Martins Creek Project Code 10475 Pavement Condition Survey Assessment

Martins Creek, Vacy, Paterson & Largs

NEW14P-0135-AB 30 April 2015



GEOTECHNICAL I LABORATORY I EARTHWORKS I QUARRY I CONSTRUCTION MATERIAL TESTING

30 April 2015

Buttai Gravel Pty Ltd Martins Creek Project – Code 10475 Daracon Engineering Pty Ltd PO Box 299 WALLSEND NSW 2287

Attention: Mr Adam Kelly

Dear Adam

RE: MARTINS CREEK PROJECT – CODE 10475 PAVEMENT CONDITION SURVEY ASSESSMENT

Please find enclosed our Pavement Condition Survey Assessment report for the Martins Creek Project, for selected roads which form part of the road network travelled by haul trucks from Daracon's Martins Creek Quarry.

The report includes results of the Pavement Condition Survey assessment site mapping, together with discussion and interpretation of the mapping results.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

For and on behalf of Qualtest Laboratory (NSW) Pty Ltd

the les

Jason Lee Principal Geotechnical Engineer

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1.0 Introduction

Qualtest Laboratory NSW Pty Ltd (Qualtest) is pleased to present this Pavement Condition Summary assessment report on behalf of Buttai Gravel Pty Ltd (Buttai), and Daracon Engineering Pty Ltd (Daracon), for the Martins Creek Project.

The purpose of the assessment was to undertake a Pavement Condition Survey assessment of selected roads which form part of the road network travelled by haul trucks from Daracon's Martins Creek Quarry.

The extent of roads to be included in the study is as per the sketch provided by ACOR Consultants NNSW Pty Ltd (ACOR), in an email dated 16 December 2014, a copy of which has been marked up referencing road sections assessed in Figure AB1 attached. The total road pavement included in the study is approximately 48km in length.

This report includes results of the Pavement Condition Survey assessment site mapping, together with discussion and interpretation of the mapping results.

2.0 Scope of Work

2.1 General Procedures

A visual survey of the pavement condition is one of the simplest and often most valuable data sets. The level of detail and rigour of a visual survey can vary significantly depending on the method used e.g. a drive-through, automated survey and/or manual mapping.

For this phase of work, the scope of work comprised of a walkover visual condition survey (manual mapping), by an experienced Principal Geotechnical Engineer from Qualtest with over 20 years' experience, and RMS Worker on Foot accredited.

When a visual survey is conducted there is a minimum level of information required to make knowledgeable decisions regarding rehabilitation needs, treatments, or documentation of existing pavement condition. This information includes:

- Distress Type identify types and causes of physical distress existing in the pavement;
- Distress Severity record the level of severity for each distress type and possible causes;
- Distress Extent and Location record the location and relative area of the pavement affected by each combination of distress type and severity.

The visual condition survey was recorded in a systematic way and mapped against a reference system (100m survey chainages marked by project surveyors Monteath & Powys), with further reference to key features along the roadway, e.g. water and drainage, vegetation, cuts and fills, structures, road intersections. It is of paramount importance that the position of the relevant section of road be accurately described on the field sheets.

The work was conducted walking along the road shoulder and road verge, measuring defect locations relative to marked road chainages typically using a measuring wheel.

General high level mapping was carried out from the road shoulder and road verge only as no Traffic Control Management services were included in the preliminary assessment to allow road access for detailed mapping and measurement of pavement defects. In areas where it was not safe to access roads by foot, mapping was conducted by vehicle drive-through.

2.2 Road Sections Mapped

The extent of roads included in the study is as per the marked up sketch provided by ACOR), a copy of which has been reproduced in Figure AB1 for reference.

The total road pavement length included in the study is approximately 48km, which has been divided into 5 sections as indicated in Table 1 for reporting purposes:

Road Section	Road Names	Road Cha	inage (m)
		Start	End
1	Gresford Road	0	8450
	Duke Street	8450	8670
	Tocal Road	8670	21530
	Paterson Road	21530	23243
2	Horns Crossing Road	0	4245
3	Dungog Road	0	3916
4	Grace Avenue	0	600
	Cory Street	600	2230
	Martins Creek Road	2230	8122
5	Paterson Road	0	2700
	Dunns Creek Road	2700	2840
	Butterwick Road	2840	8411

TABLE 1 – ROAD SECTIONS

2.3 Pavement Condition Survey Mapping Results

The mapping has focused on the main left and right hand travel lanes only. Comments have been made with regards to turning lanes, passing lanes, parking lanes and side roads where considered relevant.

Due to the scale and extent of roads involved in the study and available survey, defects have been mapped to accuracy within blocks of +/-10m longitudinally and +/-0.5m laterally along the road lengths.

Pavement defect mapping sheets, together with selected photographs of pavement defects and typical pavement conditions encountered for each road section listed above have been included in Appendices A to E respectively.

It is noted that a visual survey of the pavement by these methods is subjective, and different people may map the defect type, and particularly the severity of the defect differently depending on overall project and mapping objectives. Visual survey and mapping conducted for this study has targeted being consistent with the Austroads Guidelines to provide baseline data and documentation of existing pavement condition.

2.4 Pavement Condition Survey Mapping Reference Documents

The Pavement Condition Survey assessment was carried out in general accordance with the procedures outlined in Publication Reference: "Austroads 2009 – Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design".

For flexible pavements involved in this study, the pavement condition survey mapped a combination of the following features where applicable:

- Surfacing and pavement type;
- Surface deterioration stripping, ravelling, flushing;
- Deformation rutting, shoving;
- Cracking including existing construction joints;
- Edge defects and shoulder condition;
- Potholes;
- Patching;
- Condition of subsoil and surface drainage (whenever possible).

An extract from the Austroads document referenced above, 'Appendix A – Identification, Causes and Treatment of Visual Distress' has been attached in Appendix F. This includes detailed descriptions and example photographs of the different defect types that may be encountered in road pavements.

2.5 Defect Mapping Nomenclature and Coding

Nomenclature and coding for the different types of pavement defects that may be encountered are consistent with those provided in "Austroads 2009 – Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design".

A legend of the nomenclature and coding used is provided on each of the Pavement Defect Mapping Sheets, with a summary presented below.

Deformations:	Cracking:	Surface:	Other:			
DR – Rutting	CB – Block	SD – Delamination	EB – Edge Break			
DS – Shoving	CR – Crocodile	SS – Stripping	ED – Edge Drop Off			
DD – Depression	CT – Transverse	SR – Ravelling	HO – Potholing			
DC – Corrugation	CD – Diagonal	SF – Flushing	PA – Patching			
	CM – Meandering	SP - Polishing	PH - Photograph			
	CC – Cresent					
	CL – Longitudinal					
Severity – (Assessed lev	el of severity for each dis	tress type)				
0 – Good Condition	1 - Minor	2 - Moderate 3 - Severe				

TABLE 2 – PAVENET DISTRESS TYPES AND SEVERITY

3.0 Discussion and Recommendations

3.1 Interpretation of Results

As noted, visual survey of the pavement by the methods described in this report are subjective with respect to defect type and defect severity, however they do provide baseline data and documentation of existing pavement condition.

A general discussion and summary of pavement conditions encountered during the visual pavement survey and mapping is provided below:

- Typical defect types and severity were assessed to be consistent with those you would generally expect to encounter on regional roads of this nature, particularly considering that the roads may be of variable construction and quality when compared to current Council or RMS standards in terms of:
 - Existing pavement life and design criteria;
 - Minimum pavement thickness design compared to current design standards;
 - Material quality of basecourse and subbase gravels;
 - Compaction specification of pavement materials;
 - Treatment of any areas of poor subgrade / drainage;
 - Quality and extent of any existing pavement remediation works.
- When assessing the overall pavement condition based on the results of the visual survey and mapping results, it is assessed that there is no significant difference in terms of pavement distress and severity between the loaded and unloaded lanes of the road network travelled by haul trucks from Daracon's Martins Creek Quarry.
- There are localised areas where the severity of the defects and condition of the pavement is much worse in one lane than the other, however it is assessed that areas of poorer pavement condition is generally more a factor of the design variables noted above, as well as key features along the roadway such as:
 - Locations on bends, particularly on the inside radius;
 - Locations on variable fill embankment;
 - Locations adjacent to structures, culverts, bridges;
 - Areas of poor drainage;
 - Road intersections or entry to properties;
 - Traffic turning and screwing locations;
- Some of the above points are supported by the fact that a number of side roads off the
 road network travelled by haul trucks from Daracon's Martins Creek Quarry (which are not
 subjected to the same traffic), were observed to have similar pavement condition as the
 haul routes. For example, refer to Road Section 1, approximate Chainage 9,100m,
 Photographs 13 & 14, where condition of Tocal Road is very similar to that of adjoining local
 access road on the right hand side, Sloane Street.

3.2 **Recommendations for Additional Investigations**

If additional information on pavement condition, type, or remaining structural life is required, it is recommended that additional investigations be carried out which may comprise a combination of more targeted detailed mapping, intrusive investigations, or quantitative testing of specific road sections, which may include:

- Detail mapping of specific pavement sections with traffic control;
- Falling weight deflectometer testing;
- Roughness counts;
- Review any Council testing data, design and construction records;
- Intrusive investigations to assess quality and depth of existing pavements;
- Assessment of conformance of existing pavements to current design standards.

4.0 Limitations

The findings presented in the report and used as the basis for recommendations presented herein were obtained using normal, industry accepted geotechnical design practices and standards. To our knowledge, they represent a reasonable interpretation of the general conditions of the site.

The extent of testing associated with this assessment is limited to visual assessment of pavement surface only in general accordance with procedures outlined in "Austroads 2009 – Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design".

It should be noted that pavement conditions observed and mapped may vary over time, either as part of Council upgrade works (during the course of the study a number of Council road crews were observed carrying out expedient and remedial patching of road sections), by extreme weather and rain fall events (such as April 2015 floods), or ongoing traffic usage.

If pavement surface conditions encountered after this assessment differ from those given in this report, which is critical to design, remediation, or documentation of existing pavement condition, further advice should be sought without delay.

Data and opinions contained within the report may not be used in other contexts or for any other purposes without prior review and agreement by Qualtest. If this report is reproduced, it must be in full.

If you have any further questions regarding this report, please do not hesitate to contact Shannon Kelly or the undersigned.

For and on behalf of Qualtest Laboratory (NSW) Pty Ltd.

Eden Le.

Jason Lee Principal Geotechnical Engineer

FIGURE 1:

Site Location Plan



APPENDIX A:

Pavement Defect Mapping Sheets

Road Section 1

Ch. 0,000m to 23,243m Gresford Road Duke Street Tocal Road Paterson Road



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	1 of 47

Chainage	Left Hand Lane													Righ	nt Ha	nd L	ane		Comment	٦		
(km)		4r	n	31	m	2	m	1	m	0	CL	1	m	2	m	3	n	4	m			
0.500														1							1	
																						_
0.450																						
0.450							СВ							СВ								_
																					Ch. 436m - Change to kerb and gutter, road	_
																					widens through township of Vacy.	_
																					Minor SF in wheel paths.	
0.400										-												
																					1	_
																						_
																						_
0.350																						_
0.330																						_
																						1
																						_
0.300						C	CT			CL	CL			(CT						CL - Along centre of road has been sealed.	_
																					CT - Full road width at approx 5m intervals,	_
																					cracks have been sealed.	
																						_
0.250																						_
																						-
																						_
0.200							SF, SR	2						SF, SF	2						1	_
																						1
0.150								BR	IDGE	- CH.	115M	TO 19	0M									
																						_
											1										2	٦
0.100						SR, G	CC, C	B, EB					SR, (CC, C	B, EB							
				EB					CB, SF	2		CB, SF	2				EB				2	
																						_
0.050									CT		PA			1							1	
0.050									CB, SF	2		CB, SF	2								1	_
						C	СВ									-			-		1	٦
				PA, CL, DD															1		2	
					PA, C																	
0.000						DS,	DD, S	F, SP					DS,	DD, S	F, SP						Intersection - Horns Crossing Road 2	
LEGEND:	Defor	matic	on:			Сгас	:king:								<u>Surfa</u>	ce:				Othe	r. <u>Severity:</u>	
<u> </u>	DR	Ruttin	g			СВ	Block	ĸ				nderir	ng		SD	Dela		ion		EB	Edge Break 0 Good Condition	
	DS DD						Croc	odile verse			Cres	ent itudin	al		SS	Stripp					Edge Drop Off1MinorPotholing2Moderate	
	DD DC						Diag			CL	LONG	nualh	di		SR SF	Rave Flushi					Potholing2ModeratePatching3Severe	
							-								SP	Polish	ing			PH	Photograph	



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	2 of 47

Chainage				Left	t Har	nd Lane	e					R	ight H	and L	ane		Comment	
(km)	F	4	m	31	m	2m	1	m	C	CL	1		2m	3	1	4m		
1.000										ľ								GENERAL COMMENT: 3
																		Road pavement in very poor condition from
																		Ch. 700m to 1,000m. Extensive defects with
																		expedient repairs and repeated failures
0.950																		throughout pavement, both lanes.
0.700																		
							., DD, S						, DD, SS, PO, CC					
						PA	PO, CO	., Ск					CR					
0.900																		
0.850																		
0.000																		3
	1														ŀ			
	t					\vdash	1						, DD, SS, PO, CC		ŀ			
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0.750				C	R								PO, CC CR					
0.700													SIC .					
						EB, CL, D		ר מ										1
0.700							CC, CF											
0.700																		1
												PA						
						CB, SF, S	R											
0.650																		2
0.000					(CB, SR, SF	SS				(CB, SR, S	SF, SS					2
																		Ch. 637m - School Crossing 1
0.600	1														ŀ			
5.000	1														ŀ			
	1														ŀ			
	1				SF	С	3	SF			SF		СВ	SF	ŀ			CB at approximately 2m to 5m spacing.
	1				SR			SR			SR			SR	ŀ			SF & SR in wheel paths only, minor.
0.550	1											SS			ŀ			1
5.000															ŀ			
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	1	<u> </u>													ŀ		+	
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0.500	1														ŀ			
0.000	<u> </u>	I	1 L											1				1
EGEND:	Defc	rmati	on:			Cracking	<u>I:</u>						Surfa	ace:			Oth	<u>ner:</u> <u>Severity:</u>
		Rutti				CB Blo				Mear		g	SD		ninatio	on	EB	Edge Break 0 Good Condition
	DS	Shov	-				codile			Crese			SS	Stripp			ED	Edge Drop Off 1 Minor
			ression ugatior			CT Tra CD Dia	nsverse donal		CL	Longi	itudin	al	SR SF	Rave Flushi	-		HO PA	-
	DC	COLL	uyallor	1		CD DIS	yunar						SF SP	Polish	-		PA PH	5



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	3 of 47

Chainage				Left	Ha	nd La	ane						Righ	t Ha	and L	ane			Comment		
(km)		41	m	31	m	2	m	1m		CL	1	m	2r	n	3	n	4m	۱			
1.500																			GENERAL COMMENT: (From Ch. 1.100km)		
																PA			Road pavement in generally good condition.		
																			Minor SF, SR associated with general traffic use.		
															PA	DS					
1.450																					
									PA												
					SF																
1.400								5	SF		SF				SF						
					PA														F F		
						1						1									
1.350																					
												1									
	1									1	+	1					+				
						-		+		1	-	-									
	1				SF	1				1	+	1			<u> </u>	-+	+				
1.300						f		+		+	+	-			-	-+	+		_		
1.500						SD.	PA														
					SD	, PA			_												
					0.0				-												
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1.250																					
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1.000	-								_												
1.200																					
	-								_												
4.450																					
1.150	-							_				-									
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					SF			_			SF	-			SF						
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1.000	_							ΕB	, CL, DE	i, 55, S	Р, РА,	РО, (LC, CR								
EGEND:	Def	ormatic	on:			Crac	kina:							<u>Surfa</u>	ice:			Ot	ther: <u>Severity:</u>		
		Ruttin					Block		СМ	Меа	Inderi	ng		SD		ninatio	on	EB	-		
	DS	Shovi	ing				Crococ		СС	Cres	ent			SS	Stripp			ED	Edge Drop Off 1 Minor		
	DD	Depre					Transve		CL	Long	gitudir	nal		SR	Rave	-		HC			
	DC	Corru	Igatio	n		CD	Diagon	al						SF SP	Flushi Polish	-		PA PH	-		

Austroads 2009 - Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design

Reference:



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Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	4 of 47

Chainage				LEI	ιпа		ane							Rigr	nt Ha	and L	.ane				Comment		
(km)		4	m	3	m	2	2m		m	(CL	1	m	2	m	3	m	4	m				
2.000																SF					GENERAL COMMENT:	1	
																DD					Road pavement in generally good condition.		
																					Minor SF, SR associated with general traffic use.		
					SR																	1	
1.950					31																		
																						1	
1.900					SF																	_	
									SF													1	
					<u> </u>																		
1.050																							
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1.750														F	ΡA		PA					1	
					SF											SF							
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					_												PA					1	
																PA						1	
1.700									DA	, SS			D	A, DS,	CE.							1	
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1.650																							
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LEGEND:		ormatio					cking:								<u>Surfa</u>					<u>Othe</u>			
		R Rutting CB Block CM M			M MeanderingSDDelaminationC CresentSSStripping									EB	Edge Break 0 Good Condition								
		Shov Depr		ı				codile sverse			Long		SS Stripping al SR Ravelling							ed ho	Edge Drop Off1MinorPotholing2Moderate		
										01	Long	uun			SF	Flush				PA	Patching 3 Severe		
	DC Corrugation CD Diagonal												-										



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	5 of 47

Chainage				Lef	t Hai	ndl	ane							Riał	ht Ha	nd I	ane				Comment
(km)		4	m		m	r -	m	1	m	0	L CL	1	m	1	2m		m		m		conincit
2.500		4		3	m	2	m		m		,L 		m	2		3	n	4	-m		
2.500																					GENERAL COMMENT:
																					Road pavement in generally good condition.
										-		DS CC			PA						Minor SF, SR in wheel paths associated 1
										-		00		1	1						with general traffic use.
2.450																					
																	DS				1
						-															
					PA				PA			PA									1
2.400													SR								1
																	PA				1
2.350																					
															1						
																					1
				PA	1				05												1
2.300				SF					SF			SF				SF					
2.000									PA,	DD											1
									-		1										
2.250																					
2.250																					
2.200					DD, PO					-								-			1
				55,																	
						PA											SF				1
2.150																	DS				1
																	PA				
												PA									1
									PA			SS									1
2.100																					
									PA			PA				PA					1
2.050																	PA				1
				L																	
																SF					1
2.000																DD					
	•			•																	
LEGEND:		ormatio					<u>king:</u>								<u>Surfa</u>					<u>Othe</u>	
		Ruttin					Block				Mea		ng		SD		minati	ion			Edge Break 0 Good Condition
		Shov Depr		- -				odile verse			Cres Long		al		SS SR	Stripp Rave				ed ho	Edge Drop Off 1 Minor Potholing 2 Moderate
		Corru					Diag			υL	LONG	nuulii	ai			Flush				PA	Patching 2 Moderate Patching 3 Severe
	20	0.011					2.ug	5							SP	Polish					Photograph
																	5				- •



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
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Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	6 of 47

Chainage				Lef	t Ha	nd L	ane							Rig	nt Ha	nd I	.ane			Comment
(km)		41	m	3	m	2	m	1	m	(CL	1	m	2	m	3	m	4m		
3.000																				GENERAL COMMENT: (from Ch. 2,650m onwards)
																				Road pavement in generally good condition.
																				Minor SF, SR associated with general traffic use.
																				Minor EB along edges.
2.950																				5 5
																				Entry to property driveway LHS.
				EB,																
				PA																
2.900				DS,	PA															
2.700				_	PA					SF										
																	PA			
				EB																
2.850																				
2.050																				
											SF									
										SF					SR	, SF				-
2.800								DD, I	PA, SF											-
											SD									-
														SR						
2.750																				
															SR	, SF				
2.700																				
2.650																				
																				_
					DD, S	F										DD, S	F			
						DS, D	D, PA	, SF, SS	6				DS, D	D, PA	, SF, SS	5				
				DS,	PA															
2.600											D	D, PA,	SF		D	D, PA,	SF			
																	PA			
				ED																Entry to property driveway LHS.
2.550				EB																
					DD	, PA, S	S, SF	1	<u> </u>		חח	PA,			D	S, PA,	SF			ļ
	+								DD		SF	, SS								
											Ļ						D.			F
2.500												DD			SF	DS	, PA			
EGEND:	<u>D</u> efc	ormatic	on:			Crac	:king:								<u>Surfa</u>	<u>ce</u> :			Oth	er: <u>Severity:</u>
		Ruttin					Block	¢		СМ	Mea	nderir	ng		SD		minati	on	EB	Edge Break 0 Good Condition
		Shovi					Croc				Cres				SS	Stripp			ED	Edge Drop Off 1 Minor
C	DD	Depr	ession			CT	Trans	verse		CL	Long	itudin	al		SR	Rave	elling		HO	Potholing 2 Moderate
		Corru				00	Diag	0.5.5							SF	Flush	inc		PA	Patching 3 Severe



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	7 of 47

Chainage				Lef	it Ha	nd L	ane							Rigl	nt Ha	and I	.ane				(Comment
(km)		4	m	3	ßm	2	m	1	m	0	CL	1	m	2	m	3	m	4	m			
3.500				DD), PA																	Г
																DS	PA					
																DD	, PA					
3.450																						
																	PA					
													1			SF						
3.400												SF										
0.050																						
3.350	-																					
		+	-	+	+	-	-	-			-	-	-	-	-	-			-			
				-	-						-			1		-			1			
3.300				1	1																	
3.250																						
3.200																						
3.150	_																					
3.100																						
5.100																						
				1										-								
				1	1									1								
				T																		
3.050		L		L	L																	
																					GENERAL COMMENT:	
																						enerally good condition.
				<u> </u>										<u> </u>							Minor SF, SR associate	d with general traffic use.
3.000														<u> </u>							L	
EGEND:	Defr	ormati	on.			Crar	<u>:king:</u>								<u>Surfa</u>	ice.				Othe	ər.	<u>Severity:</u>
SLIND.		Rutti				CB				СМ	Mea	nderii	ng		SD SD		minat	ion		EB	Edge Break	0 Good Condition
	DS	Shov	ing			CR	Croc	odile		СС	Cres	ent			SS	Stripp	bing			ED	Edge Drop Off	1 Minor
	DD	Depr				CT		sverse		CL	Long	jitudin	al		SR	Rave	-			HO	Potholing	2 Moderate
	DC	Corri	ugatio	on		ĊD	Diag	onal							SF SP	Flush Polisł	-			PA PH	Patching Photograph	3 Severe
															л.		шчy			1.11	notograph	



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	8 of 47

Chainage				Lef	t Hai	nd L	ane							Righ	nt Ha	nd l	ane				Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	m	3	m	4	m		
4.000											1										GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF, SR associated with general traffic use.
																					Minor St, SK associated with general traine use.
2.050																					
3.950																					
																					Ch. 3,915m - Dungog Road Intersection
3.900																					
							SR														
							DIX.														
3.850																					
												SR	İ								
	1	1			1		<u> </u>	<u> </u>			1			1			<u> </u>			1	
		1			1		-	-			-			1			-			1	1
		1			+		-				-			+			-			+	
2.000	-	+		<u> </u>	+			SF,	SR		<u> </u>			SF, SR						+	
3.800	_	1			+		-	ļ		 	-			or, SK			-			-	
3.750																					
3.700																					
5.700																					
3.650	-																				
											PA										
										PA	F	Α				PA					
3.600																					
														SF,	DD						
					1																
3.550																				1	
					1									1				-	-		
					1									1			PA			-	
	+	1			1		-	-			-			1						1	1
	-	+		<u> </u>	+			<u> </u>			<u> </u>			+						+	
2 500		-					<u> </u>	<u> </u>			-						<u> </u>			-	
3.500		I	I	<u> </u>	I	<u> </u>	<u> </u>	<u> </u>		<u> </u>	<u> </u>	I		I			<u> </u>			<u> </u>	1
EGEND:	Defe	ormatio	on:			Сгас	:king:								<u>Surfa</u>	ce.				Othe	er: <u>Severity:</u>
		Ruttir					Bloci	ĸ		СМ	Меа	nderir	ng				minat	ion		EB	-
		Shov						odile			Cres		~		SS	Stripp				ED	Edge Drop Off 1 Minor
		Depr		٦		CT	Trans	verse			Long		al		SR	Rave					Potholing 2 Moderate
		Corru					Diag								SF	Flush	ing			PA	Patching 3 Severe
		SP Polishing PH Photograph																			



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	9 of 47

Chainage				Lef	t Ha	nd L	ane							Rigl	ht Ha	and I	ane	•			_	Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	!m	3	m	4	m			
4.500																						
																						1
											SR											
4.450				EB	СС																	1
							SR															
4.400																						
				D	D, SS,	SF			SF													1
																						1
							F	ΡA														
4.350																						
											1	1			1							
											1										1	
				L							1										1	
				EB																		1
4.300					Ī						1	1			1							
																	SR	DD				1
																	эк	DD				
4.250																						
4.200																						
4.150																						
						F	ΡA															1
			SR								<u> </u>	-			-							1
		-	EB								<u> </u>	-			-				-			1
	-													-								
4.100														-		-						
	-			-					<u> </u>		 			-							 	
	-													-		-						
	-			-					<u> </u>		 			-							 	
												<u> </u>			<u> </u>				-			
4.050	_	-									 	-		-	-				-			
		1										<u> </u>			<u> </u>				1			
	-	-									 	-		-	-				-		GENERAL COMMENT	
		1										<u> </u>			<u> </u>				1			generally good condition.
4.000	-	-												-					-	-	Minor SF, SR associate	ed with general traffic use.
4.000		I		I	I	I	<u> </u>	I	I	1	1	1	1	1	1	1	I	I	I	I	1	
EGEND:		ormatio					:king:								<u>Surfa</u>	<u>ice:</u>				<u>Oth</u>		<u>Severity:</u>
		Ruttir					Block					nderi	ng		SD	Dela		tion		EB	Edge Break	0 Good Condition
		Shov					Croc				Cres				SS	Stripp				ED	Edge Drop Off	1 Minor
		Depr					Trans			CL	Long	gitudir	nal		SR SF	Rave				HO	Potholing	2 Moderate 3 Severe
	DC	Corru	igatic	011		CD	Diag	unai							SF SP	Flush Polist				PA PH	Patching Photograph	3 Severe
															51		ıy				notograph	



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	10 of 47

Chainage				Lef	t Ha	nd L	ane							Righ	nt Ha	and I	ane	•			Comment
(km)		41	n	3	m	2	m	1	m	0	CL	1	m	1	m		m		m		
5.000													I								1
												SF									
					-							ļ									
4.050					SF			c	F												
4.950					51			3	01												
4.900							F	ΡA													1
				DS	, PA				SF												1
						I			01												
4.850																					
																	, PA				1
																L	D				1
	-				-			-					1	I	I	I	I			-	1
4.800					1			1						F	ΡA						1
						ŀ	PA														
												1	1	PA	1	1	1				1
				EB																	1
4 750																	EB				
4.750																	LD				
					SF																1
					51																
						1															1
4.700				DS	SS	l	PA							F	ΡA						2
4.650																					
4.600																					
																					Ch. 4,570m Culvert Crossing
																					Ch. 4,370m Curvert Crossing
4.550																					
	<u> </u>				<u> </u>								<u> </u>	<u> </u>							
4.500																					
4.000	<u> </u>	I		1	1	1	1	1	1	I	1	1	1	1	1	1	1	I	1	1	1
LEGEND:		rmatic					<u>king:</u>			C14	N.4				Surfa			10-		Othe	
		R Rutting CB Bloc S Shoving CR Croc								Mea Cres		ıg		SD SS	Dela Stripp		ION			Edge Break0Good ConditionEdge Drop Off1Minor	
	DD	Depre	ession			CT	Trans	verse			Long		al		SR	Rave	elling			HO	Potholing 2 Moderate
	DC	Corru	gatic	on		CD	Diag	onal								Flush Polist					Patching 3 Severe Photograph
															10		шų				поюзарн
Reference:	Austr	oads 2	2009 -	Guid	le to F	aver	nent T	echno	ology	, Part	5: Pav	/eme	nt Eva	aluatio	on and	d Trea	tmen	t Desi	gn		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	11 of 47

Chainage				Lef	t Hai	nd L	ane							Righ	nt Ha	nd L	ane				Comment
(km)		41	m	3	m	2	m	1	m	(CL	1	m	2	m	3	m	4	m		
5.500	1								05									-			1
					SF				SF												1
						[
5.450																					
5.400																					
																					1
						PA															
					1				SF												1
				DS		1	1		DD												1
5.350	-								-									-			
						I															1
					F	ΡA															
					SF																1
5.300																					
																					1
					P 1	ΡA															
				DS	05		1		SF												2
F 250					SF																1
5.250																	EB				
																					1
					SF																
						l															
5.200																	EB				Entry to property driveway RHS. 1
																					1
						PA			SF												
5.150				DS	SF	1															2
5.150																					
											1						EB				1
5.100																					
																	EB				Entry to property driveway RHS. 1
				DS	SF				SF												1
				00																	
5.050																	CM				1
															ΡA						1
													1	F	~						
																	СМ				1
F 005					SF				SF		-										
5.000				1		I					I										
LEGEND:	Deformation: Cracking: DR Rutting CB Block DS Shoving CR Crocodik DD Depression CT Transvers DC Corrugation CD Diagonal							odile verse		СС	Cre	anderii sent gitudir	-		<u>Surfa</u> SD SS SR SF SP	i <u>ce:</u> Dela Stripp Rave Flush Polist	ing Iling ng	ion		ed ho pa	r. Severity: Edge Break 0 Good Condition Edge Drop Off 1 Minor Potholing 2 Moderate Patching 3 Severe Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	12 of 47

Chainage				Lef	t Ha	nd L	.ane							Rig	ht Ha	and I	.ane				Comment
(km)		4	m	1	m	1	2m	1	m		CL	1	1m	-	2m		m		m		
6.000																SR					1
							PA														1
					1					Ļ							DS				1
F 050																SR PA					
5.950				-																	1
							PA														
												PA									1
				<u> </u>			PA			-	-			PA							1
5.900				<u> </u>			PA			-											1
																	SR				1
5.850	_																				
																	PA				1
				ΡΑ						-			SR, C	С		FA				1	
																					1
5.800																					
											-			I	PA						
5.750				EB	1																1
									SR							PA	, SS				1
				-																	
5.700				EB														-			1
5.700									SR												1
																	PA				
									SR						_	-					1
5 (5 0				PA	A, SS										SS						1
5.650				-														-			
5.600	_				1																1 Entry to property driveway RHS.
				EB													EB				1
				PA CC	SF				SF												
5.550		<u> </u>			PA			<u> </u>								<u> </u>			<u> </u>	<u> </u>	
			ļ	1																	1
		-		+	-			<u> </u>		1						-					1
		L	L		ا	SF			SF	L		L		L	L	L			L	L	1
5.500																					
<u>LEGEND:</u>	DR DS DD	DS Shoving CR Crocodile CC							СС	Mea Cres Long	ent	-		<u>Surfa</u> SD SS SR SF SP		elling ing	ion		ED	-	
Reference:	Austr	oads	2009	- Guid	le to F	Pave	ment 1	echno	ology	, Part	5: Pa	veme	ent Eva	aluati	on an	d Trea	tmen	t Desi	gn		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	19/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	13 of 47

(km) 6.500 6.450		4	m	3	m	2n	n	1m								1			
										CL	1m	า	2m	n	3m	4	4m		
6.450													Г						
6.450								SF				SF							
6.450																			
6.450													-	SF					
								SF				S	βF						
								SF											
6.400														SF	EB				
															Ĩ				
													SF						
6.350				SR															
				EB										PA,	SS, EB				
		PA														Ch. 6,325m - Culvert Crossing.			
				L		P/	4					_							
6.300				SR												1			
				PA															
															PA				
6.250				SR											EB				Entry to property driveway LHS.
															PA				
															PA				
6.200				EB															
	_																		P
	_							_							- PA				
	_				E	B, PA													
	_																		
6.150																			
	_																		
	_				PA										PA				l –
					PA	-									PA				-
	_																		
6.100	_							_							DS PA				<u> </u>
	_							_							-				Г
	-														SR				
		-	-						-		\vdash		\vdash			1	-		
6.050	+		1			\rightarrow													Γ
5.050			-													+			<u> </u>
	-	-	1			\rightarrow									SR			-	Entry to property driveway LHS.
	1		1			\rightarrow									PA				
			1	EB															
6.000			1	1	SR											1			Ι Γ
		•														•		•	·
EGEND:	Deformation: Cracking:					a al 112	_		Surface				Othe						
						Mear Crese	ndering ent	J			elamina ripping	uon		EB ED	Edge Break0Good ConditionEdge Drop Off1Minor				
			ressior	٦			Transver				itudina	1			avelling			HO	Potholing 2 Moderate
			ugatio				Diagona		~-	-2.1g					ushing			PA	Patching 3 Severe
							-								olishing			PH	Photograph
eference:							ent Tech												



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	14 of 47

Chainage			Lef	t Hai	nd L	ane						Righ	t Ha	nd L	ane				Comment
(km)		4m	3	m	2	m	1m		CL	1	m	21		3			m]
7.000					SF									PA					1
				P	ΡA			_		SF									1
(050			-	P	PA					-									1
6.950				I		I	SF		-	-									1
				S	ŝF		0.			-									
										-	SF								
													0	SF					
6.900													,	,					
				P	ΡA			_											1
			-		PA					-									1
				I						-	L								1
6.850		+	1	5	SF					1							-		L
										1	SF								
					SF														
												P.	A						1
			_						_	_									1
6.800							SF			-									
								-	-		SF								
				SF						-	51		S	ŝF					
6.750																			
									_										
			_	05			SF		_		SF			F					
(700				SF			SF		-		SF		2	oF		-			1
6.700																			
																			1
6.650				SF			SF		_	SF									1
							SF		-	SF			¢	SF					1
			1				51	-	-	51									
6.600																			
																			1
					<u> </u>		SF			SF			5	βF					1
		_		<u> </u>				_	-				0.1		DA				
4 550			1				SF	-					C	C, DS,	PΑ				1
6.550		_	-	-				+									-		
		-	1	<u> </u>				1	1	1							<u> </u>		
								SF	1										1
								51			SF			9	F				1
6.500			1												-				
LEGEND:	Deform	Deformation: Cracking:									<u>Surfa</u>	ce:				<u>Othe</u>	er: <u>Severity:</u>		
	DR Ru	OR Rutting CB Block CM							anderi	ng		SD	Dela		ion		EB	Edge Break 0 Good Condition	
	DS Shoving CR Crocodil DD Depression CT Transvers							Cres		-			Stripp				ED	Edge Drop Off 1 Minor	
	DD De	DD Depression C1 Iransvo DC Corrugation CD Diagor					verse	CL	LON	gitudir	a		SR	Rave	ung			HO	Potholing 2 Moderate
							onal						SF	Flushi	ng			PA	Patching 3 Severe



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	15 of 47

Chainage				Left	Hand	Lane					Righ	t Hand	Lane	;			(Comn	nent	
(km)		4r	n			2m	1m	(CL	1m	1		ßm	4n	n					
7.500								1			1		1							1
7 450																				
7.450																				
						SF														
												SF								
7.400										SF		0.								
													_							
7.350																				
					SF		SF													
											-		-							
7.300						PA		_												1
					СС		I	-												1
																				1
							-			SF										
7.250							SF					SF								
					SF															
							-													
							-			SF										
7.200								-												1
7.200								L												1
										SF										
						SF														
7.150	\downarrow																			1
									-			SF								
							1			F		эг								
					SF		SF													
7.100					PA			SF												2
						SF														1
						PA			_											2
						SF	<u> </u>	0.0		SF										1
7.050					PA	PA		СВ		, DR, CC	-	PA								2
7.050							1	-	0.	, DR, CC										1
							SF						1							1
					SF					SF		05	DS DR							
												SF	DR							
7.000																				
LEGEND:	Defor	matic	n.		Cra	cking:						Surface:			ć	Othe	r.	<u>Severi</u> t	hy-	
	DR I	Ruttin	g		CB	Bloc	k			ndering		SD Dela	amina	tion	E	В	Edge Break	0 0	Good Condition	
		Shovi			CR		codile		Crese			SS Strip					Edge Drop Off		Vinor	
	DD I DC (CT CD	Tran: Diag	sverse Jonal	CL	Long	itudinal		SR Rav SF Flush	elling ning				Potholing Patching		Voderate Severe	
			9			3						SP Polis					Photograph			



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	16 of 47

Chainage				Lef	t Han	nd La	ane							Righ	nt Ha	nd L	.ane				Comment	
(km)		4r	n		m		m	1	m	(CL	1	m	1	m		m		m]
8.000					SF	c			SF	1						SF						1
									51													
				DD]		D											1				1 1
7.950							P.	A						PA								_
7.750																						2
					PA, CC	S, DD)															
							P.	A	r	r	1											2
				D	D																	2
7.900					+		$\left - \right $									-		-				
7.850					-																	
7.800																						
7.750																					_	
																PA,						1
					SF	2			SF			DE), SF	-			D					1
					SF	F			SF												F F	1
7.700																						<u> </u>
7.650																						
7.030																						
																						-
7.600							P	A													F	1
																						_
					CE	В		C	СВ													1
					1		-			-				PA		СС						1
7.550				DS]			F	PA						1		EB					1
																	ED					
																					Γ	1
					SF	ŕ		5	SF			SF				SF						
7.500																						
<u>LEGEND:</u>		Ruttin Shovi Depre	ig ng essior	y CB Block CM M g CR Crocodile CC C ssion CT Transverse CL L						Crese	ent			SS SR SF	<u>ce:</u> Dela Stripp Rave Flush Polist	ing Iling ing	ion		НΟ	Severity: Edge Break 0 Good Condition Edge Drop Off 1 Minor Potholing 2 Moderate Patching 3 Severe Photograph Severe Severe		
Reference:	Austro	bads 2	2009 -	Guid	le to Pa	aven	nent Tr	echn	ology	, Part	5: Pav	/eme	nt Eva	aluatio				t Desi	gn		. notograph	



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	17 of 47

Chainage				Lef	't Ha	na L	ane							Rigr	nt Ha	and L	ane				Comment
(km)		4	łm	3	m	2	m	1	m	C	CL	11	m	2	m	3	n	4	m		
8.500																					
8.450																					
0.430	-																				
	-		-																		
	-		-																		
	_																				
8.400	_																				
	_		_																		
																					-
		i	<u> </u>	<u>i</u>	i	i	i –					i			i				<u>i</u>	<u>i</u>	Ch. 8,370m - Railway Line Crossing
						PA	A, DD,	cc					PA	, DD,	СС						
8.350							., ,							, ,							
							PA, SI	-													
							1 A, 3														
				Ĩ					СС	, PA											
				1																	
8.300				1		DA C	-		CC	, PA	1					1					
						PA, S	F		P	A											
									CC	, PA											-
				-																	L
					I	1															Γ
8.250	-																				
0.200	-		-													SF					
	_				-											-					
	-															PA					
	_														1	-A					
																-					
8.200	_		_		-											_					
	_															SF					
									SF												
					SF																
8.150																					_
																сг	ГР				
																SF	EB				
8.100					1	L										1					
					1	l										1					
		1		1	1	F										1					
	1	1	1		⊢	1	1								-					1	
	1	1			1		 			l						1				1	-
8.050	1	-			1		⊢									1				-	L
0.000		-			1		<u> </u>							1						-	
	-			-	-	SF			SF							SF			-	+	
	-		-	-	1		<u> </u>		51							1				-	
		-			1		L													-	
		-			1		I													-	
8.000					L		<u> </u>													<u> </u>	
CEND	D					<u> </u>	alataa -								.					0.1	
EGEND:		<u>ormat</u> Rutti					<u>king:</u> Blocl	,		CM	Moo	nderin	a		<u>Surfa</u> SD	<u>ace:</u> Delai	ninat	ion		<u>Oth</u> EB	<u>er:</u> <u>Severity:</u> Edge Break 0 Good Condition
	DR	Shov					Сгос				Crese		9		SS	Stripp				ЕD	Edge Drop Off 1 Minor
			ressio	n				verse				itudina	al		SR	Rave				НО	Potholing 2 Moderate
			ugatio				Diag								SF	Flushi				PA	Patching 3 Severe
															SP	Polish				PH	



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	18 of 47

Chainage				Let	t Ha		ane							RIG	nt Ha	and I	ane	<u> </u>			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	lm	2	2m	3	m	4	m		
9.000							PA						D	A, DD	сг			1			
							PA						P	A, DD	, эг						
									DD, F	PA, SF			P	A, DD	, SF						
0.050						SF				F				1			1	-			
8.950							-		3	5F											
																					Ch. 8,925m - Albert Street Intersection LHS.
					SF				SF							SF					
8.900																					
				EB																	EB - Gravel shoulder parking area on side of road.
8.850							1														Ch. 8,850m - Entry to John Tucker Park LHS.
0.000							SF														
													L		L						
8.800																					
8.750						SF															
																					-
8.700						SF	1		SF												
					Ň	51	PA		,					PA							
																					Ch. 8,670m - Prince Streeet Intersection RHS.
8.650																					
8.600																			-		
0.000																					
	_													-							
8.550	-				-	-							-		-						
	+												+	-	+						+
	-										-	-		-					-		1
	+	<u> </u>					<u> </u>				1		+	+	+	<u> </u>			1		
8.500				L																	
<u>GEND:</u>		r <u>matio</u> Ruttir					<u>king:</u> Blocl			СM	Mea	nderi	na		<u>Surfa</u> SD	<u>ice:</u> Dela	minat	tion		<u>Othe</u> EB	
		Shov						odile		СС	Cres	ent	-		SS	Stripp				ED	Edge Drop Off 1 Minor
	DD	Depr	essior					sverse		CL	Long	gitudir	nal		SR	Rave	elling			НΟ	Potholing 2 Moderate
	DC	Corru	ugatio	on		CD	Diag	onal							SF SP	Flush	ing			PA PH	Patching 3 Severe Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	19 of 47

Chainage		Left H	and La	ne					Right	t Ha	nd L	.ane	•			Comment
(km)	4m	3m	2n	n 1	m	CL	1	m	2n	n	31	m	4	m		
9.500																1
						_										
						_										
9.450			SF	SR	SF	-										
7.100						SR	-									
											SF					1
						_					-					
9.400			SR			-										1
7.400											SF					
																1
		SR		SR			05									1
9.350						_	SF				SF					
9.350			PA								0.					1
																1
			SF				SR									
0.200				SR	SF	_										
9.300							1									1
			SR								SR					
		_			SR PA		SR	SS	PA			SR				3
				SS		_										2
9.250		CC, SS	>	PA	PA	_		-		PA,	CC, I	DD				3
		-														2
						•	PA SE	R, SS, S	F							2
		CC	DD				177, 51	(, 55, 5								Ch. 9,210m - William Street Intersection RHS
9.200		СС	PA													3
		CC	FA		PA, PO, SR	SS, CC,										
					24			PA								
		D	S							PA						
9.150		_				_					DS,	PA				
																3
			PA, P	O, DD, SS												
								PA, PC	D, CC,	SR, SS	;					
9.100		_														3
		-	PA, C	C, DD, SR												Ch. 9,090m - Sloane Street Intersection RHS.
			PA, S	F, DD, EB					SR							2
						PA										2
9.050																
		-	PA, DD, C	C, SR, EB,	PO		04		CC, SR	ED 1	20		<u> </u>	<u> </u>		3
		-	D			-	۲F	, UU,	, эк	., LU, I	0		-	-		1
		D	С	PA					PA		DD					1
9.000		S	S						۲A		SS					
<u>LEGEND:</u>	Deformation: DR Rutting DS Shoving DD Depressic DC Corrugat		CT	-	CC	l Mea Cres Long	ent	-		SS SR SF		lling ng	ion		<u>Othe</u> EB ED HO PA PH	Severity:Edge Break0Good ConditionEdge Drop Off1MinorPotholing2ModeratePatching3SeverePhotograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	20 of 47

Chainage		-		Lei	ιпа	nd L	ane							кiy	піпа	and I	.ane				Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	2m	3	m	4	m		
10.000																SR					
					SR																
							1														
							-				SR										
9.950						SR	-									SR					
						SF															Ē
				1			8		P	A											-
9.900				-			SR									SF					-
												SR									-
							1									-					F
							SR					SR									
9.850	-											1									
7.050																					
						SR															
	-	1	-	1	┝			-	-		1	-		-		-				-	
	-	1	<u> </u>		1		<u> </u>	<u> </u>	<u> </u>		1			1	+	<u> </u>					
9.800	-	1	-	1	1		-	-	-		1	-		-		-				-	
7.000	-	1	-	1	1		-	-	-		1	-		-		-				-	
9.750																					
9.750																					
	-																				
9.700																					
9.700																					
	-																				
9.650																					
7.030																					
	-																				
9.600	+	1		1	1						t			1							
	1-			1							t			1							
	1	1		1	1				1		1			-							–
	1								1		1	SR		1							
		1	<u> </u>	1	1		<u> </u>		1		1	 		1							-
9.550	1								1		1		SF	<u> </u>		SF					<u> </u>
		1	<u> </u>	1	1		<u> </u>		SF		1			 							
	1								1		1			1							
	1	1		1	1				1		1			-							
	1	1		1	1				1		\vdash			1							
9.500	1			1	-				1		1	SR		-							
		1	1		1	1	1	1						1		1					• • • • •
EGEND:		ormati					<u>king:</u>								<u>Surfa</u>					<u>Oth</u>	
		Rutti					Block				Mea		ng		SD	Dela		ion		EB	Edge Break 0 Good Condition
		Shov Depi		n			Croc Trans				Cres Long		al		SS SR	Stripp Rave				ed ho	Edge Drop Off 1 Minor Potholing 2 Moderate
		Corri					Diag			ΟL	LONG	nualfi	aı		SF	Flush				PA	Patching 2 Moderate Patching 3 Severe
		20.00	9.440			- 0									SP	Polish					Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	21 of 47

Chainage				Lef	t Ha	nd La	ane							Rigl	ht Ha	nd L	.ane	÷			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	2m	3	m	4r	n		
10.500												-	SF			SF					GENERAL COMMENT:
																0.					Road pavement in generally good condition.
																					Minor SF / SR associated with general traffic use.
																					Willor St 7 Sk associated with general traffic use.
10.450																					
10.450																					
10.400																					
10.350																					
	-			-							<u> </u>		-	-							
	-				~~										-						
	-				SF	<u> </u>			SF		<u> </u>		-	-							
10.300																					
10.250																					
									SF			SF				SF					
																					_ _
							SF							SF							
					1	1	CT		1				CT	1		PA,	СС				
10.200																	-				
																					Ch. 10,180m - Paterson Road Intersection on LHS.
																					Major intersection with turning lanes.
																					Change in surface seal for intersection from
40.450																					approximately Ch. 10,150m to 10,210m.
10.150																					
								SR	SF			SF			SR	SF					L
								DIX.	31			51			55	JI					
10 100																					
10.100																					
	+					-	l				-	1		-		-					
	-			-	-	S	R				SR	<u> </u>	-	-	-						
	-			-	-	-						-	-	-	-						L
10.050	+				-	1					-	-	1	-							
10.050				-	SF	<u> </u>	SR				SR	SF	<u> </u>	-	-	SF					L
	+					-			SF		<u> </u>			-	+						
	+	+		-		-		 	эг		-	1		-	+						
	-	-		-				-			SR	 			-						L
10.000	1			9	SR	1		-	ļ		JA	 				SR		$\left - \right $			
		<u> </u>	<u>I</u>	L		4	1	I	I	1	<u>I</u>	1	1	I	<u> </u>			<u> </u>			L
10.000	Defo	ormatio					<u>king:</u>								<u>Surfa</u>					<u>Othe</u>	
			na			CB	Block	<			Mea		ng		SD	Dela		tion		EB	Edge Break 0 Good Condition
	DR					CP	Cro-	odile		CC	Cro-	ont			22						Edge Drop Off 1 Minor
	DR DS	Shov	ing	h				odile			Cres		nal		SS SR	Stripp				ED HO	Edge Drop Off 1 Minor Potholing 2 Moderate
EGEND:	DR DS DD		ing essior				Trans	verse			Cres Long		nal		SS SR SF	Stripp Rave Flush	lling		I		Edge Drop Off1MinorPotholing2ModeratePatching3Severe



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	22 of 47

Chainage				Left	Hai	nd La	ane							Rig	ht Ha	nd L	ane			Comment
(km)		41	m	31	m	2	m	1	m	0	CL	1	m	2	2m	3	m	4m		
11.000																				GENERAL COMMENT:
															PA					Road pavement in generally good condition.
																				Expedient patches only, typically about
																				300mm to 500mm in diameter.
10.050																				Minor SF / SR associated with general traffic use.
10.950	-																			Willion Sr 7 SR associated with general traffic use.
								PA		PA										
								PA	-	PA										
10.900																				
							PA			PA										
10.850								T		PA										
																				_
10.800											PA									
10.000												-								
															PA					
								PA							FA	PA				
								PA	-							PA				
10.750																				
					-															
10.700										PA										
10.650																				
						1							1							
10.600					SF				SF			SF								LL
10.600					51				51			51								
	-					_							_							
	-					<u> </u>							<u> </u>							
	-					<u> </u>							<u> </u>							
	-					-							-							
10.550	_					<u> </u>							<u> </u>	-	-					
	-					<u> </u>							<u> </u>		-					
					SF				SF			SF				SF				
10.500					51							51				51				
GEND:		ormatic					<u>king:</u>								<u>Surfa</u>				Oth	
		Ruttin					Block				Mea		ng		SD	Dela		on	EB	
	DS	Shovi					Croc				Cres				SS	Stripp			ED	Edge Drop Off 1 Minor
		Depr Corru				CT CD		verse		ΟL	Long	nuain	Idl		SR SF	Rave Flushi			HO PA	Potholing2ModeratePatching3Severe
		CONL	iyaliOl	11		$\cup \cup$	udy	undi							JI.	114211	пu		rA	



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	23 of 47

Chainage			Lef	t Ha	nd L	ane							Righ	nt Ha	nd l	.ane				Comment
(km)		4m	3	m	2m		1	m	n C		1n	n	2	m	3	m	4	m]
11.500																				GENERAL COMMENT:
								PA												Road pavement in generally good condition.
											PA									Expedient patches only, typically about
																				300mm to 500mm in diameter.
11.450																				Minor SF / SR associated with general traffic use.
11.450																				
			_																	
										-										
11.400																				
								-		-									-	
11.350	-			<u> </u>																
			_										<u> </u>							
			+	<u> </u>																
													-							
11.300																				
			PA																	
														PA						
						PA														
							PA													
11.250							PA													
11.200																				
							PA													
				05																•
				SF			PA													
11.150																				
														PA						
11.100																				
								SF												
			+	-		-				1								-		
11.050			+	-						-										
11.030	-		+	ł						1										
			+	-						1										
	-		+	1						-	+		-							
			+	-									-							
11.000			_	-									-							
11.000	<u> </u>	<u> </u>		1	1	I	I		L	<u> </u>			I	I	1	l	I	I	<u> </u>	1
EGEND:	<u>Defo</u>	rmation:			Crac	:king:								<u>Surfa</u>	<u>ce:</u>				<u>Othe</u>	
		Rutting				Block					nderin	9		SD	Dela		ion			Edge Break 0 Good Condition
		Shoving				Croc				Cres				SS	Stripp					Edge Drop Off 1 Minor
		Depress Corruga				Trans Diag	verse		CL	Long	jitudina	11		SR SF	Rave Flush				ho Pa	Potholing2ModeratePatching3Severe
	1.0.	COLLING	11011		Uυ	Diag	unai							SE	riusn	шų			гA	Falcinia > Severe



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	24 of 47

Chainage				Left	t Ha	nd L	ane							Righ	nt Ha	nd l	ane			Comment	
(km)		4	m	3	m	2	?m	1	m	(CL	1	m		m		m		m		
12.000				EB																	1
				20							PA				SR						1
																	PA				1
11.950	-					-	-	-		-	-				PA		PA PA		-		1
11.700														PA							1
				PA	ļ									PA							1
11.000				FB	, PA			-		-	-										1
11.900	-				SS	┨──		-													1
				EB		┦															
				PA	, SR																1
					ļ					-	-										
11.850	-									PA	 		PA								1
																					1
				S	SR									SR							
11.800					<u> </u>		PA	-			-			 							1
				D) S,PA,	PA SR				PA							SR				1
				-		PA,SR	I									PA	31				1
																					••
11.750]																				
	-						E	BRIDG	E - Cł	H. 11.7	710km	to 11	.770kr	n							
	-																				
11.700							PA								S	iF					1
						-					[1
11.650																					1
					SF			S	F				SF								
													5								
11.600																-		-			
11.000						-										PA					1
							PA														1
																-					
11.550					SF				SF						PA						1
11.500																					
<u>LEGEND:</u>	DR DS DD DC	Ruttir Ruttir Shov Depr Corru	ng ing essior ugatic	n		CB CR CT CD	<u>cking:</u> Blocl Croc Trans Diag	odile verse onal		CC CL	Meai Crese Long	ent itudin	al		SS SR SF SP	Dela Stripp Rave Flush Polist	lling ing iing			ED	rr. Severity: Edge Break 0 Good Condition Edge Drop Off 1 Minor Potholing 2 Moderate Patching 3 Severe Photograph
Reference:	Austr	oads	2009 -	Guid	e to F	Paver	nent I	echn	ology	, Part	5: Pav	/emei	nt Eva	luatio	n and	d Trea	tment	t Desi	gn		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	25 of 47

Chainage		Left Hand Lane												Righ	t Ha	nd L	ane		Comment		
(km)		4m	n	3r	n	2	m	1m		С	L	1r	m	2	m	3	n	4m		7	
12.500				DS		PA		Ĩ	SF											GENERAL COMMENT:	
																				Road pavement in generally good condition.	
					SF				SF						PA					Expedient patches only, typically about	
					25				5F -			SF				СС	DD			300mm to 500mm in diameter, unless shown	
12.450												эг								as larger half road patch or similar.	
																				Minor SF / SR associated with general traffic use.	
						PA														EB generally turning offs to properties, parking.	
									SF			SF									
12.400																					
12.350																					
	-																				
	-						$\left \right $														
10.0	-	+					$\left \right $										╞			L	
12.300			-+				$\left - \right $		\rightarrow	_	Г	PA			D 4	1	╞				
											Ĺ	PA	P	PA	PA		-				
							SR										EB			r	
					SF		SK		SF								EB			+	
12.250					эг				эг								ED				
12.250																					
																				r	
																	EB -			L	
12.200																					
12.200					SF															The second secon	
																				-	
12.150					SF				SF												
									_												
																PA	DS				
						SR															
				EB																	
12.100				20										PA			_				
						PA															
	1																				
					PA																
12.050																					
	-										SR										
	-	+					PA													L	
	-	+					<u> </u>			_					DA					Ch 12015m Topol Horsenteen to an of DUC	
10.000	-						SR		DA		DA				PA					Ch. 12,015m - Tocal Homestead turnoff RHS.	
12.000									PA		PA			I							
GEND:	<u>Def</u> c	matior	<u>n:</u>			Crac	<u>:king:</u>								<u>Surfa</u>	ce:			<u>O</u> tl	her: <u>Severity:</u>	
	DR	Rutting	9			СВ	Block				Mear		g		SD	Dela	minatio	on	EB	Edge Break 0 Good Condition	
		Shovin					Croco				Crese					Stripp			ED		
	DD	Depre Corruç					Transv Diago		(CL	Longi	tudina	al			Rave Flushi	-		HC PA	÷	
		COITUQ	yauon			Uυ	Diago	лыа							sг	riusni	ug		PА	raiching 3 Severe	


Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	26 of 47

Chainage	L			Lef	t Ha	nd L	ane				L			Righ	nt Ha	nd l	ane				Comment
(km)		4	m	3	m	2	m	1	m	(CL .	1	m	21	m	3	m	4r	n		
13.000																					GENERAL COMMENT:
																					Road pavement in good condition. Has been
																					recently resealed from Ch. 12,750m onwards
10.050	-																				and minor defects only
12.950	_																				
	_																				
										CL											
12.900																					
12.850															CL						
				CL					PA						SS						
		-		1	-																
	1	1		1		-	-				-	-									
12.800	-	-		-		-	-					-									
12.800	-																				
12.750																		-			Ch. 12,750m - Change in road surface seal.
	_			EB	SF						9	SF		F	PA, CO)					
															SR		SR				
				DS	, PA								DD,	SR, SS	S, SF						
12.700																					Minor defects, small expedient PA, and minor
														P.	A						DD and CC through larger PA.
							PΑ			C											
						ŀ	'A			CL				PA							
12.650																					
					SF									PA							
							SR										I				
																	SR				
	1			ł		1					l	l				SF	DS				
12.600		1		1	DD	-	<u> </u>					<u> </u>					SR				
12.000	1	1		1	SF		-		SF		-	-					EB				
	1	-			51		-					-				I					
	+	-	-		-	-						-									
		1		-			-					-									
	1	-	-	 			<u> </u>					<u> </u>									
12.550	-	-		<u> </u>							<u> </u>										
		-		1																	
	1	-				F	PΑ				SR										
				L	1		1														
			-	<u> </u>																	_
12.500				L	F	PA		1				L									
EGEND:	<u>De</u> fo	ormati	on:			<u>Cr</u> ac	:king:								Surfa	ce:			C	Othe	<u>sr:</u> <u>Severity:</u>
		Rutti					Bloc			СМ	Mea	nderir	ng				minat	ion			Edge Break 0 Good Condition
	DS	Shov						odile			Cres				SS	Stripp	oing				Edge Drop Off 1 Minor
		Depr	ressior			CT		sverse		CL	Long	jitudin	al		SR	Rave				ю	Potholing 2 Moderate
	DC	Corru	ugatio	on		CD	Diag	onal								Flush Polisi					Patching 3 Severe
															SP					Ч	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	27 OF 47

Chainage				Lef	t Ha	nd La	ane							Rigl	nt Ha	and L	ane	•			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m		m	1	m		m		
13.500																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF / SR associated with general traffic use.
																					Minor Sr 7 SK associated with general tranic use.
40.450																					
13.450																					
				-																	
13.400																					Ch. 13,400m - Tocal Agricultural Centre
																					intersection and entry on RHS.
13.350														-							
									SF												
		L		Ľ		L							L			L		L	L		
13.300																					
														1							
13.250																					
10.200	1			SF					SF												
																					Ch. 13,215m - Change in road surface seal.
13.200				(CT	1															1
13.200																					
10.150																					
13.150																					
		<u> </u>		 		<u> </u>						-	<u> </u>	-					<u> </u>		
13.100		-				-					-			1		-			-		
		<u> </u>				<u> </u>													<u> </u>		
		<u> </u>				<u> </u>							<u> </u>			<u> </u>			<u> </u>		
		<u> </u>		I		<u> </u>							<u> </u>	-					<u> </u>		
												-		<u> </u>							
13.050		<u> </u>		 		<u> </u>							<u> </u>	<u> </u>					<u> </u>		
														1							
13.000																					
EGEND:	Dofe	rmatio	·ac			<u>Crac</u>	king								<u>Surfa</u>					<u>Othe</u>	ar Savarity
LOLIND:		Ruttir					<u>king:</u> Blocł	¢		СМ	Mea	nderi	na		SD SD	<u>ice:</u> Dela	minat	ion			
		Shov					Croc				Cres		5		SS	Stripp					Edge Drop Off 1 Minor
		Depr		٦				verse			Long		al		SR	Rave					Potholing 2 Moderate
		Corru					Diag								SF	Flush	ing			PA	Patching 3 Severe
															SP	Polish	nina			PH	Photograph

Austroads 2009 - Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	24/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	28 of 47

Chainage				Lef	t Hai	nd L	ane	T				1		Rigl	nt Ha	and I	.ane	•		1	Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	m	3	m	4	m		
14.000																					
																					Ch. 13,960m - Change in road surface seal.
13.950																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF / SR associated with general traffic use.
13.900																					
																					Ch. 13,960m - Change in road surface seal.
13.850																					
	-	-																			
13.800	+	-		-		-		-			-	-		-	-				-		
13.000																					
13.750																					
					S	SR				SR											
							-														
13.700																					
13.650																					
13.600																					
10.000																					
				SF			SF					SF				SF					
	-																				
10 550	-						<u> </u>				<u> </u>		<u> </u>						<u> </u>		
13.550	-	-		-		-					-	-		-	-						
		1																			
	L			L			L						L			L			L		
13.500																					
GEND:	Defo	ormatio	on:			Crac	:king:								<u>Surfa</u>	ice:				<u>Othe</u>	er: <u>Severity:</u>
<u></u>	DR	Ruttir	ng			СВ	Bloc	k				nderii	ng		SD	Dela		ion		EB	Edge Break 0 Good Condition
		Shov		-				odile			Cres				SS SD	Stripp					Edge Drop Off 1 Minor Potholing 2 Moderate
		Depr Corru					Diag	sverse onal		υL	LONG	jitudin	ıdı		SR SF	Rave Flush					Potholing2ModeratePatching3Severe
			-				0								SP	Polisł					Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	29 of 47

Chainage				Lef	t Hai	nd L	ane							Rig	ht Ha	and I	ane					Comment	
(km)		4	m	3	m	2	m	1	m	(CL	1	lm	2	2m	3	m	4	m				
14.500										1	1			1							GENERAL COMMENT	T:	
																					Road pavement in g	generally good condition.	
																						ated with general traffic use.	
			í –		PA																		Г
14.450								S	F														
14.430	_								SF														Г
									51	-													_
												-						-					
												_											
											_												
14.400	_			-																			_
						1	1	PA			1	_											
												_											_
														ł	PA								
14.350																							
											L												_
14.300																							
					5	SF		5	F														
							PA				1	SF											F
14.250										1													t
11.200					5	SF			SF	-													_
										-													
									<u> </u>					PA									Г
							PA				-	T	SF		T								-
14 200						SF		1	SF	T			0.										┢
14.200									31														
						SF			F														
					2	SF		2	ſ														
14.150	_						PA		-	1	_												_
					5	SF		5	F		_												
	_																						
																							_
14.100	1			<u> </u>								SF											
																	DD						
														SF									
														PA			_						
14.050														SF									
	\Box											\bot											_
		1		1																			
				1							1												
14.000											1												
		-			-	-	-	-	_											_			_
EGEND:		ormati					<u>king:</u>			<u>.</u>					<u>Surfa</u>					Othe		<u>Severity:</u>	
		Rutti					Block					anderi	ng		SD		minat	ion		EB	Edge Break	0 Good Condition	
		Shov		2			Croc				Cre		ادد		SS SP	Stripp				ED HO	Edge Drop Off Potholing	1 Minor 2 Moderate	
		Depr Corri					Diag	verse onal		υL	LON	gitudir	ıaı		SR SF	Rave Flush	-			HO PA	Potholing Patching	2 Moderate 3 Severe	
	50	COIII	Jun			00	Diay	ondi							зг SP	Polisi	-			PA	Photograph	3 364616	
																	9				U 1		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	30 OF 47

Chainage				Left	Har	nd L	ane							Rig	ht Ha	and I	ane	•			Comment
(km)		4r	n	3	m	2	m	1	m	0	CL	1	m	2	!m	3	m	4	m		
15.000				PA	A, CL,	SS						SR									1
							PA					PA									1
					P	A								[1
												1	PA	1	1						1
14.950									_												
									-	DA						DA					2
										PA			21	K, SK,	minor	PA					
								F	PΑ					1	I		I				2
14.900							PA								9	SR					2
							4	PA				S	SR		9	SS					2
				EB											F	PA					
						PA															2
14.850				EB CC																	2
				PA													EB				Road narrows, no shoulder.
				SS													CC				Ch. 14,830m - Change in road surface seal.
-							<u> </u>	<u> </u>	<u> </u>				65	-	-				<u> </u>		
14.000	-										-	-	SR	-	-	-	<u> </u>				1
14.800	-						-	-	-				-		-	F	ΡA		-		
															F	PA					1
																			-		GENERAL COMMENT: (Up to Ch. 14,830m)
																					Road pavement in generally good condition.
14.750																					Minor SF, SR associated with general traffic use.
												SF									1
												51									
14.700																					
																					Ch.14,690m - Eelah Road Intersection LHS
14.650																					
																			1		Patches more of a surface spray only.
														ł	PA						Hardly visible if in vehicle.
						r	P	ΡA	1	r											1
14.600																					
							-	-	-				-		-		-		-		
							-	-	-				-		-		-		-		
															-						
14.550															-						
11.000				SF																	1
					-										1						
					PA			SF													1
14.500																					
	Dof-	mooti-				Cro	king								Ci vef -	0.001				Oth-	Source:
LEGEND:		rmatio Ruttin					<u>king:</u> Blocł	k		СМ	Mea	nderir	ng		<u>Surfa</u> SD	<u>nce:</u> Dela	minat	ion		<u>Othe</u> EB	Edge Break 0 Good Condition
	DS	Shovi	ng				Croc			СС	Cres	ent	-		SS	Stripp				ED	Edge Drop Off 1 Minor
		Depre					Trans			CL	Long	jitudin	al		SR	Rave	-				Potholing 2 Moderate
	DC	Corru	gatio	n		CD	Diag	onal							SF SP	Flush Polisł	-			PA PH	Patching 3 Severe Photograph
															0.	. 5131					
Reference:	Austr	oads 2	2009 -	Guid	e to P	aver	nent T	echn	ology	, Part	5: Pa	veme	nt Eva	aluatio	on an	d Trea	itmen	t Desi	gn		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	31 of 47

Chainage				Lef	t Hai	nd L	ane							Rigl	ht Ha	nd I	ane				Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	1	!m		m		m		
15.500				EB	1																GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SR, EB associated with general traffic use.
15.450																					Ch. 15,440m - Lemon Grove Road
				EB					SR			SR	PA								intersection LHS.
								cD													
								SR	PA		SR										
											PA										
15.400																					
15.350				50																	
				EB PA																	
									PA												
15.300																	PA				
																	EB				
																	20				
													SR								
15.250									SR							5	SR				
									SS PA												
									FA				SR								
															PA						
15.200																					
																					_
				SR PA																	
				PA		-					PA										
					SR				SR			SR				SR					
15.150																					
						F	PA														
45 400				DS	, PA	1		1													
15.100				03		-	<u> </u>				<u> </u>										
					-	-	-								-						
				-											-				-		
				-					<u> </u>			SR			-				-		
15.050	-				-	-	-		SR SS		-	JA	-		-						L
13.030	1			-	-	-	-			 	-			-	-						
	-				1	1	1				-			-	-						
	-				PA		-				-			-	-						L
	-										-			-	F	A					
15.000					I	PA, C	С	I	-								B				
13.000	1	<u> </u>		L						I	I	1	I	I	I	L .	-		I	1	I
LEGEND:	<u>Defo</u>	rmatio	on:			Crac	:king:								<u>Surfa</u>	ce:				<u>Othe</u>	er: <u>Severity:</u>
		Ruttin					Block				Mea		ng		SD		minat	ion		EB	
		Shovi					Croc				Cres				SS	Stripp				ED	Edge Drop Off 1 Minor
		Depr Corru					Trans Diag			CL	Long	ıtudin	al		SR SF	Rave Flush				ho Pa	Potholing2ModeratePatching3Severe
		UIIU	rualiù	211		$\cup \cup$	UDIU	Undi												1 🔿	3 JEVELE



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	32 of 47

Chainage				Lef	t Har	nd La	ane							Rigl	ht Ha	and I	.ane				Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m		m	1	m		m		
16.000																					
									SR												1
									PA			PA									1
15.950																					
10.700									SR			SR									1
				EB					PA				PA	1							1
15.900																					
13.700																					
					1							PA									1
												PA									1
				EB																	1
15 050	-							-			-			-	-				-		
15.850								-				-		+	1				-		
				PA				-			-	-		-	-				-		GENERAL COMMENT: (From Ch. 15,800m) 1
				۲A	-			<u> </u>				<u> </u>		+					<u> </u>		
						-															Road pavement in generally good condition.
	-							<u> </u>				-		-	1				<u> </u>		Minor SF, SR associated with general traffic use.
15.800								<u> </u>							1				<u> </u>		
										PA											2
																					Ch. 15,650m to 15,790m, SR along centreline 2
																					with intermittant expedient patches only.
15.750																					
										SR											
										PA											2
15.700									SR												
15.650							SR			PA											2
							SR														1
15.600																					
				EB																	1
				PA																	
15.550																					
				EB		_							SR	, PA							1
15.500				20																	
LEGEND:		rmatio					<u>king:</u>								<u>Surfa</u>					Othe	
		Ruttir Shov					Block	k odile			Mea Cres		ng		SD SS	Dela Stripp		ION		EB ED	Edge Break0Good ConditionEdge Drop Off1Minor
		Depr		ı				verse			Long		al		SR	Rave				HO	Potholing 2 Moderate
		Corru					Diag				-56	,			SF	Flush				PA	Patching 3 Severe
							5								SP	Polisł				PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	33 OF 47

Chainage				Lef	t Ha	nd L	ane							Rigł	nt Ha	and I	Lane	è			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	m	3	m	4	m		1
16.500																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF, SR associated with general traffic use.
16.450																					1
																					CL, CT have generally been crack sealed. 1
16.400																					
													СТ								
													CI	CL							
16.350																					
							CL														1
				<u> </u>				ļ				CL									
	-				-	-						L	 				-		-	-	
				 										ļ	 						
16.300	-																			-	
	-																				Ch. 16,280m - Start of fill embankment, guard rail
																					both sides, limited access, unsafe to walk.
44.050																					Mapping from vehicle drive through only.
16.250	-																				
16.200																					
10.200							CT							CT							1
											1										
16.150																					
																					Ch. 16,140m - Change in road surface seal.
																					1
				EB													EB	-			
16.100																					
	-																			-	
	-			<u> </u>																-	
						-														-	
4/ 050	-	-																		+	
16.050		-					-	-						-		-				-	
	-	-		<u> </u>			-	-			PA			-		-				-	1
		-					-	-			FA	 		-		-				-	L
																				1	
16.000	1	-		1					-			9	SR							-	1
	_	1		<u> </u>	I	I	1	1	1	I	·				1	1	I		I	<u> </u>	
LEGEND:		rmatio					<u>:king:</u>								<u>Surfa</u>					<u>Oth</u>	
		Ruttin					Block				Mea		ng		SD	Dela		tion		EB	
		Shov Depr		n		CR CT		odile verse			Cres Long		al		SS SR	Stripp Rave				ed ho	Edge Drop Off 1 Minor Potholing 2 Moderate
		Corru					Diag			UL.	Long	naun	u.		SF	Flush				PA	Patching 3 Severe
						5								SP	Polis					Photograph	



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	34 of47

Chainage	Γ			Lef	t Ha	nd L	ane				Γ			Rigl	ht Ha	nd l	ane				Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	1	!m		m		m		
17.000															1						GENERAL COMMENT:
17.000	-																				
	-																				Road pavement in generally good condition.
																					Some minor SR and CB only.
16.950																					
16.900																					
	ĺ.																				1
											_	СВ									_
											1		L								
	-										ļ	1	1	1	_						
16.850	_			<u> </u>		<u> </u>					<u> </u>										
	-	-		-				PA	Į		1				1						1
	-	-		<u> </u>							<u> </u>										
		-									<u> </u>										
									PA												1
16.800																					
																					1
										(СВ										
16.750																					
10.750																					
	-																				
																PA					1
16.700	_																				
16.650																					
																					CB - cracks sealed 1
								CT						СВ							1
16.600		1								I		1									
				1							1										
		1									1		1								
		1		PO	1											1					CT - cracks sealed 1
	-	-		1	-						1		CT								
16.550	+	1		1	-	-					┝──					!					
10.000	1	+		1								-		-	-						Ch. 16 550km. End of ombankmant and such
		-				-						-		-	-						Ch. 16.550km - End of embankment and guard rail.
	-				<u> </u>	<u> </u>				<u> </u>	<u> </u>				-					<u> </u>	
	-				<u> </u>																
	-				<u> </u>	<u> </u>		-			 		-								
16.500		<u> </u>			<u> </u>	<u> </u>	1		1		<u> </u>				1	1			1		
	D					0	l dan i								c					0.1	
<u>LEGEND:</u>		ormatio Ruttir					<u>:king:</u> Blocl			СM	Mea	nderi	na		<u>Surfa</u> SD	<u>ce:</u> Dela	minot	ion		<u>Othe</u> EB	Er: <u>Severity:</u> Edge Break 0 Good Condition
		Shov						к :odile			Cres		чЯ		SD	Stripp		1011		ЕD	Edge Drop Off 1 Minor
		Depr		n				sverse			Long		nal		SR	Rave				HO	Potholing 2 Moderate
		Corru					Diag				-5.15	,			SF	Flush				PA	Patching 3 Severe
			- · ·				. 3								SP	Polisł				PH	Photograph
																	-				•



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	35 of 47

Chainage				Lef	t Ha	nd L	ane							Righ	nt Ha	and I	ane	;			Comment	
(km)		4	m	3	m	2	m	1	m	0	CL	1	m		m	1	m	1	m		1	
17.500	_						1														GENERAL COMMENT:	1
17.000						-															Road pavement in good condition.	
						CL						1	CT									1
						-						-		1	-						Minor SF, SR in wheel paths associated	
											-										with general traffic use.	
17.450	_																					
									PA													1
										T												
17.400																						
17.350																						
17.330	-	-				1	-			-	1		1		-			-		1		
						-							-							+		
	-	-			-	1	-			-		-	1							-		
		-				1	-			-			1							-		
		<u> </u>				-	<u> </u>			<u> </u>		-	-			-						
17.300	4					-					-		-							-		
17.250																						
	1																					
17 200																						
17.200												I								-		
								17,100														
17.150						E	MBAI	VKME	NT WIT	HGU	ARD R	ail o	N BO	TH SID	ES							
17.100																						
																						-
	1																					
	1																					
	1					1					1		1									
17.050	1				1						1			-								
	1	<u> </u>		-		1	<u> </u>			<u> </u>	1		1		<u> </u>					1		
	+	-				1	-			-	1		1		-			-		1		
	1				-	-							-							+		
	-	-			-	1	-			-		-	1	CT		1				-		1
		<u> </u>				-	-			-	-	<u> </u>	1	U						-		1
17.000		<u> </u>																		<u> </u>		
LEGEND:	Dof-	rm of	-ac			Cros	kina								Ci orf -	0.000				Oth	or Soverity	
LEGEND:		r <u>matio</u> Ruttir					<u>king:</u> Bloc			СM	Mea	nderi	na		<u>Surfa</u> SD	<u>nce:</u> Dela	minat	tion		<u>Oth</u> EB	-	
		Shov						odile			Cres		. ·9		SS	Stripp				ED	Edge Drop Off 1 Minor	
		Depr		ı				sverse			Long		nal		SR	Rave				НО	Potholing 2 Moderate	
							Diag				-				SF	Flush				PA	Patching 3 Severe	
	DC	Corru	igaiic	///		00	Diag	oniai													r atoming of obtoile	



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	36 of 47

(km)		n	3m	2m		SF			1m	:	2m	3	m PA	4m		Ch. 17,985m - Change in asphalt seal.
17.950				F		SF							PA			Ch. 17,985m - Change in asphalt seal.
17.900				F		SF							PA			Ch. 17,985m - Change in asphalt seal.
17.900			A .													
17.900		P.														
17.850															_	GENERAL COMMENT:
17.850											1	<u> </u>				Road pavement in good condition.
17.850															_	Minor SF, SR inwheel paths associated
17.850										_						with general traffic use.
17.800																
17.800																
17.800							-									
	1 1															
17.750	+															
17.750																
17.750										_	PA					
											_					
	+	_									SF					
						SF										
17.700	<u> </u>															
										_						
17.650																
	+									_						
																-
17.600			P	A												
					_					_					_	Ch. 17,590m - Change in asphalt seal.
				СВ		С	В									
								С	в							
17.550	+									+	+			_	+	
																GENERAL COMMENT:
	\square			CL												Road pavement in good condition. Minor SF, SR wheel paths associated
17.500																with general traffic use.
GEND: Defo	ormatio	n:		Crackin	a:						Surfa	ce:			Oth	er: <u>Severity:</u>
	Ruttin			CB Blo	-		СМ	Mear	ndering				minatio	on	EB	-
DS	Shovi	ng		CR Cr	ocodile		СС	Crese	ent			Stripp			ED	Edge Drop Off 1 Minor
	Depre				ansverse		CL	Longi	tudinal			Rave	-		HO	
DC	Corru	gation		CD Dia	agonal						SF	Flush	ina		PA	Patching 3 Severe



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	37 of 47

Chainage				Left	Har	nd L	ane							Rig	nt Ha	and L	.ane				Comment
(km)		4	m	3	m	2	m	1	m	0	CL	1	m	1	m		m	4r	n		
18.500	-																				GENERAL COMMENT:
																					Road pavement in good condition.
																					Minor SF, SR in wheel paths associated
														(СВ	СВ					with general traffic use.
10.450																					with general traile use.
18.450					C	T															
							-														
18.400	_																				
											SF										
											L	<u> </u>									
18.350																					
						-															
					SF				SF			SF									Ch. 18,315m - Change in asphalt seal.
						D	d, SR,	PA					Ī								
18.300											l										
							PA										PA				
18.250																					
				PA																	
18.200																					
18.200																					
					DD PA																
18.150	-					r	ΡA														
						٢	A	1													· · · · · · · · · · · · · · · · · · ·
				PA																	
	-													1							
	-															PO					
18.100				<u> </u>																	
				EB										1							Entry to property driveway on LHS
														1							
				Ì							Ì				l						
18.050														PA							
				PA																	
	L			SF															_		
18.000				PA																	
	-			_																	
EGEND:		ormatic					<u>king:</u>								<u>Surfa</u>					Othe	
		Ruttin					Block				Mea		ng		SD		minati	on			Edge Break 0 Good Condition
		Shovi					Croc				Cres		al		SS SP	Stripp				ED HO	Edge Drop Off 1 Minor Potholing 2 Moderate
		Depr					Trans Diag			CL	Long	ntuain	Ы		SR SF	Rave Flushi				ho Pa	0
	DC	Corru	Idatio	n		CD.		002							SE	FILISO	[](1			PA	Patching 3 Severe



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	38 of 47

Chainage	Γ			Left	Hai	nd La	ane							Righ	nt Ha	and I	ane				Comment	
(km)		4	m	3r	n	2	m	1	m	(CL	1	m	1	m	T	m		m			
19.000											1										GENERAL COMMENT: (From Ch. 18,700m)	2
				SS													PA				Road pavement in poor condition.	2
																					Extensive patching, with defects forming	2
					P	ΡA		CC													within remedial patches.	2
18.950								DD									PA					-
						PA			DD													2
						СС																2
				P	A	SS											DS					-
													PO									2
18.900						P	PA		PA	, CC						F	PA					
					СС	, DD																
								DD			1											2
					P	A		SF						DD		PA						2
								СС						SF		173						
18.850								DS								F	ΡA					2
				[PA							Ľ						1
				1																		
				1																		-
	-			1							L					PA	, SF					1
18.800							PA															
																F	PΑ					2
											PA		PA			PA					DD - Relatively deep along CL of pavement.	3
											DD											_
												СС	1	F	PA							1
18.750											PA											1
					P	ΡA					PA		1	PA	1							1
						1	1															_
												PA			PA						Ch. 18,720m - Culvert Crossing	2
							SF				SF	СС										2
18.700					P	A	1	DS		SF				SF	1	1					Ch. 18,700m - Change in asphalt seal.	2
																	DS					2
																					GENERAL COMMENT: (Up to Ch. 18,700m)	
																					Road pavement in good condition.	
																					Minor SF, SR wheel paths associated	
18.650	-																				with general traffic use.	
	_																					
	_																					
18.600	-			-				<u> </u>				<u> </u>				-	<u> </u>					
	+							<u> </u>									<u> </u>					
	+							<u> </u>				<u> </u>				-	<u> </u>					
				$\left - \right $																		
10 550				$\left - \right $				-									-					
18.550	_			$\left - \right $				<u> </u>			-	<u> </u>					-					
				$\left - \right $				-									-					
	-			$\left - \right $				<u> </u>									<u> </u>					
				$\left - \right $				-									-					
10 500	-			$\left - \right $												-			-			
18.500						1	1	I			1			I			L			1	1	
LEGEND:	<u>Def</u> c	ormatio	on:		Cracking:										<u>Surfa</u>	<u>ice:</u>				<u>Othe</u>	er: <u>Severity:</u>	
-		Ruttir		CB Block		ĸ			Mea		ng		SD		minat	ion		EB	Edge Break 0 Good Condition			
		-		SS	Stripp	-			ED	Edge Drop Off 1 Minor												
		Depr					Trans			CL	Long	jitudir	nal		SR	Rave	-			HO	Potholing 2 Moderate	
	DC	Corru	gatio	on		CD	Diag	onal							SF	Flush	-			PA	Patching 3 Severe	
															SP	Polis	iing			PH	Photograph	



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	39 of 47

Chainage				Left	Hand I	ane					Righ	t Han	d Lane			Comment
(km)		4	m	3	m :	2m	1m	(CL	1m	2r	n	3m	4n	n	
19.500											t I					GENERAL COMMENT: (From Ch. 19,300m)
																Road pavement in generally good condition.
																Minor SF, SR in wheel paths associated
																with general traffic use.
19.450																
					SF											
						_										
	-					_							_			
	-					_										
19.400																
	-					-									_	
				PA		DS										_
						05										
19.350																
							1	F				SF				
	1						SF			SF					\neg	
	1						1								-	
	1						1		1							
19.300																
			DS	PA	SF											
					-								_			
19.250				PA												
																_
													-			
19.200				DS												
19.200				20		-							PA			- F
						DS										
												SF				
											PA					
19.150						PA				PA		cr	, SR			Ch. 19,150m - Lang Drive Intersection LHS
										PA		эг	, 3K			
					PA					SE	, SR		PA			
					PA		SF, SD			01	, 611					
19.100	_															
		-			PA		PA		1		SF, SR				_	
	-								1					\vdash	\rightarrow	
		-							┢					\vdash		
19.050	-					SF, SF	2				SF, SR				-+	L
19.050						P	PA				I	I		\vdash	+	_
	-	-	P	ΡA		1			-	SF	SI	R	PA			L
	1					+		1			1				+	
	1	1				1		1								
19.000	1				SF			1		SF			PA		\neg	F
		1				4	ı I	1								
EGEND:		ormatio				<u>cking:</u>		~ · ·		a al av tre		Surface				<u>Other:</u> <u>Severity:</u>
	DR DS	Ruttir Shov			CB CR		k odile		Mear Crese	ndering ent			elaminat ripping	ion		EB Edge Break 0 Good Condition ED Edge Drop Off 1 Minor
	DD	Depr		ı	CT		sverse			itudinal			avelling			HO Potholing 2 Moderate
		Corru				Diag			5			SF FI	ushing		F	PA Patching 3 Severe
												SP P	olishing		F	PH Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	40 of 47

Chainage				Lef	t Hai	nd L	ane							Rigl	ht Ha	and I	ane	•			Comment
(km)		4	1m	3	m	2	?m	1	m	(CL	1	m	2	2m	3	m	4	lm]
20.000				PA											l	PA					1
													PA, C	С	_						2
				PA EB																	1
19.950																					1
17.750				EB																	Ch. 19,940m - Change in asphalt seal.
																					1
10.000									-			-									
19.900												-				-					
				PA																	2
				DD																	
												-									
19.850					SF							-				-					
												-									
	1								1			1				1					
		_							1			1		-		1					
19.800												-									
				PA								-				-					1
				PA																	1
			1	-A																	
19.750					PA	-			SF			SF				SF					1
				DD,	SF	-						-				-					2
				DD, DS	, SS																
				DD	SF																2
19.700	_			DS		-						-				-					
				Р	A							-									1
																					1
19.650												-									
												-				-					
					SF																
19.600												_									
												-									
									1			1	-	1	+	1			+		
	1			1		1															
19.550		_												-							
							1	SF				SF	<u> </u>			SF					1
	+	-		+			1		-		-	31	-			31		-			
				L			L				L										
19.500																					
EGEND:	Defc						cking:								<u>Surfa</u>	<u>ace:</u>				<u>Oth</u>	
	DR DS					CB CR		k codile		CM CC		nderi	ng		SD SS	Dela		ion		EB ED	Edge Break0Good ConditionEdge Drop Off1Minor
	DS DD		ving pressioi	n				codile sverse				ient gitudir	nal		SS SR	Stripp Rave				ed ho	Edge Drop Off1MinorPotholing2Moderate
			rugatio					gonal							SF	Flush	ing			PA	Patching 3 Severe
															SP	Polist	ning			PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	41 of 47

Chainage				Lef	t Ha	nd L	ane							Rig	ht Ha	nd L	ane			Comment
(km)		4	m	3	m	2	m	1	m	C	CL	1	m	2	!m	3	n	4m		
20.500				PA	1			(CT		(CT								GENERAL COMMENT:
																				Road pavement in generally good condition.
																PA				Minor SF, SR in wheel paths associated
												PA								with general traffic use. Expedient PA mostly.
20.450																				with general traine use. Expedient PAthosity.
20.450	-																			
20.400																				
					PA								PA							
						Ī			PA					Ī						
							CL					SF				SF				
							CL													
20.350					PA	1			PA											
															1					
																			1	
				-							-	-			-				-	
	-			-	-	-		-	-		-				-				-	
00.000																				
20.300				PA	СС	-														
				PA	CC	C.F.														Ch. 20,290m - Change in asphalt seal.
						SF														
					SF											SF				
20.250																				
			PA																	
			.,,												C	C, PA,	DD			
20.200			ED																	
			LD																	Ch. 20,195m - Maitland Vale Road intersection RHS
															PA,	SS, SF				Ch. 20,195m - Change in asphalt seal.
					DS	, PA														
								SS	, SF											
20.150										-										
20.100																				
20.100																				
																DD				
				-	<u> </u>	<u> </u>		<u> </u>	<u> </u>						-	Щ			-	
				-	<u> </u>	<u> </u>		<u> </u>	<u> </u>		-			<u> </u>	-	<u> </u>			-	
20.050																				
																DD				
										DS	DS									
	1			L								[_			
20.000																				
	-																			
EGEND:		ormatio					<u>king:</u>								<u>Surfa</u>				<u>Oth</u>	
		Ruttir					Block					nderi	ng		SD	Dela		ion	EB	Edge Break 0 Good Condition
	DS	Shov	-	_			Croc				Cres				SS	Stripp			ED	Edge Drop Off 1 Minor
		Depr					Trans Diag			υL	LONG	jitudir	iai		SR SF	Rave Flushi			HO PA	Potholing2ModeratePatching3Severe
	υC	Corru	Jyauc	л		CD	ыag	Unal							SF SP	Polish	-		PA PH	Patching 3 severe Photograph
															JI.	i Ulisi	- y			i notographi

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Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	42 of 47

Chainage				Lef	t Ha	nd L	ane							Righ	nt Ha	and L	ane				Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	m	31	n	4n	n		
21.000					F	PA															GENERAL COMMENT:
																					Road pavement in generally good condition.
													1								Minor SF, SR in wheel paths associated
													-								with general traffic use. Expedient PA mostly.
20.950				PA	, DD				PO				-								
												SF	-								
				PA	SF				SF							SF					
																					-
20.900				PA																	
	1				SF																
																					-
				EB																	
20.850																					
20.000				0	СВ		D	D, CB,	PA												i r
							CT				1										
		-		-							1		-								Ch. 20,830m - Hilldale Dribve intersection LHS
				1																	
20.800											1										
20.000																					
20.750																					
20.750																SF					
																					
					~ ~																-
					, CB, PA				СС												l
20 700									PA												
20.700																					
				-																	
20 (50			EB PA																		L
20.650				-																	
					PA																
					PA																L
20.600					;, PA											PA					
					, FA											DD					-
				CC DD										-		DD					-
				PA								PA	DD,		DA	DD					
00 550					-				DA	DD	-	DS	СС		РА	00					
20.550	-	<u> </u>			<u> </u>				PA,	טט		<u> </u>		-				\vdash			L
		<u> </u>		<u> </u>	<u> </u>								<u> </u>					\vdash			
	-			P •			-						-								
				PA							-										
	-			(СВ	 					-										L
20.500	<u> </u>	<u> </u>		<u> </u>	1						1		1								
EGEND:	<u>Defo</u>	rmatio	on:			Crac	<u>:king:</u>								<u>Surfa</u>	ce:				<u>Othe</u>	er: <u>Severity:</u>
—	DR	Ruttir	ng			СВ	Block			СМ	Mea	nderi	ng		SD	Delar	ninati	ion		EB	Edge Break 0 Good Condition
		Shov					Croc				Cres				SS	Stripp				ED	Edge Drop Off 1 Minor
		Depr						verse		CL	Long	gitudir	al		SR	Rave				HO	Potholing 2 Moderate
	DC	Corru	ugatio	on		CD	Diag	onal							SF SP	Flushi	-			PA PH	Patching 3 Severe
															JF	Polish	чy			c (1	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	43 of 47

Chainage				Lef	t Ha	nd La	ane							Righ	nt Ha	and L	ane			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	m	3	n	4m		
21.500						PA			1											Recent PA from Council works carried out
																				in February & March 2015.
	_																			Ch 21.470m, Change in exploit sool
04.450																				Ch. 21,470m - Change in asphalt seal.
21.450																				End of recent asphalt overlay section?
																				GENERAL COMMENT:
	-										-									Road pavement in good condition.
21.400																				
21.350	_																			Ch. 21.240m, Worldy Street interception LUS
	-																			Ch. 21,340m - Wesley Street intersection LHS
21.300	_																			
21.300																				
	_																			
21.250																				
	_																			
21.200																				
																				Ch. 21,160m - Moore Road intersection LHS
21.150	_																			
21.100	_																			Ch. 21,100m - Change in asphalt seal.
21.100																				Start of recent asphalt overlay section?
																SF				
	_								F	PA						PA				
21.050				-							-			-	-				_	
														-	-					
	1			СС	, CB											-		\vdash		
21.000																				
EGEND:	Defc	ormatic	on:			<u>Crac</u>	:king:								<u>Surfa</u>	ice:			Oth	<u>ner: Severity:</u>
		Ruttin					Block					nderir	ng		SD	Dela		ion	EB	
		Shovi					Croc				Cres				SS	Stripp			ED	
		Depr					Trans			CL	Long	jitudin	al		SR SF	Rave			HO	-
	DC	Corru	iyaliC	л		CD	Diag	unai							SF SP	Flushi	пg		PA	Patching 3 Severe Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	44 of 47

Chainage				Left	Hai	nd La	ane							Righ	nt Ha	and L	.ane	•			Comment		
(km)		4n	n	31	m	2	m	1	m	(CL	1	m	2	m	3	m	4	m				
22.000																					GENERAL COMMENT: (From Ch. 21,670m)		
																					Road pavement in good condition.		
																					Parking lanes on both sides of road.		
21.950																							
							-																
21.900																							
																					Ch. 21,890m - Hunterglen Drive intersection RHS		
21.850	_																						
21.800																							
	-																						
21.750																							
					-																		
21.700																							
21.650				P	A			S	F												Ch. 21,665m - Change in asphalt seal.		
21.030	1												PA			1							
			СС		S	SF									1	PA	1						
	-					PA																	
21.600																							
	1																						
	-						P	A								-							
				P	A	СС					-									-	Recent PA from Council works carried out		
21.550				P																	in February & March 2015.		
	<u> </u>				PA																		
	1				P	PA								-		<u> </u>			-	-	Ch. 21,530m - Paterson Road intersection LHS		
	1					L										-							
21.500						PA			СС														
<u>GEND:</u>	Defa	rmatio	n:			Crac	kina:								<u>Surfa</u>	ice:				<u>Othe</u>	er: <u>Severity:</u>		
	DR	Rutting	g			СВ	Block				Mea		ng		SD	Dela		ion		EB	Edge Break 0 Good Condition		
		Shovir Depre					Croc	odile verse			Cres Long		al		SS SR	Stripp Rave				ed ho	Edge Drop Off 1 Minor Potholing 2 Moderate		
		Corru					Diag			υL	LOUG	nuain	aı		SR SF	Flush	-			но РА	Potholing 2 Moderate Patching 3 Severe		
															SP	Polish	ning			PH	Photograph		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	45 of 47

Chainage				Lef	t Har	nd La	ane							Righ	nt Ha	nd L	ane				Comment
(km)		4	m	3	m	2	m	1	m	C	CL	1	m	2	m	3r	n	4r	m		
22.500																					GENERAL COMMENT:
						C	CT						(CT							Road pavement in good condition. 1
					CT																1
						CT															1
22.450						CT															1
					1	C	CT	1													1
22.400																					
																				-	
22.350																					
	-										-		<u> </u>	-							
	-												-	-							
	-					-			СС		1		-	-							Ch. 23,310m - Victoria Road intersection RHS 1
22.300	1			С	C						-			1							
22.300																					
												СС									1
									СС												
																					Ch. 22,260m - Canna Street intersection LHS
22.250																					
	1																				
22.200																					
																					CL - More associated with joins in asphalt 1
																					surface at interface between layers than actual
22.150																					cracks in asphalt wearing surface.
							CL														
													CL								
22.100	-													<u> </u>		-	_				
	-			<u></u>									<u> </u>			С	Ċ				1
	+			CM											PA						1
				СМ		CL							-								
22.050	+					OL.									PA						1
22.050	-												-								1
	-										-										
	-					-	СС	I			(C	1		PA						1
	1		СС	СС							\vdash		1								1
22.000	t																				
	J	I		1	I	1	<u> </u>	1	ı l		ı	1	I	1						L	1
LEGEND:		rmatio					:king:								<u>Surfa</u>					<u>Othe</u>	
		Ruttir Shovi					Block	k :odile				nderii	ng			Delar		on		EB	Edge Break0Good ConditionEdge Drop Off1Minor
			1101			UΚ.	CIOC	Julie		UU	Cres	ent			33	Stripp	шg			ED	
				n			Trans	sverse		CL	Long	itudin	al								
	DD	Depr	ession			CT	Trans Diag	sverse onal		CL	Long	jitudin	al		SR	Ravel Flushi	lling			HO PA	Potholing2ModeratePatching3Severe



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	46 of 47

Chainage				Left	t Ha	nd L	ane							Rig	nt Ha	and I	ane	<u>}</u>			Comment
(km)		4	m	31	m	2	m	1m	1	С	L	1	m	2	m	3	m	4	m		
23.000																					GENERAL COMMENT:
																					Road pavement in good condition.
																					Ch. 22,980m - Change in asphalt seal.
22.950																					
22.900																					
22.850																					
						1			+					1							
	1													1				l			
22.800						1								1							
22.750																					
22.700																					Ch. 22,710m - Change in asphalt seal.
							CT							CT				(CT		CT - crosses full raod width to stormwater pit.
			CL																		
							CT				C	CT									
22.650						CT							Ī								
			CL																		
			CL				PA														
22.600		L									_										Ch. 22,655m - Bolwarra Road intersection RHS.
22.550																					
			CL																		
					(CT								L							
22.500																					
EGEND:		rmatio					king:		~		N 4	od- '			Surfa		min .	Hor		Othe	
	DR Rutting DS Shoving						Block				Crese	nderir ent	ıy		SD SS	Dela Stripp		uon		EB ED	-
		Depr		1			Trans					itudin	al		SR	Rave					Potholing 2 Moderate
		Corru					Diag		-		5				SF	Flush					Patching 3 Severe
															SP	Polisł					Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	25/02/2015
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	47 of 47

Chainage				Lef	t Hai	nd L	ane							Righ	nt Ha	and L	ane	-			Comment
(km)		41	m	3	m	2	m	1	m	C	CL	1	m	2	m	3	m	4	m		
23.500																					
23.450																					
23.430																					
22.400																					
23.400																					
	-		-							-										-	
23.350				<u> </u>			<u> </u>														
	-																				
				<u> </u>			<u> </u>	-				-	-			-					
				-																	
23.300	-			-																	
23.250																					
								EN	d at c	CHAIN	IAGE	23.24	3KM								Roundabout Intersection with Flat Road to LHS
																					GENERAL COMMENT:
																					Road pavement in good condition.
23.200																					
23.150																					
	1																				
																					Ch. 23,110m - Change in asphalt seal.
23.100				<u> </u>			<u> </u>	1							<u> </u>						
20.100	1																				
	-			<u> </u>			<u> </u>				-				<u> </u>						
	-			-			-				-				-						
	-			-							-										
23.050	-			-			-				-				-						
23.050											-										
											-										
											-										
				<u> </u>			<u> </u>														
	-			<u> </u>			-														
23.000	<u> </u>			<u> </u>	<u> </u>		<u> </u>	<u> </u>			L			<u> </u>]		
<u>EGEND:</u>	Deformation: Cracking:									Surface: Othe						<u>Othe</u>	r: <u>Severity:</u>				
SLIND.															Edge Break 0 Good Condition						
		Shovi						odile			Cres		5		SS	Stripp					Edge Drop Off 1 Minor
		Depr		٦				sverse			Long		nal		SR	Rave					Potholing 2 Moderate
		Corru					Diag								SF	Flush	ing			PA	Patching 3 Severe
															SP	Polish					Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	28/04/15
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	Site Photos



PHOTO 1 - Ch. 700m Looking back north towards Vacy. Road pavement in poor condition. Extensive defects, expedient repairs and repeated failures through pavement in both lanes.



PHOTO 3 - Ch. 1,690m Expedient patching, areas with repeated surface stripping of asphalt, deformation shoving in outer wheel path.



PHOTO 2 - Ch. 970m Looking back north towards Vacy. Deep rutting and shoving along road edge, crocodile cracking and expedient atching visible.



PHOTO 4 - Ch. 2,200m Potholes, with depressions, surface stripping and expedient patching in outer wheel path.



<u>PHOTO 5 - Ch. 4,400m</u> Road pavement in good condition.



PHOTO 6 - Ch. 4,680m Road pavement generally in good condition. Full width patch visible.



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	28/04/15
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	Site Photos



<u>PHOTO 7 - Ch. 5,270m</u> Remedial patching with deformation shoving in outer wheel path.



PHOTO 8 - Ch. 6,600m Road pavement in good condition.



<u>PHOTO 9 - Ch. 7,400m</u> Road pavement in generally good condition. Surface flushing visible inner and outer whell paths in both lanes.



On approach into township of Paterson. Road pavement in poor condition. Extensive defects, expedient repairs in both lanes. Church Street to RHS similar poor pavement condition.



PHOTO 11 - Ch. 8,500m Paterson town centre. Road pavement in generally good condition.



PHOTO 12 - Ch. 9,030m Road pavement in poor condition. Extensive defects, expedient repairs and repeated failures through pavement in both lanes.



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	28/04/15
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	Site Photos



PHOTO 13 - Ch. 9,090m

Road pavement in poor condition. Extensive defects, expedient repairs and repeated failures through pavement in both lanes. Sloane Street to RHS similar poor pavement condition.







PHOTO 16 - Ch. 10,500m Road pavement in generally good condition. Minor surface flushing and surface ravelling associated with general traffic use.



PHOTO 17 - Ch. 13,000m Road pavement in generally good condition. Minor surface flushing and surface ravelling associated with general traffic use.



PHOTO 18 - Ch. 13,500m Road pavement in generally good condition. Minor surface flushing and surface ravelling associated with general traffic use.



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	28/04/15
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	Site Photos



PHOTO 19 - Ch. 14,200m Remedial patching full width in both lanes of road pavement. Surface flushing on approach to patches.



<u>PHOTO 20 - Ch. 14,810m</u> Change in pavement surface seal. Edge break, crocodile cracking, and expedient patching along road shoulders.



<u>PHOTO 21 - Ch. 15,700m</u> Surface ravelling along both sides of road centreline, with intermittant expedient patching.



PHOTO 22 - Ch. 16,140m Road pavement in generally good condition. Minor surface flushing and surface ravelling associated with general traffic use.



PHOTO 23 - Ch. 16,800m Road pavement in generally good condition. Minor surface ravelling and block cracking visible.



PHOTO 24 - Ch. 17,600m Road pavement in generally good condition. Minor surface flushing and surface ravelling associated with general traffic use.



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	28/04/15
Location:	Road No. 1 - Gresford Road, Duke Street, Tocal Road & Paterson Road	Sheet:	Site Photos



PHOTO 25 - Ch. 19,200m Surface flushing in inner and outer weel paths both lanes. Minor deformation shoving outer wheel path, edge of pavement.



PHOTO 26 - Ch. 19,700m

Surface flushing in inner and outer weel paths both lanes. Deformation shoving, depressions, surface stripping and expedient patching visible in outer wheel path.



PHOTO 27 - Ch. 20,300m

Road pavement in generally good condition. Minor surface flushing and surface ravelling associated with general traffic use.



PHOTO 28 - Ch. 21,100m Road pavement in generally good condition. Relatively recent surface overlay or reconstruction.



PHOTO 29 - Ch. 22,100m Road pavement in generally good condition. Some longitudinal cracking visible in pavement surface



<u>PHOTO 30 - Ch. 22,900m</u> Road pavement in generally good condition.

APPENDIX B:

Pavement Defect Mapping Sheets

Road Section 2

Ch. 0,000m to 4,245m Horns Crossing Road



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	04/02/2015
Location:	Road No. 2 - Horns Crossing Road	Sheet:	1 of 9

Chainage			Left	Har	ndla	ane							Riał	nt Ha	nd I	ane				Comment
(km)		1m	_0.1			m	1	m	0	CL	1	m		m		m	1	m		
0.500		1			-								-		0		-	1		GENERAL COMMENT: 1
0.000				SP																Road pavement in generally good condition
								SP												with exception of bridge approaches.
				SP SD											SD					Minor SF associated with general traffic use. 1
0.450				30																
						SP, S	s, pa							SP SS						PA - Expedient patches, approx 0.2m diam 2
0.400							BR	IDGE	- CH	385M 1	TO 43	0M								
		1												1			I			PA - Expedient patches, approx 0.5m diam 2
																				PA - Expedient patches, approx 0.5m diam 2 to locally fix small PO in road surface (6 no.)
								DD			DI	d, SP,	PA							1
0.350								SP												
0.000																				
											PO	SD								PO - Approx 100mm diam 1
0.300																				1
																SF				
											05									
0.250		-									SF									
0.200																				
01200																				
0.150																				
		-																		
0.100			$\left - \right $																	
0.100		-									-					-			-	
		+																		
0.050																				
						SF, SP							SF, SF	>						1
0.000					DS,	DD, SI	F, SP					DS,	DD, S	iF, SP						Ch. 0m - Intersection - Gresford Road 2
LECENIE	Def				<u> </u>	-								0.7					<u><u> </u></u>	
LEGEND:	Deformat				<u>Crac</u> CB	<u>king:</u> Block	c		СМ	Mear	nderir	ng		<u>Surfa</u> SD	<u>ce:</u> Delai	minat	ion		<u>Othe</u> EB	<u>r: Severity:</u> Edge Break 0 Good Condition
	DS Show	-				Croc				Crese		9			Stripp				ED	Edge Drop Off 1 Minor
	DD Dep					Trans			CL	Long	itudin	al			Rave	-				Potholing 2 Moderate
	DC Corr	rugatic	on		CD	Diago	onal								Flushi Polish				РА DH	Patching 3 Severe Photograph
														31	POIIS	шığ			PH	rnotograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	04/02/2015
Location:	Road No. 2 - Horns Crossing Road	Sheet:	2 of 9

Chainage				Lef	t Hai	nd L	ane							Rigl	nt Ha	Ind I	ane	•			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	m	3	m	4	m		1
1.000																	-				GENERAL COMMENT:
				SP	PA												SP PA				
				SP	PA																Road pavement in generally good condition.
																					Minor SF associated with general traffic use.
																					Expedient patches only.
0.950																					
																	DS	SP			
0.900																					
0.700																					
	-																				
	-																				
	_																				
0.850																					
											L _										
0.800	1												1		1				1		
0.000																					
	-																				
0.750																					
						DS	SP														
							Ī														
0.700																					
0.700																					
	-																				
	-																				
0.650																					
0.600	1																				
	1			1									-	1	-				-	1	
	1	+		1										1							
		1		1								-		-							
	1	-		-										-							
	1			<u> </u>																	
0.550	4	<u> </u>		<u> </u>				<u> </u>													
				1																	
						_				_											
	1																				
0.500	1			1																	
5.000		1	1	1		I		1	1	I	I		1	1	1	I	1	I	1	1	1
EGEND:	<u>D</u> efc	ormatio	on:			Crac	:king:								<u>Surfa</u>	ce:				<u>Othe</u>	er: <u>Severity:</u>
_		Ruttir					Block			СМ	Mea	nderi	ng		SD	Dela		ion			Edge Break 0 Good Condition
		Shov						odile			Cres				SS	Stripp				ED	Edge Drop Off 1 Minor
		Depr						sverse		CL	Long	jitudir	nal		SR	Rave	lling			НΟ	Potholing 2 Moderate
	DC	Corru	ugatio	on		CD	Diag	onal							SF	Flush				PA	Patching 3 Severe
															SP	Polisł				DU	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	04/02/2015
Location:	Road No. 2 - Horns Crossing Road	Sheet:	3 of 9

Chainage				Lef	t Ha	nd L	ane							Rig	ht Ha	and L	ane				Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	2m	3	m	4	m		
1.500																					GENERAL COMMENT:
																	DS	SP			Road pavement in generally good condition.
																					Minor SF associated with general traffic use.
																					Expedient patches only.
1.450																	DS	SP			
1.450																	05	51			
1.400											 										
				DD SP										DA							
				51										PA							
												-	-		1						
																	DD	SP			
1.350																					
								-													F
															<u> </u>						
															<u> </u>		DD				
																	SP				
1.300																		<u> </u>			
												CD									
												SD SP									
				DD	DS, S	Р															
1.250																					
				SP																	
1.200							DD, S	SP, PA													
									DD												
									SP												
									PA								DD	SP, P	A		
1.150																					
				DS	SP, P.	Δ			DD	SP, P	Δ	DD	SP, P	Δ							Expedient PA within DS, DD, SP defects.
1.100															+						
1.100	1				-	-					-				+						
	-			-	<u> </u>	<u> </u>		-			-				+		DS SP				
	-		1		-	-					-				+		PA	-			
	-			D.c	SP, P.	Δ		-			-				-						
1.050		-		03	JI, P.										-						L
1.050					-	-		-							+			ļ			
					-	-		-			-				+						
	-				-	-					-			<u> </u>	-						
											-				-						
1 000	-			SP	PA	<u> </u>					-				-						F
1.000	<u> </u>			25	۲A	<u> </u>	<u> </u>	<u> </u>			<u> </u>	<u> </u>	I	<u> </u>	<u> </u>	I		I	I	I	
LEGEND:	Defo	ormatio	on:			Сгас	:king:								Surfa	ice.				<u>Othe</u>	er: <u>Severity:</u>
<u>LUCLIUD.</u>		Ruttir					Bloci	ĸ		СМ	Меа	nderir	ng		SD	Dela	minat	ion		EB	Edge Break 0 Good Condition
		Shov						odile			Cres		2		SS	Stripp				ED	Edge Drop Off 1 Minor
	DD	Depr	essior					sverse		CL	Long	itudin	al		SR	Rave	lling			HO	Potholing 2 Moderate
	DC	Corru	idatic	'n		CD	Diag	onal							SF	Flushi	ina			PA	Patching 3 Severe
	DC	COIL	igatic			00	Diag								SP	Polish				PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	04/02/2015
Location:	Road No. 2 - Horns Crossing Road	Sheet:	4 of 9

Chainage				Lef	t Ha	nd L	ane							Rigl	nt Ha	and L	.ane	•			Comment
(km)		41	n		m	1	m	1	m	0	CL	1	m	1	m	1	m	1	m		
2.000																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SP, SF associated with general traffic use.
																					Expedient patches only.
1.950																					
																	DC	SP, P.			
																	DS	3P, P.	A		1
1.900																					
1.850																					
1.800																					
1.000																					1
1.750				DS SP																	
				PA																	
												SP	1				DC	CD.			
												SP	-				DS	SP			1
1.700																					1
1.700																					
																	DC				
1.650																	DS SP				
				DS																	1
1.600				SP PA																	1
1.000				PA																	
				DS SP																	1
1.550				PA																	
											<u> </u>	-									
1 500														-			DS	SP			1
1.500				I	L	<u> </u>	<u> </u>	<u> </u>	I	L	L	I	<u> </u>	1	I	I	50	Jr	<u> </u>	I	
LEGEND:	<u>Defo</u>						<u>:king:</u>								<u>Surfa</u>					<u>Othe</u>	
	DR						Block					nderii	ng			Dela		ion			Edge Break 0 Good Condition
	DS DD			ı		CR CT	Croc				Cres	ent jitudin	al		SS SR	Stripp Rave					Edge Drop Off1MinorPotholing2Moderate
	DC						Diag			01	20119				SF	Flush					Patching 3 Severe
															SP	Polish					Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	04/02/2015
Location:	Road No. 2 - Horns Crossing Road	Sheet:	5 of 9

Chainage				Lef	t Har	nd La	ane							Rigl	nt Ha	and I	.ane	÷			Comment
(km)		41	m	3	m	2	m	1	m	(CL	1	m	2	m	3	m	4	m		
2.500																					GENERAL COMMENT:
																					Road pavement in generally good condition.
						-				-											Minor SP, SF associated with general traffic use.
2.450																					
2.450																					
2.400						-															
2.350																					
	-											-		-		-			-		
											-	+		+						-	
											-	-	-	-	-						
0.000	-										-	-		-					-		
2.300																					
						-															
2.250																					
2 200																					
2.200				SP																	l r
				ЪР																	
2.150						-															
2.100																	SD	SP			
	1											1		1				ſ			<u> </u>
													1		1						
	-											-				-			-		
2.050											-	+		+						-	
2.030											-	-	-	-	-						
	-										-	-		+					<u> </u>		
												+									
												-		-							
												-		-					<u> </u>		
2.000																					
<u>GEND:</u>	Defo	rmatic	on:			Crac	kina:								<u>Surfa</u>	ice:				<u>Othe</u>	er: <u>Severity:</u>
		Ruttin					Block	<		СМ	Mea	Inderi	ng		SD	Dela	minat	tion		EB	
		Shovi					Croc				Cres		0		SS	Stripp				ED	Edge Drop Off 1 Minor
		Depre		ı				verse				gitudir	nal		SR	Rave					Potholing 2 Moderate
		Corru				CD	Diag	onal			-				SF	Flush	ing			PA	Patching 3 Severe
															SP	Polisł	nina			PH	Photograph

Austroads 2009 - Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	04/02/2015
Location:	Road No. 2 - Horns Crossing Road	Sheet:	6 of 9

Chainage				Lef	t Ha	nd L	ane							Rigl	nt Ha	and L	.ane	•	Comment		
(km) 3.000		4m 3			m	2	m	1m		C	CL 1m		m	2	m	3	m	4	m		1
																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SP, SF associated with general traffic use.
2.950																					
2.700																					
2 000																					
2.900																					
2.850																					
					-			-				-	-	1		-			<u> </u>		
	-			-				-						1		-			-		
	-			-				-						1		-			-		
2.800	-																				
2.750																					
2.700																					
2.650																					
2.600					L							L	L		L						
														1							
2.550																					
	1																				
														1							
														1							
2.500		L		L	L			L		L		L	L		L	L		L	L		
	-																				•
EGEND:		ormatio					king:			~					<u>Surfa</u>					Othe	
		Ruttir Shov					Block Croc				Meandering Cresent				SD SS	Dela Stripp		ION		EB ED	Edge Break0Good ConditionEdge Drop Off1Minor
		Depr		ı				sverse			Long		al		SS SR	Rave					Potholing 2 Moderate
		Corru					Diag				-019				SF	Flush				PA	Patching 3 Severe
			-				5								SP	Polish				PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	04/02/2015
Location:	Road No. 2 - Horns Crossing Road	Sheet:	7 of 9

Chainage	L	Left Hand Lane Right Hand Lane															Comment				
(km) 3.500		4	m	3	m	2	2m		1m		CL	1	m	1	m	1	m	1	m		
																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SP, SF associated with general traffic use.
																	DS				
																	SP				
3.450																	PA				Some minor SP, EB in outer wheel path, both
																					lanes at driveway entries to properties.
				SP												1					
																	DS				
3.400																					
																					l
																	DS				lI
2 250	-	+		-										+							
3.350		+				<u> </u>			\rightarrow		-		-	-							1
		-			p.	<u> </u>					-			-							
	-	-		DS	PA									-		- I					F
	-	-												-			DS	PA			L
3.300																					
3.250				SP	PA												DS	SP, P.	A		Γ
3.230																		. ,			<u> </u>
3.200																					
																	-				
3.150																					
				SP																	
																					-
3.100																	SP				
3.100				SD													JI				
				ļ										PA							
		-				<u> </u>					<u> </u>			-				-			
	-	-		I										-							
	-	-												-							
3.050																					
	1																				
									_ [
																	SP				
	1			1														Γ			
3.000				1																	
			•	•							•					•		•	•		
EGEND:		ormatio					:king:							<u>Surfa</u>					<u>Othe</u>		
		Ruttir					Block				Mea		ng		SD	Dela		ion		EB	Edge Break 0 Good Condition
	DS	Shov					Croc				Cres				SS	Stripp				ED	Edge Drop Off 1 Minor
		Depr						verse	(JL	Long	litudir	nal		SR SF	Rave				HO PA	Potholing 2 Moderate Patching 3 Severe
	DC	Corru	igatic	JU		CD	Diag	unai							SF SP	Flushi Polish				PA PH	Patching 3 Severe Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	04/02/2015
Location:	Road No. 2 - Horns Crossing Road	Sheet:	8 of 9

Chainage				Left	Han	d La	ane							Rig	ht Ha	and I	.ane	<u>.</u>			Comment	
(km) 4.000		4m	1	3r	3m 2m			n 1m			CL	1	m	2	!m	3	m	4	m			
																					GENERAL COMMENT:	
																					Road pavement in generally good condition.	
																					Minor SP, EB associated with general traffic use.	
																					Expedient patches only.	
3.950								PA									PA					
0.700												I						1			-	
									S	P		SP										
									-	-												
2 000																						
3.900																						
3.850			_											<u> </u>	<u> </u>							
												<u> </u>		<u> </u>	<u> </u>							
															-	-						
																	DS	DD, S	SF			
												<u> </u>		<u> </u>	-	-						
3.800														<u> </u>		1		Ì				
																	SD	CR				
3.750																						
3.700										SP	SP											
										SF	SF											
3.650																						
	ĺ																					
																					Ch. 3,620m - Mowbray Lane North intersection RHS.	
3.600																						
3.000																	DS	DD, S	SP		l r	
			+												+	+	20					
	-		-									<u> </u>		-	+	+		-			<u> </u>	
	-		-+											-	-	-	SP	<u> </u>				
2 5 5 0												-			+	1						
3.550			+									-			+	+	DS	DD				
	-		_											-	-		50	00				
	-		-											-	-		cD				L	
	-														-	-	SP					
	<u> </u>		_											-	-	-	D 2					
3.500										PA	<u> </u>	<u> </u>	DS	DP, S	٥٢							
GEND:	<u>Def</u> o	rmatior	<u>1:</u>		C	<u>Crac</u>	king:								<u>Surfa</u>	ace:				Othe	er: <u>Severity:</u>	
		Rutting					Block	(СМ	Mea	nderii	ng		SD	Dela		tion		EB		
	DS	Shovin	g				Croc			СС	Cres	ent			SS	Stripp	bing			ED	Edge Drop Off 1 Minor	
		Depres						verse		CL	Long	jitudin	al		SR	Rave					Potholing 2 Moderate	
	DC	Corrug	atior	٦	C	CD	Diag	onal							SF	Flush				PA	Patching 3 Severe	
															SP	Polisł	ning			PH	Photograph	


Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	04/02/2015
Location:	Road No. 2 - Horns Crossing Road	Sheet:	9 of 9

Chainage				Lef	t Ha	nd L	ane							Rigl	nt Ha	and L	.ane				Comment
(km)		4	m	3	m	2	m	1n	n	C	L	1	m	2	m	3	m	4	m		
4.500																					
4.450																					
4.400																					
4.350																					
1.000	1	1			<u> </u>	<u> </u>							<u> </u>	1	-						
	1	1												ł					1		
	1	+						$\left \right $						-				-			
	1	+												-				-			GENERAL COMMENT:
4.300	1	1					-							1					1		Road pavement in generally good condition.
4.300	-	-												-					-		Minor SP, SR associated with general traffic use.
																					Millor St., Sit associated with general name use.
4 250								FNE	D AT CH		AGE	4 245	км								Intersectionwith Dungog Road
4.250												112 10									Expediaent PA, SP, SR at intersection from
																					turning vehicles.
																	SR				
4 200																	511				
4.200																					
4 150																	SR				
4.150	-																51				
	-																				
4.400																					
4.100																					CH. 4,090m - View Street intersection LHS.
																					ch. 4,070m - New Street Intersection Ens.
	-	+					-	\vdash						-					-		
	-			-		-		+						-					-		
4.050		+			-	-		$\left \right $													
4.050		+			-	-		$\left \right $													
		+			-	-		$\left \right $													
	-			-	-	-		\vdash					-	1					-		
	-			-	<u> </u>	-		\vdash						-					-		
4.000				-	<u> </u>	<u> </u>		$\left \right $					<u> </u>						-		
4.000	<u> </u>			I	I	I	1							1				I	1	I	l
EGEND:	<u>D</u> efc	ormatio	on:			Crac	:king:								Surfa	<u>ice</u> :				Othe	er: <u>Severity:</u>
	DR	Ruttir	g						С	M	Mear	nderir	ng		SD	Dela	minat	ion		EB	Edge Break 0 Good Condition
		Shov						odile			Crese				SS	Stripp				ED	Edge Drop Off 1 Minor
		Depr						sverse	С	L	Longi	itudin	al		SR	Rave				HO	Potholing 2 Moderate
	DC	Corru	igatio	on		CD	Diag	onal							SF	Flush				PA	Patching 3 Severe
															SP	Polish	ung			PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	28/04/15
Location:	Road No. 2 - Horns Crossing Road	Sheet:	Site Photos



PHOTO 1 - Ch. 340m

Road pavement in poor condition. Extensive defects, expedient patches and failures through pavement in both lanes on approach downhill approach to bridge.



PHOTO 2 - Ch. 1,370m Full lane width remedial patch. With some expedient patches adjoining and on other side of road.



<u>PHOTO 3 - Ch. 1,700m</u> Deformation shoving in outer wheel paths, with surface polishing and expedient patching.



PHOTO 4 - Ch. 3,450m Road pavement in generally good condition. Deformation shoving, surface poishing and expedient patching in outer wheel path.



PHOTO 5 - Ch. 4,140m Surface ravelling of pavement surface in outer wheel path.



PHOTO 6 - Ch. 4,240m Intersection with Dungog Road. Surface ravelling, surface polishing and expedient patching across intersection associated with turning vehicles.

APPENDIX C:

Pavement Defect Mapping Sheets

Road Section 3

Ch. 0,000m to 3,916m Dungog Road



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	09/02/2015
Location:	Road No. 3 - Dungog Road	Sheet:	1 of 8

Chainage				Left	t Har	nd L	ane							Right	На	nd La	ane			Comment
(km)		4r			m		m	1	m	C	L.	1	m	2m		3n		4n	n	
0.500		1		51		~			1		, L			211	•	511			•	
0.500																				GENERAL COMMENT:
																				Road pavement in reasonable condition. Assessed
																				to be comparable to other local roads in region.
																				EB along most of its length, with minor SF, DD & DC.
0.450				PA																1
0.400				PA																1
					ĺ															
				DD	SF, DS	S											PA			1
0.350										DD,	СС									Ch. 350m - Culvert Crossing 1
										DD,	СС									DD & CC either side locally on approaches.
			ŀ																	
														\vdash						
									-	-										
0.300														\vdash						
0.300	╉─┼		-		\vdash		<u> </u>	-						\vdash						
					<u> </u>															
					<u> </u>															
					$\left - \right $															
0.250					$\left - \right $															
					<u> </u>															
																				1
																	ED			
0.200																				
0.150																				
	1										DS									
										PA	PA									Expedient patches, approx 300mm diam. 1
0.100																				
0.100																- r				Ch. 50m to 100m, mostly EB and ED with 1
				EB																localised expedient patches only along edges.
																	EB			localised expedient pateries only along edges.
	\vdash			ED			-	-									LD			
	\vdash			PA			<u> </u>	<u> </u>						\vdash						
0.050																				
	\vdash																			Ch. 0m to 50m, most defects generally 1
							SR							SR						in outer wheel path.
	\vdash																			
	1					D	C, SR,	PA					D	C, SR, P	A					2
							.,	••					5.	. ,, 1						Intersection - Horns Crossing Road
0.000																				
0.000	Deform						<u>king:</u>								<u>Surfac</u>					Other: Severity:
	DR R	uttin	g			СВ	Block				Mear		ng	S	D	Delan		on	E	B Edge Break 0 Good Condition
	DR R DS S	luttin hovii	g ng			CB CR	Block	odile		СС	Crese	ent		S S	SD SS	Dela n Strippi	ng	on	E	B Edge Break 0 Good Condition D Edge Drop Off 1 Minor
	DR R DS S	ttin tovii Depre	g ng ession	1		CB CR CT	Block	odile verse		СС		ent		9 9 9	SD SS SR	Delan	ng ing	on	EI EI H	B Edge Break 0 Good Condition



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	09/02/2015
Location:	Road No. 3 - Dungog Road	Sheet:	2 of 8

Chainage				Lef	t Hai	nd L	ane							Righ	nt Ha	and L	ane				Comment
(km)		4	m	3	m	2	m	1	m	0	CL	1	m	1	m	3			m		
1.000						_					-			-		-					GENERAL COMMENT:
																					Road pavement in generally good condition.
																	DD	SF			Minor EB & ED along pavement edges.
																	DD	31			Millio LB & LD along pavement edges.
0.050																	DD	SF			1
0.950																	טט	эг			L
0.900																					
			-						-									-			
			-						-									-			
0.850							-								-						
		<u> </u>			<u> </u>	<u> </u>	<u> </u>							-							
		<u> </u>			<u> </u>	<u> </u>	<u> </u>				-										
														-							
0.800														-							
																					Ch. 775m - Culvert Crossing
0.750																					
																					Ch. 720m - Culvert Crossing
									-									-			
0.700								DD	SR								DD	SR			1
0.650																					
0.600																					
				-																	
		<u> </u>			<u> </u>																
0.550											Ì										
											D										Ch. 510m - Culvert Crossing 1
0.500			_							C	D										DD either side locally on approaches.
FOEND	D (~														<u></u>	6
EGEND:		r <u>matio</u> Ruttir					<u>king:</u> Bloc			CM	Mee	nderir	na		<u>Surfa</u> SD	<u>nce:</u> Delai	min 9t	ion		<u>Othe</u> EB	<u>er: Severity:</u> Edge Break 0 Good Condition
		Shov						k odile			Cres		ч		SD	Stripp				ЕD	Edge Drop Off 1 Minor
			essior	ı				sverse			Long		al		SR	Rave				HO	Potholing 2 Moderate
	טט	Debi														110110					2 Moderate
		Corru					Diag								SF	Flushi				PA	Patching 3 Severe



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	09/02/2015
Location:	Road No. 3 - Dungog Road	Sheet:	3 of 8

Chainage				Lef	t Ha	nd L	ane							Rigl	ht Ha	and L	ane	è			Comment
(km)		41	m	3	m	2	?m	1	m	(CL	1	m	1	!m	1	m	1	lm		
1.500				CL			DC	C,SF						DC, S	F						DC & SF at change in seal, just before 1
																					intersection with Grace Avenue.
4.450																					
1.450																					
1.400																					
																					1
													CL								Ch. 1,365m, Approximate start of left hand turning
1.350													OL.								lane into Grace Avenue
1.300																					
1.250																					
1.200																					CL associated with placement of seal?
										CL											
4 000																					
1.200										-											With sealed shoulder, 0.9m to 1.2m width
					I	D	s, dd,	DC					DS	5, DD,	СС	I		1			Ch. 1,185m, change in road surface 1
																					DS, DD & CC at pavement interface.
1.150																					
																	EB				
1.100																					
																					2
																	DD				
																	DS				
1.050																	SR				
																	SF				
	<u> </u>																		<u> </u>		
															+				-		
1.000															1			-	1		
	•			•						•			•					•			
LEGEND:	<u>Defo</u> DR	r <u>matic</u> Ruttir					<u>cking:</u> Blocl			СМ	Mea	nderir	na		<u>Surfa</u> SD	<u>ace:</u> Dela	minat	tion		<u>Othe</u> EB	r: <u>Severity:</u> Edge Break 0 Good Condition
	DS	Shovi	ng				Croc			СС	Cres	ent	-		SS	Stripp	bing			ED	Edge Drop Off 1 Minor
		Depr Corru				CT	Trans Diag	sverse		CL	Long	jitudin	al		SR SF	Rave Flush				HO PA	Potholing2ModeratePatching3Severe
	DC	CONU	gauc	//1		CD	Diag	Undi							SP	Polish				PA PH	Photograph

Austroads 2009 - Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design

Reference:



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	09/02/2015
Location:	Road No. 3 - Dungog Road	Sheet:	4 of 8

Chainage				Lef	t Ha	nd L	ane							Righ	nt Ha	and I	.ane	;			Comment
(km)		4	m	1	m	T	m	1	m	(CL	1	m	1	m	1	m	1	m		
2.000																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF & SR associated with general traffic use.
	-																				
1.950	_																				
1.900																					
	_																				Ch. 1800m to 1900m - BRIDGE
	_																				
	_																				
1.850	-				BRI	DGE									BRI	DGE					
	_																				
	_																				
1.800	_			1														1			
1.750																					
	-																				
1.700																					
	_																				
1 (50																					
1.650																					
1.600																					Ch. 1600m, Approximate start of right hand turning
																					lane into Grace Avenue
	-																				
1.550																					
						DS,	DC, S	F, CT					DS,	DC, S	F, CT						DS, DC, SF & CT at change in seal, just after 1
	_																				intersection with Grace Avenue.
	_																				
1.500					-		-	-				-		-	-	-			-	-	Ch. 1510m, intersection with Grace Avenue.
1.300	_	I	I	L	<u> </u>	I	<u> </u>	<u> </u>	I	1	L	<u> </u>	I	<u> </u>	<u> </u>	<u> </u>	1	I	<u> </u>	<u> </u>	I
LEGEND:		ormatio					<u>king:</u>								<u>Surfa</u>					<u>Othe</u>	-
		Ruttir Shov	-				Block				Mea Cres	nderir ent	ng			Dela Stripp		lion			Edge Break0Good ConditionEdge Drop Off1Minor
		Depr	-	ı		CT		verse				jitudin	al			Rave	-				Potholing 2 Moderate
		Corru					Diag				-				SF	Flush	ing			PA	Patching 3 Severe
															SP	Polisł	ning			PH	Photograph
Reference:	Austr	roads	2009 -	Guid	le to F	Paver	nent I	echn	ology	, Part	5: Pa	veme	nt Eva	aluatio	on and	d Trea	tmen	t Desi	gn		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	09/02/2015
Location:	Road No. 3 - Dungog Road	Sheet:	5 of 8

Chairser	Left Hand Lane													D:~'	at 11-	nd '	0.5				Comment
Chainage				1		1								1		and L					Comment
(km)		4	m	3	m	2	m	1	m	0	CL	1	m	2	m	3	m	4	m		
2.500																					GENERAL COMMENT:
																					Road pavement in generally good condition.
										-							-				Ch. 2250m to 2500m, minor CL and occasional CT
2.450	-																				just visible within road pavement, assessed likely
																					to be associated with construction joints in asphalt.
																					1
2.400																					
2.100					CL																
2.350																					
										_											
																					1
					CL									-							
2.300	-									-							-				
										-							-				
2.250																					
2.230																					
2.200																					
2.150																					
2.100	\square																				
	1	1										1		1							
														1							
2.050																					
	-				<u> </u>			<u> </u>											<u> </u>		
				<u> </u>	<u> </u>			<u> </u>						<u> </u>					<u> </u>		
2.000	+			-	<u> </u>									+					<u> </u>		
2.000		I	I	L	<u> </u>	I	I	I	I	<u> </u>	I	I	I	1	I	I	<u> </u>	I	<u> </u>	I	I
LEGEND:		ormatio				<u>Crac</u>									<u>Surfa</u>					<u>Othe</u>	
		Ruttir Shov					Block	k odile			Mea Cres	nderir ont	ng		SD SS	Dela Stripp		ion			Edge Break0Good ConditionEdge Drop Off1Minor
		Depr		r				verse				ent jitudin	al			Rave					Potholing 2 Moderate
		Corru					Diag					,			SF	Flush	ing			PA	Patching 3 Severe
															SP	Polish	ning			PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	09/02/2015
Location:	Road No. 3 - Dungog Road	Sheet:	6 of 8

Chainage				Lef	t Ha	nd L	ane							Rig	ht Ha	and I	ane	è			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m		2m	1	m		m		
3.000																					GENERAL COMMENT:
																					Road pavement in generally good condition.
	-																				Minor SF & SR associated with general traffic use.
2.950	-																				
21700	1				BR	DGE									BR	DGE					
	-																				
2.900	_																				
2.900	1																				
						D	C, DS	, SP	1				D	C, DS	, SP	1					
0.050																					
2.850	-						SP, SI	2						SP, S	R						Ch. 2,850m, road narrows down to single lane at
																		1			bridge approach.
2.800																					
				DD		(CT	1	SF												Ch. 2,750m, braking area on approach to 2
2.750				SF																	single lane bridge, on downhill bend in road.
				PA																	
2.700	_								DD												1
																					1
									-												
									DD												
2.650																					
				СВ							-										Ch. 2,650m, deep block cracks, loss of seal, at 2 entry into rural property on left hand side of road.
																					entry into rural property officient hand side of road.
2.600																					
2.550																					
2.500																					
	Defe					C	a la la marca da								C. unfo					0	Course the second s
LEGEND:		ormatio Ruttir					<u>king:</u> Bloc			СМ	Mea	nderii	ng		<u>Surfa</u> SD	<u>ace:</u> Dela	mina	tion		<u>Othe</u> EB	e <u>r: Severity:</u> Edge Break 0 Good Condition
	DS	Shov	ing					codile		СС	Cres	ent	-		SS	Stripp	oing			ED	Edge Drop Off 1 Minor
		Depr Corru					Tran: Diag	sverse Ional	•	CL	Long	jitudin	al		SR SF	Rave Flush	-				Potholing2ModeratePatching3Severe
	-		5 - 10				8								SP	Polis	-				Photograph
Reference:	Aust	roads	2009	- Guid	le to	Paver	nent 1	[echn	oloav	. Part	5: Pay	/eme	nt Eva	aluati	on an	d Trea	itmen	nt Des	ian		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	09/02/2015
Location:	Road No. 3 - Dungog Road	Sheet:	7 of 8

Chainage				Left	Har	nd La	ane							Righ	nt Ha	nd La	ane	;			Comment
(km)		4n	n	3r	n	2	m	1	m	С	:L	1	m	1	m	3m		1	m		
3.500							PA								PA						1
							FA								FA						
							PA	1													1
0.450								1	СС			1	1		PA						
0.450															14						1
				EB																	
				ED													DS	PA			1
3.400		-		PO		P	٨														1
				Mine	or DD	, SF, С		within	1 PA							-	SF				1
				SF		1 1			SF								0.	1			1
																CN	1				1
3.350																					
																- F	PA				1
3.300																					
																					1
									SR												1
				SI	-																
0.050																					
3.250																SF					1
																		Į			
													1	1	1						1
				SI	-									PA							
3.200												DD									
												SF									
																					1
														P	A						
3.150																					
						Р	A							P	A						1
								1				1						1			
				SI	-							-		PA			сс				1
3.100				SF,	PA									14			00				
3.100																		1			
				SI	=									P	A		EB				1
				5							l										
0.055							сг с <u>р</u>									SF	EB				1
3.050							SF, SR									SF	ΕB				
																_	_				2
							SF									SF	EB				
						SR, SF	SS P	A.CC					SR SF	SS P	A, CC		-				Variable defects across full road width. 2
3.000						211, 01	, 55, 1	, 00					5.1, 51	, 55, 1	,						Expedient patching.
LEGEND:	Defor	matio	n:			<u>Crac</u>	kina:								Surfa	ce:				<u>Othe</u>	er: <u>Severity:</u>
	DR	Rutting	9			СВ	Block					nderir	ng		SD	Delam	ninat	tion		EB	Edge Break 0 Good Condition
	DS S					CR				СС			.1			Strippin				ED	Edge Drop Off 1 Minor
	DD Depression CT Transverse CL Longitudinal SR Ravelling DC Corrugation CD Diagonal SF Flushing										HO PA	Potholing2ModeratePatching3Severe									
			,															PH	Photograph		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	09/02/2015
Location:	Road No. 3 - Dungog Road	Sheet:	8 of 8

Chainage				Lef	t Hai	nd L	ane							Righ	nt Ha	and L	ane	•			Comment
(km)		4	m	1	m	1	m	1	m	(CL	1	lm	1	m		m		m		
4.000																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF & SR associated with general traffic use.
3.950																					
								EN	D AT	CHAI	NAGE	3.916	5KM			1					Intersection with Gresford Road
3.900	_			DR																	1
				SF	-																
																					1
														9	ŝF		EB				
3.850																	ED				
3.800																					
0.000				SR					SR												1
3.750																					
3.700																					
	-			SR																	1
																					1
3.650				SF					SF			SF					SF				
									ЪГ												
				DS	SF																1
												SR									1
3.600																					
3.000	1																				
									SR												1
																60					
3.550																SR					1
	\vdash				SF			-			1			-	-					-	1
	1				сс				SF		1					SR					
3.500				L		I	PA							F	ΡA						1
LEGEND:	<u>Def</u> o	rmatio	on:			Crac	<u>:king:</u>								<u>Surfa</u>	ce:				<u>Othe</u>	r: <u>Severity:</u>
	DR	Ruttir	ng			СВ	Block				Mea		ing		SD	Dela		ion		EB	Edge Break 0 Good Condition
	DS DD	Shov Depr		ı		CR CT	Croc	odile verse			Cres Long		nal		SS SR	Stripp Rave				ed ho	Edge Drop Off 1 Minor Potholing 2 Moderate
	DC						Diag			UL.	LONG	,			SF	Flush	ing			PA	Patching 3 Severe
															SP	Polish	ning			PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	28/04/15
Location:	Road No. 3 - Dungog Road	Sheet:	Site Photos





PHOTO 2 - Ch. 210m Edge drop along pavement shoulder.



surface polishing and expedient patching across intersection associated with turning vehicles.



PHOTO 3 - Ch. 1,180m Change in road surface seal. Minor deformation shoving, depression and crocodile cracking at pavement interface.



PHOTO 4 - Ch. 2,650m Deep block cracking, loss of seal, near entry into rural property on LHS.



PHOTO 5 - Ch. 3,115m Crocodile cracking in outer wheel path of area previously repaired with remedial patch.



<u>PHOTO 6 - Ch. 3,130m</u> Remedial patch, full road width.

APPENDIX D:

Pavement Defect Mapping Sheet

Road Section 4

Ch. 0,000m to 8,122m Grace Avenue Cory Street Martins Creek Road



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	1 of 17

Chainage				Lef	t Hai	nd L	ane							Righ	nt Ha	and L	ane				Comment
(km)		4	m	3	m	2	m	1r	n	C	CL	1	m	2	m	3	m	4r	n		
0.500																0.5					
																SF					Ch. 480m - Culvert crossing
												SF				SF					Γ
0.450												SF				SF					
																					GENERAL COMMENT:
																					Road pavement in generally good condition.
0.400																					Minor SF / SR associated with general traffic use.
								ſ													Γ
									SF												
0.350				1		1			ŀ			SF									
	1			1	SF				ŀ							SF					
	1			1					-				1	1							-
	1			1										1							
	1			t																	
0.300																					
																SF					
0.250							SR														
	1																				
							CL														
							CL														
0.200																					
0.150																					
0.100									CT			CT	1			SS					
	-			<u> </u>								SF	_	-		SF					
	-			-		-															
											-	07		-		05					L
0.050				<u> </u>								SF	 			SF					
	-			-		-															
	1			-			C.														
				 			SF	1						-							
0.000						<u> </u>			_					-							Interractionwith Dungage Paged
0.000	_			1		I															Intersectionwith Dungog Road
EGEND:	Defr	ormatio	on:			Crac	king:								Surfa	ice:				Othe	er: <u>Severity:</u>
		Ruttir					Block			СМ	Mear	nderi	ng		SD		minati	ion		EB	Edge Break 0 Good Condition
	DS	Shov	ing			CR	Croco	odile		СС	Crese	ent			SS	Stripp				ED	Edge Drop Off 1 Minor
		Depr					Transv			CL	Long	itudir	nal		SR	Rave				НО	Potholing 2 Moderate
	DC	Corru	ugatio	on		CD	Diago	onal							SF	Flushi				PA	Patching 3 Severe
															SP	Polish	ıına			PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	2 of 17

Chainage		Left Hand Lane Right Hand Lane												Comment					
(km)		4m		3m	2	?m	1m	(CL	1m		2r	n	3m		4	m		
1.000																			
												1							PA - Expedient patches only 1
			E	B, PA				SS	SS]					ĺ				1
										- F	PA, PC	ר SR	CC						
0.950											7410	5, 010	, 00						
									_										
										1 1									
			-																
			_																
0.900			-							PA					_				1
			-						<u> </u>			I	EB, SR						
			-	-									,						
			EE	3									T		_				1
0.850				-										EB					
				00	PA, PC	_	SR		Ì		SR			EB, CC	С,				2
				UU, 1	PA, PC)	SR				SK			PA, PC	С				
					CC P	PA FR	SR, PO			C	C PA	FR 9	SR, PO						2
0.800					00,.	,, 20,	010,10					, 20, 0	511,1 0						
																			2
				_															2
				EB, (CC, P	A, PO	CC,	SR		CC, SR	1	EB, C	C, PA,	PO					
			_	_										_					
0.750						1													Ch. 750m - Culvert Crossing
			-										_						2
				-	Г	DS. DC	, PO, PA			DS, DC	C, PO,	PA		EB PA					Ch. 720m - Douglas Street Intersection
				-					-					_					
0.700									4				Ē	EB					2
					[DS, CC	, PA, SS			DS,	CC,	PA, S	S						2
																			1
				EB										EB					
				PA										PA					
0.650																			
			_		DC, P	A, CC	, SS, SR			DO	C, PA,	CC,	SS, SR						2
								-											
			÷-	<u>i</u>	<u>i</u>	i		<u>i</u>	i –	<u>i i</u>	i	i	i	i	ļ				Ch. 125m - Railway crossing.
			_		DC, P	A, CC	, SS, SR			DC	C, PA,	CC,	SS, SR						Ch. 105m - Station Street intersection 2
0.600			-	-	-	!		:	<u> </u>	: :			:		-				Ch. 95m - Railway crossing.
			+				├ ── ├ ──	+		┢──┢	-	-	I						1
										SF			SF	_					
														_					
0.550									İ -			CT							1
0.000									-	ГТ									1
										SF			SF						
									L										
												CT							1
0.500													SF						1
	Defi	and a			C 1	alsta -						_	C					0.1	
LEGEND:		<u>mation:</u> Rutting				<u>cking:</u> Blocł	¢	СМ	Mea	Indering			<u>Surfac</u> SD D	<u>e:</u>)elami	nati	on		<u>Othe</u> EB	er: <u>Severity:</u> Edge Break 0 Good Condition
		Shoving			CR				Cres	-				trippin				ED	Edge Drop Off 1 Minor
		Depressic				Trans		CL	Long	gitudinal				avellir	-			HO	Potholing 2 Moderate
	DC (Corrugat	ion		CD	Diag	onal							lushing	-			PA PH	Patching 3 Severe
													JF P		Я			сıЛ	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	3 of 17

Chainage			Left	Har	nd La	ane							Righ	nt Ha	nd L	.ane	•			Comment
(km)	4	1m	31	m	2	m	1r	n	(CL	1	m	2	m	3	m	4	m		
1.500				S	R	1					SR	CL	ĺ		60					1
															SR					
1.450																				
1.450																				
			PA	EB																1
1.400			EB					PA							SR					1
					-															
1.350																				
																				1
					CL,	SR, SS	5, PA					CL,	SR, SS	5, PA						
			1							I							l			
1.300							BRID	GE - (CH. 1,	,200M	TO 1,	220M								
																				2
4.050					ED									ED						
1.250					EB CC									EB CC						
					PA									PA						
1.200			_						PA											2
																				2
				F	PA, PC	D, SS,	SR, CC					PA, PO	D, SS,	SR, CO	2					
1.150			С	С						PC	, PA									2
			Ρ.											1	SR					
			P	0							PC), PA								2
			С	c			SR													2
1.100			D										SR							
			P.							I										
								20		SD, F	PO, PA	A, CC,								2
1.050	+			SD	ν, PU,	ra, C	C, SS, 9	эκ		1	SS, SF									
1.050																				2
			PA	SR				60			60									
								SR			SR				Ρ	A				
				PO,	, PA							٦								2
1.000			СС				P	O, PA	4	PC), PA				PO	PA				2
LEGEND:	Deformati				<u>Crac</u>	:king:								<u>Surfa</u>	ce:				<u>Othe</u>	
	DR Rutti					Block				Mea		ng		SD	Dela		ion			Edge Break 0 Good Condition
	DS Show DD Dep	ving pressior	٦				odile sverse			Cres Long		nal		SS SR	Stripp Rave				ed ho	Edge Drop Off 1 Minor Potholing 2 Moderate
	DC Corr					Diag								SF	Flushi	ing			PA	Patching 3 Severe
														SP	Polish	ning			PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	4 of 17

Chainage				Lef	t Hai	nd L	ane				Τ			Righ	nt Ha	and I	ane	è			Comment
(km)		4r	n	3	m	2	m	1	m	(CL	1	m	1	m	1	m	1	m		
2.000																					GENERAL COMMENT: (CH. 1,350m to 2,000m)
																					Road pavement in generally good condition.
																SR					Minor SF / SR associated with general traffic use.
																PA					1
1.950				EB	PA																1
					-							<u> </u>									
										<u> </u>	<u> </u>	<u> </u>									
									<u> </u>			<u> </u>									
4.000										<u> </u>	<u> </u>	<u> </u>									
1.900												-									
									-			PA	1								1
								+					-								
1.850								-				-									
												PO	, PA								1
1.800								<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>				P	ΡA				Ch. 1,800m - Culvert crossing
										<u> </u>	<u> </u>	<u> </u>		1	SR	1	1				1
									<u> </u>	<u> </u>	<u> </u>	<u> </u>									
	_								<u> </u>	<u> </u>	<u> </u>	+									
1 750					-																
1.750												-									
								+				+									
								-				-									
1.700																					
														SR							1
														511			EB	PA			CH. 1,680m - Cook Street Intersection 1
																					(Note: Cook Street pavement assessed to be in
									<u> </u>			<u> </u>									much worse condition than pavement of Martins
1.650									<u> </u>			<u> </u>									Creek Road. Moderate to severe condition 2/3.
									<u> </u>			<u> </u>									
									<u> </u>	<u> </u>	<u> </u>	<u> </u>									
1.600											-										
1.000								-						PO	, PA						1
							PO, P	A						PO, P.	A						Minor PO and expedient PA on approaches 1
1.550									BRID	GE - (CH. 1,	550M									to both sides of bridge.
						1	PO, P.	A						PO, P	A	1	1				1
								-				-									
					-							<u> </u>									
					-							<u> </u>									
1.500																					
LEGEND:	Defc	ormatio	n:			Crac	:king:								<u>Surfa</u>	ice:				Othe	r: <u>Severity:</u>
		Ruttin					Bloc					nderir	١g			Dela	minat	tion			Edge Break 0 Good Condition
	DS	Shovi	-					codile			Cres					Stripp	-			ED	Edge Drop Off 1 Minor
		Depre Corru				CT	Trans	sverse		CL	Long	gitudin	al			Rave Flush					Potholing2ModeratePatching3Severe
	DC	Conu	yauo	11		CD	Diag	Unai								Polish	-				Photograph
																	-				
Reference:	Aust	roads 2	2009 -	Guid	ie to F	Paver	nent 1	echn	ology	, Part	5: Pav	veme	nt Eva	aluatio	on and	d Trea	tmen	t Desi	gn		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	5 of 17

Chainage	1			Lef	t Ha	nd L	ane							Rigl	nt Ha	and I	.ane	•			Comment
(km)		4	m	3	m	2	2m	1	m	(CL	1	m	1	m		m		m		
2.500																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor EB associated with general traffic use.
2.450																					
														-							Ch. 2,430m - Culvert Crossing
2.400																					
2.400	1			PA	1																1
2.350																					
		-					-							-							
2 200	-																				
2.300																					
																	EB				2
2.250					PA, C	С	DC	, PA	F	ΡA							PA				1
																					Ch. 2230m - Black Rock Road Intersection
				PA					PA								PA				(Note: Black Rock pavement assessed to be in 1
																					much worse condition than pavement of Martins
2.200	{						RA	LWAY	BRID	GE - 0	CH. 2,1	90M 1	IO 2,2	10M							Creek Road. Moderate to severe condition 2/3.
	-																				GENERAL COMMENT:
																					Road pavement in generally good condition.
															9	SR					Minor SF / SR associated with general traffic use.
2.150																					
									SR	-							EB	PA			1
0.400																					
2.100	-																				
2.050																	PA				1
	 	<u> </u>				-	-	<u> </u>				<u> </u>	<u> </u>								
2.000	-						+														
2.000	<u> </u>	<u> </u>		1	1	<u> </u>	<u> </u>			I	I			1	1			I	1	1	1
LEGEND:	<u>Defc</u>	rmatio	on:			Crac	<u>cking:</u>								<u>Surfa</u>	ce:				<u>Othe</u>	er: <u>Severity:</u>
		Ruttir	-				Bloc				Mea		ng		SD	Dela		ion			Edge Break 0 Good Condition
		Shov Depr	-	h			Croc				Cres Long		al		SS SR	Stripp Rave	-			ED HO	Edge Drop Off 1 Minor Potholing 2 Moderate
		Corru					Diag			ΟL	LONG	nuuil	i di		SF	Flush				PA	Patching 3 Severe
															SP	Polisł	-			PH	-
Reference:	Austr	oads	2009 -	- Guic	le to l	Paver	nent 1	echn	oloav	Part	5: Pay	/eme	nt Eva	aluatio	on an	d Trea	tmen	t Desi	an		



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	6 of 17

Chainage	L			Lef	t Ha	nd La	ane							Righ	nt Ha	Ind L	ane			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	m	3	n	4m	1	
3.000																				GENERAL COMMENT:
																				Road pavement in generally good condition.
																				Minor SF / SR associated with general traffic use.
																				CC & EB on edges generally associated with
2.950																				turnoff entry to property driveways.
2.950																				tumon entry to property unveways.
																				F
																	DD			
																	EB			
																				Ch. 2,910m - Culvert Crossing
2.900																				
																	EB			_
																	PA			
2.850				EB	PA												СС			
2.030																				
																				F
																	EB			
2.800																	PA			
																	CC			
2.750																				
																	EB			Ch. 2,720m - Culvert Crossing
					1												LD			Ch. 2,720m - Calvert clossing
2.700																				
2.650																				
									PA											Γ
				PA																
0.400				17.																
2.600				DA																
	<u> </u>			PA																
		-				-														
		1																		
		-																		
2.550																				
		1																		
		1		l																
2.500		1		ŀ																
2.500	J	1			I	1	<u> </u>	I	1		I	1		I	I					1
EGEND:	<u>Def</u> c	ormatio	on:			<u>Cra</u> c	:king:								<u>Surfa</u>	ce:			Oth	er: <u>Severity:</u>
		Ruttir					Block	(СМ	Mea	nderir	g		SD	Dela	minati	on		Edge Break 0 Good Condition
		Shov					Croc				Cres				SS	Stripp	ing		ED	Edge Drop Off 1 Minor
	DD	Depr	essior			CT	Trans	verse		CL	Long	jitudin	al		SR	Rave			НО	Potholing 2 Moderate
	DC	Corru	gatic	on		CD	Diag	onal							SF	Flushi			PA	Patching 3 Severe
															SP	Polish				Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	7 of 17

Chainage				Lef	t Ha	nd L	ane							Rigl	ht Ha	nd l	.ane	•			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	2m	3	m	4	m		
3.500																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF / SR associated with general traffic use.
																					CC & EB on edges generally associated with
3.450																					turnoff entry to property driveways.
5.450																					
																					Ch. 3,430m - Culvert Crossing
																					Minor SR either side of culvert on approaches.
																					while sketter side of curver of approaches.
3.400																					
3.400																					
2 250																					
3.350	-	-		-		-		-			-					SF					ll
		-				-		-											-		
	-			-		-		-			-								<u> </u>		
	-			-		-		-			-								<u> </u>		
2 200				-																	
3.300						-		-											-		
																	50				
																	EB	PA			
											-										Ch. 3,270m - Culvert Crossing
3.250																					
													-								
3.200	_							SR					SR								
	_																				
																	PA				
	_																				
3.150																					
	_																, DS				
	_															PA	, SF				
	_																				
3.100				PA																	
	_	-																		-	
3.050	_																				Ch. 3,050m - Woodglen Close Intersection LHS
3.000																					1
CENE	D (~	1.1.								c					<u> </u>	
<u>GEND:</u>		ormatio Ruttir					<u>king:</u> Blocl			CM	Mea	nderi	าต		<u>Surfa</u> SD	<u>ce:</u> Dela	minot	ion		<u>Othe</u> EB	<u>er: Severity:</u> Edge Break 0 Good Condition
	DR	Shov						odile			Cres		·9		SS	Stripp				ED	Edge Drop Off 1 Minor
		Depr	-	٦				verse			Long		al		SR	Rave				НО	Potholing 2 Moderate
		Corru					Diag								SF	Flush				PA	Patching 3 Severe
															SP	Polisł	nina			PH	Photograph

Austroads 2009 - Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design

Reference:



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	8 of 17

Chainage				Lef	t Ha	nd L	ane							Rigl	nt Ha	and L	.ane				Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m		m	1	m		m		
4.000	_	-			1						1	-	1		1			-	<u> </u>		GENERAL COMMENT:
					1																Road pavement in generally good condition.
				DD EB																	Minor SF / SR associated with general traffic use.
					-																CC & EB on edges generally associated with
0.050	-																				
3.950	_				1																turnoff entry to property driveways.
	_																				
	_																				
	-									-								-			
3.900				EB													EB				
	_																				
	_																				
3.850	4	-		L	 						<u> </u>		-		-						
	1																				
	1																				
	1																				
3.800																					
3.750																					1
				EB																	
3.700				PA																	1
																					1
3.650				EB																	
				EB																	
				1																	
	1			1																	
				1																	
3.600	1			1																	
	1			1	1																
	1			1																	
	1			1																	
	1			1																	1
3.550	1			1													EB				
				1																	
	1																PA				1
	1		<u> </u>	1		<u> </u>	<u> </u>										EB		<u> </u>	<u> </u>	1
	1			1																	
3.500			<u> </u>	1		<u> </u>	<u> </u>									<u> </u>			<u> </u>	-	
0.000		1	1	<u> </u>	1	1	1	1		t		1	I	I	I	I			1	1	1
LEGEND:		ormatio					:king:								<u>Surfa</u>					<u>Othe</u>	
		Ruttir					Block				Mea		ng		SD	Dela		ion		EB	Edge Break 0 Good Condition
		Shov		-				odile			Cres				SS	Stripp				ED	Edge Drop Off 1 Minor
		Depr Corru					Trans Diag	sverse		CL	Long	Itudin	nal		SR SF	Rave Flush				HO PA	Potholing2ModeratePatching3Severe
	50	COIR	Jyau			υ	Jay	Judi													
															SP	Polish	ning			PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	9 of 17

Chainage				Lef	t Ha	nd L	ane							Rigł	nt Ha	nd L	.ane	•			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	1	m		m		m		
4.500	_																				GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF / EB associated with general traffic use.
4.450																					
				EB								SF				SF					1
					1																1
4.400				EB																	
																	EB				1
	_																				
	_																				
4.350	_																				
	_												-	-							
														-							
	-		-	-		-	-				-		-	-					-		
4.300	-		-			-	-						-	+					-		
4.300	_																				
	_																				
4.250																					
4.200																					
				PA	PA																1
	_			PA		PA			PA			PA				PA					1
	_																				
4.150	-			PA																	1
	-			PA	1																1
	-			FA	<u> </u>																
	_																				
4.100																					
					1																1
	1			EB							1		1	1							
				L							1										
4.050																					
																					1
	_																EB				
4.000	+																				
						_									_					_	
LEGEND:		ormatio Ruttir					<u>king:</u> Blocl			CM	Mea	nderi	na		<u>Surfa</u> SD	<u>ce:</u> Dela	minat	ion		<u>Othe</u> EB	e <u>r: Severity:</u> Edge Break 0 Good Condition
		Shov						odile			Cres				SS	Stripp				ED	Edge Drop Off 1 Minor
	DD	Depr	essior			CT	Trans	sverse			Long		nal		SR	Rave	lling			ΗΟ	Potholing 2 Moderate
	DC	Corru	ugatio	on		CD	Diag	onal								Flush				PA	Patching 3 Severe Photograph
															SP	Polish				PH	



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	10 of 17

Chainage				Lef	t Ha	nd L	ane							Righ	nt Ha	and L	.ane	;			Comment
(km)		41	n	3	m	2	m	1	m	(CL	1	m	2	m	3	m	4	m		
5.000																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF / EB associated with general traffic use.
4.950																					
4.950																					
4.900	-																				
4.850														SR, SS	5						1
4.800																					Ch. 4,800m - Culvert Crossing
																-					
																					2
4.750					PA	A, DS,	DD, C	C, SF,	SR		P.	A, DS,	DD, C	C, SF,	SR						
4.700	ĺ																				
				PA																	1
1 700				EB	PA	СС					PA					PA					1
4.700																FA					
4.650																					
4.600																					
4.550																					
					<u> </u>										<u> </u>	<u> </u>					
																					1
4.500				EB																	
					-						•							•			
LEGEND:		<u>rmatic</u> Ruttin				<u>Crac</u> CB				СМ	Mea	anderi	na		<u>Surfa</u> SD	i <u>ce:</u> Dela	minat	tion		<u>Othe</u> EB	rr: <u>Severity:</u> Edge Break 0 Good Condition
	DS	Shovi	ng					odile		СС	Cres	sent			SS	Stripp				ED	Edge Drop Off 1 Minor
		Depre						sverse		CL	Long	gitudir	nal		SR	Rave					Potholing 2 Moderate Patching 3 Severe
	ЪС	Corru	yallo	11		CD	Jiag	unal							SF SP	Flush Polish				PA PH	Patching 3 Severe Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	11 of 17

Chainage				Lef	t Hai	nd L	ane							Rigl	ht Ha	and L	.ane				Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	1	2m	1	m		m		1
5.500				-				-			-	-	1		Г						2
					P	A									ED	PA,					2
					ļ											C C					
5.450							PA, [DD, SF						DD), PA						2
																					2
					ED	PA															
					LD,	FA									DE	, PA	СС				2
																PA					2
5.400							-														
					SR	PA															2
															SR	, PA					
5.350													SR								
	<u> </u>				-			<u> </u>		I	-				1						2
	<u> </u>							S	R						⊢						2
5.300													1			SR					
5.500															-	-					
																					1
					S	R															
															SR	, PA					1
5.250							DD	, PA		.0											1
									2	SR											
													F	PA							1
							F	PA	-												1
															SR	, PA					
5.200																					
									DD, SI	R	DD), SR									2
														SR							
							SR, CO	2						1	EB, S	SR, PA					2
													DD								2
5.150					DP	, PA			DP	, PA					-						Ch. 5,150m - Glenburn Road Intersection LHS Poor condition at intersection turning area. 2
					DI	, 1 A	ļ		DR	, 1 A											Poor condition at intersection turning area. 2
																					1
5.100							-	-			1		1	+	DR,	SF, PA					
0.100	1				l						1		1		-						
											1		1	1	1		PA				1
				DD,	CC, S	F, PA	1				1	PA	1			DD,					1
	L	L					L	L			L		PA		L		A				1
5.050												PA									1
						SF	СС		SF	СС											1
													-								
				<u> </u>										<u> </u>							
5.000	<u> </u>			L			SR				<u> </u>			SR							1
LEGEND:	Defe	ormatio	n.			Crac	:king:								<u>Surfa</u>	ice.				<u>Othe</u>	er: <u>Severity:</u>
LOLID.		Ruttir					-	k		СМ	Mea	nderi	ng		SD SD		minati	on		EB	Edge Break 0 Good Condition
	DS	Shov	ing			CR	Croc	odile		СС	Cres	ent			SS	Stripp				ED	Edge Drop Off 1 Minor
		Depr						verse		CL	Long	gitudir	nal		SR	Rave				HO	Potholing 2 Moderate
	DC	Corru	igatic	on		CD	Diag	onal							SF SP	Flush Polish	-			PA PH	Patching 3 Severe Photograph
l .															51		шу			гП	поюдгари



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	12 of 17

Chainage				Left	Har	nd L	ane	<u>. </u>						Righ	nt Ha	nd l	.ane				Comment
(km)		4	m	3n	n	2	m	1	n	0	CL	1n	n	2	m	3	m	4	m		
6.000																					GENERAL COMMENT: (from Ch. 5,750m onwards)
																					Road pavement in generally good condition.
																					Minor SF / EB associated with general traffic use.
5.950																SR	EB				
																EB					
5.900					DS	, SF					SF					SF					
5.850																DS, SF,					
					DI	d, SF,	SR								S	R					
				[EB					
	1																				
5.800														-							
	_														SF	, SR					
	_																				
	_																				
																					
5.750	-																				GENERAL COMMENT:
									5	R				DD	, PA	EB					Road pavement in generally poor condition
	-					DD	, PA					DR, PA	22	CD CF		PA					up to approximately Ch. 5,750m.
						DD	, PA					DR, PF	1, 33, .	JK, JF							
F 700					0	SE DA	, SS,PC														
5.700	-					PA	, 55,1 0	_						SS,	SR	EB					
				-	017																
																					PA - Expedient patches only. Intermittant,
																PA					typically about 0.5m diam.
5.650																					
5.600																					
					DS	, PA,	СС								PA	DD					
					PA											EB					
				[PA					
5.550	1																				
	1						SR.	PA				SR, I	PA								
	1					1				1											
	1														EB, E	D, PA					
	-	-																			
5.500						EE	8, PA, (I						
EGEND:	Defc	ormatio	on:			Crac	:king:								<u>Surfa</u>	ce:				<u>Othe</u>	er: <u>Severity:</u>
	DR	Ruttir	ng			СВ	Block					nderinę	9		SD	Dela	minati	ion		EB	Edge Break 0 Good Condition
	DS	Shov	-				Croc				Crese				SS	Stripp				ED	Edge Drop Off 1 Minor
			ession Jgation				Trans Diag	verse		CL	Long	tudina	1		SR SF	Rave Flush				ho Pa	Potholing2ModeratePatching3Severe
		COIIL	gauon			00	Jay	JIIdl							SP SP	Polish	-			PA PH	Patching 3 severe Photograph
																	9				



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	13 of 17

Chainage				Lef	t Ha	nd L	ane							Rig	ht Ha	and L	.ane	•			Comment
(km)		41	m	3	m	2	m	1	m	0	CL	1	m	2	2m	3	m	4	m		
6.500																					Ch. 6,490 - Culvert Crossing
						DD	, PA	1								PA					1
6.450																					
0.430																					
															PA SI						1
(100																					
6.400																					
																-					1
6.350					DD PA											EB					Entry to property driveway RHS & LHS. 1
																PA					1
6.300																EB					1
									SF												1
																SR					1
6.250																эк					
																SR EB					2
					-	DS	PA, S	FSR				_				LD					1
						55,	SR	1, 51													1
6.200					F	ΡA										EB					1
													S	R		PA					1
									SR												
6.150																					
																					1
												SF			SF						
												-			SR						
6.100												ļ			-						1
0.100	i															SR					Entry to property driveway RHS.
																EB ED					
(050																PA					1
6.050																					Entry to property driveway RHS.
	L			L		L	L		L			L	L								
																EB SR					
(007					DD SR										-						1
6.000	<u> </u>			<u> </u>	51	<u> </u>	<u> </u>	<u> </u>	I	<u> </u>	L	<u> </u>	I	<u> </u>	<u> </u>	<u> </u>		<u> </u>	<u> </u>	I	
LEGEND:		rmatic					king:								<u>Surfa</u>					Othe	
		Ruttin Shovi					Block	k :odile			Mea Cres		ng		SD SS	Dela Stripp		tion			Edge Break0Good ConditionEdge Drop Off1Minor
	DD	Depre	essior			CT	Trans	sverse			Long		al		SR	Rave	lling			HO	Potholing 2 Moderate
	DC	Corru	igatio	on		CD	Diag	onal							SF SP	Flush Polist					Patching 3 Severe Photograph
															515		шу				naograph

Austroads 2009 - Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design

Reference:



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	14 of 17

Chainage				Lef	t Hai	nd L	ane							Righ	nt Ha	and I	ane	•			Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	1	m	1	m	1	m		
7.000																					1
								SR					SR								
									PA												1
					DD PA									E	3, SR, I	PA					1
6.950					SS																
6.900																					
												SR			SR SF						1
(050					DI	, DS,	PA, SF	ł, SS, (JC						31						2
6.850																					
																					Ch. 6,805m - Culvert Crossing
6.800																					
6.750																					1
														CD.	05						
														SR	SF						
6.700					DD											PA					1
					DD										SR SF	PA					
							SR														
6.650																DD					1
												SF			SF	PA					1
						SF															
							-														
6.600						DR	2, PA, S	SF, SS,	СС				SR,	, PA							2
0.000															50	D.A					1
															EB,	PA					
					PA																1
6.550																					
											-										
				-			-	-						-					-		Entry tp property driveway RHS. 1
																EB PA					
6.500																Ĺ					
LEGEND:	Defo	mati	-			Cro-	:king:								<u>Surfa</u>		_			Othe	r Covoritu
LLGENU:	Deroi DR						Block			СМ	Mea	nderir	ng				minat	ion			<u>rr: Severity:</u> Edge Break 0 Good Condition
	DS	Shovi	ing			CR	Croc	odile		СС	Crese	ent	-		SS	Stripp	bing			ED	Edge Drop Off 1 Minor
	DD DC						Trans			CL	Long	itudin	al			Rave Flush					Potholing 2 Moderate Patching 3 Severe
	20	50110					2.49	501								Polisi					Photograph
	DC						Diag			CL	Long	ituuin	a		SF	Flush	ing			PA	Patching 3 Severe



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	15 of 17

Chainage				Left H	Har	nd La	ane							Righ	nt Ha	and L	ane				Comment
(km)		4	m	3m	ı	2	m	1	m	(CL	1	m	2	m	3	m	4	m		
7.500																EB					
						PA															
7.450																					
												SR									
								5	SR		SR	PA									
					DD PA																
					FA				F	PA	1	_									Ch.7,410m - Culvert Crossing
7.400	-															PA					<u> </u>
												SR PA									
											PA										r r
7.350																					
7.000											F	A									F
													S	SF							
																					_
7.300																PA					
																DD SR					
																эк					
					SS,	SR															
7.250	-																				
				— -																	F
					DD																
					PA										SF						l r
7 200															51						
7.200																					
						SS SR															L
						SK									05						
7.150						SR									SF						
7.100																					
					DD																
					PA SF																
7.050			\vdash	— -							-		SR								
7.050	-		\vdash	-+				-			-		л								
	+	-	\vdash					-					-		-					-	
	\vdash		\vdash																	-	l r
													SR								
7.000	1							SR													<u> </u>
		1	<u> </u>							ı	•				ı	1		1	1	ı	
<u>EGEND:</u>		ormatio				Crac				<u> </u>					<u>Surfa</u>			• .		Othe	
		Ruttir Shov					Block	k odile			Mea Cres		ıg		SD SS	Dela Stripp		ION		EB ED	Edge Break0Good ConditionEdge Drop Off1Minor
			ession					verse			Long		al		SR	Rave				HO	Potholing 2 Moderate
			gatior				Diag								SF	Flush	ng			PA	Patching 3 Severe
															SP	Polish	ing			PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	16 of 17

Chainage		1		Lef	t Hai	nd L	ane							Rig	ht Ha	nd	Lane			Comment
(km)		4	m	3	m	2	m	1	m	C	CL	1	m	1	2m	3	m	4r	n	
8.000																				
					SR															
					SS															
																	PO			
7.950																				
					SR															
								SR					SR							
7.900							1	-				1		1						
															PA		EB			<u> </u>
															SR					
7.850																	PA			L
															-					
															SR PA					
																				r i i i i i i i i i i i i i i i i i i i
7.800															SR					
7.600															-					
						SR									SR					L
						SS									SS					
															SR		EB			
7.750															PA		PA			-
						1														
				SR	, SS												PA			
															-					
															SR PA					
7.700																				
				PA																
7.650															SR					
															PA					
															_					
					SR										-					
				DS	, PA											DS	, PA			
7.600				1	<u> </u>			<u> </u>												
					-			-							SR	l				r
	-			-	<u> </u>	<u> </u>					-				PA					
				+			-								DD, PA	SP.	SS			<u>├ </u>
7.550	-			-							<u> </u>				55,0	., JN, -				L
1.550	1			+	-	-	1	-	\vdash		-				-					
				\vdash		-	-						0-							L
				\vdash				-	\vdash				SR SS				EB ED			
													PA				PA			
7.500				1											1					
		1		•								<u>.</u>						<u> </u>		
EGEND:		ormatio					<u>king:</u>			~~~					<u>Surfa</u>		mate - 1			Other: Severity:
		Ruttir Shov					Block Croc				Mea Cres		ıg		SD SS	Dela	minat Ding	ion		EBEdge Break0Good ConditionEDEdge Drop Off1Minor
		Depr		n				verse			Long		al		SR	Rave				HO Potholing 2 Moderate
															SF	Flush	ing			PA Patching 3 Severe
	DC Corrugation CD Diagonal									SP	Polis	hina			PH Photograph					



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	11/02/2015
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	17 of 17

Chainage				Lef	t Ha	nd L	ane	1		I		T		Rigl	nt Ha	nd l	ane			1	Comment
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	m	3	m	4	m		
8.500																					
8.450																					
8.400																					
																					-
														-							
8.350	_																		-		
																			-		
																			-		
8.300														-							+
0.300																					
8.250																					
0.200																					-
8.200																					
8.150																					
		1	1	1	1	1	1	EN	ID AT	CHAI	NAGE	8.122	КМ	1		1		_		1	Intersection with Paterson Road
																SR,	PA				
8.100		+									<u> </u>					I					
	-			EB				-						PA							
	-	-		PA				-			-			1	1	ſ	-			-	-
	-	+		РA				-						-			SR				+
8.050	\vdash	+		+				-			-			-							+
0.000		+		+		1									SR	P	PA				+
		+		+		F								1	1	<u> </u>	•				+
		-		\vdash	SR	F					-			-	1						+
	1	+		1	SS	⊢		<u> </u>						1	PA	1				-	Γ
8.000				1		F								1	SR	1					-
				•		d					•										· <u> </u>
<u>EGEND:</u>		ormati					<u>king:</u>			<u>.</u>					<u>Surfa</u>					Othe	
	DR DS	Ruttii Shov					Block Croc				Mea Cres	nderir ent	ng		SD SS	Dela Stripp	minat bina	ion		EB ED	Edge Break0Good ConditionEdge Drop Off1Minor
		Depi		n			Trans					jitudin	al		SR	Rave					
							Diag								SF	Flush	ing			PA	Patching 3 Severe
	DC Corrugation														SP	Polisł	nina			PН	Photograph

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Reference:



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	28/04/15
Location:	Road No. 4 - Grace Avenue, Cory Street & Martins Creek Road	Sheet:	Site Photos



PHOTO 1 - Ch. 710m

Road pavement in poor condition. Extensive defects, expedient patch repairs and repeated failures in both lanes. Douglas Street to LHS similar poor pavement condition.



<u>PHOTO 2 - Ch. 1,130m</u> Road pavement in poor condition. Extensive defects, expedient patch repairs and repeated failures in both lanes.



PHOTO 3 - Ch. 4,720m

Road pavement in poor condition. Extensive defects, expedient patch repairs and repeated failures in both lanes.



PHOTO 4 - Ch. 6,600m Road pavement in poor condition. Extensive defects, expedient patch repairs and repeated failures in both lanes.

APPENDIX E:

Pavement Defect Mapping Sheets

Road Section 5

Ch. 0,000m to 8,411m Paterson Road Dunns Creek Road Butterwick Road



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/02/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	1 of 17

Chainage				Lef	t Ha	nd L	ane	1				1		Rigl	nt Ha	nd I	ane	;			Comment
(km)		4n	n	3	m	2	m	1	m	0	CL	1	m	2	m	3	m	4r	n		
0.500																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF associated with general traffic use.
0.450																					Ch. 450m - Change in seal. Very good condition.
				PO		SR		PA	S	R				SR							Entry to property driveways, LHS & RHS
0.400																					
0.350																					
0.300	+						-	-						-							
0.300																					
																					Ch. 260m - Culvert Crossing
0.250														1							5
								SR					SR								ſ
																					-
0.200																					
									5	6F	9	SF									Ch. 180m - Martins Creek Road Intersection
					5	SF															ļ
0.150						-															
				EB	SR CC																
					00																1
	_																				
	_																				
0.100	-																				
	_																				
	-							BF	RIDGE	- CH.	30M ⁻	TO 13	0M								
	-																				
0.050																					
	1																				
														1							
0.000																					Intersection - Tocal Road
		1		•	•		•	•	•		•	•		•		•	•	•		•	
GEND:	Defor						<u>king:</u>								<u>Surfa</u>					Othe	-
	DR F DS S						Bloc	k odile			Mea Cres		ng		SD SS	Dela		tion		EB ED	-
	DS S			ı				oalle sverse			Long		nal		SS SR	Stripp Rave					Edge Drop Off1MinorPotholing2Moderate
	DC C						Diag			JL	20119	aun			SF	Flush					Patching 3 Severe
			-				5								SP	Polis					Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/02/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	2 of 17

Chainage				Lef	t Ha	nd L	ane							Rigł	nt Ha	and L	.ane	•			Comment	
(km)		4	m	3	m	2	m	1	m	(CL	1	m	2	m	3	m	4	m			
1.000																					GENERAL COMMENT:	
																					Road pavement in generally good condition.	
																					Minor SF / SR associated with general traffic use.	
																					Typically near entry to property driveways.	
0.050																					rypically hear entry to property driveways.	
0.950																						
0.900																						
0.850																						
	1	-		1	<u> </u>			-			-	<u> </u>	<u> </u>	1	<u> </u>	-			<u> </u>	-		
	-			-										-								
0.800	-			-	-							-	-	-					-			
0.000	-	-		-	-			-				-	-	-	-	-			-			
0.750																						
									-													
0.700																						
0.650																						
0.000																						
									-													
0.400	-	-		-	-			-				-	-	-	-	-			-			
0.600					<u> </u>							<u> </u>	<u> </u>	-					<u> </u>			
	<u> </u>			<u> </u>																		
	-			-	<u> </u>							<u> </u>	<u> </u>	-					<u> </u>			
					<u> </u>							<u> </u>	<u> </u>		<u> </u>				<u> </u>			
														1								
0.550																						
				L																		
0.500														1								
						1	I	I	I								1					
EGEND:	Defo	rmatio	on:			Crac	king:								Surfa	ice:				<u>Othe</u>	er: <u>Severity:</u>	
	DR	Ruttir	ng			СВ	Block				Mea		ng		SD Delamination						Edge Break 0 Good Condition	
		Shov					Croc				Cres				SS	Stripp				ED	Edge Drop Off 1 Minor	
		Depr						verse		CL	Long	jitudin	al		SR	Rave					Potholing 2 Moderate	
	DC	Corru	gatic	on		CD	Diag	onal							SF							
													SP	SF Flushing SP Polishing					Photograph			



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/02/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	3 of 17

Chainage		Left Hand Lane Right Hand Lane														Comment						
(km) 1.500	4m			3m		2	m	1m		0	CL	1m		2m			3m 4		4m		1	
																					GENERAL COMMENT:	
																					Road pavement in generally good condition.	
																					Minor SF / SR associated with general traffic use.	
1.450																					Ch. 1,460m - Culvert Crossing	
							SS														More a cut mark in road than defect.	
1.400																						
																					Ch. 1,390m - Culvert Crossing	
1.350																				-		
	1																			-		
																				1		
		<u> </u>				1						<u> </u>				1	<u> </u>			1		
1.300																				1		
1.000																				1		
1.250																					Ch. 1,250m - Frances Dun Lane Intersection RHS	
1.230																						
1.200																						
1.150																						
1.100																				-		
					-	-							-		-	-			-	-		
1.050					-	-							-		-	-			-	-		
		<u> </u>												-						-		
					-															-		
1 000				<u> </u>							<u> </u>									-		
1.000	<u> </u>	L	I	L	1	1	I	<u> </u>			L	I	1	1	1	1	I	L	1	<u> </u>		
EGEND:	Deformation:					Cracking:									<u>Surfa</u>			Othe				
		Ruttir				CB Block			k CM			Meandering			SD Delamir					EB		
		Shov		_			Croc				Cres				SS	Stripp				ED	Edge Drop Off 1 Minor	
		Depr Corru					Trans Diag	verse onal		CL	Long	litudir	nal		SR SF	Rave Flush				HO PA	Potholing2ModeratePatching3Severe	
	DC	COIII	Janc	71		CD	ыay	Undi							SF SP	Polisi				PA PH	Patching 3 severe Photograph	
															<u>.</u>			ЧЧ				



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/02/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	4 of 17

Chainage			Lef	't Har	nd L	ane							Rig	ht Ha	and L	.ane		Comment		
(km) 2.000		4m	3	m	2	m	1m		C	CL	1m		2m		3m		4	m		
				SF				SF					1							
																				••••••••••••••••••••••••••••••••••••••
			DD																	
			SF																	
1.950																				
1.930			DS	S, EB																Entry to property driveways LHS.
				, 20	-									-						Entry to property driveways ens.
			_											-						Ch. 1,925m - Culvert Crossing
1.900																				
								SF												
1.850																				GENERAL COMMENT:
																				Road pavement in generally good condition.
																				Minor SF / SR associated with general traffic use.
			-	1									1	1	-			-		
			-	1									-							
1.800			-	1						-			-							_
1.000			DD																	
1.750																				
1.700																				
1 (50																				
1.650																				
1.600																				
1.550				1																
				1									1				-			
			-	1									-							GENERAL COMMENT:
										-			-							Road pavement in generally good condition.
										<u> </u>			-	-						
1 500			_	-																Minor SF / SR associated with general traffic use.
1.500					I	I				I	I	I	1		I			I		1
EGEND:	<u>Defo</u> r	mation:		Cracking:										Surface:					<u>Othe</u>	er: <u>Severity:</u>
		Rutting		CB B					M	Mea	nderir	ng		SD	<u>ace:</u> Delaminatio		ion		EB	Edge Break 0 Good Condition
	DS	Shoving			CR	Croc	odile	С	С	Crese	ent			SS	Stripp	oing			ED	Edge Drop Off 1 Minor
		Depressi					verse	С	Ľ	Long	itudin	al		SR	Rave					Potholing 2 Moderate
	DC	Corruga	tion		CD	Diag	onal							SF	Flush	-			PA	Patching 3 Severe
														SP Polishing					PH	Photograph


Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/02/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	5 of 17

Chainage				Left	Hai	nd L	ane							Righ	nt Ha	and L	ane	•			Comment
(km)		41	m	3	m	2	m	1	m	(CL	1	m	2	m	31	n	4	m		
2.500																					GENERAL COMMENT: (from Ch. 2,300m onwards)
																					Road pavement in generally good condition.
							ΡA														Minor SF / SR associated with general traffic use.
2.450							_														
21100																					
				DS,	PA							PA									1
								SR													
2.400				S	R																1
2.400				0																	1
								SR													
								31					SR								
					DA																
2.350					PA	ļ															1
																					Ch. 2,310m - Culvert Crossing
2.300																					
							PA				1										2
														DS, DF							2
2.250							PA						PA, I	D3, Di	(, UU						2
							PA							PA							2
							PA								1						2
																					2
2.200																					Ch. 2,200m to 2,440m road with guard rail.
				Ρ	A																Assessed unsafe to map by walking through.
																					Condition survey conducted from vehicle.
				DD SF																	1
2.150																					
2.100																					
2.100																					
				DD,	СС																1
2.050																					
2.050																					1
				DD SF																	
				5.																	
2.000																					
	Defe					0	dun = :								C					0+-	r Sourcita
LEGEND:	<u>Defor</u> DR						<u>:king:</u> Block			СМ	Mea	nderir	ng		<u>Surfa</u> SD	<u>ice:</u> Delai	minat	ion		<u>Othe</u> EB	r <u>r: Severity:</u> Edge Break 0 Good Condition
		Shovi	-				Croc				Cres				SS	Stripp				ED	Edge Drop Off 1 Minor
	DD DC						Trans [®] Diago			CL	Long	jitudin	aı		SR SF	Rave Flushi				HO PA	Potholing2ModeratePatching3Severe
	-		52.0												SP	Polish					Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/02/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	6 of 17

Chainage				Lef	it Ha	nd L	ane							Righ	nt Ha	nd I	ane				Comment
(km)		4	m	3	m	2	m	1n	n	С	L	1	m	2	m	3	m	4	m		
3.000																					GENERAL COMMENT: (from Ch. 2,700m)
																					Road pavement in generally good condition.
																					Minor EB both sides and occasional undulation
																					in road surface.
2.950																					
2.930	-																				
										-											
0.000										-											
2.900	-									-											
															~		DA				
						~~~									CC	C, DD,	PA				2
				PF	A, DD,					_											2
										_											
2.850				EB,	DD					_											Ch. 2,850m - Change in seal. 2
																					Ch. 2,840m - Turns into Butterwick Road.
	-					-															
	-			CC	C, EB	<b> </b>															1
	-	<u> </u>																			
2.800	_	<u> </u>																			
2.750																					
						F	PΑ														1
2.700				C	M									PA							Ch. 2,700m - Turn into Duns Creek Road 1
														PA							
																					GENERAL COMMENT: (up to Ch. 2,700m) 1
					SR																Road pavement in generally good condition.
2.650																					Minor SF / SR associated with general traffic use.
	1	1			1					1											
2.600	1				1					1											
	1				1					1											
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	1			DS	S, EB	PA, (	CC			+											1
	1	+				- · · ·	-			+									<u> </u>	-	
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2.000		-			-					+											
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2.500					-		-			+									-		
2.500	_	<u> </u>	1	L	I	I	L						L	I	I	1	1		L	L	1
LEGEND:	Defo	ormatio	on:			Crac	:king:								<u>Surfa</u>	ce:				<u>Othe</u>	er: <u>Severity:</u>
	DR	Ruttir	ng			СВ	Block				Mear		ng		SD	Dela		ion		EB	Edge Break 0 Good Condition
		Shov	-			CR	Croc				Crese				SS	Stripp				ED	Edge Drop Off 1 Minor
	DD	Depr				CT	Trans		Cl	. I	Longi	tudin	al		SR	Rave	-			НО	Potholing 2 Moderate
	DC	Corru	gatic	on		CD	Diag	onal							SF SP	Flush	-			PA DU	Patching 3 Severe
															32	Polisł	шıg			PH	Photograph

Austroads 2009 - Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design

Reference:



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/04/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	7 of 17

Chainage				Lef	t Hai	nd La	ane							Righ	nt Ha	and L	ane				Comment
(km)		4	m	r –	m	r –	m	1	m	0	CL	1	m	1	m	1	m		m		
3.500								-				-									GENERAL COMMENT:
																					Road pavement in generally good condition.
																DA	, DS				Minor EB both sides, typically associated with 1
																Brt	, 50				driveway entry to properties.
2 450																					unveway entry to propentes.
3.450																					
3.400																					
3.350	-																				
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											L										
3.250																					
0.200																					
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3.200																					
3.150																					
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															-						
3.100																					
3.050																					
																	PA				1
3.000																					
	-																				
<u>LEGEND:</u>	<u>Defo</u>						<u>king:</u>								<u>Surfa</u>					Othe	
	DR						Block					nderir	ng			Dela		ion			Edge Break 0 Good Condition
		Shov Depr		ı			Croc Trans				Cres	ent jitudin	al			Stripp Rave					Edge Drop Off1MinorPotholing2Moderate
	$\nu \nu$	rehi	ະວວເບເ			$\sim$ 1	110115	• • ci 26		υL	LOUG	յուսարի	ui		JI	nave	anna			10	z wouldle
	DC					CD	Diag	onal							SF	Flush	ina			PA	Patching 3 Severe



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/04/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	8 of 17

Chainage				Lef	't Hai	nd L	ane							Rigl	ht Ha	and l	ane	•			Comment
(km)		4	m	3	m	2	m	1	m	(	CL	1	m	2	2m	3	m	4	m		
4.000																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor EB both sides, typically associated with
	-																				driveway entry to properties.
3.950	_																				
									PA,	DD	PA	DD									1
3.900																					
3.850	-	-	-	-	-		-						-	-	-						
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	_			1								<u> </u>									
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3.600																					
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		-	-		-		-	-					-	-	-	-			-	EB ED	L
			-		-		-						-	-	-						<b>I</b>
		-	<u> </u>	-	-		<u> </u>								-						
3.500																					
	_																				
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		Rutti									Mea		ng		SD		minat	ion		EB	Edge Break 0 Good Condition
		Shov		_				odile			Cres				SS	Stripp				ED	Edge Drop Off 1 Minor
	DD	Depr						sverse		CL	Long	ntudir	al		SR SF	Rave	-			HO PA	Potholing 2 Moderate Patching 3 Severe
	DC	Corri	Jyatio	חר		CD	Diag	onai							SF SP	Flush Polisł	-			PA PH	Patching 3 Severe Photograph
																POIISI				РΠ	FILOLOGIADII



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/04/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	9 of 17

(km) 4.500 4.450		4	m	3	m	2	m	1	m	(	CL	1	m	2	m						1
4.500					1									2		3	m	4	lm	1	
																					GENERAL COMMENT:
4.450																					Road pavement in generally good condition.
4.450																					Minor SF / SR associated with general traffic use.
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																					1
							PA				F	PA, C	С		SR		EB				1
4.400																					
				EB																	Entry to property LHS 1
				LD			SP, SR	2						SP, SF	2						1
4.350							51,51							51,51	`						
	_				1															-	
																					<b>_</b>
				EB	L										<u> </u>						1
	-	<u> </u>		Ļ	<b>I</b>		<u> </u>	<u> </u>			<u> </u>			-					-	-	
4.300	_														<u> </u>						
					F	PA	1														Note: Patches under construction by PSC 1
	-							DA									EB				road crew at time of assessment.
	_							PA	1												1
4.250	-																				
	-																				Ch 4.220m Culwort Crossing
														-							Ch. 4,230m - Culvert Crossing
4.200																					
4.200	-																				
4.150																	PA				Entry to property RHS 1
4.100					1										1					-	
	-				-						ļ			-					-	-	
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	-	<u> </u>			-		<u> </u>	<u> </u>						-	-				-	-	
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		Ruttir					Block				Mea		ng		SD	Dela		ion		EB	
		Shov		_			Croc				Cres				SS	Stripp				ED	Edge Drop Off 1 Minor Potholing 2 Moderate
		Depr Corru					Trans Diag			UL	Long	μιασιμ	ıdi		SR SF	Rave Flush				HO PA	Potholing2ModeratePatching3Severe
	20	20110	5000			20	ug								SP	Polisi	-				Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/04/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	10 of 17

Chainage         Unteresting         Left Hand Lare         Normet         Comment         Comment         Comment           5.000         Image	
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EB     FA     SR     <	
EB     FA     SR     <	
EB     FA     SR     <	
EB     FA     SR     <	
EB     EB     SR     <	_
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4.700 PA, CC	
	1
4.650     EB     EB     EB     EB     EB	
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4.600 EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB EB	1
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4.550 EB EB EB EB EB EB	1
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	1 1 1 1
4.500	1
4.500	1 1 1 1
LEGEND: Deformation: Cracking: Surface: Other: Severity:	1 1 1 1
LEGEND:         Deformation:         Cracking:         Surface:         Other:         Severity:           DR         Rutting         CB         Block         CM         Meandering         SD         Delamination         EB         Edge Break         0         Good Condition	1 1 1 1
LEGEND:         Deformation:         Cracking:         Surface:         Other:         Severity:           DR         Rutting         CB         Block         CM         Meandering         SD         Delamination         EB         Edge Break         0         Good Condition	1 1 1 1



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/04/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	11 of 17

<i>a</i> >							ane									and I					Comment
(km)		4r	n	3r	n	2	m	1	n	C	CL	1	m	2	!m	3	m	4	m		
5.500				CC																	GENERAL COMMENT:
			PA	PA																	Road pavement in generally good condition.
																					Minor SF / SR / SP associated with general traffic.
5.450			SR																		<b></b>
5.450			214																		
						-											-				
5.400																					
5.350																					
																-			-		
5.300		_ ]							_ 1												
						-	-														
5.250						-											-				
5.200																					
						-	-														
5.150																					
5.100																					
											l		1		1				1		
													1		1	1			1		
													1	-	+	1		-	1		
E 050												-		-	-	-			-	-	
5.050														-	-	-			-		
												-		<u> </u>	4			-			<b>r</b>
							SR,					SR	, SS	SP	1	SR	SS		<u> </u>		
					Ρ.	A		SS								1	SR				Entry tp property LHS
				SR													SR EB				
5.000				31														L			
																		-			
EGEND:	Defor					<u>Crac</u>									<u>Surfa</u>					<u>Othe</u>	
	DR						Block				Mea		ng		SD	Dela		ion		EB	Edge Break 0 Good Condition
	DS						Croc				Cres				SS	Stripp				ED	Edge Drop Off 1 Minor
		Depre					Trans			CL	Long	jitudir	nal		SR	Rave				НО	Potholing 2 Moderate
	DC	Corru	gatio	n		CD	Diag	onal							SF SP	Flush Polisł				PA PH	Patching 3 Severe Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/04/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	12 of 17

Chainage				Lef	t Hai	nd L	ane							Rigl	nt Ha	nd L	ane				Comment
(km)		4	m	3	m	2	m	1r	n	C	CL	1	m	1	m		m	4r	m		
6.000																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF / SR / SP associated with general traffic.
																					Willor 31 / 31 / 33 / 31 / 330Clated Will general tranc.
5.950					SF,	SP		SF,	SP			SF	, SP		SF	SP					Ch. 5,950m - Green Wattle Creek Road 1 intersection LHS.
	-					1								-							
5.900																					
0.700	1																				
5.850																					
5.650																					
	–						$\left  - \right $						-	1							
	–						$\left  - \right $						-	1							
F 000	–						$\left  - \right $						-	-							
5.800																					
				СС																	Ch. 5,770m - Culvert crossing
5.750	-																				
5.700																					
5.650																					
					\$	F			SF -												1
					,	,			0.												
					Ρ	A															1
5.600																					
				DD																	1
	L					L				_											
	L			S	F	L				_											
5.550						L				_							_		_		
				L						-											
				DS,	PA					-										-	1
	1			PA		Ī								1							1
	1		Ľ								l										
5.500			DS	PA,	СС																2
						~									<u> </u>					<u> </u>	
EGEND:		ormatio Ruttir					<u>king:</u> Block		~	Ν.4	Mea	ndor	20		<u>Surfa</u> SD	<u>ce:</u> Dela	ninat	ion		<u>Othe</u> EB	<u>er: Severity:</u> Edge Break 0 Good Condition
		Shov					Croce				Cres		'9		SS	Stripp		JII JII		ED	Edge Drop Off 1 Minor
		Depr		ı			Transv				Long		al		SR	Rave				НО	Potholing 2 Moderate
		Corru					Diago				0				SF	Flush	ng			PA	Patching 3 Severe
															SP	Polish				PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/04/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	13 of 17

Chainage	L		Lef	t Ha	nd La	ane						Righ	t Ha	nd L	ane				Comment
(km)		4m	3	m	2	m	1m		CL	1n	ı	21	m	3	m	4n	n		
6.500	-																		
																		С	h. 6,480m - Clifton Lane intersection LHS.
																		G	ENERAL COMMENT:
6 450									-										bad pavement in generally good condition.
6.450									-					-					
									-									IVI	linor SF / SR associated with general traffic use.
									_										
			_												PA				-
6.400				PA, D	S														
				P	ΡΑ														
				SF															
					P	A													
6.350					PA														
				PA, C	С					$ \top$	T		_		Τ	T	T		
									1										
			1																
6.300								1	1										
				PA				1	1										Г
			F	ΡA			PA			1	ľ		P	A				Pr	operty entry both LHS & RHS.
			DS						1				-	PA	DD				
( 250			55	17(										17	00			_	
6.250									-										
				SF									SR					Pr	roperty entry on LHS
									_					-					
6.200																			
			PA	, SF			SF												
														SF					
6.150			PA																
			DS															С	h. 6,130m - Culvert crossing
																			-
				SF															
6.100				SF															
														SF					
	1							1	1										
6.050				1					1	+									
5.050								+	+							$\rightarrow$			
	+	+		-	-			+	+	+						$\rightarrow$		+	
	-			-	-			+	+							_			
6 000	+	+	+		-			+	+	+								-+	
6.000				I	L				1										
EGEND:	<u>Defc</u>	mation:			Crac	king:							<u>Surfa</u>	ce:			<u>c</u>	)ther:	<u>Severity:</u>
		Rutting				Block				andering	9		SD		minati	on			dge Break 0 Good Condition
		Shoving				Croc			Cres					Stripp					dge Drop Off 1 Minor
		Depress				Trans		CL	Long	gitudina	I			Rave	-				otholing 2 Moderate
	DC	Corruga	ation		CD	Diago	onal							Flushi Polish	-				atching 3 Severe hotograph
															00101				



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/04/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	14 of 17

Chainage				Lef	t Ha	nd L	ane							Righ	nt Ha	nd l	.ane	•			Comment
(km)		4	m	3	m	2	m	1	m	(	CL	1	m	2	m	3	m	4	m		
7.000																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF / SR associated with general traffic use.
6.950																					
6.900	-																				
6.850																					
																					Ch. 6,820m - Glenurie Close intersection RHS.
6.800																					
6.750	_																				
			_	PA	SF				SF			SF				SF					-
				PA					SF			SF					PA				
6.700					SF						PA				F	PA					
															F	ΡA					-
				DD																	
				PA								PA			СС						
6.650					_																Ch. 6,655m - Culvert crossing
					SF				SF			SF				SF PA					
																SF					
6.600																					
6.550																					
6.500																					
EGEND:		ormati Ruttir					<u>:king:</u> Bloci			см	Mea	nderi	201		<u>Surfa</u> SD	<u>ice:</u> Dela	minat	ion		<u>Othe</u> EB	<u>er: Severity:</u> Edge Break 0 Good Condition
		Shov						к codile			Cres		'n		SD	Stripp		IIUII		ED.	Edge Drop Off 1 Minor
	DD	Depr	essior			CT		sverse			Long		al		SR SF	Rave	lling			HO PA	Potholing 2 Moderate Patching 3 Severe
							-								SP	Polisł				PH	Photograph

Austroads 2009 - Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design

Reference:



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/04/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	15 of 17

Chainage				Lef	t Hai	nd L	ane							Rigi	nt Ha	and L	ane				Comment
(km)		4	m	3	m	2	m	1	m	(	CL	1	m	2	m	3	m	4	m		1
7.500																					GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF / SR associated with general traffic use.
7.450				PA DD	SF				SF							DD					
																					<b>L</b>
7.400																					
7.350																					
7.300			Ŀ	L							-			-	-						
				PA	05				SF												
					SF																
7.250										-											
7.200																					
7.200																					
										-											
7 4 5 0																					
7.150																					
7.100																					
7.050																					
7.000																					
EGEND:	Defo	ormatio	on:	_	-	Crac	:king:	-			-	-	-	-	Surfa	ice:		-	-	Othe	er: <u>Severity:</u>
	DR	Ruttir	ng			СВ	Block					nderir	ng		SD	Dela		ion		EB	Edge Break 0 Good Condition
		Shov					Croc				Cres					Stripp					Edge Drop Off 1 Minor
		Depr					Trans			CL	Long	jitudin	al			Rave					Potholing 2 Moderate
	DC	Corru	ugatio	on		CD	Diag	onal							SF	Flushi				PA	Patching 3 Severe
															SP	Polish	ing			PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	17/04/2015
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	16 of 16

Chainage				Lef	t Ha	nd La	ane							Rigl	ht Ha	and I	.ane	•			Comment
(km)		4	m	3	m	2	m	1	m	(	CL	1	m	2	!m	3	m	4	m		
8.000																				1	GENERAL COMMENT:
																					Road pavement in generally good condition.
																					Minor SF / SR associated with general traffic use.
7.950																					
																					<b>_</b>
7.900	-			SF				SF													Property entry LHS
	_																				
7 050																					
7.850																					
											-				1	-				-	
7.800																					
7.750																					
7.700																					Ch. 7,700m - Culvert crossing
	-																				
	_																				
7 ( 50																					
7.650	-																				
	-																				
7.600	1			1		1									1				1		
	1			1											1			1			
				1																	
	1			L	L	L					L	L				L					
7.550																					
															-						
															1						
															1						
7.500																					
EGEND:	Defo	rmatio	on:			Сгас	king:								<u>Surfa</u>	ice:				<u>Othe</u>	er: <u>Severity:</u>
	DR	Ruttir	ng				Block	¢		СМ	Mea	nderii	ng		SD	Dela	minat	ion		EB	Edge Break 0 Good Condition
	DS						Croc				Cres				SS	Stripp					Edge Drop Off 1 Minor
		Depr						verse		CL	Long	jitudin	al		SR	Rave	-			HO	Potholing 2 Moderate Patching 3 Severe
	DC	Corru	Jyatic	וור		CD	Diag	unai							SF SP	Flush Polisł	-			PA PH	Patching 3 Severe Photograph
															э.	. 5131					



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
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Chainage	L	Left Hand Lane         Right Hand Lane           4m         3m         2m         1m         CL         1m         2m         3m         4m														Comment					
(km)		4	m	3	m	2	m	1m (		CL		1m		2m 3m			4m				
8.500																					
8.450																					
								EN	id at	CHAI	NAGE	8.411	КМ								Clarence Town Road Intersection
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	shagalon						5								SP Polishing					PH	Photograph



Client:	Buttai Gravel Pty Ltd - Daracon Engineering Pty Ltd	Project No:	NEW14P-0135
Project:	Martins Creek Project - Code 10475	Date:	28/04/15
Location:	Road No. 5 - Paterson Road, Dunns Creek Road & Butterwick Road	Sheet:	Site Photos



PHOTO 1 - Ch. 2,180m Road pavement in generally condition on approach to embankment. Full width patching visible within embankment.



<u>PHOTO 2 - Ch. 2,900m</u> Road pavement in generally good condition. Minor edge break both sides along edges of pavement.





PHOTO 3 - Ch. 5,200m Road pavement in generally good condition. Minor surface flushing, ravelling and polishing associated with general traffic use.

Remedial patches across both lanes. Deformation shoving, depressions and expedient patches at either end and along road shoulders.



PHOTO 5 - Ch. 8,200m Road pavement in generally good condition. Minor surface flushing and ravelling associated with general traffic use.



PHOTO 6 - Ch. 8,350m Approach to Clarencetown Road intersection. Remedial patches, surface flushing and some edge break and edge drop visible.

# **APPENDIX F:**

Extract from

"Austroads 2009 – Guide to Pavement Technology, Part 5: Pavement Evaluation and Treatment Design – Appendix A, Identification, Causes and Treatment of Visual Distress"

## APPENDIX A IDENTIFICATION, CAUSES AND TREATMENT OF VISUAL DISTRESS

## A.1 Flexible Pavements

The principal modes of pavement distress of flexible pavements are as follows:

## A Deformation

- A.1 Rutting
- A.2 Shoving (plastic flow)
- A.3 Depression and heave
- A.4 Corrugation

## B Cracking

- B.1 Block cracking
- B.2 Crocodile cracking
- B.3 Transverse cracking
- B.4 Diagonal cracking
- B.5 Meandering cracking
- B.6 Crescent-shaped cracking
- B.7 Longitudinal cracking

## C Edge defects

### D Delamination

### E Stripping

- E.1 Sprayed seal
- E.2 Asphalt
- F Ravelling
- G Flushing
- H Polishing
- I Potholing
- J Failed patches.

Some of these distress types are shown in Figure A.1, Figure A.2 and Figure A.3 below.

These defects are described below, together with a photograph and a listing of the likely causes of the particular defect and possible treatments.

The causes of these defects can be categorised into three groupings:

- structural
- environmental
- construction quality.

In many cases, there may be more than one apparent cause which may make it difficult to identify the primary cause of the defect. For further details see Part 3 of the Guide.



Figure A.1: Deformation defects in flexible pavements



Figure A.2: Cracking of flexible pavements



Figure A.3: Surface distress of flexible pavements

### A.1 Deformation – Rutting (DR)

#### **Description:**

Longitudinal deformation in a wheelpath. Result of densification of pavement layers, including subgrade or plastic shear deformation of upper layers. Bound lower layers may not be affected. Length to width ratio – determined using a straight edge laid on the high points – normally greater than four to one. May occur in one or both wheelpaths of a lane but mostly in the outer wheelpath nearest to the pavement edge.



#### Causes:

- ingress of water through the pavement surfacing or road edges into base, sub-base and subgrade
- structural overloading of the pavement and/or inadequate pavement thickness (exacerbated, in asphalt pavements, by high pavement temperatures)
- inadequate quality of pavement materials
- poor quality construction control, particularly compaction and drainage

pavement at terminal condition.

#### Non-structural treatments:

- in-place asphalt recycling
- cold planing to remove high points
- cold overlays, slurry seals (provided rut depth ≤ 15 mm) and microsurfacing
- thin asphalt surfacings (non-structural)
- ultra thin overlays provided rut depth  $\leq$  2.5 x mix size
- rip, reshape and reseal appropriate for granular pavements.

#### Structural treatments:

- drainage improvements
- asphalt overlay or granular resheet
- deep lift asphalt
- partial reconstruction and asphalt overlay
- in situ stabilisation
- heavy patching
- total reconstruction.

#### A.2 Deformation – Shoving, Plastic Flow (DS)

#### **Description:**

Shoving: Bulging and horizontal deformation of the road surface – generally occurs in areas of high shear stress.

Plastic flow: Deformation in asphalt of asphalt surfaces.



#### Causes:

- lack of containment at pavement edge combined with swelling of moisture-susceptible pavement material and/or repeated passage of heavy vehicles on relatively narrow sealed formations
- inadequate pavement thickness
- inadequate quality of pavement materials e.g. asphalt mixes with poor aggregate interlock combined with turning/accelerating traffic; or poor binder/aggregate adhesion (stripping)
- inadequate compaction of surfacing or base material
- localised softening of asphalt binder due to fuel/oil spillage, or temperature-susceptible binder or excess binder content in asphalt
- lack of bond between pavement layers
- moisture in pavement and/or subgrade.

#### Non-structural treatments:

- in-place asphalt recycling
- cold planing of unsound material and replacement with adequate material
- where due to deficiency of unsealed shoulder, resheet shoulder.

#### Structural treatments:

- drainage improvements
- asphalt or granular overlays
- partial reconstruction and overlay
- in situ stabilisation
- heavy patching
- reconstruction.

## A.3 Deformation – Depression and Heave (DD)

#### **Description:**

Irregular depressions and bulges in the pavement surface.



#### Causes:

- moisture movement, especially in expansive clay subgrades
- inadequate drainage
- inadequate compaction, particularly of base material
- inadequate quality of pavement materials
- settlement of trench backfill due to poor compaction or softening caused by leakage from services.

#### Non-structural treatments:

- regulate with asphalt or cold overlay
- reduce moisture ingress by sealing shoulders.

#### **Structural treatments:**

- drainage improvements
- asphalt or granular overlays
- partial reconstruct and overlay
- in situ stabilisation
- heavy patching
- reconstruction.

## A.4 Deformation – Corrugations (DC)

#### **Description:**

Transverse undulations in the pavement surface or base, most commonly associated with spray seal or unsealed pavements but can occur in thin asphalt surfacing.

Wavelengths of undulations can range between 0.3 and 2 metres.



#### Causes:

- local failure in the pavement
- inadequate material quality; e.g. inability of asphalt surfacing to resist heavy vehicle loading
- defective works practice such as irregular compaction energy input
- poor bonding between thin asphalt surfacing and concrete base.

- remove and replace base and reseal or overlay
- in situ stabilisation
- cold plane and overlay asphalt surfaced pavements.

## B.1 Cracking – Block Cracking (CB)

#### **Description:**

Interconnected cracks forming a series of blocks approximately rectangular in shape. Typically distributed over a large area of pavement.



#### Causes:

- reflection from underlying joints
- shrinkage or fatigue in an underlying bound (cemented) or macadam layer
- inadequate slab thickness
- ageing and hardening of bituminous surfacing.

- crack filling
- SAM seals, reinforced seals, ultra thin overlays
- SAMI or geotextile seal plus asphalt overlay
- cold plane and overlay
- in situ asphalt recycling and overlay.

## B.2 Cracking – Crocodile Cracking (Alligator Cracking, Crazing) (CR)

#### **Description:**

Interconnected or interlaced cracks forming a series of small polygons resembling a crocodile skin.

Crocodile cracking is often confined to the wheelpaths and may have a noticeable longitudinal grain.

The presence of crocodile cracking usually signifies that the surfacing has reached the end of its design life.



#### Causes:

- fatigue-induced structural cracking (high pavement curvature value)
- inadequate pavement thickness
- moisture in formation
- inadequate quality of pavement or surfacing materials (e.g. brittle or aged bitumen or low-strength aggregates)
- lack of compaction in asphalt or cementitious layers.

#### **Non-structural Treatments:**

- SAM seals, reinforced seals, ultra thin overlays
- SAMI or geotextile seal plus thin asphalt overlay
- cold planing and thin overlay
- in situ asphalt recycling.

#### Structural treatment:

- drainage improvements in combination with another treatment such as an overlay
- SAMI plus asphalt overlay
- in situ asphalt recycling plus overlay
- cold planing plus overlay
- in situ stabilisation
- heavy patching
- reconstruction.

## **B.3** Cracking – Transverse Cracking (CT)

#### Description:

An unconnected crack running across the pavement.



#### Causes:

- reflection of shrinkage crack or joint from an underlying cemented base
- construction joint or shrinkage crack in asphalt surfacing (shrinkage cracking in asphalt can be related to low ambient temperatures and/or bitumen hardening)
- structural failure of cement concrete base
- shrinkage of slab during curing as a result of sawing joints too late or excess slab length
- settlement associated with an underground service or a structure (bridge/culvert)
- intrusion of tree roots into the subgrade or pavement layers.

- crack seal
- SAM seals, reinforced seals, ultra thin overlays
- SAMI or geotextile seal plus asphalt overlay
- cold planing and overlay
- in situ asphalt recycling.

## **B.4** Cracking – Diagonal Cracking (CD)

#### **Description:**

An unconnected crack running diagonally across the pavement.



#### Causes:

- age hardening of bitumen
- shrinkage of slab during curing as a result of sawing joints too late or excess slab length
- reflection of underlying joint
- settlement associated with an underground service or a structure (bridge/culvert)
- construction joints
- intrusion of tree roots.

- crack seal
- SAM seals, reinforced seals, ultra thin overlays
- SAMI or geotextile seal plus asphalt overlay
- cold planing and overlay
- in situ asphalt recycling and overlay.

## **B.5** Cracking – Meandering Cracking (CM)

#### Description:

Unconnected irregular crack, varying in line and direction; which usually occurs singly.



#### Causes:

- moisture in formation
- reflection of shrinkage cracking from bound base
- in asphalt surfacings on concrete pavements, due to inadequate slab thickness, unstable slabs or slab settlement
- shrinkage in concrete slabs during curing as a result of delay in sawing joints or excessive slab lengths
- settlement associated with an underground service or a structure (bridge/culvert)
- intrusion of tree roots into subgrade or pavement layers.

- crack filling
- SAM seals, reinforced seals, ultra thin overlays
- SAMI or geotextile seal plus asphalt overlay
- cold planing and overlay
- in situ asphalt recycling and overlay
- remove trees.

## **B.6** Cracking – Crescent Shaped Cracking (CC)

#### **Description:**

Crescent, or half moon shaped, cracks often occurring in closely-spaced parallel groups and commonly associated with shoving.

Most commonly associated with asphalt surfacings.



#### Causes:

- poor bond between wearing course and underlying layers
- inadequate thickness of wearing course
- dragging of asphalt under paver screed during laying, especially at low temperatures
- high horizontal shear forces associated with turning and acceleration movements
- inadequate asphalt mix for the traffic conditions
- low modulus base layer.

#### **Non-structural Treatments:**

- crack filling
- cold planing and overlay
- in situ asphalt recycling and overlay.

#### **Structural Treatments:**

- overlay
- heavy patching
- reconstruction.

## **B.7** Cracking – Longitudinal Cracking (CL)

#### **Description:**

Cracks which run longitudinally along the pavement.

Can occur singly or as a series of parallel or echelon cracks.

Some limited branching can occur.

Longitudinal cracking is often the first type of cracking initiated in a wheelpath or rut.



#### Causes:

When occurring singly:

- reflection of joints or shrinkage cracks in underlying cemented base
- poorly constructed joint in asphalt surfacing
- displacement of joint at pavement widening
- reflection of joints associated with road widening.

When occurring as a series of near-parallel cracks:

- volume change of expansive clay subgrade
- cyclical weakening of the pavement edge
- differential settlement between cut and fill
- reflection of cracks in underlying cemented sub-base.

- drainage improvements
- sealing shoulders
- crack filling
- cold planing and overlay
- heavy patching
- reconstruction.

### C Edge Break (EB)

#### **Description:**

Occurs along the unsupported edges of asphalt or sprayed seal surfaces where the surface of an unsealed shoulder is below the level of the adjacent pavement surface. Seal/shoulder interface is directly trafficked resulting in abrasion and shear failure of pavement edge (manifest as fretting). May occur locally or be continuous over a length of road. Frequently occurs on tight curves or where the edge of the pavement is vulnerable to tyre wear and attrition.



#### Causes:

- an inadequate road alignment or sealed pavement width which causes vehicles to traffic the pavement edge
- omission of a shoulder resheet following pavement overlay
- erosion of shoulder by wind and/or water
- growth of vegetation at the edge of the seal.

- resheet shoulder
- bitumen stabilise shoulders
- seal shoulders
- local pavement widening.

### C Edge Drop-Off (ED)

#### **Description:**

The vertical distance from the surface of the seal at the edge to the surface of the shoulder. Not usually considered a deflect if the drop-off is less than 10 mm to 15 mm.



#### Causes:

- an inadequate road alignment or sealed pavement width which causes vehicles to traffic the pavement edge
- omission of a shoulder resheet following pavement overlay
- erosion of shoulder by wind and/or water
- growth of vegetation at the edge of the seal.

- resheet shoulder
- bitumen stabilise shoulders
- seal shoulders
- local pavement widening.

## D Delamination (SD)

#### **Description:**

Loss of a discrete section of wearing course layer.

A feature of delamination is that there is usually a clear delineation between the wearing course and the lower layer.



#### Causes:

- inadequate sweeping of granular base prior to priming
- inadequate prime or tack coat before placement of upper layers
- dislodging of fragments initiated by block cracking or crocodile cracking
- seepage of water through cracks in asphalt layer, resulting in breaking of bond between surface and lower layers
- weak loose layer immediately underlying a seal
- adhesion of surface binder to vehicle tyres
- inadequate thickness of asphalt layer.

- cold planing and overlay
- reseal.

## E.1 Stripping of Sprayed Seals (SS)

#### **Description:**

The loss of aggregate from a sprayed seal leaving the binder exposed to direct tyre contact.



#### Causes:

- low binder application rate
- poor binder to stone adhesion due to dirty, dusty or wet aggregate exacerbated by lack of pre-coat on the aggregate
- age hardening (oxidation) or adsorption of binder
- incorrect blending of binder (cutter or flux oil content too high)
- stone deterioration
- inadequate rolling before opening of seal to traffic, particularly on curves and bends
- inappropriate stone size in reseal
- temperature susceptible bitumen.

- enrichment or rejuvenation of binder only where aggregate loss is limited to a few stones
- reseal.

## E.2 Stripping of Asphalt (SS)

#### **Description:**

The loss of bitumen and/or mineral aggregate or filler from an asphalt layer. The stripping could occur on the surface or within the layer.

Stripping within the layer may lead to the development of potholes.

Photographs show white fines that have been pumped to surface, an early indicator of stripping.



#### Causes:

- moisture entry through excessive voids or segregated or cracked surface
- low binder content
- age hardening (oxidation) or adsorption of binder
- incorrect mix design.

#### **Treatments:**

 depending on the extent of the stripping, the treatments may range from isolated repairs to complete removal and replacement of the affected asphalt layer.

## F Ravelling (or Fretting) (SR)

#### **Description:**

Progressive disintegration of pavement surface by loss of both binder and aggregate.



#### Causes:

- binder hardening and oxidation or damage by fuel
- inappropriate asphalt mix or poor mix design
- inadequate compaction and/or construction defects due to wet or cold weather, or the use of dirty, dusty or wet aggregate
- oil and fuel spillages.

- sprayed enrichment or rejuvenation
- cold overlay, slurry surfacing and microsurfacings
- asphalt overlay.

## G Flushing (or Bleeding, Fatty or Slick Surface, Black Spots) (SF)

#### **Description:**

An excess of binder on the surface of a pavement, which is liable to pick-up on tyres during hot weather. A potential safety concern because of loss of skid resistance.

Manifest as low texture depth and inadequate tyre to stone contact.



#### Causes:

- flushing in the underlying layer i.e. a previous surfacing
- inappropriate asphalt type or inadequate mix design
- excessive rate of application of binder with respect to stone size in sprayed seals
- excessive prime or poor prime penetration into granular base causing excess binder in the surfacing
- in a seal or asphalt laid over a primer seal before volatiles in primer binder have evaporated
- penetration or punching of aggregate into an underlying layer e.g. low strength base
- oil and fuel spillages.

- reseal
- solvent treatment plus additional aggregate for flushed sprayed seals
- cold planing, scabbling and grooving for fatty asphalt
- asphalt overlay.

## H Polishing (SP)

#### **Description:**

Smoothing and rounding of the upper surface of a sealing aggregate, usually occurs in the wheel tracks. Identified by relative appearance and feel of trafficked and untrafficked areas.

Polished areas will feel relatively smooth and will sometimes be noticeably shiny.

The degree of polishing cannot be quantified by observation.



#### Causes:

- inadequate resistance to polishing of surface aggregates, particularly by heavy traffic
- use of naturally smooth aggregates (e.g. water worn gravel).

- reseal
- cold overlay, slurry seal, microsurfacing
- ultra thin overlay
- asphalt overlay.

## I Potholing (HO)

#### **Description:**

A steep-sided or bowl-shaped cavity extending into layers below the wearing course.



#### Causes:

- loss of surface material due to ravelling, stripping, cracking and/or delamination
- load-associated disintegration of the base
- 'pick-up' of bitumen wearing surface caused by binder adhesion to tyres
- moisture entry into a granular base through cracked surface course, resulting in localised softening
- poor quality base material.

- normally repaired by routine maintenance techniques
- reseal
- asphalt overlays.

#### J Patches: Expedient Patch and Reconstructed Patch (PA)

#### **Description:**

A repaired section of pavement ranging in size from less than 1 m² to many linear metres of a half or even full pavement width. It may or may not be associated with either a loss of serviceability (apart from a loss of appearance) or structural capacity. Expedient patches will not normally be straight sided and are often a temporary measure. They may contribute to increased road roughness and subsequent further distress. Example of Expedient Patch Reconstructed Patches are generally more permanent and will usually be straight sided. **Example of Reconstructed Patch** Causes:

- expedient patch: the repair of surfacing deficiencies (deformation or rutting, cracking, stripping, edge break etc.) without prior removal of the affected material
- reconstruction patch: ranges from correction of a pavement deficiency to the . reinstatement of a service trench
- inadequate compaction may lead to further deformation and distress.

#### Treatments:

A patch does not indicate the need for any further action but many patches, particularly . within a short time period, indicate that there may be a systemic problem in the pavement that requires a more considered treatment. Consideration should be given to the reasons for the patching and a resurfacing appropriate to that type of defect.