Date: 10th February 2014

J Wyndham Prince
PO Box 4366
Penrith Westfield NSW 2750

Attn: Brett Buckpitt

JKW Ref 5892 - JORDAN SPRINGS – Village 4C,D,E&F
CCTV review

Brett,

Please find enclosed the CCTV disk and SEWRAT report for the storm water drainage for Jordan Springs Village 4C,D,E&F. JKW have reviewed the CCTV footage and concur the report accurately represents the CCTV without omission of defects.

The following lines are of concern and will need to be investigated further for remediation works:

- 19/3 – 19/4 (5.11m from 19/3): circumferential crack of 1mm width from 8-4 o'clock
- 21/7 – 21/8 (10.24m from 21/8): break at 7 o'clock; believed to be patched but requires confirmation
- 24/2 – 24/3 (11.94m from 24/3): large break at top of pipe; looks to be repaired but requires further investigation
- 24/5 – 24/6 (2.16m from 24/5): chipping/breaking at joint at top of pipe
- 24/6 – 24/7 (7.65m from 24/7): chipping/breaking at joint at top of pipe
- 24/6 – 24/7 (19.68m from 24/7): chipping/breaking at joint at top of pipe
- 24/6 – 24/7 (27.79m from 24/7): chipping/breaking at joint at top of pipe
- 24/6 – 24/7 (35.84m from 24/7): chipping/breaking at joint at top of pipe
- 29/4 – 29/5 (9.76m from 29/4): puncture at 9 o'clock; looks to be repaired but requires confirmation
- 29/4 – 30/1 (1.25m from 30/1): chipping/breaking at joint at top of pipe
- C/2 – C/3 (6.74m from C/2): rubber deposit on walls of pipe possibly from patching lifting holes; needs confirmation
- 01/15 – 01/16 (17.31-18.08m from 01/15): 2mm wide circumferential crack, punctures in pipes, chips and breaks along this span
- 24/9 – 21/12 (4.46m from 24/9): Puncture at top of pipe; looks to be repaired but needs confirmation

Additionally, there are several lines that act as outlets to the sediment basins / drainage channels and as a result, majority of these lines are partially filled with water whilst the sediment basin holds water. The following lines could not be camera'd as a result:

- 19/6 – A/2
- 19/6 – 19/7
- 21/12 – C/2
- C/2 – C/3

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Furthermore, the following lines were not camera'd by the CCTV subcontractor and therefore do not have the supporting video and written evidence. Testing of this line will be conducted in the coming days and provided for review once obtained:

- 35/3 – 34/1

Regards,

Josh Vermeer
For JK Williams Contracting Pty Ltd.

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WSA assessment

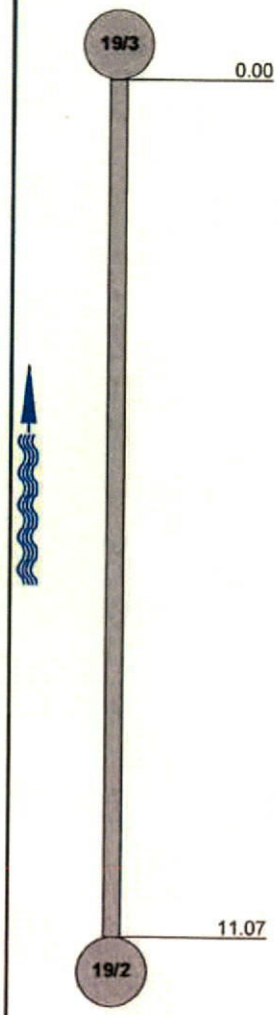
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**1**	**19/2-19/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**19/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 4**	Precipitation.:	**No**	DS MH:	**19/3**
Asset Location		Flow control		Inspect Lenght :	**11.07 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**900 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:90 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 19/3

11.07 Finish node, grated inlet pit, Nodename: 19/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

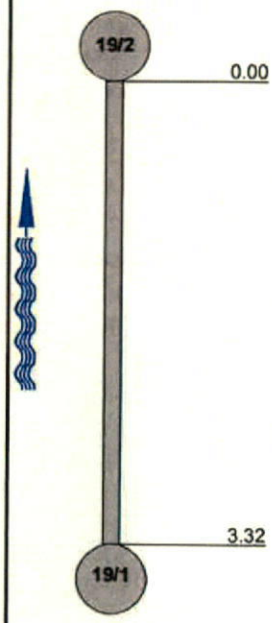
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**2**	**19/1-19/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**19/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 4**	Precipitation.:	**No**	DS MH:	**19/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**3.32 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**900 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:50 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 19/2

3.32 Finish node, grated inlet pit, Nodename: 19/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

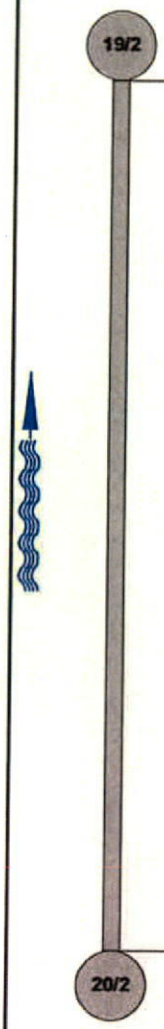
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**3**	**20/2-19/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**20/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 4**	Precipitation.:	**No**	DS MH:	**19/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**48.71 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**750 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:390 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 19/2

48.71 Finish node, grated inlet pit, Nodename: 20/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

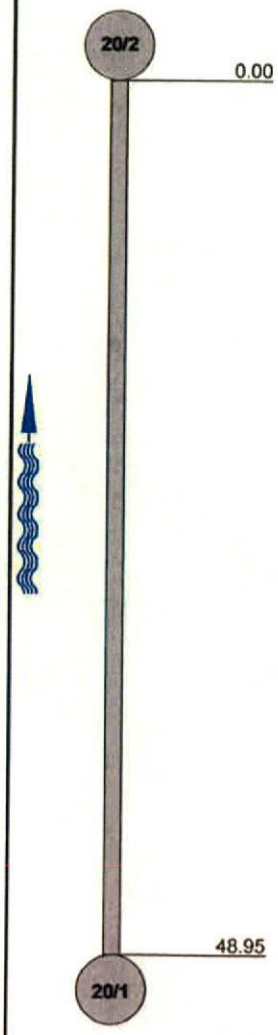
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**4**	**20/1-20/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**20/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 4**	Precipitation.:	**No**	DS MH:	**20/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**48.95 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**750 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:390 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 20/2

48.95 Finish node, grated inlet pit, Nodename: 20/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**5**	**19/3-19/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**19/3**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 4**	Precipitation.:	**No**	DS MH:	**19/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.68 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**900 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:60	Position	Observation
19/3	0.00	Start node, grated inlet pit, Nodename: 19/3
	5.11	Circumferential surface crack , width 1mm , from 8 to 4 o'clock
19/4	6.68	Finish node, grated inlet pit, Nodename: 19/4

5.11 m

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	0.1	0.01	0.1	1	0	0	0	0	1

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Inspection Pictures

Location/Street	Town or suburb:	Date :	Section number:	Sewer Ref.:
Road 4		**30/01/2014**	**5**	**19/3-19/4**

Photo: 193-194_193_194_30012014_080604_A.JPG
5.11m, Circumferential surface crack , width 1mm , from 8 to 4 o'clock

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WSA assessment

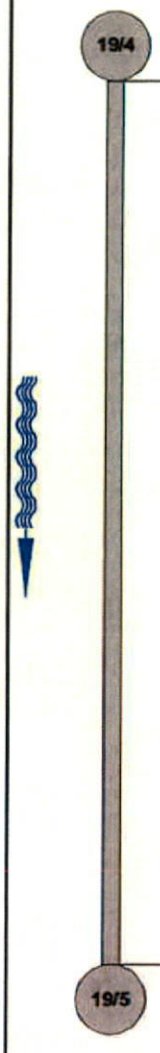
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**6**	**19/4-19/5**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**19/4**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 4**	Precipitation.:	**No**	DS MH:	**19/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**13.31 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**900 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:105 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 19/4

13.31 Finish node, grated inlet pit, Nodename: 19/5

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

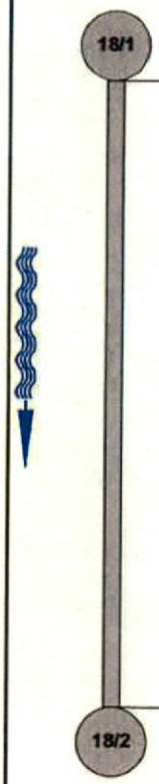
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**7**	**18/1-18/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**18/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 4**	Precipitation.:	**No**	DS MH:	**18/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**4.50 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**600 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 18/1

4.50 Finish node, grated inlet pit, Nodename: 18/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**8**	**18/2-18/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**18/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 4**	Precipitation.:	**No**	DS MH:	**18/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**11.60 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**600 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105 **Position** **Observation**

18/2 0.00 Start node, grated inlet pit, Nodename: 18/2

11.60 Finish node, grated inlet pit, Nodename: 18/3 **18/3**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**9**	**21/2-21/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**21/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**30.16 m**

Purpose of Inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:240 **Position** **Observation**

0.00 Start node, grated inlet pit, Nodename: 21/3

30.16 Finish node, grated inlet pit, Nodename: 21/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

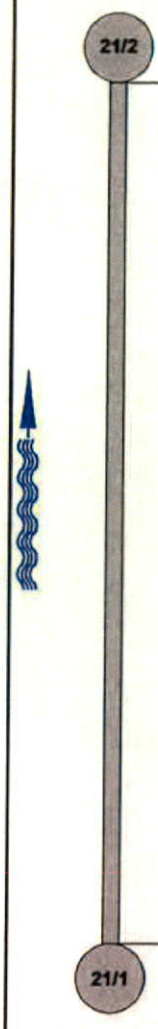
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**10**	**21/1-21/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**21/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**21/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**33.41 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:270 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 21/2

33.41 Finish node, grated inlet pit, Nodename: 21/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**11**	**21/3-21/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**21/3**
Suburb:	**Jordan Springs**	Client	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**32.39 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:270 **Position** **Observation**

0.00 Start node, grated inlet pit, Nodename: 21/3

32.39 Finish node, grated inlet pit, Nodename: 21/4

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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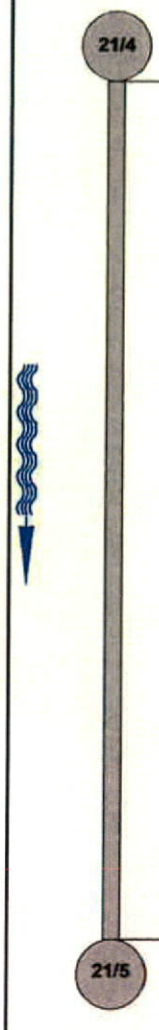
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**12**	**21/4-21/5**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**21/4**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**7.40 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
	0.00	Start node, grated inlet pit, Nodename: 21/4
	7.40	Finish node, grated inlet pit, Nodename: 21/5



STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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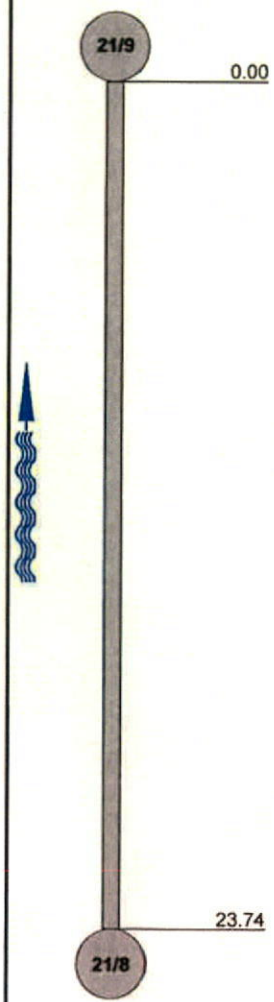
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**13**	**21/8-21/9**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**21/8**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/9**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**23.74 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:195 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 21/9

23.74 Finish node, grated inlet pit, Nodename: 21/8

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**14**	**21/7-21/8**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**21/7**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/8**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**43.33 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:345 **Position** **Observation**

10.24 m

0.00 Start node, grated inlet pit, Nodename: 21/8

10.24 Breaking, all pieces are present but some of them are visibly displaced from position, length of break 100 , at 7 o'clock

43.33 Finish node, grated inlet pit, Nodename: 21/7

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	50	1.15	50	4	0	0	0	0	1

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Inspection Pictures

Location/Street	Town or suburb:	Date :	Section number:	Sewer Ref.:
Road 5		**30/01/2014**	**14**	**21/7-21/8**

Photo: 217-218_217_218_30012014_092123_A.JPG
10.24m, Breaking, all pieces are present but some of them are visibly displaced from position, length of break 100 , at 7 o'clock

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WSA assessment

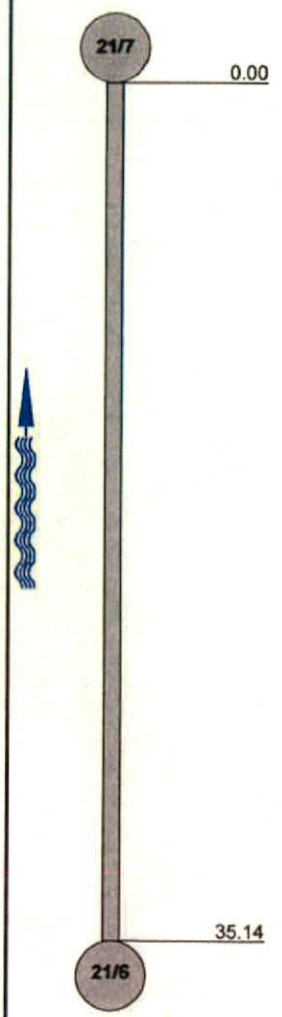
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**15**	**21/6-21/7**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**21/6**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/7**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**35.14 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:285 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 21/7

35.14 Finish node, grated inlet pit, Nodename: 21/6

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

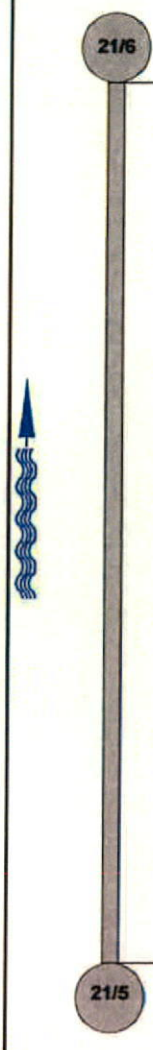
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**16**	**21/5-21/6**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**21/5**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**30.35 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:240 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 21/6

30.35 Finish node, grated inlet pit, Nodename: 21/5

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

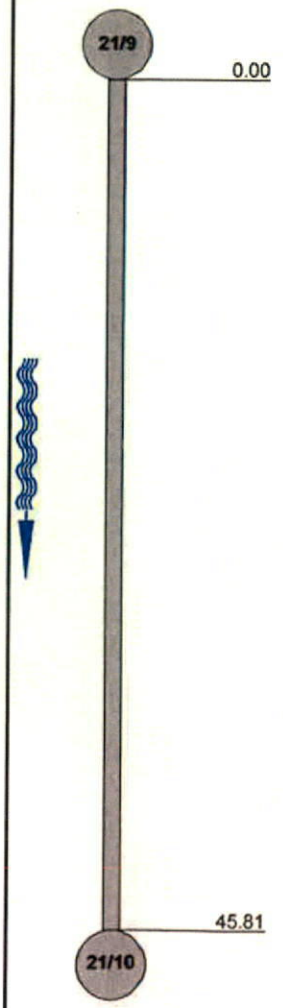
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**17**	**21/9-21/10**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**21/9**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/10**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**45.81 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:375 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 21/9

45.81 Finish node, grated inlet pit, Nodename: 21/10

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**18**	**9/1-21/10**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**9/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/10**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.68 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
21/10	0.00	Start node, grated inlet pit, Nodename: 21/10
	6.68	Finish node, grated inlet pit, Nodename: 9/1
9/1		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**19**	**21/10-21/11**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**21/10**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/11**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**25.32 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**525 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:210 **Position** **Observation**

0.00 Start node, grated inlet pit, Nodename: 21/10

25.32 Finish node, grated inlet pit, Nodename: 21/11

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

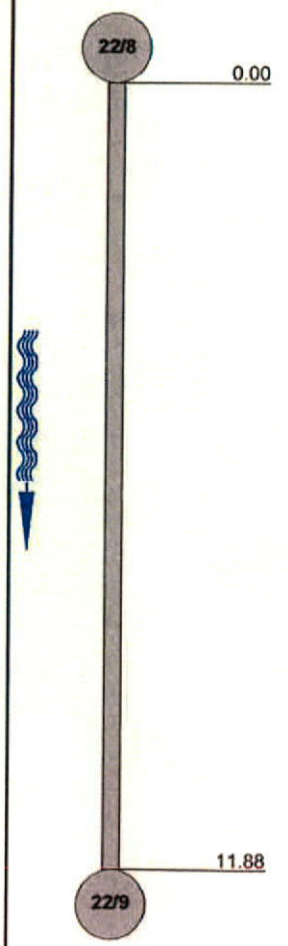
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**20**	**22/8-22/9**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**22/8**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**22/9**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**11.88 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**525 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 22/8

11.88 Finish node, grated inlet pit, Nodename: 22/9

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**21**	**22/9-21/11**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**22/9**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**21/11**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.48 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**525 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
22/9	0.00	Start node, grated inlet pit, Nodename: 22/9
21/11	6.48	Finish node, grated inlet pit, Nodename: 21/11

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**22**	**48/1-22/8**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**48/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**22/8**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**7.33 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60 **Position** **Observation**

22/8 0.00 Start node, grated inlet pit, Nodename: 22/8

7.33 Finish node, grated inlet pit, Nodename: 48/1

48/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

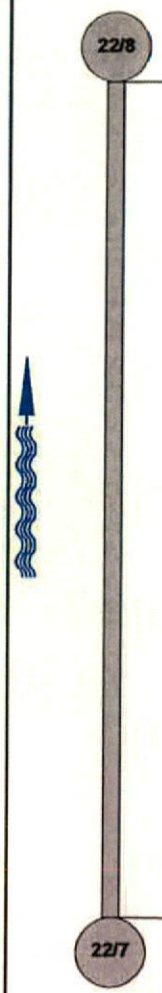
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**23**	**22/7-22/8**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**22/7**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**22/8**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**28.83 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:240 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 22/8

28.83 Finish node, grated inlet pit, Nodename: 22/7

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

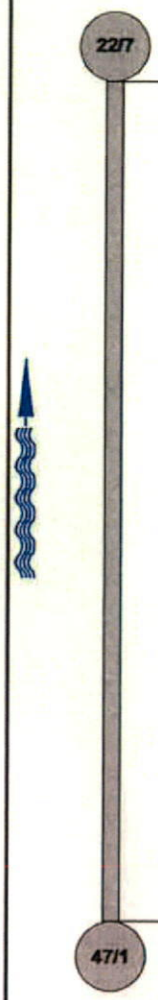
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**24**	**47/1-22/7**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**47/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**22/7**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**9.05 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:75 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 22/7

9.05 Finish node, grated inlet pit, Nodename: 47/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

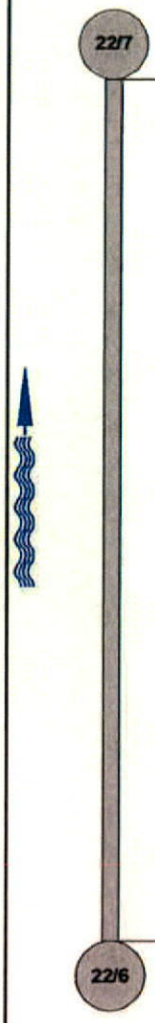
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**25**	**22/6-22/7**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**22/6**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**22/7**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**51.98 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:420 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 22/7

51.98 Finish node, grated inlet pit, Nodename: 22/6

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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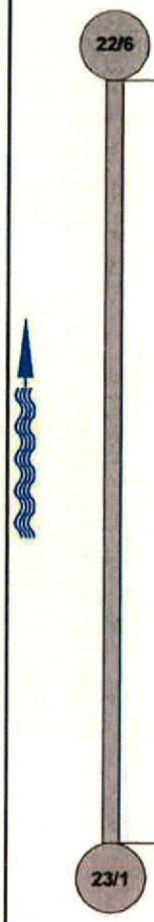
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**26**	**23/1-22/6**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**23/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**22/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**8.22 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:75 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 22/6

8.22 Finish node, grated inlet pit, Nodename: 23/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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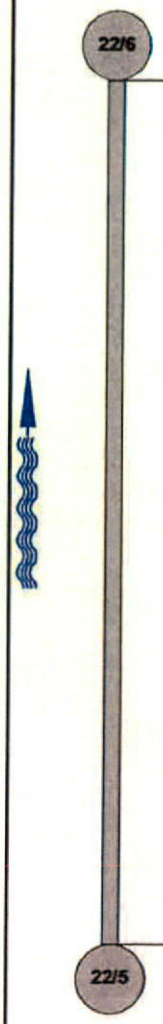
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**27**	**22/5-22/6**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**22/5**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**22/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**48.38 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:390 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 22/6

48.38 Finish node, grated inlet pit, Nodename: 22/5

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**28**	**07/1-22/5**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**07/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**22/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**7.22 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
22/5	0.00	Start node, grated inlet pit, Nodename: 22/5
	7.22	Finish node, grated inlet pit, Nodename: 07/1
07/1		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**29**	**113/2-07/1**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**113/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**07/1**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**5.76 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
07/1	0.00	Start node, grated inlet pit, Nodename: 07/1
113/2	5.76	Finish node, grated inlet pit, Nodename: 113/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**30**	**102/4-22/5**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**102/4**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**22/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**5.27 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
22/5	0.00	Start node, grated inlet pit, Nodename: 22/5
102/4	5.27	Finish node, grated inlet pit, Nodename: 102/4

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

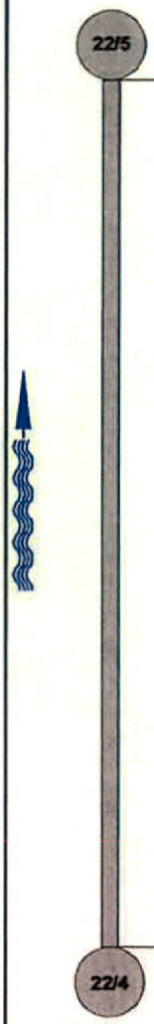
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**31**	**22/4-22/5**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**22/4**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**22/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**24.29 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:195 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 22/5

24.29 Finish node, grated inlet pit, Nodename: 22/4

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

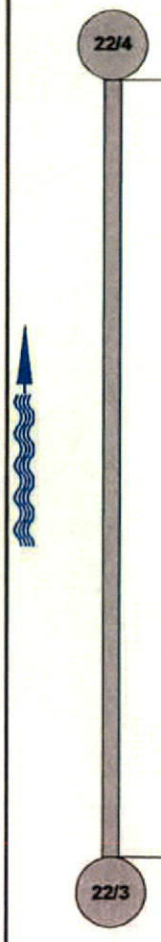
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**32**	**22/3-22/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**22/3**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 6**	Precipitation.:	**No**	DS MH:	**22/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**13.40 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:120 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 22/4

13.40 Finish node, grated inlet pit, Nodename: 22/3

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

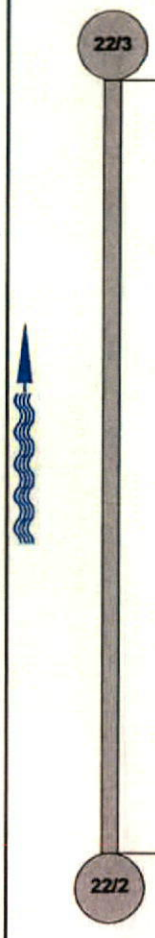
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**33**	**22/2-22/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**22/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**22/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**11.67 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 22/3

11.67 Finish node, grated inlet pit, Nodename: 22/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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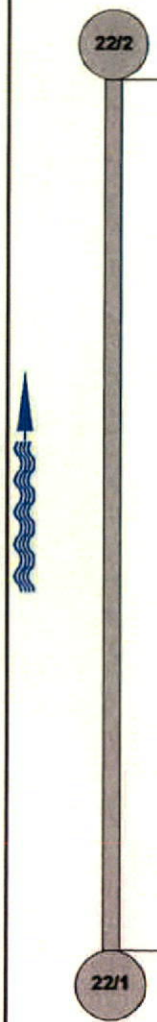
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**34**	**22/1-22/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**22/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**22/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**37.53 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:300 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 22/2

37.53 Finish node, grated inlet pit, Nodename: 22/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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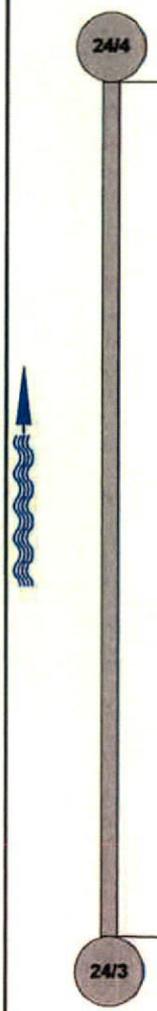
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**35**	**24/3-24/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**24/3**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**24/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**53.40 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:435 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 24/4

53.40 Finish node, grated inlet pit, Nodename: 24/3

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

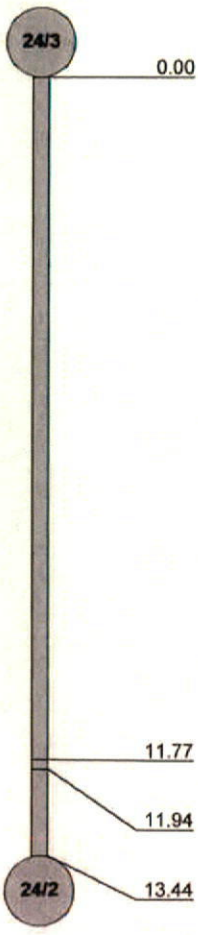
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**36**	**24/2-24/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**24/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**24/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**13.44 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:120 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 24/3


11.77 m


11.94 m


11.94 m

11.77 Point repair, hole repaired , length: 50mm, repaired externally, at 1 o'clock

11.94 Point repair, hole repaired , length: 1000mm, repaired externally, from 10 to 3 o'clock

13.44 Finish node, grated inlet pit, Nodename: 24/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Inspection Pictures

Location/Street	Town or suburb:	Date :	Section number:	Sewer Ref.:
Road 5		**30/01/2014**	**36**	**24/2-24/3**

Photo: 242-243_242_243_30012014_123306_A.JPG
11.77m, Point repair, hole repaired , length: 50mm, repaired externally, at 1 o'clock

Photo: 242-243_242_243_30012014_123406_A.JPG
11.94m, Point repair, hole repaired , length: 1000mm, repaired externally, from 10 to 3 o'clock

Photo: 242-243_242_243_30012014_123413_B.JPG
11.94m, Point repair, hole repaired , length: 1000mm, repaired externally, from 10 to 3 o'clock

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**37**	**24/1-24/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**24/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**24/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**8.48 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:75	Position	Observation
24/2	0.00	Start node, grated inlet pit, Nodename: 24/2
	8.48	Finish node, grated inlet pit, Nodename: 24/1
24/1		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**38**	**24/4-24/5**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**24/4**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**24/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**24.77 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:210 **Position** **Observation**

0.00 Start node, grated inlet pit, Nodename: 24/4

24.77 Finish node, grated inlet pit, Nodename: 24/5

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**39**	**24/5-24/6**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**24/5**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**24/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**9.96 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:90	Position	Observation
24/5	0.00	Start node, grated inlet pit, Nodename: 24/5
	2.16	Breaking, some pieces are missing, length of break 100, at joint, at 12 o'clock
24/6	9.96	Finish node, grated inlet pit, Nodename: 24/6

2.16 m

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	60	6.02	60	5	0	0	0	0	1

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Inspection Pictures

Location/Street	Town or suburb:	Date :	Section number:	Sewer Ref.:
Road 5		**30/01/2014**	**39**	**24/5-24/6**

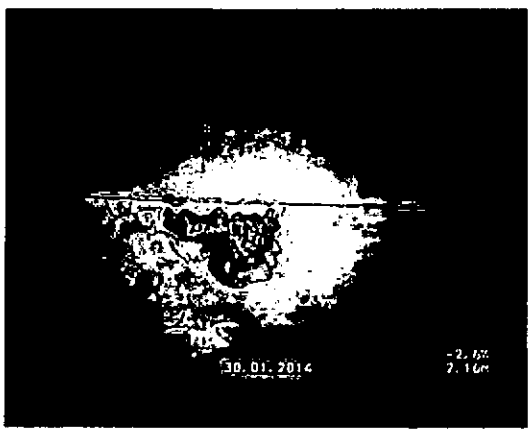

Photo: 245-246_245_246_30012014_130359_A.JPG
2.16m, Breaking, some pieces are missing, length of break 100, at joint, at 12 o'clock

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WSA assessment

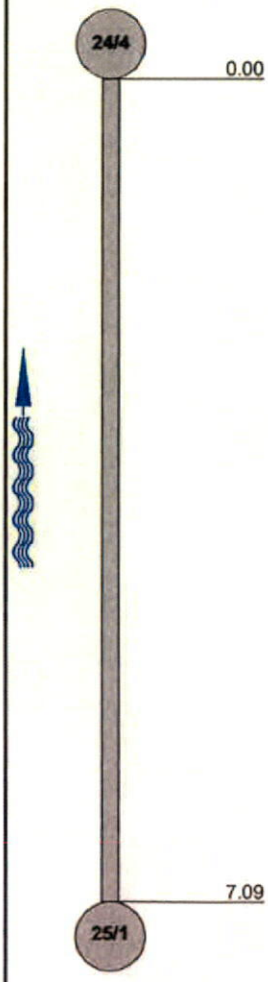
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**40**	**25/1-24/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**25/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**24/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**7.09 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 24/4

7.09 Finish node, grated inlet pit, Nodename: 25/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**41**	**27/3-27/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**27/3**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 8**	Precipitation.:	**No**	DS MH:	**27/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.68 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
27/3	0.00	Start node, grated inlet pit, Nodename: 27/3
27/4	6.68	Finish node, grated inlet pit, Nodename: 27/4

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**42**	**27/4-24/5**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**27/4**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 8**	Precipitation.:	**No**	DS MH:	**24/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**12.32 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105 **Position** **Observation**

0.00 Start node, grated inlet pit, Nodename: 27/4

12.32 Finish node, grated inlet pit, Nodename: 24/5

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

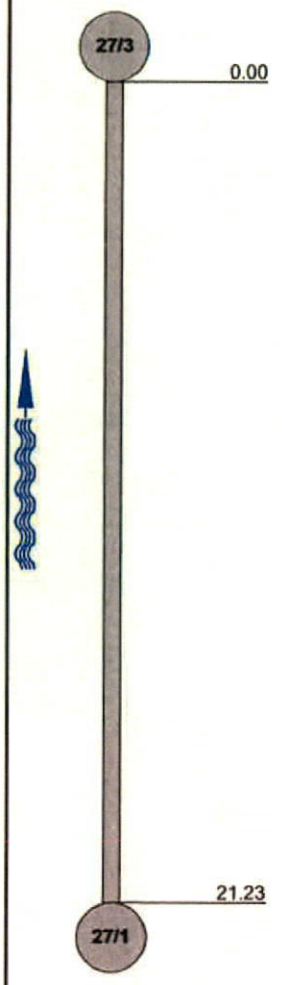
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**43**	**27/1-27/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**27/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 8**	Precipitation.:	**No**	DS MH:	**27/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**21.23 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:180 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 27/3

21.23 Finish node, grated inlet pit, Nodename: 27/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**44**	**105/7-27/1**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**105/7**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 8**	Precipitation.:	**No**	DS MH:	**27/1**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**3.49 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
27/1	0.00	Start node, grated inlet pit, Nodename: 27/1
105/7	3.49	Finish node, grated inlet pit, Nodename: 105/7

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

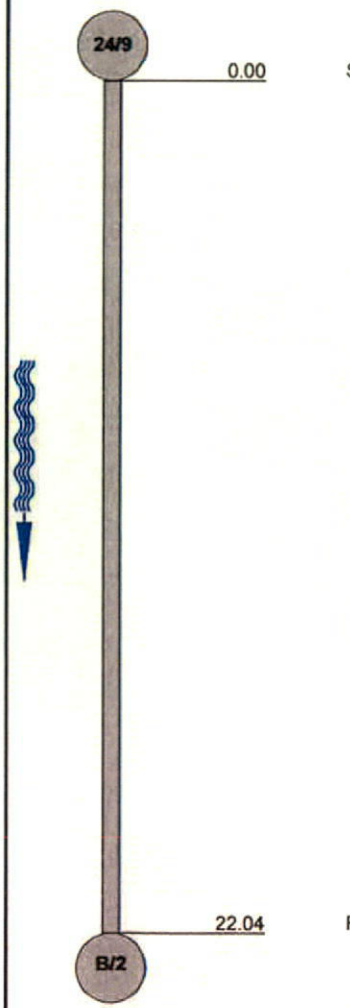
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**45**	**24/9-B/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**24/9**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**B/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**22.04 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**525 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:180 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 24/9

22.04 Finish node, outfall or culvert headwall, Nodename: B/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

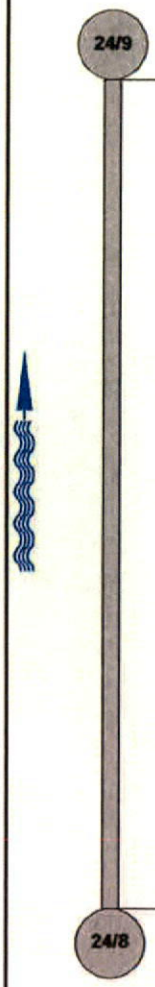
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**46**	**24/8-24/9**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**24/8**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**24/9**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**12.51 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 24/9

12.51 Finish node, grated inlet pit, Nodename: 24/8

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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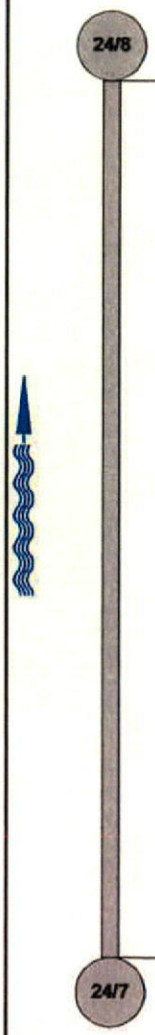
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**47**	**24/7-24/8**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**24/7**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**24/8**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**22.66 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:180 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 24/8

22.66 Finish node, grated inlet pit, Nodename: 24/7

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**48**	**26/1-24/7**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**26/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**24/7**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**9.89 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**376 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:90	Position	Observation
24/7	0.00	Start node, grated inlet pit, Nodename: 24/7
26/1	9.89	Finish node, grated inlet pit, Nodename: 26/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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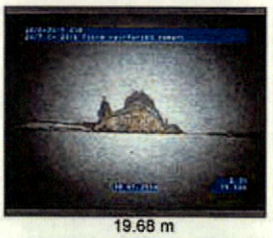
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**49**	**24/6-24/7**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**24/6**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**24/7**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**41.35 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:330	Position	Observation	
24/7	0.00	Start node, grated inlet pit, Nodename: 24/7	 7.65 m
	7.65	Breaking, some pieces are missing, length of break 100, at joint, at 12 o'clock	 19.68 m
	19.68	Breaking, some pieces are missing, length of break 100, at joint, at 12 o'clock	 27.79 m
	27.79	Breaking, some pieces are missing, length of break 100, at joint, at 12 o'clock	 35.84 m
	35.84	Breaking, some pieces are missing, length of break 100, at joint, at 12 o'clock	
24/6	41.35	Finish node, grated inlet pit, Nodename: 24/6	

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
4	60	5.8	240	5	0	0	0	0	1

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Inspection Pictures

Location/Street	Town or suburb:	Date :	Section number:	Sewer Ref.:
Road 5		**30/01/2014**	**49**	**24/6-24/7**

Photo: 246-247_246_247_30012014_141914_A.JPG
7.65m, Breaking, some pieces are missing, length of break 100, at joint, at 12 o'clock

Photo: 246-247_246_247_30012014_142036_A.JPG
19.68m, Breaking, some pieces are missing, length of break 100, at joint, at 12 o'clock

Photo: 246-247_246_247_30012014_142208_A.JPG
27.79m, Breaking, some pieces are missing, length of break 100, at joint, at 12 o'clock

Photo: 246-247_246_247_30012014_142312_A.JPG
35.84m, Breaking, some pieces are missing, length of break 100, at joint, at 12 o'clock

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WSA assessment

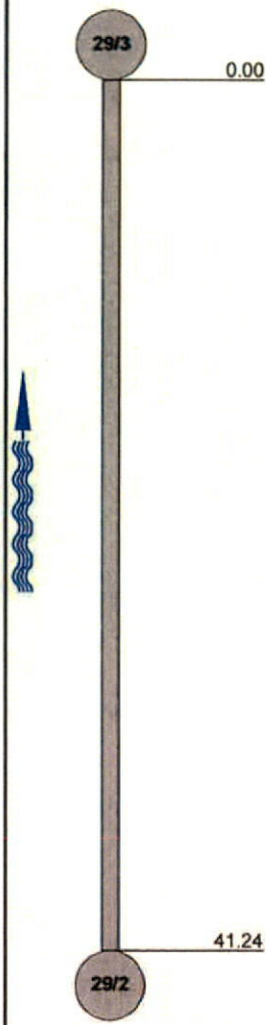
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**50**	**29/2-29/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**29/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**29/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**41.24 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:330 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 29/3

41.24 Finish node, grated inlet pit, Nodename: 29/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

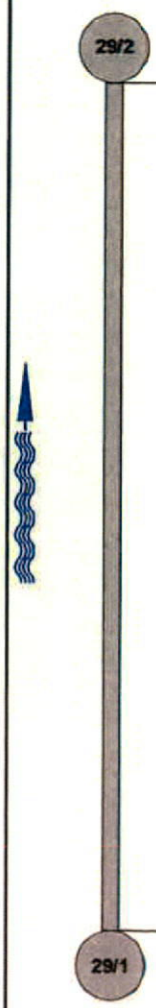
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**51**	**29/1-29/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**29/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**29/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**38.32 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:315 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 29/2

38.32 Finish node, grated inlet pit, Nodename: 29/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**52**	**29/3-29/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**29/3**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**29/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**16.46 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:135 **Position** **Observation**

29/3 0.00 Start node, grated inlet pit, Nodename: 29/3

16.46 Finish node, grated inlet pit, Nodename: 29/4 **29/4**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**53**	**29/4-29/5**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**29/4**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**29/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**28.27 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:225 **Position** **Observation**

9.76 m

29/4

0.00 Start node, grated inlet pit, Nodename: 29/4

9.76 Breaking, all pieces are present but some of them are visibly displaced from position, length of break 100 , at 9 o'clock

28.27 Finish node, grated inlet pit, Nodename: 29/5

29/5

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	50	1.77	50	4	0	0	0	0	1

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Inspection Pictures

Location/Street	Town or suburb:	Date :	Section number:	Sewer Ref.:
Road 7		**30/01/2014**	**53**	**29/4-29/5**

Photo: 294-295_294_295_30012014_151054_A.JPG
9.76m, Breaking, all pieces are present but some of them are visibly displaced from position, length of break 100 , at 9 o'clock

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**54**	**29/5-29/6**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**29/5**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**29/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**21.61 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:180	Position	Observation
29/5	0.00	Start node, grated inlet pit, Nodename: 29/5
29/6	21.61	Finish node, grated inlet pit, Nodename: 29/6

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**55**	**29/6-29/7**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**29/6**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**29/7**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**28.28 m**

Purpose of Inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:225 **Position** **Observation**

29/6 0.00 Start node, grated inlet pit, Nodename: 29/6

28.28 Finish node, grated inlet pit, Nodename: 29/7 **29/7**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
30/01/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Glen Johnston**	**56**	**29/7-29/8**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**29/7**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**29/8**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**44.42 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**525 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:360	Position	Observation
29/7	0.00	Start node, grated inlet pit, Nodename: 29/7
29/8	44.42	Finish node, grated inlet pit, Nodename: 29/8

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**57**	**28/1 to 107/6**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**107/6**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**28/1**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**3.49 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
	28/1	
	0.00	Start node, grated inlet pit, Nodename: 28/1
	3.49	Finish node, grated inlet pit, Nodename: 107/6
	107/6	

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**58**	**28/1 to 28/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**28/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**28/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**15.10 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:120	Position	Observation
28/1	0.00	Start node, grated inlet pit, Nodename: 28/1
	15.10	Finish node, grated inlet pit, Nodename: 28/2
28/2		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**59**	**28/2 to 28/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**28/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**28/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**17.34 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:150 **Position** **Observation**

28/2 0.00 Start node, grated inlet pit, Nodename: 28/2

17.34 Finish node, grated inlet pit, Nodename: 28/3 **28/3**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

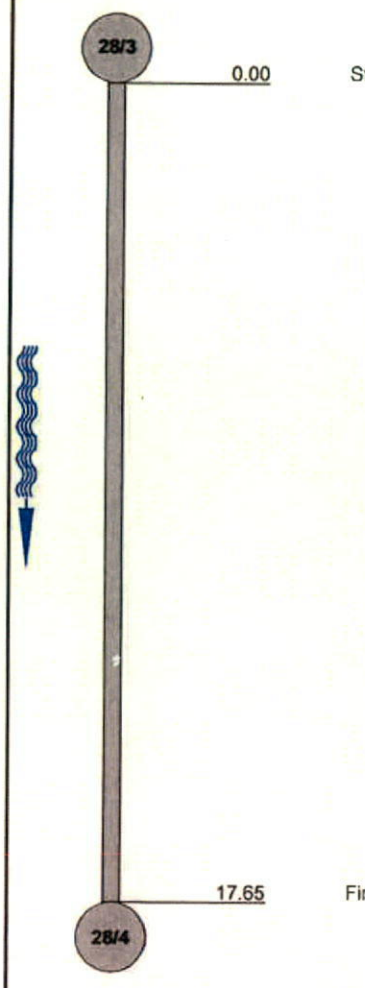
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**60**	**28/3 to 28/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**28/3**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**28/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**17.65 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:150 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 28/3

17.65 Finish node, grated inlet pit, Nodename: 28/4

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

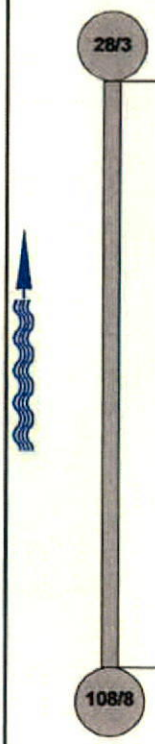
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**61**	**28/3 to 108/8**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**108/8**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**28/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**4.21 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 28/3

4.21 Finish node, grated inlet pit, Nodename: 108/8

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**62**	**28/5 to 28/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**28/4**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**28/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**5.83 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:60	Position	Observation
28/5	0.00	Start node, grated inlet pit, Nodename: 28/5
28/4	5.83	Finish node, grated inlet pit, Nodename: 28/4

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

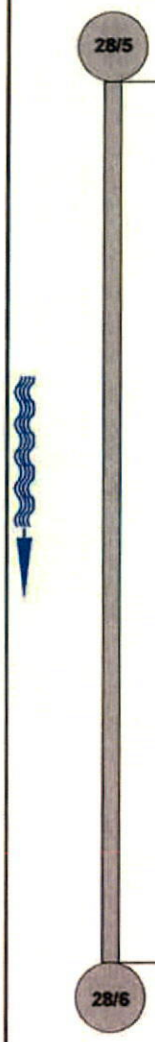
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**63**	**28/5 TO 28/6**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**28/5**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**28/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**30.37 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:240 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 28/5

30.37 Finish node, grated inlet pit, Nodename: 28/6

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

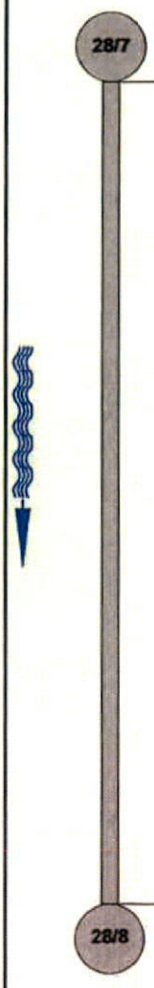
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**64**	**28/7 TO 28/8**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**28/7**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**28/8**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**21.25 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**750 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:180 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 28/7

21.25 Finish node, grated inlet pit, Nodename: 28/8

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**65**	**28/8 TO 28/9**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**28/8**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**28/9**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**22.11 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**750 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:180 **Position** **Observation**

28/8 0.00 Start node, grated inlet pit, Nodename: 28/8

22.11 Finish node, grated inlet pit, Nodename: 28/9 **28/9**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

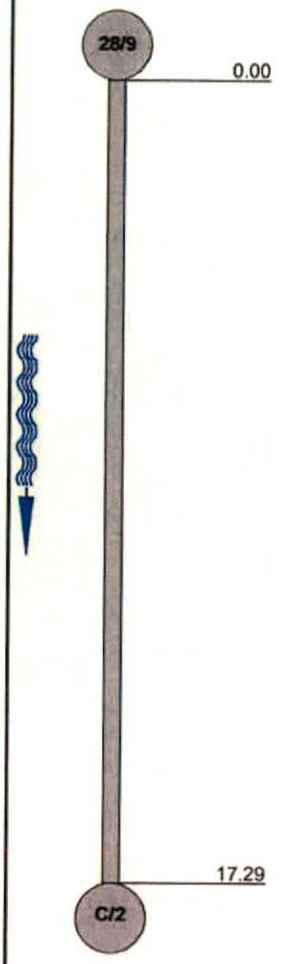
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**66**	**28/9 TO C/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**28/9**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**C/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**17.29 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**825 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:150 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 28/9

17.29 Finish node, maintenance hole, Nodename: C/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**67**	**C/2 TO C/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**C/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**C/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**25.47 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**825 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:210 **Position** **Observation**

6.74 m

C/2

0.00 Start node, grated inlet pit, Nodename: C/2

6.74 Deposits on the wall , other material RUBBER, Obstruction: <5% , from 11 to 1 o'clock

25.47 Finish node, outfall or culvert headwall, Nodename: C/3

C/3

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	1	5	0.2	5	2

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Inspection Pictures

Location/Street	Town or suburb:	Date :	Section number:	Sewer Ref.:
Road 9		**4/02/2014**	**67**	**C/2 TO C/3**

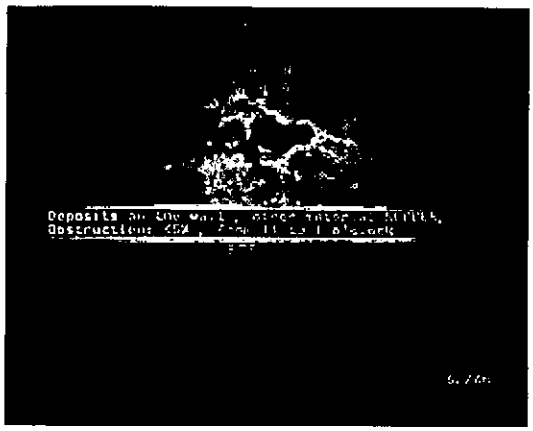

Photo: 67_1_2_04022014_104142_A.JPG
6.74m, Deposits on the wall , other material RUBBER,
Obstruction: <5% , from 11 to 1 o'clock

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WSA assessment

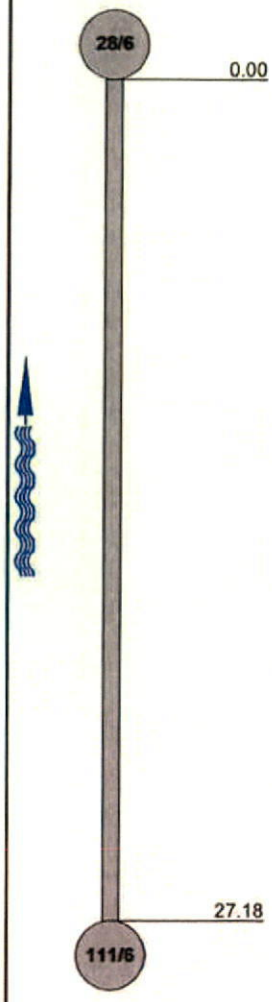
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**68**	**28/6 TO 111/6**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline Inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**111/6**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**28/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**27.18 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:225 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 28/6

27.18 Finish node, grated inlet pit, Nodename: 111/6

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

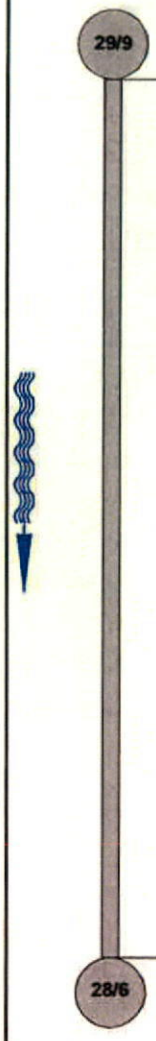
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**69**	**28/6 TO 29/9**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**29/9**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**28/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**20.83 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**525 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:165 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 29/9

20.83 Finish node, grated inlet pit, Nodename: 28/6

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

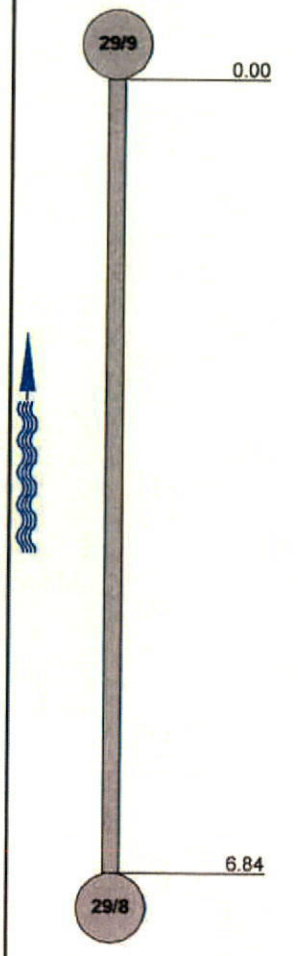
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**70**	**29/9 to 29/8**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**29/8**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**29/9**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.84 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**525 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 29/9

6.84 Finish node, grated inlet pit, Nodename: 29/8

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

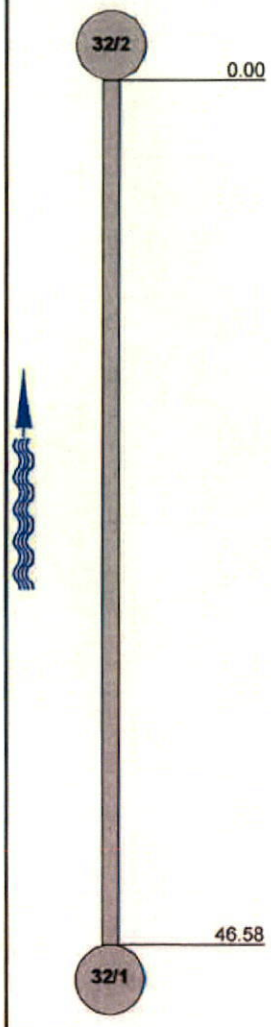
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**71**	**32/2 to 32/1**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline Inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**32/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 8**	Precipitation.:	**No**	DS MH:	**32/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**46.58 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:375 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 32/2

46.58 Finish node, grated inlet pit, Nodename: 32/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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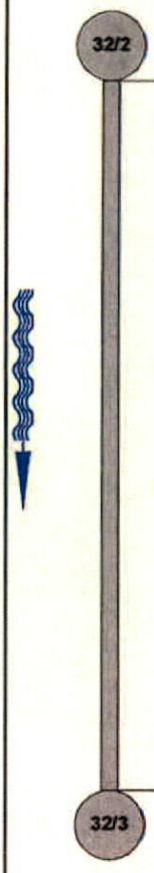
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**72**	**32/2 to 32/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**32/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 8**	Precipitation.:	**No**	DS MH:	**32/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.12 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 32/2

6.12 Finish node, grated inlet pit, Nodename: 32/3

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

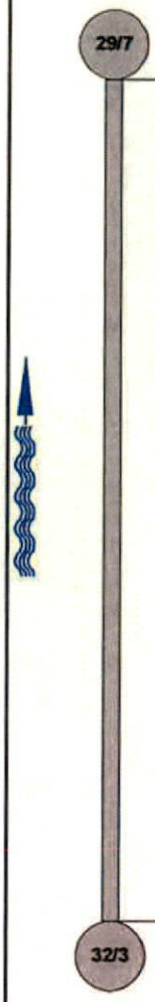
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**73**	**29/7 to 32/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**32/3**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**29/7**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**12.69 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 29/7

12.69 Finish node, grated inlet pit, Nodename: 32/3

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**74**	**31/1 to 29/6**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**31/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**29/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.60 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
31/1	0.00	Start node, grated inlet pit, Nodename: 31/1
	6.60	Finish node, grated inlet pit, Nodename: 29/6
29/6		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**75**	**29/5 to 106/10**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**106/10**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 7**	Precipitation.:	**No**	DS MH:	**29/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**4.11 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
29/5	0.00	Start node, grated inlet pit, Nodename: 29/5
	4.11	Finish node, grated inlet pit, Nodename: 106/10
106/10		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**76**	**30/1 to 29/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**30/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 5**	Precipitation.:	**No**	DS MH:	**29/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**11.98 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Reinforced concrete**

Remarks :

1:105 **Position** **Observation**

1.25 m

30/1

0.00 Start node, grated inlet pit, Nodename: 30/1

1.25 Breaking, some pieces are missing, length of break 100 , from 12 to 1 o'clock

11.98 Finish node, grated inlet pit, Nodename: 29/4

29/4

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	60	5.01	60	5	0	0	0	0	1

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Inspection Pictures

Location/Street	Town or suburb:	Date :	Section number:	Sewer Ref.:
Road 5		**4/02/2014**	**76**	**30/1 to 29/4**

Photo: 76_1_2_04022014_130946_A.JPG
1.25m, Breaking, some pieces are missing, length of break 100 ,
from 12 to 1 o'clock

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WSA assessment

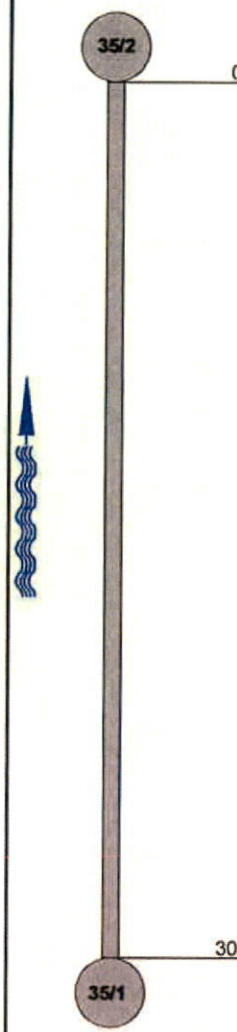
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**77**	**35/2 to 35/1**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**35/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**35/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**30.17 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:240 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 35/2

30.17 Finish node, grated inlet pit, Nodename: 35/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

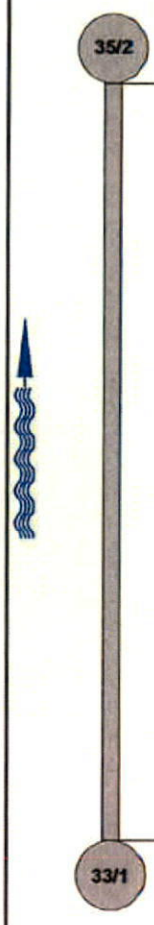
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**78**	**35/2 to 33/1**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**33/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**35/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**8.15 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:75 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 35/2

8.15 Finish node, grated inlet pit, Nodename: 33/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**79**	**35/2 to 35/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**35/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**35/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**59.16 m**

Purpose of Inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:480	Position	Observation
35/2	0.00	Start node, grated inlet pit, Nodename: 35/2
	59.16	Finish node, grated inlet pit, Nodename: 35/3
35/3		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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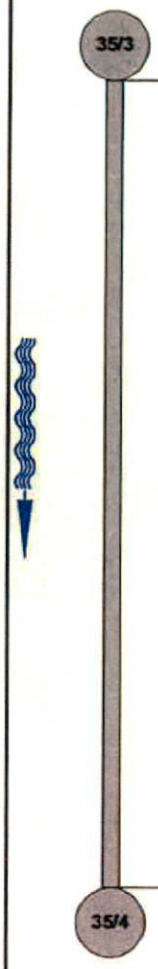
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**80**	**35/3 to 35/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline Inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**35/3**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**35/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**13.91 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:120 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 35/3

13.91 Finish node, grated inlet pit, Nodename: 35/4

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**81**	**35/4 to 28/9**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**35/4**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**28/9**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**5.69 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**450 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50 **Position** **Observation**

35/4 0.00 Start node, grated inlet pit, Nodename: 35/4

5.69 Finish node, grated inlet pit, Nodename: 28/9

28/9

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**82**	**28/9 to 28/10**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**28/9**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**28/10**
Asset Location		Flow control	**No measures**	Inspect Lenght ;	**0.39 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**750 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
28/9	0.00	Start node, grated inlet pit, Nodename: 28/9
28/10	0.39	Finish node, grated inlet pit, Nodename: 28/10

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**83**	**35/1 to 109/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**109/3**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**35/1**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**4.22 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
35/1	0.00	Start node, grated inlet pit, Nodename: 35/1
	4.22	Finish node, grated inlet pit, Nodename: 109/3
109/3		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Email: info@totaldraincleaning.com.au

WSA assessment

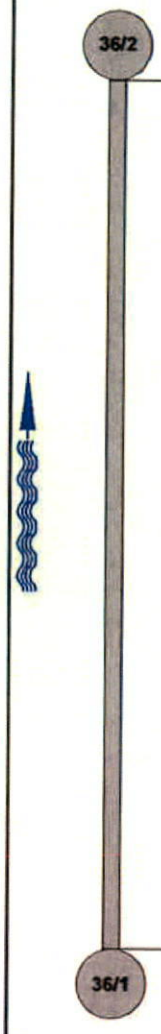
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**84**	**36/2 to 36/1**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**36/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 9**	Precipitation.:	**No**	DS MH:	**36/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**43.03 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:345 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 36/2

43.03 Finish node, grated inlet pit, Nodename: 36/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**85**	**36/2 to 41/1**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**41/1**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 10**	Precipitation.:	**No**	DS MH:	**36/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**8.87 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:75	Position	Observation
36/2	0.00	Start node, grated inlet pit, Nodename: 36/2
41/1	8.87	Finish node, grated inlet pit, Nodename: 41/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**86**	**36/2 to 36/3**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**36/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 10**	Precipitation.:	**No**	DS MH:	**36/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**23.60 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:195 **Position** **Observation**

0.00 Start node, grated inlet pit, Nodename: 36/2

23.60 Finish node, grated inlet pit, Nodename: 36/3

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

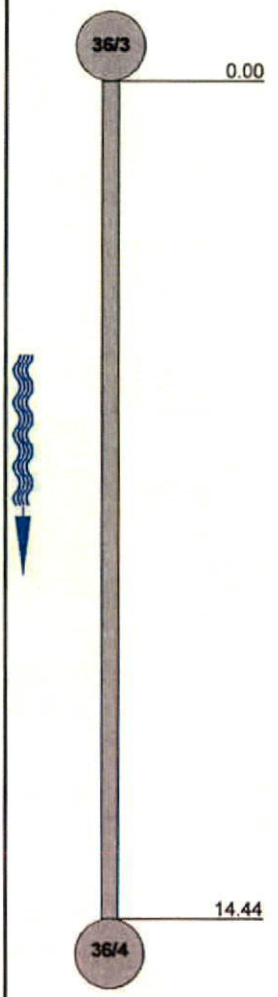
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**87**	**36/3 to 36/4**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**36/3**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**downstream**
Street:	**Road 10**	Precipitation.:	**No**	DS MH:	**36/4**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**14.44 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:120 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 36/3

14.44 Finish node, grated inlet pit, Nodename: 36/4

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

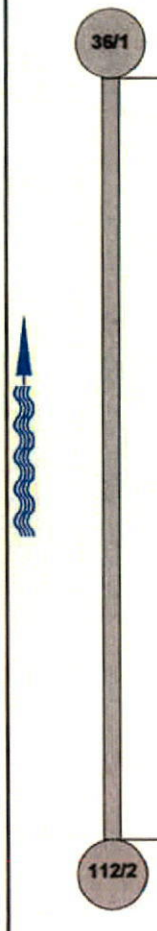
Date:	Project	Client	Operator :	Section number:	Pipe Asset Id:
4/02/2014	**Jordan Springs Stage 4C**	**J.K Williams**	**Mitch Crocker**	**88**	**36/1 to 112/2**
	Cleaning: **cleaned**	Standard: **WSA 05-2008 2.2**	LRP **Pipeline inside Start Nod**	US Depth	DS Depth

Town:		Catchment:		US MH:	**112/2**
Suburb:	**Jordan Springs**	Client:	**J.K Williams**	Survey Dir:	**upstream**
Street:	**Road 10**	Precipitation.:	**No**	DS MH:	**36/1**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**11.48 m**

Purpose of inspection :	**New Construction**	Shape :	
Use of Conduit:	**Drain**	Dia/Height:	**375 mm**
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 36/1

11.48 Finish node, grated inlet pit, Nodename: 112/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**1**	**37/2 to 37/1**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
07:30:54	**cleaned**				

Town:		Catchment:		US MH:	**37/1**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 5**	Precipitation.:		DS MH:	**37/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**46.22 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:375	Position	Observation
37/2	0.00	Start node, grated inlet pit, Nodename: 37/2
	46.22	Finish node, grated inlet pit, Nodename: 37/1
37/1		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**2**	**37/2 to 37/3**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
07:35:32	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**37/2**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 5**	Precipitation.:		DS MH:	**37/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.62 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
37/2	0.00	Start node, grated inlet pit, Nodename: 37/2
	6.62	Finish node, grated inlet pit, Nodename: 37/3
37/3		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**3**	**37/5 to 37/4**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
07:57:00	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**37/4**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 5**	Precipitation,:		DS MH:	**37/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**16.03 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:135	Position	Observation
37/5	0.00	Start node, grated inlet pit, Nodename: 37/5
	16.03	Finish node, grated inlet pit, Nodename: 37/4
37/4		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

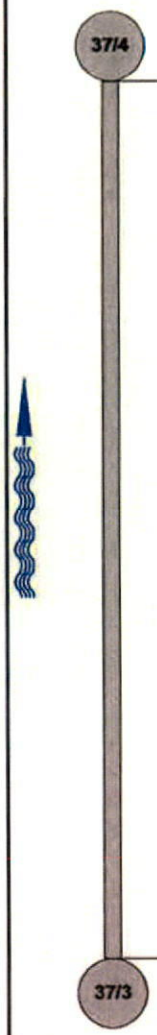
Date:	Asset owner's job ref.:	Asset Owner:	Operator:	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**4**	**37/4 to 37/3**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
08:01:38	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**37/3**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 5**	Precipitation.:		DS MH:	**37/4**
Asset Location		Flow control	**No measures**	Inspect Lenght:	**62.34 m**

Purpose of inspection:	**New Construction**	Shape:	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks:

1:495 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 37/4

62.34 Finish node, grated inlet pit, Nodename: 37/3

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**5**	**37/5 to 42/1**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
08:11:53	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**42/1**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 5**	Precipitation.:		DS MH:	**37/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.88 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
37/5	0.00	Start node, grated inlet pit, Nodename: 37/5
	6.88	Finish node, grated inlet pit, Nodename: 42/1
42/1		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

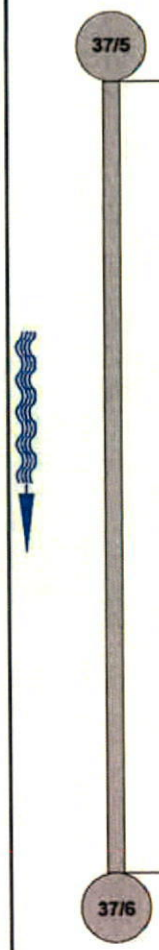
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**6**	**37/5 to 37/6**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
08:14:05	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**37/5**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 21**	Precipitation.:		DS MH:	**37/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**11.93 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105	Position	Observation
	0.00	Start node, grated inlet pit, Nodename: 37/5
	11.93	Finish node, grated inlet pit, Nodename: 37/6



STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**7**	**37/7 to 37/6**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
08:16:08	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**37/6**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**37/7**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**28.07 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:225	Position	Observation
37/7	0.00	Start node, grated inlet pit, Nodename: 37/7
	28.07	Finish node, grated inlet pit, Nodename: 37/6
37/6		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**8**	**37/7 to 110/1**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
08:27:15	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**110/1**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**37/7**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.68 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
37/7	0.00	Start node, grated inlet pit, Nodename: 37/7
110/1	6.68	Finish node, grated inlet pit, Nodename: 110/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**9**	**37/7 to 36/5**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
08:32:07	**cleaned**	**WSA 05-2008 2.2**	**ins**		**Television Camera**

Town:		Catchment:		US MH:	**37/7**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 21**	Precipitation,:		DS MH:	**36/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**45.03 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:360	Position	Observation
37/7	0.00	Start node, grated inlet pit, Nodename: 37/7
	45.03	Finish node, grated inlet pit, Nodename: 36/5
36/5		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

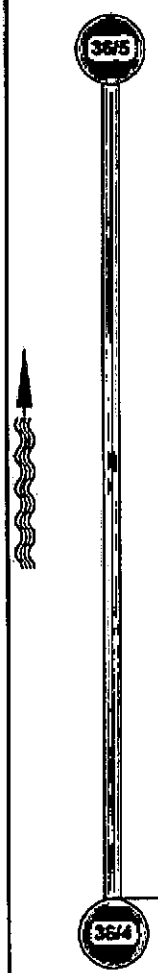
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**10**	**36/5 to 36/4**
Time of Inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
08:43:43	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**36/4**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**36/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**12.27 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105 **Position** **Observation**



12.26 Finish node, grated inlet pit, Nodename: 36/4

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**11**	**36/5 to a/2**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
08:54:26	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**a/2**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**36/5**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**7.54 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:60	Position	Observation
	36/5	
	0.00	Start node, grated inlet pit, Nodename: 36/5
	7.54	Finish node, grated inlet pit, Nodename: a/2
	a/2	

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

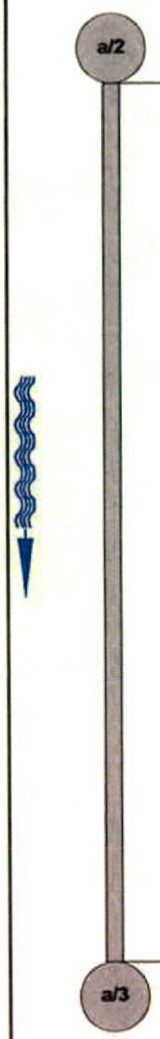
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**12**	**a/2 to a/3**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
08:56:19	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**a/2**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 21**	Precipitation.:		DS MH:	**a/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**13.24 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:105 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: a/2

13.24 Finish node, maintenance hole, Nodename: a/3

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**13**	**a/3 to a/2**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
09:02:33	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**a/2**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**a/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**19.13 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:165	Position	Observation
a/3	0.00	Start node, grated inlet pit, Nodename: a/3
a/2	19.13	Finish node, outfall or culvert headwall, Nodename: a/2

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**14**	**36/5 to 36/6**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
09:09:09	**cleaned**	**WSA 05-2008 2.2**	**ins**		**Television Camera**

Town:		Catchment:		US MH:	**36/5**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 21**	Precipitation.:		DS MH:	**36/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**10.22 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:90	Position	Observation
36/5	0.00	Start node, grated inlet pit, Nodename: 36/5
36/6	10.22	Finish node, grated inlet pit, Nodename: 36/6

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

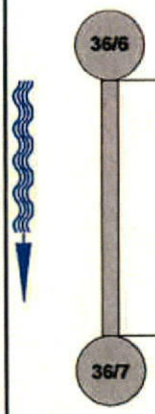
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**15**	**36/6 to 36/7**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
09:10:52	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**36/6**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 21**	Precipitation.:		DS MH:	**36/7**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**1.83 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
	0.00	Start node, grated inlet pit, Nodename: 36/6
	1.83	Finish node, grated inlet pit, Nodename: 36/7



STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

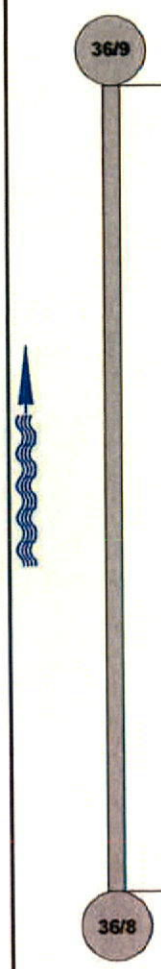
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**16**	**36/9 to 36/8**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
09:32:32	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**36/8**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**36/9**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**12.14 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 36/9

12.14 Finish node, grated inlet pit, Nodename: 36/8

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

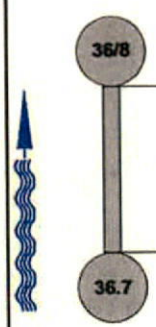
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**17**	**36/8 to 36/7**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
09:36:46	**cleaned**	**WSA 05-2008 2.2**	**ins**		**Television Camera**

Town:		Catchment:		US MH:	**36.7**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**36/8**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**1.19 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
	0.00	Start node, grated inlet pit, Nodename: 36/8
	1.19	Finish node, grated inlet pit, Nodename: 36.7



STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

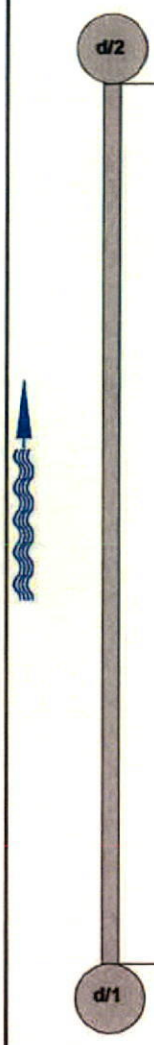
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**18**	**d/2 to d/1**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
09:48:42	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**d/1**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**d/2**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**56.82 m**

Purpose of Inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:450 **Position** **Observation**



0.00 Start node, outfall, Nodename: d/2

56.82 Finish node, outfall or culvert headwall, Nodename: d/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**19**	**36/4 to a/3**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
10:18:13	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**36/4**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 10**	Precipitation.:		DS MH:	**a/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**11.69 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105	Position	Observation
a/3	0.00	Start node, grated inlet pit, Nodename: a/3
	11.69	Finish node, grated inlet pit, Nodename: 36/4
36/4		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**20**	**19/5 to 19/6**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
10:32:34	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**19/5**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 5**	Precipitation.:		DS MH:	**19/6**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**43.80 m**

Purpose of Inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:345	Position	Observation
19/5	0.00	Start node, grated inlet pit, Nodename: 19/5
	43.80	Finish node, grated inlet pit, Nodename: 19/6
19/6		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**21**	**21/11 to 21/12**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
10:52:19	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**21/11**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 5**	Precipitation.:		DS MH:	**21/12**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**29.80 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:240	Position	Observation
21/11	0.00	Start node, grated inlet pit, Nodename: 21/11
	29.80	Finish node, grated inlet pit, Nodename: 21/12
21/12		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

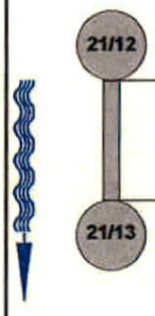
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**22**	**21/12 to 21/13**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
10:55:59	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**21/12**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 5**	Precipitation.:		DS MH:	**21/13**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**0.86 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
	0.00	Start node, grated inlet pit, Nodename: 21/12
	0.86	Finish node, Nodename: 21/13, GPT



STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**23**	**24/9 TO 21/12**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
11:16:44	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**24/9**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 5**	Precipitation.:		DS MH:	**21/12**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**19.66 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:165 **Position** **Observation**


4.46 m

24/9

0.00 Start node, grated inlet pit, Nodename: 24/9

4.46 PUBCH IN LINE , Obstruction: <5%

19.66 Finish node, grated inlet pit, Nodename: 21/12

21/12

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Inspection Pictures

Location/Street	Town or suburb:	Date :	Section number:	Sewer Ref.:
road 5		**8/02/2014**	**23**	**24/9 TO 21/12**

Photo: 23_1_2_08022014_111853_A.JPG
4.46m, PUBCH IN LINE , Obstruction: <5%

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**24**	**10/1 TO 21/12**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
11:29:13	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**10/1**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 5**	Precipitation.:		DS MH:	**21/12**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**5.13 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
10/1	0.00	Start node, grated inlet pit, Nodename: 10/1
21/12	5.13	Finish node, grated inlet pit, Nodename: 21/12

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**25**	**21/15 TO 21/14**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
11:42:00	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**21/14**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 5**	Precipitation.:		DS MH:	**21/15**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**27.78 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Concrete pipe**

Remarks :

1:225	Position	Observation
21/15	0.00	Start node, grated inlet pit, Nodename: 21/15
	27.78	Finish node, grated inlet pit, Nodename: 21/14
21/14		

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

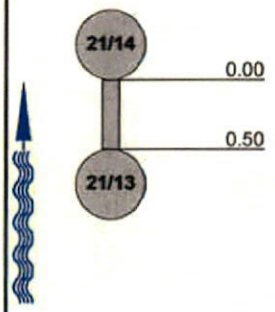
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**26**	**21/14 TO 21/13**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
11:48:27	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**21/13**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 6**	Precipitation.:		DS MH:	**21/14**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**0.50 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
	0.00	Start node, maintenance hole, Nodename: 21/14
	0.50	Finish node, Nodename: 21/13, GPT



STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

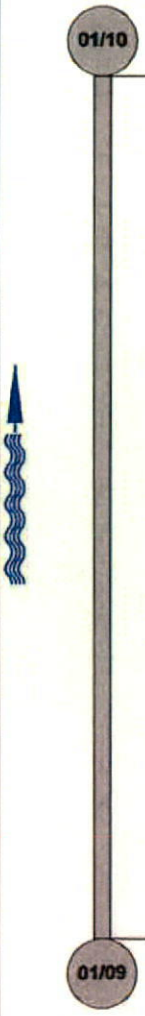
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**27**	**01/10 TO 01/09**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
12:16:23	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**01/09**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**01/10**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**50.17 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:405 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 01/10

50.17 Finish node, grated inlet pit, Nodename: 01/09

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**28**	**01/09 TO 01/08**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
12:20:01	**cleaned**	**WSA 05-2008 2.2**	**ins**		**Television Camera**

Town:		Catchment:		US MH:	**01/08**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**01/09**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**30.32 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:240	Position	Observation
01/09	0.00	Start node, grated inlet pit, Nodename: 01/09
01/08	30.32	Finish node, grated inlet pit, Nodename: 01/08

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**29**	**01/10 TO 01/11**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
12:26:55	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**01/10**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 21**	Precipitation.:		DS MH:	**01/11**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**11.90 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:105	Position	Observation
01/10	0.00	Start node, grated inlet pit, Nodename: 01/10
01/11	11.90	Finish node, grated inlet pit, Nodename: 01/11

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

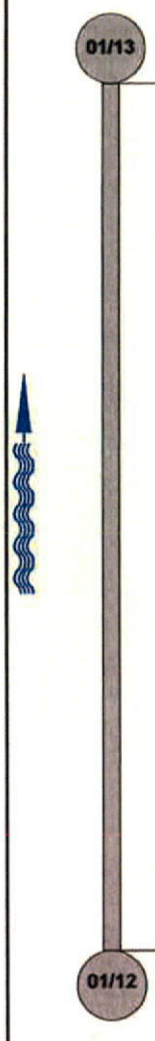
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**30**	**01/13 TO 01/12**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
12:41:46	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**01/12**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**01/13**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**35.44 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:285 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 01/13

35.44 Finish node, grated inlet pit, Nodename: 01/12

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

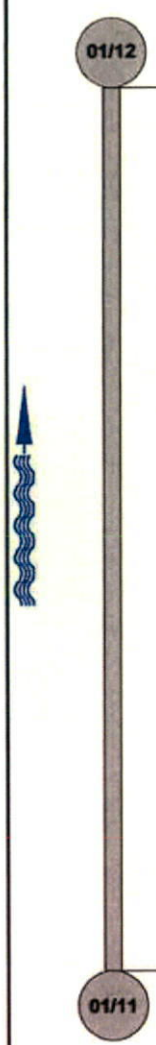
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**31**	**01/12 TO 01/11**
Time of Inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
12:45:08	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**01/11**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**01/12**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**43.71 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:345 **Position** **Observation**



0.00 Start node, grated inlet pit, Nodename: 01/12

43.71 Finish node, grated inlet pit, Nodename: 01/11

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**32**	**01/13 TO 04/1**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
12:52:10	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**04/1**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 21**	Precipitation.:		DS MH:	**01/13**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**9.38 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:75	Position	Observation
01/13	0.01	Start node, grated inlet pit, Nodename: 01/13
04/1	9.38	Finish node, grated inlet pit, Nodename: 04/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

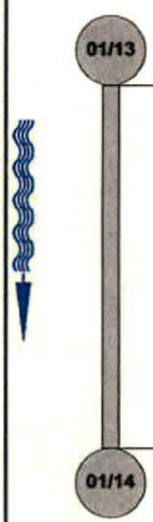
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**33**	**01/13 TO 01/14**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
12:52:59	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**01/13**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 21**	Precipitation.:		DS MH:	**01/14**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**2.60 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
	0.00	Start node, grated inlet pit, Nodename: 01/13
	2.60	Finish node, Nodename: 01/14, GPT



STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

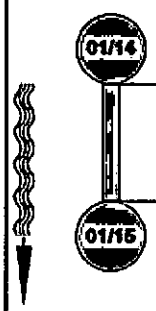
Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**34**	**01/14 TO 01/15**
Time of Inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
12:54:57	**cleaned**	**WSA 05-2008 2.2**	**ins**		**Television Camera**

Town:		Catchment:		US MH:	**01/14**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 21**	Precipitation.:		DS MH:	**01/15**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**0.84 m**

Purpose of Inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:50	Position	Observation
	0.00	Start node, Nodename: 01/14, GPT
	0.84	Finish node, maintenance hole, Nodename: 01/15



STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
8/02/2014		**jk williams**	**m crocker**	**35**	**01/15 TO 01/16**
Time of inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
12:57:06	**cleaned**	**WSA 05-2008 2.2**	**lns**		**Television Camera**

Town:		Catchment:		US MH:	**01/15**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**downstream**
Street:	**road 21**	Precipitation.:		DS MH:	**01/16**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**19.60 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:165	Position	Observation
01/15	0.01	Start node, grated inlet pit, Nodename: 01/15
	17.31	Circumferential wall crack , width 2mm , from 12 to 6 o'clock
	17.31	Deformation, mixed orientation , change in diameter <5%, length of deformation 100mm , from 12 to 4 o'clock
	17.99	Breaking, some pieces are missing, length of break 300 , from 11 to 3 o'clock
	18.08	Deformation, mixed orientation , change in diameter <5%, length of deformation 100mm , from 12 to 12 o'clock
01/16	19.60	Finish node, outfall or culvert headwall, Nodename: 01/16


17.31 m


17.31 m


17.99 m


18.08 m

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
4	**63**	**3.21**	**63**	**5**	**0**	**0**	**0**	**0**	**1**

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Inspection Pictures

Location/Street	Town or suburb:	Date :	Section number:	Sewer Ref.:
road 21		**8/02/2014**	**35**	**01/15 TO 01/16**

Photo: 35_1_2_08022014_125944_A.JPG
17.31m, Circumferential wall crack , width 2mm , from 12 to 6 o'clock

Photo: 35_1_3_08022014_130008_A.JPG
17.31m, Deformation, mixed orientation , change in diameter <5%, length of deformation 100mm , from 12 to 4 o'clock

Photo: 35_1_4_08022014_130025_A.JPG
17.99m, Breaking, some pieces are missing, length of break 300 , from 11 to 3 o'clock

Photo: 35_1_5_08022014_130043_A.JPG
18.08m, Deformation, mixed orientation , change in diameter <5%, length of deformation 100mm , from 12 to 12 o'clock

From:	Joshua Vermeer
To:	Ali, Ahmad; BBuckpitt@jwprince.com.au; bbourke@jwprince.com.au; gfletcher@penrithcity.nsw.gov.au; Cremona Mark (mcremona@penrithcity.nsw.gov.au); SMasters@penrithcity.nsw.gov.au
Cc:	Slavce Kirovski; Dean Lucas; Mladen Mejakic
Subject:	Jordan Springs Village 4E - Missing CCTV line
Date:	Wednesday, 12 February 2014 9:56:58 AM
Attachments:	PDF_S36.pdf Quarantined Attachment.txt

Morning Gents,

As noted on my initial CCTV submission, line 35/3 – 34/1 was missing from the report. Please find attached for your inclusion into your records

Regards,

Josh Vermeer
Project Manager - JK Williams Group - www.jkw.com.au
44 Jack Williams Drive, Penrith NSW
Office 02 4725 3429 / Mobile 0435 653 739 / Fax 02 4725 3499

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WSA assessment

Date:	Asset owner's job ref.:	Asset Owner:	Operator :	Section number:	Pipe Asset Id:
11/02/2014		**jk williams**	**m crocker**	**36**	**35/3 to 34/1**
Time of Inspection:	Cleaning:	Standard:	LRP	Conduit Unit Length	Method of Inspection
14:13:23	**cleaned**	**WSA 05-2008 2.2**	**Ins**		**Television Camera**

Town:		Catchment:		US MH:	**34/1**
Suburb:	**jordan springs**	Asset Owner:	**jk williams**	Survey Dir:	**upstream**
Street:	**road 9**	Precipitation.:		DS MH:	**35/3**
Asset Location		Flow control	**No measures**	Inspect Lenght :	**6.30 m**

Purpose of inspection :	**New Construction**	Shape :	**Circular**
Use of Conduit:	**Drain**	Dia/Height:	
Type of Conduit:	**Storm water drain**	Lining:	
Lining Method:		Pipe Material:	**Fibre reinforced cement**

Remarks :

1:60	Position	Observation
35/3	0.00	Start node, grated inlet pit, Nodename: 35/3
34/1	6.30	Finish node, grated inlet pit, Nodename: 34/1

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

HI QUALITY QUARRY (NSW) PTY LTD
Cnr Elizabeth Drive & Mamre Road,
Kemps Creek NSW 2178
PO Box 42 Kemps Creek NSW 2178
PH: (02) 9826 1666 FAX: (02) 9826 1896

CERTIFICATE OF COMPLIANCE

The NATA endorsed test reports obtained by Network Geotechnics on samples of 75mm crushed sandstone from Hi-Quality Wallacia Quarry demonstrate compliance with RTA3071 - Select Material Type A criteria.

Copies of relevant test reports are attached for your records.

Client: JK Williams Contracting Pty Ltd

Projects: Jordan Springs Village 4C, 4D, 4E, and 4F

Quantity: 15,810 tonnes

Period: 5/9/13 - 22/10/13

Yours Sincerely,

Joe Zappavinga

NSW Sales Manager

Network Geotechnics

Mt Kuring-Gai
12/9-15 Gundah Rd
Mt Kuring-Gai NSW 2080
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E: admin@netgeo.com.au
W: www.netgeo.com.au
ABN: 35 069 211 561

W0723/1-K EO:NC
17th September, 2013

The Manager
HI Quality
PO Box 42
KEMPS CREEK NSW 2171

Attention: Mr Stephen Hallinan

Dear Sir

Re: Material Testing – Wallacia Quarry, Wallacia

Please find enclosed results for 75mm Crushed Sandstone sampled from Stockpile Number W75CSS0813 at the above site on the 28.8.13. Two samples numbered 41 & 42 were provided by the Client and tested to RTA test methods and Australian Standards for conformance with RTA 3071 "Select Material for Formation"

This stockpile conforms to the specification for material in accordance with RTA specification 3071 A.1 for Select Material (Type A).

Please do not hesitate to contact the undersigned should you have any queries.

For and on behalf of
Network Geotechnics Pty Ltd

Eliot O'Donnell
Laboratory Manager

encl. Test Report Sheet:-Test No 41 & 42 (1 sheet)
California Bearing Ratio:- Test Nos 41 & 42 (1 sheet)

Network Geotechnics

ACN 069 211 561
Unit 1/140 Industrial Road
Oak Flats NSW 2529 AUSTRALIA
Telephone 61 2 4257 4458
Facsimile 61 2 4257 4463
Email: southcoast@neigeo.com.au

TEST REPORT

Client:	Hi Quality Pty Ltd	Job No:	W07/23		1 of 1
Principal:	-				
Project:	Material Testing Control Testing - Wallacia Quarry	Tested By:	TM & BW	Date:	13.9.13
Location:	Nortons Basin Road	Checked By:	EO	Date:	17.9.13

Sample Description:	75mm CSS	Sample Procedure:	By Client
Sample Date:	28.8.13	Stockpile Number:	W75CSS0813

ANALYSIS OF CRUSHED SANDSTONE RTA 3071

Test Procedure			Results					Specification	
			41	42	-	-	-	RTA 3071 Ed 1 Table 3071./A-.1 Select Fill (Type A)	Nominated Particle Size Distribution
T106									
Percentage Passing	100 mm sieve	%	100	100	-	-	-	100	100
Percentage Passing	75 mm sieve	%	100	100	-	-	-	95-100	100
Percentage Passing	53 mm sieve	%	100	100	-	-	-	-	100
Percentage Passing	37.5 mm sieve	%	88	91	-	-	-	-	90
Percentage Passing	26.5 mm sieve	%	79	81	-	-	-	-	80
Percentage Passing	19.0 mm sieve	%	71	72	-	-	-	50-85	72
Percentage Passing	13.2 mm sieve	%	61	67	-	-	-	-	64
Percentage Passing	9.5 mm sieve	%	56	62	-	-	-	-	59
Percentage Passing	6.7 mm sieve	%	51	57	-	-	-	40-80	54
Percentage Passing	4.75 mm sieve	%	48	53	-	-	-	-	51
Percentage Passing	2.36 mm sieve	%	43	46	-	-	-	35-70	45
T108									
Liquid Limit		%	21	23	-	-	-	-	
T109									
Plastic Limit		%	13	14	-	-	-	-	
Plasticity Index		%	8	9	-	-	-	15 max	
T114									
Maximum Dry Compressive Strength		MPa	-	-	-	-	-	2.0 min (if p <3)	
Corresponding Moisture Content		%	-	-	-	-	-	-	
Corresponding Dry Density		t/m^3	-	-	-	-	-	-	
*T117									
CBR Value@5.0mm pen.		%	50	50	-	-	-	30min Top 150mm layer 15min Below Top 150mm layer	
Maximum Dry Density		t/m^3	2.07	2.09	-	-	-		
Optimum Moisture Content		%	8.5	9.1	-	-	-		

REMARKS *Refer to attached report sheets for full test results
*Note: All test samples pretreated to RTA T102 CA3

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Eliot O'Donnell

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Network Geotechnics

CALIFORNIA BEARING RATIO (CBR) TEST REPORT

Client :	HI Quality Pty Ltd	**Job Number:**	W07/23
Project:	Material Quality Control Testing - Wallacia Quarry	**Report Number:**	48124
location:	Nortons Basin Road	**Report Date:**	17/09/2013
GTR Number :		**Tested By:**	Hamish James

TEST IDENTIFICATION

Sampling Method :Sampled By Client

Lab Number	41	42	
Sample Date	28/08/2013	28/08/2013	
Stockpile Number:	W75CSS0813	W75CSS0813	
	Ex Stockpile	Ex Stockpile	
Sample Description	75mm Crushed Sandstone	75mm Crushed Sandstone	

LABORATORY DATA

		RTA T111	*RTA T120*	
Field Moisture Content	(%)	7.2	7.3	
Maximum Dry Density	(t/m^3)	2.07	2.09	
Optimum Moisture Content	(%)	8.5	9.1	

TEST RESULTS

		RTA T117	*RTA T120*	
Date Tested		13/09/2013	13/09/2013	
Days Soaked		4	4	
Surcharge Weight		4.5 kg	4.5 kg	
Before Soaking				
Dry Density	(t/m^3)	2.06	2.08	
Density Ratio	(%)	100 Standard	100 Standard	
Moisture Content	(%)	8.6	9.0	
Moisture Ratio	(%)	101	99	
After Soaking				
Dry Density	(t/m^3)	2.06	2.08	
Density Ratio	(%)	100 Standard	100 Standard	
Swell	(%)	0.1	0.0	
Moisture Content				
After Soaking	(%)	8.5	9.0	
Top 30mm	(%)	9.8	9.8	
Full Depth After Test	(%)	10.0	10.1	
CBR Value	(%)	**50 @ 5.0mm**	**50 @ 5.0mm**	
Percentage retained on 19.0 mm	(%)	33.0 Excluded	33.0 Excluded	

Remarks : Pretreated to RTA T102 CA 3

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Wollongong Laboratory 1318

Approved Signatory:

Eliot ODonnell

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CERTIFICATE OF COMPLIANCE

The N.A.T.A endorsed test results obtained by the Materials Technical Services laboratory (Accreditation No: 547) on samples of DGB20 drawn from Dunmore Quarry lots identified as DGB20 S/P 71, 72 and 74 are available if required.

The samples tested were recovered from the production lots produced from the 15.08.13 to the 24.09.13 and represent approximately 4000 tonnes each.

The samples tested were taken from the 15.08.13 to the 24.09.13 as per AS1141 Section 3 "Sampling of Aggregates and Rock" and the RMS Specification No.3051, Table 4 - Minimum Sampling and Testing Requirements

The results have been compared to the RMS Specification No.3051 Edition 5 June 1998. The results indicate that the material properties comply with the specification requirements.

We have been advised that material from these lots would have been supplied as follows:

CLIENT: JK Williams Contracting Pty Ltd

FOR THEIR JOB AT: Jordan Springs Villages 4E and 4F

PERIOD: October and December 2013

Yours faithfully

M. Formosa

Mike Formosa
Quarries Coordinator NSW/ACT
10.01.14

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Mike Formosa
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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	53909
MATERIAL:	DGB20 S/P 71 (0-4,000t) as Unbound Base	DATE SAMPLED:	15.8.13
		DATE TESTED:	16.8.13 to 26.8.13

SPECIFICATION: Roads and Traffic Authority NSW QA Specification **3051**. Unbound and Modified Base and Sub-Base Materials for Surfaced Road Pavements (Edition 5, June 1998). Table 3051.2 Unbound and Modified Material (Based on Shear Strength).

Particle Size Distribution Test Methods RMS T106 and T107				**Results**				
				Field Sample No.				
A. S. Sieve	**RTA QA Spec. 3051.2**	**Nominated Grading**	**Grading Tolerance RTA QA Spec. 3051.2**	Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
				Laboratory Sample No.				
				145359	145360	145361	145362	145363
	% Passing	**% Passing**	**% Variation**	**% Passing**				
26.5mm	100	100	± 10	100	100	100	100	100
19.0mm	-	99	± 10	98	99	99	99	99
13.2mm	-	89	± 8 (2)	84	92	91	89	88
9.5mm	-	-	-	77	86	83	81	82
6.7mm	50-80	71	± 5 (2)	66	76	72	69	70
4.75mm	-	-	-	57	66	61	59	60
2.36mm	-	41	± 4 (2)	39	45	42	40	41
425µm	-	18.5	± 3 (1)	17.5	21	19.5	17.0	18.5
75µm	-	12.0	± 2 (1)	11.5	13.0	12.0	11.0	11.5
13.5µm	-	5.0	-	4.5	5.5	5.5	5.0	5.0
Total defect points (as per Spec. RTA 3051-13.2. **Max. 5.0 per sample**).				0.0	0.0	0.0	0.0	0.0
Average defect points (as per Spec. RTA 3051-13.2. **Max. average of 3.0**).						0.0		
Note :	Numerical value in brackets refers to defect weighting values as per RTA Table 3051.2.							

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Date 27.8.13 *Serial No.* 118665

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	53909
MATERIAL:	DGB20 S/P 71 (0-4,000t) as Unbound Base	DATE SAMPLED:	15.8.13
		DATE TESTED:	16.8.13 to 26.8.13

Test Method RMS T107		**Results**				
Fine particle distribution in road materials (distribution for portion of material <2.36mm).		**Field Sample No.** Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
		Laboratory Sample No. 145359	145360	145361	145362	145363
	Amount passing 425µm (%)	45	46	47	43	45
	Amount passing 75µm (%)	29	29	29	28	28
	Amount less than 13.5µm (%)	12.0	12.0	12.5	12.0	12.0
	Flocculation observations			No flocculation		
Ratio	**RTA QA Specification 3051.1 Ratio (%)**					
A	**35-55**	45	47	46	43	45
B	**35-55**	66	62	62	65	62
C	**35-60**	39	42	46	45	43

Test Methods RMS T108 and T109		**Results**	
Liquid Limit, Plastic Limit and Plasticity Index of road materials. (RMS T108 and T109 now refer to AS1289.3.1.1 Liquid Limit, AS1289.3.2.1 Plastic Limit and AS1289.3.3.1 Plasticity Index)		**Field Sample No.** Bulk 2	Bulk 4
		Laboratory Sample No. 145360	145362
	RTA QA Spec. 3051.2		
Liquid Limit (%)	**Max. 20 if non-plastic**	**N/A***	**N/A***
Plastic Limit (%)	**Max. 20 if plastic**	**N/A****	**N/A****
Plasticity Index (%)	**Max. 6 for Categories 1, 2a, 2b, 2c and 2d**	**NP**	**NP**
Sample history		**OD**	
Preparation method		**DS**	
Method used for moisture content determination		**AS1289.2.1.1**	

N/A* - Test is not applicable due to continual slippage in bowl. Liquid Limit could not be obtained. **NP** - Non-plastic.
N/A** - Unable to roll, plastic limit could not be obtained. **N/App.** - Not Applicable.
Sample history:- NS = Natural state, AD = Air dried, **OD** = Oven dried at 50°C, UN = Unknown
Preparation method:- WS = Wet sieved, **DS** = Dry sieved

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	53909
MATERIAL:	DGB20 S/P 71 (0-4,000t) as Unbound Base	DATE SAMPLED:	15.8.13
		DATE TESTED:	16.8.13 to 26.8.13

Test Method RMS T215		Results				
Wet / Dry Strength Variation.		Field Sample No.	Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
		Laboratory Sample No.	145359	145360	145361	145362	145363
	RTA QA Spec. 3051.2	Samples combined					
		Note : Where all wet/dry variation results are < 25% : 1 per 10,000t is required					
Wet / Dry Strength Variation (%)	**Maximum 35**	**24**					
Average Dry Strength (kN)	**-**	**330**					
Average Wet Strength (kN)	**Minimum 70**	**252**					
Size of test fraction (mm)		-19.0 to +9.5					
Significant breakdown (%)		< 0.2					
Diameter of cylinder used (mm)		150					

Test Method RMS T114		Results				
Maximum Dry Compressive Strength (MDCS) of Road Construction Materials.		Field Sample No.	Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
		Laboratory Sample No.	145359	145360	145361	145362	145363
	RTA QA Spec. 3051.2	Samples combined					
MDCS (MPa)	**Minimum 1.7**	**4.6**					
Optimum Moisture Content at MDCS (%)		7.5					

Test Method RMS T213		Results
Particle shape by proportional calliper.		Field Sample No. Bulk 1 Laboratory Sample No. 145359
	RTA QA Spec. 3051.1	
Total mis-shapen particles at 2:1 ratio	**Maximum 35%**	**10 %**
Note : Grading results from RMS T106 grading were used to calculate above.		

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	53909
MATERIAL:	DGB20 S/P 71 (0-4,000t) as Unbound Base	DATE SAMPLED:	15.8.13
		DATE TESTED:	16.8.13 to 26.8.13

Test Method RMS T171 - Texas TXL	**Results**				
Modified Texas Triaxial Compression Test for disturbed soils, soil aggregate and crushed rock.	**Field Sample No.** Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
	Laboratory Sample No. 145359	145360	145361	145362	145363
	Samples combined				
Texas Classification No.	**1.7**				
Angle of shear resistance (deg.)	53.7				
Apparent cohesion (KPa)	88.3				
Average compressive modulus (MPa)	63.9				
Average Relative Density (% MDD)	100.0				
Average Relative Moisture content (% OMC)	84.8				
Target density (t/m^3)	2.171				
Target Moisture content (%)	6.7				
Amount of material retained on 37.5mm sieve (%)	0				
Normal Stress (kPa)	10	30	60	90	
Compressive Modulus (MPa)	37.4	74.2	70.2	73.6	
Dry Density of Specimen (t/m^3)	2.171	2.171	2.171	2.171	
Relative Dry Density of specimen (%MDD)	100.0	100.0	100.0	100.0	
Moisture content after testing (%)	6.7	6.7	6.7	6.7	
Test Method RMS T111					
(Dry density / moisture content relation of road materials using standard compactive effort).					
Maximum Dry Density (t/m^3)	**2.171**				
Optimum Moisture Content (%)	**7.9**				
Method used for moisture content determination	RMS T120				
Materials retained on 19mm sieve (%)	1				

Table 3051.2 - Unbound and Modified Materials (based on shear strength) specification requirements.
(For interpretation of results refer to RTA 3051).

Modified Texas Triaxial Classification No.	**1.7**
For Category 1 materials	Maximum 2.0
For Category 2a materials	Maximum 2.2
For Category 2b materials	Maximum 2.5
For Category 2c and 2d materials	Maximum 3.0

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	53909
MATERIAL:	DGB20 S/P 71 (0-4,000t) as Unbound Base	DATE SAMPLED:	15.8.13
		DATE TESTED:	16.8.13 to 26.8.13

Particle Size Distribution Test Method AS1289.3.6.1				**Results**				
A. S. Sieve	**RTA QA Spec. 3051.2**	**Nominated Grading**	**Grading Tolerance RTA QA Spec. 3051.2**	**Field Sample No.** Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
				Laboratory Sample No. 145359	145360	145361	145362	145363
		From gradings on page 1		AS1289.3.6.1 Particle size distribution of material after RMS T171 (Texas Triaxial Test), as per notes in Table 3051.2 (viii).				
	% Passing	**% Passing**	**% Variation**	**% Passing**				
26.5mm	**100**	100	**± 10**	100				
19.0mm	-	99	**± 10**	99				
13.2mm	-	89	**± 8 (2)**	89				
9.5mm	-	-	-	82				
6.7mm	**50-80**	71	**± 5 (2)**	72				
4.75mm	-	-	-	62				
2.36mm	-	41	**± 4 (2)**	43				
1.18mm	-	-	-	29				
600µm	-	-	-	22				
425µm	-	18.5	**± 3 (1)**	19				
300µm	-	-	-	17				
150µm	-	-	-	14				
75µm	-	12.0	**± 2 (1)**	12				
Total defect points (as per Spec. RTA 3051-13.2. **Max. 5.0 per sample**).				0.0				
Note: Numerical value in brackets refers to defect weighting values as per RTA QA Spec. 3051, Table 3051.2.								

Note : Samples provided by client.

J. BARKLEY, D. DAVIES, T. MEEHAN, T. KALAJZICH, S. LEAN, M .BANKS, M. JENNINGS, T. HOLZ, M. FORMOSA, FILE.

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	54300
MATERIAL:	DGB20 S/P 72 (0-4,000t) as Unbound Base	DATE SAMPLED:	12.9.13
		DATE TESTED:	13.9.13 to 26.9.13

SPECIFICATION: Roads and Traffic Authority NSW QA Specification **3051**. Unbound and Modified Base and Sub-Base Materials for Surfaced Road Pavements (Edition 5, June 1998). Table 3051.2 Unbound and Modified Material (Based on Shear Strength).

Particle Size Distribution Test Methods RMS T106 and T107				**Results**				
				Field Sample No.				
A. S. Sieve	**RTA QA Spec. 3051.2**	**Nominated Grading**	**Grading Tolerance RTA QA Spec. 3051.2**	Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
				Laboratory Sample No.				
				146146	146147	146148	146149	146150
	% Passing	**% Passing**	**% Variation**	**% Passing**				
26.5mm	100	100	± 10	100	100	100	100	100
19.0mm	-	98	± 10	98	99	98	97	98
13.2mm	-	81	± 8 (2)	80	83	78	84	78
9.5mm	-	-	-	72	73	70	77	71
6.7mm	50-80	62	± 5 (2)	61	63	61	66	60
4.75mm	-	-	-	50	53	51	55	51
2.36mm	-	35	± 4 (2)	33	36	35	37	34
425µm	-	14.0	± 3 (1)	13.5	14.5	13.5	15.0	13.5
75µm	-	9.0	± 2 (1)	8.5	9.5	9.0	9.5	8.5
13.5µm	-	4.0	-	4.0	4.0	4.0	4.5	4.0
Total defect points (as per Spec: RTA 3051-13.2. Max. 5.0 per sample).				0.0	0.0	0.0	0.0	0.0
Average defect points (as per Spec: RTA 3051-13.2. Max. average of 3.0).						0.0		
Note :	Numerical value in brackets refers to defect weighting values as per RTA Table 3051.2.							

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Date 30.9.13 *Serial No.* 119682

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	54300
MATERIAL:	DGB20 S/P 72 (0-4,000t) as Unbound Base	DATE SAMPLED:	12.9.13
		DATE TESTED:	13.9.13 to 26.9.13

Test Method RMS T107		**Results**				
Fine particle distribution in road materials (distribution for portion of material <2.36mm).		**Field Sample No.** Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
		Laboratory Sample No. 146146	146147	146148	146149	146150
	Amount passing 425µm (%)	41	40	39	40	41
	Amount passing 75µm (%)	26	26	25	26	26
	Amount less than 13.5µm (%)	11.5	11.0	11.0	11.5	11.5
	Flocculation observations			No flocculation		
Ratio	**RTA QA Specification 3051.1 Ratio (%)**					
A	**35-55**	41	40	39	41	41
B	**35-55**	63	66	67	67	63
C	**35-60**	47	42	44	47	47

Test Methods RMS T108 and T109	**Results**	
Liquid Limit, Plastic Limit and Plasticity Index of road materials. (RMS T108 and T109 now refer to AS1289.3.1.1 Liquid Limit, AS1289.3.2.1 Plastic Limit and AS1289.3.3.1 Plasticity Index)	**Field Sample No.** Bulk 2	Bulk 4
	Laboratory Sample No. 146147	146149
RTA QA Spec. 3051.2		
Liquid Limit (%) **Max. 20 if non-plastic**	**N/A***	**N/A***
Plastic Limit (%) **Max. 20 if plastic**	**N/A****	**N/A****
Plasticity Index (%) **Max. 6 for Categories 1, 2a, 2b, 2c and 2d**	**NP**	**NP**
Sample history	**OD**	
Preparation method	**DS**	
Method used for moisture content determination	**AS1289.2.1.1**	

N/A* - Test is not applicable due to continual slippage in bowl. Liquid Limit could not be obtained. **NP** - Non-plastic.
N/A** - Unable to roll, plastic limit could not be obtained. **N/App.** - Not Applicable.
Sample history:- NS = Natural state, AD = Air dried, **OD** = Oven dried at 50°C, UN = Unknown
Preparation method:- WS = Wet sieved, **DS** = Dry sieved

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	54300
MATERIAL:	DGB20 S/P 72 (0-4,000t) as Unbound Base	DATE SAMPLED:	12.9.13
		DATE TESTED:	13.9.13 to 26.9.13

Test Method RMS T215		**Results**				
Wet / Dry Strength Variation.		**Field Sample No.**	Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
		Laboratory Sample No.	146146	146147	146148	146149	146150
	RTA QA Spec. 3051.2	Samples combined Note : Where all wet/dry variation results are < 25% : 1 per 10,000t is required					
Wet / Dry Strength Variation (%)	**Maximum 35**	**26**					
Average Dry Strength (kN)	-	**368**					
Average Wet Strength (kN)	**Minimum 70**	**273**					
Size of test fraction (mm)		-19.0 to +9.5					
Significant breakdown (%)		< 0.2					
Diameter of cylinder used (mm)		150					

Test Method RMS T114		**Results**				
Maximum Dry Compressive Strength (MDCS) of Road Construction Materials.		**Field Sample No.**	Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
		Laboratory Sample No.	146146	146147	146148	146149	146150
	RTA QA Spec. 3051.2	Samples combined					
MDCS (MPa)	**Minimum 1.7**	**5.2**					
Optimum Moisture Content at MDCS (%)		7.0					

Test Method RMS T213		**Results**
Particle shape by proportional calliper.		**Field Sample No.** Bulk 3 **Laboratory Sample No.** 146148
	RTA QA Spec. 3051.1	
Total mis-shapen particles at 2:1 ratio	**Maximum 35%**	**13 %**
Note : Grading results from RMS T106 grading were used to calculate above.		

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	54300
MATERIAL:	DGB20 S/P 72 (0-4,000t) as Unbound Base	DATE SAMPLED:	12.9.13
		DATE TESTED:	13.9.13 to 26.9.13

Test Method RMS T171 - Texas TXL	**Results**				
Modified Texas Triaxial Compression Test for disturbed soils, soil aggregate and crushed rock.	**Field Sample No.** Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
	Laboratory Sample No. 146146	146147	146148	146149	146150
	Samples combined				
Texas Classification No.	**2.2**				
Angle of shear resistance (deg.)	50.6				
Apparent cohesion (KPa)	71.0				
Average compressive modulus (MPa)	149.7				
Average Relative Density (% MDD)	99.8				
Average Relative Moisture content (% OMC)	85.0				
Target density (t/m^3)	2.062				
Target Moisture content (%)	5.1				
Amount of material retained on 37.5mm sieve (%)	0				
Normal Stress (kPa)	10	30	60	90	
Compressive Modulus (MPa)	115.7	200.4	94.6	133.1	
Dry Density of Specimen (t/m^3)	2.057	2.057	2.057	2.057	
Relative Dry Density of specimen (%MDD)	99.8	99.8	99.8	99.8	
Moisture content after testing (%)	5.1	5.1	5.1	5.1	
Test Method RMS T111					
(Dry density / moisture content relation of road materials using standard compactive effort).					
Maximum Dry Density (t/m^3)	**2.062**				
Optimum Moisture Content (%)	**6.0**				
Method used for moisture content determination	RMS T120				
Materials retained on 19mm sieve (%)	2				

Table 3051.2 - Unbound and Modified Materials (based on shear strength) specification requirements.
(For interpretation of results refer to RTA 3051).

Modified Texas Triaxial Classification No.	**2.2**
For Category 1 materials	Maximum 2.0
For Category 2a materials	Maximum 2.2
For Category 2b materials	Maximum 2.5
For Category 2c and 2d materials	Maximum 3.0

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	54300
MATERIAL:	DGB20 S/P 72 (0-4,000t) as Unbound Base	DATE SAMPLED:	12.9.13
		DATE TESTED:	13.9.13 to 26.9.13

Particle Size Distribution Test Method AS1289.3.6.1				**Results**				
A. S. Sieve	**RTA QA Spec. 3051.2**	**Nominated Grading**	**Grading Tolerance RTA QA Spec. 3051.2**	**Field Sample No.** Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
				Laboratory Sample No. 146146	146147	146148	146149	146150
		From gradings on page 1		AS1289.3.6.1 Particle size distribution of material after RMS T171 (Texas Triaxial Test), as per notes in Table 3051.2 (viii).				
	% Passing	**% Passing**	**% Variation**	**% Passing**				
26.5mm	**100**	100	**± 10**	100				
19.0mm	-	98	**± 10**	98				
13.2mm	-	81	**± 8 (2)**	77				
9.5mm	-	-	-	68				
6.7mm	**50-80**	62	**± 5 (2)**	58				
4.75mm	-	-	-	48				
2.36mm	-	35	**± 4 (2)**	33				
1.18mm	-	-	-	22				
600µm	-	-	-	17				
425µm	-	14.0	**± 3 (1)**	15				
300µm	-	-	-	13				
150µm	-	-	-	11				
75µm	-	9.0	**± 2 (1)**	9				
Total defect points (as per Spec. RTA 3051-13.2. **Max. 5.0 per sample**).				0.0				
Note: Numerical value in brackets refers to defect weighting values as per RTA QA Spec. 3051, Table 3051.2.								

Note : Samples provided by client.

J. BARKLEY, D. DAVIES, T. MEEHAN, T. KALAJZICH, S. LEAN, M .BANKS, M. JENNINGS, T. HOLZ, M. FORMOSA, FILE.

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	54510
MATERIAL:	DGB20 S/P 74 (0-4,000t) as Unbound Base	DATE SAMPLED:	24.9.13
		DATE TESTED:	26.9.13 to 11.10.13

SPECIFICATION: Roads and Traffic Authority NSW QA Specification **3051**. Unbound and Modified Base and Sub-Base Materials for Surfaced Road Pavements (Edition 5, June 1998). Table 3051.2 Unbound and Modified Material (Based on Shear Strength).

Particle Size Distribution Test Methods RMS T106 and T107				**Results**				
A. S. Sieve	**RTA QA Spec. 3051.2**	**Nominated Grading**	**Grading Tolerance RTA QA Spec. 3051.2**	Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
				Field Sample No.				
				Laboratory Sample No.				
				146647	146648	146649	146650	146651
	% Passing	**% Passing**	**% Variation**	**% Passing**				
26.5mm	**100**	**100**	**± 10**	100	100	100	100	100
19.0mm	-	**99**	**± 10**	100	99	99	99	100
13.2mm	-	**93**	**± 8 (2)**	94	92	93	93	94
9.5mm	-	-	-	85	83	84	83	86
6.7mm	**50-80**	**72**	**± 5 (2)**	73	71	72	71	74
4.75mm	-	-	-	62	61	62	60	63
2.36mm	-	**41**	**± 4 (2)**	41	40	42	40	43
425µm	-	**17.0**	**± 3 (1)**	16.5	17.0	16.0	16.5	18.0
75µm	-	**10.0**	**± 2 (1)**	10.0	10.0	10.0	9.0	10.5
13.5µm	-	**4.5**	-	4.5	4.0	4.5	4.0	4.5
Total defect points (as per Spec. RTA 3051-13.2. **Max. 5.0 per sample**).				0.0	0.0	0.0	0.0	0.0
Average defect points (as per Spec. RTA 3051-13.2. **Max. average of 3.0**).						0.0		
Note :	Numerical value in brackets refers to defect weighting values as per RTA Table 3051.2.							

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

Approved Signatory _____ **Artemio Mendoza**

Date 11.10.13 *Serial No.* 120014

This document is issued in accordance with the NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025

NATA Accredited Laboratory Number: **547**

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	54510
MATERIAL:	DGB20 S/P 74 (0-4,000t) as Unbound Base	DATE SAMPLED:	24.9.13
		DATE TESTED:	26.9.13 to 11.10.13

Test Method RMS T107		**Results**				
Fine particle distribution in road materials (distribution for portion of material <2.36mm).		**Field Sample No.** Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
		Laboratory Sample No. 146647	146648	146649	146650	146651
	Amount passing 425µm (%)	40	42	38	41	42
	Amount passing 75µm (%)	25	25	24	23	24
	Amount less than 13.5µm (%)	10.5	10.5	10.5	10.0	10.5
	Flocculation observations			No flocculation		
Ratio	**RTA QA Specification 3051.1 Ratio (%)**					
A	**35-55**	40	43	38	41	42
B	**35-55**	61	59	63	55	58
C	**35-60**	45	40	45	44	43

Test Methods RMS T108 and T109		**Results**	
Liquid Limit, Plastic Limit and Plasticity Index of road materials. (RMS T108 and T109 now refer to AS1289.3.1.1 Liquid Limit, AS1289.3.2.1 Plastic Limit and AS1289.3.3.1 Plasticity Index)		**Field Sample No.** Bulk 2	Bulk 4
		Laboratory Sample No. 146648	146650
	RTA QA Spec. 3051.2		
Liquid Limit (%)	**Max. 20 if non-plastic**	**N/A***	**N/A***
Plastic Limit (%)	**Max. 20 if plastic**	**N/A****	**N/A****
Plasticity Index (%)	**Max. 6 for Categories 1, 2a, 2b, 2c and 2d**	**NP**	**NP**
Sample history		**OD**	
Preparation method		**DS**	
Method used for moisture content determination		**AS1289.2.1.1**	

N/A* - Test is not applicable due to continual slippage in bowl. Liquid Limit could not be obtained. **NP** - Non-plastic.
N/A** - Unable to roll, plastic limit could not be obtained. **N/App.** - Not Applicable.
Sample history:- NS = Natural state, AD = Air dried, **OD** = Oven dried at 50°C, UN = Unknown
Preparation method:- WS = Wet sieved, **DS** = Dry sieved

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	54510
MATERIAL:	DGB20 S/P 74 (0-4,000t) as Unbound Base	DATE SAMPLED:	24.9.13
		DATE TESTED:	26.9.13 to 11.10.13

Test Method RMS T215		**Results**				
Wet / Dry Strength Variation.		**Field Sample No.**				
		Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
		Laboratory Sample No.				
		146647	146648	146649	146650	146651
	RTA QA Spec. 3051.2	Samples combined Note : Where all wet/dry variation results are < 25% ; 1 per 10,000t is required				
Wet / Dry Strength Variation (%)	**Maximum 35**	**28**				
Average Dry Strength (kN)	-	**344**				
Average Wet Strength (kN)	**Minimum 70**	**248**				
Size of test fraction (mm)		-19.0 to +9.5				
Significant breakdown (%)		< 0.2				
Diameter of cylinder used (mm)		150				

Test Method RMS T114		**Results**				
Maximum Dry Compressive Strength (MDCS) of Road Construction Materials.		**Field Sample No.**				
		Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
		Laboratory Sample No.				
		146647	146648	146649	146650	146651
	RTA QA Spec. 3051.2	Samples combined				
MDCS (MPa)	**Minimum 1.7**	**4.0**				
Optimum Moisture Content at MDCS (%)		6.5				

Test Method RMS T213		**Results**				
Particle shape by proportional calliper.		**Field Sample No.**				
		Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
		Laboratory Sample No.				
		146647	146648	146649	146650	146651
	RTA QA Spec. 3051.1					
Total mis-shapen particles at 2:1 ratio	**Maximum 35%**	**Not applicable**				
Note : Grading results from RMS T106 grading were used to calculate above.						

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	54510
MATERIAL:	DGB20 S/P 74 (0-4,000t) as Unbound Base	DATE SAMPLED:	24.9.13
		DATE TESTED:	26.9.13 to 11.10.13

Test Method RMS T171 - Texas TXL	**Results**				
Modified Texas Triaxial Compression Test for disturbed soils, soil aggregate and crushed rock.	**Field Sample No.** Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
	Laboratory Sample No. 146647	146648	146649	146650	146651
	Samples combined				
Texas Classification No.	**1.6**				
Angle of shear resistance (deg.)	54.5				
Apparent cohesion (KPa)	91.1				
Average compressive modulus (MPa)	161.8				
Average Relative Density (% MDD)	100.0				
Average Relative Moisture content (% OMC)	84.7				
Target density (t/m^3)	2.125				
Target Moisture content (%)	7.2				
Amount of material retained on 37.5mm sieve (%)	0				
Normal Stress (kPa)	10	30	60	90	
Compressive Modulus (MPa)	73.9	177.1	199.7	196.4	
Dry Density of Specimen (t/m^3)	2.125	2.125	2.125	2.125	
Relative Dry Density of specimen (%MDD)	100.0	100.0	100.0	100.0	
Moisture content after testing (%)	7.2	7.2	7.2	7.2	
Test Method RMS T111					
(Dry density / moisture content relation of road materials using standard compactive effort).					
Maximum Dry Density (t/m^3)	**2.125**				
Optimum Moisture Content (%)	**8.5**				
Method used for moisture content determination	RMS T120				
Materials retained on 19mm sieve (%)	1				

Table 3051.2 - Unbound and Modified Materials (based on shear strength) specification requirements.
(For interpretation of results refer to RTA 3051).

Modified Texas Triaxial Classification No.	**1.6**
For Category 1 materials	Maximum 2.0
For Category 2a materials	Maximum 2.2
For Category 2b materials	Maximum 2.5
For Category 2c and 2d materials	Maximum 3.0

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TEST REPORT

CLIENT:	BORAL QUARRIES - DUNMORE QUARRY	FILE No:	8/13
PROJECT:	Quality Control Testing	REQUEST No:	54510
MATERIAL:	DGB20 S/P 74 (0-4,000t) as Unbound Base	DATE SAMPLED:	24.9.13
		DATE TESTED:	26.9.13 to 11.10.13

Particle Size Distribution Test Method AS1289.3.6.1				**Results**				
A. S. Sieve	**RTA QA Spec. 3051.2**	**Nominated Grading**	**Grading Tolerance RTA QA Spec. 3051.2**	**Field Sample No.** Bulk 1	Bulk 2	Bulk 3	Bulk 4	Bulk 5
				Laboratory Sample No. 146647	146648	146649	146650	146651
		From gradings on page 1		AS1289.3.6.1 Particle size distribution of material after RMS T171 (Texas Triaxial Test), as per notes in Table 3051.2 (viii).				
	% Passing	**% Passing**	**% Variation**	**% Passing**				
26.5mm	**100**	100	**± 10**	100				
19.0mm	-	99	**± 10**	99				
13.2mm	-	93	**± 8 (2)**	91				
9.5mm	-	-	-	81				
6.7mm	**50-80**	72	**± 5 (2)**	69				
4.75mm	-	-	-	58				
2.36mm	-	41	**± 4 (2)**	40				
1.18mm	-	-	-	26				
600µm	-	-	-	18				
425µm	-	17.0	**± 3 (1)**	16				
300µm	-	-	-	14				
150µm	-	-	-	11				
75µm	-	10.0	**± 2 (1)**	9				
Total defect points (as per Spec. RTA 3051-13.2. **Max. 5.0 per sample**).				0.0				
Note: Numerical value in brackets refers to defect weighting values as per RTA QA Spec. 3051, Table 3051.2.								

Note : Samples provided by client.

J. BARKLEY, D. DAVIES, T. MEEHAN, T. KALAJZICH, S. LEAN, M .BANKS, M. JENNINGS, T. HOLZ, M. FORMOSA, FILE.

Aus Pits

Solve. Develop. DeliverGoing Green

6 February 2014

Mr Josh Vermeer
JK Williams Group
44 Jack Williams Drive
Penrith NSW 2751

Dear Josh,

SUBJECT: **Letter of Compliance**
PROJECT: **Jordan Springs – Stage 4C**
SUPPLY: **Pre- Cast Pits and Covers**

This letter serves as a letter of compliance for all products supplied to the above project.

Aus Pits manufacture custom made pre-cast pits and associated products in accordance with the following criteria:

- To RMS QA Specification R11 Edition 3, Rev 14 – Stormwater Drainage
- To Penrith City Council standard drawings and specifications
- To all project specific drawings provided by the contractor.
- To all relevant Australian Standards applicable to pre-cast pit manufacture which includes AS3600.
- To computations developed by AGB Group Consulting Engineers.
- These computations comply with the Austroads Bridge Design Code AS5100, incorporating design criteria for pits to be constructed with 100mm thick walls and base.
- Fibre reinforced pits have been constructed in accordance with RMS 'Approval for the supply of Fibre-Struct pre-cast pits' letter dated 19/8/2011
- Pit designs are based on 100 year design life to Class D traffic loads.
- Aus Pits maintain strict factory controls under our own manufacturing Specification No. 7/92.
- Aus Pits manufacture under a certified ISO 9001 Quallity System and maintain records of manufacture for presentation when required.

As stated, Aus Pits maintain manufacturing controls to ensure that compliance to the standard requirements are achieved.

Yours sincerely,

Ben Wharton
AUS PITS
Northern States Sales Manager

Aus Pits

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6 February 2014

Mr Josh Vermeer
JK Williams Group
44 Jack Williams Drive
Penrith NSW 2751

Dear Josh,

SUBJECT: **Letter of Compliance**
PROJECT: **Jordan Springs – Stage 4E**
SUPPLY: **Pre- Cast Pits and Covers**

This letter serves as a letter of compliance for all products supplied to the above project.

Aus Pits manufacture custom made pre-cast pits and associated products in accordance with the following criteria:

- To RMS QA Specification R11 Edition 3, Rev 14 – Stormwater Drainage
- To Penrith City Council standard drawings and specifications
- To all project specific drawings provided by the contractor.
- To all relevant Australian Standards applicable to pre-cast pit manufacture which includes AS3600.
- To computations developed by AGB Group Consulting Engineers.
- These computations comply with the Austroads Bridge Design Code AS5100, incorporating design criteria for pits to be constructed with 100mm thick walls and base.
- Fibre reinforced pits have been constructed in accordance with RMS 'Approval for the supply of Fibre-Struct pre-cast pits' letter dated 19/8/2011
- Pit designs are based on 100 year design life to Class D traffic loads.
- Aus Pits maintain strict factory controls under our own manufacturing Specification No. 7/92.
- Aus Pits manufacture under a certified ISO 9001 Quallity System and maintain records of manufacture for presentation when required.

As stated, Aus Pits maintain manufacturing controls to ensure that compliance to the standard requirements are achieved.

Yours sincerely,

Ben Wharton
AUS PITS
Northern States Sales Manager

Aus Pits

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6 February 2014

Mr Josh Vermeer
JK Williams Group
44 Jack Williams Drive
Penrith NSW 2751

Dear Josh,

SUBJECT: **Letter of Compliance**
PROJECT: **Jordan Springs – Stage 4D**
SUPPLY: **Pre- Cast Pits and Covers**

This letter serves as a letter of compliance for all products supplied to the above project.

Aus Pits manufacture custom made pre-cast pits and associated products in accordance with the following criteria:

- To RMS QA Specification R11 Edition 3, Rev 14 – Stormwater Drainage
- To Penrith City Council standard drawings and specifications
- To all project specific drawings provided by the contractor.
- To all relevant Australian Standards applicable to pre-cast pit manufacture which includes AS3600.
- To computations developed by AGB Group Consulting Engineers.
- These computations comply with the Austroads Bridge Design Code AS5100, incorporating design criteria for pits to be constructed with 100mm thick walls and base.
- Fibre reinforced pits have been constructed in accordance with RMS 'Approval for the supply of Fibre-Struct pre-cast pits' letter dated 19/8/2011
- Pit designs are based on 100 year design life to Class D traffic loads.
- Aus Pits maintain strict factory controls under our own manufacturing Specification No. 7/92.
- Aus Pits manufacture under a certified ISO 9001 Quallity System and maintain records of manufacture for presentation when required.

As stated, Aus Pits maintain manufacturing controls to ensure that compliance to the standard requirements are achieved.

Yours sincerely,

Ben Wharton
AUS PITS
Northern States Sales Manager

Aus Pits

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6 February 2014

Mr Josh Vermeer
JK Williams Group
44 Jack Williams Drive
Penrith NSW 2751

Dear Josh,

SUBJECT: **Letter of Compliance**
PROJECT: **Jordan Springs – Stage 4F**
SUPPLY: **Pre- Cast Pits and Covers**

This letter serves as a letter of compliance for all products supplied to the above project.

Aus Pits manufacture custom made pre-cast pits and associated products in accordance with the following criteria:

- To RMS QA Specification R11 Edition 3, Rev 14 – Stormwater Drainage
- To Penrith City Council standard drawings and specifications
- To all project specific drawings provided by the contractor.
- To all relevant Australian Standards applicable to pre-cast pit manufacture which includes AS3600.
- To computations developed by AGB Group Consulting Engineers.
- These computations comply with the Austroads Bridge Design Code AS5100, incorporating design criteria for pits to be constructed with 100mm thick walls and base.
- Fibre reinforced pits have been constructed in accordance with RMS 'Approval for the supply of Fibre-Struct pre-cast pits' letter dated 19/8/2011
- Pit designs are based on 100 year design life to Class D traffic loads.
- Aus Pits maintain strict factory controls under our own manufacturing Specification No. 7/92.
- Aus Pits manufacture under a certified ISO 9001 Quallity System and maintain records of manufacture for presentation when required.

As stated, Aus Pits maintain manufacturing controls to ensure that compliance to the standard requirements are achieved.

Yours sincerely,

Ben Wharton
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Northern States Sales Manager

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A Division of Holmes Nominees (Aust) Pty. Ltd.
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Hy-Tec Industries Pty Ltd
ACN 070 100 702
ABN 90 070 100 702

P O Box 6770
SILVERWATER NSW 1811
Phone: 61 2 9647 2866
Fax: 61 2 9647 2924

23rd January 2014
J K Williams
Attention : Mr. Joshua Vermeer
CC: Mr. Peter McKee

Dear Joshua,

RE: J K Williams - Jordan Springs, Certificate of Compliance

Please find attached NATA test report numbers 02341421AN, 10LT6988, CWES135-04695-1 and WY1282 , issued by Hy-Tec, Coffey and Watertest laboratories, on sample 20mm dense graded base (DGB20) drawn from Austen Quarry **Lot 075**.

The product was sampled in accordance with AS 1141.3.

The results have been compared to RTA Specification No. 3051 Table 2, Edition 5, 1998. The results indicate that the material properties comply with the specification requirements.

CLIENT: J.K. Williams

PROJECT: Jordan Springs

PERIOD: Commencing January 2014

Yours sincerely,

Damijan Nemes
Hy-tec Industries Pty Ltd
Technical & Quality Manager (NSW)

Concord West, Sydney Laboratory

Coffey Testing Pty Ltd
ABN 92 114 364 046
4 Rothwell Ave. (PO Box 329)
Concord West NSW 2138

Phone: +61 (2) 9736 3922
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Material Test Report

Report No: CWES13S-04695-1
Issue No: 1

Client: Austen Rhyolite Pty Ltd
P.O. Box 6770
Silverwater NSW 1811

Principal:
Project No.: INFOCWES00166AA
Project Name: Material Testing - Hartley Quarry
Lot No.: Stockpile 5 **TRN:**

Tests indicated as not accredited are outside the scope of the laboratory's or signatories accreditation.

Approved Signatory: Adam O'Callaghan
(Senior Geotechnician)

Date of Issue: 25/11/2013

Sample Details

Sample ID: CWES13S-04695
Client Sample: 1421-01
Date Sampled:
Source: Hartley Quarry
Material: Roadbase Gravel
Specification: No Specification
Sampling Method: Submitted by client
Project Location: Austen Hartley Quarry
Sample Location:

Test Results

Description	Method	Result	Limits
Maximum Dry Compressive Strength (MPa)	RTA T114 - 2007#	3.7	
Moisture Content at MDCS (%)		6.0	
Dry Density at MDCS (t/m³)		2.12	
Date Tested		25/11/2013	

Comments

Tests indicated as not accredited are outside the scope of the laboratory's or signatories accreditation.
CWES13W01809

Concord West, Sydney Laboratory

Coffey Testing Pty Ltd
ABN 92 114 364 046
4 Rothwell Ave. (PO Box 329)
Concord West NSW 2138

Phone: +61 (2) 9736 3922
Fax: +61 (2) 9743 5860

coffey

Material Test Report

Report No: CWES13S-04696-1
Issue No: 1

Client: Austen Rhyolite Pty Ltd
P.O. Box 6770
Silverwater NSW 1811

Principal:
Project No.: INFOCWES00166AA
Project Name: Material Testing - Hartley Quarry
Lot No.: Stockpile 5 TRN:

Tests indicated as not accredited are outside the scope of the laboratory's or signatories accreditation.

Approved Signatory: Adam O'Callaghan
(Senior Geotechnician)

Date of Issue: 25/11/2013

Sample Details

Sample ID:	CWES13S-04696
Client Sample:	1421-02
Date Sampled:	
Source:	Hartley Quarry
Material:	Roadbase Gravel
Specification:	No Specification
Sampling Method:	Submitted by client
Project Location:	Austen Hartley Quarry
Sample Location:	

Test Results

Description	Method	Result	Limits
Maximum Dry Compressive Strength (MPa)	RTA T114 - 2007#	4.5	
Moisture Content at MDCS (%)		6.5	
Dry Density at MDCS (t/m³)		2.13	
Date Tested		25/11/2013	

Comments

Tests indicated as not accredited are outside the scope of the laboratory's or signatories accreditation.
CWES13W01806

20 Kelso Crescent,
Moorebank, NSW 2170
P(02) 9822 6842
F (02) 9601 7446

TEST REPORT

Hy-Tec Industries Pty.Ltd.
ABN 90 070 100 702

REPORTING ON AGGREGATE CHARACTERISTICS

REPORT NO: 02341421AN
PAGE: 1 of 1
NO. OF SAMPLES: 5

CLIENT: AUS-10 Rhyolite Pty.Ltd

PROJECT: Construction Materials

SOURCE: Austen Quarry, located at Hartley

NATA Laboratory Accredited No:18082
Accredited for compliance with ISO/IEC 17025

SPECIFICATION: RTA 3051 (1998), Unbounded and Modified Base and Sub-Base Materials for Surfaced Road Pavements
Table 3051.2 Based on Shear Strength (Unbound Base)

LOT NUMBER:	075
STOCKPILE NUMBER:	05
INTERNAL SAMPLE NUMBER:	1421
PRODUCT CODE:	HLGM20MDGB
PRODUCT DESCRIPTION:	DGB20mm Dense Graded Base
SAMPLED ON:	Wednesday, 16 October 2013
NOTES:	Unbounded and Unmodified Materials

Date of Sampling
16/10/2013

Date of Testing
25/10/2013
to
14/11/2013

TEST METHOD	UOM	SUB-SAMPLE NO:	1	2	3	4	5	NOMINATED GRADING	LIMIT OF MAXIMUM DEVIATION
AS 1141.3.1	-	Sampling as per clause 6.9.5 Part B	Yes	Yes	Yes	Yes	Yes		
T102	-	Pretreatment by Compaction	-	-	Yes	-	-		
T103	-	Pretreatment by Artificial Weathering	-	-	-	-	-		
T105	-	Preparation of Samples for Testing (Soil)	Yes	Yes	Yes	Yes	Yes		
AS1289.3.6.1	%	Particle Size Distribution Passing Sieve Size (mm) 26.5	100	100	100	100	100	100	±10
		19.0	100	100	100	100	99	100	±10
		13.2	89	92	95	94	95	93	±8
		6.70	59	63	68	69	70	66	±5
		2.36	35	40	43	44	45	41	±4
		425 µm[i]	20	23	24	25	25	23	±3
		75 µm[i]	12	14	14	15	15	14	±2
								LIMIT MIN	LIMIT MAX
T171[ii]		Modified Texas Triaxial For Category 1 Materials For Category 2a Materials For Category 2b Materials For Category 2c & 2d Materials	-	-	2.0	-	-	- - - -	2.0 2.2 2.5 3.0
T114	MPa	Maximum Dry Compressive Strength on fraction passing 19mm sieve	3.7	4.5	NR	NR	NR	1.7 (If Plct)	-
T116	MPa	Unconfined Compressive Strength	NR	NR	NR	NR	NR	-	-
T108	%	Liquid Limit	17	18	19	19	19	-	20[2] (If PI=0)
T109	%	Plastic Limit	17	17	16	16	16	-	20 (If PI>0)
T109	%	Plasticity Index	0	1	3	3	3	-	6[1]
T219	%	Acid Soluble Sulfate Content	-	-	0.014	-	-	-	0.3
T129	Unit	pH	-	-	8.0	-	-	-	-
T215	kN	Aggregate Wet Strength[iii] (a) either a sprayed seal or up to 50mm thickness of asphalt	-	-	196	-	-	70[3] 60[4]	-
	kN	(b) more than 50mm thickness of asphalt	NA	NA	NA	NA	NA	70[5] 60[6]	-
	%	Wet/Dry Strength Variation[iii]	-	-	11	-	-	-	35[7]

NOTES:
Test T114-116-171-129-219 not covered in Hy-tec Moorebank's laboratory Scope of Accreditation.
T114-Refer to Coffey Report No.CWES138-04695-1
T116-Not required
T171-Refer to Coffey Report No.IOLT 6988
T123-T129-Refer to WATERTEST Job No.WY1282

Sample history for Atterberg Limits: Air-Dried. Preparation Method for Atterberg Limits: Dry Sieved
NR = Not Required LV = Local Value PI = Plasticity Index NP = Non Plastic
i - Prior to testing the materials shall be modified, compacted & cured at 23±2°C & constant moisture content for 7 days in accordance with RTA T611
ii - When tested at 85%±2% of OMC and 100%±1%MDD as determine by RTA T111 (Standard Compaction)
iii - Fraction tested is -19.0mm and +9.5mm
1 - After being subjected to the pretreatment, the PL shall not increase by more than 3 from that of the sample prior to pretreatment
2 - Max may be increased to 23 for non-plastic crushed rock products
3 - Min of Aggregate wet Strength for Category 1, 2a, 2b or 2c
4 - Min of Aggregate wet Strength for Category 2d
5 - Min of Aggregate wet Strength for Category 1 or 2a
6 - Min of Aggregate wet Strength for Category 2b, 2c or 2d
7 - Max of Wet/Dry Strength Variation for Cate. 1, 2a, 2b or 2c and Local Value for Cato. 2d

Approved By: Fred Gendo

Title: Laboratory Supervisor

Signed:

Date: 04.12.13

WATERTEST

Office:
PO BOX 591
SEVEN HILLS NSW 2147

Laboratory:
1/4 ABBOTT ROAD
SEVEN HILLS NSW 2147
Telephone: (02) 9838 8294
Fax: (02) 9838 8919
A.C.N. 098 982 140
A.B.N. 76 098 982 140
NATA No: 1884

ANALYTICAL REPORT for:

HY-TEC INDUSTRIES PTY LTD

PO BOX 6770
SILVERWATER NSW 1811

ATTN: DAMIJAN NEMES

JOB NO: WY1282

CLIENT ORDER: 2201007735

DATE RECEIVED: 13/11/13

DATE COMPLETED: 29/11/13

TYPE OF SAMPLES: SOIL

NO OF SAMPLES: 2

NATA Accredited for compliance with ISO/IEC 17025

.....
Issued on 29/11/13
Sue Wyman
(Laboratory Supervisor)

ANALYTICAL REPORT

JOB NO: WY1282
CLIENT ORDER: 2201007735

	SAMPLES	SO3 %	pH
1	0233/1422	0.021	8.1
2	0234/1421	0.014	8.0
	MDL	0.001	0.1
	Method Code	10.53	8.21
	Preparation	P1	P1

ANALYTICAL REPORT

JOB NO: WY1282
CLIENT ORDER: 2201007735

METHODS OF PREPARATION AND ANALYSIS

The tests contained in this report have been carried out on the samples as received by the laboratory.

P1	Analysis performed on sample as received
10.53	Acid Soluble Sulphate - Based on RTA Test Method T219 expressed as SO3
8.21	pH value of a soil - RTA T123

Rocla
Pipeline Products

QAR11 CERTIFICATE OF COMPLIANCE

GOODS SUPPLIED TO **JK Williams Contracting Pty Ltd**

PROJECT **Jordon Springs Estate 4E & F**

All specified products manufactured to our system's requirements comply with the Rocla standard product specifications or to an agreed customer specification and/or drawing.

In accordance with Rocla policy, Quality system documents together with production records are available for audit by our customers at our works.

All products listed have been manufactured under the Rocla Quality Management System. This system is based on compliance with the requirements of AS/NZS ISO 9001:2000 'Quality Management Systems - Requirements'.

Rocla BOX CULVERTS and base slabs that are utilised in the manufacture of OSD Tanks, are designed and manufactured in accordance with AS1597.2 and can confirm to RTA Specification R16 if required. Unless otherwise specified, box culverts are B1 exposure classification and 0-2m fill. Box culverts are designed to withstand SM1600 loading in accordance with AS5100.

ITEM	DESCRIPTION
ABAC1801805	RCBC 1800 X 1800 X 2.40 AS1597.2 0-2M FILL B1
ABAC1801802294	RCBC 1800 X 1800 X 2.133 AS1597.2 0-2M FILL B1 SPLAY

Supply Location: EMU PLAINS

Quality Officer: K Wadl Date: 13/2/14

User Ref: QAR11, Serial No: 400, Revision Level: 5.05 - Refer to Rocla Intranet for latest revision

Rocla
Pipeline Products

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ITEM	DESCRIPTION
ABAA3601507	RCBC 3600 X 1500 X 2.45 AS1597.2 0-2M FILL B1
ABAA3601502	RCBC 3600 X 1500 X 1.20 AS1597.2 0-2M FILL B1

Supply Location: EMU PLAINS

Quality Officer: K Hall Date: 13/2/14

Williams Consulting Engineers Australia Pty. Ltd.

ABN39129454146
ACN129454146
CIVIL STRUCTURAL
78 St Johns Road, Blaxland, NSW 2774
P.O. Box 79 Blaxland NSW 2774
5000 Channel Highway, TAS 7150
P.O. Box 79 Middleton, TAS 7163

13th February, 2014
Project No.2013/096

Mr. Joshua Vermeer,
J. K. Williams Contracting Pty. Ltd.,
44 Jack Williams Drive,
PENRITH. NSW. 2750

Dear Sir,

RE: JORDAN SPRINGS SUBDIVISION STAGES 4C, 4D, 4E, 4F – STRUCTURAL CERTIFICATE FOR STORMWATER DRAINAGE PITS AND BOX CULVERT BASES AND SUNDRIES.

The writer has carried out inspections of the stormwater drainage pit bases, box culvert bases, and the pit walls and risers for Stages 4C, 4D, 4E, 4F of the Jordan Springs subdivision as follows:

Date	Item	Inspected
30/08/13	4E culvert base slabs 2 and 4	Base slab reinforcement and cover
06/09/13	4E culvert base slabs 1 and 3	Base slab reinforcement and cover
10/09/13	4E culvert base slab 5	Base slab reinforcement and cover
12/09/13	Pit 19/6, 20/1	Pit base reinforcement and cover
13/09/13	Pit 19/6, 20/1	Pit wall reinforcement and cover
18/09/13	Pit 19/2, 19/4	Pit base reinforcement and cover
19/09/13	Pit 19/2, 19/4	Pit wall reinforcement and cover
19/09/13	Pit 19/5, 21/12	Pit base reinforcement and cover
19/09/13	Pit 19/6	Pit riser reinforcement and cover
23/09/13	Pit 19/2, 19/4, 20/1	Pit riser reinforcement and cover
23/09/13	Pit 19/5	Pit wall reinforcement and cover
25/09/13	Pit 19/5	Pit riser reinforcement and cover
25/09/13	4F Culvert base middle slab	Base slab reinforcement and cover
30/09/13	4F Culvert base middle slab	Base slab reinforcement and cover
01/10/13	Pit 21/1	Pit base reinforcement and cover
02/10/13	Pit 18/2	Pit base reinforcement and cover
02/10/13	Pit 21/12	Pit wall reinforcement and cover
04/10/13	Pit 18/2	Pit wall reinforcement and cover
10/10/13	Pit 18/2	Pit riser reinforcement and cover
10/10/13	Pit 21/1	Pit wall reinforcement and cover
14/10/13	Pit 21/1, 21/12	Pit riser reinforcement and cover
14/10/13	4E northeast wing wall	Reinforcement and cover
02/11/13	4F northwest wingwall	Reinforcement and cover
02/11/13	4E north headwall and upstand wall	Reinforcement and cover
05/12/13	4F southwest wingwall	Reinforcement and cover
10/12/13	4F south headwall	Reinforcement and cover
19/12/13	4E southwest wingwall	Reinforcement and cover
09/01/14	4E south headwall	Reinforcement and cover

Jordan Springs Subdivision,
Stages 4E,4F (Cont.):

The reinforcement, cover and member thicknesses for all pits, box culvert bases, maintenance slabs and headwalls were satisfactory and in accordance with the approved drawings and site instructions by the writer.

The writer certifies that the stormwater drainage pits, box culvert bases, maintenance slabs and headwalls have been constructed in accordance with the approved engineering drawings prepared by J. Wyndham Prince Pty. Ltd., as per the table of plans on Page 3.

Yours faithfully,

R. D. Williams
B.Sc.(Tech.), Civil Engineering,
Grad. Dip., Mining Engineering,
MIEAust., CPEng., NPER2445628

Jordan Springs Subdivision,
Stages 4C, 4D, 4E, 4F (Cont.):

TABLE OF ENGINEERING CONSTRUCTION PLANS:

Stage 4C		
Cover Sheet	9408/CC301	A
Engineering Plan Sheet 1 of 2	9408/CC304	B
Engineering Plan Sheet 2 of 2	9408/CC305	B
Special Pit Details 18/2	9408/CC331	A
Special Pit Details 19/2	9408/CC333	A
Special Pit Details 19/3	9408/CC334	A
Special Pit Details 19/4	9408/CC335	A
Special Pit Details 19/5	9408/CC336	A
Special Pit Details 19/6	9408/CC337	A
Special Pit Details 20/1	9408/CC338	A
Special Pit Details Typical Junction Pits	9408/CC339	A
Special Pit Details 21/12	9408/CC340	A
Stage 4E		
Cover Sheet	9408/CC501	A
Engineering Plan	9408/CC504	B
Line 201 Culvert Plan and Details Sheet 1	9408/CC531	B
Line 201 Culvert Plan and Details Sheet 2	9408/CC532	B
Line 201 Culvert Plan and Details Sheet 3	9408/CC533	B
Title Sheet & Construction Notes	15200/S1	-
Typical Junction Pit Plan & Details	15200/S4	-
Culvert Wall & Rock Retaining Wall Details	15200/S5	-
Culvert Elevations	15200/S6	-
Culvert & Wing Wall Details	15200/S7	-
Bridging Slab Bottom Reinforcement Plans & Details	15200/S8	-

Jordan Springs Subdivision,
Stages 4C, 4D, 4E, 4F (Cont.):

TABLE OF ENGINEERING CONSTRUCTION PLANS (Cont.)::

Stage 4F		
Cover Sheet	9408/CC601	A
Engineering Plan	9408/CC603	C
Line 202 Culvert Plan and Sections	9408/CC613	B
Line 202 Culvert and Slab Detail	9408/CC614	A
Title Sheet & Construction Notes	15200/S1	-
Culvert Layout Plan & Elevations	15200/S3	-
Culvert & Wingwall Details	15200/S4	-
Culvert Wall & Rock Retaining Wall Details	15200/S5	-
Bridgind Slab Plans & Headwall Details	15200/S6	-