

APPENDIX 'A' - GEOTECHNICAL REPORT

PAVEMENT CORES FOR:

Buler Street from Gilbert Avenue to Manitoba Avenue – Concrete Rehabilitation
Manitoba Avenue from Chudley Street to Keewatin Street – Concrete Rehabilitation
Pacific Avenue from Sherbrook Street to Tecumseh Street – Asphalt Rehabilitation
Tecumseh Street from Pacific Avenue to Alexander Avenue – Concrete Rehabilitation

The geotechnical report is provided to aid in the Contractor's evaluation of the existing pavement structure and/or soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in pavement structure and/or soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities. The nature and extent of variations may not become evident until construction commences.



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"Engineering and Testing Solutions That Work for You"

November 30, 2021

File No.: 21-037-02

City of Winnipeg
Engineering Public Works
106 - 1155 Pacific Avenue
Winnipeg, Manitoba
R3E 3P1

ATTENTION: Richard Weibel, C.E.T.

RE: Contract 2 – 2022 Local Street Renewal Program 22-R-01C

Introduction

ENG-TECH Consulting Limited (ENG-TECH) was retained by the City of Winnipeg to complete a pavement coring program for future rehabilitation projects along sections of multiple local streets in Winnipeg, Manitoba.

Scope of Work

The scope of work for the project entailed recovering a total of eight (8) cores through the existing pavement structure, documenting findings in accordance with Site Investigation Requirements for Public Works Street Projects and providing a report outlining the work conducted, including photographs and pavement core summary tables showing the pavement core thicknesses and locations using UTM coordinates.

The sections of road from which cores were recovered were as follows:

- Buller Street (Gilbert Avenue to Manitoba Avenue) - two cores
- Manitoba Avenue (Chudley Street to Keewatin Street) – three cores
- Pacific Avenue (Sherbrook Street to Tecumseh Street) - three cores
- Tecumseh Street (Pacific Avenue to Alexander Avenue) - one core

Field Program

ENG-TECH conducted the coring program on the local streets on November 17, 2021 across the site locations previously stated. The cores were obtained by ENG-TECH at locations determined by the City of Winnipeg using a 150 mm diameter diamond end core barrel. ENG-TECH repaired the core apertures with a City of Winnipeg approved material (horizontal repair mortar) that has been accepted on previous street renewal projects.

Laboratory Program

ENG-TECH measured core thicknesses and photographed the pavement structure. The core thicknesses, pavement structure and UTM coordinates are outlined in Tables 1 to 4 below. Photographs of each core are shown in the attached Photographs 1 to 8.

Closure

ENG-TECH trusts this is all the information required. If you have any questions, please contact the undersigned.

Sincerely,
ENG-TECH Consulting Limited



Darci Babisky, C.E.T.
Operations Manager - Laboratory

Enclosures: Table 1 – Summary of Pavement Structure –Buller Street (Gilbert Avenue and Manitoba Avenue)
Table 2 – Summary of Pavement Structure - Manitoba Avenue (Chudley Street to Keewatin Street)
Table 3 – Summary of Pavement Structure - Pacific Avenue (Sherbrook Street to Tecumseh Street)
Table 4 – Summary of Pavement Structure - Tecumseh Street (Pacific Avenue to Alexander Avenue)
Photographs of Cores (8 cores) (8 pages)

Email: rweibel@winnipeg.ca



**Table 1 - Summary of Pavement Core Structure
 Buller Street between Gilbert Avenue and Manitoba Avenue**

| Core No. | Date Collected | Lane Direction | Test Hole Location | | Pavement Surface | | |
|----------|-------------------|----------------|--------------------|---------|------------------|--------------------|----------------|
| | | | UTM (N) | 14U (E) | Type | Core Diameter (mm) | Thickness (mm) |
| PC1 | November 17, 2021 | Southbound | 5532657 | 630091 | Asphalt | 150 | 0 |
| | | | | | Concrete | 150 | 156 |
| PC2 | November 17, 2021 | Northbound | 5532558 | 630042 | Asphalt | 150 | 0 |
| | | | | | Concrete | 150 | 155 |

**Table 2 - Summary of Pavement Core Structure
 Manitoba Avenue between Chudley Street and Keewatin Street**

| Core No. | Date Collected | Lane Direction | Test Hole Location | | Pavement Surface | | |
|------------------|-------------------|----------------|--------------------|---------|------------------|--------------------|----------------|
| | | | UTM (N) | 14U (E) | Type | Core Diameter (mm) | Thickness (mm) |
| PC3 | November 17, 2021 | Eastbound | 5532629 | 629798 | Asphalt | 150 | 56 |
| | | | | | Concrete | 150 | 195 |
| PC4 ¹ | November 17, 2021 | Westbound | 5532684 | 629686 | Asphalt | 150 | 60 |
| | | | | | Concrete | 150 | 178 |
| PC5 | November 17, 2021 | Westbound | 5532728 | 629591 | Asphalt | 150 | 63 |
| | | | | | Concrete | 150 | 181 |

**Table 3 - Summary of Pavement Core Structure
 Pacific Avenue between Sherbrook Street and Tecumseh Street**

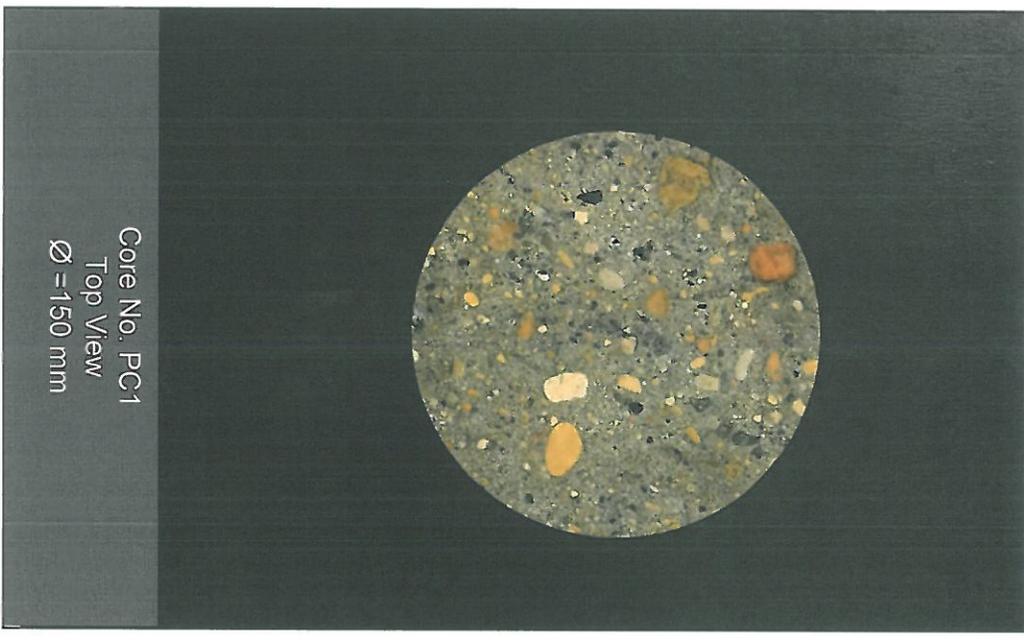
| Core No. | Date Collected | Lane Direction | Test Hole Location | | Pavement Surface | | |
|------------------|-------------------|----------------|--------------------|---------|------------------|--------------------|----------------|
| | | | UTM (N) | 14U (E) | Type | Core Diameter (mm) | Thickness (mm) |
| PC6 ² | November 17, 2021 | Eastbound | 5529888 | 632520 | Asphalt | 150 | 209 |
| | | | | | Concrete | 150 | 90 |
| PC7 ³ | November 17, 2021 | Eastbound | 5530007 | 632279 | Asphalt | 150 | 204 |
| | | | | | Concrete | 150 | 0 |
| PC8 | November 17, 2021 | Westbound | 5530057 | 632174 | Asphalt | 150 | 277 |
| | | | | | Concrete | 150 | 0 |

| Table 4 - Summary of Pavement Core Structure Tecumseh Street between Pacific Avenue and Alexander Avenue | | | | | | | |
|---|-------------------|----------------|--------------------|---------|------------------|--------------------|----------------|
| Core No. | Date Collected | Lane Direction | Test Hole Location | | Pavement Surface | | |
| | | | UTM (N) | 14U (E) | Type | Core Diameter (mm) | Thickness (mm) |
| PC9 ¹ | November 17, 2021 | Northbound | 5532728 | 6295891 | Asphalt | 150 | 0 |
| | | | | | Concrete | 150 | 153 |

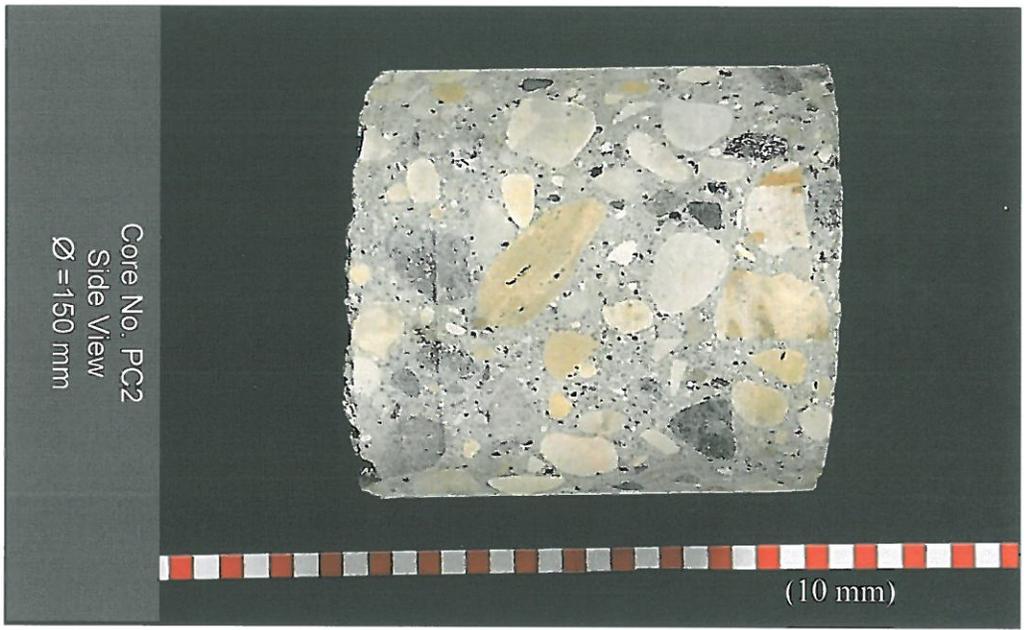
Notes:

1. Core No.'s PC4 and PC9 contained reinforcing steel bars.
2. Core No. PC6 was composed largely of asphalt cement with little to no visible aggregate below 75mm depth. Refer to photograph 6
3. Core No. PC7 contained a layer of asphalt cement with no visible aggregate near the bottom of the core. Refer to photograph 7

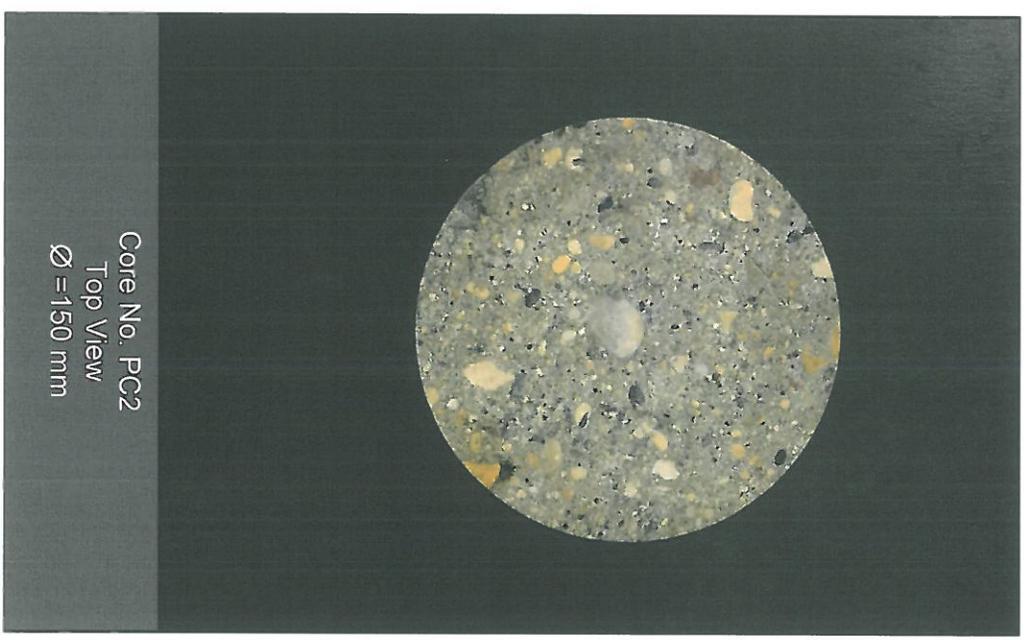
Photograph 1: Specimens from Buller Avenue



Photograph 2: Specimens from Buller Avenue



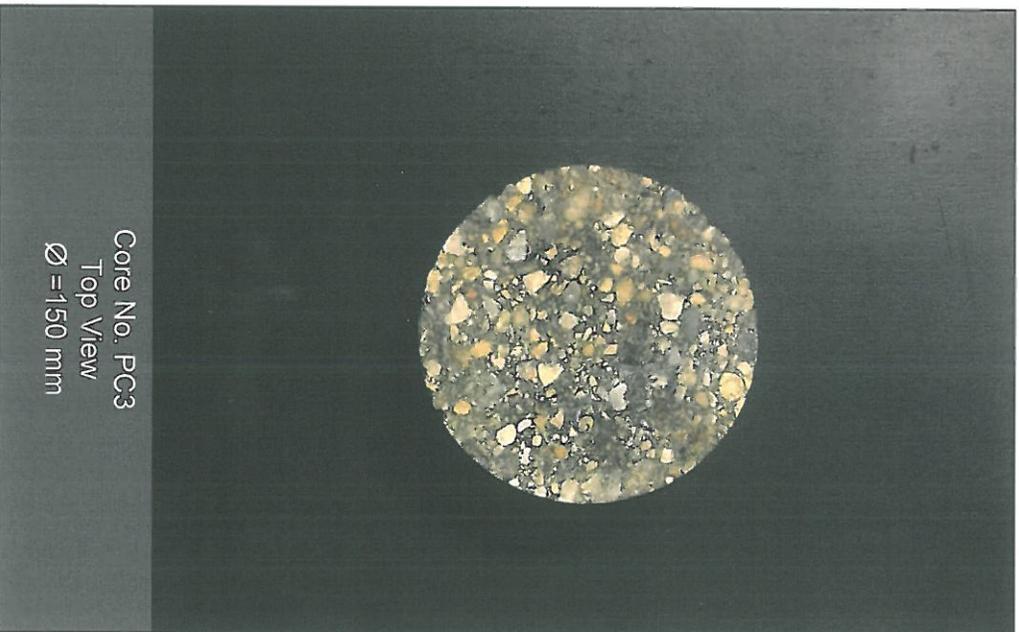
Core No. PC2
Side View
Ø = 150 mm



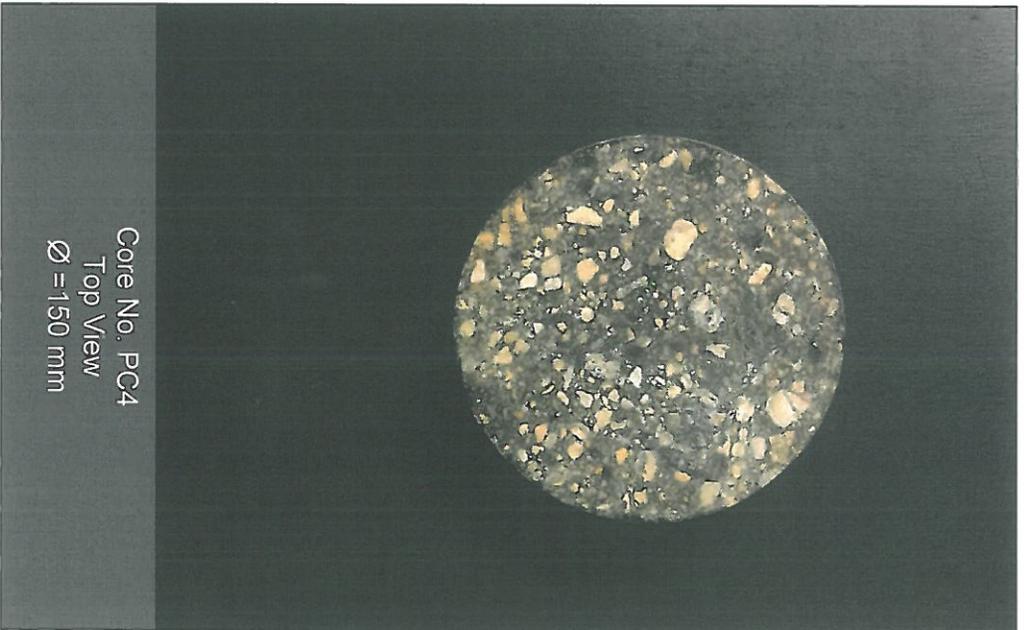
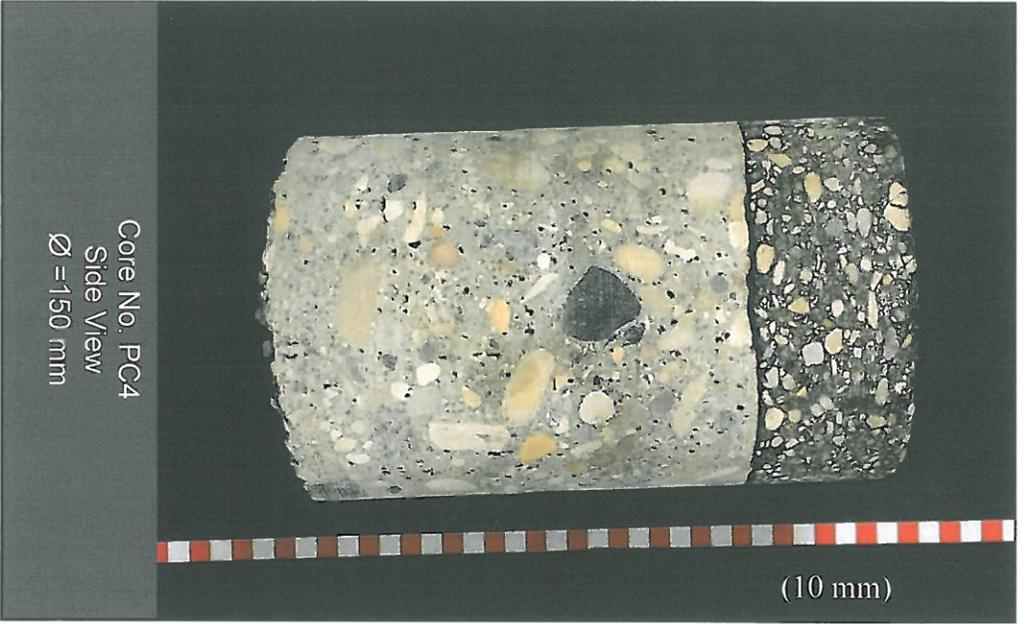
Core No. PC2
Top View
Ø = 150 mm



Photograph 3: Specimens from Manitoba Avenue



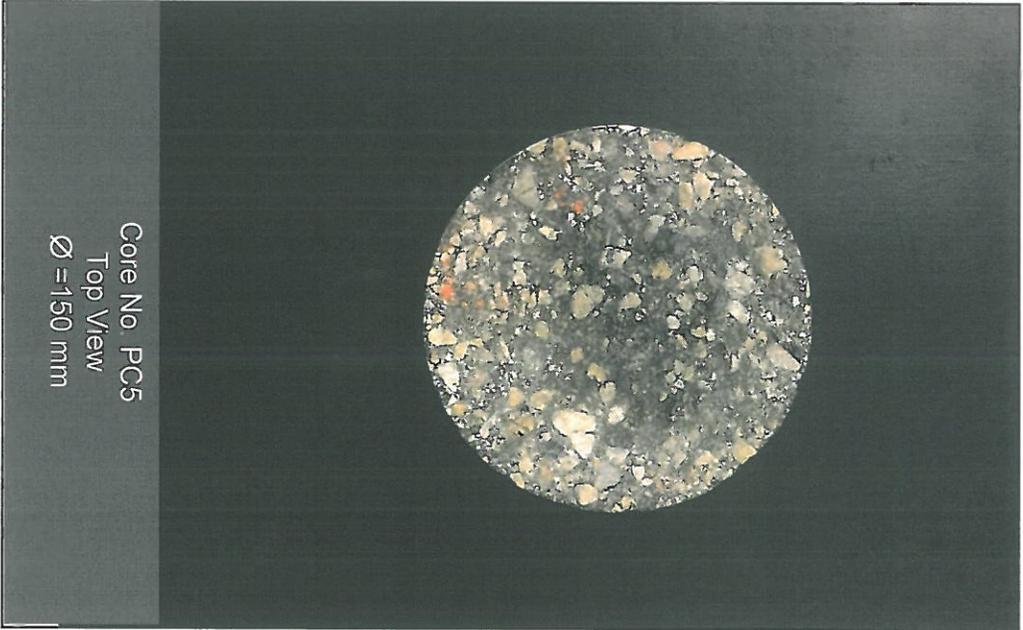
Photograph 4: Specimens from Manitoba Avenue



Photograph 5: Specimens from Manitoba Avenue



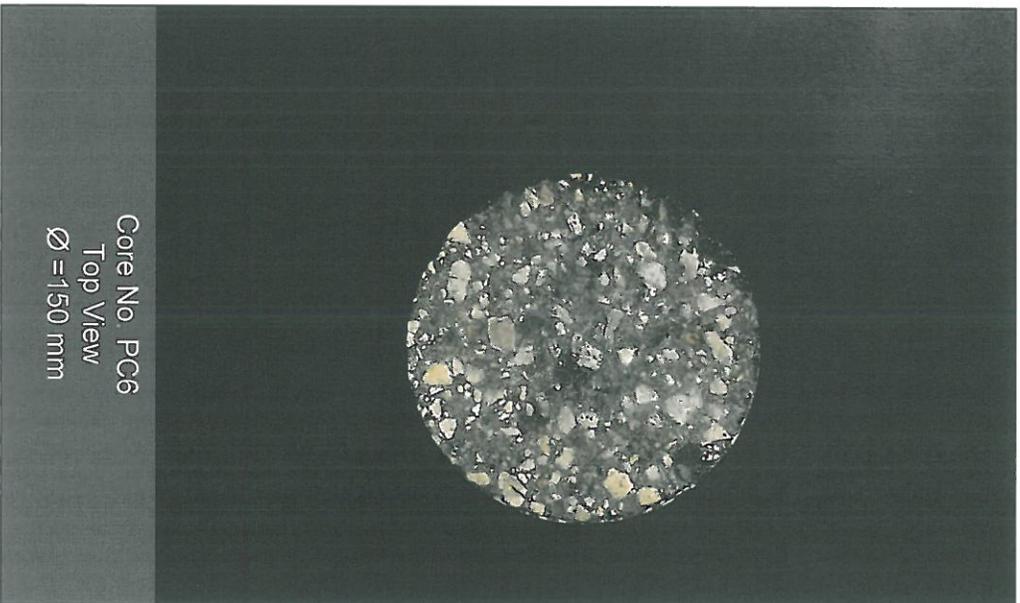
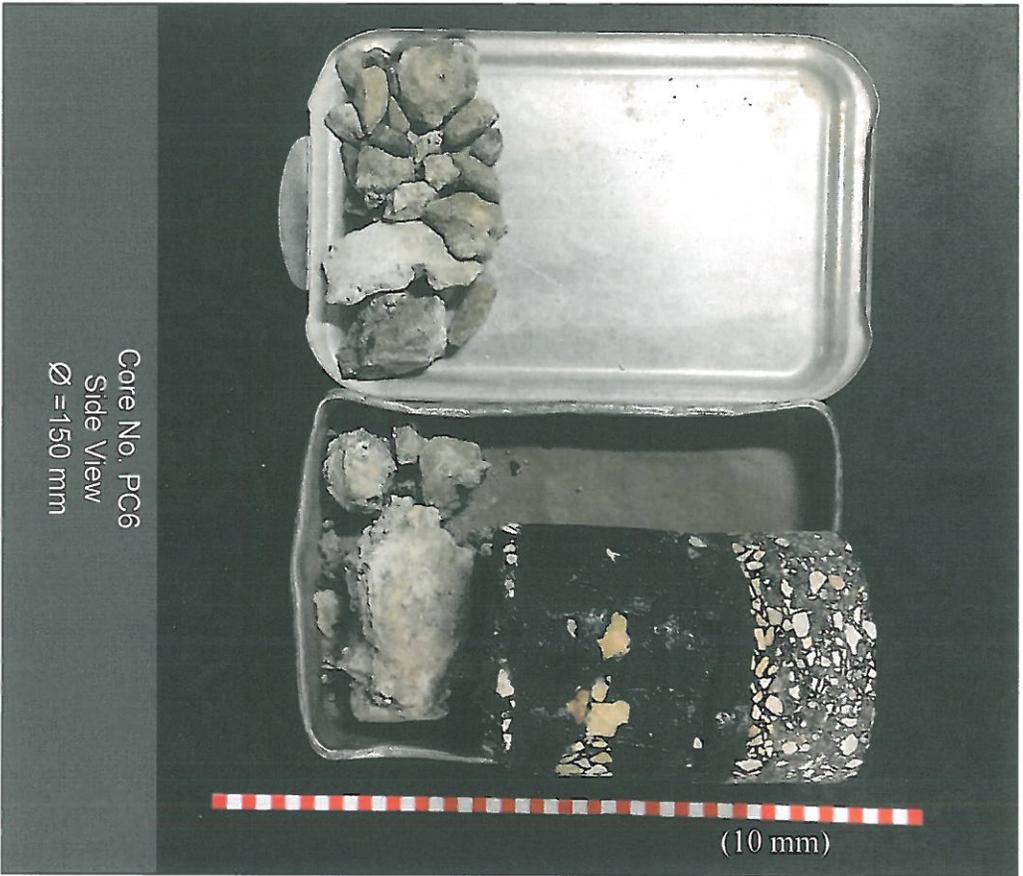
Core No. PC5
Side View
Ø = 150 mm



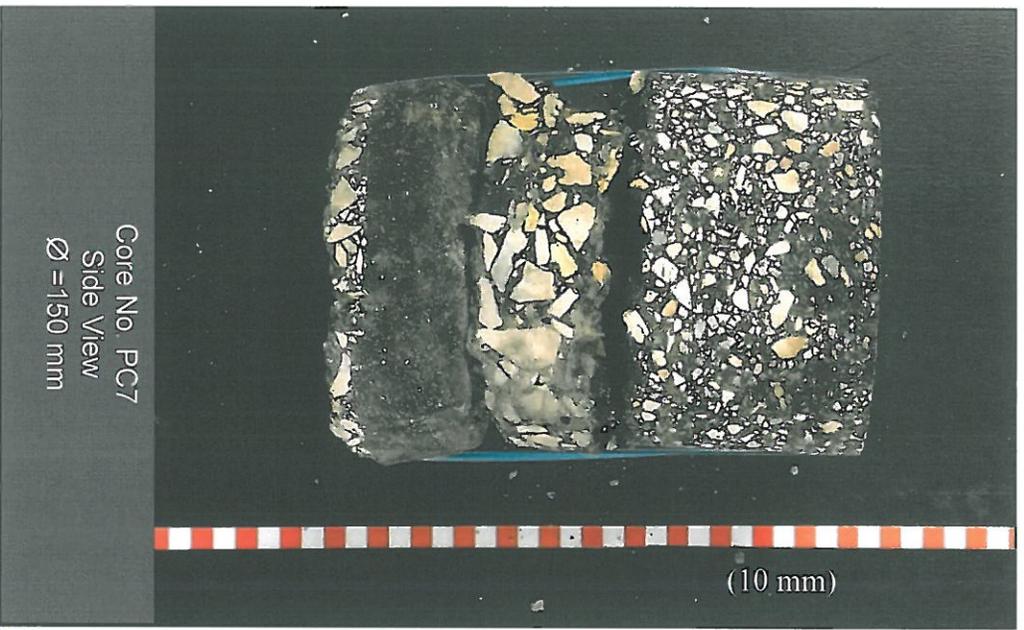
Core No. PC5
Top View
Ø = 150 mm



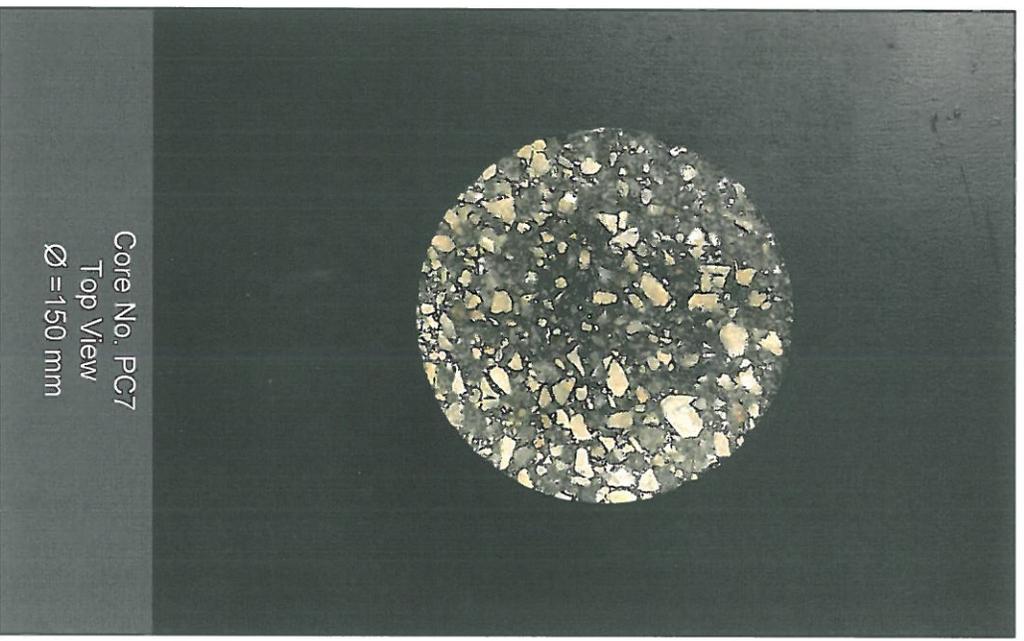
Photograph 6: Specimens from Pacific Avenue



Photograph 7: Specimens from Pacific Avenue



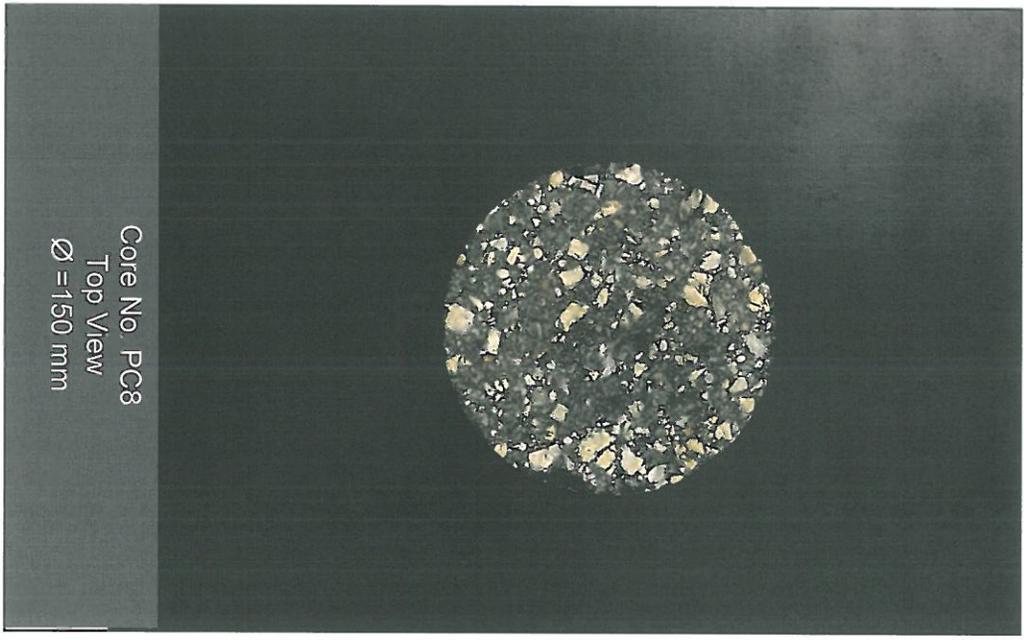
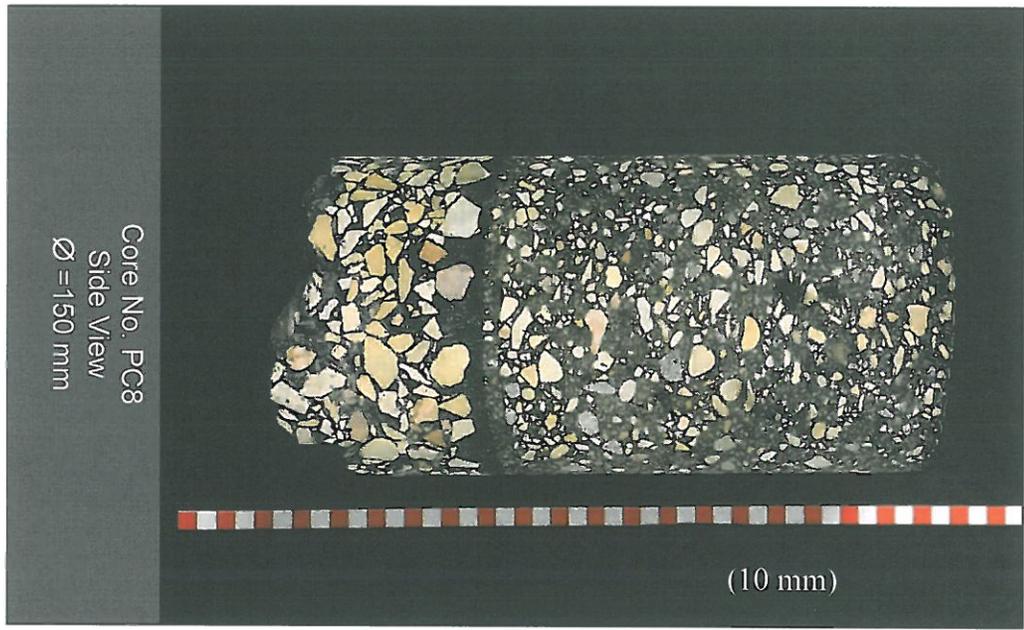
Core No. PC7
Side View
Ø = 150 mm



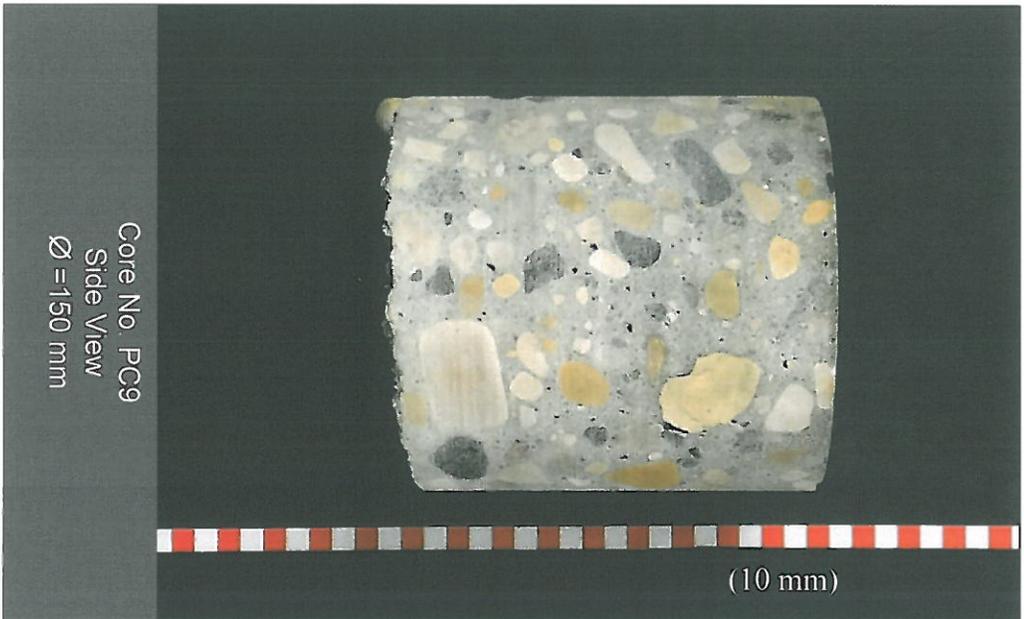
Core No. PC7
Top View
Ø = 150 mm



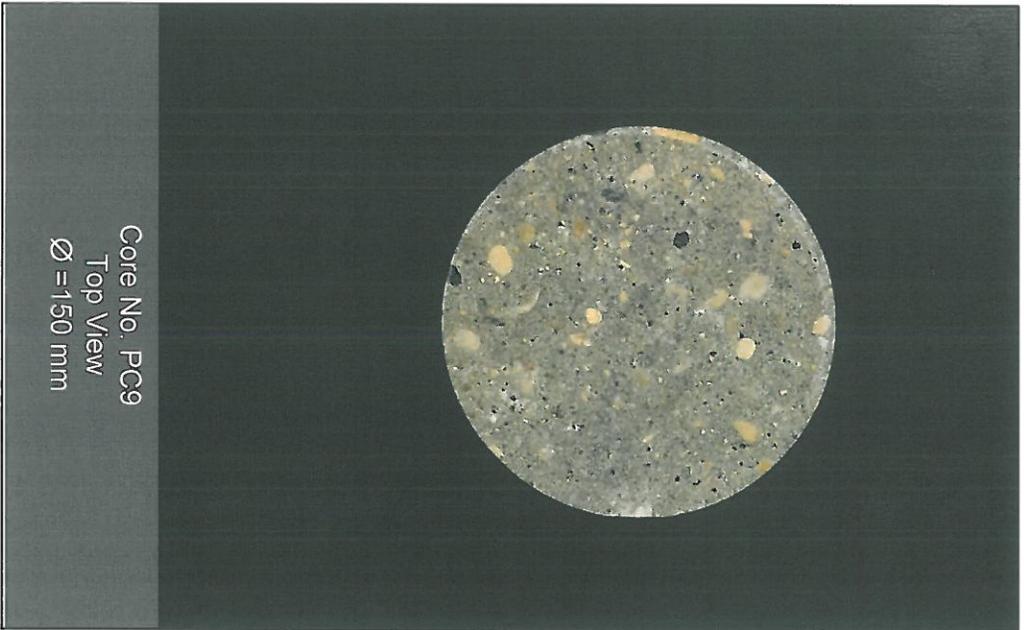
Photograph 8: Specimens from Pacific Avenue



Photograph 9: Specimens from Pacific Avenue



Core No. PC9
Side View
Ø = 150 mm



Core No. PC9
Top View
Ø = 150 mm

