

[2011 Wells Road.pdf](#)

[2013 Hengrove Way.pdf](#)

[2014 Hengrove Way.pdf](#)

[BNES Keynsham bypass Report 11367-2016.pdf](#)

North Somerset Council Highway Services Laboratory

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REPORT No: 11/03-BCC-Wells Road Bristol-

CORES

Page 1 of 3

( + plan + photographs)

Issue Date : 10/09/2011

**CLIENT and ADDRESS**

**Mr Jim Creamer Highway Operations Manager Bristol City Council Planning Transport and Sustainable Development Brunel House St Georges Road Bristol BS1 5UY Tel 01179 223133 mob 07710 396997**

DATE SAMPLE RECEIVED : 07/09/11

DATE SAMPLE TESTED : 09/09/11

**TEST : Visual Examination of Cores and Each layer chemically tested for Tar presence and those identified further tested for Waste Acceptance Criteria Certification**

SUMMARY OF RESULTS : (TOTAL LISTED HERE = 12 )

**WELLS ROAD BRISTOL**

**Bituminous Depths**

Core No (WW1 ) = 205mm Tar indicated below 145mm

Core No (WW2 ) = 200mm Tar indicated below 140mm

Core No (WW3 ) = 230mm Tar indicated below 185mm

Core No (WW4 ) = 175mm Tar indicated below 125mm

Core No (WW5 ) = 135mm Tar indicated below 105mm

Core No (WW6 ) = 195mm Tar indicated below 95mm

Core No (WW7 ) = 150mm Tar indicated below 60mm

Core No (WW8 ) = 95mm Bitumen

Core No (WW9 ) = 130mm Bitumen

Core No (WW10 ) = 145mm Bitumen

Core No (WW11 ) = 95mm Bitumen

Core No (WW12 ) = 105mm Bitumen

**# = NIL x Determinations for Waste Acceptance Criteria (WAC ) for Tar bound carried out**

TEST ENGINEER : BM/DET

REPORT AUTHOR : DET

AUTHORISED SIGNATURE



**D.E. TURNER : LABORATORY MANAGER**

*(Any Opinions, Judgements or Interpretations expressed in this Report are outside the scope of UKAS Accreditation )*

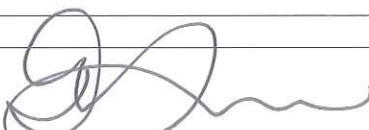
<b>SITE CORES</b>	
North Somerset Council Highway Services Laboratory	
<b>SITE LOCATION : WELLS ROAD BRISTOL</b>	page 2 of Report 11/03
<b>VISUAL CORE SUMMARY AND TAR / WAC TEST DETAILS</b>	

Core no	Total Depth mm	Layer Depths mm + Material Type per Layer		W A C	Binder Type and WAC Sample Details #
WW1	205mm	25	SMA 14 surf		Bitumen
		30	HRA 30/14F surf HS (planed)		Bitumen
		30	HRA 30/14F surf Slag (planed)		Bitumen
		20	AC10 close surf		Bitumen
		40	AC14 close surf		Bitumen
		60	AC32 dense base		<b>Tar indicated</b>
			Onto granular material		
WW2	200mm	40	HRA 30/14F surf HS		Bitumen
		25	AC20 dense bin		Bitumen
		45	HRA 30/14F surf HS (planed)		Bitumen
		30	AC10 close surf		Bitumen
		60	AC32 dense base		<b>Tar indicated</b>
			Onto granular material		
WW3	230mm	35	SMA 10 surf		Bitumen
		--	Core separated		
		50	AC20 dense bin		Bitumen
		35	HRA 30/14F surf HS (planed)		Bitumen
		30	AC 6 dense surf		Bitumen
		35	AC14 close surf		Bitumen
		45	AC20 dense bin		<b>Tar indicated</b>
			Onto granular material		
WW4	175mm	50	SMA 14 surf		Bitumen
		55	HRA 30/14F surf HS (planed)		Bitumen
		20	AC 6 dense surf		Bitumen
		50	AC20 dense bin : <b>partial disintegration of layer on extraction</b>		<b>Tar indicated</b>
			Onto granular material		
WW5	135mm	35	SMA 14 surf		Bitumen
		30	HRA 30/14F surf HS (planed)		Bitumen
		40	HRA 30/14F surf Slag (planed)		Bitumen
		30	AC20 dense bin		<b>Tar indicated</b>
		--	Core separated		
		--	Onto Concrete : total depth not determined		
WW6	195mm	15	AC 6 dense surf		Bitumen
		30	AC14 close surf (Slag)		Bitumen
		25	AC10 close surf		Bitumen
		25	AC10 close surf		Bitumen
		20	AC 6 dense surf		<b>Tar indicated</b>
		80	AC32 dense base		<b>Tar indicated</b>
			Onto granular material		

REMARKS : (a) NIL WACs on this page

(b) See Site Plan for Core Locations

AUTHORISED SIGNATURE :



D.E. TURNER : LABORATORY MANAGER

DATE : 09/09/11

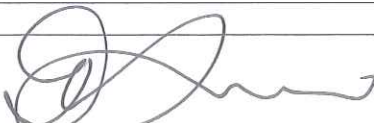
<b>SITE CORES</b>	
North Somerset Council Highway Services Laboratory	
<b>SITE LOCATION : WELLS ROAD BRISTOL</b>	page 3 of Report 11/03
<b>VISUAL CORE SUMMARY AND TAR / WAC TEST DETAILS</b>	

Core no	Total Depth mm	Layer Depths mm + Material Type per Layer		W A C	Binder Type and WAC Sample Details #
WW7	150mm	20	SMA 14 surf		Bitumen
		40	AC 6 dense surf		Bitumen
		90	AC20 dense bin		<b>Tar indicated</b>
			Onto granular material		
WW8	95mm ( + Concrete )	35	SMA 14 surf		Bitumen
		30	HRA 30/14F surf Slag (planed)		Bitumen
		30	AC10 close surf		Bitumen
		--	Core separated		
		--	Onto Concrete : total depth not determined		
WW9	130mm ( + Concrete )	45	SMA 14 surf		Bitumen
		55	HRA 30/14F surf Slag (planed)		Bitumen
		30	AC10 close surf		Bitumen
		--	Core separated		
		--	Onto Concrete : total depth not determined		
WW10	145mm ( + Concrete )	30	SMA 14 surf		Bitumen
		40	HRA 30/14F surf Slag (planed)		Bitumen
		75	AC32 dense base		Bitumen
		--	Core separated		
		--	Onto Concrete : total depth not determined		
WW11	95mm ( + Concrete )	35	SMA 14 surf		Bitumen
		60	HRA 30/14F surf Slag (planed)		Bitumen
		--	Core separated		
		--	Onto Concrete : total depth not determined		
WW12	105mm	20	SMA 14 surf		Bitumen
		45	HRA 30/14F surf Slag (planed)		Bitumen
		40	AC10 close surf		Bitumen
		--	Core separated		
		--	Onto Concrete : total depth not determined		

**REMARKS : (a) NIL WACs on this page**

**(b) See Site Plan for Core Locations**

**AUTHORISED SIGNATURE :**

  
**D.E. TURNER : LABORATORY MANAGER**

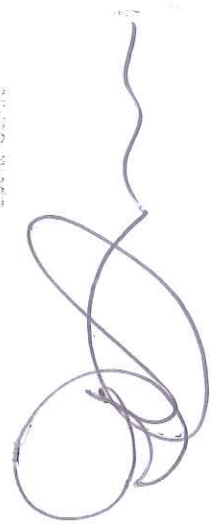
**DATE : 09/09/11**



6 Cones WW1 → WW6 inclusive

NORTH SOMERSET COUNCIL  
HIGHWAY SERVICES LABORATORY

SOUTH EAST  
SOUTH WEST



6 Cones





6. Core:  $WWT \Rightarrow WWI$  inclusive

**WORTH SOMERSET COUNCIL  
HIGHER SERVICES LABORATORY**













WW5

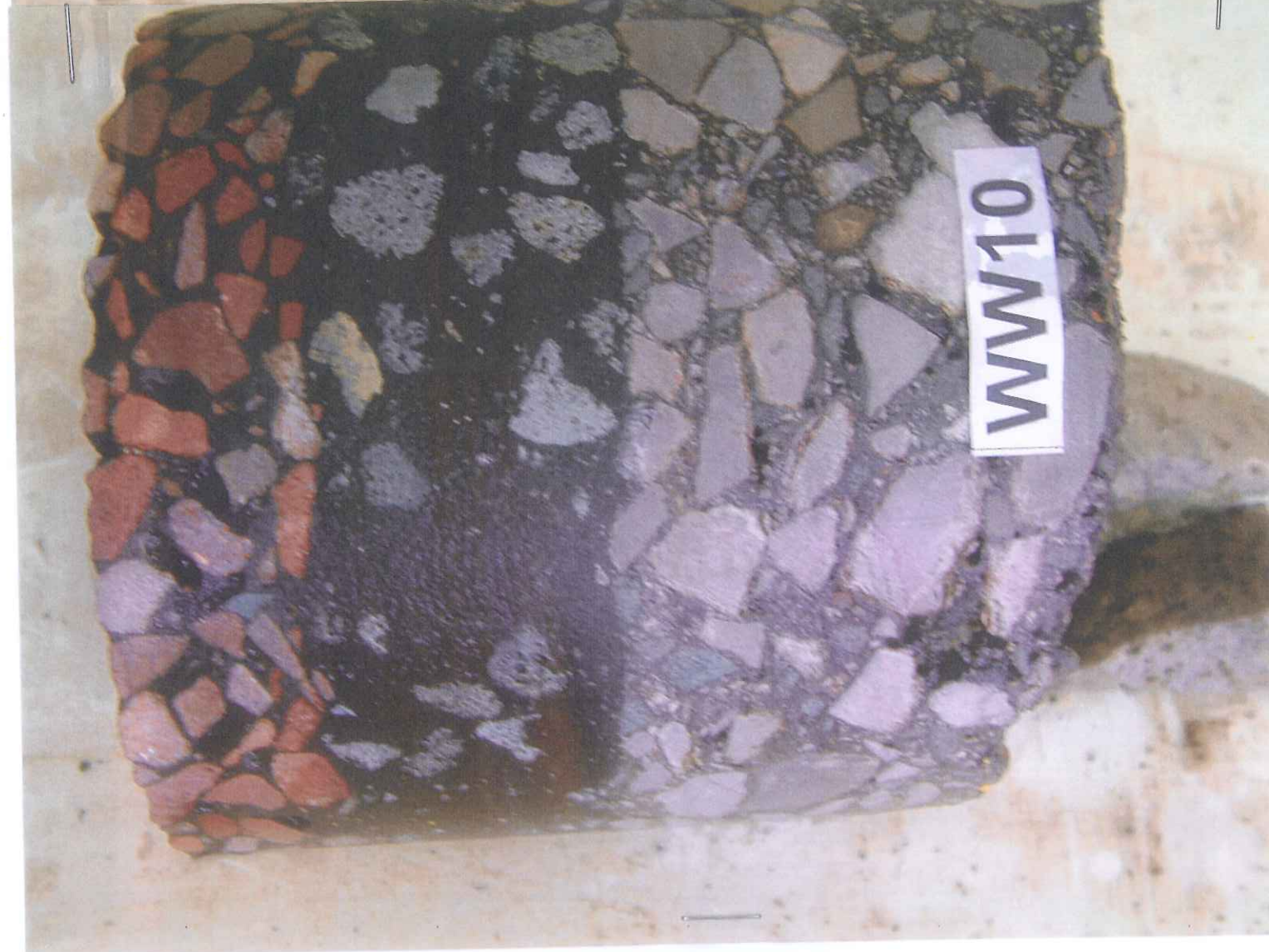
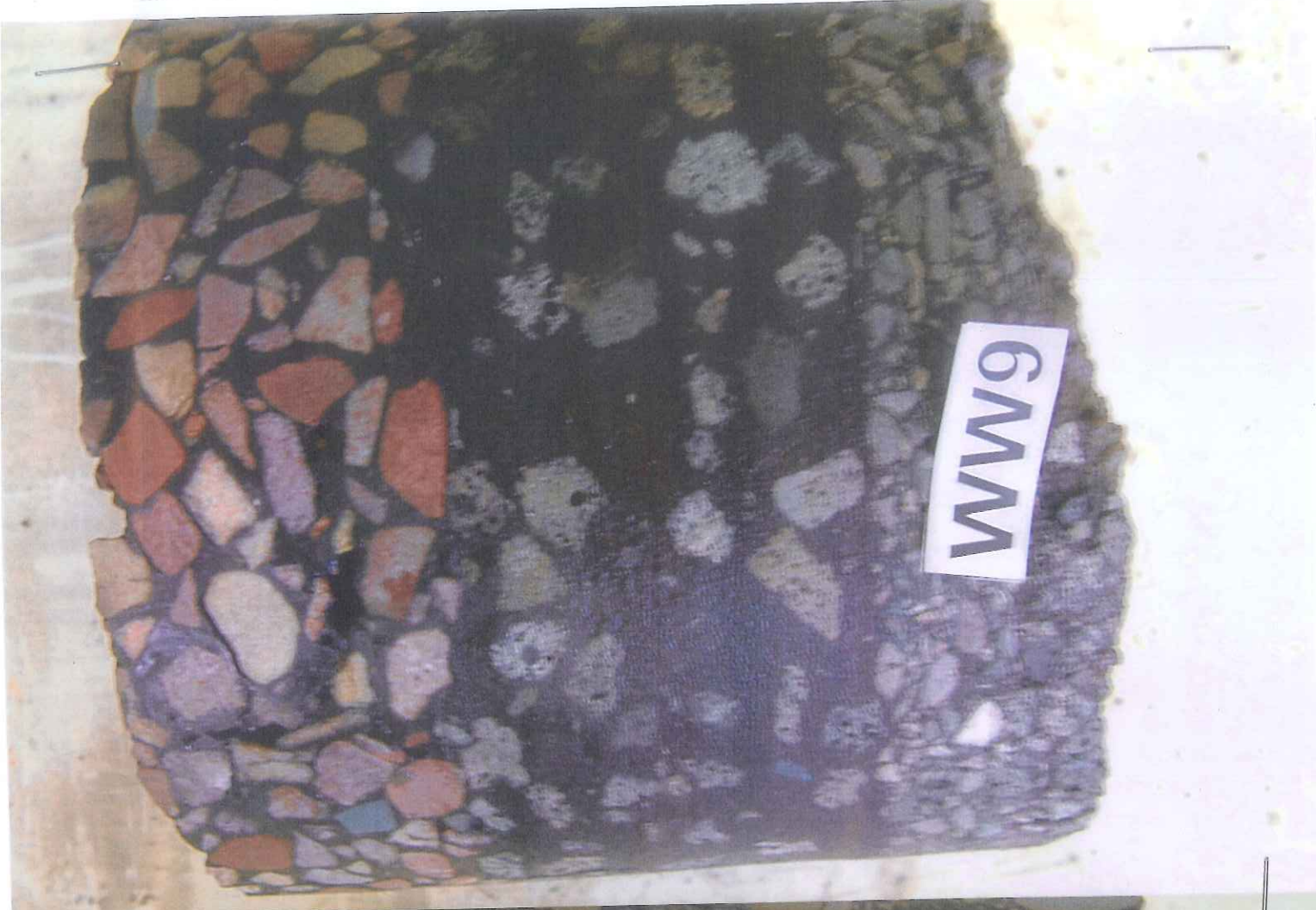


WW6













WW11



WW12



North Somerset Council Highway Services Laboratory

North Somerset Council Highway Services Laboratory REPORT No: 14/19-BCC-Hengrove Way Bristol  
\*\* Head Office : CASTLEWOOD

B3130 Tickenham Road  
Clevedon  
North Somerset BS21 6FW

WAC CORES  
Page 1 of 2  
( + Photographs + Site Plan )  
Issue Date : 15/06/13

Mr Phil Davies Bristol City Council Planning Transport and Sustainable Development Brunel House St  
Georges Road Bristol BS1 5UY Tel 01179 223133

DATE SAMPLE RECEIVED : 11/06/13 DATE SAMPLE TESTED : 13/06/13  
TEST : Visual Examination of Cores and selected Cores tested for Landfill Waste Acceptance Criteria : BS EN  
12457-3 : 2001

SUMMARY OF RESULTS : (TOTAL LISTED HERE = 6 )

**HENGROVE WAY BRISTOL**

Core No	Depth mm	Core Binder Composition Bitumen or Tar or Both	WAC Tested
HW1	220mm	Bitumen	Nil
HW2	130mm	Bitumen	Nil
HW3	120mm	Bitumen	Nil
HW4	145mm	Bitumen	Nil
HW5	145mm	Bitumen	Nil
HW6	140mm	Bitumen	Nil

TEST ENGINEER : BM

REPORT AUTHOR : DET

AUTHORISED SIGNATURE:

  
D.E. TURNER : LABORATORY MANAGER

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**SITE CORES**

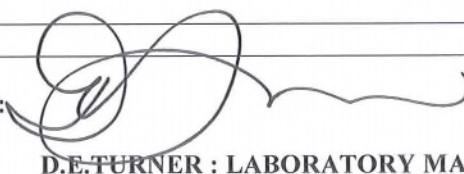
North Somerset Council Highway Services Laboratory

**SITE LOCATION : HENGROVE WAY BRISTOL**

page 2 of Report 14/19

**VISUAL CORE SUMMARY AND TAR / WAC TEST DETAILS**

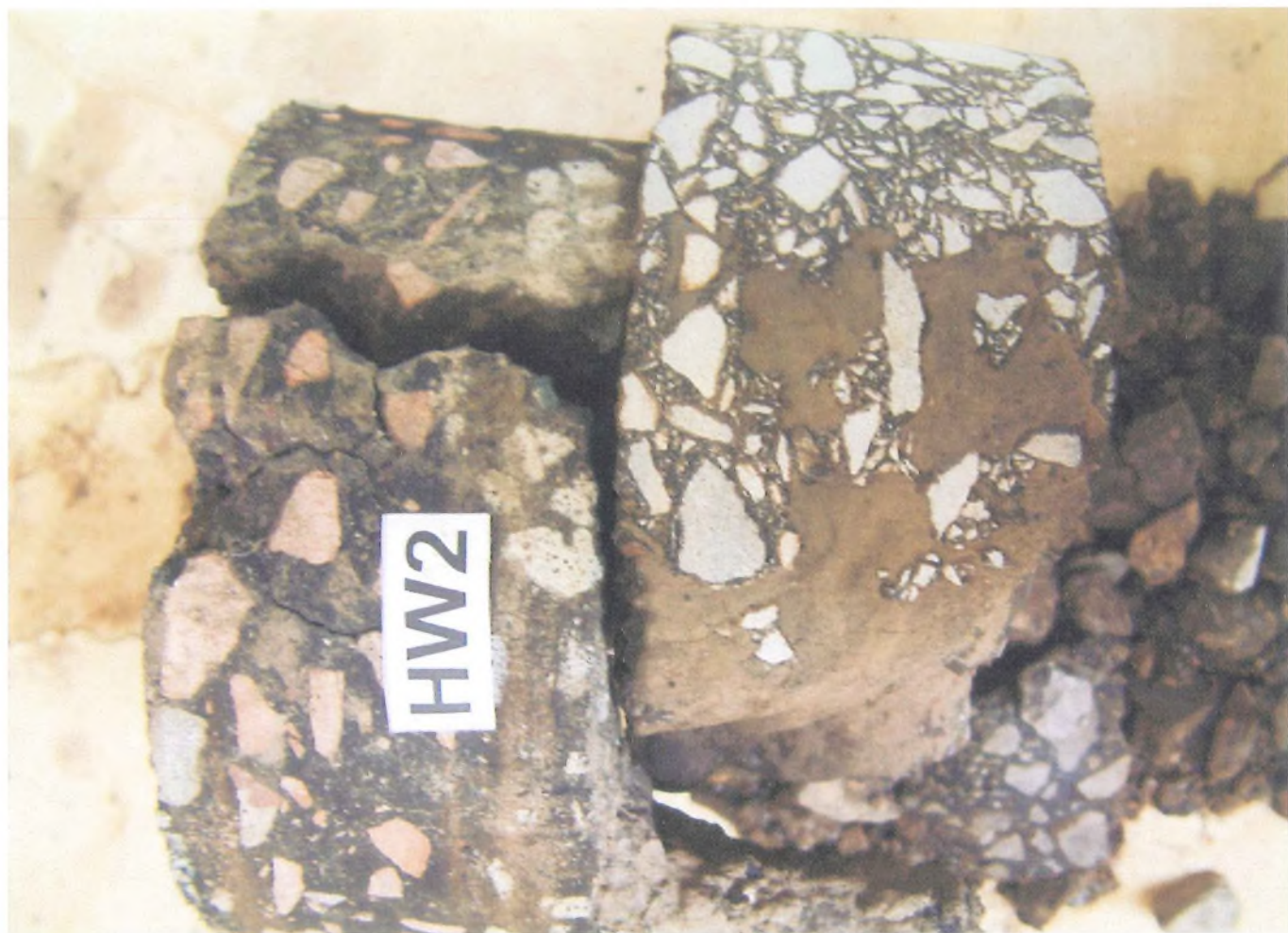
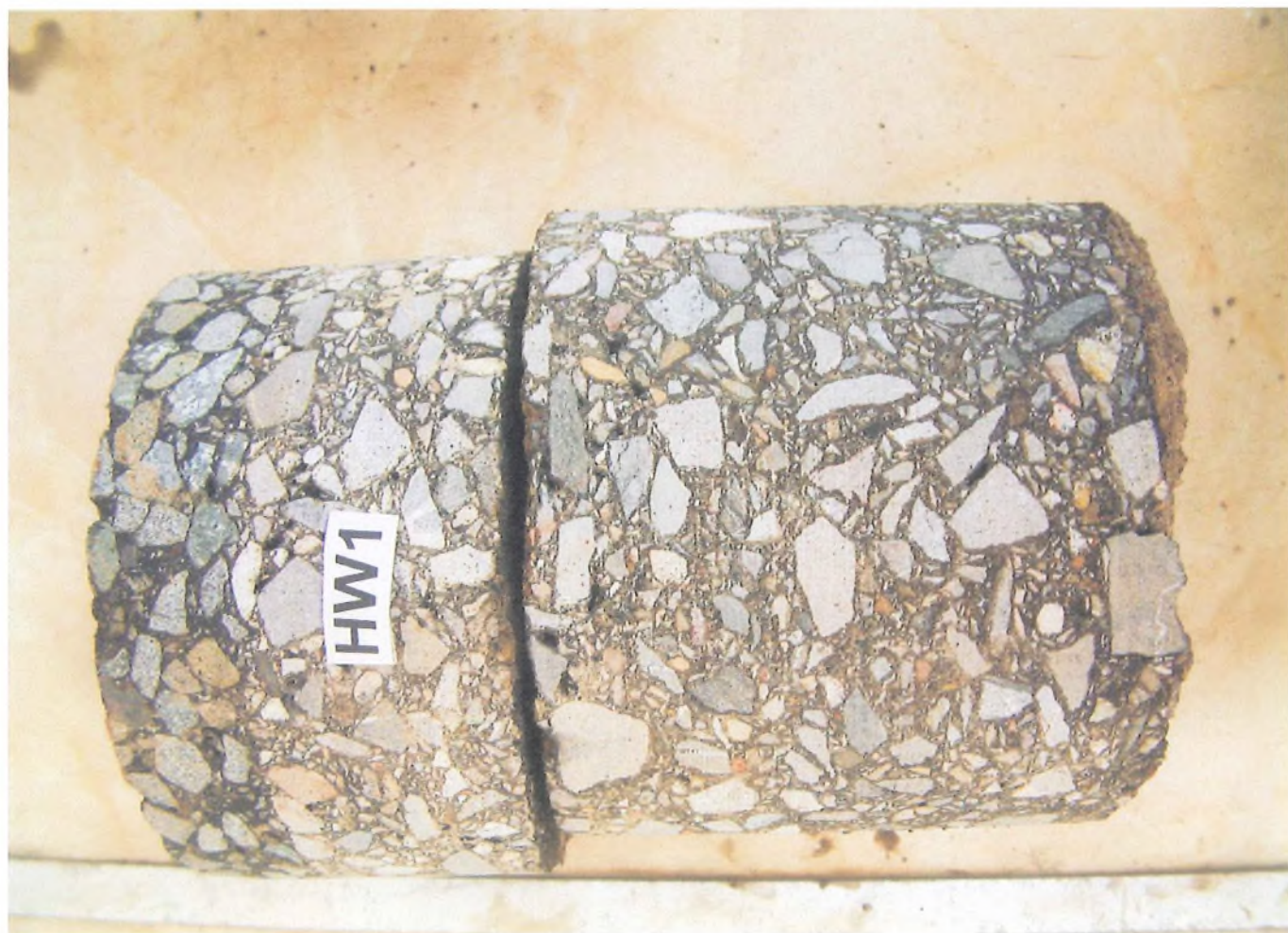
Core no	Total Depth mm	Layer Depths mm + Material Type per Layer		W A C	Binder Type and WAC Sample Details #
HW1	220mm	30mm	SMA 14 surf		Bitumen
		50mm	AC20 dense bin		Bitumen
		--	Core separated		
		140mm	AC32 dense base		Bitumen
			Onto granular material		
HW2	130mm	--	Surface dressing layer		Bitumen
		40mm	HRA 30/14F surf		Bitumen
		20mm	HRA 30/14F surf		Bitumen
		--	Core separated		
		70mm	AC32 dense base		Bitumen
			partial disintegration of layer on extraction		
			Onto granular material		
HW3	120mm	--	Surface dressing layer		Bitumen
		50mm	HRA 30/14F surf		Bitumen
		10mm	HRA 30/14F surf		Bitumen
		60mm	AC32 dense base		Bitumen
			Onto granular material		
HW4	145mm	--	Surface dressing layer		Bitumen
		40mm	HRA 30/14F surf		Bitumen
		--	Surface dressing layer		Bitumen
		35mm	HRA 30/14F surf		Bitumen
		70mm	AC32 dense base		Bitumen
			Onto granular material		
HW5	145mm	--	Surface dressing layer		Bitumen
		40mm	HRA 30/14F surf		Bitumen
		--	Surface dressing layer		Bitumen
		30mm	HRA 30/14F surf		Bitumen
		75mm	AC32 dense base		Bitumen
			Onto granular material		
HW6	140mm	45mm	HRA 30/14F surf		Bitumen
		--	Surface dressing layer		Bitumen
		30mm	HRA 30/14F surf		Bitumen
		65mm	AC32 dense base		Bitumen
			Onto granular material		

**REMARKS : (a) NIL WACs on this page**
**(b) See Site Plan for Core Locations**
**AUTHORISED SIGNATURE :**

  
**D.E. TURNER : LABORATORY MANAGER**
**DATE : 13/06/13**

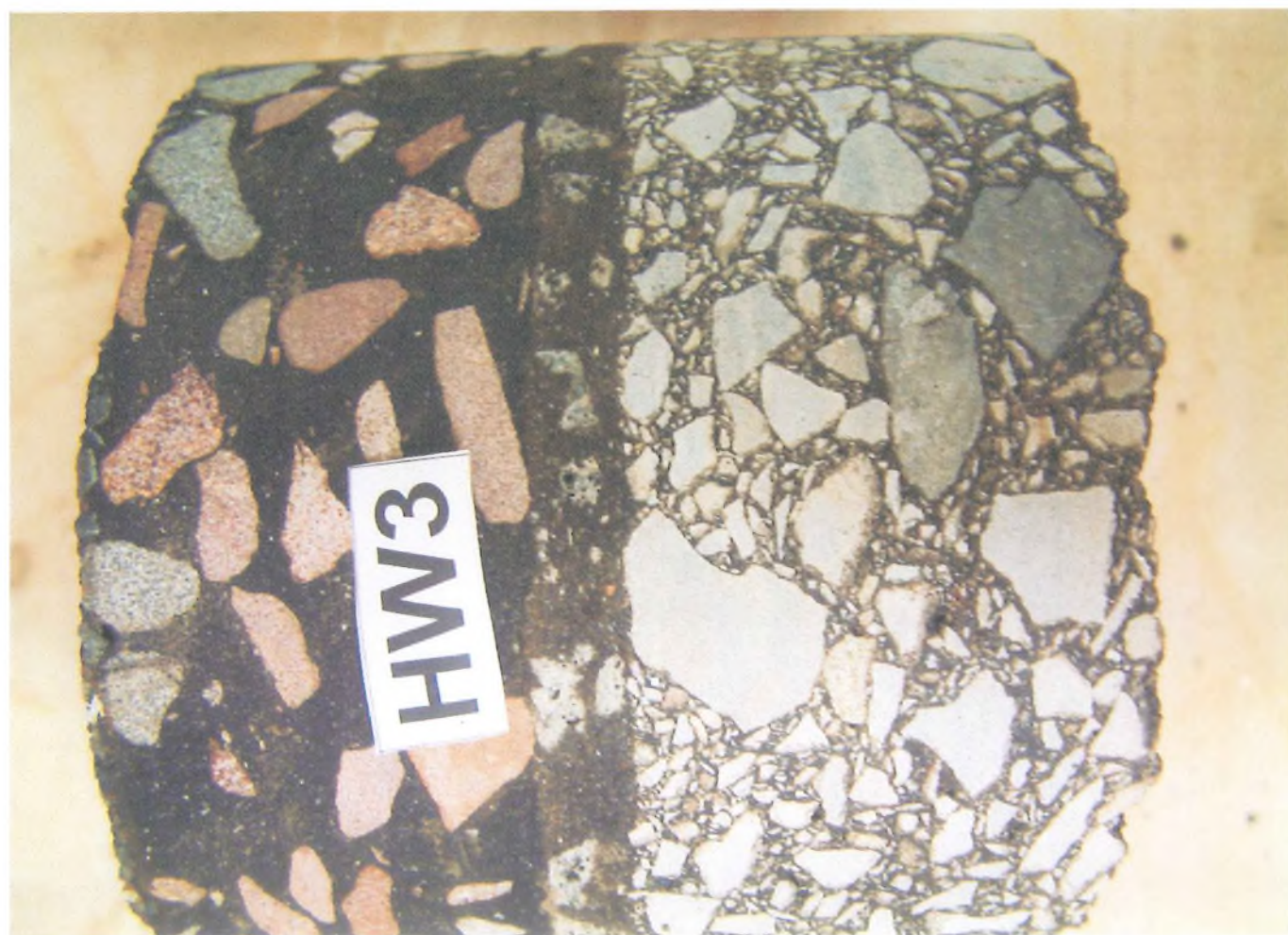




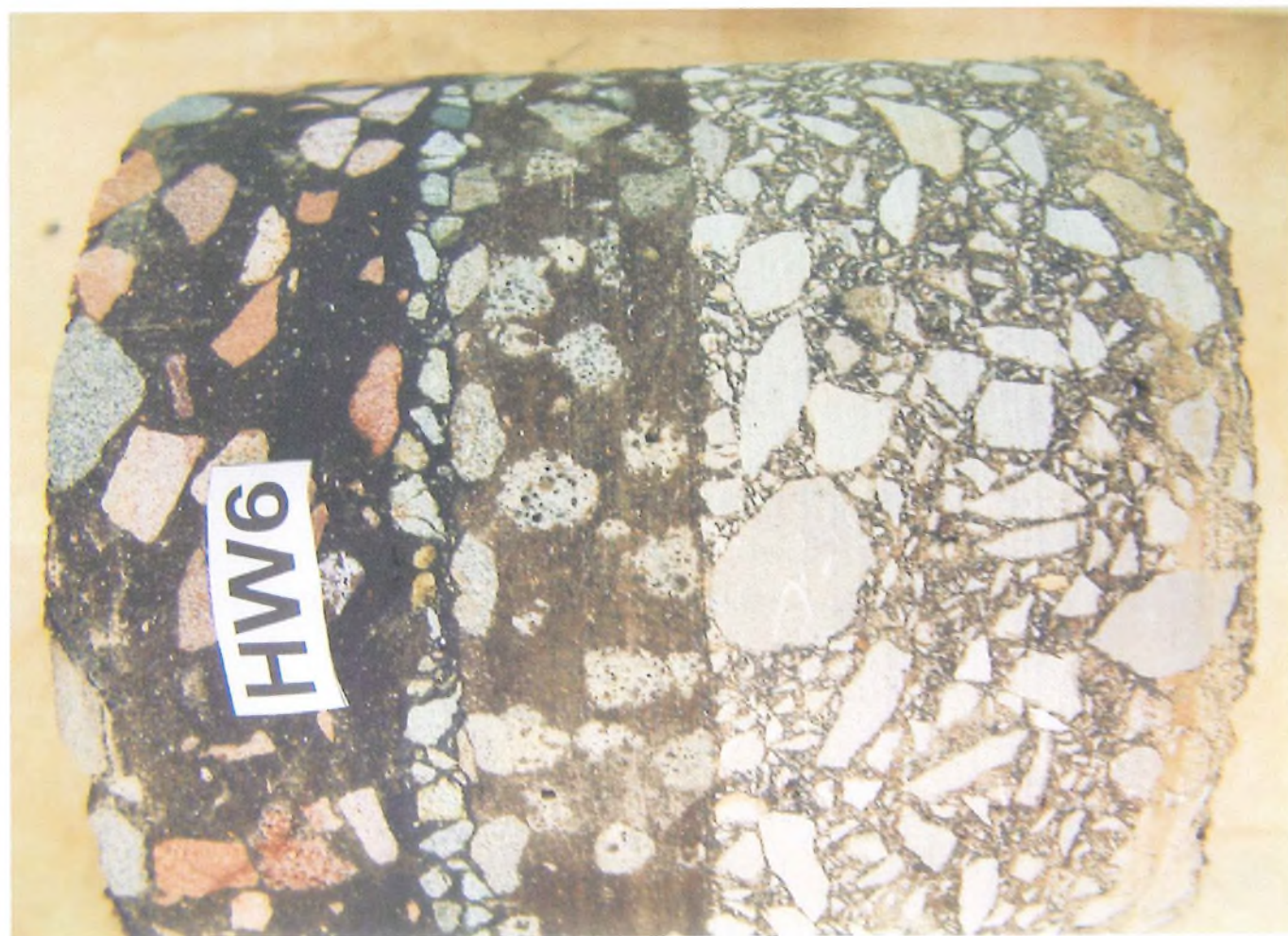
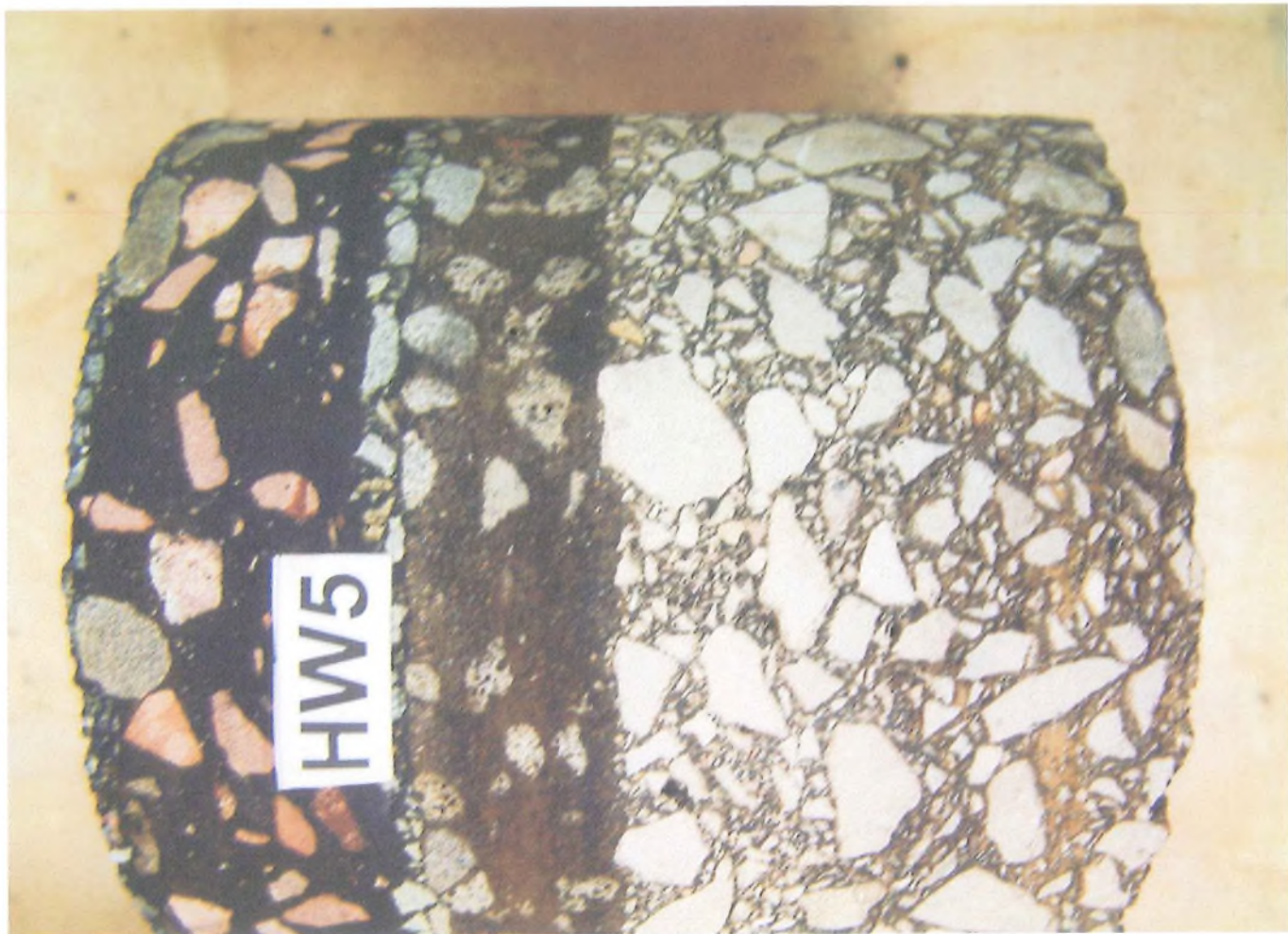














## TECHNICAL REPORT ROAD CORES

CLIENT:

**Bristol City Council**

CONTRACT:

**HWW - Hengrove Way, Whitchurch**

DATE CORED:

**3<sup>rd</sup> July 2014**

FAO: **Mr. Philip Davies**

REPORT ADDRESS:

**Bristol City Council  
Place  
Highways Delivery  
Wilder House  
Wilder Street  
Bristol  
BS2 8PH**

Order No.: **60075788**

REPORT NO: **14-54898 / Rev 0 / MS – 12/08/2014**

APPROVED BY:



S. J. White *FIQ MIAT* ☐

A. Bates ☐

K. D. Tiller ☐

M. Slater ☒

R.J.Holloway *BSc (Hons) MSc FGS CEnv MCIWEM* ☐

DATE:

**12 August 2014**

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Client: **Bristol City Council**  
Contract: **HWW - Hengrove Way, Whitchurch**  
Date Cored: **3<sup>rd</sup> July 2014**

---

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**2.0 VISUAL CORE EXAMINATION RECORD AND TAR / WAC TEST DETAILS.....2**

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**5.0 QUALITY STATEMENT.....7**

**APPENDICES**

**APPENDIX A – SITE PLANS**

**APPENDIX B - CORE PHOTOGRAPHS**






Client: **Bristol City Council**  
 Contract: **HWW - Hengrove Way, Whitchurch**  
 Date Cored: **3<sup>rd</sup> July 2014**

## 1.0 SUMMARY OF VISUAL EXAMINATION OF CORES and SELECTED CORES FOR TEST

- 1.1 An instruction was received from Mr. Philip Davies to attend their site at Hengrove Way, in Whitchurch on 3<sup>rd</sup> July 2014. The purpose of the visit was to conduct sampling of in-situ cores for laboratory visual examination and selection of cores for chemical property testing for Landfill Waste Acceptance Criteria (W.A.C.) to BS EN 12457-3.
- 1.2 A summary of the examination results is shown below in Table 1, the total number of cores listed = **Ten**.

### 1.3 TABLE 1.0 –INDICATED BINDER COMPOSITION & SELECTED WAC TESTING

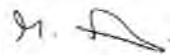
Core Ref.	Depth (mm)	Core Binder Composition (Bitumen, Tar or Both)	WAC Tested	WAC Test Lab. Ref.
HWW1	135mm	Bitumen	N/A	N/A
HWW2	130mm	Bitumen	N/A	N/A
HWW3	125mm	Bitumen	N/A	N/A
HWW4	145mm	Bitumen	N/A	N/A
HWW5	135mm	Bitumen	N/A	N/A
HWW6	130mm	Bitumen	N/A	N/A
HWW7	130mm	Bitumen	N/A	N/A
HWW8	135mm	Bitumen	N/A	N/A
HWW9	130mm	Bitumen	N/A	N/A
HWW10	145mm	Bitumen	N/A	N/A
Remarks: <b>NB: Granular material below all Cores taken was poorly compacted</b>				
Examined By: <b>DT</b>			Date Examined : <b>10/07/14</b>	
Approved By: 			Date Approved: <b>17/07/14</b>	
Approved Signatories : [ ] <b>S J White</b> Head of Laboratories [ ] <b>A Bates</b> Laboratory Manager [ ] <b>K Tiller</b> Technical Manager [ ✓ ] <b>M Slater</b> Senior Technician				
ANY OPINIONS, JUDGEMENTS OR INTERPRETATIONS EXPRESSED IN THIS REPORT ARE OUTSIDE THE SCOPE OF UKAS ACCREDITATION				



Client: **Bristol City Council**  
 Contract: **HWW - Hengrove Way, Whitchurch**  
 Date Cored: **3<sup>rd</sup> July 2014**

## 2.0 VISUAL CORE EXAMINATION RECORD AND TAR / WAC TEST DETAILS

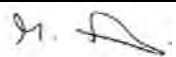
### 2.1 TABLE 2.0 – EXAMINATION RECORDS

Core Ref. (Loc.)	Total Depth (mm)	Layer Depths (mm)	Visual Layer Material Description*	WAC	Binder Type and WAC Sample Details #
HWW1 (c/w)	135mm	-- 50mm -- 35mm 50mm	Surface dressing layer HRA30/14 surf Surface dressing layer HRA30/14 surf AC20 dense bin Onto granular material		Bitumen  Bitumen Bitumen
HWW2 (c/w)	130mm	-- 30mm -- 35mm 65mm	Surface dressing layer HRA30/14 surf Surface dressing layer HRA30/14 surf AC20 dense bin Onto granular material		Bitumen  Bitumen Bitumen
HWW3 (c/w)	125mm	-- 35mm -- 30mm 60mm	Surface dressing layer HRA30/14 surf Surface dressing layer HRA30/14 surf AC20 dense bin Onto granular material		Bitumen  Bitumen Bitumen
REMARKS NIL W.A.C.'s shown on this page (refer to Appendix C for W.A.C.certificates) See Core Photographic Records (refer to Appendix B). See Site Plan for Core Locations (refer to Appendix A).					
Loc. Legend		c/w = Carriageway; f/p = Footpath; l/b = Layby; b/l = Bus Lane			
Examined By: DT		Date Examined:		10/07/14	
Approved By: 		Date Approved:		17/07/14	
Approved Signatories : [ ] S J White Head of Laboratories [ ] A Bates Laboratory Manager [ ] K Tiller Technical Manager [ ✓ ] M Slater Senior Technician					
ANY OPINIONS, JUDGEMENTS OR INTERPRETATIONS EXPRESSED IN THIS REPORT ARE OUTSIDE THE SCOPE OF UKAS ACCREDITATION					



Client: **Bristol City Council**  
 Contract: **HWW - Hengrove Way, Whitchurch**  
 Date Cored: **3<sup>rd</sup> July 2014**

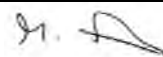
## 2.2 **TABLE 2.1 – EXAMINATION RECORDS**

Core Ref. (Loc.)	Total Depth (mm)	Layer Depths (mm)	Visual Layer Material Description*	WAC	Binder Type and WAC Sample Details #
HWW4 (c/w)	145mm	-- 35mm 40mm 70mm	Surface dressing layer HRA30/14 surf HRA30/14 surf AC20 dense bin Onto granular material		Bitumen Bitumen Bitumen
HWW5 (c/w)	135mm	-- 40mm 35mm 60mm	Surface dressing layer HRA30/14 surf } CORE SPLIT FULL HRA30/14 surf } DEPTH OF ALL 3 AC20 dense bin } LAYERS Onto granular material		Bitumen Bitumen Bitumen
HWW6 (c/w)	130mm	-- -- 45mm 35mm 50mm	High Friction Course Surface dressing layer HRA30/14 surf HRA30/14 surf AC20 dense bin Onto granular material		Bitumen Bitumen Bitumen
REMARKS NIL W.A.Cs shown on this page (refer to Appendix C for W.A.C.certificates) See Core Photographic Records (refer to Appendix B). See Site Plan for Core Locations (refer to Appendix A).					
Loc. Legend		c/w = Carriageway; f/p = Footpath; l/b = Layby; b/l = Bus Lane			
Examined By: DT			Date Examined: 10/07/14		
Approved By: 			Date Approved: 17/07/14		
Approved Signatories : [ ] S J White Head of Laboratories [ ] A Bates Laboratory Manager [ ] K Tiller Technical Manager [ ✓ ] M Slater Senior Technician					
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Client: **Bristol City Council**  
 Contract: **HWW - Hengrove Way, Whitchurch**  
 Date Cored: **3<sup>rd</sup> July 2014**

### 2.3 **TABLE 2.2 – EXAMINATION RECORDS**

Core Ref. (Loc.)	Total Depth (mm)	Layer Depths (mm)	Visual Layer Material Description*	WAC	Binder Type and WAC Sample Details #
HWW7 (c/w)	130mm	-- 40mm 10mm 80mm	Surface dressing layer HRA30/14 surf HRA30/14 surf (planed) AC20 dense bin Onto granular material		Bitumen Bitumen Bitumen
HWW8 (c/w)	135mm	-- 55mm 30mm 50mm	Surface dressing layer HRA30/14 surf HRA30/14 surf AC20 dense bin Onto granular material		Bitumen Bitumen Bitumen
HWW9 (c/w)	130mm	-- 60mm 20mm 50mm	Surface dressing layer HRA30/14 surf HRA30/14 surf (planed) AC20 dense bin Onto granular material		Bitumen Bitumen Bitumen
HWW10 (c/w)	145mm	55mm 40mm 50mm	SMA14 surf HRA30/14 surf AC20 dense bin Onto granular material		Bitumen Bitumen Bitumen
REMARKS NIL W.A.C.'s shown on this page (refer to Appendix C for W.A.C.certificates) See Core Photographic Records (refer to Appendix B). See Site Plan for Core Locations (refer to Appendix A).					
Loc. Legend		c/w = Carriageway; f/p = Footpath; l/b = Layby; b/l = Bus Lane			
Examined By: DT		Date Examined:		10/07/14	
Approved By: 		Date Approved:		17/07/14	
Approved Signatories : [ ] S J White Head of Laboratories [ ] A Bates Laboratory Manager [ ] K Tiller Technical Manager [ ✓ ] M Slater Senior Technician					
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Client: **Bristol City Council**  
 Contract: **HWW - Hengrove Way, Whitchurch**  
 Date Cored: **3<sup>rd</sup> July 2014**

### 3.0 SUMMARY OF LABORATORY CHEMICAL ANALYSIS

3.1 The cores shown in Table 1 of this report which were selected for Waste Acceptance Criteria testing were sent to ACS Environmental Testing Limited. The full certificates of test are shown in Appendix C of this report.

3.2 The analysis undertaken on each core contained:

- Individual concentrations of the speciated PAHs
- Concentrations of the “banded” TPHs
- L/S2 and L/S8 Speciated PAHs Leachates
- WAC Metals Suite obtained from the Solids as opposed to the Leachates

*Please note: Waste Carriers / Landfill operators may request other analysis than that undertaken by ACS Testing Limited herein.*

3.3 The “Environment Agency Hazardous Waste: Interpretation of the definition and classification of hazardous waste (3rd edition 2013)” - Technical Guidance WM2 - Example 16 - Coal Tar states that:  
 “The assessment of asphalt material as hazardous requires specific consideration to assess the material for the List of Wastes codes:

- 17 03 01\* bituminous mixtures containing coal tar
- 17 03 02 bituminous mixtures other than those mentioned in 17 03 01

Determining the levels of coal tar present in “black top” can be difficult. Where road material is suspected of containing coal tar the waste is deemed to be hazardous unless it can be proven that the coal tar (including all of its constituent hydrocarbon compounds) is present at a concentration of less than 0.1%. Table 3.2 of the CLP uses benzo[a]pyrene as a marker compound for carcinogenicity for certain coal tar entries. Where the concentration of benzo[a]pyrene is at or above 50 ppm (mg/kg) in the black top alone (excluding other material) then the amount of coal tar should be considered to be sufficient for the material to be hazardous and thus coded 17 03 01\*.

Any sampling of black top would need to ensure that layers with different concentrations of benzo[a]pyrene are properly and representatively assessed.”

#### 3.4 Table 3 – Benzo[a]pyrene Results

Core Ref.	Depth (mm)	Benzo[a]pyrene concentration (mg/kg)	Waste Code (17 03 01 or 17 03 02 )	Lab. Ref.
HWW 1 to HWW 10	All depths cored	N/A	17 03 02	N/A
Tested By: N/A – No Analysis Required			Date Completed : 17 / 07 / 2014	

3.5 It is ACS Testing Limited’s interpretation of clause 3.3 above that any core sample tested which is reported as having benzo[a]pyrene above 50 ppm falls into the Waste Code 17 03 01 and should therefore be disposed of to an Hazardous Landfill Site.

Similarly, it is ACS Testing Limited’s interpretation of clause 3.3 above that any core sample tested which is reported as having benzo[a]pyrene below 50 ppm falls into the Waste Code 17 03 02 and should therefore be disposed of to a Non-hazardous Landfill Site or alternatively can be sent to a suitably permitted recycling facility.



Client: **Bristol City Council**  
Contract: **HWW - Hengrove Way, Whitchurch**  
Date Cored: **3<sup>rd</sup> July 2014**

---

#### 4.0 SUMMARY OF DISPOSAL OPTIONS

4.1 Based on found Benzo[a]pyrene concentrations, Table 4 lists deposition requirements of the tested layers.

**Table 4 – Proposed Disposal**

Core Ref.	Depth (mm)	Waste Code	Deposition (Hazardous / Non-hazardous <u>or</u> to Recycling)
HWW 1 to HWW 10	All depths cored	17 03 02	<b>Non-Hazardous Landfill / Recycling</b>

Client: **Bristol City Council**  
Contract: **HWW - Hengrove Way, Whitchurch**  
Date Cored: **3<sup>rd</sup> July 2014**

---

## **5.0 QUALITY STATEMENT**

- 5.1 We confirm that in preparing this report we have exercised reasonable skill and care in order to produce accurate details.
- 5.2 We confirm that testing has been conducted in accordance with relevant standards, as requested by the Client, with reference to the Organisation's Quality Manual Procedures.
- 5.3 The results and contents of this report are based upon in-situ analysis and/or the laboratory testing of specimens or sample material submitted to the laboratory.
- 5.4 Consequently, comments contained herein are derived from the determination of the results from the analysed material and that of any additional information, drawings, plans or similar such data as supplied by the Client.
- 5.5 ACS Testing warrants only the accuracy of the test result and information contracted to be supplied to the Client but will accept no liability in respect of the use to which the Client puts such information or the purpose for which such information was requested.
- 5.6 Unless specifically assigned and confirmed in writing within the terms of the Agreement/Written Order the Organisation asserts and retains all Copyright and other Intellectual Property rights, in and over the report and its contents.



Client: **Bristol City Council**  
Contract: **HWW - Hengrove Way, Whitchurch**  
Date Cored: **3<sup>rd</sup> July 2014**

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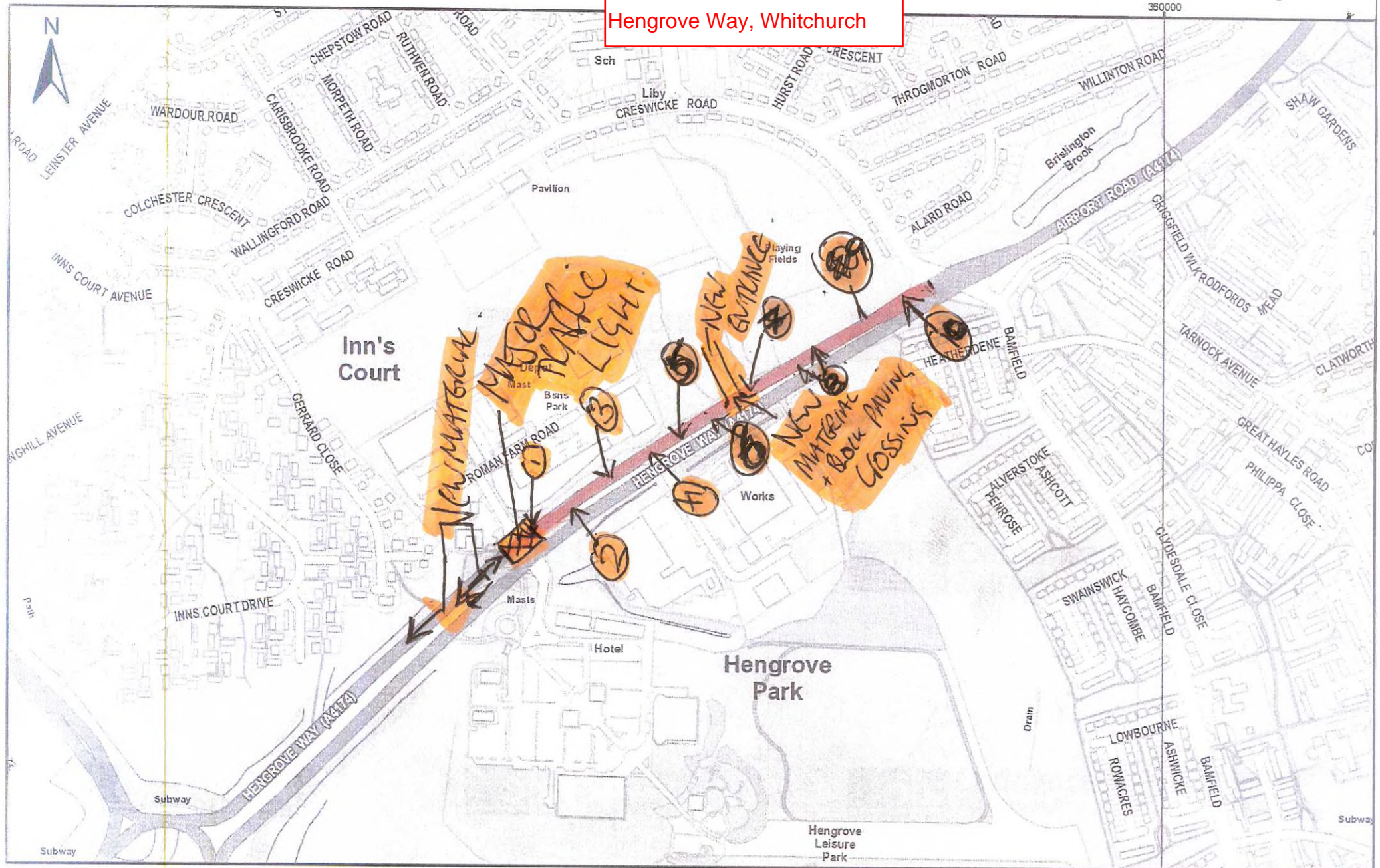
## **APPENDIX A – SITE PLANS**

# Bristol City Council map

ACS Report ref: 14-54898  
Cores HWW 1 to HWW 10

Hengrove Way, Whitchurch

Document created on Wednesday 23rd April 2014 at 14:37



75 37.5 0 75 150 225 300

1:6,000

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100023406



Client: **Bristol City Council**  
Contract: **HWW - Hengrove Way, Whitchurch**  
Date Cored: **3<sup>rd</sup> July 2014**

---

## **APPENDIX B - CORE PHOTOGRAPHS**

ACS - PHOTOGRAPHIC RECORD

CLIENT: Bristol City Council

CONTRACT: 14-54898

DATE: 3/7/2014

SAMPLE REF: HW-1



300mm

200mm

100mm



ACS - PHOTOGRAPHIC RECORD

CLIENT: Bristol City Council

CONTRACT: 14-54898

DATE: 3/7/2014

SAMPLE REF: HW-2



300mm

200mm

100mm





ACS - PHOTOGRAPHIC RECORD

CLIENT: Bristol City Council

CONTRACT: 14-54898

DATE: 3/7/2014

SAMPLE REF: HWW-3



400mm

300mm

200mm

100mm

0mm



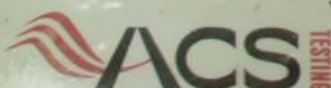
ACS - PHOTOGRAPHIC RECORD

CLIENT: Bristol City Council

CONTRACT: 14-54898

DATE: 3/7/2014

SAMPLE REF: HWW-4



400mm

300mm

200mm

100mm





ACS - PHOTOGRAPHIC RECORD

CLIENT: Bristol City Council

CONTRACT: 14-54898

DATE: 3/7/2014

SAMPLE REF: HWW-5

Pink	255-192-203	
Red	255-000-000	
Yellow	255-255-000	
Brown	165-042-042	
Green	000-194-000	
Blue	000-000-255	
White	255-255-255	
Grey	128-128-128	
Black	000-000-000	



CLIENT: Bristol City Council

CONTRACT: 14-54898

DATE: 3/7/2014

SAMPLE REF: HWW-6

Pink	255-192-203	
Red	255-000-000	
Yellow	255-255-000	
Brown	165-042-042	
Green	000-194-000	
Blue	000-000-255	
White	255-255-255	
Grey	128-128-128	
Black	000-000-000	





ACS - PHOTOGRAPHIC RECORD

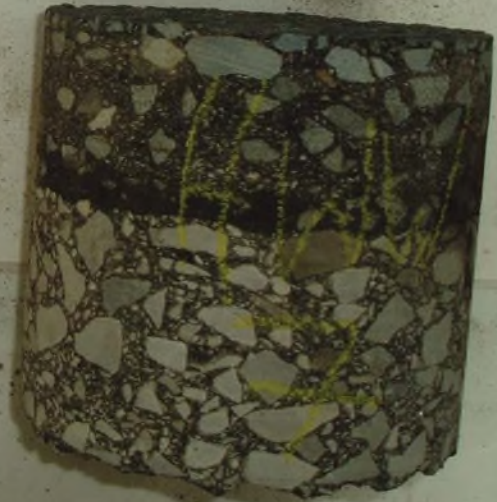
CLIENT: Bristol City Council

CONTRACT: 14-54898

DATE: 3/7/2014

SAMPLE REF: HW-7

Pink	255-192-203	
Red	255-000-000	
Yellow	255-255-000	
Brown	165-042-042	
Green	000-100-000	
Blue	000-000-255	
White	255-255-255	
Grey	128-128-128	
Black	000-000-000	



ACS - PHOTOGRAPHIC RECORD

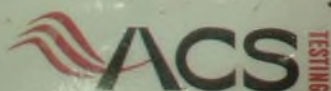
CLIENT: Bristol City Council

CONTRACT: 14-54898

DATE: 3/7/2014

SAMPLE REF: HW-8

Pink	255-192-203	
Red	255-000-000	
Yellow	255-255-000	
Brown	165-042-042	
Green	000-100-000	
Blue	000-000-255	
White	255-255-255	
Grey	128-128-128	
Black	000-000-000	





ACS - PHOTOGRAPHIC RECORD

CLIENT: Bristol City Council

CONTRACT: 14-56898

DATE: 3/7/2014

SAMPLE REF: HWW-9



400mm

300mm

200mm

100mm



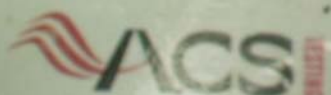
ACS - PHOTOGRAPHIC RECORD

CLIENT: Bristol City Council

CONTRACT: 14-56898

DATE: 3/7/2014

SAMPLE REF: HWW-10



300mm

200mm

100mm





# Technical Report: Road Core Examination

## A Visual Assessment & Dimensional Check

---

North Somerset Council Highway Services Laboratory,  
Old Weston Road,  
Cambridge Batch,  
Flax Bourton,  
BS48 1UL.



---

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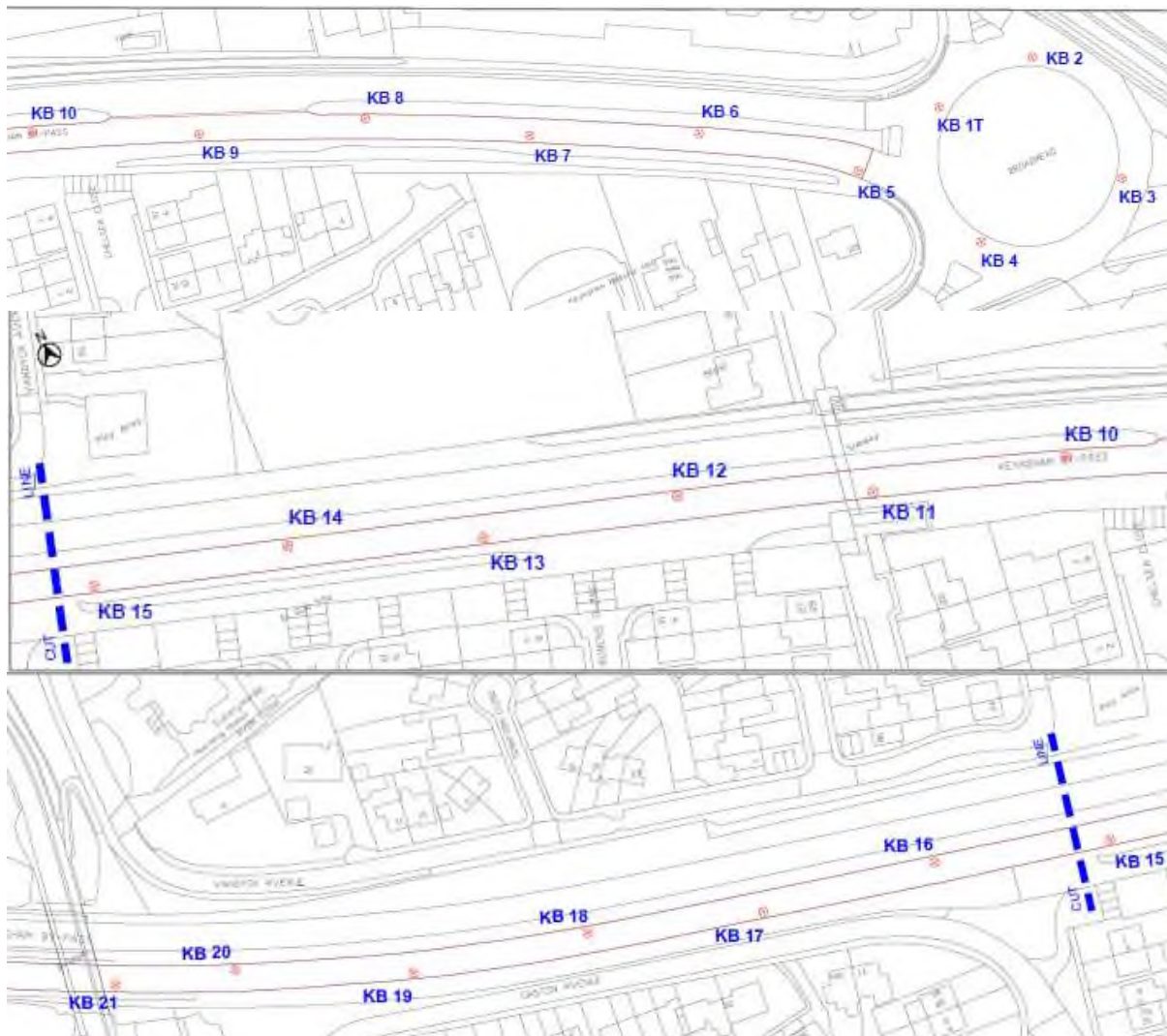
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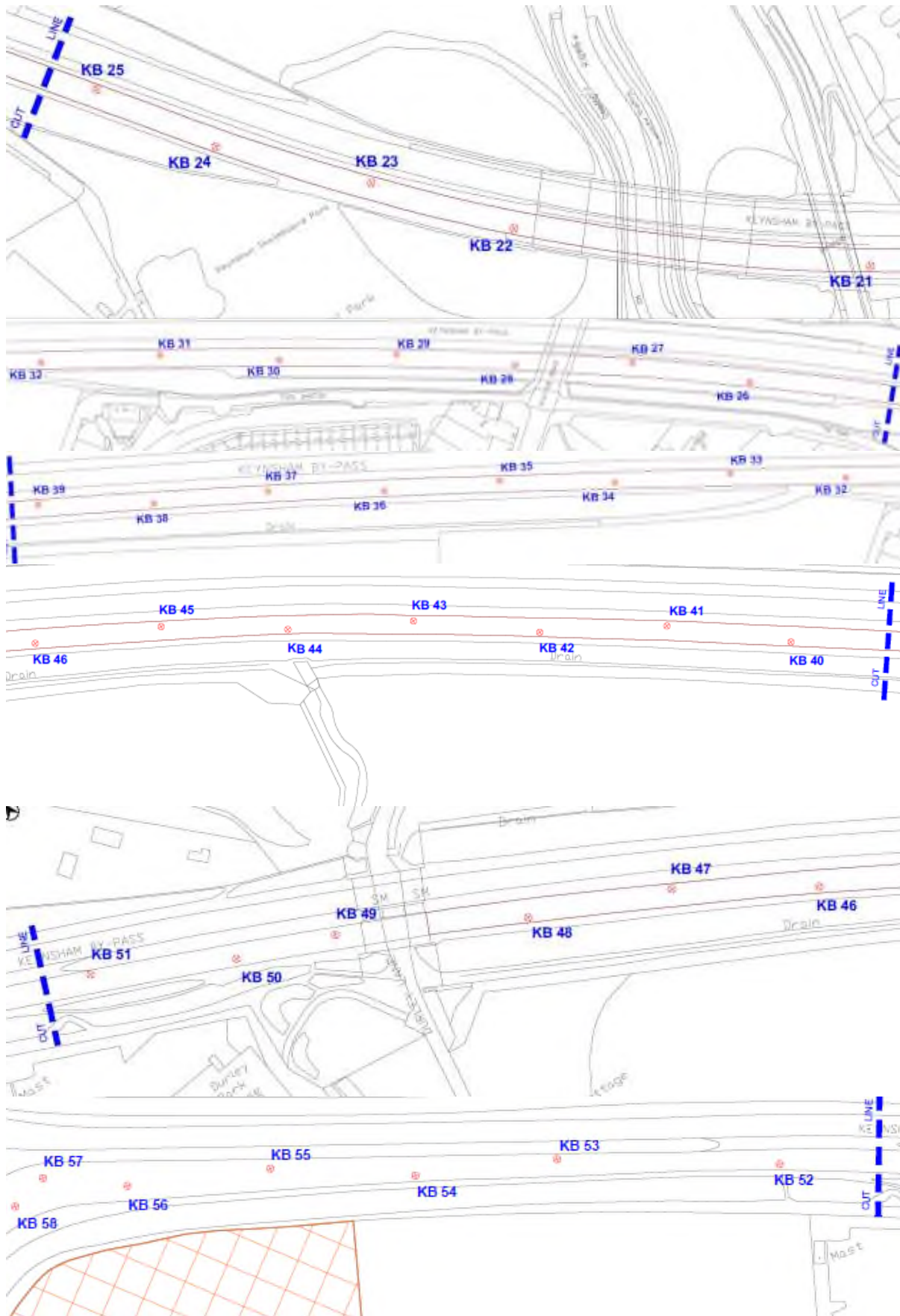
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## 1.0 Executive Summary

A total of fifty-eight *in situ* cores were collected on the 04/11/2016 by North Somerset Council Highway Services Laboratory from A4 Keynsham Bypass and A4 Broadmead Roundabout for laboratory visual assessment, dimensional check and analysis for the presence of tar (see plate 1). Samples were collected where marked by the client. Cores were examined to BS 12697-36:2003 (destructive method), and where appropriate recommendations made for further chemical property testing under the Landfill Waste Acceptance Criteria (WAC). The depth of stripped layers were interpreted utilising *in situ* core measurements and photography for comparison. PAK marker test for the presence of tar is not covered by the laboratory's UKAS schedule. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.







**Plate 1:** Site plans for Keynsham Bypass

**Table 1: Core Locations and examination summary**

<b>Core Ref:</b>	<b>O/S:</b>	<b>St:</b>	<b>BNG:</b>	<b>Hole Depth (mm)</b>	<b>WAC Potentially required?</b>
KB1	Just before Waitrose Exit	66514	68314	64	No, bituminous materials only
KB2	Just before Bath/Saltford exit	66543	68310	294	Yes, tar present below 212mm
KB3	Just after Bath/Saltford exit	66555	68271	304	Yes, tar present below 224mm
KB4	Near exit for school	66518	68278	280	Yes, tar present below 122mm
KB5	Lane1 Wbnd off broadmead RAB			318	Yes, tar present below 136mm
KB6	Lane2 Wbnd			253	Yes, tar present below 95mm
KB7	Lane1 Wbnd			267	Yes, tar present below 107mm
KB8	Lane2 Wbnd			254	Yes, tar present below 99mm
KB9				238	Yes, tar present below 107mm
KB10				273	
KB11				307	Yes, tar present below 173mm
KB12				283	Yes, tar present below 113mm
KB13				254	Yes, tar present below 107mm
KB14				256	Yes, tar present below 56mm
KB15				287	Yes, tar present below 123mm
KB16				292	Yes, tar present below 100mm
KB17				224	Yes, tar present below 132mm
KB18				274	Yes, tar present below 111mm
KB19				255	Yes, tar present below 102mm
KB20				255	Yes, tar present below 110mm
KB21				249	Yes, tar present below 84mm
KB22				283	Yes, tar present below 119mm
KB23				161	Yes, tar present below 146mm
KB24				257	Yes, tar present below 119mm
KB25				288	Yes, tar present below 21mm




KB26	308	Yes, tar present below 101mm
KB27	280	Yes, tar present below 98mm
KB28	256	Yes, tar present below 114mm
KB29	273	Yes, tar present below 113mm
KB30	263	Yes, tar present below 116mm
KB31	240	Yes, tar present below 91mm
KB32	274	Yes, tar present below 108mm
KB33	262	Yes, tar present below 125mm
KB34	285	Yes, tar present below 50mm
KB35	290	Yes, tar present below 60mm
KB36	249	Yes, tar present below 185mm
KB37	249	Yes, tar present below 121mm
KB38	268	Yes, tar present below 56mm
KB39	286	Yes, tar present below 71mm
KB40	236	Yes, tar present below 48mm
KB41	247	Yes, tar present below 67mm
KB42	283	Yes, tar present below 123mm
KB43	261	Yes, tar present below 113mm
KB44	297	Yes, tar present below 132mm
KB45	263	Yes, tar present below 47mm
KB46	266	Yes, tar present below 141mm
KB47	275	Yes, tar present below 136mm
KB48	298	Yes, tar present below 142mm
KB49	276	Yes, tar present below 69mm
KB50	288	Yes, tar present below 111mm
KB51	258	Yes, tar present below 48mm
KB52	426	Yes, tar present below 98mm
KB53	360	Yes, tar present below 70mm
KB54	413	Yes, tar present below 134mm
KB55	316	No, bituminous materials only

KB56	314	No, bituminous materials only
KB57	338	No, bituminous materials only
KB58	339	No, bituminous materials only

---

Tested by: L Burton      Position: Lab Tech      Date Tested: 05/12/16

Computerised by: L Burton      Position: Lab Tech      Date Completed: 08/12/16

Approved by:       Position: TM      Date Approved: 15/12/16  
Mr Paul Stewart



## 2.0 Core examination records

### 2.1 Core Reference: KB1



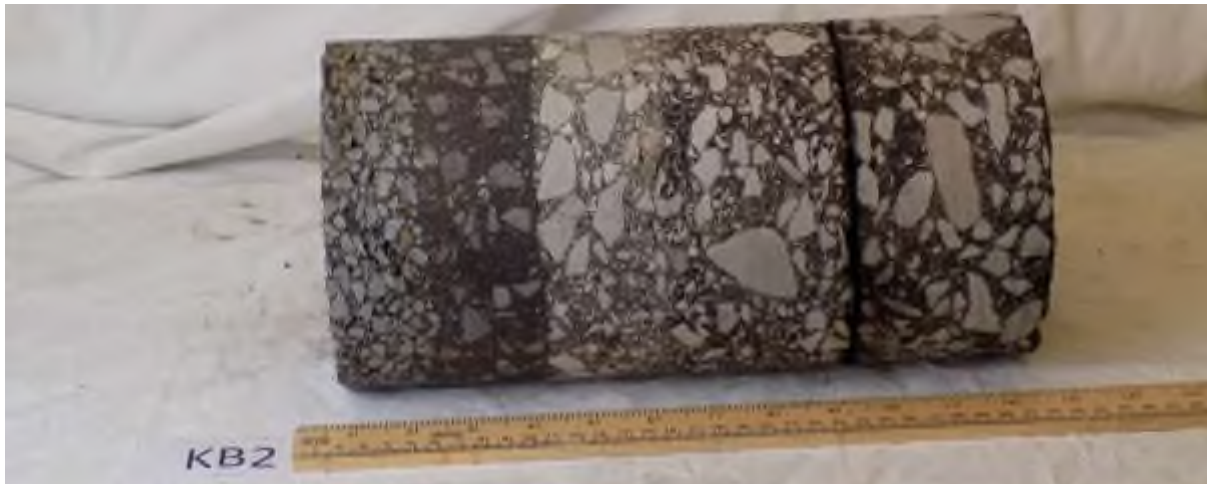
**Plate 2:** Core reference: KB1

**Table 2:** Visual examination results and WAC recommendations for core ref: KB1

<b>Core Reference:</b>	KB1
<b>Location</b>	Just before Waitrose exit, Broadmead RAB
<b>Total Depth Core (mm)</b>	64
<b>Surface Course Type</b>	10mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	30
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	34
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	No

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Based on the pattern of cracking in the wearing course and comparison to the other cores on the roundabout this core appears to have been taken on a trench which has since been overlaid.

**2.2 Core reference: KB2****Plate 3:** Core reference: KB2**Table 3:** Visual examination results and WAC recommendations for core ref: KB2

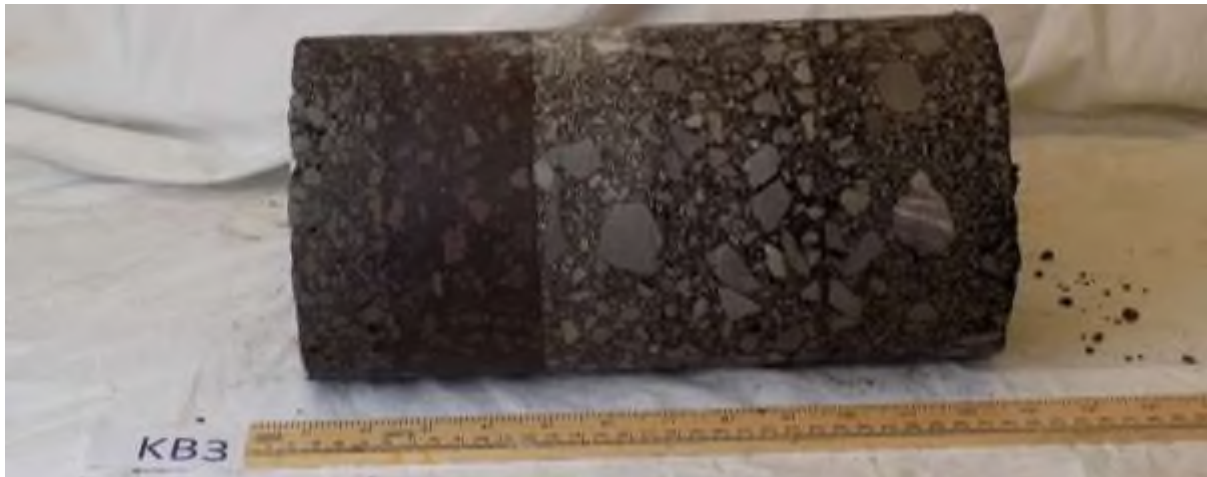
<b>Core Reference:</b>	KB2
<b>Location</b>	Just before Bath/Saltford Exit, Broadmead RAB
<b>Total Depth Core (mm)</b>	294
<b>Surface Course Type</b>	10mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	41
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	47
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	48
<b>3) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	76
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	82
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in some 32mm A/C



### 2.3 Core reference: KB3



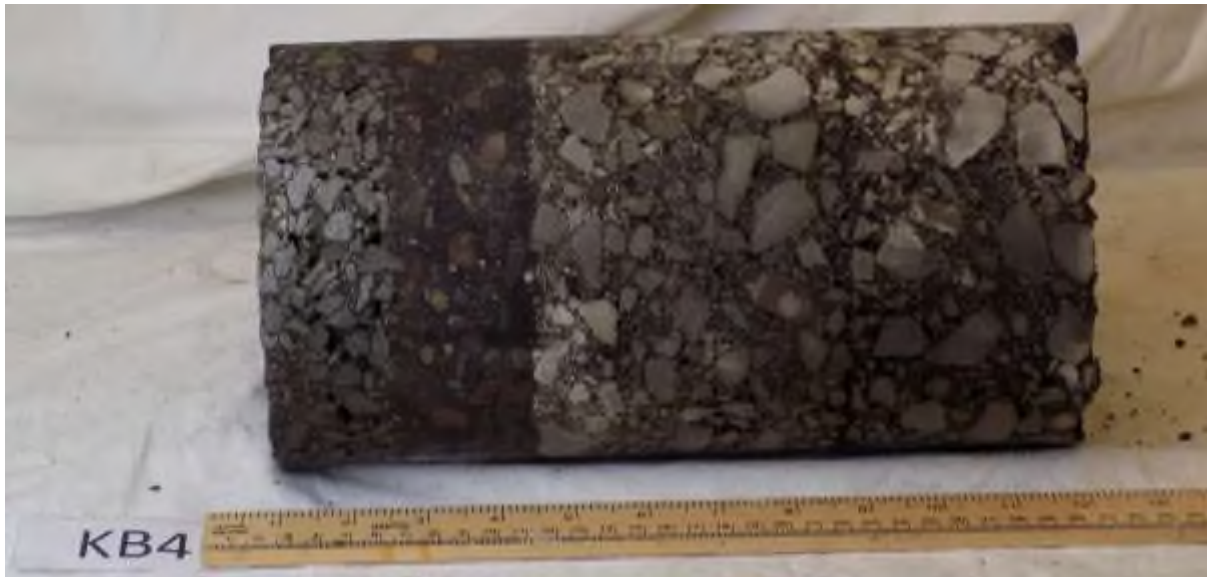
**Plate 4:** Core reference: KB3

**Table 4:** Visual examination results and WAC recommendations for core ref: KB3

<b>Core Reference:</b>	KB3
<b>Location</b>	Just after Bath/Saltford Exit, Broadmead RAB
<b>Total Depth Core (mm)</b>	304
<b>Surface Course Type</b>	10mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	42
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	62
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	50
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	70
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	80
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in some 32mm A/C

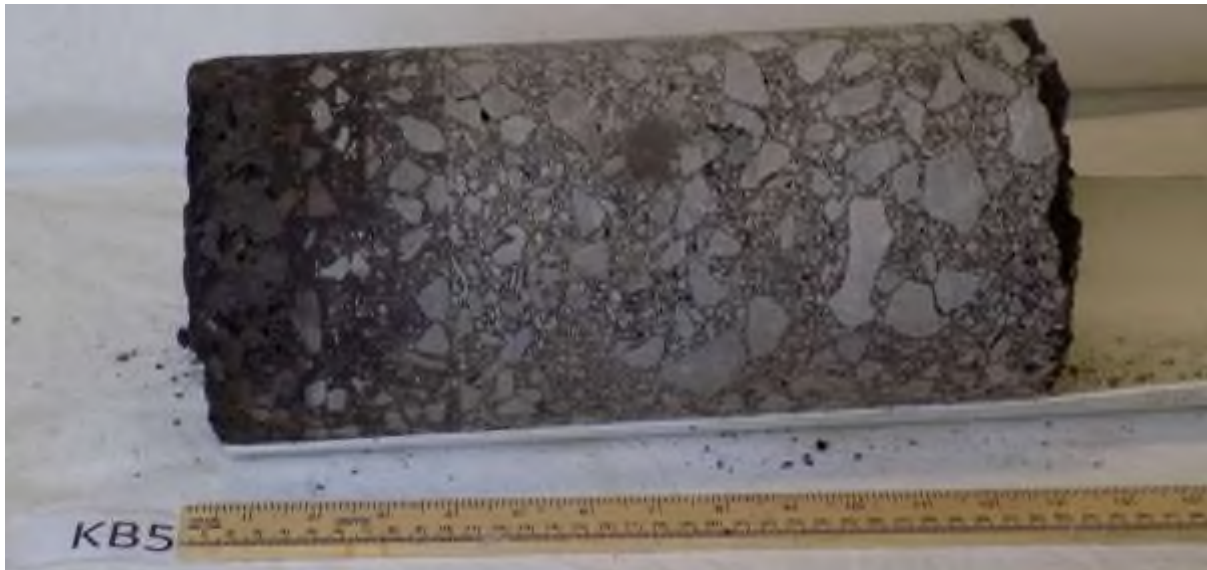
**2.4 Core reference: KB4****Plate 5:** Core reference: KB4**Table 5:** Visual examination results and WAC recommendations: KB4

<b>Core Reference:</b>	KB4
<b>Location</b>	Near exit for school, Broadmead RAB
<b>Total Depth Core (mm)</b>	280
<b>Surface Course Type</b>	10mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	46
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	46
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	30
<b>3) Bound Material Type</b>	32mm A/C <sup>1</sup>
<b>Thickness Found (mm)</b>	78
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	80
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

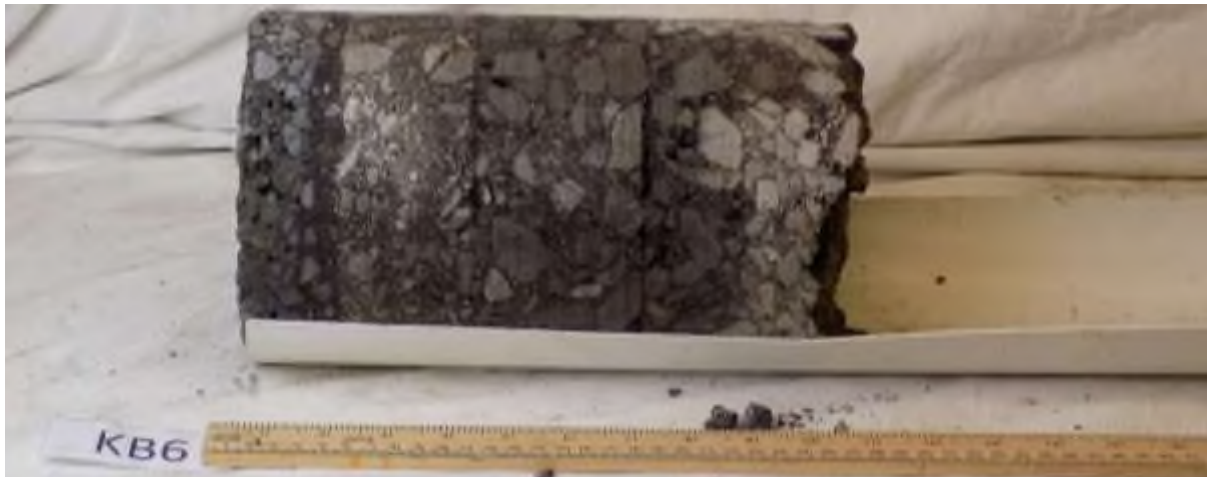


**2.5 Core reference: KB5****Plate 6:** Core reference: KB5**Table 6:** Visual examination results and WAC recommendations for core ref: KB5

<b>Core Reference:</b>	KB5
<b>Location</b>	Lane1, westbound
<b>Total Depth Core (mm)</b>	318
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	35
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	33
<b>2) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	29
<b>3) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	39
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	88
<b>5) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	94
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

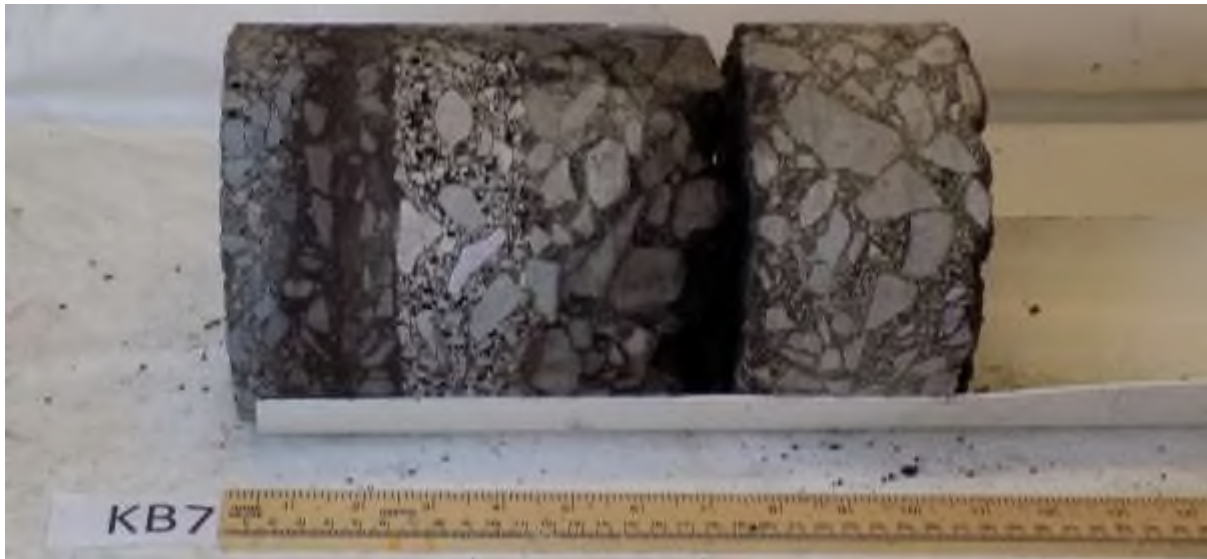
**2.6 Core reference: KB6****Plate 7:** Core reference: KB6**Table 7:** Visual examination results and WAC recommendations for core ref: KB6

<b>Core Reference:</b>	KB6
<b>Location</b>	Lane 2, Westbound
<b>Total Depth Core (mm)</b>	253
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	28
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	12
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	55
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	68
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	90
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

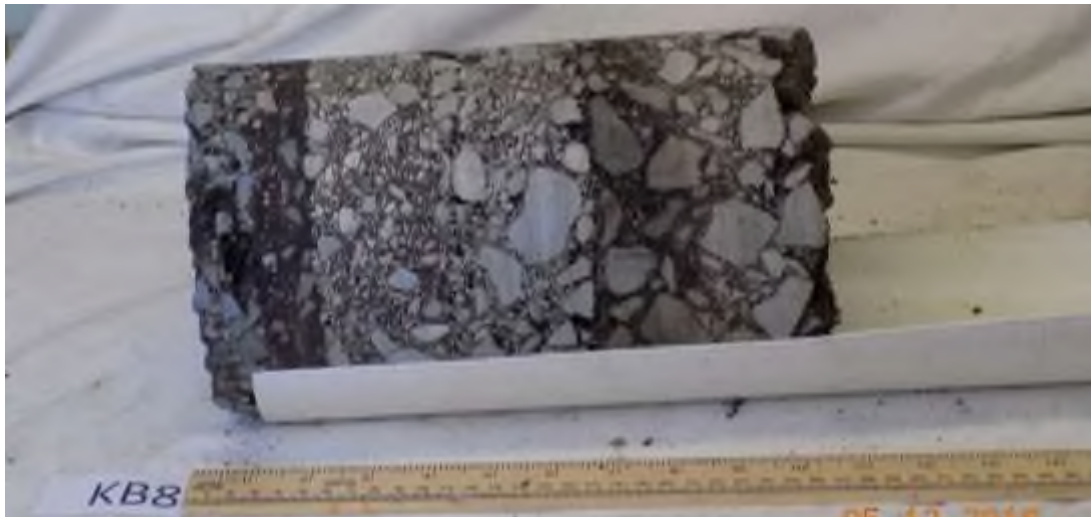


**2.7 Core reference: KB7****Plate 8:** Core reference: KB7**Table 8:** Visual examination results and WAC recommendations for core ref: KB7

<b>Core Reference:</b>	KB7
<b>Location</b>	Lane 1, Westbound
<b>Total Depth Core (mm)</b>	267
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	26
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	36
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	45
<b>3) Bound Material Type</b>	32mm A/C <sup>3,7</sup>
<b>Thickness Found (mm)</b>	75
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	85
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

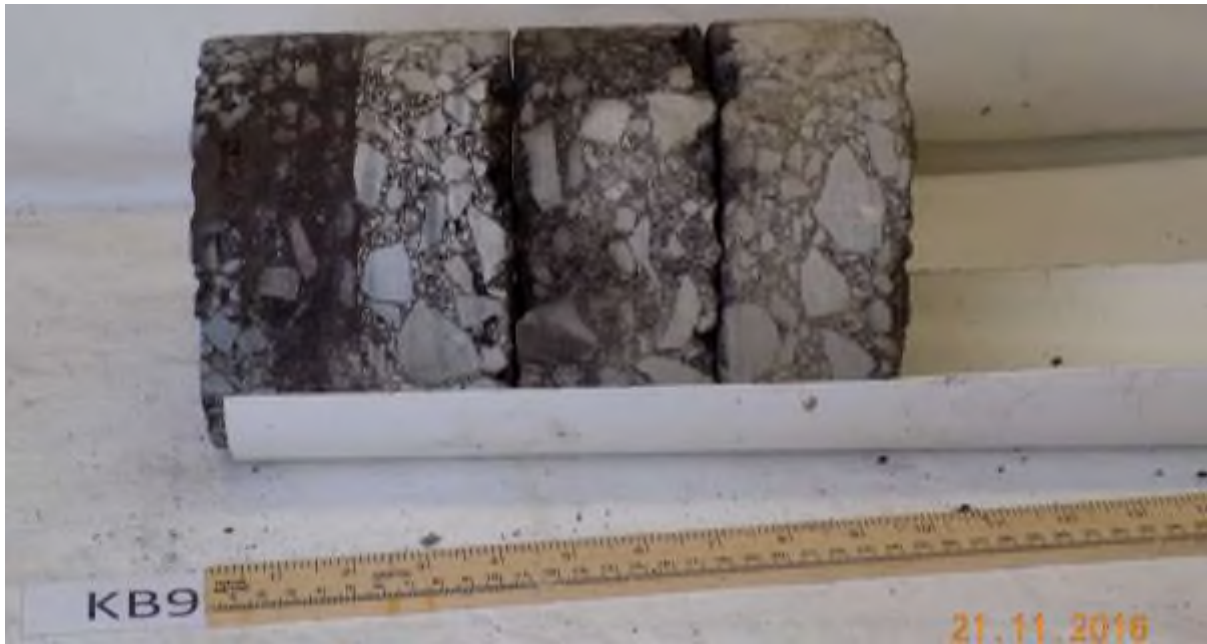
**2.8 Core reference: KB8****Plate 9:** Core reference: KB8**Table 9:** Visual examination results and WAC recommendations for core ref: KB8

<b>Core Reference:</b>	KB8
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	254
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	25
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	23
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	51
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	60
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	95
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

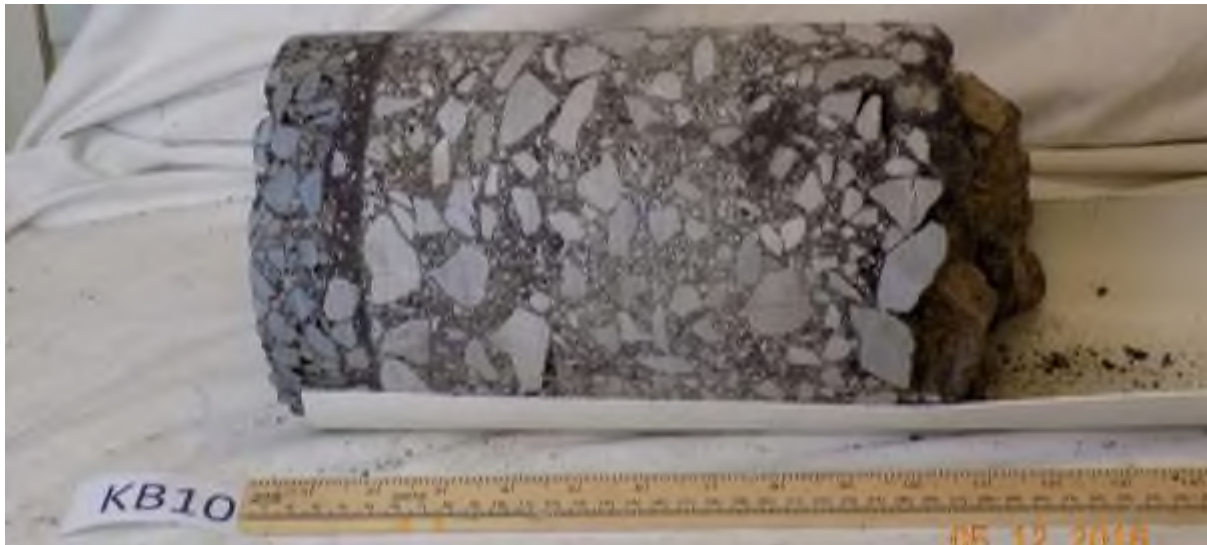


**2.9 Core Reference: KB9****Plate 10:** Core reference: KB9**Table 10:** Visual examination results and WAC recommendations for core ref: KB9

<b>Core Reference:</b>	KB9
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	238
<b>Surface Course Type</b>	14mm SMA`
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	28
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	16
<b>2) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	15
<b>3) Bound Materials Type</b>	20mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	48
<b>4) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	66
<b>5) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	65
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

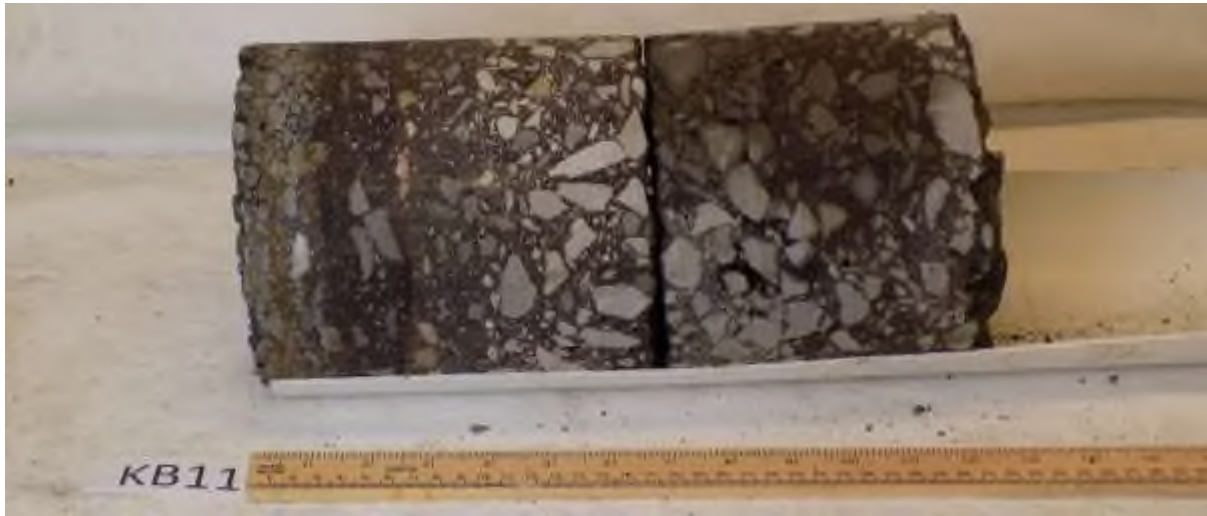
**2.10 Core reference: KB10****Plate 11:** Core reference: KB10**Table 11:** Visual examination results and WAC recommendations for core ref: KB10

<b>Core Reference:</b>	KB10
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	273
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	29
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	14
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	65
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	75
<b>4) Bound Material Type</b>	32mm A/C <sup>1</sup>
<b>Thickness Found (mm)</b>	90
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No

**WAC Potentially Required**

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

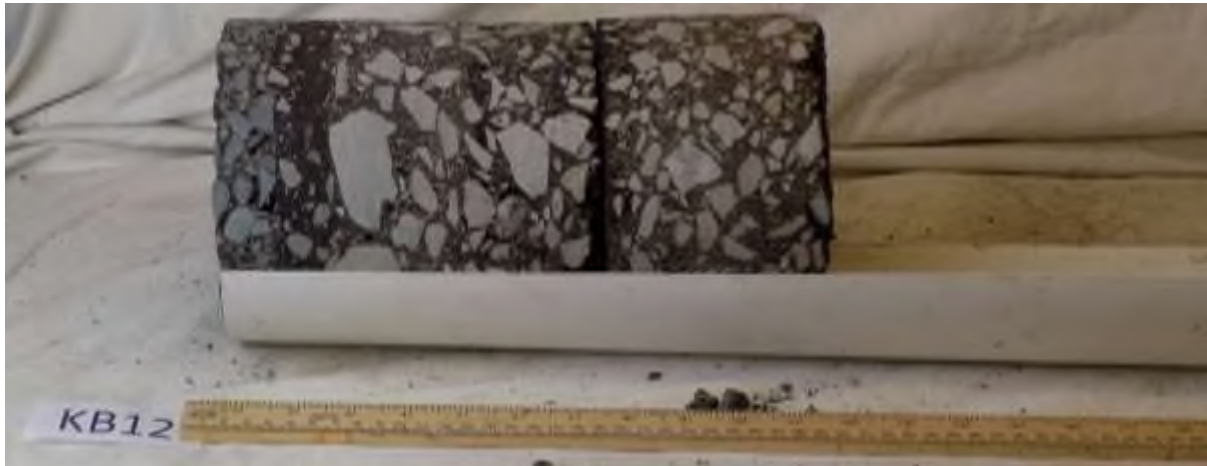


**2.11 Core reference: KB11****Plate 12:** Core reference: KB11**Table 12:** Visual examination results and WAC recommendations for core ref: KB11

<b>Core Reference:</b>	KB11
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	307
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	28
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	41
<b>2) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	32
<b>3) Bound Material Type</b>	20mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	72
<b>4) Bound Material Type</b>	20mm A/C <sup>1</sup>
<b>Thickness Found</b>	47
<b>5) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	87
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C and some 20mm A/C

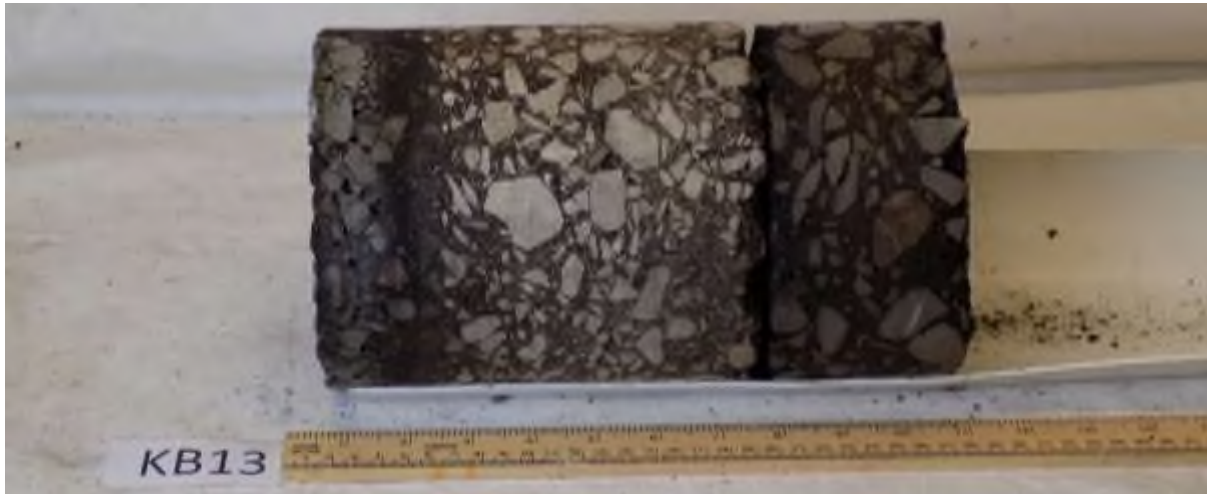
**2.12 Core reference: KB12****Plate 13:** Core reference: KB12**Table 13:** Visual examination results and WAC recommendations for core ref: KB12

<b>Core Reference:</b>	KB12
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	283
<b>Surface Course Type</b>	14mm SMA
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	25
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	28
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	60
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	65
<b>4) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	105
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 20mm A/C and some 32mm A/C

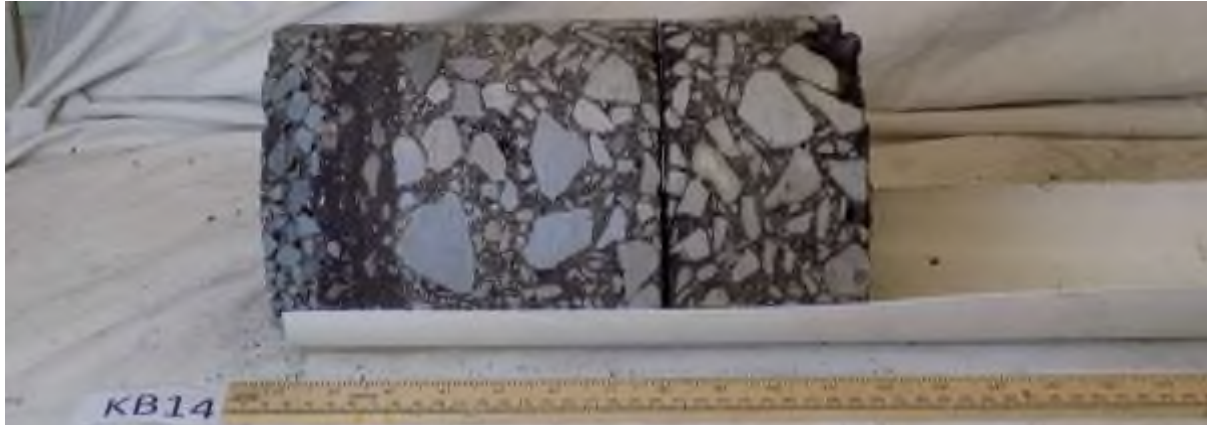


**2.13 Core reference: KB13****Plate 14:** Core reference: KB13**Table 14:** Visual examination results and WAC recommendations for core ref: KB13

<b>Core Reference:</b>	KB13
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	254
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	31
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	20
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	56
<b>3) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found</b>	70
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	77
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

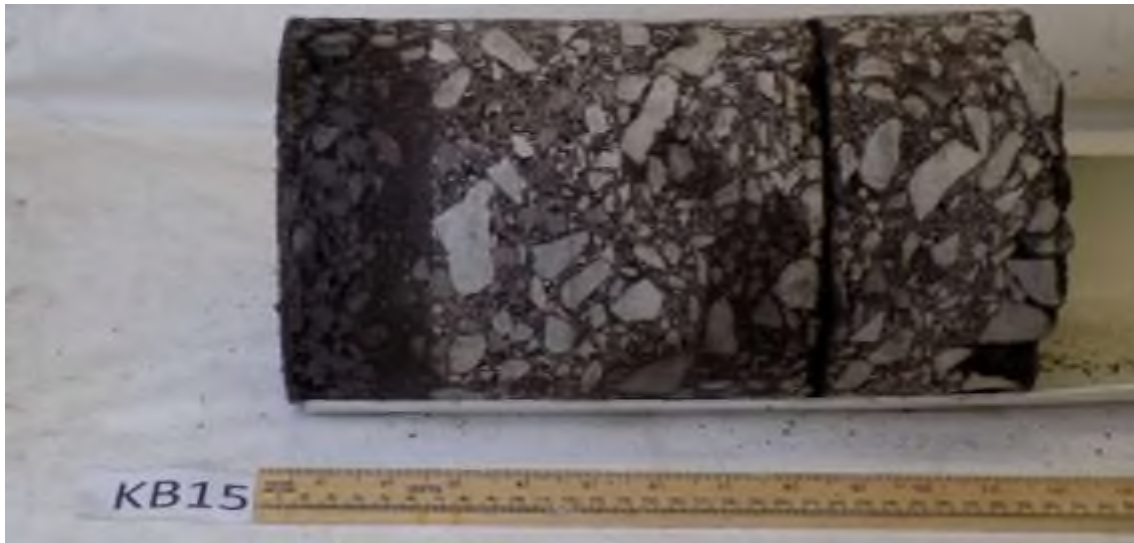
**2.14 Core reference: KB14****Plate 15:** Core reference: KB14**Table 15:** Visual examination results and WAC recommendations for core ref: KB14

<b>Core Reference:</b>	KB14
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	256
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	25
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	31
<b>2) Bound Material Type</b>	32mm A/C*
<b>Thickness Found (mm)</b>	50
<b>3) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found</b>	63
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	87
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** \*mild PAK marker reaction indicates tar in this layer, please be aware that the strength of the reaction does not indicate the amount of tar present in the material.

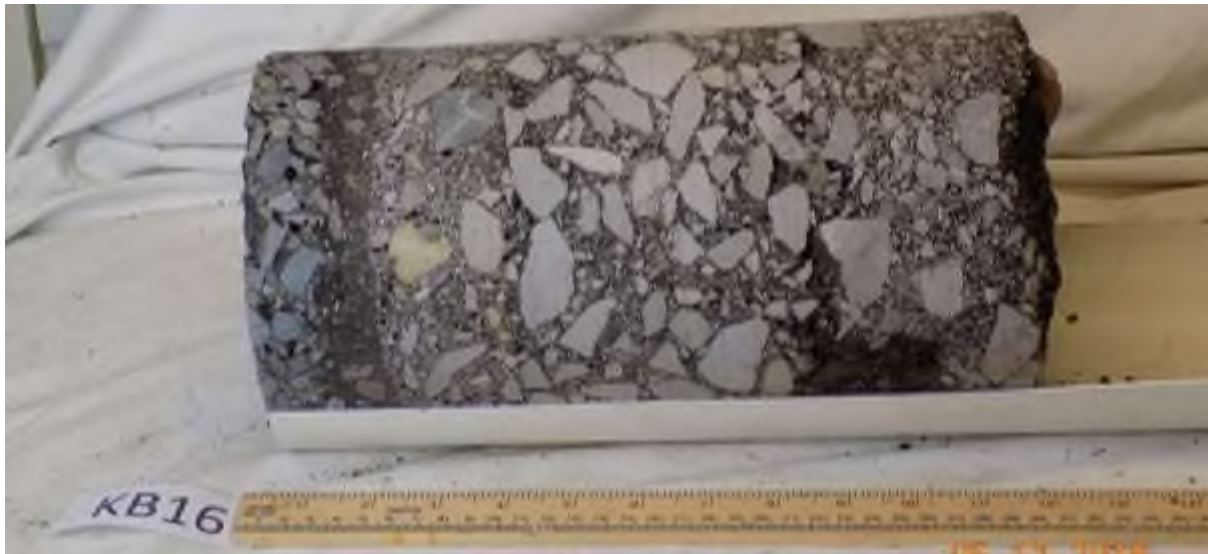


**2.15 Core reference: KB15****Plate 16:** Core reference: KB15**Table 16:** Visual examination results and WAC recommendations for core ref: KB15

<b>Core Reference:</b>	KB15
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	287
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	32
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	26
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	65
<b>3) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found</b>	78
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	86
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

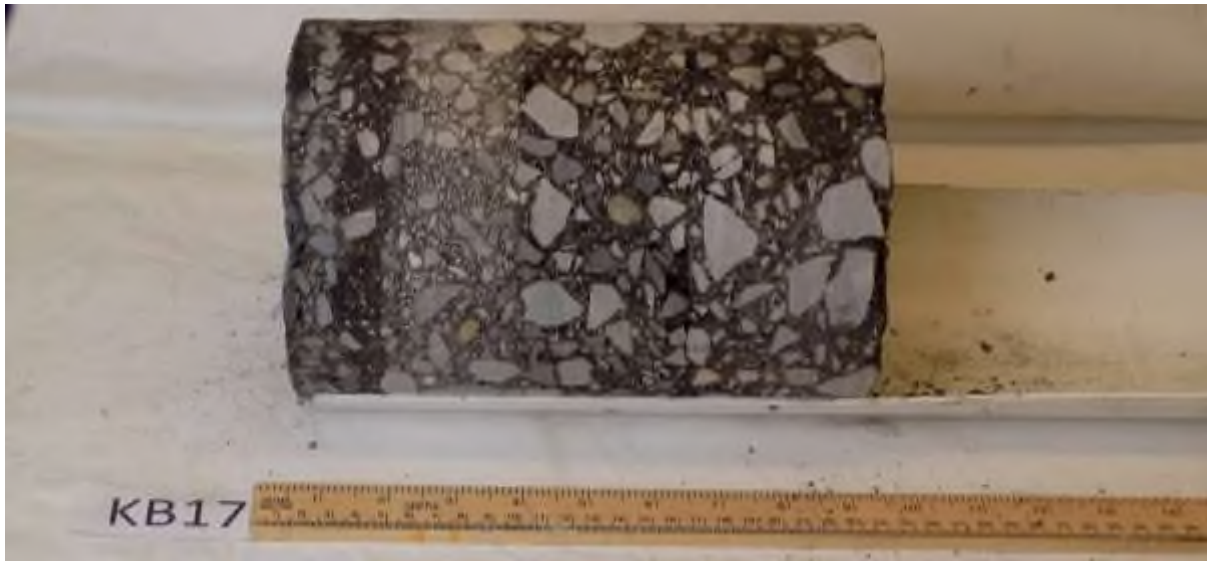
**2.16 Core reference: KB16****Plate 17:** Core reference: KB16**Table 17:** Visual examination results and WAC recommendations for core ref: KB16

<b>Core Reference:</b>	KB16
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	292
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	30
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	22
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	48
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	110
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	82
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in some 32mm A/C

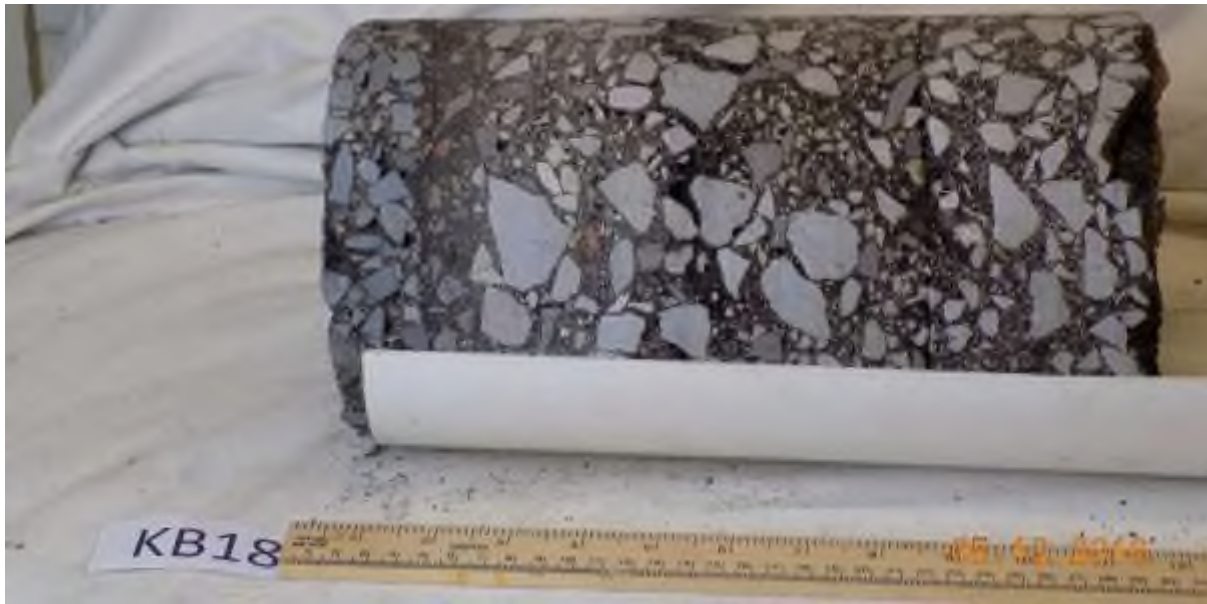


**2.17 Core reference: KB17****Plate 18:** Core reference: KB17**Table 18:** Visual examination results and WAC recommendations for core ref: KB17

<b>Core Reference:</b>	KB17
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	224
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	24
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	23
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	45
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	60
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	72
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

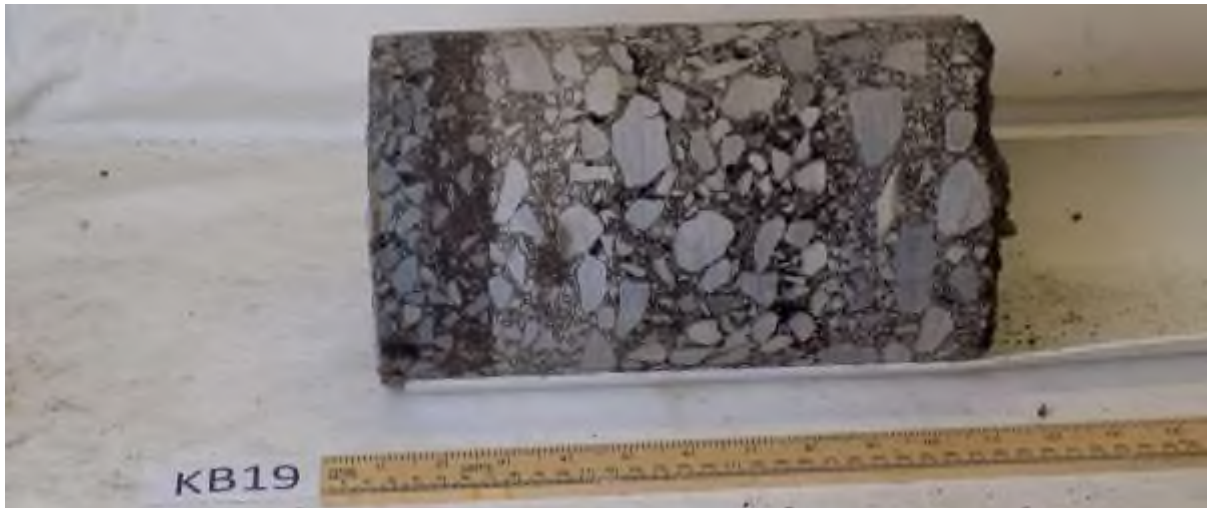
**2.18 Core reference: KB18****Plate 19:** Core reference: KB18**Table 19:** Visual examination results and WAC recommendations for core ref: KB18

<b>Core Reference:</b>	KB18
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	274
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	34
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	19
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	58
<b>3) Bound Material Type</b>	32mm A/C <sup>1</sup>
<b>Thickness Found</b>	88
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	75
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

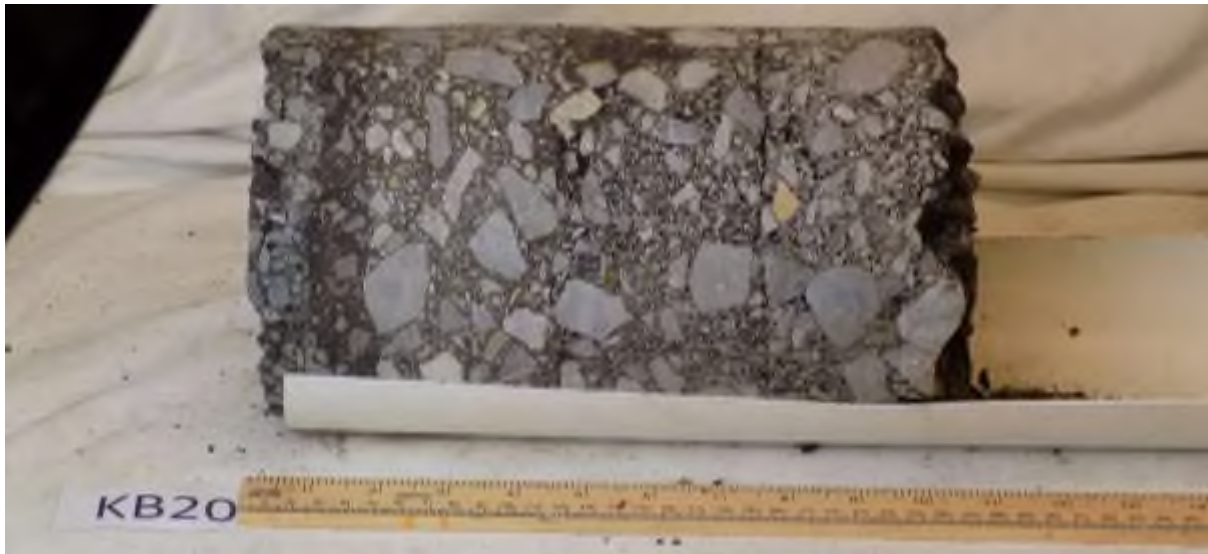


**2.19 Core reference: KB19****Plate 20:** Core reference: KB19**Table 20:** Visual examination results and WAC recommendations for core ref: KB19

<b>Core Reference:</b>	KB19
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	255
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	26
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	25
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	51
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	85
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	68
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

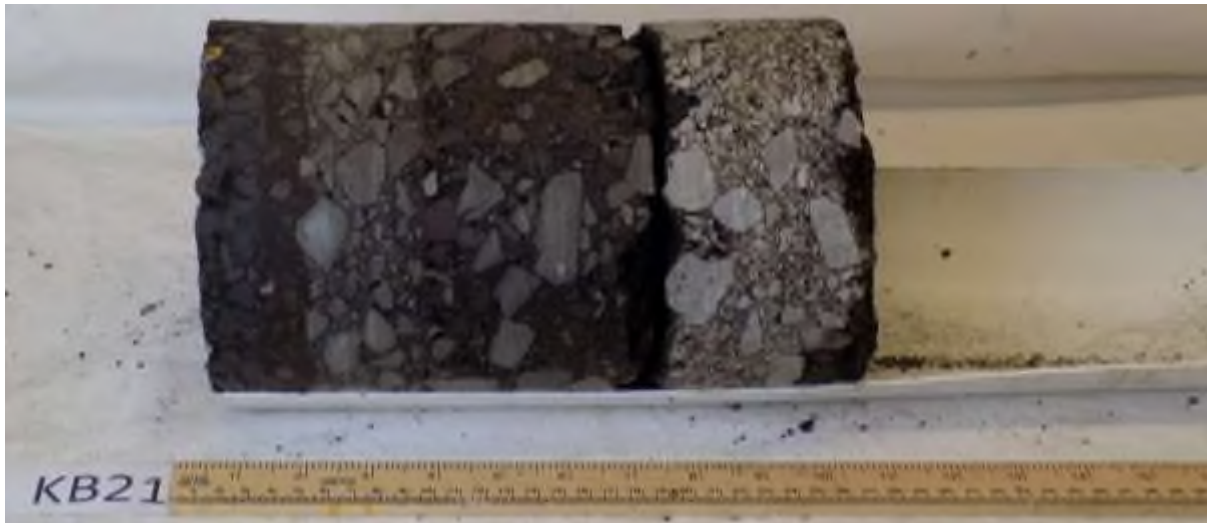
**Remarks:** Tar present in 32mm A/C

**2.20 Core reference: KB20****Plate 21:** Core reference: KB20**Table 21:** Visual examination results and WAC recommendations for core ref: KB20

<b>Core Reference:</b>	KB20
<b>Location</b>	Lane 2 westbound
<b>Total Depth Core (mm)</b>	255
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	23
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	21
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	66
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	75
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	70
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

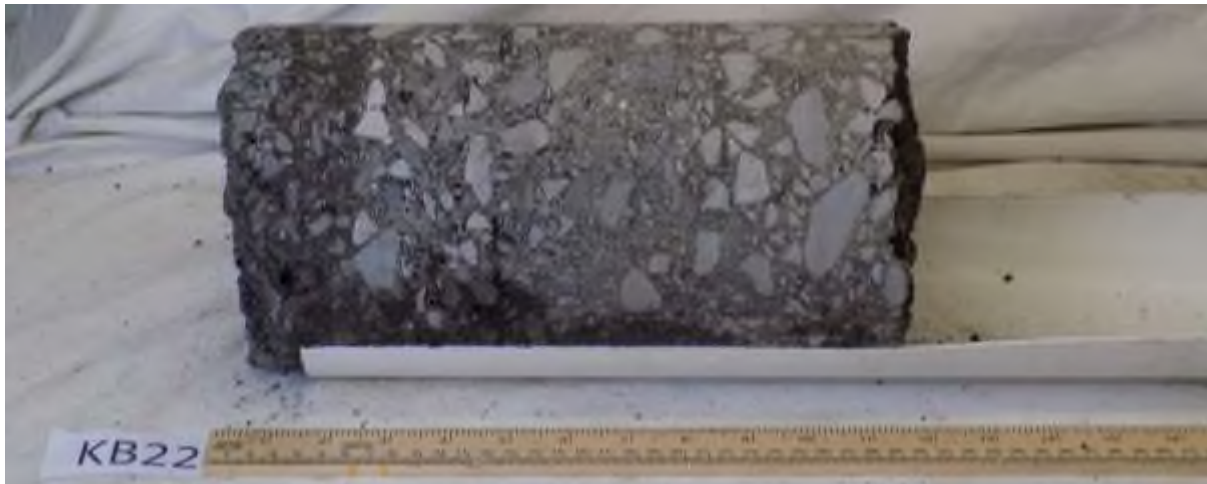
**2.21 Core reference: KB21****Plate 22:** Core reference: KB21**Table 22:** Visual examination results and WAC recommendations for core ref: KB21

<b>Core Reference:</b>	KB21
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	249
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	22
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	18
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	44
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	85
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	80
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C



**2.22 Core reference: KB22****Plate 23:** Core reference: KB22**Table 23:** Visual examination results and WAC recommendations for core ref: KB22

<b>Core Reference:</b>	KB22
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	283
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	25
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	34
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	58
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	81
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	85
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

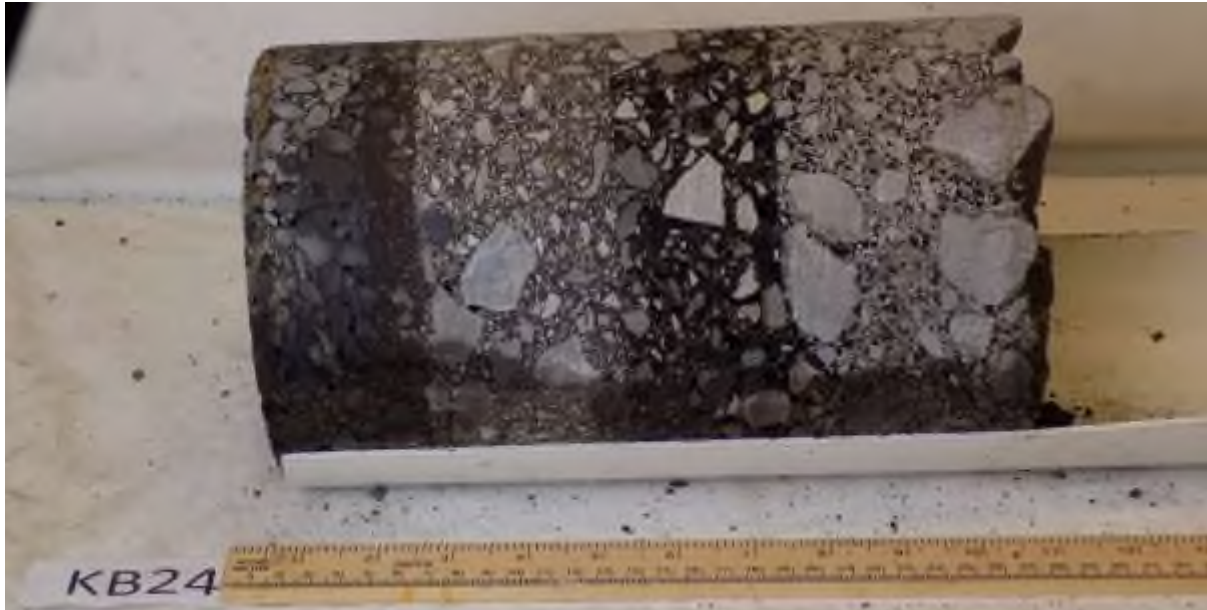
**Remarks:** Tar present in 32mm A/C

**2.23 Core reference: KB23****Plate 24:** Core reference: KB23**Table 24:** Visual examination results and WAC recommendations for core ref: KB23

<b>Core Reference:</b>	KB23	
<b>Location</b>	Just off the far side of the bridge deck	
<b>Total Depth Core (mm)</b>	146-161	
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>	
<b>Aggregate Type &amp; PSV</b>	Gritstone 60	
<b>Thickness Found (mm)</b>	38	
<b>1) Bound Material Type</b>	14mm 35% HRA	
<b>Thickness Found (mm)</b>	43	
<b>2) Bound Material Type</b>	32mm A/C	
<b>Thickness Found (mm)</b>	65-80	
<b>Foundation Material</b>	Concrete	32mm A/C
<b>Significant Quantity Lifted</b>	No	No
<b>WAC Potentially Required</b>	Yes	

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Core was taken just off the bridge deck. The concrete that was recovered is thought to be the end of the bridge abutment as it was only present in the half of the core closest to the bridge and had a clean edge. Tar present in some 32mm A/C, The depth of 32 mm AC (layer 2) includes 15 mm of overlap with concrete. Further 32 mm AC was present below.

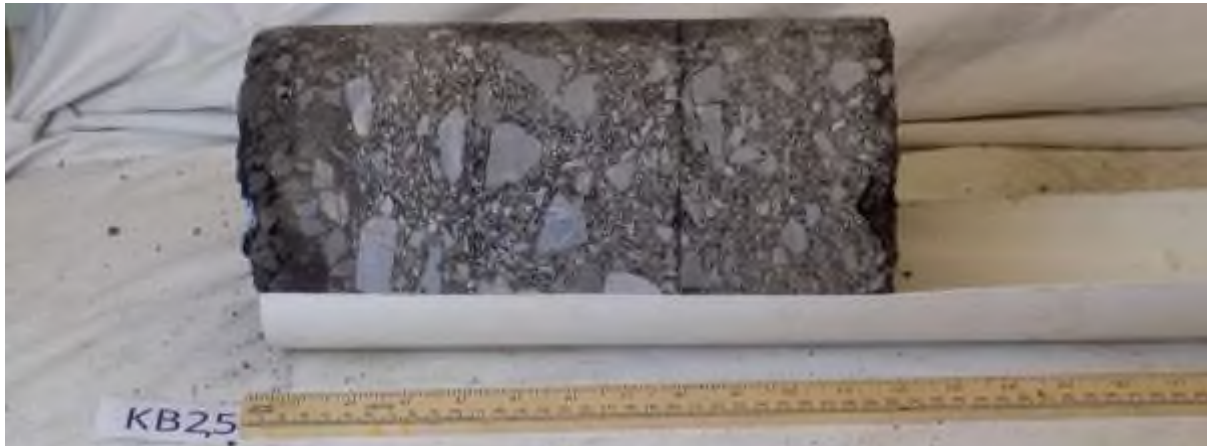
**2.24 Core reference: KB24****Plate 25:** Core reference: KB24**Table 25:** Visual examination results and WAC recommendations for core ref: KB24

<b>Core Reference:</b>	KB24
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	257
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	38
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	16
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	65
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	54
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	84
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

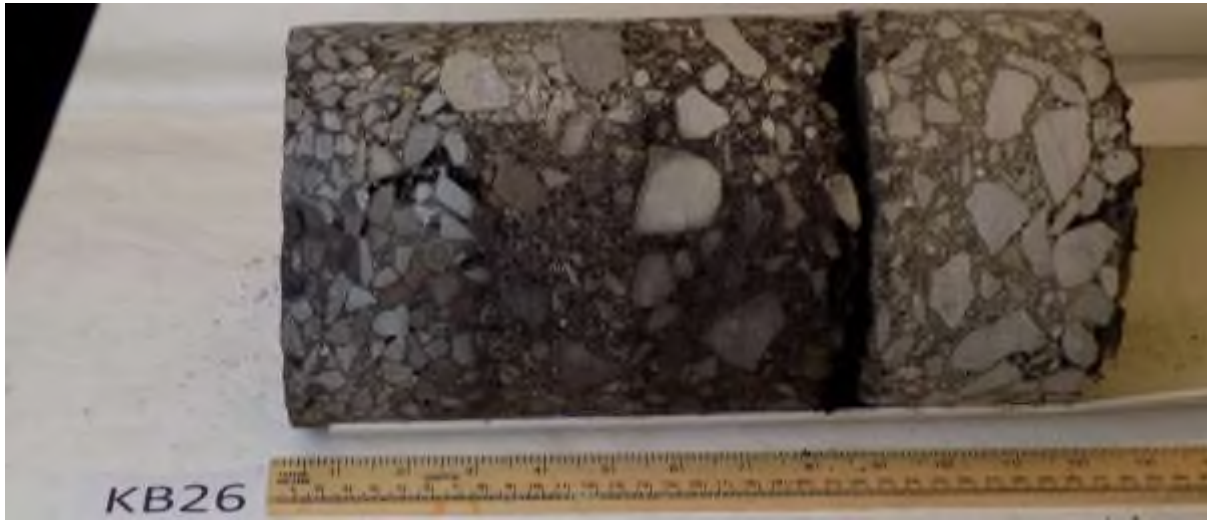


**2.25 Core reference: KB25****Plate 26:** Core reference: KB25**Table 26:** Visual examination results and WAC recommendations for core ref: KB25

<b>Core Reference:</b>	KB25
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	288
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	21
<b>1) Bound Material Type</b>	14mm 35% HRA*
<b>Thickness Found (mm)</b>	21
<b>2) Bound Material Type</b>	32mm A/C*
<b>Thickness Found (mm)</b>	55
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	91
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	93
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in some 32mm A/C. \* Bound layers 1 and 2 had a mild PAK marker reaction, unusual as none of the surrounding HRA reacted. Please be aware that the strength of reaction does not indicate the amount of tar present.

**2.26 Core reference: KB26****Plate 27:** Core reference: KB26**Table 27:** Visual examination results and WAC recommendations for core ref: KB26

<b>Core Reference:</b>	KB26
<b>Location</b>	Lane 1 westbound
<b>Total Depth Core (mm)</b>	269-308
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	74-56
<b>1) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	66-45
<b>2) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	77
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	91
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

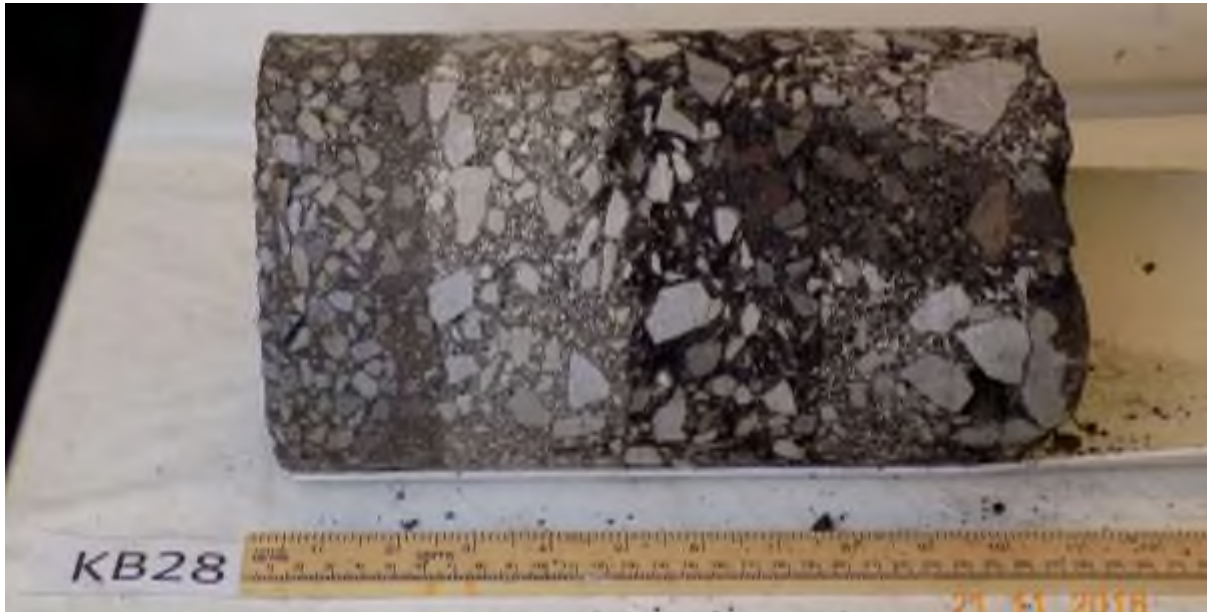
**2.27 Core reference: KB27****Plate 28:** Core reference: KB27**Table 28:** Visual examination results and WAC recommendations for core ref: KB27

<b>Core Reference:</b>	KB27
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	280
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	20
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	26
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	52
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	84
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	98
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in some 32mm A/C

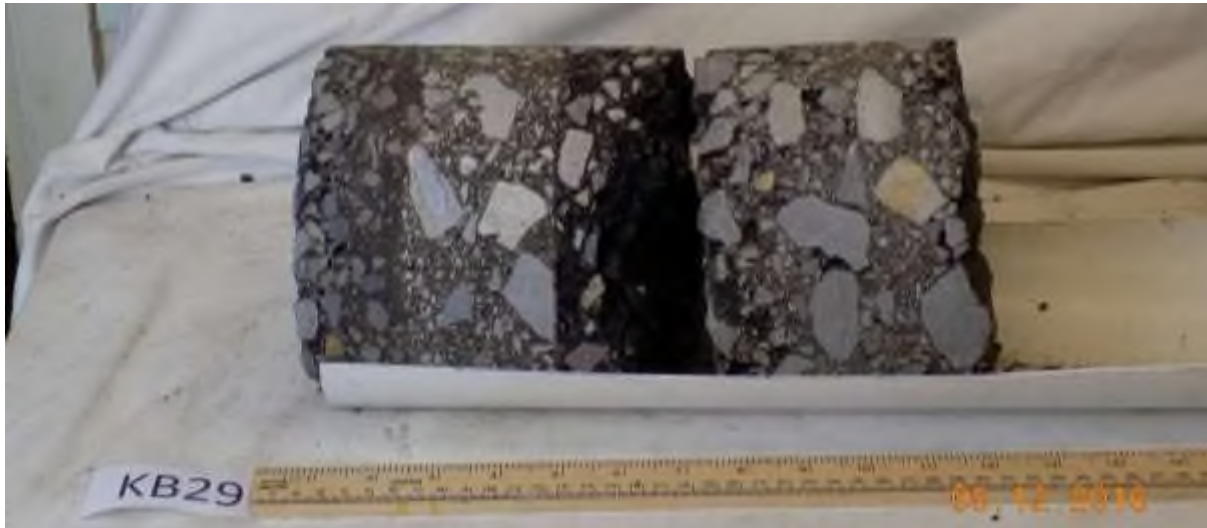


**2.28 Core reference: KB28****Plate 29:** Core reference: KB28**Table 29:** Visual examination results and WAC recommendations for core ref: KB28

<b>Core Reference:</b>	KB28
<b>Location</b>	Lane 1 westbound
<b>Total Depth Core (mm)</b>	256
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	38
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	17
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	59
<b>3) Bound Material Type</b>	32mm A/C <sup>1</sup>
<b>Thickness Found</b>	62
<b>4) Bound Material Type</b>	32mm A/C <sup>1</sup>
<b>Thickness Found (mm)</b>	80
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

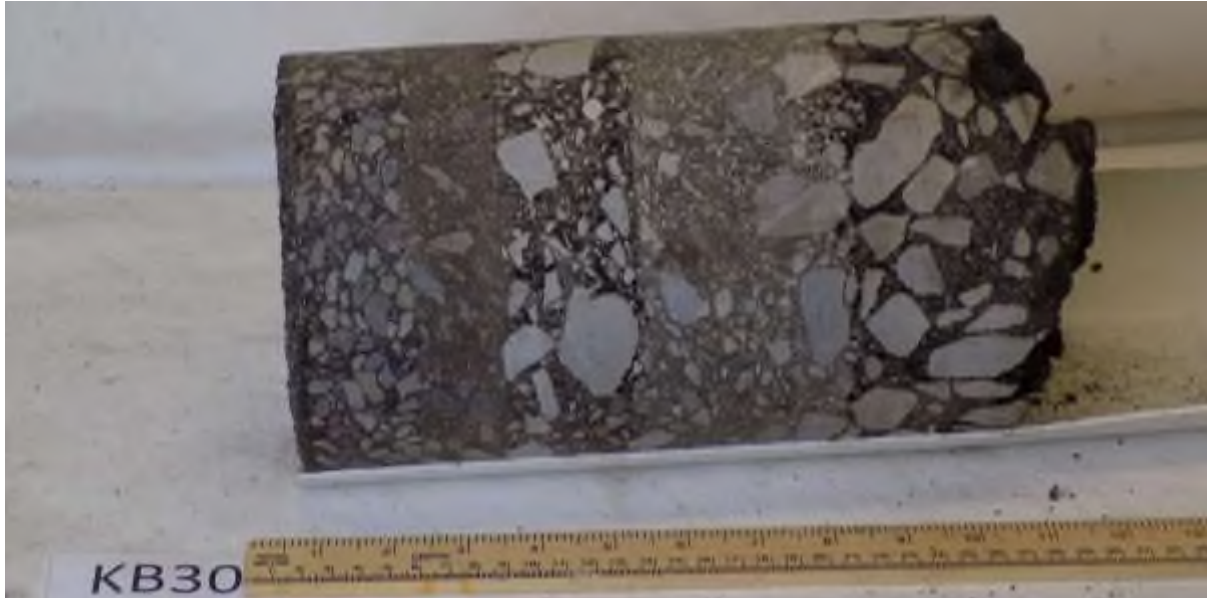
**Remarks:** Tar present in 32mm A/C

**2.29 Core reference: KB29****Plate 30:** Core reference: KB29**Table 30:** Visual examination results and WAC recommendations for core ref: KB29

<b>Core Reference:</b>	KB29
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	273
<b>Surface Course Type</b>	14mm SMA
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	23
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	27
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	63
<b>3) Bound Material Type</b>	20mm A/C <sup>7,3</sup>
<b>Thickness Found</b>	50
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	110
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 20mm A/C and some 32mm A/C

**2.30 Core reference: KB30****Plate 31:** Core reference: KB30**Table 31:** Visual examination results and WAC recommendations for core ref: KB30

<b>Core Reference:</b>	KB30
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	263
<b>Surface Course Type</b>	High Friction surfacing
<b>Aggregate Type &amp; PSV</b>	Calcined Bauxite 68
<b>Thickness Found (mm)</b>	5
<b>1) Bound Material Type</b>	10mm SMA
<b>Thickness Found (mm)</b>	38
<b>2) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	29
<b>3) Bound Material Type</b>	20mm A/C
<b>Thickness Found</b>	44
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	72
<b>5) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	75
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

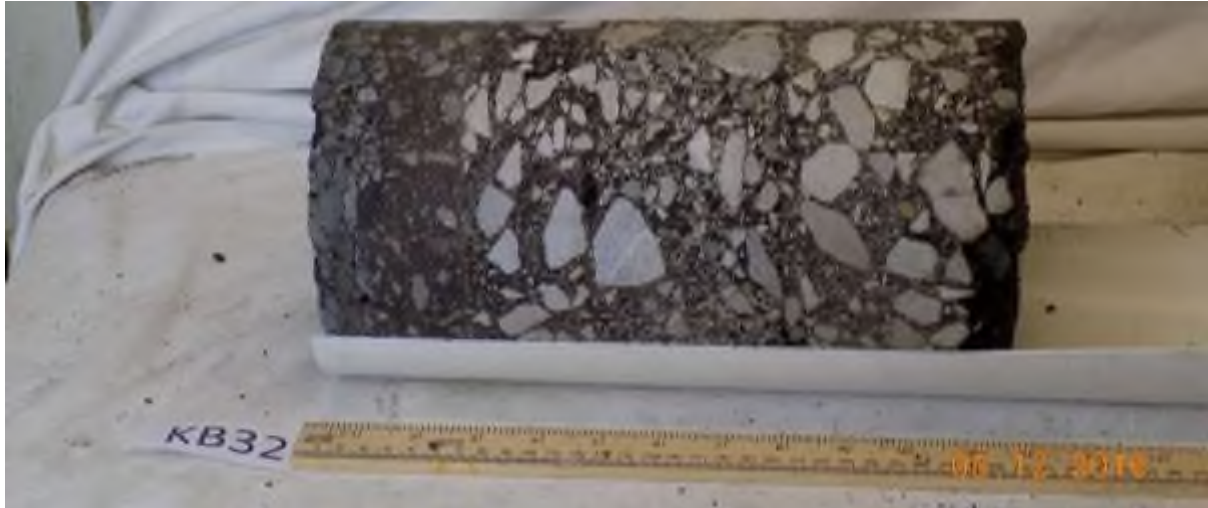


**2.31 Core reference: KB31****Plate 32:** Core reference: KB31**Table 32:** Visual examination results and WAC recommendations for core ref: KB31

<b>Core Reference:</b>	KB31
<b>Location</b>	Lane 2 westbound
<b>Total Depth Core (mm)</b>	240
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	22
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	25
<b>2) Bound Material Type</b>	20mm A/C <sup>1</sup>
<b>Thickness Found (mm)</b>	44
<b>3) Bound Material Type</b>	32mm A/C <sup>1</sup>
<b>Thickness Found</b>	63
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	86
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

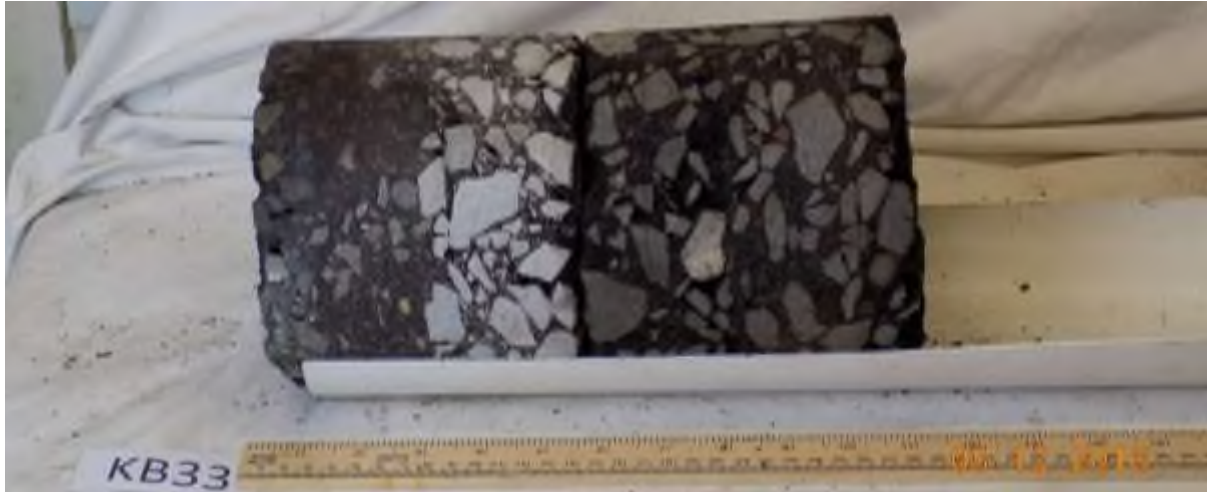
**Remarks:** Tar present in 32mm A/C

**2.32 Core reference: KB32****Plate 33:** Core reference: KB32**Table 33:** Visual examination results and WAC recommendations for core ref: KB32

<b>Core Reference:</b>	KB32
<b>Location</b>	Lane 1 westbound
<b>Total Depth Core (mm)</b>	274
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	20
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	38
<b>2) Bound Material Type</b>	20mm A/C <sup>1</sup>
<b>Thickness Found (mm)</b>	50
<b>3) Bound Material Type</b>	32mm A/C <sup>1</sup>
<b>Thickness Found</b>	76
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	90
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

**2.33 Core reference: KB33****Plate 34:** KB33**Table 34:** Visual Examination results and WAC recommendations for core ref: KB33

<b>Core Reference:</b>	KB33
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	262
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	24
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	46
<b>2) Bound Material Type</b>	20mm A/C <sup>7,1</sup>
<b>Thickness Found (mm)</b>	55
<b>3) Bound Material Type</b>	32mm A/C <sup>1</sup>
<b>Thickness Found</b>	63
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	74
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

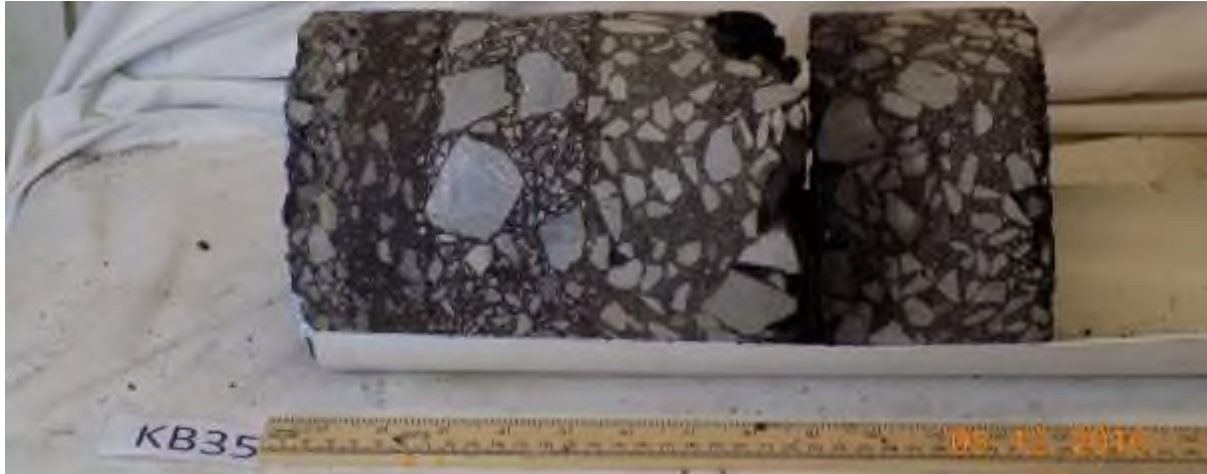


**2.34 Core reference: KB34****Plate 35:** Core reference: KB34**Table 35:** Visual examination results and WAC recommendations for core ref: KB34

<b>Core Reference:</b>	KB34
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	285
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	22
<b>1) Bound Material Type</b>	14mm HRA
<b>Thickness Found (mm)</b>	28
<b>2) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	65
<b>3) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found</b>	90
<b>4) Bound Material Type</b>	32mm A/C <sup>10</sup>
<b>Thickness Found (mm)</b>	80
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

**2.35 Core reference: KB35****Plate 36:** Core reference: KB35**Table 36:** Visual examination results and WAC recommendations for core ref: KB35

<b>Core Reference:</b>	KB35
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	290
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	28
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	32
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	58
<b>3) Bound Material Type</b>	32mm A/C <sup>7,3</sup>
<b>Thickness Found</b>	85
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	87
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

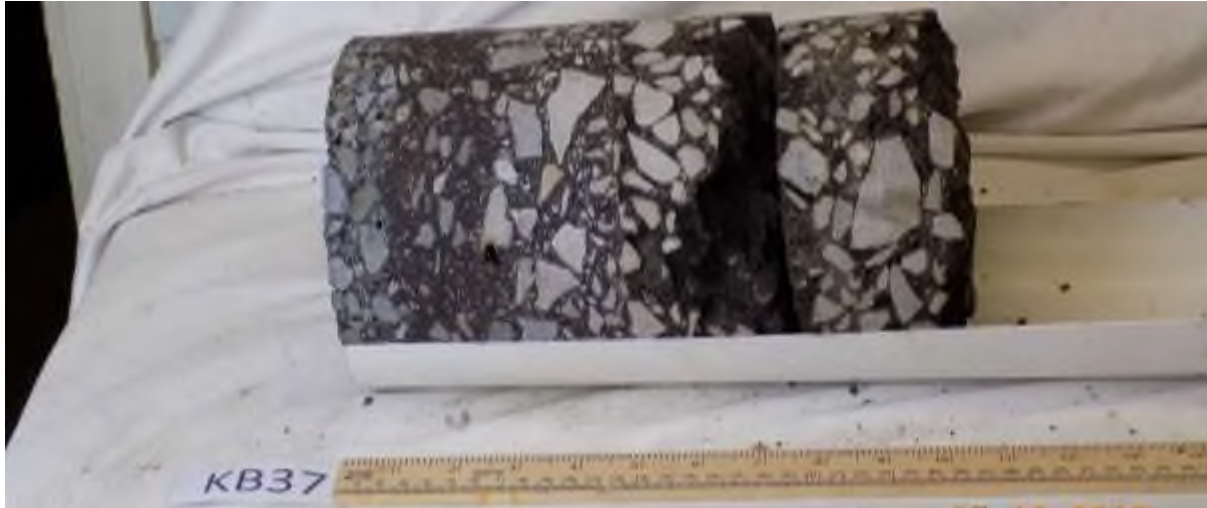
**2.36 Core reference: KB36****Plate 37:** Core reference: KB36**Table 37:** Visual examination results and WAC recommendations for core ref: KB36

<b>Core Reference:</b>	KB36
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	249
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	26
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	38
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	46
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	75
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	64
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in some 32mm A/C



**2.37 Core reference: KB37****Plate 38:** Core reference: KB37**Table 38:** Visual examination results and WAC recommendations for core ref: KB37

<b>Core Reference:</b>	KB37
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	249
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	26
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	40
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	55
<b>3) Bound Material Type</b>	32mm A/C <sup>3,7</sup>
<b>Thickness Found</b>	60
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	68
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

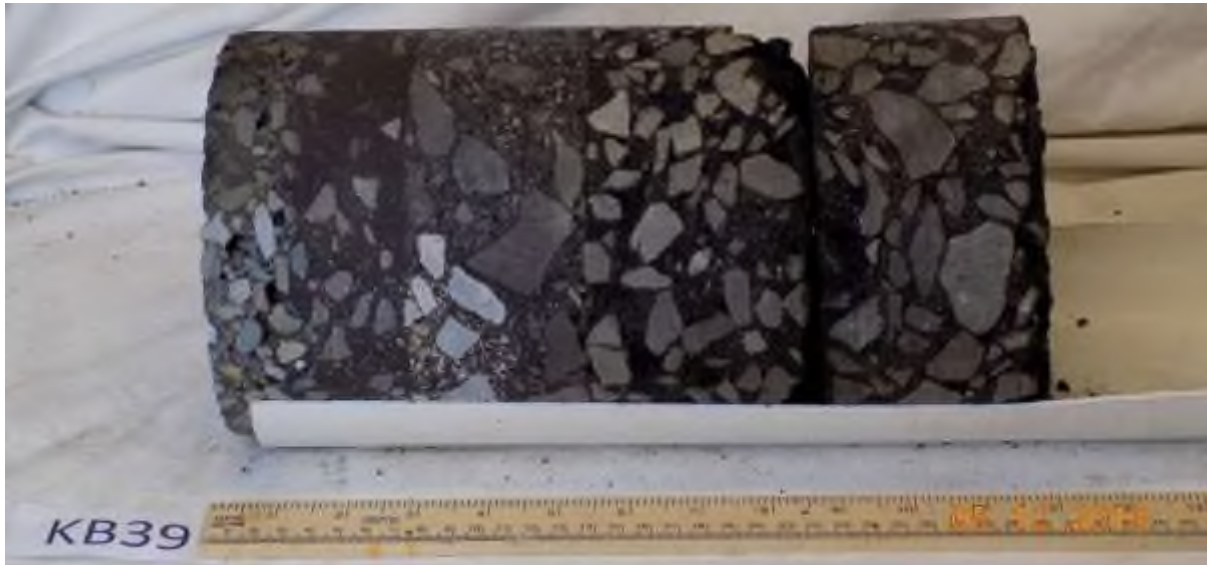
**Remarks:** Tar present in some 32mm A/C

**2.38 Core reference: KB38****Plate 39:** Core reference: KB38**Table 39:** Visual examination results and WAC recommendations for core ref: KB38

<b>Core Reference:</b>	KB38
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	268
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	28
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	28
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	54
<b>3) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found</b>	90
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	68
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 20mm and 32mm A/C

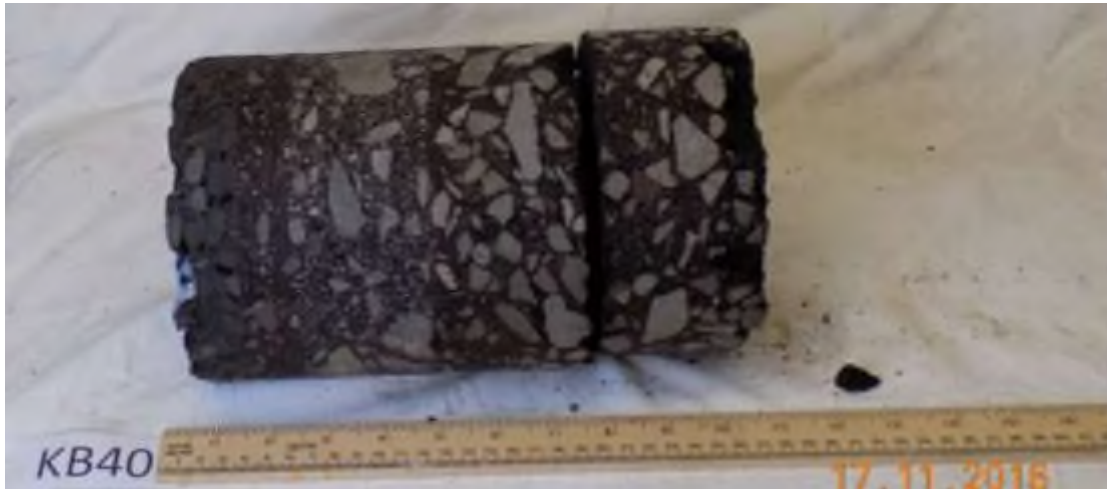
**2.39 Core reference: KB39****Plate 40:** Core reference: KB39**Table 40:** Visual examination results and WAC recommendations for core ref: KB39

<b>Core Reference:</b>	KB39
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	286
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	30
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	41
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	62
<b>3) Bound Material Type</b>	20mm A/C <sup>1,7</sup>
<b>Thickness Found</b>	75
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	78
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 20mm and 32mm A/C

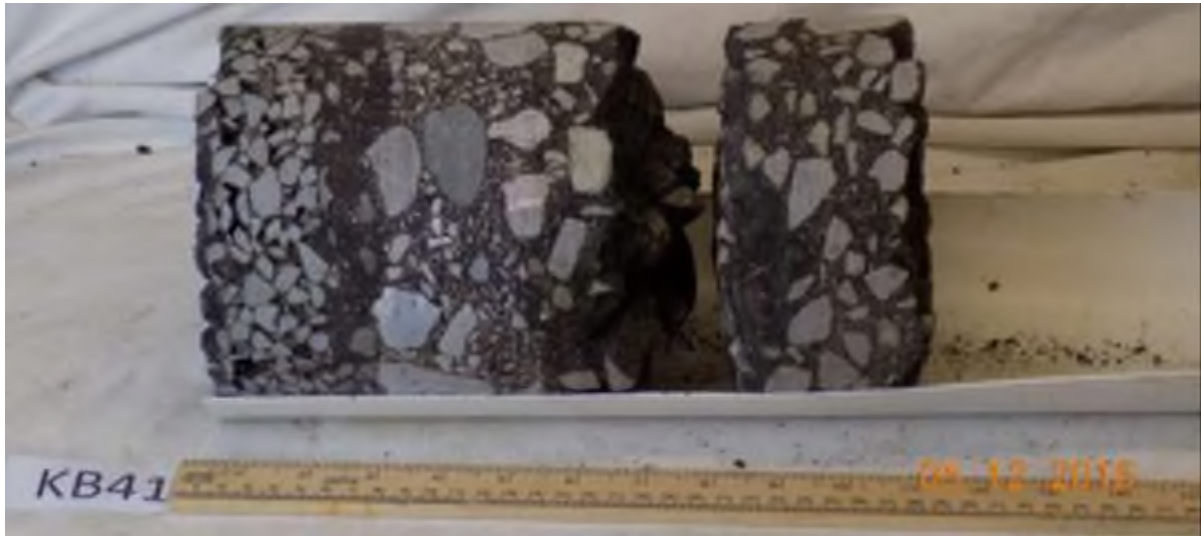


**2.40 Core reference: KB40****Plate 41:** Core reference: KB40**Table 41:** Visual examination results and WAC recommendation for core ref: KB40

<b>Core Reference:</b>	KB40
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	236
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	26
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	22
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	56
<b>3) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found</b>	62
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	70
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 20mm and 32mm A/C

**2.41 Core reference: KB41****Plate 42:** Core reference: KB41**Table 42:** Visual examination results and WAC recommendations for core ref: KB41

<b>Core Reference:</b>	KB41
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	247
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	49
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	18
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	60
<b>3) Bound Material Type</b>	32mm A/C <sup>3,7</sup>
<b>Thickness Found</b>	50
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	70
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

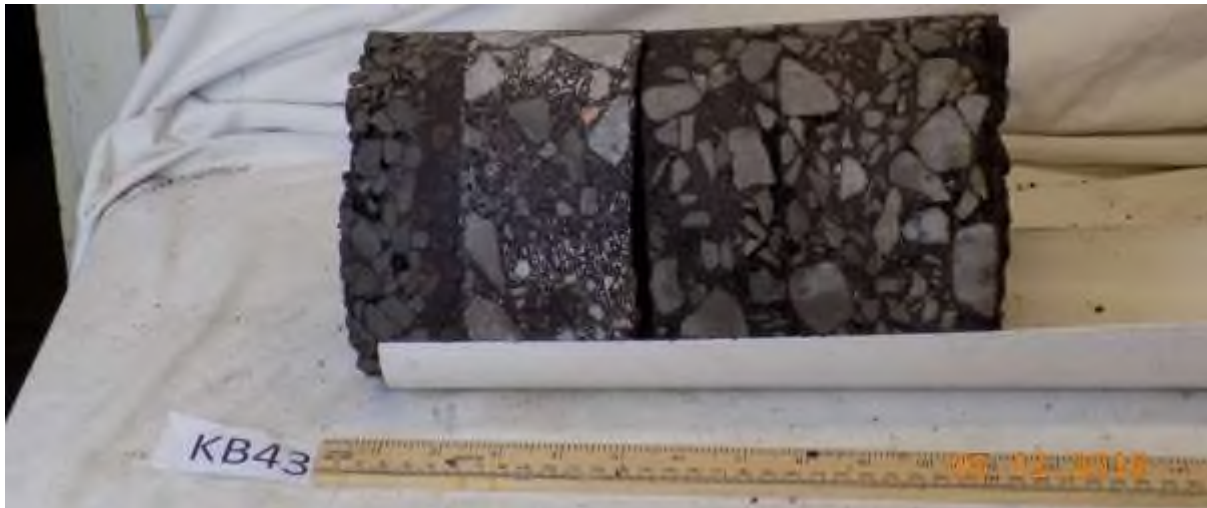
**2.42 Core reference: KB42****Plate 43:** Core reference: KB42**Table 43:** Visual examination results and WAC recommendations for core ref: KB42

<b>Core Reference:</b>	KB42
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	283
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	38
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	25
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	60
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	90
<b>4) Bound Material Type</b>	32mm A/C <sup>2</sup>
<b>Thickness Found (mm)</b>	70 (approximately)
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

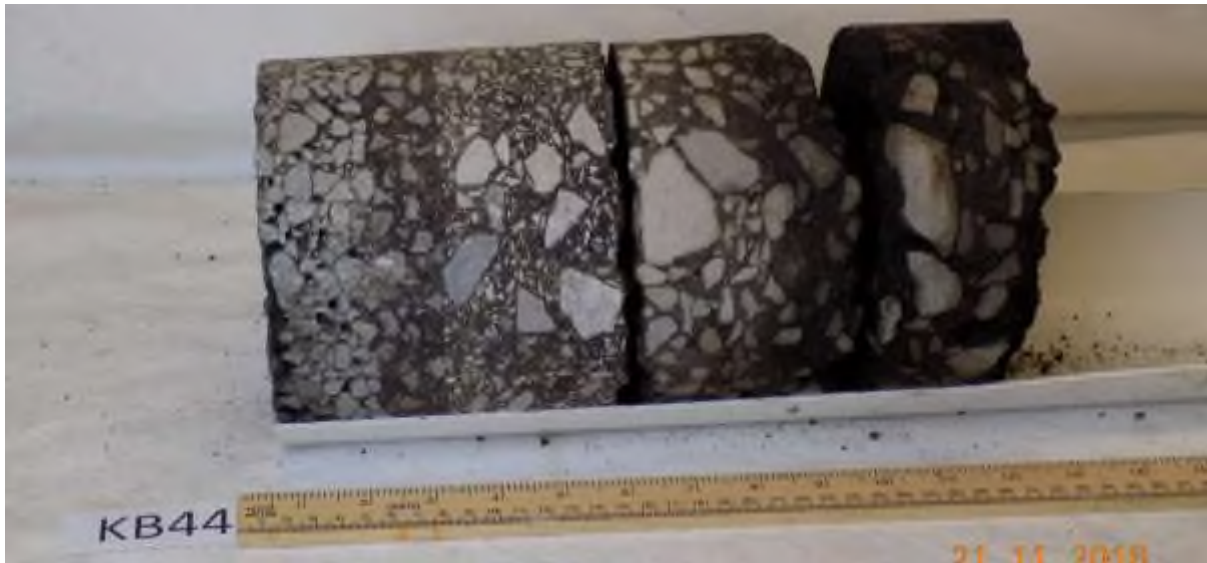


**2.43 Core reference: KB43****Plate 44:** Core reference: KB43**Table 44:** Visual examination results and WAC recommendation for core ref: KB43

<b>Core Reference:</b>	KB43
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	263
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	31
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	16
<b>2) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	73
<b>3) Bound Material Type</b>	32mm A/C <sup>1</sup>
<b>Thickness Found</b>	53
<b>4) Bound Material Type</b>	32mm A/C <sup>1</sup>
<b>Thickness Found (mm)</b>	90
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

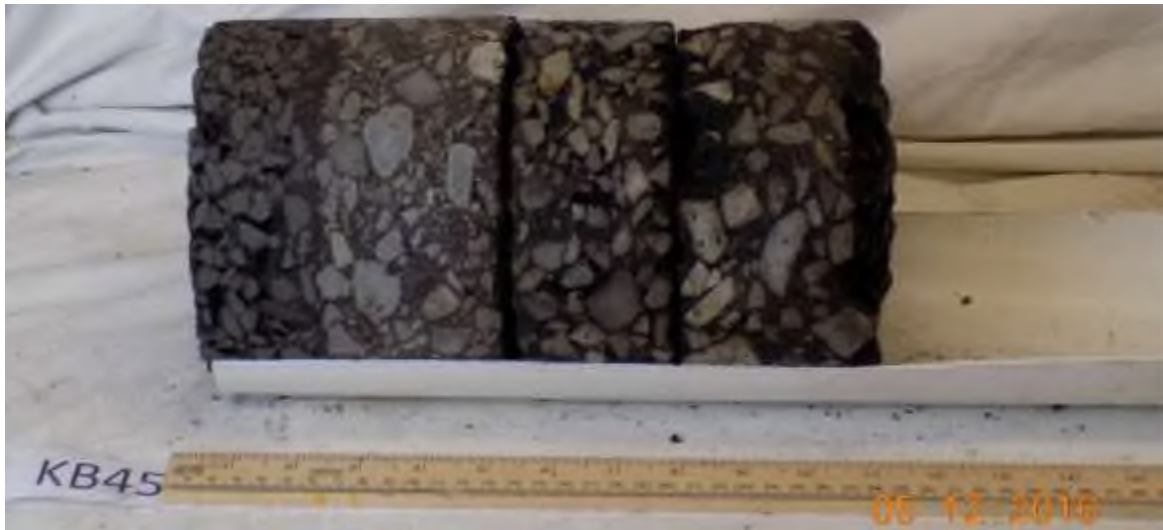
**Remarks:** Tar present in 32mm A/C

**2.44 Core reference: KB44****Plate 45:** Core reference: KB44**Table 45:** Visual examination results and WAC recommendations for core ref: KB44

<b>Core Reference:</b>	KB44
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	297
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	43
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	22
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	67
<b>3) Bound Material Type</b>	32mm A/C <sup>3,7</sup>
<b>Thickness Found</b>	90
<b>4) Bound Material Type</b>	32mm A/C <sup>3</sup>
<b>Thickness Found (mm)</b>	75
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

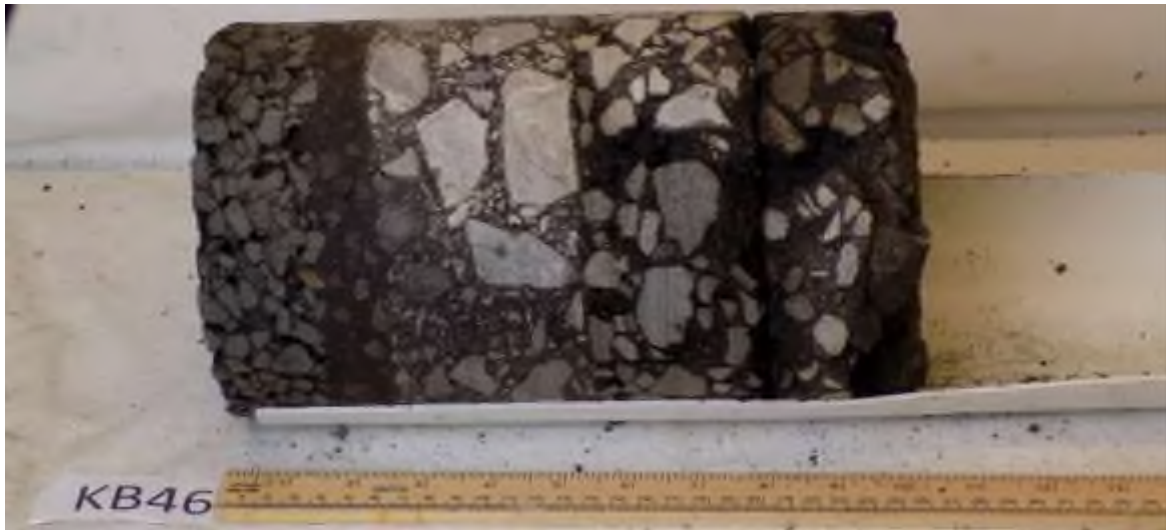
**2.45 Core reference: KB45****Plate 46:** Core reference: KB45**Table 46:** Visual examination results and WAC recommendations for core ref: KB45

<b>Core Reference:</b>	KB45
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	253-261
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	45
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	0-8
<b>2) Bound Material Type</b>	20mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	68
<b>3) Bound Material Type</b>	20mm A/C <sup>7</sup>
<b>Thickness Found</b>	60
<b>4) Bound Material Type</b>	32mm A/C <sup>3</sup>
<b>Thickness Found (mm)</b>	80
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C and some 20mm A/C

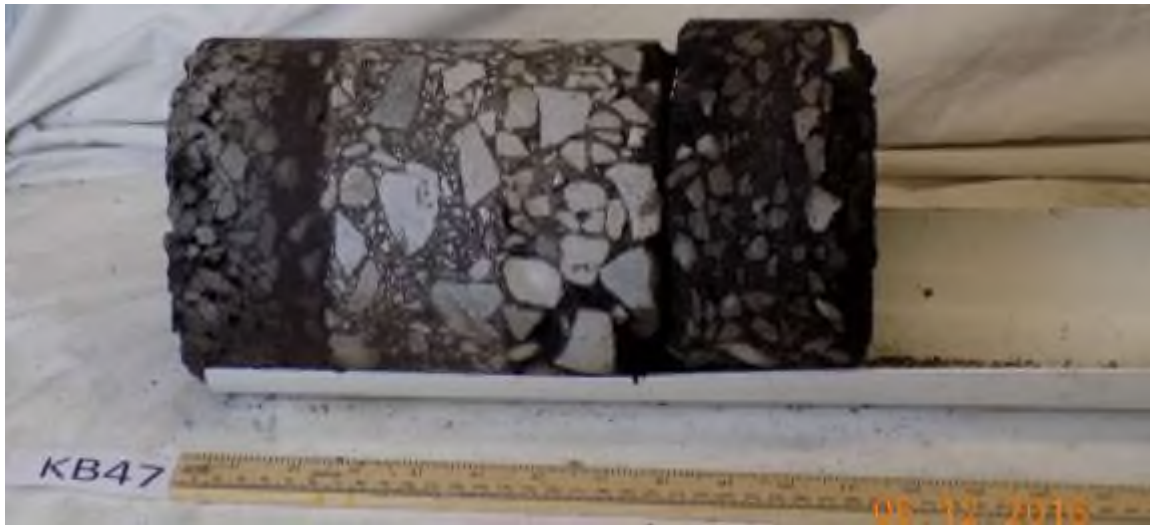


**2.46 Core reference: KB46****Plate 47:** Core reference: KB46**Table 47:** Visual examination results and WAC recommendations for core ref: KB46

<b>Core Reference:</b>	KB46
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	266
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	45
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	25
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	71
<b>3) Bound Material Type</b>	32mm A/C <sup>1,7</sup>
<b>Thickness Found</b>	62
<b>4) Bound Material Type</b>	32mm A/C <sup>10</sup>
<b>Thickness Found (mm)</b>	63
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

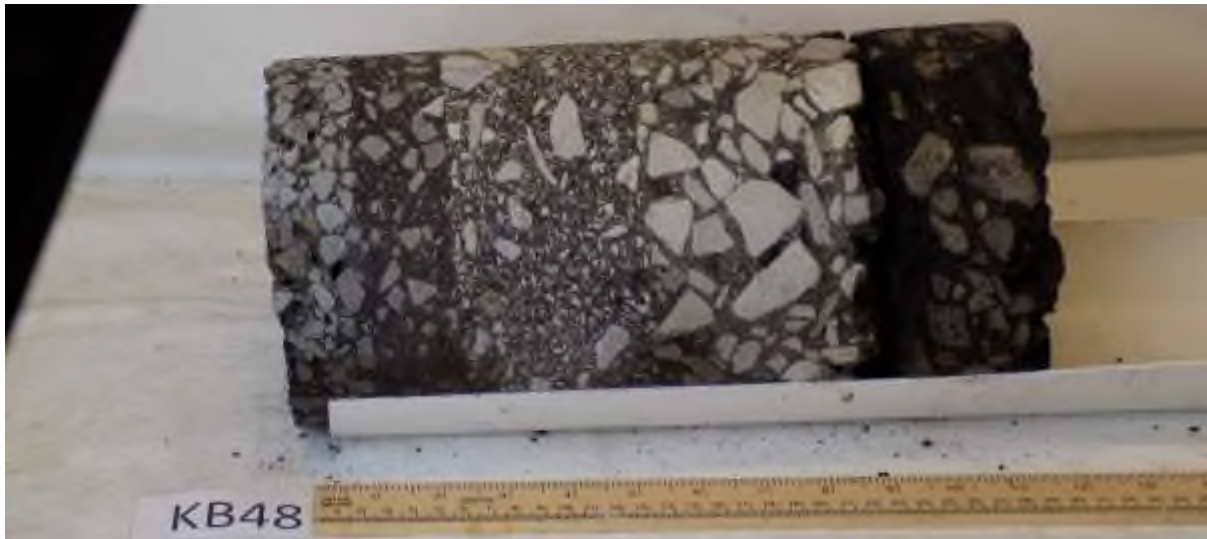
**Remarks:** Tar present in 32mm A/C

**2.47 Core reference: KB47****Plate 47:** Core reference: KB47**Table 47:** Visual examination results and WAC recommendations for core ref: KB47

<b>Core Reference:</b>	KB47
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	275
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	41
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	22
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	73
<b>3) Bound Material Type</b>	32mm A/C <sup>7,1</sup>
<b>Thickness Found</b>	61
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	78
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** <sup>1</sup>voided; <sup>2</sup>stripped; <sup>3</sup>partially stripped; <sup>4</sup>limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in some 32mm A/C

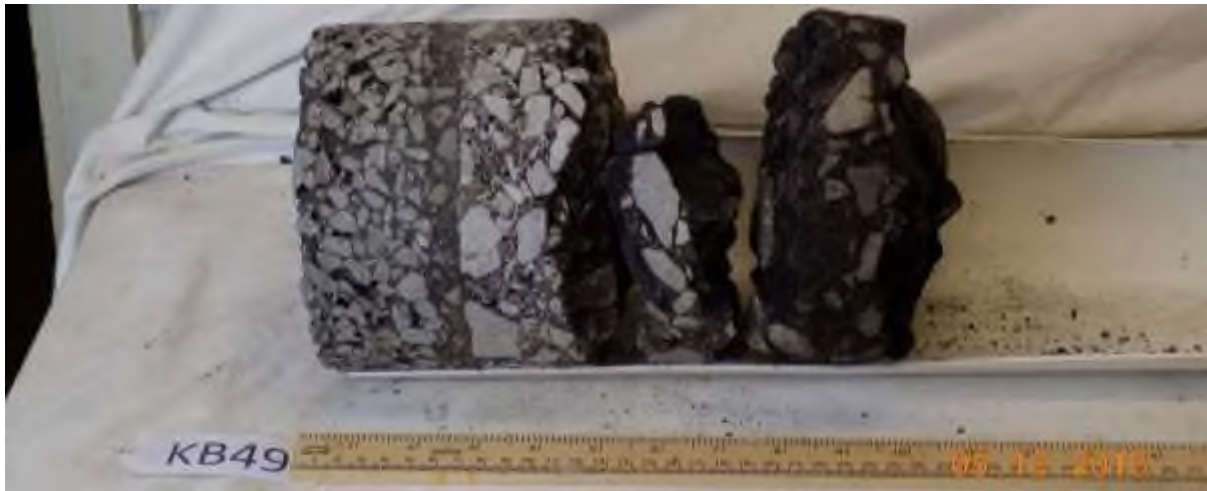
**2.48 Core reference: KB48****Plate 49:** Core reference: KB48**Table 49:** Visual examination result and WAC recommendations for core ref: KB48

<b>Core Reference:</b>	KB48
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	298
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	34
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	36
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	72
<b>3) Bound Material Type</b>	32mm A/C <sup>7,1</sup>
<b>Thickness Found</b>	88
<b>4) Bound Material Type</b>	32mm A/C <sup>3</sup>
<b>Thickness Found (mm)</b>	68
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C



**2.49 Core reference: KB49****Plate 50:** Core reference: KB49**Table 50:** Visual examination results and WAC recommendations for core ref: KB49

<b>Core Reference:</b>	KB49
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	276
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	54
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	15
<b>2) Bound Material Type</b>	20mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	55
<b>3) Bound Material Type</b>	32mm A/C <sup>3</sup>
<b>Thickness Found</b>	72
<b>4) Bound Material Type</b>	32mm A/C <sup>3</sup>
<b>Thickness Found (mm)</b>	80
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 20mm and 32mm A/C

**2.50 Core reference: KB50****Plate 51:** Core reference: KB50**Table 51:** Visual examination results and WAC recommendations for core ref: KB50

<b>Core Reference:</b>	KB50
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	288
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	30
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	28
<b>2) Bound Material Type</b>	20mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	53
<b>3) Bound Material Type</b>	32mm A/C <sup>3,7</sup>
<b>Thickness Found</b>	87
<b>4) Bound Material Type</b>	32mm A/C <sup>3</sup>
<b>Thickness Found (mm)</b>	90
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

**2.51 Core reference: KB51****Plate 52:** Core reference: KB1**Table 52:** Visual examination results and WAC recommendations for core ref: KB1

<b>Core Reference:</b>	KB51
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	258
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	33
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	15
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	57
<b>3) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found</b>	73
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	80
<b>Foundation Material</b>	Concrete
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C



**2.52 Core reference: KB52****Plate 53:** Core reference: KB52**Table 53:** Visual examination results and WAC recommendations for core ref: KB52

<b>Core Reference:</b>	KB52
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	426
<b>Surface Course Type</b>	14mm SMA <sup>1</sup>
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	40
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	10
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	48
<b>3) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found</b>	73
<b>4) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	60
<b>5) Bound Material Type</b>	Concrete
<b>Thickness Found (mm)</b>	105
<b>6) Bound Material Type</b>	Concrete
<b>Thickness Found (mm)</b>	90
<b>Foundation Material</b>	Concrete
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

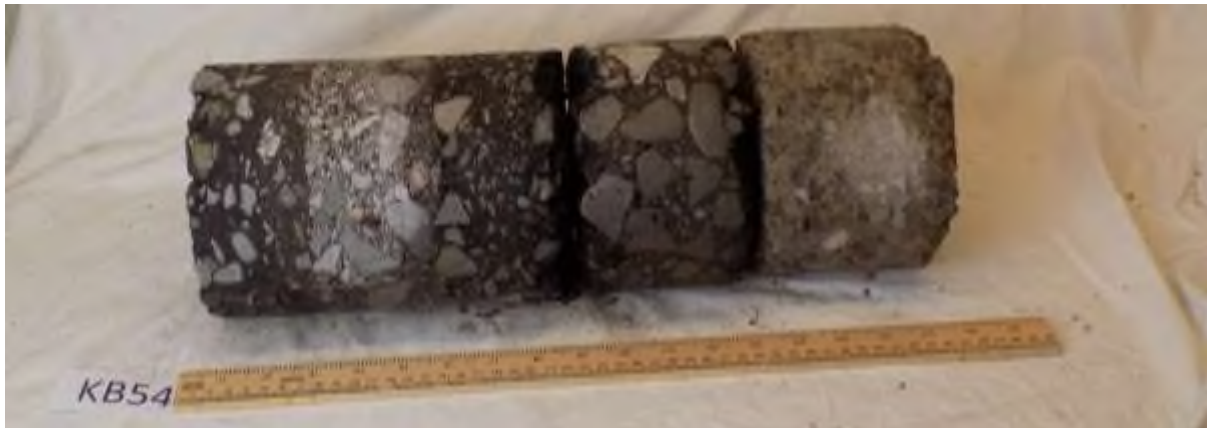
**Remarks:** Tar present in 32mm A/C

**2.53 Core reference: KB53****Plate 54:** Core reference: KB53**Table 54:** Visual examination results and WAC recommendations for core ref: KB53

<b>Core Reference:</b>	KB53
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	360
<b>Surface Course Type</b>	14mm 35% HRA
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	53
<b>1) Bound Material Type</b>	14mm A/C
<b>Thickness Found (mm)</b>	17
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	55
<b>3) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found</b>	71
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	71
<b>5) Bound Material Type</b>	Concrete
<b>Thickness Found (mm)</b>	93
<b>Foundation Material</b>	Concrete
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C

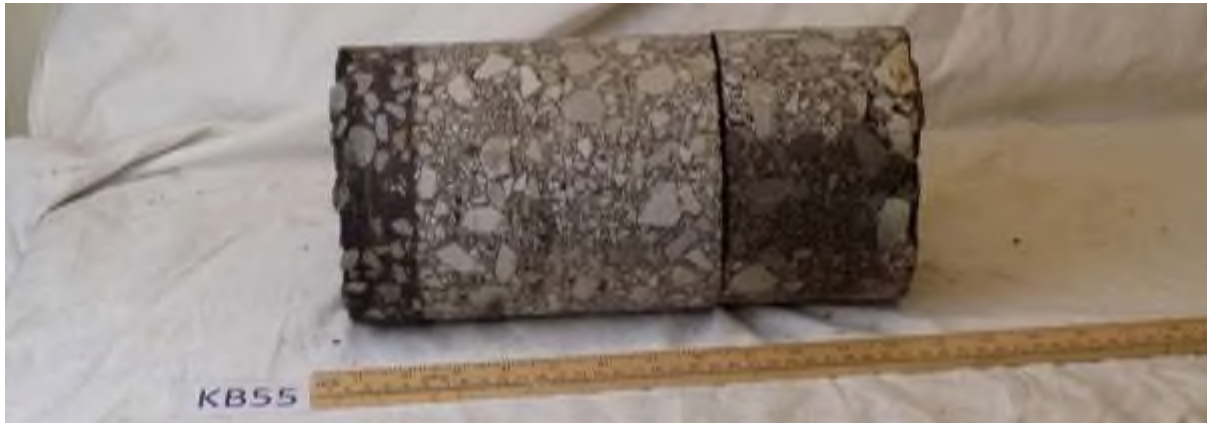
**2.54 Core reference: KB54****Plate 55:** Core reference: KB54**Table 55:** Visual examination results and WAC recommendations for core ref: KB54

<b>Core Reference:</b>	KB54
<b>Location</b>	Lane 1
<b>Total Depth Core (mm)</b>	413
<b>Surface Course Type</b>	14mm 35% HRA
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	40
<b>1) Bound Material Type</b>	14mm 35% HRA
<b>Thickness Found (mm)</b>	26
<b>2) Bound Material Type</b>	28mm A/C
<b>Thickness Found (mm)</b>	68
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	75
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	92
<b>5) Bound Material Type</b>	Concrete
<b>Thickness Found (mm)</b>	112
<b>Foundation Material</b>	Concrete
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	Yes

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**Remarks:** Tar present in 32mm A/C



**2.55 Core reference: KB55****Plate 56:** Core reference: KB55**Table 56:** Visual examination results and WAC recommendations for core ref: KB55

<b>Core Reference:</b>	KB55
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	316
<b>Surface Course Type</b>	14mm 35% HRA
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	43
<b>1) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	78
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	93
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	102
<b>Foundation Material</b>	Concrete
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	No

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**2.56 Core reference: KB56****Plate 57:** Core reference: KB56**Table 57:** Visual examination results and WAC recommendation for core ref: KB56

<b>Core Reference:</b>	KB56
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	314
<b>Surface Course Type</b>	Red high friction surfacing
<b>Aggregate Type &amp; PSV</b>	Calcined bauxite 68
<b>Thickness Found (mm)</b>	3
<b>1) Bound Material Type</b>	14mm HRA
<b>Thickness Found (mm)</b>	38
<b>2) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	63
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	112
<b>4) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	98
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	No

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**2.57 Core reference: KB57****Plate 58:** Core reference: KB57**Table 58:** Visual examination results and WAC recommendations for core ref: KB57

<b>Core Reference:</b>	KB57
<b>Location</b>	Lane 2, westbound
<b>Total Depth Core (mm)</b>	338
<b>Surface Course Type</b>	14mm 35% HRA
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	39
<b>1) Bound Material Type</b>	20mm A/C
<b>Thickness Found (mm)</b>	88
<b>2) Bound Material Type</b>	32mm A/C <sup>7</sup>
<b>Thickness Found (mm)</b>	103
<b>3) Bound Material Type</b>	32mm A/C
<b>Thickness Found</b>	108
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	No

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked



**2.58 Core reference: KB58****Plate 59:** Core reference: KB58**Table 59:** Visual examination results and WAC recommendations for core ref: KB58

<b>Core Reference:</b>	KB58
<b>Location</b>	Lane 1, westbound
<b>Total Depth Core (mm)</b>	339
<b>Surface Course Type</b>	14mm 35% HRA
<b>Aggregate Type &amp; PSV</b>	Gritstone 60
<b>Thickness Found (mm)</b>	53
<b>1) Bound Material Type</b>	20mm A/C <sup>1</sup>
<b>Thickness Found (mm)</b>	52
<b>2) Bound Material Type</b>	32mm A/C
<b>Thickness Found (mm)</b>	234
<b>Foundation Material</b>	Granular subbase
<b>Significant Quantity Lifted</b>	No
<b>WAC Potentially Required</b>	No

**Key:** 1voided; 2stripped; 3partially stripped; 4limestone contamination; <sup>5</sup>Worn; <sup>6</sup>not recovered; <sup>7</sup>no bond to lower layer; <sup>8</sup>rebar depth (mm) <sup>9</sup>multiple layers, <sup>10</sup>Layer cracked

**- END OF REPORT -**