



ROADS AUTHORITIES & UTILITIES COMMITTEE
(SCOTLAND)

NATIONAL CORING REPORT
2015/2016 PROGRAMME

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NATIONAL CORING REPORT 2015/2016

1 INTRODUCTION

This report presents the findings of the National Coring Programme 2015/2016.

2 PROGRAMME IMPLEMENTATION

- 2.1 The National Coring Programme was developed and implemented at Area RAUC level (excluding Island Councils and Trunk Road Authorities) and built on the lessons learned in the previous programmes. RAUC(S) had set a timetable for the exercise across the five Areas and as laid out within Advice Note 3 v9. It is important to note that the National Coring Programme investigates the compliance of the bituminous layers only and not the unbound/Cementous layers below.
- 2.2 The programme was delivered within timescales in two areas, however, there were significant issues encountered in the other three. These issues had a major impact to the delivery of the overall programme which resulted in the delay of nearly a year. Items regarding accreditation and individual Roads Authority resource were the significant items of concern. This will need to be investigated and worked through to a suitable conclusion after this specific programme.
- 2.3 The methodology and specification for the coring programme is detailed within Advice Note 3 v9 and was approved by RAUC(S), which formed the basis for all five Area programmes. Lead Authorities were identified in each of these five areas and would manage the Coring Programmes for the individual Roads Authority areas as well as administering the contract for each UKAS accredited testing laboratory for their area.
- 2.4 As agreed in previous programmes, the reasonable costs of the Lead Authority would be recovered from the local Road Works Authorities on a pro-rata basis from the Coring results. The costs of any failed Cores are borne by the appropriate Statutory Undertaker that carried out the reinstatement tested.

3 RESULTS

3.1 The overall National Coring Programme results for 2015/16 are detailed in the table below. The Appendices at rear of this document will provide more detail on the individual Utility, RAUC Areas, Local Authority areas and failure types for the 2015/16 programme. All cores have been logged onto the Scottish Road Works Register (SRWR).

Year	2001/2	2003/4	2005/6	2008/9	2010/11	2012/13	2015/16
No. Cores	1909	1861	1340	1566	1349	1534	1535
Pass	44%	59%	60%	64%	74%	83%	82%
Fail	56%*	41%*	40%*	36%*	26%	17%	18%

* Denotes years in which failures were classified as either “Fail Monitor” or “Fail Replace”. From 2011 onwards, it was agreed at RAUC(S) to remove the “Fail Monitor” category as an option.

3.2 The details of the individual and Area RAUC’s results should be discussed and reviewed at their levels. These are held within this report for reference.

3.3 The results show that the 2015/16 programme is the first to show no improvement of the previous one. The following aspects are of note and to be considered:

- a) The overall result shows a percentage fall from the previous programme,
- b) The sample size overall is remarkably similar to that of 2012/13,
- c) And, although the overall pass rate does not reflect this, the number of Utility Companies that achieved the 90%, or near, pass rate threshold increased from 2 to 5.

3.4 Within the Sample Period for the reinstatements (1st January 2015 to 31st December 2015), the number of reinstated works were circa. 65,000, which is remarkably similar to that of the previous programme. The sample size is nominally 2% of those works.

3.5 As with previous years, the main mode of failure within those reinstatements that were shown to not have achieved the require standard was insufficient Bitumen Layer Thicknesses and was an increase of 25% from 109 in the previous programme to 132. It is worth noting that there is a substantial increase in Material Type failures from 27 to 69. A slight increase in compaction failures from 80 to 86 was also recorded. The Bonding failures (recorded as “Others”) show a slight decrease from 41 to 38.

Please Note: These totals of failures are recorded when some Core Samples have multiple items of non-compliance. This may be part of the reason why the levels of failures appear to have substantially increased from the previous programmes where only the primary reason was recorded. This is shown in Graph NC2b and does not affect the overall result.

3.6 All of the data contained within this document can be found on the Scottish Road Works Commissioner’s website at www.roadworksscotland.scot

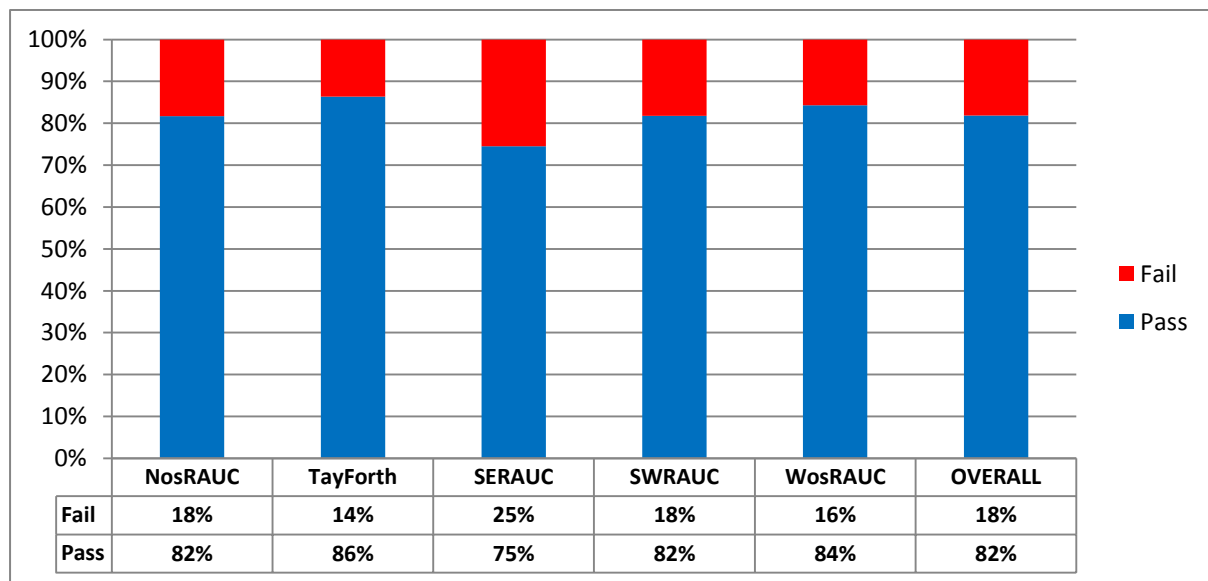
4 CONCLUSIONS

- 4.1 The results indicate there was a disappointing decline in the core sample compliance. Although the decline is only by one percent, it still represents a major issue that exists throughout the RAUC(S) community.
- 4.2 Based upon the results of this programme, there is a compelling need for a further programme.
- 4.3 Through the trend analysis using the data to produce the information held within the Appendices, Layer Depth failures are still the main source overall but only in three of the five RAUC areas. The other two areas have compaction as the main source of failure. Only one of the five RAUC areas appears to have no compaction issues at all.
- 4.4 The failure modes recorded within the programme do not seem consistent throughout and would be worthy of further investigation to understand best practices, if any.
- 4.5 Advice Note 3 v9 was had clear programme dates and detailed what was required by all involved to deliver. On discussion, commitment and available resources seemed to be the primary reasons why the programme failed to conclude by the prescribed date set out.

5 RECOMMENDATIONS

- 5.1 Due to the result, it is recommended that a further National Coring Programme be carried out. This should be done on all reinstatements completed to permanent standard and registered on the SRWR between 1st April 2018 and 31st March 2019. This will give all involved reasonable time to enable and embed any improvements and actions required within their organisations.
- 5.2 However, due to the various issues that were found within this programme, there is critical requirement to review the processes, responsibilities and consequences currently undertaken in the National Coring Programme and within Advice Note 3 v9.
- 5.3 As mentioned in 4.3, it is recommended that an overview of the passes and failures should be carried out to understand what is going right and wrong holistically in the RAUC(S) community. The output from this will give greater insight on what is needed to find the improvements and the strategies that can be employed throughout the wider community. To this end, a further more detailed report would be beneficial.
- 5.4 In 4.3, there was an aspect of inconsistency of the result across the country. It is recommended that the initial result from the accredited Laboratory is reported against the final agreed result. This will give both a performance indicator of the Laboratory and measure of how much adjustment was used for agreement. Also, the number of a Utilities own Coring Programme reports were used for substitution should be reported and recorded.
- 5.5 The financial aspect of the National Coring programme does need to be reviewed as a critical matter. A single contract should be used and procured, and this will allow the programme to be carried out adequately in order to alleviate the multiple financial restraints each organisation have.
- 5.6 The Lead Authority role should be reviewed and, possibly, overhauled to overcome the issues encountered.
- 5.7 Trunk Road Network and the island Road Authorities (Western Isles, Orkney Islands and Shetland Isles) should be considered to be included as a precursor to the recommended inclusion of Quality Plans for the Utility Companies in upcoming legislation. This will provide a benchmark of quality that can be measured against going forward.
- 5.8 Part of the resource issue was the amount of available people with the experience and awareness of Coring and Materials. It is recommended that a “Coring Awareness” session, or sessions, be organised prior to the next programme to give anyone involved the required skills and knowledge to carry out a successful Coring Programme. This should be aimed at both Road Authority and Utility participants as a target audience.
- 5.9 RAUC(S) co-chairs to release a press statement on behalf of the community.

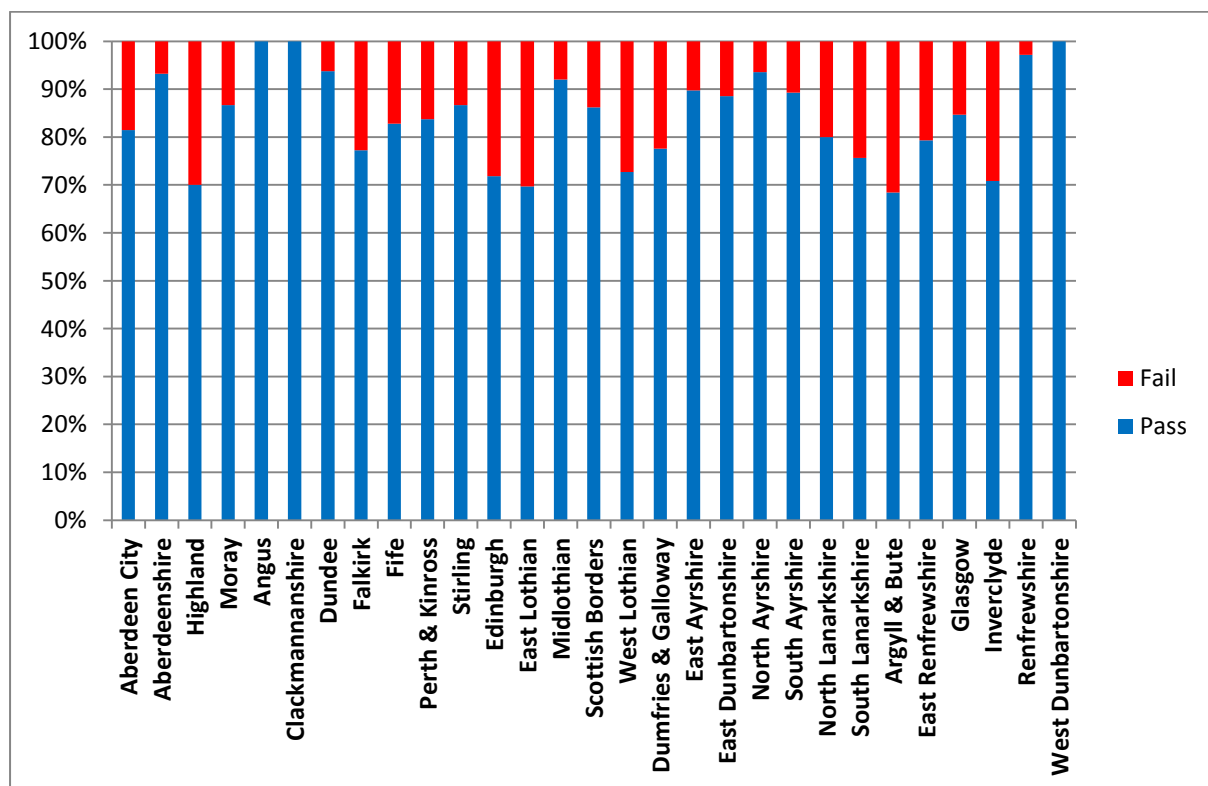
APPENDIX NC1 – Pass and Fail Splits (RAUC and Road Authority)



Graph NC1a – Pass/Fail Split by RAUC Area and Overall

	NosRAUC	TayForth	SERAUC	SWRAUC	WosRAUC	Overall
Fail	39	40	71	75	53	276
Pass	174	254	208	337	285	1260

Table NC1a – Numbers of Pass/Fail by RAUC Area and Overall



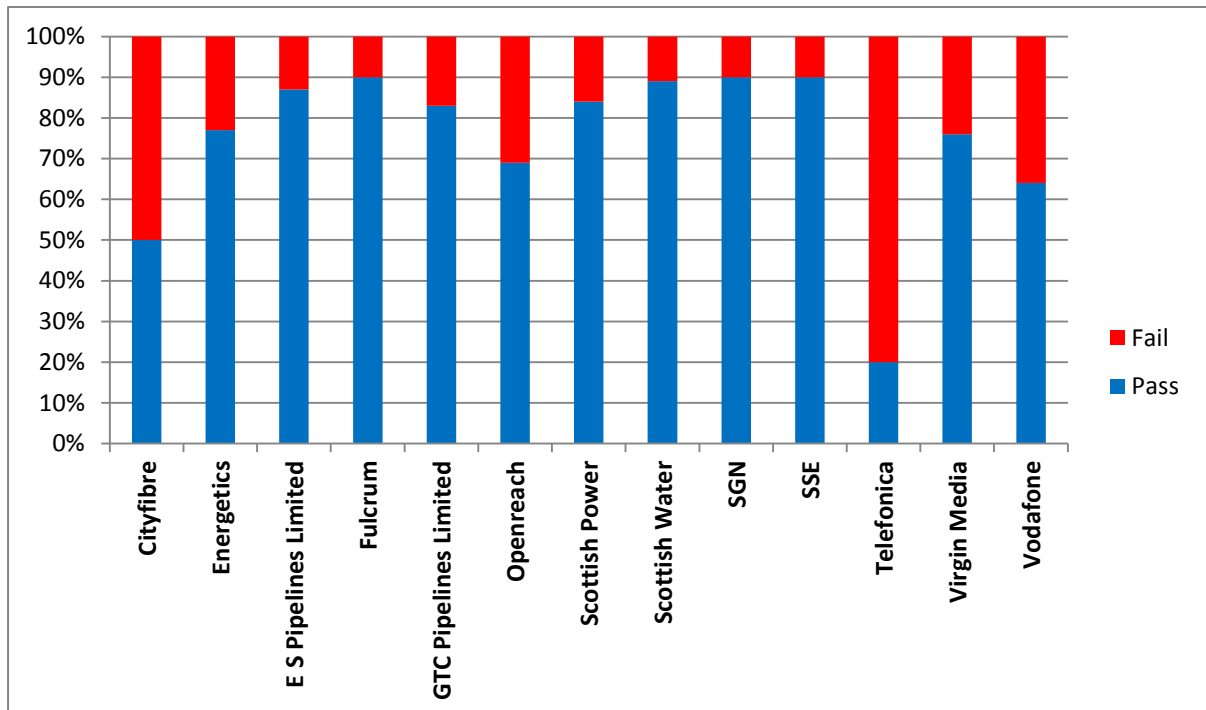
Graph NC1b – Pass/Fail Split by Road Authority

APPENDIX NC1 (Continued)

	Pass	Fail	% Pass
Aberdeen City	44	10	81%
Aberdeenshire	55	4	93%
Highland	49	21	70%
Moray	26	4	87%
Angus	32	0	100%
Clackmannanshire	19	0	100%
Dundee	30	2	94%
Falkirk	34	10	77%
Fife	76	16	83%
Perth & Kinross	36	7	87%
Stirling	26	4	87%
Edinburgh	107	42	72%
East Lothian	23	10	70%
Midlothian	23	2	92%
Scottish Borders	25	4	88%
West Lothian	32	12	73%
Dumfries & Galloway	45	13	78%
East Ayrshire	35	4	90%
East Dunbartonshire	31	4	89%
North Ayrshire	29	2	94%
South Ayrshire	25	3	89%
South Lanarkshire	87	28	76%
Argyll & Bute	26	12	68%
East Renfrewshire	23	6	79%
Glasgow	149	27	85%
Inverclyde	17	7	71%
North Lanarkshire	84	21	80%
Renfrewshire	34	1	97%
West Dunbartonshire	36	0	100%

Table NC1b – Numbers of Passes and Fails by Road Authority

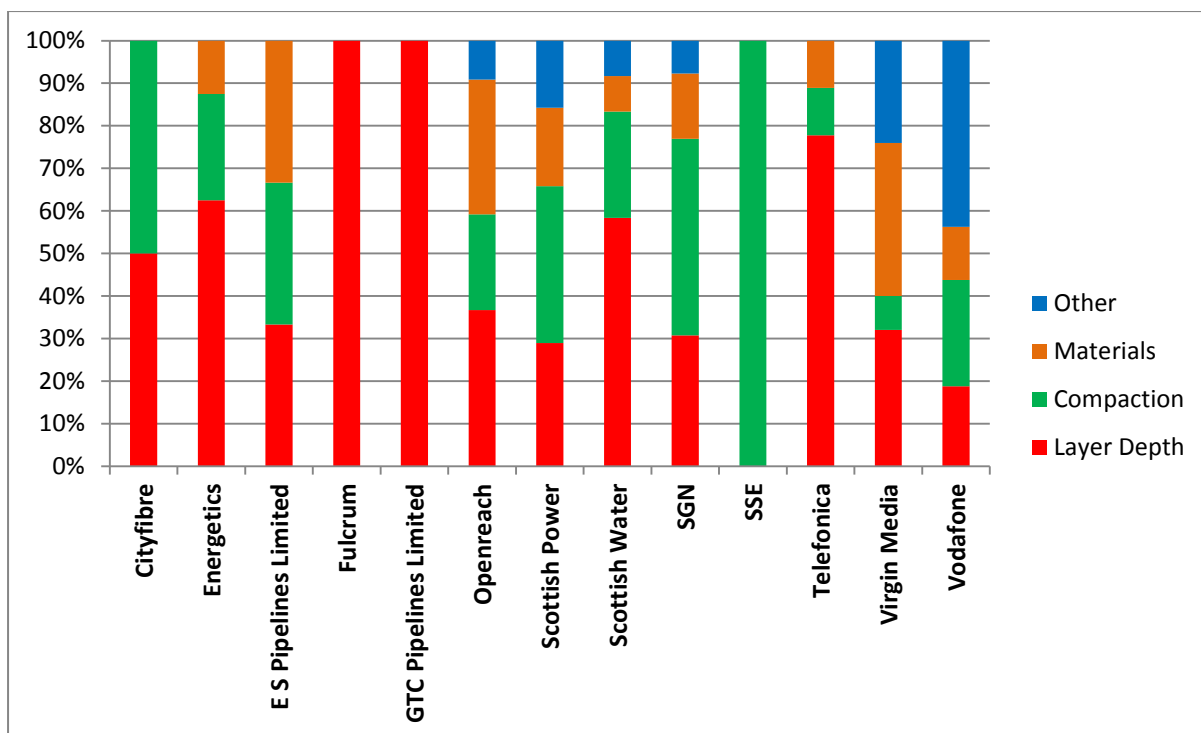
APPENDIX NC2 – Pass and Fail Splits (by Utility)



Graph NC2a – Pass/Fail by Utility Sampled

	No of Cores	Pass	Fail	% Pass
Cityfibre	4	2	2	50%
Energetics	30	23	7	77%
ES Pipelines Limited	15	13	2	87%
Fulcrum	10	9	1	90%
GTC Pipelines Limited	6	5	1	83%
Openreach	345	237	108	69%
Scottish Power	180	151	29	84%
Scottish Water	515	460	55	89%
SGN	252	228	24	90%
SSE	40	36	4	90%
Telefonica	10	2	8	20%
Virgin Media	92	70	22	76%
Vodafone	36	23	13	64%

Table NC2a – Numbers for Pass/Fail by Utility Sampled



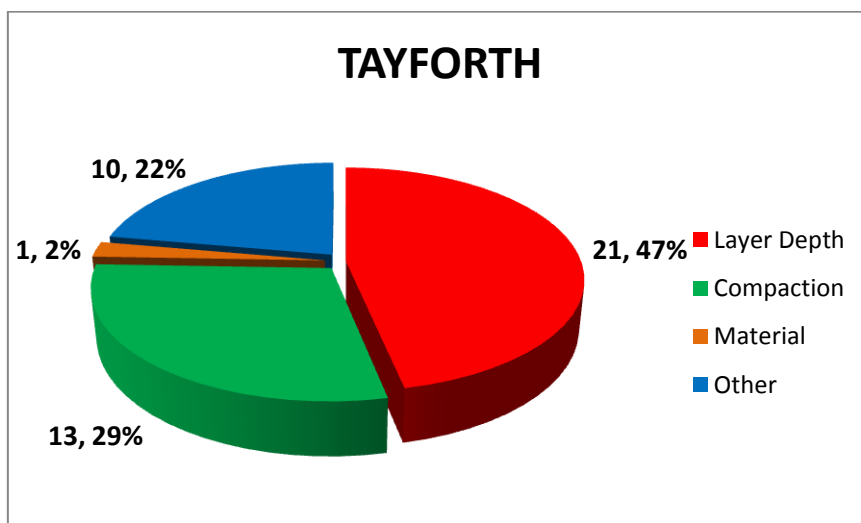
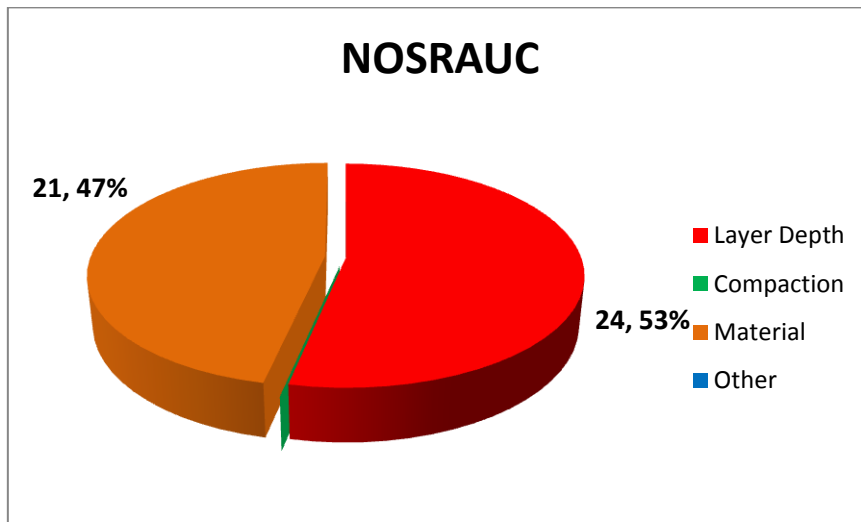
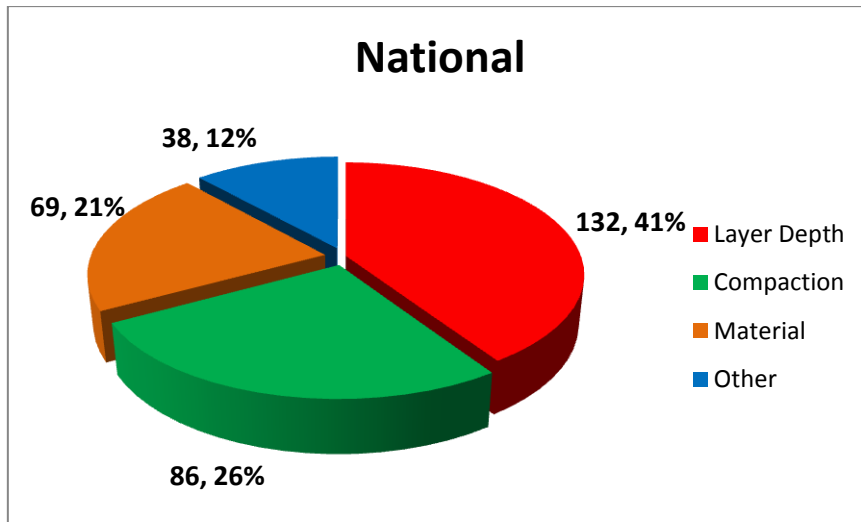
Graph NC2b – Overall Failure Split Percentages by Utility

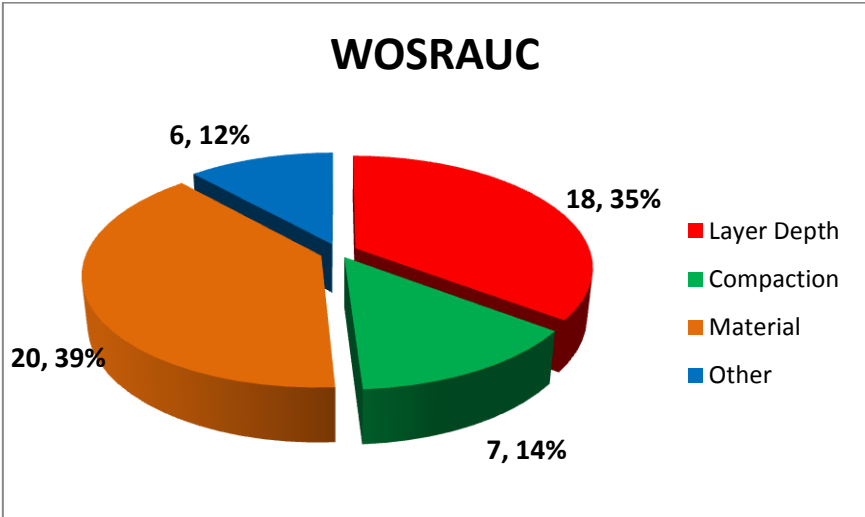
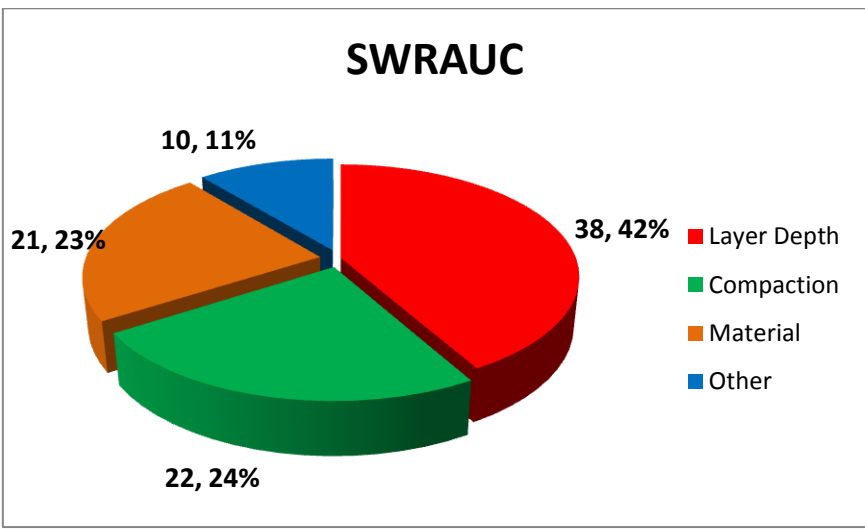
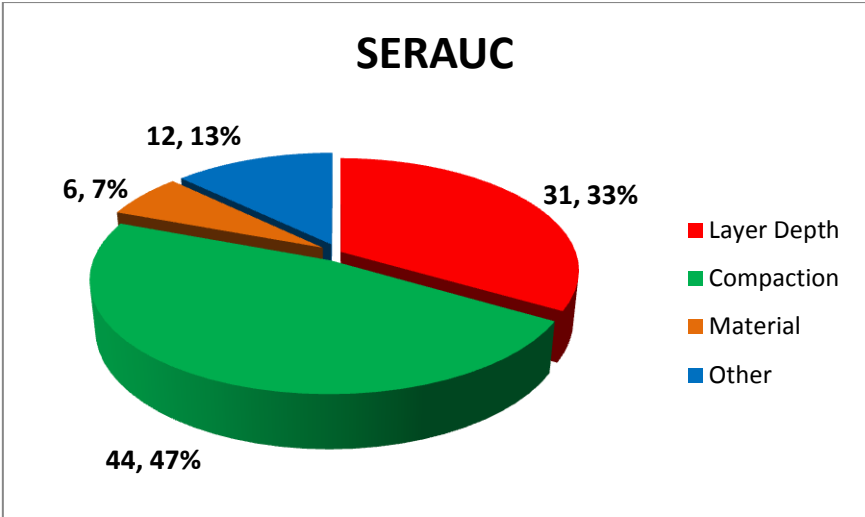
	Layer Depth	Compaction	Material	Other
Cityfibre	1	1	0	0
Energetics	5	2	1	0
ES Pipelines Limited	1	1	1	0
Fulcrum	1	0	0	0
GTC Pipelines Limited	1	0	0	0
Openreach	44	27	38	11
Scottish Power	11	14	7	6
Scottish Water	42	18	6	6
SGN	8	12	4	2
SSE	0	4	0	0
Telefonica	7	1	1	0
Virgin Media	8	2	9	6
Vodafone	3	4	2	7

Table NC2b – Failure Type Numbers by Utility*

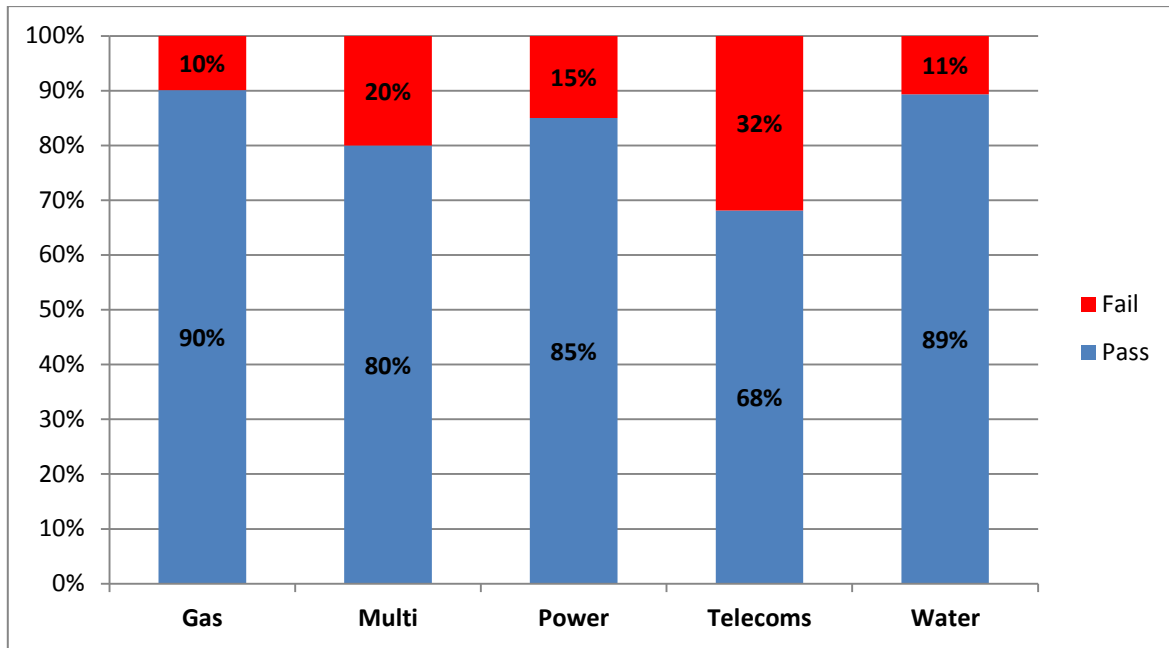
*Please Note: A single core can have multiple failure modes

Appendix NC3 – Core Failure Analysis





Appendix NC4 – Utility Sector Analysis



Graph NC4 – Utility Sector Performance