurements.

Measurements must be taken using a calibrated steel rule or approved jig or other device with 1mm graduations. A minimum of four measurements of depth (thickness) evenly spaced around the perimeter of each specimen must be recorded. All measurements shall have a limit deviation of ± 1 mm in accordance EN 12697: Part 36: 2003.

The depth of the specimen will be calculated from the average of the measurements taken and expressed to the nearest 1 mm.

8.7 Air void measurement

Air voids testing of a construction layer, e.g., surface or binder course should not be carried out if:

- Testing demonstrates that the sample does not comply with the required depth specification (see 8.6).
- Assessment determines that the wrong material has been used in the reinstatement.

Air voids will be determined in accordance with the SROH as follows.

The in-situ air voids content shall be calculated in accordance with EN 12697- 8.

For routine testing the maximum density shall be determined in accordance with EN 12697 – 5 Procedure A: Volumetric procedure.

Alternatively and with agreement of all parties the maximum density may be determined using the mid-point of the supplier's declared grading & binder content for that mix.

In all cases the core bulk density shall be determined in accordance with EN 12697 – 6, Procedure C: Bulk Density – Sealed specimen.

The maximum density and core bulk density shall be used to determine air void content in accordance with EN 12697 – 8. The result for each reinstatement shall be the average of all results obtained on the cores taken from that reinstatement.

Where the size of the reinstatement exceeds 6sqm, core samples will be extracted in accordance with the SROH - S10.2.3 (4) and the average air void content shall be calculated for that reinstatement. The reported result will comprise the mean value of all individual results from the cores sampled from that reinstatement but shall also show all the individual results leading to the summary.

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9.0 Reporting mechanisms and comparative data-sets

9.1 On completion of a structured coring programme a summary report should be produced by or on behalf of the Street Authority or Works Promoter undertaking the programme and circulated as appropriate.

9.2 The collection of comparative data is an important aspect of performance compliance monitoring. Individual summary reports will be tailored to individual writing styles but should include the table below.

Works Promoter 1	Works Promoter 2	Etc Etc	
			Total c/way sites.
			Total c/way compliant sites
			Total c/way non compliant sites
			C/way percentage compliant
			Total f/way sites
			Total f/way compliant sites
			Total f/way non-compliant sites
			F/way percentage compliant
			Total Numbers of sites cored
			Total Compliant
			Total Non-Compliant
			Total Percentage Complaint
			Analysis of non-compliance
			Surface course air void non-compliant
			Binder course air void non-compliant
			Combined surface course and binder course air void non-compliant
			Total air voids non-compliant
			Surface course depth non-compliant
			Binder course depth non-compliant
			Bound base (road base) depth non-compliant
			Combined surface course/binder course/bound base (road base) depth non-compliant
			Total depth non-compliant
			Combined depth and air void non-compliant
			Incorrect material used
			Incorrect polished stone value
			Presence of contamination / poor bond etc

- 9.3 Summary reports should include an appendix of the relevant UKAS laboratory analysis test data sheets.
- 9.4 Works Promoters should act on and respond to the information presented in the summary reports.
- 9.5 Summary reports issued on completion of a structured coring programme are additional to any information contained as part of a NRSWA Section 72(3) notice.

10.0 Defect notification and remediation

- 10.1 Core samples that are not compliant with the requirements of the SROH are also non compliant with the requirements of Section 71(1) of the NRSWA. Where core samples identify non compliance with the requirements of the SROH then the whole of the area reinstated is deemed to be non-compliant for defect notification purposes.
- 10.2 The Street Authority should issue a Notice to the Works Promoter, under Section 72(3) of the NRSWA identifying the non compliance and the required remedial action. UKAS Laboratory report sheets should be issued with the Section 72(3) Notice to confirm the non compliance if not already issued with summary report (see 9.3 above).

- 10.3 The detail of any remedial works and the timescales appertaining to any remedial reinstatement must be agreed with the street authority. Consideration may be given to the social and environmental impact of any remediation; however this should not be detrimental to the integrity of the reinstatement or of the highway. In the case of a proven non compliant reinstatement it is the discretion of the Street Authority to determine the requirement for remedial works and this may include assessing the quality of the reinstatement relative to the condition of the adjacent surfaces. **(Ref SROH S12.1.2).**
- 10.4 Where a non-compliant reinstatement is identified then the guarantee period appertaining to that reinstatement is deemed not to have started.
- 10.5 Where non-compliance is not agreed by the Works Promoter a mechanism for escalation should be agreed by both parties. Where resolution is not reached refer to the HAUC (UK) dispute resolution process.
- 10.6 Core samples should be retained for a minimum period of 1 month after issue of report / defect notification unless agreed otherwise by all parties. Where non-compliance is not agreed any cores should be retained until the matter is resolved.

11.0 Cost recovery

- 11.1 The recovery of costs incurred as a result of investigatory works is covered under Section 96 of NRSWA and the appropriate Regulations.

Invoices for those costs should be calculated in accordance with the above regulations and invoiced in a transparent manner. An example of how this can be achieved is shown in **Appendix A3**.

Costs may only be recovered where non-compliance has been proven.

Appendix A1 – Example standard letter of notification

Address 1
Address 2
Address 3
Address 4

Contact 1
Contact 2

Date (minimum 1 month in advance of date of programme commencement)

Dear Sir or Madam

New Roads and Street Works Act 1991

Notification of intention to carry out a structured coring programme

Please find attached a schedule of reinstatements that will be sampled as part of a structured coring programme to take place commencing.....In accordance with best practice recommendations all reinstatements to be sampled have been marked for identification purposes.

All reinstatements have been selected based on street works notices as submitted by your company.

Should your company consider that any of the sample reinstatements as identified:

- Do not relate to the associated works reference.
- Do not relate to works that your company have completed.
- Is not a permanent reinstatement.
- Are visually non-compliant with the SROH.

Then you must inform this authority no later than 10 working days before this core programme commences.

It is recommended that a representative of your company attends each reinstatement during this structured coring programme to view the core sampling process.

It is also recommended that a representative of your company makes arrangements to attend the appointed UKAS accredited materials laboratory during this coring programme to view the core testing and analysis processes.

The details for our UKAS accredited material laboratory are attached.

Yours Faithfully Etc etc

Appendix A2 – Examples of Certificates of sampling



Environment, Economy and Culture Directorate
Keith Grant, County Scientific Officer
County Scientific & Materials Unit, Little Moor House, Falcon Road, Exeter, EX2 7PL
Tel: (01392) 386500 Fax: (01392) 386477 E-mail: materials.laboratory@devon.gov.uk



Certificate of Sampling of Utility Reinstatement by Coring

**SPECIFICATION FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS - APRIL 2010
(New Roads and Streetworks Act 1991)**

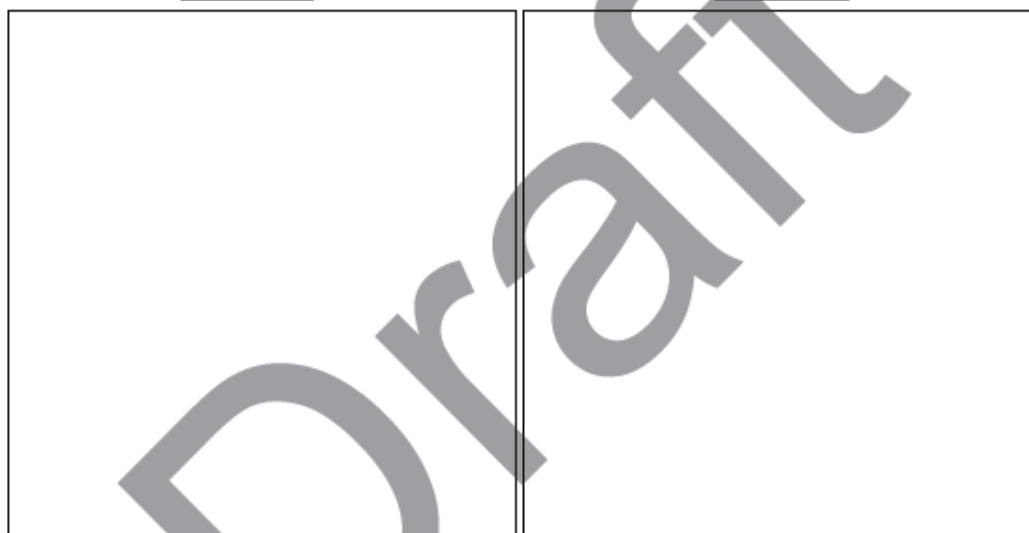
Core No.:
Sample No.:
Scheme:

Time Cored:
Date Sampled:
Sampled By:
Road Category:
Min Depth (mm):
Utility Rep:

Location:
Works Record:
Site Risk Category:
Statutory Undertaker:

Photo/Sketch 1

Photo/Sketch 2



Reason for Sampling:
Core Diameter (mm):
Condition of Core(s):
Weather Conditions:

Size of Trench (m):
No. of Pairs Taken:

For trenches with an area greater than 18m²:-
No. of core(s) taken:
Area of trench
represented by core(s):

Core obtained in accordance with our UKAS accreditation and Technical Procedure TP 10.4.3

Signed:.....

Date:

Remarks/Any departures:

FIRST INTERVENTION LTD

TELEPHONE NO. 01737 780 384

TEST REPORT / RECORD OF CORE SAMPLE**CLIENT****ADDRESS OF CORE SAMPLE**

CERTIFICATE NO.	<input type="text" value="52167"/>
CORE SIZE	<input type="text" value="100"/> mm
SAMPLE No.	<input type="text" value="001"/>
SAMPLE COND ON REC	<input type="text" value="Good"/>
SAMPLE REC. DATE	<input type="text" value="05/10/2011"/>
DATE OF TEST	<input type="text" value="05/10/2011"/>
SAMPLED BY (3) (5) (7)	<input type="text" value="N/A"/>
TESTED BY	<input type="text" value="N/A"/>
SAMPLING PLAN	<input type="text" value="N/A"/>
SAMPLING CERT AVAIL	<input type="text" value="Yes"/>
DATE OF SAMPLE:	<input type="text" value="05/10/2011"/>
LOCATION	<input type="text" value="N/A"/>
ROAD CLASS	<input type="text" value="N/A"/>
ROAD TYPE	<input type="text" value="N/A"/>
HIGHWAY AUTHORITY	<input type="text" value="N/A"/>
CLIENT REF. NO.	<input type="text" value="N/A"/>
DATE OF ISSUE	<input type="text" value="05/10/2011"/>
UTILITY	<input type="text" value="N/A"/>
TEAM/COMPANY	<input type="text" value="N/A"/>

SAMPLING/TEST METHOD/S

- (1) IN-HOUSE METHOD FI01 : 2011
 (2) IN-HOUSE METHOD FI02 : 2006
 (3) BS EN12697-27:2001
 (4) IN-HOUSE METHOD FI04 : 2011
 (5) BS EN12504-1:2009
 (6) IN-HOUSE METHOD FI06 : 2011
 (7) BSEN12697:PART 36:2003
 (8) IN-HOUSE METHOD FI08 : 2011

6 Point Measure for Surface Course

1	2	3	4	5	6	Wearing Average
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> mm

6 Point Measure for Binder Course

1	2	3	4	5	6	Base Average
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> mm

Totals

<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> mm
--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	-----------------------------------

LAYER REF.	DEPTH FROM mm	DEPTH TO mm	(1) (6) (8) LAYER DEPTH mm.	(2) MATERIAL DESCRIPTION	(2) AGG SIZE mm.	(2) AGG TYPE	(2) VOIDS IN LAYER	(2) LAYER CONDITION	NRSWA ACT 1991 COMPLIES	NOTE IDENTIFIER
A	0	0	0	N/A	0	N/A	N/A	N/A	N/A	
B	0	0	0	N/A	0	N/A	N/A	N/A	N/A	
C	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

SURFACE CROWNING	(4)	N/A	N/A
SURFACE DEPRESSION	(4)	N/A	N/A
REINSTATEMENT AREA	(4)	0	0
REINSTATEMENT M2	(4)	0	

Comments:

*****SAMPLE CERTIFICATE*****

AUTHORISED SIGNATORIE

DATE OF ISSUE: 05/10/2011

P.BURNS Managing Director / I. STEELE Technical Manager / S. WALLACE Senior Technician

SAMPLES WILL BE DISPOSED OF AFTER 14 DAYS FROM DATE OF ISSUE OF THIS CERTIFICATE UNLESS OTHERWISE INSTRUCTED

KEY: D=DISINTEGRATED P=PART DISINTEGRATED I=INTACT H=HARDSTONE L=LIMESTONE

ALL DATA RECORDED ON THIS SHEET IS FOR INFORMATION PURPOSES ONLY
 FIRST INTERVENTION LTD
 50 HOLMETHORPE AVE, HOLMETHORPE IND. EST., REDHILL, SURREY, RH1 2N
 REGISTERED IN ENGLAND No. 3293198

Tests marked with an* are "Not UKAS Accredited" in this report / certificate and are not included in the UKAS Accreditation Schedule for our laboratory.

"Opinions and interpretations expressed herein are outside the scope of UKAS accreditation".

FORM QM24-01 March 2011

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Appendix A3 – Example formula for the recovery of costs.

A3.0 Introduction

3.0.1 As a measure of transparency a street authority may consider using the following formula to calculate any applicable costs incurred as a result of extracting, testing and analysing non compliant core samples. This formula will result in an average cost per core and should be agreed between all parties as a replacement for individual core costs.

A3.1 Recovery of costs

3.1.1 Where a non compliance with the SROH is identified then the recoverable costs per core may be calculated using the following formula;

$$\text{Cost per core} = \frac{A+B+C+D+E+F+G}{\text{Total number of core samples taken (including compliant cores)}}$$

- A** Identifying potential sample – One hour for a single operative, (*published street authority hourly recharge rate*).
- B** Confirming sample – One hour per site (or street if multiple cores in a single location) for a single operative multiplied by the number of visually compliant sites to be sampled, (*published street authority hourly recharge rate*).
- C** Notify undertakers of core programme, (standard letter) – One hour for a single operative, (*published street authority hourly recharge rate*).
- D** Extraction and testing of core samples and production of lab reports. – as invoiced by UKAS accredited laboratory.
- E** Assist UKAS technician in extracting cores - Single operative for “X” days at 7.4hrs per day, (*published street authority hourly recharge rate*).
(**X = duration of the core extraction element of the total program**)
- F** Costs for any identified additional traffic management – as invoiced by traffic management contractor.
- G** Production of completed programs Core Performance Report - Four hours for a single operative (*published street authority hourly recharge rate*).

Note: The formula does not require all the elements (A-G) to be undertaken and should only include those elements which result in a direct or actual cost.