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ANNUAL ENVIRONMENTAL REPORT

RILTA ENVIRONMENTAL LTD.

SITE 14-A1 GREENOGUE BUSINESS PARK

LICENCE NO. W0185-01

JANUARY 2016 – DECEMBER 2016

Prepared For: -

Rilta Environmental Ltd,
Greenogue Business Park,
Rathcoole,
County Dublin.

Prepared By: -

O' Callaghan Moran & Associates,
Unit 15 Melbourne Business Park,
Model Farm Road,
Cork.

7 April 2017

Project	Annual Environmental Report 2016			
Client	Rilta Environmental Ltd W0185-01			
Report No	Date	Status	Prepared By	Reviewed By
161950209	23/03/2017	Draft	Mr Neil Sandes PGeo EurGeol	Mr Jim O'Callaghan MSc
	07/04/2107	Final		

TABLE OF CONTENTS

PAGE

1. INTRODUCTION

This is the 2016 Annual Environmental Report (AER) for the Rilta Environmental Limited (Rilta) Materials Recovery Facility (MRF) located at Unit 14-A1 Greenogue Business Park, Rathcoole, County Dublin. The report covers the period from the 1st January 2016 to the 31st December 2016. The content of the AER is based on Schedule E of the Waste Licence (W0185-01).

2. SITE DESCRIPTION

2.1 Site Location and Layout

The facility is located within an industrial estate approximately 2km east of Newcastle village and approximately 2.5km west of Rathcoole village. Rilta have been operating at the facility since 2009.

2.2 Waste Management Activities

During the reporting period the licence allowed Rilta to accept and process up to 60,000 tonnes of waste per annum, as set out in Appendix A and summarised below:

2.2.1 Waste Types & Processes

During the reporting period, the facility was licensed to accept the following waste categories and maximum quantities, as specified in Schedule A of the Licence: -

- Household Waste (7,000 tonnes)
- Commercial & Industrial Waste (15,000 tonnes)
- Construction & Demolition Waste (1,000 tonnes)
- Sewage Sludge (2,000 tonnes)
- Industrial Sludge (2,000 tonnes)
- Hazardous Waste (as listed in Table E.2.2 entitled 'Hazardous waste Types and Quantities' of the application (33,000 tonnes)

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Act, 1996:

Class 7: Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination), which results in final compounds or mixtures, which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule (including evaporation, drying and calcination);

This activity relates to the shredding of waste materials, including, household hazardous waste containers and metals, plastics, card and paper. Physico-chemical treatment may be carried out on effluents to meet discharge criteria.

Class 11: Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule;

This activity relates to bulking-up of waste on-site prior to shipment of waste for disposal offsite.

Class 12: Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule;

This activity relates to the baling and repackaging of various waste types prior to disposal off-site.

Class 13: Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced;

This activity relates to the storage of hazardous and non-hazardous waste at the facility prior to disposal off-site.

Licensed Waste Disposal Activities, Fourth Schedule of the Waste Management Act, 1996.

Class 2: Recycling or reclamation of organic substances, which are not used as solvents (including composting and other biological transformation processes);

This activity relates to the recycling of various organic substances including, wood, paper/cardboard, textile materials and vegetable oils.

Class 3: Recycling or reclamation of metals and metal compounds;

This activity relates to the dismantling, shredding, baling and recycling of various metal wastes.

Class 4: Recycling or reclamation of other inorganic materials;

This activity is limited to the reclamation of refrigerator gasses.

Class 11: Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:

This activity is to make provision for the acceptance on-site for transfer to an appropriate facility of waste that has been obtained from any activity referred to previously in the Schedule.

Class 12: Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule;

This activity refers to the exchange of certain waste types and their packaging for further processing off-site

Class 13: Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced;
This activity is limited to the storage of waste at the facility prior to off-site recovery.

3. EMISSION MONITORING

Rilta implements the environmental monitoring programme specified in the licence to assess the significance of emissions from the site activities. The programme includes surface water, wastewater, groundwater, noise and dust monitoring. The monitoring locations are shown on the plan in Appendix A. The monitoring results are submitted to the Agency at quarterly intervals. An overview of the results is presented in this Section.

3.1 Surface Water Monitoring

Surface water monitoring was carried out quarterly at one location (SW1). There are no emission limit values (ELVs) or trigger levels set in the Licence. Following a request from the Agency, trigger levels were developed in September 2015 in accordance with the Agency's guidance on setting of trigger levels for storm water discharges to off-site surface waters at EPA licensed IPPC & Waste facilities based on data from Q-1 2009 to Q-3 2015.

Table 3.1 presents the surface water monitoring results in 2016. All parameters are below their respective warning levels.

Table 3.1 Surface water Monitoring Results 2016: SW1

Parameter	Units	Q1	Q2	Q3	Q4	Warning Level	Action Level
pH	pH units	7.51	6.83	7.5	6.47	8.78	9.34
Conductivity	mS/cm	344	134	125	283	573	715
COD	mg/l	24	25	17	19	57	76

3.2 Groundwater Monitoring

There are two groundwater monitoring wells on site (GW-1 and GW-2). The locations are shown on the plan in Appendix 1. GW-1 is in the southern section of the site and is upgradient of GW-2, which is in the northern end of the site.

Monitoring is carried out quarterly. The parameters analysed quarterly are pH, electrical conductivity, temperature, dissolved oxygen, chloride, sulphate, Total Organic Carbon. Annual monitoring of List I/II Organic Substances and dissolved metals are carried out annually.

Tables 3.2 to Table 3.5 include the groundwater analytical results for GW-1 and GW-2 for each quarter. The tables included for comparison purposes the Interim Guideline Values (IGV) prepared by the Agency and the groundwater Threshold Values (TV) from the Groundwater Regulations 2010.

In Q1 there was a slight exceedance of the IGV for manganese in GW-1. There was exceedances of the IGV for chloride and electrical conductivity in GW-2 but the GTVs were not exceeded.

There were no further exceedances of the IGV or TVs throughout the year. There is no significant change in water quality between the upgradient and downgradient wells.

Table 3.2 Q1 Groundwater Monitoring Results (Annual Parameters)

Parameter	Unit	GW-1	GW-2	IGV	TV
Boron	µg/l	18	20	**1,000**	**750**
Cadmium	µg/l	<0.5	<0.5	**5**	**3.75**
Calcium	mg/l	124.9	181	**200**	**-**
Copper	µg/l	<7	<7	**30**	**1,500**
Iron	µg/l	<20	<20	**200**	**-**
Lead	µg/l	<5	<5	**10**	**18.75**
Magnesium	mg/l	8.9	14	**50**	**-**
Manganese	µg/l	511	40	**50**	**-**
Nickel	µg/l	3	<2	**20**	**15**
Potassium	mg/l	0.9	2.1	**5**	**-**
Zinc	µg/l	<3	<3	**100**	**-**
Sulphate	mg/l	96.81	185.52	**200**	**187.5**
Chloride	mg/l	17.5	48.4	**30**	**187.5**
Dissolved Oxygen	mg/l	6	7	**NAC**	**-**
Electrical Conductivity	µS/cm	673	1,118	**1,000**	**875 – 1,875**
pH	pH units	7.10	7.16	**6.5-9.5**	**-**
Total Organic Carbon	mg/l	<2	<2	**NAC**	**-**
VOC	µg/l	ND	ND	**-**	**-**
sVOC	µg/l	ND	ND	**-**	**-**

NAC – no abnormal change
ND – None Detected

Table 3.3 Q2 Groundwater Monitoring Results

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pH	pH Units	7.59	7.54	**6.5-9.5**	**-**
EC	µS/cm	761	642	**1,000**	**875 – 1,875**
Dissolved Oxygen	mg/l	7	7	**NAC**	**-**
Chloride	mg/l	19.6	15.1	**30**	**187.5**
Sulphate	mg/l	106.69	67.69	**200**	**187.5**
Total Organic Carbon	mg/l	<2	<2	**NAC**	**-**

NAC – no abnormal change

Table 3.4 Q3 Groundwater Monitoring Results

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pH	pH Units	7.52	7.98	**6.5-9.5**	**-**
EC	µS/cm	626	401	**1,000**	**875 – 1,875**
Dissolved Oxygen	mg/l	7	5	**NAC**	**-**
Chloride	mg/l	18.5	19.7	**30**	**187.5**
Sulphate	mg/l	19.61	54.08	**200**	**187.5**
Total Organic Carbon	mg/l	<2	3	**NAC**	**-**

NAC – no abnormal change

Table 3.5 Q4 Groundwater Monitoring Results

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pH	pH Units	7.46	7.46	**6.5-9.5**	**-**
EC	µS/cm	700	525	**1,000**	**875 – 1,875**
Dissolved Oxygen	mg/l	8	8	**NAC**	**-**
Chloride	mg/l	17.4	8.3	**30**	**187.5**
Sulphate	mg/l	87.7	52.7	**200**	**187.5**
Total Organic Carbon	mg/l	<2	2	**NAC**	**-**

NAC – no abnormal change

3.3 Wastewater Monitoring

The facility is designed to collect wastewater (foul) from floor wash downs in the warehouse building and discharge to it to the municipal sewer that serves the industrial estate. However, as putrescible wastes are not accepted at the facility and floor wash downs are not required, there is no wastewater discharge to sewer and no requirement for monitoring to be carried out.

3.4 Noise Survey

An annual noise survey is carried out. This was carried out in August 2016. Daytime noise monitoring was carried out at approved noise monitoring locations as shown on the site plan in Appendix 1 and the results are summarised in Table 3.6. Site operations were not audible at any of the stations and were therefore lower than the 55dB daytime limit as specified in the licence.

Table 3.6 Day-time Noise Survey Results

Station	N1	N2	N3
Period	Daytime	Daytime	Daytime
Ambient $L_{Aeq\ 30\ min}$ (dB)	62	64	54
Facility specific $L_{Aeq\ 30\ min}$ (dB)	<52	<51	<<49
Tone objectively detected	x	x	x
Tone attributable to facility	x	x	x
Facility audibly tonal	x	x	x
Facility audibly impulsive	x	x	x
Facility rated $L_{Req\ 30\ min}$ (dB)	<52	<51	<<49
Limit (dB)	55	55	55
Compliance	✓	✓	✓

3.5 Dust Monitoring

Dust monitoring was carried out in August, September and October and the results are in Table 3.7. There was one exceedance of the dust deposition limit (350 mg/m^2/day) set in the Licence. In September 2016 the result for D-3 (1,591 mg/m^2/day) exceeded the dust deposition limit, however, the inorganic particulate faction of the sample which is representative of site activities was 191 mg/m^2/day which is below the limit. The sample was impacted greatly by the presence of vegetative growth (leaves, algae, etc.), which was not derived from site based activities. The exceedance was reported to the Agency.

Table 3.7 Dust Monitoring Results 2016

	April / May mg/m^2/day	**July / August mg/m^2/day**	**September mg/m^2/day**	**Deposition Limit mg/m^2/day**
D-1	20.81	7.24	113	350
D-2	15.29	10.77	123	350
D-3	33.27	4.99	1,591	350
D-4	42.41	3.03	108	350

4. SITE DEVELOPMENT WORKS

4.1 Engineering Works

There was no engineering works completed in 2016 and none are proposed for 2017.

4.2 Summary of Resource & Energy Consumption

Table 4.1 is a summary of the resource and energy consumption during the reporting period and a comparison with the consumption in 2015.

Table 4.1 Resources Used On-Site in 2015 & 2016

Resources	Quantities 2014	Quantities 2016
Road Diesel	1,220 litres	1360 litres
Electricity	56,100 KwH	64,000 KwH
Water	480m^3	840m^3

5. WASTE RECEIVED AND CONSIGNED FROM THE FACILITY

Table 5.1 shows the total quantities of waste received and Table 5.2 shows the total quantities of waste consigned from the facility in 2016. Table 5.3 shows the quantities of waste received and consigned in previous years. A breakdown of the waste types is provided in accordance with the List of Waste. A more detailed description of the wastes consigned and the waste destinations are provided in the PRTR submission in Appendix 2.

The total amount received in 2016 was 1,332 tonnes. The total amount consigned was 1,403.5 tonnes. The difference in waste received into and consigned is 71.533 tonnes. This relates to waste that was on-site at the end of 2016 and which was consigned in 2017. All the wastes consigned from the site went to authorised recovery and disposal facilities.

Table 5.1 Waste Received 2016

EWC	Description	Waste In
16 02 11*	WEEE	380.06
16 02 13*	Transformers	1269.88
16 02 14	Redundant Equipment	23.2

Table 5.2 Waste Consigned 2016

EWC	Description	Waste Out
13 03 07*	Mineral Based non-chlorinated insulating and heat transmission oils	212.14
13 05 07*	Oily Water from oil/water interceptors	15.02
16 02 11*	Discarded equipment containing chlorofluorocarbons, HCFC, HFC	380.06
16 02 14	Discarded Equipment other than those mentioned in 16 02 09 to 16 02 13	23.2
19 12 02	Ferrous Metal	845.29
19 12 03	Non-ferrous Metal	83.5
16 07 08*	Wastes containing oil	71.7
	Total Received	1,673.14
	Total Consigned	1630.91
	Recovered	1544.19
	Disposed	86.72
	Recovery Rate (%)	94.68%

Table 5.3 Waste Received & Consigned in Recent Years

	2015	2014	2013	2012	2011
Total Received	1,332	2615.18	2614.40	2714	2617.5
Total Consigned	1,403.541	2,546.67	2478.48	2788.20	2339.69
Total Recovered	1,375.901	2,528.81	2474.98	2753.30	2339.69
Total Disposed	27.64	17.86	3.5	34.9	0
Recovery Rate	98.03%	99.30%	99.86%	98.75%	100%

6. ENVIRONMENTAL INCIDENTS AND COMPLAINTS

6.1 Incidents

There was 1 notifiable environmental incident in 2016.

1) 17th November 2016 – Non-compliance of ELV for dust at monitoring point D-3. The total volume exceeded the ELV as a result of contamination of the sample by organic matter and not site derived inorganic matter. Agency notified following incident.

6.2 Register of Complaints

Rilta maintains a register of complaints received in accordance with Condition 10.4 of the waste licence. There were no complaints during the reporting period.

7. ENVIRONMENTAL DEVELOPMENT

7.1 Environmental Management Programme Report

RILTA has implemented an Integrated Management System (IMS) in accordance with the requirements of Occupational Health and Safety Assessment Series (OHSAS) 18001:2007 and International Standard Organisation (ISO) 14001:2004 in order to manage the Health, Safety and Environmental performance of their business and to control health and safety risk and to minimise their environmental aspects and impacts.

The IMS has been developed for the achievement of continual improvement taking into account the requirements of the Waste Licence Conditions. RILTA has prepared and effectively implement documented procedures and instructions in accordance with the requirements of both the OHSAS 18001:2007 and ISO 14001:2004. The facility was recertified in February 2015.

The schedule of the EMS Objectives and Targets, including their status for 2017 is included in Appendix 3.

7.2 Site Management Structure

Details of the site management structure are provided in Appendix 5.

7.3 Environmental Management Programme

The objectives that were achieved during this reporting period are outlined in Appendix 4.

7.4 Communications Programme

Rilta maintains a 'Public File' which contains all correspondence between Rilta and the Agency, all waste data and monitoring data as required by the licence. Opening Times for Inspection of Records are from 10 am – 4 pm. Visits to the site should be arranged in advance by ringing the Facility Manager at 01 401 8000

7.5 Nuisance Controls

Rilta has contracted an external vermin control company to carry out nuisance control at the facility.

8. OTHER REPORTS

8.1 European Pollutant Release and Transfer Register

Under the European Pollutant Release and Transfer Register Regulation (EC) No. 166/2006 Rilta are required to submit information annually to the Agency. A copy of the information submitted to the Agency via the web-based data reporting system is in Appendix 2.

8.2 Bund Integrity Test Report

Bund integrity testing was completed in 2016. A copy of the report was submitted to the agency in 2016 and is included in Appendix 6.

APPENDIX 1

Site Plan showing Environmental Monitoring Locations

Rev	Date	Description	By	Chkd.
D01	08.04.11	DRAFT ISSUE FOR REVIEW	MN	ST

Client: RILTA Environmental Limited

Project: RILTA WASTE FACILITY AT GREENOGUE BUSINESS PARK

Title: ENVIRONMENTAL MONITORING LOCATIONS

Scale @ A1: 1:125

Prepared by: M. Nolan | Checked: | Date: April 2011

O'Callaghan Moran & Associates,
Unit 15 Melbourne Business Park,
Model Farm Road,
Cork.

Revision:

Drawing No.: 2.1

APPENDIX 2

European Pollutant Release and Transfer Register

Environmental Protection Agency

Guidance to completing the PRTR workbook

PRTR Returns Workbook

Version 1.1.19

REFERENCE YEAR	2016

1. FACILITY IDENTIFICATION

Parent Company Name	Rilta Environmental Limited
Facility Name	Rilta Environmental
PRTR Identification Number	W0185
Licence Number	W0185-01

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Block 402, Grant Drive
Address 2	Greenogue Business Park
Address 3	Rathcoole
Address 4	
	Dublin
Country	Ireland
Coordinates of Location	-6.47708 53.2999
River Basin District	IEEA
NACE Code	3832
Main Economic Activity	Recovery of sorted materials
AER Returns Contact Name	Colm Hussey
AER Returns Contact Email Address	colm.hussey@rilta.ie
AER Returns Contact Position	Site Manager
AER Returns Contact Telephone Number	0879176264
AER Returns Contact Mobile Phone Number	0879176264
AER Returns Contact Fax Number	
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	70
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(a)	Installations for the recovery or disposal of hazardous waste
5(c)	Installations for the disposal of non-hazardous waste
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

Guidance on waste imported/accepted onto site

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : W0185 | Facility Name : Rilta Environmental | Filename : W0185_2016.xlsm | Return Year : 2016 |

22/03/2017 08:05

9

Please enter all quantities on this sheet in Tonnes

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	13 03 07	Yes	212.1	mineral-based non-chlorinated insulating and heat transmission oils	R9	M	Weighed	Offsite in Ireland	Rilta Environmental Ltd,w0192-3	402 Greenogue Business Park,,,Rathcoole,Co. Dublin,Ireland	Rilta Environmental Ltd,W192-3,402 Greenogue Business Park, ,Rathcoole,Co. Dublin,Ireland	402 Greenogue Business Park, ,Rathcoole,Co. Dublin,Ireland
Within the Country	13 05 07	Yes	15.02	oily water from oil/water separators	D9	M	Weighed	Offsite in Ireland	Rilta Environmental Ltd,w0192-3	402 Greenogue Business Park,,,Rathcoole,Co. Dublin,Ireland	Rilta Environmental Ltd,W192-3,402 Greenogue Business Park, ,Rathcoole,Co. Dublin,Ireland	402 Greenogue Business Park, ,Rathcoole,Co. Dublin,Ireland
To Other Countries	16 02 11	Yes	380.1	discarded equipment containing chlorofluorocarbons, HCFC, HFC	R4	M	Weighed	Abroad	Tech Rec NI,.	Dungannon, , , Co. Tyrone,Ireland	Tech Rec NI,.,Dungannon, .,.Co. Tyrone,Ireland	Dungannon,,.,.Co. Tyrone,Ireland
Within the Country	16 02 14	No	23.2	discarded equipment other than those mentioned in 16 02 09 to 16 02 13	R4	M	Weighed	Offsite in Ireland	Hegarty Metals,Permit No. WP 05/04	Dock Road,., Limerick,.,Ireland		
Within the Country	**16 07 08**	**Yes**	71.7	wastes containing oil	D9	M	Weighed	Offsite in Ireland	Rilta Environmental Ltd,w0192-3	402 Greenogue Business Park,,,Rathcoole,Co. Dublin,Ireland	Rilta Environmental Ltd,W192-3,402 Greenogue Business Park, ,Rathcoole,Co. Dublin,Ireland	402 Greenogue Business Park, ,Rathcoole,Co. Dublin,Ireland
Within the Country	16 07 99	No	0.0	wastes not otherwise specified	D9	M	Weighed	Offsite in Ireland	Rilta Environmental Ltd,w0192-3	402 Greenogue Business Park,,,Rathcoole,Co. Dublin,Ireland		
Within the Country	19 12 02	No	845.3	ferrous metal	R4	M	Weighed	Offsite in Ireland	Hegarty Metals,Permit No. WP 05/04	Dock Road,., Limerick,.,Ireland		
Within the Country	19 12 03	No	83.5	non-ferrous metal	R4	M	Weighed	Offsite in Ireland	Hegarty Metals,Permit No. WP 05/04	Dock Road,., Limerick,.,Ireland		

* Select a row by double-clicking the Description of Waste then click this delete button

APPENDIX 3

Schedule of 2016 Targets and Objectives

RILTA ENVIRONMENTAL Ltd.

EHS MANAGEMENT SYSTEM

EHS MANAGEMENT PLAN

In accordance with
ISO 14001 & OHSAS18001

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE ACHIEVEMENT OF OBJECTIVES AND TARGETS

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
1	Increase environmental awareness among RILTA staff.	Conduct site tours for all staff before end 2016	Collate staff into groups of no more than 5 persons per site tour	CH	Apr 16	
			Complete site walks on non month-end Fridays	CH	Oct 16	
		Complete Staff Environmental Training Package	Andy Wood and CH to develop training package	CH	Jan 16	Yes
			AW and CH to start delivering training package	CH	Feb 16	Yes
			Further training to be developed on foot of original Training findings.	CH	June 16	Yes

2	Optimize waste tracking from cradle to grave	Install suitable waste tracking system for all waste	Install system Snag system Track asbestos Switch Off Old System	CH/DM CH/DM CH/DM CH/DM	Jan 16 Feb 16 March 16 Aug 16	Yes

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
3	Ensure quality drainage system	No leaks	Re-coat the settlement tank (1) Re-coat the settlement tank (2) Re-coat the settlement tank (3)	CH CH CH	June 16 August 16 October 16	
4	Ensure only clean water released to the river	No ELV breaches	Empty and clean attenuation tank Skim storm water interceptor on a monthly basis Replace/Repair damaged concrete on a rota basis to ensure no damaged areas by 2016	CH/SH CH/SH CH/SH	June 16 Ongoing Dec 16	Y Y Y

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
5	Reduce use of hazardous raw materials used on site.	Implement the 'treat waste with waste' best practice method on an ongoing basis	Source suitable waste streams for treatment Laboratory approval for the usage of wastes for treatment	RS TMc	Ongoing Ongoing	Y Yes
6	Optimize the quality of trade effluent	No ELV breaches	Clean 'wet wells' twice a year Clean DAF system twice a year	TMc TMc	Dec 16 Dec 16	Y Y

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
7	To be a good and considerate neighbour.	No complaints	Complete noise monitoring. Monitor adjoining river on a quarterly basis. Implement 'closed door' policy system when unloading liquid waste tankers where possible Cold cutting at the cedar site to take place inside with doors close Inform neighbours when bulk soil/sludge are being moved off site Make contact with Fortunes and Bailey care on a quarterly basis	CH CH CM/DG DG CH CH	Ongoing Ongoing Ongoing Ongoing Ongoing Ongoing	

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
8	To Be Energy Efficient	Reduce electricity usage by 5%	Complete targeted energy audit at both 402 and 14A1 sites. Assess findings of audit. Implement findings of audit if economically and practically feasible.	CH CH/SC CH/SC	Aug 16 Sept 16 Dec 16	

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
9	Reduce Process Waste	Reduce filtercake volumes	Install and commission sludge drying plant Investigate alternative uses for the new dried waste	CH CH	May 16 Sept 16	
10	Reduce The Number of Lost Time Accidents	Aim for Zero Lost Time Accidents	Tailor Manual Handling Training to emphasize the need to cut out ‘reaching and lifting’ Aim for 100% Manual and Chemical handling	CH CH	May 16 Dec 16	
11						

APPENDIX 4

Schedule proposed Targets and Objectives 2017

RILTA ENVIRONMENTAL Ltd.

EHS MANAGEMENT SYSTEM

EHS MANAGEMENT PLAN

In accordance with
ISO 14001 & OHSAS18001

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE ACHIEVEMENT OF OBJECTIVES AND TARGETS

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
1	Increase environmental awareness among RILTA staff.	Develop and produce EHS diary for 2018	Find suitable producer(s) Develop content for approval Get quotes for production Print and distribute to relevant stakeholders	CH SL SL SL	Mar 17 Mar 17 Mar 17 Apr 17	
2	Optimize waste tracking from cradle to grave	Develop integrated system for managing all data	Sign off on suitable reports on electronic tracking system Amend ‘incoming waste records’ to accommodate tracking reports Develop live mass balance monthly update	CH CH CH	Apr 17 May 17 Oct 17	

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
3	Ensure quality drainage system	No leaks	Re-coat the settlement tank (1) Re-coat the settlement tank (2) Re-coat the settlement tank (3)	CH CH CH	June 17 August 17 October 17	
4	Ensure only clean water released to the river	No ELV breaches	Empty and clean attenuation tank Skim storm water interceptor on a monthly basis Replace/Repair damaged concrete on a rota basis to ensure no damaged areas by 2017	CH CH CH	Mar 17 Ongoing Dec 17	

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
5	Reduce use of hazardous raw materials used on site.	Employ solvent free paint	Source suitable paints Assess suitability of existing paint systems	CH CH	Mar 17 April 17	
6	Optimize the quality of trade effluent	No ELV breaches	Clean ‘wet wells’ twice a year Clean DAF system twice a year	TMc TMc	Ongoing Ongoing	

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
7	To be a good and considerate neighbour.	No complaints	Complete noise monitoring. Monitor adjoining river on a quarterly basis. Implement 'closed door' policy system when unloading liquid waste tankers where possible Cold cutting at the cedar site to take place inside with doors close Make contact with immediate neighbours on a quarterly basis	CH CH CM/DG DG CH	Ongoing Ongoing Ongoing Ongoing Ongoing	

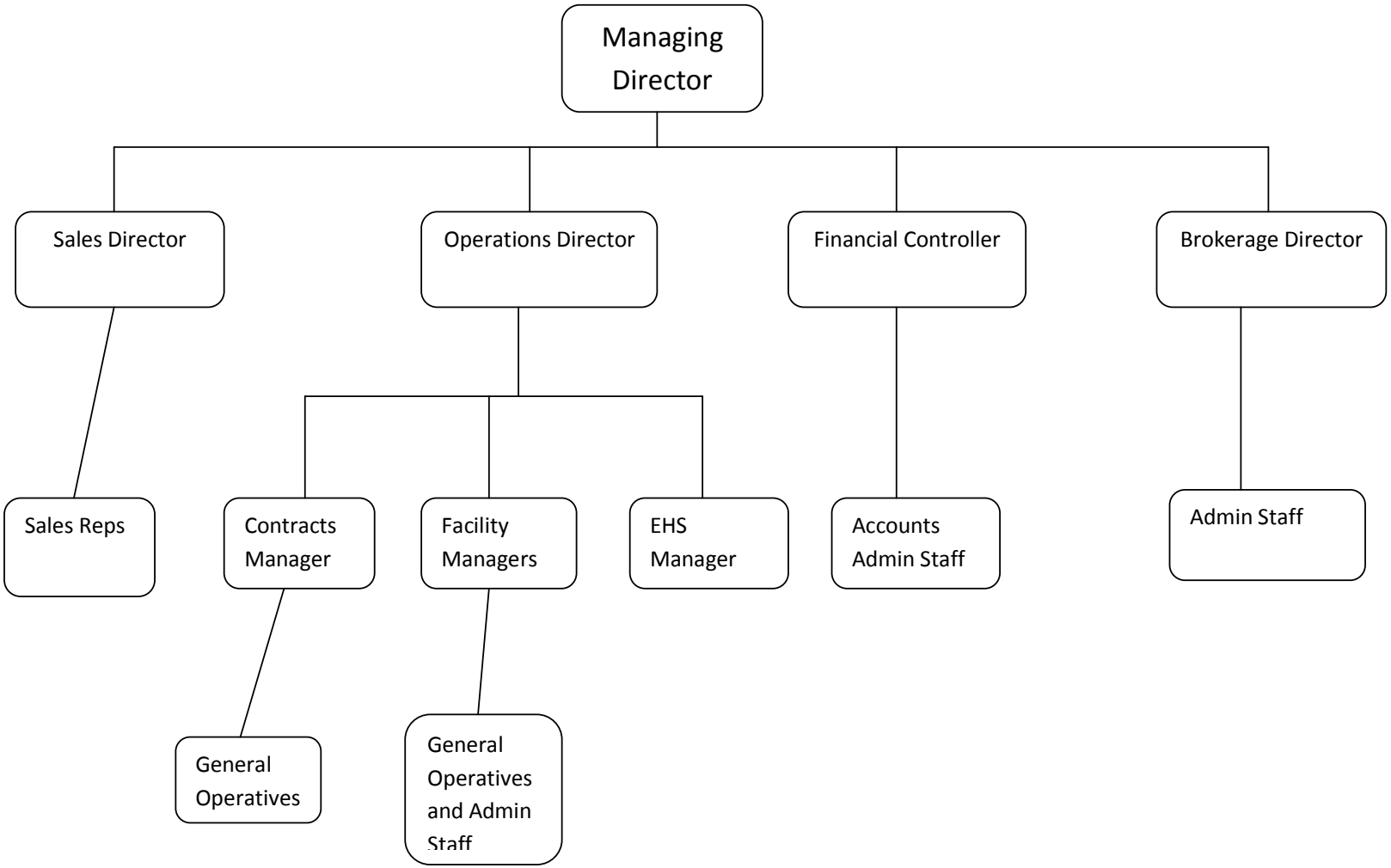
EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
8	To Be Energy Efficient	Reduce electricity usage by 5%	Assess findings of 2016 audit. Implement findings of audit if economically and practically feasible.	CH/SC CH/SC	Apr 17 June 17	

EMP Ref.	***Objective***	***Target***	***Environmental Management Programme for the implementation of objectives.***	***Responsible Person***	***Completion Date***	***Completed (Y/N)***
9	Reduce Process Waste	Reduce filtercake volumes	Optimize the volume of 'dig-out' waste that can be dried.	DG	June 17	
10	Reduce The Number of Lost Time Accidents	Aim for Zero Lost Time Accidents	Tailor Manual Handling Training to emphasize the need to cut out 'reaching and lifting' Aim for 100% Manual and Chemical handling Develop app for recording 'area of concern/near miss' data Aim for 75 near misses	SL SL SL SL	Ongoing Dec 17 Apr 17 Dec 17	
11	Reduce Detergent use on Tank Cleaning Work	Reduce Detergent use by 10%	Eliminate neat detergent/road bio use Do not exceed recommended usage	EK EK	Dec 17 Dec 17	

APPENDIX 5

Management Structure

Rilta Environmental Management Structure



APPENDIX 6

Bund Integrity Test Report

Rilta Environmental Ltd.

Bund Integrity Testing at Site 14A1, Greenogue Business Park, Rathcoole, Co. Dublin

November 2016

Revision: B

TOBIN CONSULTING ENGINEERS

Patrick J. Tobin & Co. Ltd.

REPORT

PROJECT:

Bund Integrity Testing

Site 14A1, Greenogue Business Park
Rathcoole, Co. Dublin

CLIENT:

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DOCUMENT AMENDMENT RECORD

Client: **Rilta Environmental Ltd.**

Project: **10063 – Bund Testing**

Title: **Bund Integrity Testing**

PROJECT NUMBER: 10063				DOCUMENT REF:10063/Rev A			
A	Bund Integrity Testing	FH	090217	ST	190213	DG	190213
Revision	**Description & Rationale**	**Originated**	**Date**	**Checked**	**Date**	**Authorised**	**Date**
TOBIN Consulting Engineers							

TABLE OF CONTENTS

1 INTRODUCTION

Tobin Consulting Engineers (hereafter referred to as TOBIN) have been commissioned by Rilta Environmental Ltd. to carry out Bund Integrity Testing at their facility at 14A1, Greenogue Business Park, Rathcoole, Co. Dublin under the requirements of the site's EPA Waste Licence (No. W0185-01).

TOBIN proposed that over a period amenable to facility operations hydrostatic testing, CCTV survey and structural survey would be carried out on the specified bunds and areas.

A CCTV survey of the site drainage was carried out by Rilta staff on 15/11/16. A structural survey of the Buildings outlined for assessment was carried out by a TOBIN Engineer on Friday, 25th November 2016.

Hydrostatic testing of a number of bunded areas and underground settlement tanks commenced on Saturday, July 23rd 2016 and concluded Monday, July 25th 2016. A second visit for testing of the underground bund at Site 14A1, Greenogue Business Park commenced Tuesday, 14th November 2016 and concluded on Thursday 16th November 2016 in order to carry out Testing of four indoor portable bunds.

Areas / Bunds for testing identified within Site 14A1, Greenogue Business Park include:

- Area / Bund No. 12: Large Warehouse
- Area / Bund No. 13: Storage Bay Portable Bunds (2No)
- Area / Bund No. 14: Processing Bay Portable Bunds (2No)
- Area / Bund No. 15: Outdoor Concrete Bund
- Area / Bund No. 16: Underground Concrete Bund

TOBIN carried out preliminary inspections of the bunds and areas listed above and made assessments as to the necessity/suitability of each for hydrostatic testing or structural assessment. A detailed bund location map (Figure 1) is contained in Appendix A.

2 METHODOLOGY

It was proposed that over a period when the facility was non-operational, liquid levels within the over ground bunds and underground tanks would be monitored, following preparatory works, for a three day period (preferably over a weekend). Any subsequent fluctuation in levels over this period would indicate if the integrity of each bund is intact.

2.1 METHODOLOGY FOR TESTING AT SITE 14A1, GREENOGUE BUSINESS PARK

A methodology for the testing of individual bunds and tanks at Site 14A1 is detailed below. The locations of the areas tested at Site 14A1 is shown in Figure 1 in Appendix A.

2.1.1 Large Warehouse Building (Area / Bund No. 12)

A structural survey was carried out by a TOBIN Engineer on the Internal Warehouse Building on Friday, 25th November, located as shown in Figure 1 of Appendix A. This building is designated as an area for the storage, inspection and processing of incoming electrical transformers. This survey consisted of a visual assessment of all walls, floors and ramps within the building.

2.1.2 Storage Bay – Portable Bunds (2 No.) (Area / Bund No. 13)

There are Indoor Portable Bunds/Tanks (2 No.) in the Storage Bay Building at Site 14A1, located as shown in Figure 1 of Appendix A.

It was proposed that over a period when the facility was non-operational, liquid levels within the internal storage bunds would be monitored for a three day period.

The locations of the storage bunds during the testing period and location of the main outdoor storage area are shown in Figure 1 attached.

Please Note: *During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.*

2.1.3 Processing Area – Portable Bunds (2No.) (Area / Bund No. 14)

It was proposed to test the Indoor Portable Steel Bunds (2No.) in the Processing Bay Building at Site 14A1, located as shown in Figure 1 of Appendix A. The bunds were thoroughly cleaned out, with any debris and sludge removed from the bunds prior to testing.

Each bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of each bund. This was to represent the maximum capacity the bund will be required to hold.

When the bund was full to the required limit it was be allowed to sit for one day to allow the container/bund to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured at 24hr intervals over 3 days.

Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out such as welding or repairing any cracks or faults to a satisfactory standard.

Please Note: *During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.*

2.1.4 Outdoor Concrete Bund / Loading Bay (Area / Bund No. 15)

It was proposed to test the Outdoor Concrete Bund / Loading Bay at Site14A1, located as shown in Figure 1 of Appendix A. The bund was thoroughly cleaned out, with any debris and sludge removed from the bund prior to testing.

The bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of the bund. This was to represent the maximum capacity the bund will be required to hold.

When the bund was full to the required limit it was allowed to sit for one day to allow the container/bund to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured at 24hr intervals over 3 days.

Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out such as protective coating applied or any cracks or faults repaired and sealed to a satisfactory standard.

Please Note: *During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.*

2.1.5 Underground Concrete Bund (Area / Bund No. 16)

Testing was carried out on the Underground Concrete Bund over a 3 day period in July 2016. It was proposed to test the Underground Concrete Bund at Site14A1, located as shown in Figure 1 of Appendix A. The bund was thoroughly cleaned out, with any debris and sludge removed from the bund prior to testing.

The bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of the bund. This was to represent the maximum capacity the bund will be required to hold.

When the bund was full to the required limit it was allowed to sit for one day to allow the container/bund to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured using a data logger to record any changes in water level.

Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out such as protective coating applied or any cracks or faults repaired and sealed to a satisfactory standard.

Please Note: *During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.*

3.0 CONTROL

Due to the potential for evaporation in the settlement tanks/bunded areas, a control was put in place (note: where tanks are internal there is no risk of precipitation influencing levels). A container was filled to a specific level with liquid from the Underground Tanks. This control was left beside the internal tanks throughout the testing period. This control provides an indication of the evaporation rate active on the tanks and the influence of any rainfall during the testing period.

Due to the potential for evaporation and precipitation in the Outdoor Concrete Bund, a control was put in place. A container was filled to a specific level with water. This control was left beside the Outdoor Concrete Bund.

These controls provide an indication of the evaporation and precipitation rate active on the bunds both indoors and outdoors.

3.1 FAILURE

Should the structure not satisfy the test, remedial works will be recommended and carried out and the same procedure will be repeated.

3.2 WATER DISPOSAL

Any water used in this procedure will be disposed of through the surface water drainage system on site.

3.3 PROGRAMME FOR TESTING (SITE 14A1)

With the exception of the tests carried out in November for the internal bunds, it was proposed that all testing would be carried out over the same 4-day period[1] in July 2016.

- Day 1: TOBIN staff attended Site 14A1 on Friday, July 22nd 2016, before the testing commenced in order to assess the Underground Concrete Bund and Outdoor Concrete Bund for testing and to review the location of the Bunds to be tested (with Rilta staff) and the preparation of test areas including the addition of water to the bund as required for hydrostatic testing (with Rilta staff). Levels were taken by TOBIN staff.

- Day 2-4: TOBIN staff attended Site 14A1 on Saturday, 23rd July, Sunday, 24th July and Monday, 25th July to take levels at the Underground and Outdoor Concrete Bunds. Levels were taken at the same time each day, weather conditions noted and controls checked

A second visit was required to carry out hydrostatic testing on the Over indoor portable bunds at Site 14A1 in November 2016.

- Day 1: TOBIN staff attended Site 14A1 on Monday, 14th of November 2016 before the testing commenced in order to assess all Areas / Bunds for testing and to review the locations of the Areas / Bunds to be tested (with Rilta staff). Preparation of test areas including the addition of water to containers/bunds where required for hydrostatic testing (with Rilta staff). Levels were taken by TOBIN staff.

- Days 2-4: TOBIN staff attended site on Tuesday, November 15th, Wednesday, 16th November and Thursday, 17th November to take levels at each test location. Levels were taken at the same time each day, weather conditions noted and controls checked.

- A TOBIN Structural Engineer visited site to carry out a structural assessment of the bunds and buildings on Friday, 25th November.

[1] Where this was not practical for Rilta, an alternative programme for testing was agreed (all results are included herein).

4 RESULTS

4.1 HYDROSTATIC SURVEY RESULTS

Hydrostatic testing was carried out on the Bunded areas & Underground Storage Tanks from Friday, July 22nd to Monday, July 25th 2016, and for additional Indoor Portable Storage Bunds from Tuesday, 15th November to Thursday, 17th November 2016.

No fluctuation in liquid levels was noted in the bunds or tanks during the first monitoring period Day 1 to Day 2 (November 15th to 16th November 2016) and levels remained constant for the second monitoring period Day 2 to Day 3 (16th November to 16th November 2016). Results from the controls showed no variation and were consistent with readings from all storage tanks.

As no fluctuation was noted in liquid levels during the measurement period and the control remained constant, it is determined that all tested bunds and tanks are in good structural condition. No ancillary works are required for these bunds.

4.2 TESTING AT SITE 14A1, GREENOGUE BUSINESS PARK

Testing commenced 'as per methodology' on Saturday 23rd July 2016 and concluded on Monday, 25th of July 2016. A second visit was required to test the Indoor Portable Bunds bund. This test commenced on Tuesday, 15th November 2016 and concluded on Thursday, 17th November 2016. Measurements were recorded over three consecutive days and the results were analysed by TOBIN staff. No fluctuation in liquid level was noted at any of the monitoring locations, during any of the daily monitoring events (see results below). The controls for these assessments showed no change, remaining consistent with the results from the daily monitoring. See section 4.2.2 below for test results.

4.2.1 Large Warehouse Building (Area / Bund No. 12)

As per methodology a structural survey was carried out by a TOBIN Engineer on the Warehouse on Friday, 25th November 2016, located as shown on Figure 1 of Appendix A.

This area is generally used to store relatively dry materials. The construction is typical industrial ground floor construction with 6m x 6m concrete bays. There is a concrete upstand approx 100mm high around the perimeter of the area with block walls above. There is ramped access to the entrances and exits to the bund.

The floor slab and up-stand was generally found to be in good structural condition with no obvious defects. The ramps approaching the external dock – leveller have been damaged by the impact of

the vehicular movements. These require repair with a suitable repair mortar. The make-up of the joint filler material between the 6m x 6m concrete bays is unknown and maybe unsuitable to store the material required. It is recommended that these joints be re-sealed with a suitable sealant that capable of performing with aggressive materials.

4.2.2 Storage Bay - Portable Bunds (2No.) (Area / Bund No.13)

Testing commenced 'as per methodology' on Monday, 14th November 2016. Measurements were recorded over three consecutive days and the results were analysed by TOBIN staff. No fluctuation in liquid level was noted at any of the indoor bund monitoring locations, during any of the daily monitoring events (see results below).

As no fluctuation was noted in tank liquid levels during the measurement period, the internal bunds are in good structural condition as detailed below.

Storage Bay Portable Bund No. 1:
As per methodology Bund No. 1 was filled with water to an appropriate level (110% tank volume) on Monday the 14th November 2016. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Tuesday 15th November 2016. Table 4-7 below represents recorded water levels within the bund over the test period. Two levels were taken for each bund as there was a slight slant in some of the storage tanks.

Table 4-7 Storage Bay Portable Bund No. 1 Test Result

Measurement Location	Mon 14th Nov	Tues 15th Nov	Wed 16th Nov	Thur 17th Nov	Fluctuation	Pass / Fail
Storage Bay Portable Bund No. 1						
A, Front Left	23.1	23.2	23.2	23.1	-0.1cm	**Pass**
B, Front Right	23.6	23.6	23.6	23.6	0.0cm	**Pass**
C, Rear Left	23.7	23.7	23.7	23.7	0.0cm	**Pass**
D, Rear Right	23.4	23.4	23.4	23.3	-0.1cm	**Pass**

Testing at this location was not impacted by facility operations

Storage Bay Portable Bund No. 2:
As per methodology Bund No. 2 was filled with water to an appropriate level (110% tank volume) on Monday the 14th November 2016. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Tuesday 15th November 2016. Table 4-8 below represents recorded water levels within the bund over the test

period. Two levels were taken for each bund as there was a slight slant in some of the storage tanks.

Table 4-8 **Storage Bay Portable Bund No. 2 Test Result:**

Measurement Location	Mon 14th Nov	Tues 15th Nov	Wed 16th Nov	Thur 17th Nov	Fluctuation	Pass / Fail
Storage Bay Portable Bund No. 2						
A, Front Left	24.2	24.2	24.2	24.2	0.0cm	**Pass**
B, Front Right	24.3	24.3	24.3	24.3	0.0cm	**Pass**
C, Rear Left	24.2	24.3	24.3	24.3	-0.1cm	**Pass**
D, Rear Right	24.1	24	24	24	-0.1cm	**Pass**

Testing at this location was not impacted by facility operations.

4.2.3 Processing Area - Portable Bunds (2No.) (Area / Bund No.14)

As per methodology Area / Bund No. 14 was filled with water to an appropriate level (110% tank volume) on Monday the 14th November 2016. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Tuesday 15th November 2016. Table 4-13 below represents recorded water levels within the bund and control over the test period. Various levels were taken for each bund as there was a variation in floor level in some of the bunds.

Table 4-9 Bund / Area No. 14 Test Result

Measurement Location	Tues 15th Nov	Wed 16th Nov	Thur 17th Nov	Fluctuation	Pass / Fail
Main Bund					
A, Front Left	29.4cm	29.4cm	29.3cm	-0.1cm	**Pass**
B, Front Right	29.6cm	29.6cm	29.6cm	0.0cm	**Pass**
C, Rear Right	28.6cm	28.6cm	28.5cm	-0.1cm	**Pass**
D, Rear Left	28.5cm	28.4cm	28.4cm	-0.1cm	**Pass**
Processing Bund					
E, Front Left	11.7cm	11.7cm	11.7cm	0.0cm	**Pass**
F, Front Right	9.9cm	9.9cm	9.9cm	0.0cm	**Pass**

Testing at this location was not impacted by facility operations.

4.2.4 Outdoor Concrete Bund (Area / Bund No.15)

As per methodology Area / Bund No. 15 was filled with water to an appropriate level (110% tank volume) on Friday 22nd July. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Saturday 23rd July. Table 4-14 below represents recorded water levels within the bund and control over the test period. Various levels were taken for each bund as there was a variation in floor level in some of the bunds.

Table 4-14 Bund / Area No. 15 Test Result

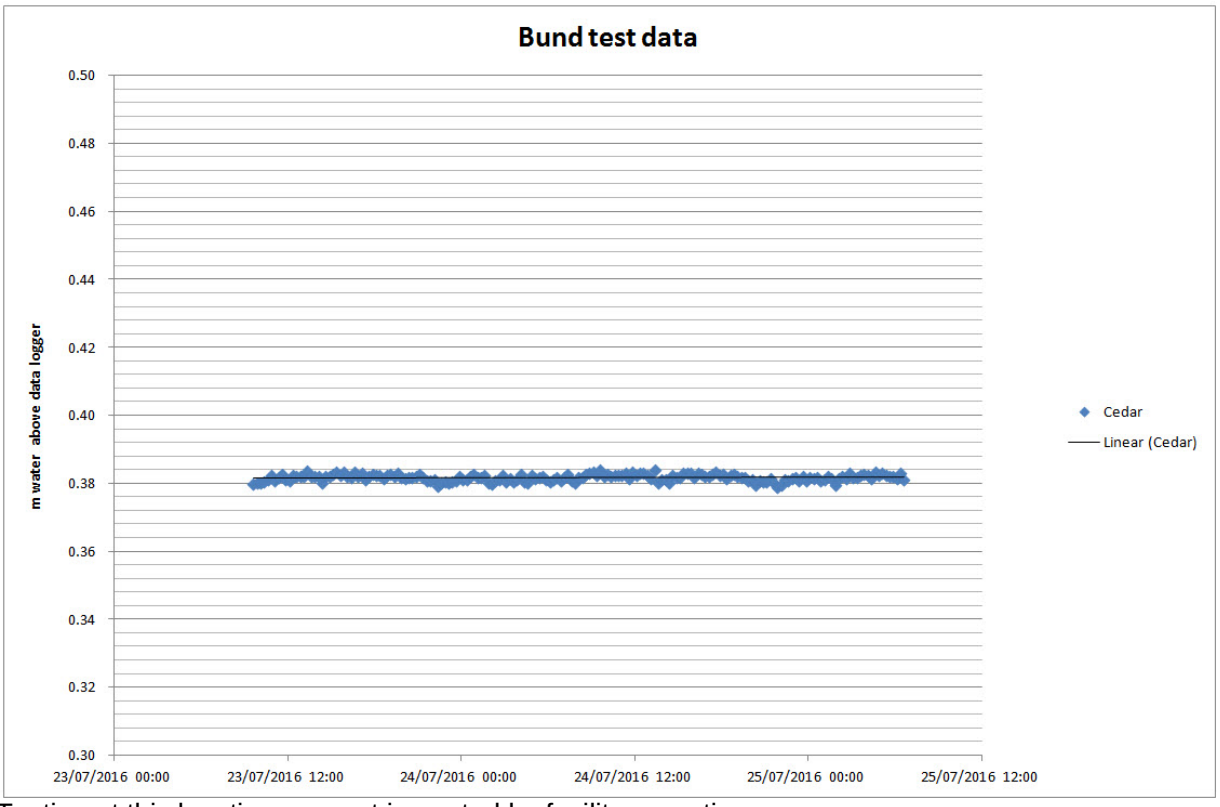
Measurement Location	Sat 23rd Jul (Top of bund to water level)	Sun 24th Jul (Top of bund to water level)	Mon 25nd Jul (Top of bund to water level)	Fluctuation	Pass / Fail
A, Front Right	90cm	90cm	90cm	0.0cm	**Pass**
B, Rear Right	93cm	93cm	93cm	0.0cm	**Pass**
C, Rear Centre	113cm	113cm	113cm	0.0cm	**Pass**
D, Rear Left	94cm	94cm	94cm	0.0cm	**Pass**
E, Front Left	95cm	95cm	95cm	0.0cm	**Pass**

Testing at this location was not impacted by facility operations.

4.2.5 Underground Concrete Bund (Area / Bund No.16)

As per methodology Area / Bund No. 16 was filled with water to an appropriate level (110% tank volume) on Friday 22nd July 2016. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated, a data logger was then placed in the underground concrete bund. The test commenced on Saturday 23rd July. Table 4-15 below represents recorded change in water levels within the bund and control over the test period.

Table 4-15 Bund / Area No. 16 Test Result



Testing at this location was not impacted by facility operations.

No fluctuation in liquid levels was noted in the bunds or tanks during the first monitoring period Day 1 to Day 2 (November 15th to 16th November 2016) and levels remained constant for the second monitoring period Day 2 to Day 3 (16th November to 16th November 2016). Results from the controls showed no variation and were consistent with readings from all storage tanks.

As no fluctuation was noted in liquid levels during the measurement period and the control remained constant, it is determined that all tested bunds and tanks are in good structural condition. No ancillary works are required for these bunds

5 CCTV

5.1 CCTV SURVEY

A CCTV drainage inspection was carried out on 5th of December 2016 on behalf of Rilta Environmental Ltd. The Inspection Report is included in Appendix B attached.

It was apparent from the CCTV camera inspection that the drainage system is generally in good condition, with some area requiring attention. A summary of defects and recommended remedial works can be found on the final page of Appendix B.

6 CONCLUSION

The assessment of the bunds / areas after CCTV survey, structural and hydrostatic testing is as follows:

Areas / Bunds for testing identified within Site 14A1, Greenogue Business Park include:

- Area / Bund No. 12: Large Warehouse = **PASS**
- Area / Bund No. 13: Storage Bay Portable Bunds (2No) = **PASS**
- Area / Bund No. 14: Processing Bay Portable Bunds (2No) = **PASS**
- Area / Bund No. 15: Outdoor Concrete Bund = **PASS**
- Area / Bund No. 16: Underground Concrete Bund = **PASS**
-

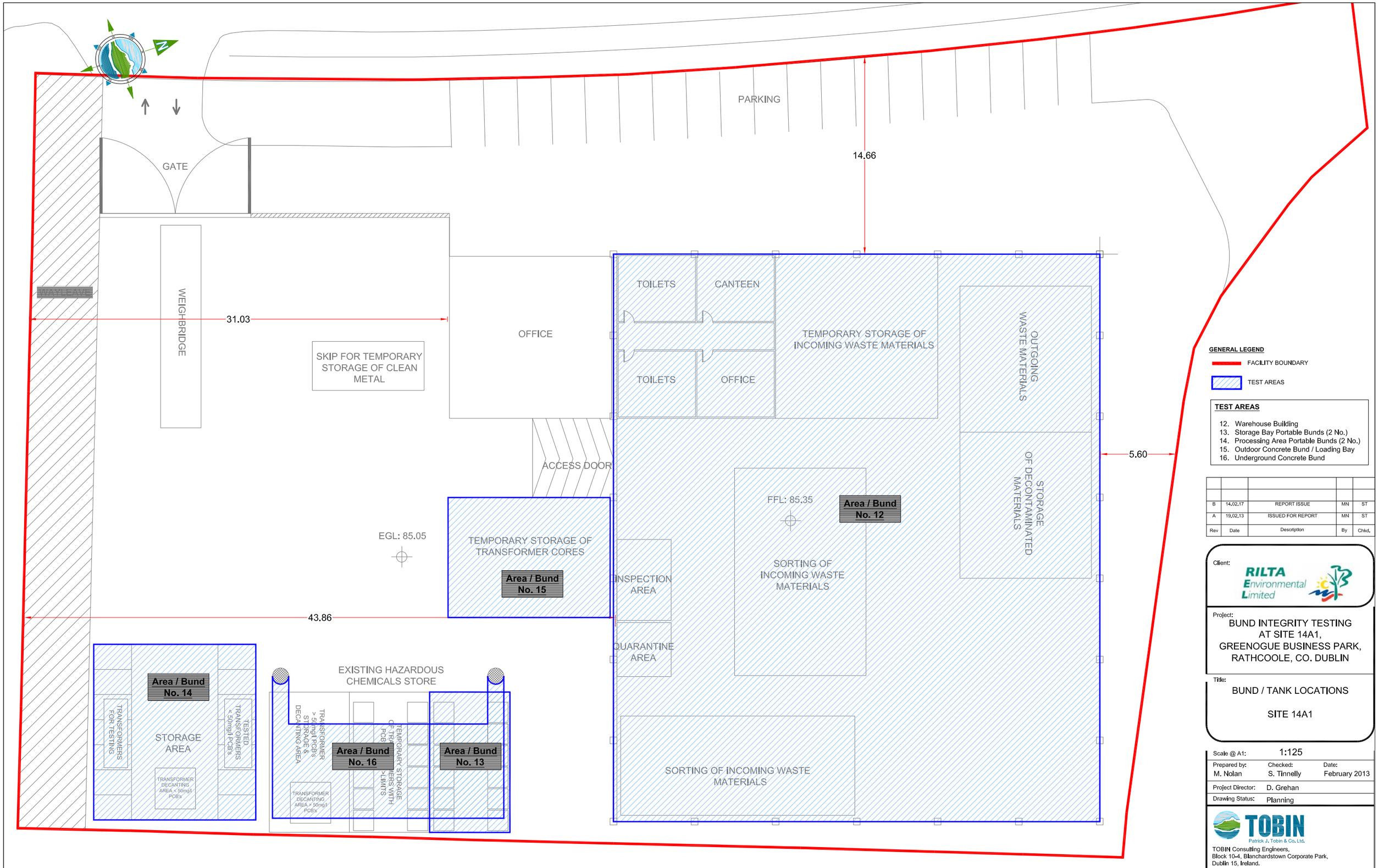
CCTV Survey **= Pass (**Remedial works recommended**)**

APPENDIX A

Figure 1: Bund / Tank Locations for Testing
(Site 14A1, Greenogue Business Park)

APPENDIX B

Site 14A1 (Ref. Cedar Yard) - CCTV Drainage Inspection Report



GENERAL LEGEND

FACILITY BOUNDARY

TEST AREAS

TEST AREAS

12. Warehouse Building
13. Storage Bay Portable Bunds (2 No.)
14. Processing Area Portable Bunds (2 No.)
15. Outdoor Concrete Bund / Loading Bay
16. Underground Concrete Bund

Rev	Date	Description	By	Chkd.
B	14.02.17	REPORT ISSUE	MN	ST
A	19.02.13	ISSUED FOR REPORT	MN	ST

Client: RILTA Environmental Limited

Project: BUND INTEGRITY TESTING AT SITE 14A1, GREENOGUE BUSINESS PARK, RATHCOOLE, CO. DUBLIN

Title: BUND / TANK LOCATIONS

SITE 14A1

Scale @ A1: 1:125

Prepared by:	Checked:	Date:
M. Nolan	S. Tinnelly	February 2013

Project Director: D. Grehan

Drawing Status: Planning

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Drawing No.: Figure 1

Revision: B

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one51

RILTA ENVIRONMENTAL LIMITED

INTEGRATED HAZARDOUS WASTE MANAGEMENT SOLUTIONS

CCTV DRAINAGE INSPECTION REPORT

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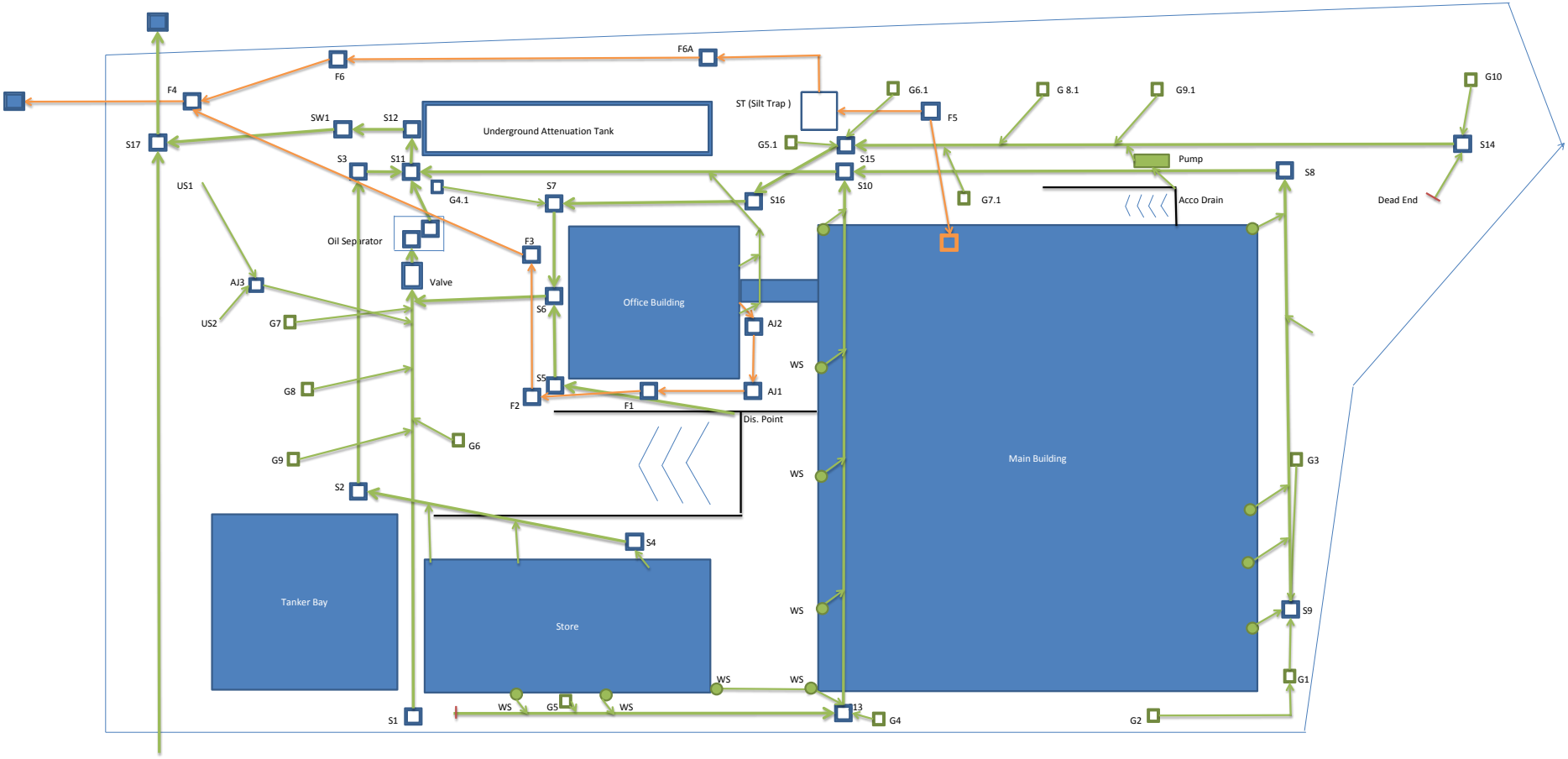
EPA WASTE LICENCE NO. W0192-03


F6A
F6
F4
SW1
S12
Underground Attenuation Tank
ST (Silt Trap)
G6.1
G 8.1
G9.1
G10
F5
S17
S3
S11
G5.1
S15
S14
Pump
US1
G4.1
S7
S16
S10
S8
G7.1
Acco Drain
Dead End
Oil Separator
F3
Valve
AJ3
US2
G7
S6
Office Building
AJ2
WS
G8
S5
AJ1
F2
F1
Dis. Point
G9
G6
Main Building
G3
S2
S4
Tanker Bay
Store
S9
WS
G5
S1
S13
G4
G2
G1

Rilta Environmental Ltd
Greenogue Business Park
Rathcoole
Tel: 01 4018000
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Project-information / Inspection: 1

Project name :	Project Number :	Contact :	Date :
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City, St Zip:	**Rathcoole**
Po Box:	**Dublin**
Telephone:	
Fax:	
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e-mail:	

Proj mgr	**CEDAR**
Responsible:	**Colm Hussey**
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Po Box:	**Dublin**
Telephone:	
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Contractor	**Rilta Environmental Ltd**
Responsible:	**Eoin Kirby, Frantisek Navratil**
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e-mail:	**info@rilta.ie**

Rilta Environmental Ltd
Greenogue Business Park
Street : Rathcoole
Tel: 01 4018000
Fax:
Email: info@rilta.ie

Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
05/12/2016		**no rain or snow**	**Frantisek**	**1**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**AJ1**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**F1**
Inspection	**AJ1 (D/S) F1**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**7.71 m**	Lining :	

Comment :

1:63 Position	Code	Observation	MPEG	Photo	Grade
AJ1					
0.00	IC	Start node type, inspection chamber, reference number : AJ1	00:00:02		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:02		(Serv) 0
1.80	SR	Sealing ring intruding, from 5 to 7 o'clock	00:00:18		(Constr) 1
2.20	LR	Line deviates right Remarks: 90deg.	00:00:23		(Serv) 0
7.70	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
7.71	MHF	Finish node type, manhole reference number: F1	00:00:00	1_6A	(Constr) 0
F1					

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**5**	**0.65**	**5**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection pictures / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**05/12/2016**	**1**	**X**

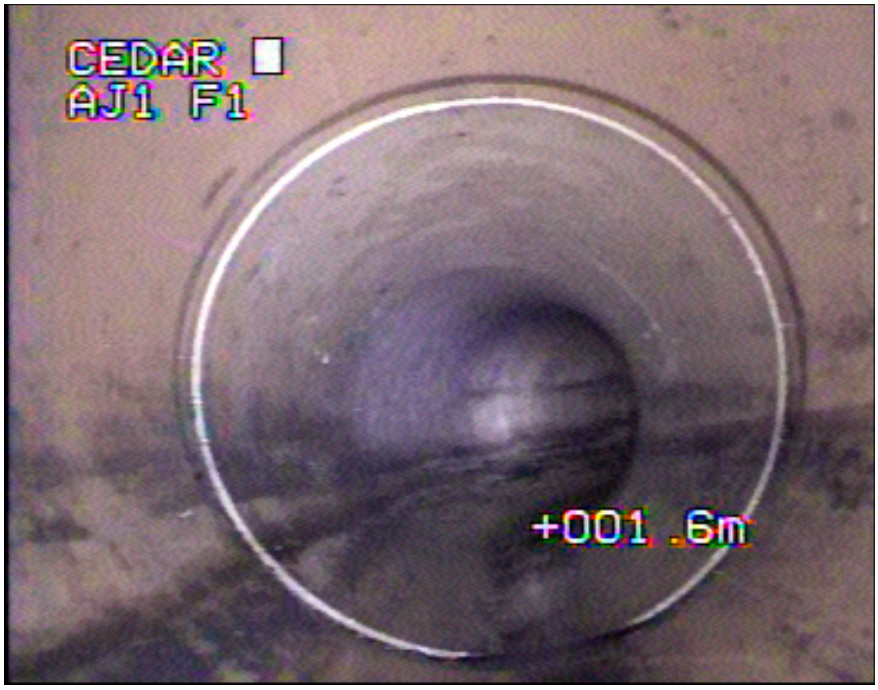

Photo: 1_6A, MPEG #: 051216_1, 00:00:00
7.71m, Finish node type, manhole reference number: F1

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
05/12/2016		**no rain or snow**	**Frantisek**	**2**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**AJ2**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**AJ1**
Inspection	**AJ2 (D/S) AJ1**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**4.51 m**	Lining :	

Comment :

1:50 Position	Code	Observation	MPEG	Photo	Grade
AJ2					
0.00	IC	Start node type, inspection chamber, reference number : AJ2	00:00:01		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:01		(Serv) 0
1.60	CN	Connection other than junction, at 3 o'clock, diameter 150mm	00:00:23		(Constr) 0
4.50	WL	Water level, 0% of the vertical dimension	00:01:02		(Serv) 0
AJ1					
4.51	ICF	Finish node type, inspection chamber reference number: AJ1	00:01:02		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
05/12/2016		**no rain or snow**	**Frantisek**	**3**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**F1**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**F2**
Inspection	**F1 (D/S) F2**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**11.11 m**	Lining :	

Comment :

1:105 Position	Code	Observation	MPEG	Photo	Grade
F1					
0.00	MH	Start node type, manhole, reference number : F1	00:00:04		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:04		(Serv) 0
1.30	WL	Water level, 5% of the vertical dimension	00:00:16		(Serv) 0
4.20	WL	Water level, 0% of the vertical dimension	00:00:48		(Serv) 0
11.10	WL	Water level, 0% of the vertical dimension	00:01:55		(Serv) 0
F2					
11.11	MHF	Finish node type, manhole reference number: F2	00:01:55		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
05/12/2016		**no rain or snow**	**Frantisek**	**4**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**F2**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**F3**
Inspection	**F2 (D/S) F3**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**147.00 m**	Lining :	

Comment :

1:126 Position	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node type, manhole, reference number : F2	00:00:05		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:05		(Serv) 0
0.20	SR	Sealing ring intruding, from 6 to 12 o'clock	00:00:07	4_3A	(Constr) 1
14.70	LL	Line deviates left	00:03:32		(Serv) 0
15.00	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
15.01	MHF	Finish node type, manhole reference number: F3	00:00:00		(Constr) 0

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Date :	Job number :	Weather :	Operator :	Section number :	PLR :
05/12/2016		**no rain or snow**	**Frantisek**	**4**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Grade:
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	

1:126	Position	Code	Observation	MPEG	Photo	Grade

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Date :	Job number :	Weather :	Operator :	Section number :	PLR :
05/12/2016		**no rain or snow**	**Frantisek**	**4**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Grade:
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	

1:126	Position	Code	Observation	MPEG	Photo	Grade

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Inspection Report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR :
05/12/2016		**no rain or snow**	**Frantisek**	**4**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Grade:
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	

1:126	Position	Code	Observation	MPEG	Photo	Grade

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Inspection Report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR :
05/12/2016		**no rain or snow**	**Frantisek**	**4**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Grade:
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	

1:126	Position	Code	Observation	MPEG	Photo	Grade

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Inspection Report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR :
05/12/2016		**no rain or snow**	**Frantisek**	**4**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Grade:
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	

1:126	Position	Code	Observation	MPEG	Photo	Grade

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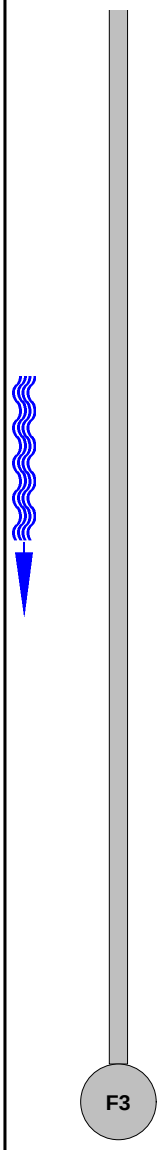
Inspection Report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR :
05/12/2016		**no rain or snow**	**Frantisek**	**4**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Grade:
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	

1:126	Position	Code	Observation	MPEG	Photo	Grade



Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**5**	**0.03**	**5**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection pictures / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**05/12/2016**	**4**	**X**

Photo: 4_3A, MPEG #: 051216_1, 00:00:07
0.2m, Sealing ring intruding, from 6 to 12 o'clock

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
05/12/2016		**rain**	**Frantisek**	**5**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**F4**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**DS**
Inspection	**F4 (D/S) DS**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Concrete**
Total length :	**6.71 m**	Lining :	

Comment :

1:63	Position	Code	Observation	MPEG	Photo	Grade
F4	0.00	MH	Start node type, manhole, reference number : F4	00:00:02		(Constr) 0
	0.01	WLC	Clear water level, 10% of the vertical dimension	00:00:02		(Serv) 0
	3.50	WL	Water level, 15% of the vertical dimension	00:01:05		(Serv) 0
	6.70	WL	Water level, 15% of the vertical dimension	00:01:58		(Serv) 0
DS	6.71	MHF	Finish node type, manhole reference number: DS Remarks: Manhole on site next to Cedar.	00:01:58		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
05/12/2016		**rain**	**Frantisek**	**6**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**F3**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**F4**
Inspection	**F4 (U/S) F3**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Concrete**
Total length :	**22.51 m**	Lining :	

Comment :

1:189 Position	Code	Observation	MPEG	Photo	Grade
F4					
0.00	MH	Start node type, manhole, reference number : F4	00:00:00		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
0.20	CN	Connection other than junction, at 6 o'clock, diameter 150mm Remarks: Rodding Eye.	00:00:11		(Constr) 0
0.70	WLC	Clear water level, 5% of the vertical dimension	00:00:24		(Serv) 0
3.10	WL	Water level, 0% of the vertical dimension	00:00:46		(Serv) 0
6.30	WL	Water level, 5% of the vertical dimension	00:01:19		(Serv) 0
6.80	WL	Water level, 10% of the vertical dimension	00:01:24		(Serv) 0
7.40	WL	Water level, 15% of the vertical dimension	00:01:32		(Serv) 0
8.50	WL	Water level, 0% of the vertical dimension	00:01:45		(Serv) 0
17.60	WL	Water level, 5% of the vertical dimension	00:03:36		(Serv) 0
22.50	WL	Water level, 0% of the vertical dimension	00:04:09		(Serv) 0
F3					
22.51	MHF	Finish node type, manhole reference number: F3	00:04:09		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
06/12/2016		**rain**	**Frantisek**	**7**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**F6**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**F4**
Inspection	**F4 (U/S) F6**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Concrete**
Total length :	**14.81 m**	Lining :	

Comment :

1:126 Position	Code	Observation	MPEG	Photo	Grade
F4					
0.00	MH	Start node type, manhole, reference number : F4	00:00:00		(Constr) 0
0.01	WL	Water level, 15% of the vertical dimension	00:00:00		(Serv) 0
5.00	WLC	Clear water level, 5% of the vertical dimension	00:00:49		(Serv) 0
6.80	WL	Water level, 0% of the vertical dimension	00:01:14		(Serv) 0
8.30	CM	Cracks, multiple, from 4 to 8 o'clock	00:01:22	7_5A	(Struct) 3
14.30	DEC	Settled deposits, hard or compacted, 10% cross-sectional area loss Remarks: A lump of the concrete after building.	00:02:24	7_6A	(Serv) 3
14.60	WL	Water level, 0% of the vertical dimension	00:02:33		(Serv) 0
14.80	WL	Water level, 10% of the vertical dimension	00:02:33		(Serv) 0
F6					
14.81	MH	Start node type, manhole, reference number : F4	00:02:33		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade

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Inspection pictures / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**06/12/2016**	**7**	**X**

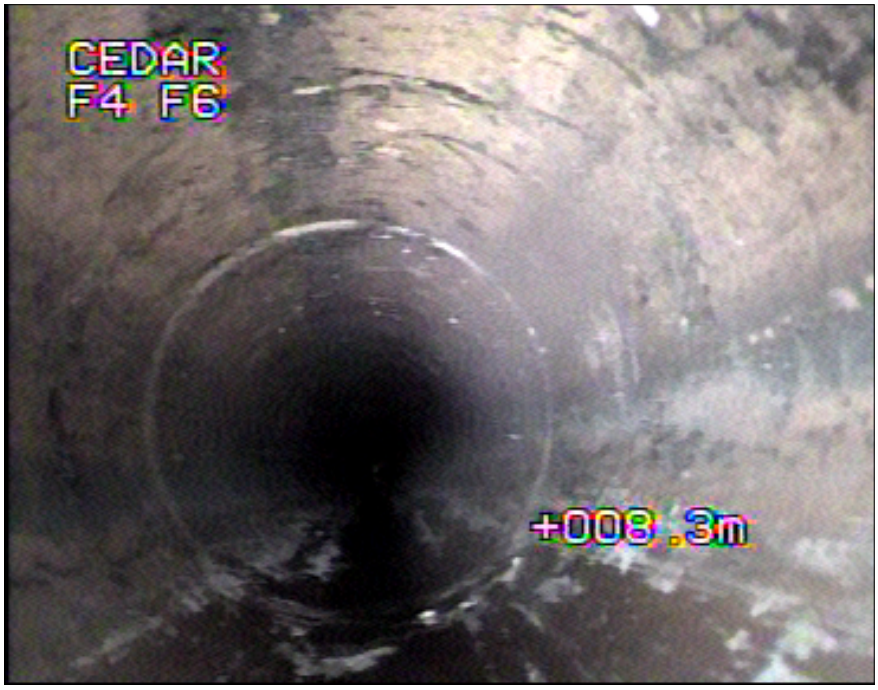

Photo: 7_5A, MPEG #: 051216_1, 00:01:22
8.3m, Cracks, multiple, from 4 to 8 o'clock

Photo: 7_6A, MPEG #: 051216_1, 00:02:24
14.3m, Settled deposits, hard or compacted, 10% cross-sectional area loss

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
06/12/2016		**rain**	**Frantisek**	**8**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**F5**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**ST**
Inspection	**F5 (D/S) ST**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**8.01 m**	Lining :	

Comment :

1:84	Position	Code	Observation	MPEG	Photo	Grade
F5	0.00	MH	Start node type, manhole, reference number : F5	00:00:02		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:02		(Serv) 0
	7.40	REM	General remark Remarks: Dents	00:01:02	8_3A	(Misc) 0
	8.00	WL	Water level, 0% of the vertical dimension	00:01:25		(Serv) 0
ST	8.01	MHF	Finish node type, manhole reference number: ST Remarks: Silt Trap	00:01:25		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**06/12/2016**	**8**	**X**

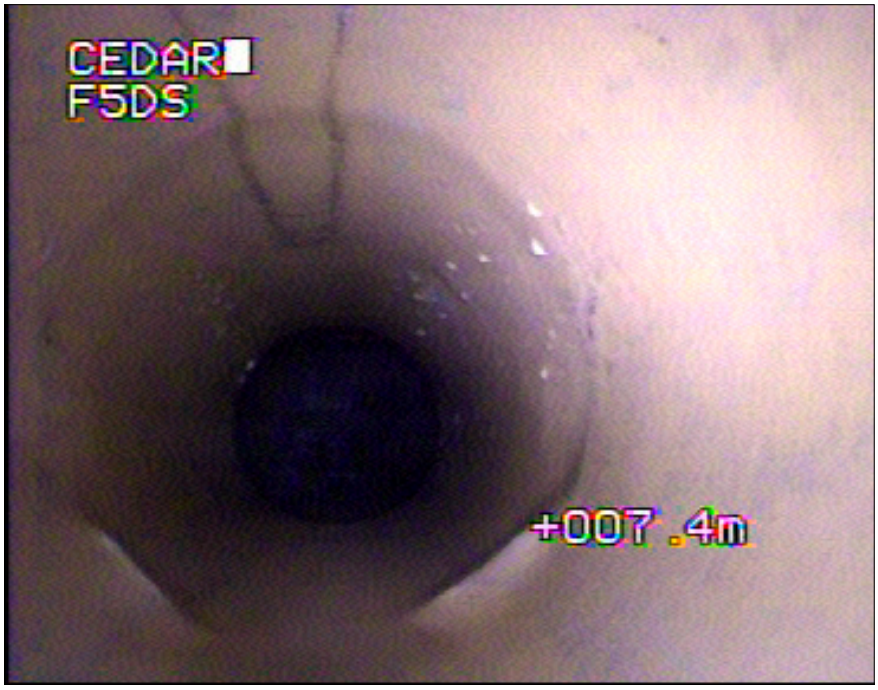

Photo: 8_3A, MPEG #: 051216_1, 00:01:02
7.4m, General remark

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
06/12/2016		**rain**	**Frantisek**	**9**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**US**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**F5**
Inspection	**F5 (U/S) US**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**9.51 m**	Lining :	

Comment :

1:84 Position	Code	Observation	MPEG	Photo	Grade
F5					
0.00	MH	Start node type, manhole, reference number : F5	00:00:01		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:01		(Serv) 0
3.60	WL	Water level, 5% of the vertical dimension	00:00:40		(Serv) 0
5.00	WL	Water level, 0% of the vertical dimension	00:01:29		(Serv) 0
8.20	REM	General remark Remarks: Dents	00:01:55	9_5A	(Misc) 0
9.40	CN	Connection other than junction, at 12 o'clock, diameter 40mm Remarks: Connection from cabin inside of the buildi	00:02:06		(Constr) 0
9.50	WL	Water level, 0% of the vertical dimension	00:02:07		(Serv) 0
9.51	SA	Survey abandoned Remarks: Survey could not be completed due to a wavin pipe in the way.	00:02:07		(Misc) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**06/12/2016**	**9**	**X**

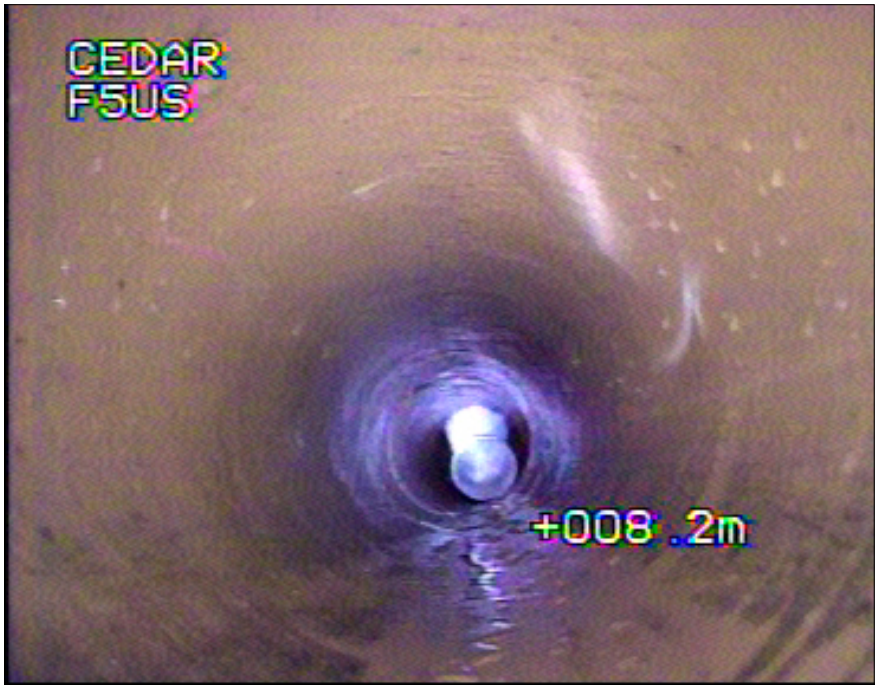

Photo: 9_5A, MPEG #: 051216_1, 00:01:55
8.2m, General remark

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
06/12/2016		**rain**	**Frantisek**	**10**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**ST**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**F6A**
Inspection	**ST (D/S) F6A**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**1.41 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
ST	0.00	CP	Start node type, catchpit, reference number : ST	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	0.40	LL	Line deviates left Remarks: 90 deg.	00:00:25		(Serv) 0
	1.40	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	1.41	SA	Survey abandoned Remarks: Survey could not be completed due to a bend on the pipe and bad access to thi	00:00:00		(Misc) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
06/12/2016		**rain**	**Frantisek**	**11**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**AJ3**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**DS**
Inspection	**AJ3 (D/S) DS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**11.90 m**	Lining :	

Comment :

1:84 Position	Code	Observation	MPEG	Photo	Grade
AJ3					
0.00	IC	Start node type, inspection chamber, reference number : AJ3	00:00:02		(Constr) 0
0.01	WL	Water level, 5% of the vertical dimension	00:00:01		(Serv) 0
5.40	WL	Water level, 10% of the vertical dimension	00:03:17		(Serv) 0
5.80	WL	Water level, 30% of the vertical dimension	00:00:49		(Serv) 0
6.60	CUW	Loss of vision, camera under water	00:00:57		(Misc) 0
8.20	LR	Line deviates right Remarks: 45 deg.	00:01:18		(Serv) 0
8.30	WL	Water level, 30% of the vertical dimension	00:01:20		(Serv) 0
9.00	WL	Water level, 15% of the vertical dimension	00:01:35		(Serv) 0
9.10	BRF	Finish node type, major connection without manhole reference number: DS Remarks: This pipe is connected to	00:01:34		(Constr) 0

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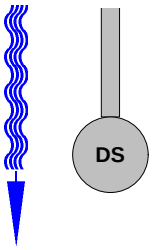
Inspection Report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR :
06/12/2016		**rain**	**Frantisek**	**11**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Grade:
rain	**VEHICLE 1**	**camera 1**		**yes**	

1:84	Position	Code	Observation	MPEG	Photo	Grade



Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
06/12/2016		**no rain or snow**	**Frantisek**	**12**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G2**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**G1**
Inspection	**G1 (U/S) G2**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**11.91 m**	Lining :	

Comment :

1:105	Position	Code	Observation	MPEG	Photo	Grade
G1						
	0.00	GY	Start node type, gully, reference number : G1	00:00:02		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:02		(Serv) 0
	4.50	LR	Line deviates right Remarks: 90 deg.	00:01:33		(Serv) 0
	11.90	WL	Water level, 0% of the vertical dimension	00:03:46		(Serv) 0
G2	11.91	GYF	Finish node type, gully reference number: G2	00:03:46		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
06/12/2016		**no rain or snow**	**Frantisek**	**13**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**US1**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**AJ3**
Inspection	**AJ3 (U/S) US1**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**9.41 m**	Lining :	

Comment :

1:84	Position	Code	Observation	MPEG	Photo	Grade
AJ3	0.00	IC	Start node type, inspection chamber, reference number : AJ3	00:00:02		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:02		(Serv) 0
	3.10	WL	Water level, 5% of the vertical dimension	00:00:46		(Serv) 0
	7.20	LL	Line deviates left	00:01:14		(Serv) 0
	7.30	WL	Water level, 0% of the vertical dimension	00:01:24		(Serv) 0
	9.30	LU	Line deviates up	00:01:39		(Serv) 0
US1	9.40	WL	Water level, 0% of the vertical dimension	00:01:35		(Serv) 0
	9.41	GYF	Finish node type, gully reference number: US1 Remarks: Gully underneath the weightbridge.	00:01:35		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
22/12/2016		**no rain or snow**	**Frantisek**	**14**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**US2**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**AJ3**
Inspection	**AJ3 (U/S) US2**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**2.21 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
AJ3						
	0.00	IC	Start node type, inspection chamber, reference number : AJ3	00:00:02		(Constr) 0
	0.01	WLC	Clear water level, 0% of the vertical dimension	00:00:02		(Serv) 0
	1.90	LU	Line deviates up	00:00:18		(Serv) 0
	2.20	WL	Water level, 0% of the vertical dimension	00:00:20		(Serv) 0
US2	2.21	GYF	Finish node type, gully reference number: US2 Remarks: Gully under the weightbridge.	00:00:20		(Constr) 0

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
22/12/2016		**no rain or snow**	**Frantisek**	**15**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G6**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**DS**
Inspection	**G6 (D/S) DS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**4.90 m**	Lining :	

Comment :

1:50 Position	Code	Observation	MPEG	Photo	Grade
G6					
0.00	GY	Start node type, gully, reference number : G6	00:00:02		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:02		(Serv) 0
4.90	WL	Water level, 0% of the vertical dimension	00:01:35		(Serv) 0
DS					
4.90	BRF	Finish node type, major connection without manhole reference number: DS Remarks: This pipe is connected to	00:01:35		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
22/12/2016		**no rain or snow**	**Frantisek**	**16**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G6.1**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**MH15**
Inspection	**G6.1 (D/S) MH15**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**3.40 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
G6.1	0.00	GY	Start node type, gully, reference number : G6.1	00:01:21		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	0.20	REM	General remark Remarks: Socket are connected up side down.	00:00:05		(Misc) 0
	3.40	WL	Water level, 0% of the vertical dimension	00:00:34		(Serv) 0
MH15	3.40	MHF	Finish node type, manhole reference number: MH15	00:00:34		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
22/12/2016		**no rain or snow**	**Frantisek**	**17**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G7.1**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**DS**
Inspection	**G7.1 (D/S) DS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**9.81 m**	Lining :	

Comment :

1:84	Position	Code	Observation	MPEG	Photo	Grade
G7.1	0.00	GY	Start node type, gully, reference number : G7.1	00:01:41		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	3.60	WLC	Clear water level, 5% of the vertical dimension	00:00:42		(Serv) 0
	4.40	WLC	Clear water level, 0% of the vertical dimension	00:00:51		(Serv) 0
	9.80	WL	Water level, 0% of the vertical dimension	00:01:41		(Serv) 0
DS	9.81	BRF	Finish node type, major connection without manhole reference number: DS Remarks: This pipe is connected to	00:01:41		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
22/12/2016		**no rain or snow**	**Frantisek**	**18**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G7**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**DS**
Inspection	**G7 (D/S) DS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**5.01 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
G7	0.00	GY	Start node type, gully, reference number : G7	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	5.00	WL	Water level, 0% of the vertical dimension	00:00:50		(Serv) 0
DS	5.01	BRF	Finish node type, major connection without manhole reference number: DS Remarks: This pipe is connected to	00:00:50		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
22/12/2016		**no rain or snow**	**Frantisek**	**19**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G8.1**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**DS**
Inspection	**G8.1 (D/S) DS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**2.11 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
G8.1	0.00	GY	Start node type, gully, reference number : G8.1	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	1.80	LR	Line deviates right	00:00:15		(Serv) 0
	2.10	WL	Water level, 0% of the vertical dimension	00:00:20		(Serv) 0
DS	2.11	BRF	Finish node type, major connection without manhole reference number: DS Remarks: This pipe is connected to	00:00:20		(Constr) 0

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**20**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G8**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**DS**
Inspection	**G8 (D/S) DS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**6.41 m**	Lining :	

Comment :

1:63	Position	Code	Observation	MPEG	Photo	Grade
G8	0.00	GY	Start node type, gully, reference number : G8	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	2.40	CN	Connection other than junction, at 9 o'clock, diameter 100mm	00:00:35		(Constr) 0
	6.10	LR	Line deviates right Remarks: 45 deg.	00:01:18		(Serv) 0
	6.10	WL	Water level, 0% of the vertical dimension	00:01:21		(Serv) 0
DS	6.40	WL	Water level, 5% of the vertical dimension	00:01:21		(Serv) 0
	6.41	BRF	Finish node type, major connection without manhole reference number: DS Remarks: This pipe is connected to	00:01:21		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**21**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G9.1**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**DS**
Inspection	**G9.1 (D/S) DS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**4.81 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
G9.1	0.00	GY	Start node type, gully, reference number : G9.1	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	0.20	LL	Line deviates left Remarks: 45 deg.	00:00:01		(Serv) 0
	4.30	LD	Line deviates down	00:00:42		(Serv) 0
	4.80	WL	Water level, 0% of the vertical dimension	00:01:03		(Serv) 0
DS	4.81	BRF	Finish node type, major connection without manhole reference number: DS Remarks: This pipe is connected to	00:01:03		(Constr) 0

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**22**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G9**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**DS**
Inspection	**G9 (D/S) DS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**7.41 m**	Lining :	

Comment :

1:63	Position	Code	Observation	MPEG	Photo	Grade
G9	0.00	GY	Start node type, gully, reference number : G9	00:00:01		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:01		(Serv) 0
	0.90	SR	Sealing ring intruding, from 5 to 7 o'clock	00:00:12	22_3A	(Constr) 1
	6.30	REM	General remark Remarks: Socket on this pipe are connected against the stream.	00:01:12		(Misc) 0
	7.40	WL	Water level, 0% of the vertical dimension	00:01:25		(Serv) 0
DS	7.41	BRF	Finish node type, major connection without manhole reference number: DS Remarks: This pipe is connected to	00:01:25		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**5**	**0.67**	**5**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection pictures / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**23/12/2016**	**22**	**X**

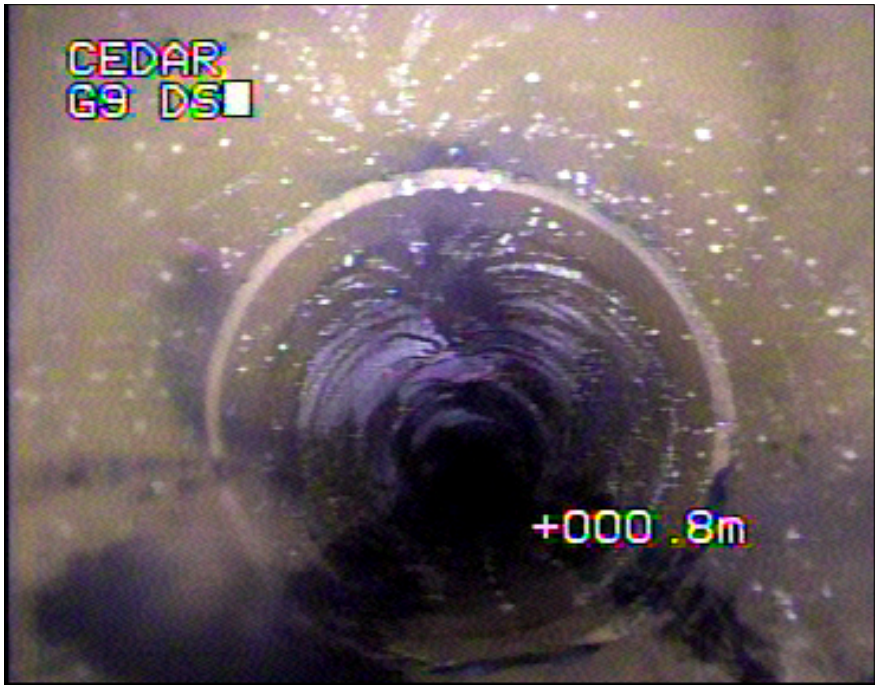

Photo: 22_3A, MPEG #: 051216_1, 00:00:12
0.9m, Sealing ring intruding, from 5 to 7 o'clock

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**23**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S2**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S3**
Inspection	**S2 (D/S) S3**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**31.10 m**	Lining :	

Comment :

1:252 Position	Code	Observation	MPEG	Photo	Grade
S2					
0.00	MH	Start node type, manhole, reference number : S2	00:00:00		(Constr) 0
0.01	WLC	Clear water level, 0% of the vertical dimension	00:00:00		(Serv) 0
30.00	SR	Sealing ring intruding, from 11 to 3 o'clock	00:04:31	23_3A	(Constr) 1
30.50	LR	Line deviates right Remarks: 45 deg.	00:05:02		(Serv) 0
31.10	WL	Water level, 0% of the vertical dimension	00:05:15		(Serv) 0
31.10	MHF	Finish node type, manhole reference number: S3	00:05:15		(Constr) 0
S3					

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**5**	**0.16**	**5**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection pictures / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**23/12/2016**	**23**	**X**

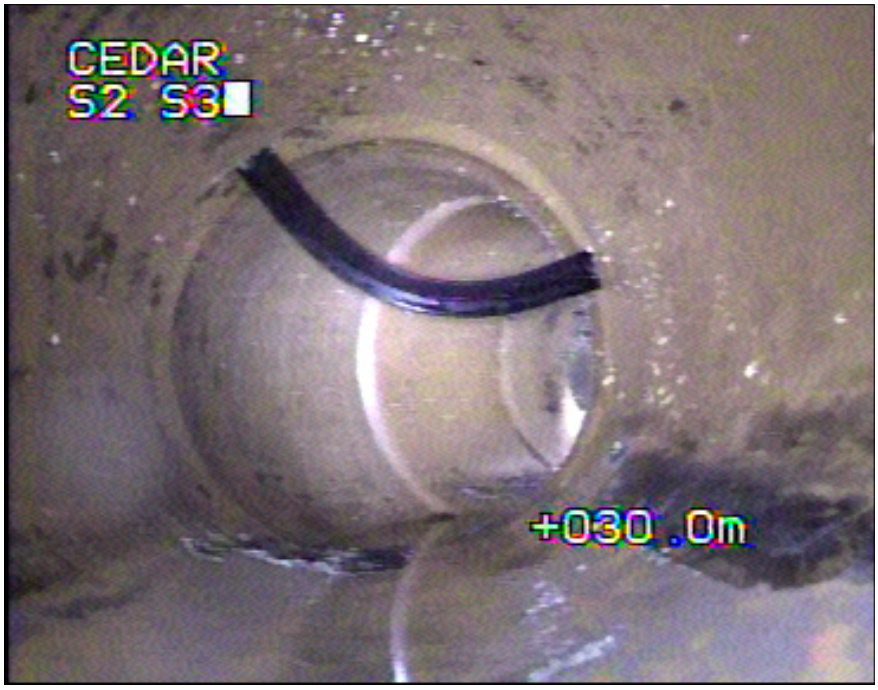

Photo: 23_3A, MPEG #: 051216_1, 00:04:31
30m, Sealing ring intruding, from 11 to 3 o'clock

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**24**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S4**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S2**
Inspection	**S2 (U/S) S4**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**18.11 m**	Lining :	

Comment :

1:147 Position	Code	Observation	MPEG	Photo	Grade
S2					
0.00	MH	Start node type, manhole, reference number : S2	00:00:00		(Constr) 0
0.01	WLC	Clear water level, 0% of the vertical dimension	00:00:00		(Serv) 0
3.20	CN	Connection other than junction, at 2 o'clock, diameter 100mm	00:00:27		(Constr) 0
3.20	WL	Water level, 5% of the vertical dimension	00:00:29		(Serv) 0
4.70	WL	Water level, 0% of the vertical dimension	00:00:43		(Serv) 0
4.71	LL	Line deviates left Remarks: 45 deg.	00:00:43		(Serv) 0
9.00	WL	Water level, 5% of the vertical dimension	00:01:23		(Serv) 0
10.20	WL	Water level, 0% of the vertical dimension	00:01:34		(Serv) 0
11.10	CN	Connection other than junction, at 3 o'clock, diameter 100mm	00:01:41		(Constr) 0
13.00	SZ	Surface damage, other, from 8 to 9 o'clock Remarks: A piece of wire damaged surface of this pipe .	00:02:35	24_10A	(Struct) 0
15.30	WL	Water level, 5% of the vertical dimension	00:03:03		(Serv) 0
16.20	WL	Water level, 10% of the vertical dimension	00:03:10		(Serv) 0
17.00	WL	Water level, 0% of the vertical dimension	00:03:43		(Serv) 0
18.10	WL	Water level, 0% of the vertical dimension	00:03:53		(Serv) 0
18.11	MHF	Finish node type, manhole reference number: S4	00:03:53		(Constr) 0
S4					

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Featuress**

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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Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**23/12/2016**	**24**	**X**

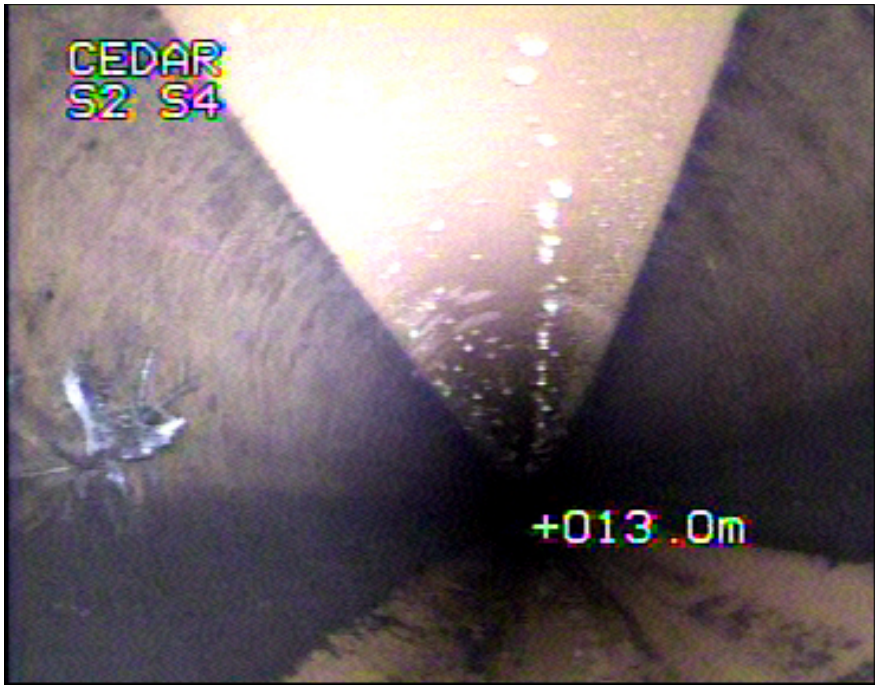

Photo: 24_10A, MPEG #: 051216_1, 00:02:35
13m, Surface damage, other, from 8 to 9 o'clock

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**25**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S3**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S11**
Inspection	**S3 (D/S) S11**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**4.31 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
S3	0.00	MH	Start node type, manhole, reference number : S3	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	2.40	WLC	Clear water level, 5% of the vertical dimension	00:00:25		(Serv) 0
	3.50	LL	Line deviates left Remarks: 45 deg.	00:00:33		(Serv) 0
	4.30	WL	Water level, 0% of the vertical dimension	00:00:44		(Serv) 0
S11	4.31	MHF	Finish node type, manhole reference number: S11	00:00:44		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**26**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**US**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S4**
Inspection	**S4 (U/S) US**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**4.10 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
S4						
	0.00	MH	Start node type, manhole, reference number : S4	00:00:02		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:02		(Serv) 0
	3.00	WL	Water level, 0% of the vertical dimension	00:00:19		(Serv) 0
	3.01	BRF	Finish node type, major connection without manhole reference number: US Remarks: Retention Tank.	00:00:19		(Constr) 0
	4.10	LD	Line deviates down Remarks: 45 deg.	00:00:20		(Serv) 0
US						

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**27**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**DP**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S5**
Inspection	**S5 (U/S) DP**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**15.91 m**	Lining :	

Comment :

1:126 Position	Code	Observation	MPEG	Photo	Grade
S5					
0.00	MH	Start node type, manhole, reference number : S5	00:00:00		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
0.40	LL	Line deviates left Remarks: 45 deg.	00:00:03		(Serv) 0
1.10	LL	Line deviates left Remarks: 15-30 deg.	00:00:07		(Serv) 0
4.40	WLC	Clear water level, 5% of the vertical dimension	00:00:32		(Serv) 0
4.90	WL	Water level, 10% of the vertical dimension	00:00:36		(Serv) 0
6.30	WL	Water level, 5% of the vertical dimension	00:00:45		(Serv) 0
8.50	WL	Water level, 0% of the vertical dimension	00:01:09		(Serv) 0
11.10	OJM	Open joint, medium Remarks: Pipes are not connected fully.	00:01:44	27_9A	(Struct) 1
11.60	WL	Water level, 5% of the vertical dimension	00:01:47		(Serv) 0
13.70	WL	Water level, 0% of the vertical dimension	00:02:05		(Serv) 0
15.40	LR	Line deviates right Remarks: 90 deg.	00:02:23		(Serv) 0
15.90	WL	Water level, 0% of the vertical dimension	00:02:29		(Serv) 0
15.91	BRF	Finish node type, major connection without manhole reference number: DP Remarks: Discharging Point of aco	00:02:29		(Constr) 0
DP					

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Featuress**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**1**	**0.06**	**1**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection pictures / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**23/12/2016**	**27**	**X**

Photo: 27_9A, MPEG #: 051216_1, 00:01:44
11.1m, Open joint, medium

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**28**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S6**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**OS**
Inspection	**S6 (D/S) OS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**9.01 m**	Lining :	

Comment :

1:84	Position	Code	Observation	MPEG	Photo	Grade
S6	0.00	MH	Start node type, manhole, reference number : S6	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	3.00	WL	Water level, 5% of the vertical dimension	00:00:31		(Serv) 0
	3.70	WL	Water level, 10% of the vertical dimension	00:00:37		(Serv) 0
	6.30	WL	Water level, 15% of the vertical dimension	00:00:59		(Serv) 0
	7.60	WL	Water level, 10% of the vertical dimension	00:01:10		(Serv) 0
	9.00	WL	Water level, 10% of the vertical dimension	00:01:22		(Serv) 0
OS	9.01	BRF	Finish node type, major connection without manhole reference number: OS Remarks: This pipe is connected to	00:01:22		(Constr) 0

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**29**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S5**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S6**
Inspection	**S6 (U/S) S5**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**7.61 m**	Lining :	

Comment :

1:63	Position	Code	Observation	MPEG	Photo	Grade
S6	0.00	MH	Start node type, manhole, reference number : S6	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	7.60	WL	Water level, 0% of the vertical dimension	00:01:51		(Serv) 0
S5	7.61	MHF	Finish node type, manhole reference number: S5	00:01:51		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**30**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S7**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S6**
Inspection	**S6 (U/S) S7**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**8.11 m**	Lining :	

Comment :

1:84	Position	Code	Observation	MPEG	Photo	Grade
S6	0.00	MH	Start node type, manhole, reference number : S6	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	8.10	WLC	Clear water level, 0% of the vertical dimension	00:01:05		(Serv) 0
S7	8.11	MHF	Finish node type, manhole reference number: S7	00:01:05		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**31**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G4**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S7**
Inspection	**G4 (D/S) S7**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**6.11 m**	Lining :	

Comment :

1:63	Position	Code	Observation	MPEG	Photo	Grade
G4	0.00	GY	Start node type, gully, reference number : G4	00:00:58		(Constr) 0
	0.01	WLC	Clear water level, 0% of the vertical dimension	00:00:58		(Serv) 0
	5.90	LR	Line deviates right Remarks: 45 deg.	00:00:58		(Serv) 0
	6.10	WL	Water level, 0% of the vertical dimension	00:01:03		(Serv) 0
S7	6.11	MHF	Finish node type, manhole reference number: S7	00:01:03		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**32**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S9**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S8**
Inspection	**S8 (U/S) S9**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**37.71 m**	Lining :	

Comment :

1:315 Position	Code	Observation	MPEG	Photo	Grade
S8					
0.00	MH	Start node type, manhole, reference number : S8	00:00:03		(Constr) 0
0.01	WLC	Clear water level, 0% of the vertical dimension	00:00:03		(Serv) 0
2.90	CN	Connection other than junction, at 2 o'clock, diameter 100mm	00:00:32		(Constr) 0
4.50	WL	Water level, 5% of the vertical dimension	00:00:49		(Serv) 0
7.20	CN	Connection other than junction, at 10 o'clock, diameter 100mm	00:01:09		(Constr) 0
16.30	CN	Connection other than junction, at 2 o'clock, diameter 100mm	00:02:27		(Constr) 0
25.50	WL	Water level, 0% of the vertical dimension	00:03:57		(Serv) 0
28.40	CN	Connection other than junction, at 2 o'clock, diameter 100mm	00:03:55		(Constr) 0
37.70	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
S9					
37.71	MHF	Finish node type, manhole reference number: S9	00:00:00		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**33**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S8**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S10**
Inspection	**S8 (D/S) S10**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**37.41 m**	Lining :	

Comment :

1:315 Position	Code	Observation	MPEG	Photo	Grade
S8					
0.00	MH	Start node type, manhole, reference number : S8	00:00:01		(Constr) 0
0.01	WLC	Clear water level, 0% of the vertical dimension	00:00:01		(Serv) 0
30.60	WL	Water level, 5% of the vertical dimension	00:04:41		(Serv) 0
31.70	LL	Line deviates left Remarks: 15	00:04:20		(Serv) 0
31.90	WL	Water level, 0% of the vertical dimension	00:04:26		(Serv) 0
37.40	WL	Water level, 5% of the vertical dimension	00:04:46		(Serv) 0
S10					
37.41	MHF	Finish node type, manhole reference number: S10	00:04:46		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**34**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G1**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S9**
Inspection	**S9 (U/S) G1**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**5.61 m**	Lining :	

Comment :

1:63	Position	Code	Observation	MPEG	Photo	Grade
S9	0.00	MH	Start node type, manhole, reference number : S9	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	5.60	WLC	Clear water level, 0% of the vertical dimension	00:00:57		(Serv) 0
G1	5.61	GYF	Finish node type, gully reference number: G1	00:00:57		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**35**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**no**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G3**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S9**
Inspection	**S9 (U/S) G3**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**10.81 m**	Lining :	

Comment :

1:105 Position	Code	Observation	MPEG	Photo	Grade
S9					
0.00	MH	Start node type, manhole, reference number : S9	00:00:01		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:01		(Serv) 0
3.00	DES	Settled deposits, fine, 5% cross-sectional area loss	00:00:27		(Serv) 2
5.20	WL	Water level, 10% of the vertical dimension	00:00:38		(Serv) 0
8.50	WL	Water level, 0% of the vertical dimension	00:00:58		(Serv) 0
10.80	WL	Water level, 0% of the vertical dimension	00:01:12		(Serv) 0
G3					
10.81	GYF	Finish node type, gully reference number: G3	00:01:12		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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**	**1**	**0.09**	**1**	**2**

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**36**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**no**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**US2**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S9**
Inspection	**S9 (U/S) US2**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**4.10 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
S9	0.00	MH	Start node type, manhole, reference number : S9	00:00:02		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:02		(Serv) 0
	3.60	LU	Line deviates up	00:00:30		(Serv) 0
	4.10	WL	Water level, 0% of the vertical dimension	00:00:41		(Serv) 0
	4.10	SA	Survey abandoned Remarks: Survey could not be completed due to Length of this pipe. This pipe is a water s	00:00:41		(Misc) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**37**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S10**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S11**
Inspection	**S10 (D/S) S11**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**26.61 m**	Lining :	

Comment :

1:210 Position	Code	Observation	MPEG	Photo	Grade
S10					
0.00	MH	Start node type, manhole, reference number : S10	00:00:00		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
6.00	CN	Connection other than junction, at 10 o'clock, diameter 100mm	00:00:43		(Constr) 0
26.60	WL	Water level, 0% of the vertical dimension	00:03:04		(Serv) 0
26.61	MHF	Finish node type, manhole reference number: S11	00:03:04		(Constr) 0
S11					

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**38**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S13**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S10**
Inspection	**S10 (U/S) S13**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**47.71 m**	Lining :	

Comment :

1:378 Position	Code	Observation	MPEG	Photo	Grade
S10					
0.00	MH	Start node type, manhole, reference number : S10	00:00:00		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
2.30	CN	Connection other than junction, at 1 o'clock, diameter 100mm Remarks: Possibly a water spout.	00:00:21		(Constr) 0
14.30	CN	Connection other than junction, at 1 o'clock, diameter 100mm Remarks: A water spout.	00:01:46		(Constr) 0
26.70	CN	Connection other than junction, at 2 o'clock, diameter 100mm Remarks: A water spout.	00:03:15		(Constr) 0
34.70	WL	Water level, 5% of the vertical dimension	00:05:49		(Serv) 0
37.10	WL	Water level, 0% of the vertical dimension	00:06:39		(Serv) 0
39.00	CN	Connection other than junction, at 2 o'clock, diameter 100mm Remarks: A water spout.	00:07:27		(Constr) 0
47.70	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
47.71	MHF	Finish node type, manhole reference number: S13	00:00:00		(Constr) 0
S13					

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**39**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**OS**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S11**
Inspection	**S11 (U/S) OS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**6.21 m**	Lining :	

Comment :

1:63	Position	Code	Observation	MPEG	Photo	Grade
S11	0.00	MH	Start node type, manhole, reference number : S11	00:00:00		(Constr) 0
	0.01	WLC	Clear water level, 5% of the vertical dimension	00:00:00		(Serv) 0
	5.30	WL	Water level, 0% of the vertical dimension	00:00:40		(Serv) 0
	6.20	WL	Water level, 0% of the vertical dimension	00:00:46		(Serv) 0
OS	6.21	OSF	Finish node type, oil separator reference number: OS Remarks: Oil Separator.	00:00:46		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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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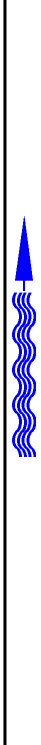
Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**40**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S3**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S11**
Inspection	**S11 (U/S) S3**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**3.81 m**	Lining :	

Comment :



1:50 Position	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node type, manhole, reference number : S11	00:00:01		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:01		(Serv) 0
0.10	LR	Line deviates right Remarks: 45 deg.	00:00:04		(Serv) 0
1.00	WL	Water level, 5% of the vertical dimension	00:00:11		(Serv) 0
3.80	WLC	Clear water level, 0% of the vertical dimension	00:00:29		(Serv) 0
3.81	MHF	Finish node type, manhole reference number: S3	00:00:29		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**41**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G4**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S13**
Inspection	**S13 (U/S) G4**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**0.61 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
S13	0.00	MH	Start node type, manhole, reference number : S13	00:00:01		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:01		(Serv) 0
	0.60	WL	Water level, 0% of the vertical dimension	00:00:11		(Serv) 0
G4	0.61	GYF	Finish node type, gully reference number: G4	00:00:11		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**42**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**US**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S13**
Inspection	**S13 (U/S) US**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**26.51 m**	Lining :	

Comment :

1:210 Position	Code	Observation	MPEG	Photo	Grade
S13					
0.00	MH	Start node type, manhole, reference number : S13	00:00:00		(Constr) 0
0.01	WLC	Clear water level, 5% of the vertical dimension	00:00:00		(Serv) 0
4.10	WL	Water level, 0% of the vertical dimension	00:00:40		(Serv) 0
7.10	CN	Connection other than junction, at 2 o'clock, diameter 100mm Remarks: A water spout.	00:01:04		(Constr) 0
14.20	CN	Connection other than junction, at 12 o'clock, diameter 100mm Remarks: A water spout.	00:02:08		(Constr) 0
14.50	WLC	Clear water level, 5% of the vertical dimension	00:02:12		(Serv) 0
15.00	WL	Water level, 0% of the vertical dimension	00:02:16		(Serv) 0
17.50	CN	Connection other than junction, at 12 o'clock, diameter 100mm Remarks: A water spout.	00:02:37		(Constr) 0
19.80	WL	Water level, 5% of the vertical dimension	00:02:54		(Serv) 0
21.10	CN	Connection other than junction, at 12 o'clock, diameter 100mm Remarks: A water spout.	00:03:03		(Constr) 0
22.70	WL	Water level, 0% of the vertical dimension	00:03:16		(Serv) 0
26.50	WL	Water level, 0% of the vertical dimension	00:03:43		(Serv) 0
26.51	BRF	Finish node type, major connection without manhole reference number: US Remarks: The end of the pipe.	00:03:43		(Constr) 0
US					

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**43**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**WS**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S13**
Inspection	**S13 (U/S) WS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**6.41 m**	Lining :	

Comment :

1:63	Position	Code	Observation	MPEG	Photo	Grade
S13	0.00	MH	Start node type, manhole, reference number : S13	00:00:02		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:02		(Serv) 0
	1.70	LL	Line deviates left Remarks: 45 deg.	00:00:15		(Serv) 0
	1.71	CN	Connection other than junction, at 12 o'clock, diameter 100mm Remarks: A water spout.	00:00:15		(Constr) 0
	6.40	WL	Water level, 0% of the vertical dimension	00:00:41		(Serv) 0
WS	6.41	BRF	Finish node type, major connection without manhole reference number: WS Remarks: A water spout.	00:00:41		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**44**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G10**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S14**
Inspection	**S14 (U/S) G10**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**4.61 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
S14	0.00	MH	Start node type, manhole, reference number : S14	00:00:01		(Constr) 0
	0.01	WLC	Clear water level, 0% of the vertical dimension	00:00:01		(Serv) 0
	4.60	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
G10	4.61	GYF	Finish node type, gully reference number: G10	00:00:00		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Featuress				
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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**45**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**US**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S14**
Inspection	**S14 (U/S) US**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**3.61 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
S14	0.00	MH	Start node type, manhole, reference number : S14	00:00:00		(Constr) 0
	0.01	WL	Water level, 5% of the vertical dimension	00:00:00		(Serv) 0
	1.00	WLC	Clear water level, 0% of the vertical dimension	00:00:09		(Serv) 0
	3.60	WL	Water level, 0% of the vertical dimension	00:00:29		(Serv) 0
US	3.61	BRF	Finish node type, major connection without manhole reference number: US Remarks: dead End.	00:00:29		(Constr) 0

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**46**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**G5**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S15**
Inspection	**S15 (U/S) G5**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**3.01 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
S15	0.00	MH	Start node type, manhole, reference number : S15	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	3.00	WL	Water level, 0% of the vertical dimension	00:00:26		(Serv) 0
G5	3.01	GYF	Finish node type, gully reference number: G5	00:00:26		(Constr) 0

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**47**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S14**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S15**
Inspection	**S15 (U/S) S14**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**42.51 m**	Lining :	

Comment :

1:336 Position	Code	Observation	MPEG	Photo	Grade
S15					
0.00	MH	Start node type, manhole, reference number : S15	00:00:00		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
6.70	CN	Connection other than junction, at 3 o'clock, diameter 150mm Remarks: Connection from G7.1	00:00:43		(Constr) 0
16.80	CN	Connection other than junction, at 10 o'clock, diameter 100mm Remarks: Connection from G8.1	00:01:43		(Constr) 0
19.40	CN	Connection other than junction, at 9 o'clock, diameter 100mm Remarks: Connection from G9.1	00:02:03		(Constr) 0
24.30	SR	Sealing ring intruding, from 10 to 6 o'clock	00:02:39	47_6A	(Constr) 1
25.20	CN	Connection other than junction, at 2 o'clock, diameter 80mm Remarks: Connection from Pump beside loading de	00:02:48		(Constr) 0
42.50	WLC	Clear water level, 0% of the vertical dimension	00:06:44		(Serv) 0
42.51	MHF	Finish node type, manhole reference number: S14	00:06:44		(Constr) 0
S14					

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**5**	**0.12**	**5**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection pictures / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**23/12/2016**	**47**	**X**

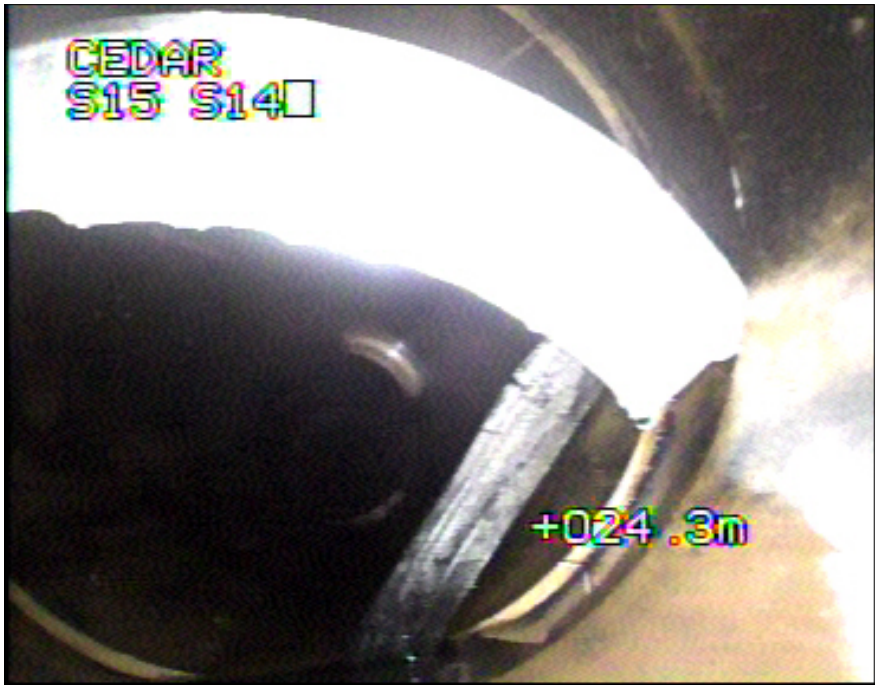

Photo: 47_6A, MPEG #: 051216_1, 00:02:39
24.3m, Sealing ring intruding, from 10 to 6 o'clock

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**48**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S15**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S16**
Inspection	**S15 (D/S) S16**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**7.01 m**	Lining :	

Comment :

1:63	Position	Code	Observation	MPEG	Photo	Grade
S15	0.00	MH	Start node type, manhole, reference number : S15	00:00:00		(Constr) 0
	0.01	WLC	Clear water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	6.20	LR	Line deviates right	00:00:52		(Serv) 0
	6.40	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	7.00	WL	Water level, 5% of the vertical dimension	00:00:00		(Serv) 0
S16	7.01	MHF	Finish node type, manhole reference number: S16	00:00:00		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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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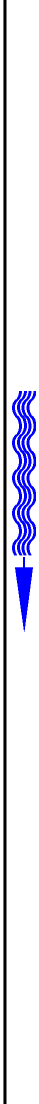
Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**49**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S16**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S7**
Inspection	**S16 (D/S) S7**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**15.51 m**	Lining :	

Comment :



1:126 Position	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node type, manhole, reference number : S16	00:00:00		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
13.10	WLC	Clear water level, 5% of the vertical dimension	00:01:52		(Serv) 0
14.10	WLC	Clear water level, 10% of the vertical dimension	00:02:00		(Serv) 0
15.00	LL	Line deviates left Remarks: 90 deg.	00:02:07		(Serv) 0
15.40	JDL	Joint displaced, large Remarks: Poor workmanship.	00:02:41	49_6A	(Struct) 1
15.50	WL	Water level, 5% of the vertical dimension	00:00:00		(Serv) 0
15.51	MHF	Finish node type, manhole reference number: S7	00:00:00		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**23/12/2016**	**49**	**X**

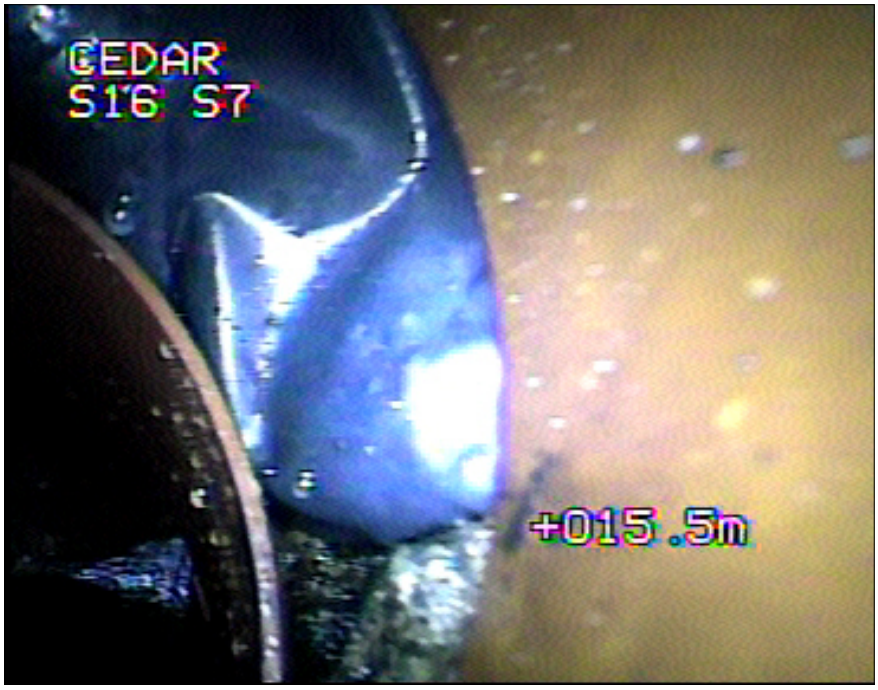

Photo: 49_6A, MPEG #: 051216_1, 00:02:41
15.4m, Joint displaced, large

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**50**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**AD**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**SUMP**
Inspection	**SUMP (U/S) AD**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**0.62 m**	Lining :	

Comment :

1:50	Position	Code	Observation	MPEG	Photo	Grade
SUMP	0.00	CP	Start node type, catchpit, reference number : SUMP	00:00:00		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
	0.60	RF	Roots, fine Remarks: These roots come from gap between the end of this pipe and ACCO Drain.	00:00:12	50_3A	(Serv) 2
AD	0.61	WL	Water level, 0% of the vertical dimension	00:01:15		(Serv) 0
	0.62	BRF	Finish node type, major connection without manhole reference number: AD Remarks: ACCO Drain.	00:01:15		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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**	**1**	**1.61**	**1**	**3**

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Inspection pictures / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**23/12/2016**	**50**	**X**

Photo: 50_3A, MPEG #: 051216_1, 00:00:12
0.6m, Roots, fine

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Inspection report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**51**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**SW1**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**S17**
Inspection	**SW1 (D/S) S17**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**12.31 m**	Lining :	

Comment :

1:105	Position	Code	Observation	MPEG	Photo	Grade
SW1	0.00	MH	Start node type, manhole, reference number : SW1 Remarks: Surface water valve.	00:00:02		(Constr) 0
	0.01	WL	Water level, 0% of the vertical dimension	00:00:02		(Serv) 0
	8.30	REM	General remark Remarks: Socket connection against the stream	00:01:15		(Misc) 0
	12.30	WL	Water level, 0% of the vertical dimension	00:01:49		(Serv) 0
S17	12.31	MHF	Finish node type, manhole reference number: S17	00:01:49		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

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 report / Inspection: 1

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
23/12/2016		**no rain or snow**	**Frantisek**	**52**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow	**VEHICLE 1**	**camera 1**		**yes**	**Frantisek**

Place :	**Rathcoole**	Location details:		U/S MH :	**S1**
Road :	**Greenoque Busniss Park**	Catchment:		U/S Depth :	
Location	**Property with buildings**	Tape number :	**051216_1**	D/S MH :	**OS**
Inspection	**S1 (D/S) OS**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225.00 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Polyvinyl chloride**
Total length :	**37.81 m**	Lining :	

Comment :

1:315 Position	Code	Observation	MPEG	Photo	Grade
S1					
0.00	MH	Start node type, manhole, reference number : S1	00:00:00		(Constr) 0
0.01	WL	Water level, 0% of the vertical dimension	00:00:00		(Serv) 0
14.00	OBI	Other obstacles protuding through wall, from 12 to 6 o'clock, 5% cross-sectional area loss Remarks: A steel bar	00:01:52	52_3A	(Serv) 5
23.30	CN	Connection other than junction, at 10 o'clock, diameter 100mm Remarks: Connection from G9	00:03:09		(Constr) 0
27.20	CN	Connection other than junction, at 2 o'clock, diameter 100mm Remarks: Connection from G6	00:03:35		(Constr) 0
31.70	CN	Connection other than junction, at 10 o'clock, diameter 100mm Remarks: Connection from G8.	00:04:01		(Constr) 0
36.10	SR	Sealing ring intruding, from 11 to 1 o'clock	00:05:24		(Constr) 1
36.10	CN	Connection other than junction, at 10 o'clock, diameter 100mm Remarks: Connection from G7	00:05:26	52_8A	(Constr) 0
36.70	CN	Connection other than junction, at 9 o'clock, diameter 100mm Remarks: Connection from AJ3.	00:05:38		(Constr) 0
37.20	CN	Connection other than junction, at 3 o'clock, diameter 150mm Remarks: Connection from S6.	00:05:58		(Constr) 0
37.40	WL	Water level, 0% of the vertical dimension	00:06:05		(Serv) 0
37.80	WL	Water level, 10% of the vertical dimension	00:06:05		(Serv) 0
OS					
37.81	BRF	Finish node type, major connection without manhole reference number: OS Remarks: Survey stopped just befor	00:06:05		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Featuress**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**5**	**0.13**	**5**	**1**	**1**	**10**	**0.26**	**10**	**5**

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Inspection pictures / Inspection: 1

Place :	Road :	Date :	Section number :	PLR Suffix :
Rathcoole	**Greenoque Busniss Park**	**23/12/2016**	**52**	**X**

Photo: 52_3A, MPEG #: 051216_1, 00:01:52
14m, Other obstacles protuding through wall, from 12 to 6 o'clock, 5% cross-sectional area loss

Photo: 52_8A, MPEG #: 051216_1, 00:05:26
36.1m, Connection other than junction, at 10 o'clock, diameter 100mm

ONSITE DRAINAGE – SUMMARY OF DEFECTS

PLEASE REFER TO THE SITE PLAN OVERLEAF

It was apparent from the CCTV camera inspection that the drainage system is generally in good condition, with some area requiring attention.

For any of the places where a seal ring was found to be intruding, a structural patch lining of all defective sections is recommended in order to reinstate the drainage lines to a watertight condition. Other drainage line defects have been itemised below.

Foul Line

Drainage line: F6 – F4

Location	***Defect***
8.30m	Multiple cracks in the line. Recommendation repair by installation of liner.
14.30m	Settled deposits in the line. Assumed to be a lump of concrete from the building manufacture. Recommend robotic cutter to break up concrete and the line be flushed.

Surface Water Line

Drainage Line: AD – Sump

Location	***Defect***
0.60m	Roots located at the end of the pipe at the ACO Drain. Recommend root cutter to dislodge roots and liner to repair line.

Drainage Line: S1 – OS

Location	***Defect***
14.00m	A steel bar is protruding through the drain wall. Recommend that a robotic cutter cuts the steel bar and that the line is repaired by installation of a liner.

Drainage Line: S16 – S7

Location	***Defect***
15.40m	Joint displacement. A structural patch liner is required on this defective section in order to bring it to a watertight condition.