



constructiveevaluation

site investigation • building pathology

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Date: 29th April 2019

Our Ref: 19.1105

Mr Preston Carvalho

c/o Edward Caush

by email: eca@south-down.demon.co.uk

RE: 1 Maylands Road, Havant

Dear Preston

Further to the completion of Ground Investigation works at the above site, I enclose the preliminary field logs from the 3no windowless sample boreholes.

As indicated on the logs the ground conditions comprise Chalk, which is consistently encountered below 1.70mbgl. As such it is anticipated that the new development will be able to utilise spread type foundations, and piling would not be necessary.

A fully report on geotechnical aspects is to follow

Kind Regards

Yours Sincerely

Graham Carter BSc FGS

Engineering Geologist

Constructive Evaluation Limited



Borehole Log

Borehole No.

WS1

Sheet 1 of 1

Project Name: Maylands Road, Havant

 Project No.
19.1105

Co-ords:

 Hole Type
WLS

Location: Bedhampton, Havant

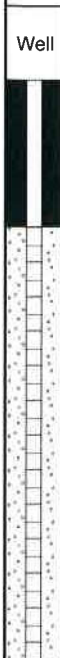
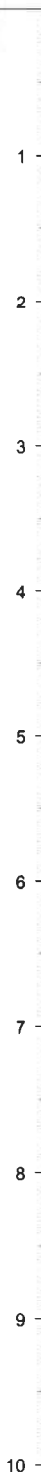
Level:

 Scale
1:50

Client: Mr Preston Carvalho

Dates: 23/04/2019

 Logged By
GC

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.30	ES		0.50			MADE GROUND: Shingle over dark brown slightly gravelly sandy Silt. Sand is fine to medium. Gravel is subangular to subrounded, medium to coarse sized brick, concrete, rare clinker.		
		0.50	D							
		0.60	ES							
		1.00	D	N=11 (1,2/3,2,3,3)	1.40			Firm consistency brown speckled grey and white slightly sandy gravelly Clay. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse sized flint and chalk. (HEAD DEPOSIT)		
		1.00	ES							
		1.00	SPT							
		1.50	D	1.70			Medium dense white / brown speckled clayey GRAVEL. Gravel is subangular to angular, fine to coarse sized Chalk. (possible HEAD DEPOSIT)			
		2.00	D		N=16 (1,1/1,2,3,10)		2.50			Structureless CHALK composed of white speckled brown alightly clayey locally clayey GRAVEL. Gravel is weak to medium weak low density white with black spots Chalk. (PORTSDOWN CHALK FORMATION)
		2.00	SPT							
		2.50	D							
		3.00	D	N=50 (25 for 110mm/50 for 245mm)	4.00			Recovered as medium weak to medium strong medium density white CHALK. Bedding is very closely spaced and subvertical. Fracture discontinuities are very closely spaced and subvertical. Discontinuities are open <1mm and clean. Widely spaced burrow flints. (PORTSDOWN CHALK FORMATION)		
		3.00	SPT							
		3.50	D							
		4.00	D	50 (4,8/50 for 160mm)	4.00			End of Borehole at 4.000m		
		4.00	SPT							
						</				

Remarks

Buried services clearance pit to 1.00mbgl. No Groundwater encountered.





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Borehole Log

Borehole No.

WS2

Sheet 1 of 1

Project Name: Maylands Road, Havant

Project No.
19.1105

Co-ords:

Hole Type

WLS

Location: Bedhampton, Havant

Level:

Scale
1:50

Client: Mr Preston Carvalho

Dates: 23/04/2019

Logged By
GC

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.30			MADE GROUND: Grass over dark brown sandy slightly gravelly Silt. Sand is fine to medium. Gravel is subangular to subrounded, fine to coarse sized flint and chalk.	
		0.50	D		0.80			Firm consistency brown speckled grey and white slightly sandy gravelly Clay. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse sized flint and chalk. (HEAD DEPOSIT)	
		0.60	ES		1.10			Medium dense white / brown speckled clayey GRAVEL. Gravel is subangular to angular, fine to coarse sized Chalk. (Possible HEAD DEPOSIT)	1
		1.00	D						
		1.00	ES						
		1.00	SPT	N=25 (3,5/6,6,7,6)					
		1.50	D						
		1.50 - 2.00	B					Recovered as medium weak to medium strong medium density white speckled light brown CHALK. Bedding discontinuities are closely to medium spaced and subhorizontal. Fracture discontinuities are extremely closely to medium spaced and subvertical. Discontinuities open 1-3mm and clean or infilled with comminuted pale brown silt. (PORTSDOWN CHALK FORMATION)	2
		2.00	D		2.60			Structureless CHALK composed of white speckled brown slightly clayey locally clayey GRAVEL. Gravel is weak to medium weak low density white with black spots Chalk. (PORTSDOWN CHALK FORMATION)	3
		2.00	SPT	N=12 (3,3/2,3,3,4)					
		2.50	D						
		3.00	D						
		3.00	SPT	N=14 (1,2/3,4,3,4)					
		3.50	D						
		4.00	D						
		4.00	SPT	N=37 (6,7/6,8,11,12)					4
		4.50	D						
		5.00	D		5.00				
		5.00	SPT	N=41 (11,12/13,9,6,13)				End of Borehole at 5.000m	5
									6
									7
									8
									9
									10

Remarks

Buried services clearance pit to 1.00mbgl. No Groundwater encountered.





Borehole Log

Borehole No.

WS3

Sheet 1 of 1

Project Name: Maylands Road, Havant

Project No.
19.1105

Co-ords:

Hole Type
WLS

Location: Bedhampton, Havant

Level:

Scale
1:50

Client: Mr Preston Carvalho

Dates: 23/04/2019

Logged By
GC

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES	N=18 (4,4/3,4,5,6)	0.25		MADE GROUND: Grass over brown sandy Silt. Sand is fine to medium. Scattered gravel sized plastic and fragment of geotextile membrane. Recovered as Structureless CHALK composed of white / pale grey silty sandy GRAVEL and cobbles. Sand is fine to medium. Gravel is subangular to subrounded, fine to coarse sized medium weak, medium density white with black spots and brown staining Chalk. Recovered as medium weak to medium strong medium density white speckled light brown CHALK. Bedding discontinuities are closely to medium spaced and subhorizontal. Fracture discontinuities are extremely closely to medium spaced and subvertical. Discontinuities closed and clean. (PORTSDOWN CHALK FORMATION)	1	
		0.50	D						
		0.50	ES						
		1.00	D						
		1.00	ES						
		1.00	SPT						
		1.50	D	N=15 (3,4/3,4,4,4)	0.90				
		2.00	D						
		2.00	SPT						
		2.50	D						
3.00	D	N=17 (3,3/4,4,4,5)	4.00						
3.00	SPT								
3.50	D	N=14 (3,2/3,3,3,5)	4.00						
4.00	D								
4.00	SPT	End of Borehole at 4.000m						4	
								5	
								6	
								7	
								8	
								9	
								10	

Remarks

Buried services clearance pit to 1.00mbgl. No Groundwater encountered.



015703

INSTALLATION, OPERATING & MAINTENANCE GUIDELINES
FOR PACKAGE DOMESTIC PUMP STATIONS
EFFLUENT / SEWAGE & GRINDER APPLICATIONS



Kingspan Environmental Service Contact Numbers:

GB Tel: +44 (0) 844 846 0500

NI Tel: +44 (0) 28 3025 4077

IRL Tel: +44 (0) 48 3025 4077

Enclosed Documents		GRP Chamber Ø0.9m	Roto Chamber Ø1.0
EFFLUENT APPLICATIONS			
DS1175P	Single Effluent Pump Chamber Sales Drawing	♦	
DS1176P	Twin Effluent Pump Chamber Sales Drawing		
DS1191P	Single Effluent Pump Chamber Sales Drawing		♦
DS1192P	Twin Effluent Pump Chamber Sales Drawing		
SEWAGE APPLICATIONS			
DS1171P	Single Sewage Pump Chamber Sales Drawing	♦	
DS1172P	Twin Sewage Pump Chamber Sales Drawing		
DS1187P	Single Sewage Pump Chamber Sales Drawing		♦
DS1188P	Twin Sewage Pump Chamber Sales Drawing		
GRINDER APPLICATIONS			
DS1173P	Single Grinder Pump Chamber Sales Drawing	♦	
DS1174P	Twin Grinder Pump Chamber Sales Drawing		
DS1189P	Single Grinder Pump Chamber Sales Drawing		♦
DS1190P	Twin Grinder Pump Chamber Sales Drawing		
FLOATS			
DS1194P	Float Information Sales Drawing	♦	♦

Issue	Description	Date
01	Initial Issue - CC1060	July 2012
02	CC1076	September 2012
03	CC1434	May 2018

HEALTH & SAFETY

THESE WARNINGS ARE PROVIDED IN THE INTEREST OF SAFETY. YOU MUST READ THEM CAREFULLY BEFORE INSTALLING OR USING THE EQUIPMENT.

It is important that this document is retained with the equipment for future reference. Should the equipment be transferred to a new owner, always ensure that all relevant documents are supplied in order that the new owner can be acquainted with the functioning of the equipment and the relevant warnings.

INSTALLATION SHOULD ONLY BE CARRIED OUT BY A SUITABLY EXPERIENCED CONTRACTOR, FOLLOWING THESE GUIDELINES. ELECTRICAL WORK SHOULD BE CARRIED OUT BY A QUALIFIED ELECTRICIAN.

Sewage and sewage effluent can contain substances harmful to human health. Any person carrying out maintenance on the equipment should wear suitable protective clothing, including gloves. Good hygiene practice should also be observed.

When covers are removed precautions must be taken against personnel falling into the unit.

Should you wish to inspect the operation of the equipment, please observe all necessary precautions, including those listed below, which apply to maintenance procedures.

Ensure that you are familiar with the safe working areas and accesses & that the working area is adequately lit.

Take care to maintain correct posture, particularly when lifting. Use appropriate lifting equipment when necessary. Keep proper footing and balance at all times. Avoid any sharp edges.

The removal of sediment should be carried out by a contractor holding the relevant permits to transport and dispose of such waste. The contractor must refer to the guidelines in this document.

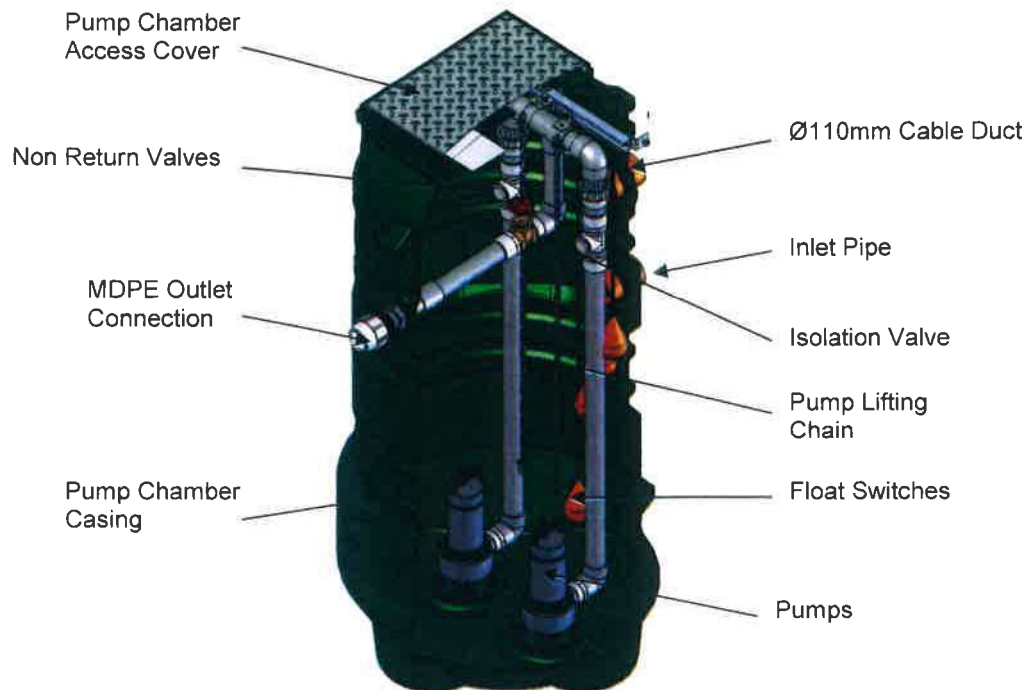
AS WITH ALL SITE WORK, THE DANGERS OF WORKING WITH WATER AND ELECTRICITY POSE SEVERE THREATS TO HEALTH, IF OBVIOUS AND FUNDAMENTAL PRECAUTIONS ARE NOT TAKEN. THEREFORE IF YOU ARE IN ANY DOUBT REGARDING ANY OF THE FOLLOWING, PLEASE DO NOT HESITATE TO CONTACT US.

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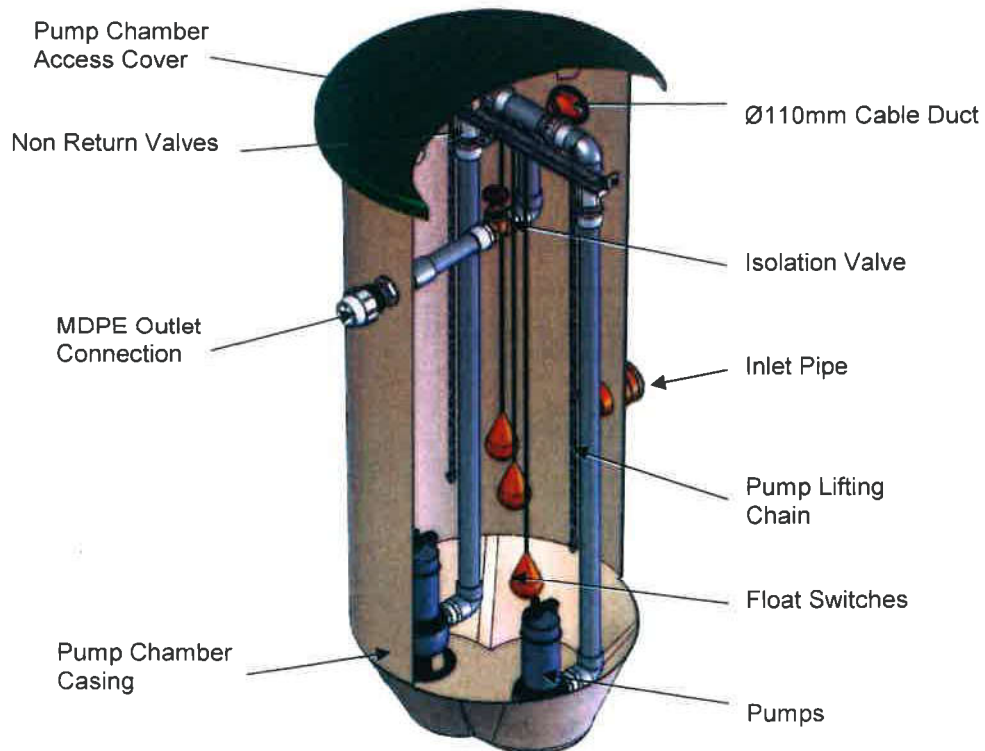
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1 System Overview.

Pictorial representation below indicates basic requirements for a standard system, please note not all of the items required are supplied from us as standard.



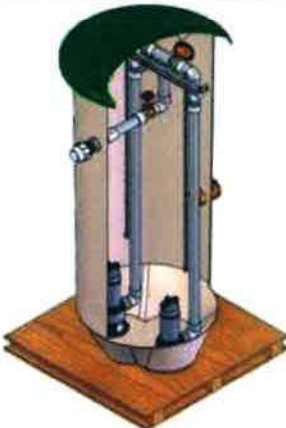
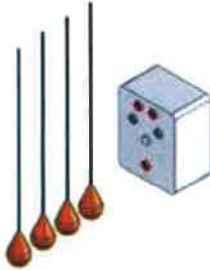
Ø1.0m Roto Moulded Chamber



Ø0.9m Grp Chamber

1.1 Site Delivery Check List.

The delivery ticket will have 4 no. items listed that will need to be checked against items actually delivered. Each item will be clearly identified as per list below.

<u>Pump Chamber Assembly</u> Product Code Example - '<u>DPSttuvwxyz</u>' 1. The unit will be fitted complete with internal pipework and pumps. 2. Lifting chain will be secured to the pumps and unistrut assembly 3. Inlet pipework will be fitted 4. Cable Duct pipework will be fitted 5. Pedestrian rated cover fitted 6. Unit supplied strapped to a standard pallet.	
<u>Control Panel and Floats</u> Product Code Example - '<u>DPSPUMPxyz</u>' 1. The control panel and floats will be supplied in boxes wrapped in polythene bags and secured to the pump chamber pallet using strapping.	
<u>Inlet Pipework (Optional)</u> (Ø0.9m GRP Pump Chamber Only) Product Code Example - '<u>DP SINLETz</u>' 1. Only available if ordered with Pump Chamber 2. Ø110mm or Ø160mm is available depending upon the Inlet size selected on the pump chamber	
<u>High Level Alarm (Optional)</u> (Ø0.9m GRP Pump Chamber Only) Product Code Example - '<u>DP SHLAz</u>' 1. Only available if ordered with Pump Chamber 2. Single and Twin Pump options available	

2 Operating Guidelines

2.1 Introduction

- 2.1.1 These Guidelines represent Best Practice for the installation of the above packaged pump stations (waste water application). It must be noted, however, that these Guidelines are of a general nature. It is the responsibility of others to verify that they are appropriate for the specific ground conditions and in-service loads of each installation. Similarly, any information or advice given by employees or agents of the company regarding the design of an installation must be verified by a qualified specialist (e.g. Civil engineering consultant).

2.2 Handling & Storage

- 2.2.1 Care must be taken to ensure that units are not damaged during delivery and handling on site. Please take care and place unit so that it cannot fall and become damaged.
- 2.2.2 The design requirements of the product will frequently mean that the centre of gravity of the unit is "offset". Care must therefore be taken to ensure that the unit is stable when lifting and that loads are evenly distributed during lifting.
- 2.2.3 Lifting equipment should be selected by taking into account the unit weight, length and the distance of lift required on site.
- 2.2.4 We accept no responsibility for the selection of lifting equipment.

3 Chamber Installation

- 3.1.1 Select a suitable location for the chamber. This will normally be at the lowest ground level on the site so that the facilities can be drained into the chamber.
- 3.1.2 Check that no other structure - or special access - is required over the selected position. Provision can be made, if necessary, to place the chamber in a roadway, provided that the backfill, cover slab and access cover are designed in accordance with the anticipated loads.
- 3.1.3 Check that no underground cable, pipe or service duct lies beneath the selected position.
- 3.1.4 Excavate the minimum opening in the ground to receive the pump chamber and pipework to be used. This opening must allow for a minimum of 250mm of concrete around the chamber.
- 3.1.5 The depth of the excavation needs to be at least 150mm deeper than the overall tank depth.
- 3.1.6 If a machine is used to remove the soil, then the sides of the excavation should be battered for stability and a sump left should it be necessary to dewater.
- 3.1.7 If it is dug by hand, the sides will need shoring up for safety, to prevent earth slippage.
- 3.1.8 A de-watering pump may be required to control any ground water present.
- 3.1.9 Place in position the concrete base, minimum thickness 150mm of concrete and allow to set.
- 3.1.10 Lower the pump chamber onto the dried concrete, ensuring that the inlet and outlet pipes are correctly aligned.
- 3.1.11 The unit then should be backfilled with either mass concrete, or a lean mix in areas where ground conditions are wet or unstable. The minimum surround thickness for this backfill should be 250mm.
- 3.1.12 In all instances the pumpchamber must be filled with clean water to keep pace with the backfilling process, this is in order to equalize the pressures exerted onto the unit and prevent the possibility of chamber deformation or flotation during installation.

- 3.1.13 Connect up the site pipework (supplied by others) to the inlet and outlet connections of the pump chamber.
- 3.1.14 Finish off the surface of the excavation to the required level, depending on the final surface finish required.
- 3.1.15 The Concrete Specification is not a site-specific installation design.

GENERAL CONCRETE SPECIFICATION IN ACCORDANCE WITH BS EN 206-1 (BS 8500-1)		
TYPE OF MIX		(DC) DESIGN
PERMITTED TYPE OF CEMENT		BS 12 (OPC): BS 12 (RHPC): BS 4027 (SRPC)
PERMITTED TYPE OF AGGREGATE (coarse & fine)		BS 882
NOMINAL MAXIMUM SIZE OF AGGREGATE		20 mm
GRADES:	C25 /30	REINFORCED & ABOVE GROUND WITH HOLDING DOWN BOLTS REINFORCED (EG. FOR HIGH WATER TABLE) UNREINFORCED (NORMAL CONDITIONS)
	C25 /30	
	C16 /20	
MINIMUM CEMENT CONTENT	C30	270 - 280 Kg/M ³
	C20	220 - 230 Kg/M ³
SLUMP CLASS		S1 (25mm)
RATE OF SAMPLING		READY MIX CONCRETE SHOULD BE SUPPLIED COMPLETE WITH APPROPRIATE DELIVERY TICKET IN ACCORDANCE WITH BS EN 12350-1
NOTE: STANDARD MIXES SHOULD NOT BE USED WHERE SULPHATES OR OTHER AGGRESSIVE CHEMICALS EXIST IN GROUND WATER		

4 Important Notes

- 4.1.1 When positioning the chamber please check that your electrician has provided sufficient cable to allow the control panel to be placed in the required position.
- 4.1.2 It is most important that once the chamber is in position, with all the inlet connections made and before installing the pumps, that the drainage system is flushed through and all sand, debris etc. is removed from the chamber.

4.1.3 FAILURE TO DO THIS MAY INVALIDATE THE WARRANTY ON THE PUMPSETS

- 4.1.4 A cable duct is required, free from sharp bends, minimum diameter 75mm.

Additional Notes

- 4.1.5 If the chamber is going to be subjected to traffic & or vehicle loads, it is essential that a cover slab is constructed so there is no direct load onto the chamber. Also a suitably rated access frame and cover must be obtained, and installed in such a manor that no loads bear directly onto the neck of the chamber.
- 4.1.6 When using a concrete backfill it is important to ensure that the mix is not too wet as this may exert floatation pressure on the pumpchamber.
- 4.1.7 In all instances the pumpchamber must be filled with clean water to keep pace with the backfilling process, this is in order to equalize the pressures exerted onto the unit and prevent the possibility of chamber deformation or flotation during installation.

IF IN DOUBT PLEASE CONTACT US FOR ADVICE.

IT SHOULD BE NOTED THAT THIS INFORMATION IS FOR GUIDANCE PURPOSES ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE INSTALLATION IS CARRIED OUT TO THE SATISFACTION OF YOUR REGULATING LOCAL WATER AUTHORITY, IN ACCORDANCE WITH THE PREVAILING GROUND CONDITIONS.

5 Operational Description

5.1 Pump Control Panels

- 5.1.1 Twin Pump Panels are designed to operate from 4 float switches i.e. stop / start / duty - standby & high level alarm. Single Pump Panel installations are designed to operate on 3 float switches start / stop & high level alarm.
- 5.1.2 Each pump may be run on its own by operating the respective "manual" switch mounted on the door.
- 5.1.3 In "auto" the pumps will run under float switch control.
- 5.1.4 As the level rises the stop float contacts will close. When the start float switch contact closes, the duty pump will start. This pump will continue to run until the level falls below the stop float switch.
- 5.1.5 After each pump cycle the duty pump is alternate so that the other pump becomes the duty pump the next time the level reaches the duty pump start float.
- 5.1.6 If the level continues to rise to the high level float, the high-level alarm light will illuminate. This alarm may be reset once the level is below the high-level float switch. Under high level conditions this lamp will be illuminated to indicate that there is either a pump failure or that the volume of influent is exceeding the discharge capability of the pump. The high level alarm / beacon will need to be manually reset by the site operator once the cause of the high level condition has been identified and resolved.
- 5.1.7 Should the duty pump have failed or is running and the level continues to rise to the duty /standby pump start float, the second standby pump will start and continue to run until the level falls below the stop float switch.
- 5.1.8 Cable access is available from both the top & bottom end of the panel. Additional access can be gain from the sides but must be suitably glanded. The control panel has an IP54 rating. The cabling work and glanding to the panel needs to meet the same standard to maintain this rating.
- 5.1.9 Please ensure that the overload(s) within the panel are adjusted to match the Full Load Current of the pump(s) to ensure nuisance tripping is not encountered. Please contact our technical office for further advice if required.

PLEASE REFER TO WIRING DIAGRAMS SUPPLIED INSIDE THE CONTROL PANEL.

6 General Maintenance

The best way to achieve this is to arrange a contract with an approved Service provider. Please contact us on the phone number given for service contact details.

There will always be situations when a little self help may be sufficient to avoid call out and we describe here some basic checks which may prove useful: Before opening the unit, please see Health and Safety Notes.

We recommend the unit is checked every 6 months to ensure there are no blockages or obstructions in the inlet and out let pipes, also check that there is not excessive sludge build up in the bottom of the tank.

If in any doubt whatsoever please contact your service provider.

7 How to Keep your Pump Station Running Sweetly.

If a Pump Station serves your property, the likelihood is that the property is not connected directly to the mains sewer system.

Sewage pump systems are designed to handle foul water, natural human waste and biodegradable products. Other household waste and non-biodegradable products should never be disposed of through the drainage system.

Disposal of non bio-degradable products will affect the reliability of all pumping stations, causing pumps to block and storage chambers to become congested with non-pumpable waste.

Bear in mind too that it isn't only the toilet that is connected to the station; anything that goes down the sink, bath etc. also ends up there.

THE FOLLOWING MUST NOT BE DISCHARGED INTO THE DRAINS

- **Cleaning Rags**
- **Cloths**
- **Syringes & Hypodermic Needles**
- **Medicines & Medical Equipment.** Take unused medicines to a pharmacist for safe disposal.
- **Grease & Fat.** These products tend to cool down, separate from the water and coagulate within the pump chamber. Fat & grease encase the pump and floats, causing blockages and failure of pumps.
- **Nappies, sanitary towels, incontinence materials, soft toys, tennis balls etc.** It may seem a bit obvious to say this, but it is amazing what gets flushed down the loo from time to time. Causing blockages of the drains and pumps
- Even so-called **disposable nappies and sanitary towels** often do not degrade fully and can lead to malfunction, so it is best to dispose of them by other means. Fabric cleansing wipes & nappy liners can block pipework. They should not be flushed into the drainage system.

ROUTINE DE-SLUDGING AND SERVICING

Pump Stations over time accumulate settled solids. It is good practice to check and if necessary empty/desludge these at the same time as any treatment unit.

It is vital to the systems ongoing operation and should be carried out regularly.

Mechanical and electrical servicing, particularly, must be performed by properly trained personnel suitably qualified and experienced in this type of work.