



<b>Operator</b>	<b>Tesco Stores Limited</b>
<b>Installation Address</b>	<b>Tesco Petrol Filling Station Wrekin Retail Park Arleston Telford TF1 2DE</b>
<b>Grid Reference</b>	<b>SJ 668 106</b>
<b>Registered Office</b>	<b>Tesco House Delamare Road Cheshunt Hertfordshire EN8 9SL</b>
<b>Registered Number</b>	<b>00519500</b>

**Tesco Stores Limited** is hereby permitted by the Borough of Telford and Wrekin to carry on a unloading of petrol into stationary storage tanks and filling of vehicle petrol tanks activity at the service station under section 1.2, part B, of Schedule 1 of The Environmental Permitting (England and Wales) Regulations 2010 (as amended), as listed and as described below within the installation boundary as marked red on the attached plan referenced Appendix 1 and in accordance with the following conditions.

<b>Provenance</b>	<b>Relevant Dates</b>
Date Application Made (Deemed application)	14.04.2005
Date 'Duly Made'	N/A
Date Permit First Issued	14.04.2005
Date of Variations	30.8.2006 04.01.2010 05.10.2010
Date of Latest Variation	05.10.2010

This permit consists of 28 numbered pages

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## **Description of the Installation**

### **Stage I Controls**

The prescribed activity of unloading into storage of petrol at service stations from mobile containers. The term "mobile container" is taken from the EC Directive, but in the context of this note means "road tanker". The description of prescribed service stations (and their time-scales for coming into control) are set out in the Environmental Permitting (England and Wales) Regulations 2007 (as amended)

The unloading of petrol into the tanks may be either directly from the road tanker or via an off-set filling pipe.

Deliveries of petrol can occur at any time and may occur outside normal operating hours. The deliveries are directly supervised by a service station operator or controlled entirely by the road tanker driver. In the Approved Code of Practice and Guidance on Unloading Petrol from Road Tankers (L133), reference is made to unloading "where the tanker driver is assisted" and "where the tanker driver is unassisted".

There are emissions associated with the escape of petrol vapour displaced when storage tanks are filled, and with breathing or ventilating losses from the storage tank.

It should be noted that the term "service station", includes commercial refilling sites such as may be found on Post Office or Ministry of Defence premises or other industrial sites where petrol is dispensed into motor vehicles in addition to retail outlets.

### **Stage II Controls**

There are also petrol vapour emissions associated with the filling of vehicle petrol tanks at service stations. Controls for abating such emissions are termed "Stage II controls". Under the 1991 United Nations Economic Commission for Europe Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution Concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes (referred to herein as the UN ECE VOCs Protocol), the United Kingdom is obliged to introduce controls to ensure that such emissions are recovered.

This obligation has been given effect by SI 2006, No. 2311.



## Potential Releases

For the purposes of the Environmental Permitting (England and Wales) Regulations 2007 (as amended) petrol vapours from installations intended for the sale of motor vehicles require control.

The following parts of the installation may give rise to petrol vapours:

- Unloading petrol from road tankers
- Storage of petrol
- Filling of vehicle petrol tanks

**Tesco Stores Limited** are permitted to operate an installation unloading of petrol into stationary storage tanks and filling of vehicle petrol tanks at the service station above subject to compliance with the following conditions. The service station has **4** storage tanks, **32** nozzles dispensing petrol and contains the following permitted equipment only (See table 1):

Make	Equipment	Date of Installation
PETROTEC Clean Air 40 – 80 system	Stage II Vapour Recovery System (Open active vapour recovery to underground storage)	8/05/2009
PETROTEC Clean Air 40 – 80 system	Stage II Vapour Recovery Monitoring System	8/05/2009
Wayne Opus	Stage II Vapour Recovery Dispenser/Pump	8/05/2009
ELAFLEX ZVA GRV3	Stage II Vapour Recovery Fuel-hose nozzle	8/05/2009
ELAFLEX SLIMLINE	Stage II Vapour Recovery Hose	8/05/2009
GAST PBB10 GAST PBB12	Stage II Vapour Recovery pressure reducing unit/valve	8/05/2009
Wayne Opus	Stage II Vapour Recovery pump	8/05/2009

**Table 1:** Permitted equipment on site **Tesco Stores Limited 07/00033/PFS**

Subject to compliance with the following conditions:



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## Permit Conditions

- 1) Vapours displaced by the delivery of petrol into storage installations at service stations shall be returned through a vapour tight connection line to the road tanker delivering the petrol. Unloading operations may not take place unless the arrangements are in place and properly functioning, subject to conditions 3, 4 and 5.
- 2) The operator shall implement the schedule of preventative maintenance as stated in application form and in document referenced Appendix A provided as part of the application for authorisation/permit dated 20<sup>th</sup> October 2009 (**See Appendix 3**).
- 3) All reasonably practicable steps shall be taken to prevent uncontrolled leaks of vapour from vents, pipes and connectors from occurring. The regulator shall be advised without delay of the circumstances of such a vapour leak if there is likely to be an effect on the local community, and in all cases such a vapour leak should be recorded in the log book required under condition 23. In this condition and in condition 4 a vapour leak means any leak of vapour excepting those which occur through the vent mentioned in condition 10 during potentially hazardous pressurisation.
- 4) The operator shall advise the regulator of the corrective measures to be taken and the timescales over which they will be implemented in the event of a vapour leak described in condition 3.
- 5) Instances of vapour lock shall be recorded in the log book and, under the circumstances detailed in condition 3, be advised to the regulator.
- 6) The procedures in conditions 2 to 5 inclusive and conditions 23 to 26 inclusive shall be reviewed in light of any modifications which occur to the facilities. The regulator shall be advised of any proposed alteration in operating procedures.
- 7) The number of tanker compartments being discharged simultaneously shall not exceed 2, excluding the diesel compartment[s].
- 8) The connection points on the tank filling pipes and vapour return pipe shall be fitted with secure seals to reduce vapour leaks when not in active use. If apertures are provided on storage tanks for the use of a dipstick, these shall be securely sealed when not in active use.
- 9) The fittings for delivery and vapour return pipes shall be different to prevent mis-connection.



- 10) Petrol storage tank vent pipes shall be fitted with a pressure vacuum relief valve to minimise vapour loss during unloading and storage of petrol. The pressure vacuum relief valve shall be sized and weighted to prevent vapour loss, except when the storage tanks are subject to potentially hazardous pressurisation.
- 11) When connecting hoses prior to delivery, the vapour return hose shall be connected before any delivery hose. The vapour return hose shall be connected by the road tanker end first, and then at the storage tank end.
- 12) Adjacent to each vapour return connection point for the storage tank, there shall be a clearly legible and durable notice instructing "Connect vapour return line before off-loading" or similar wording. The sign shall also refer to the maximum number of tanker compartments which may be unloaded simultaneously in accordance with condition 7.
- 13) If dip testing of storage tanks or road tanker compartments is performed before delivery, the dip openings shall be securely sealed prior to the delivery taking place.
- 14) Road tanker compartment dip testing shall not be performed whilst the vapour hose is connected.
- 15) A competent person shall remain near the tanker and keep a constant watch on hoses and connections during unloading. A competent person is one who has received training in accordance with Section 5 of PG1/14(06).
- 16) All road tanker compartment vent and discharge valves shall be closed on completion of the delivery.
- 17) On completion of unloading the vapour hose shall not be disconnected until the delivery hose has been discharged and disconnected. The delivery hose shall be disconnected at the road tanker end first. The vapour return hose shall be disconnected at the storage tank end first.
- 18) All connection points shall be securely sealed after delivery.
- 19) If the storage tanks or road tanker compartments are dipped after delivery, the dip openings shall be securely sealed after dip testing.
- 20) Manhole entry points to storage tanks shall be kept securely sealed except when maintenance and testing are being carried out which require entry to the tank.



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- 21) Petrol delivery and vapour return lines shall be tested in accordance with the schedule as stated in application form and in document referenced Appendix A provided as part of the application for authorisation/permit dated 20<sup>th</sup> October 2009 (**See Appendix 3**).
  - 22) Pressure vacuum relief valves on petrol storage tank vents shall be checked for correct functioning, including extraneous matter, seating and corrosion at least once every three years.
  - 23) Vapours displaced by the filling of petrol into vehicle petrol tanks at service stations shall be recovered through the use of open active vapour recovery to underground storage. Filling of vehicle petrol tanks shall not take place unless such a system is in place and fully functioning.
  - 24) The vapour recovery system referred to in condition 23 shall be certified by the manufacturer to have a hydrocarbon capture efficiency of not less than 85%. Equipment used shall be approved for use under the regulatory regimes of at least one European Union or European Free Trade Association country.
  - 25) The vapour recovery equipment referred to in Condition 23 shall be designed, installed and tested in accordance with the relevant British, European and international standards or national methods in place at the time that the equipment was installed.
  - 26) The installation has in place an automatic monitoring system in accordance with condition 28.



27) Petrol delivery and vapour recovery systems for vehicle petrol tanks shall be tested in accordance with the manufacturer's specifications prior to commissioning and for:

- Vapour containment integrity at least once every three years, and always following substantial changes or significant events that lead to the removal or replacement of any of the components required to ensure the integrity of the containment system.
- Effectiveness of the vapour recovery system at least once every three years.

This shall be undertaken by measuring the ratio of the volume of vapour recovered to liquid petrol dispensed i.e. vapour/petrol (V/P) ratio. The V/P ratio shall be at least 95% and, where the vapours are recovered into the fuel storage tank, not greater than 105% to avoid excessive pressure build up and consequent release through the pressure relief valves.

The V/P ratio shall be determined by simulating the dispensing of petrol using measuring equipment approved for use in any European Union or European Free Trade Association country. The method to be used shall involve measuring the volume of air recovered with fuel flow simulated at the dispenser and read electronically using the approved measuring equipment. This provides the ratio of air recovered to liquid dispensed (air/liquid ratio) which should then be corrected to provide the V/P ratio using an appropriate factor to account for the difference in viscosity between petrol vapour and air ('k-factor').

29) The automatic monitoring system referred to in condition 26 shall:

- Automatically detect faults in the proper functioning of the petrol vapour recovery system including the automatic monitoring system itself and indicate faults to the operator. A fault shall be deemed to be present where continuous monitoring during filling of vehicle petrol tanks indicates that the V/P ratio (condition 27) averaged over the duration of filling has fallen below 85% or has exceeded 115% for ten consecutive filling operations. This only applies to filling operations of at least 20 seconds duration and where the rate of petrol dispensed reaches at least 25 litres per minute.
- Automatically cut off the flow of fuel on the faulty delivery system if the fault is not rectified within 1 week.
- Be approved for use under the regulatory regime of at least one European Union or European Free Trade Association country.





- 30) The operator shall also undertake a weekly check to verify functionality of the system for recovery of vapours during filling of vehicle petrol tanks, including:
- An inspection for torn, flattened or kinked hoses and damaged seals on vapour return lines;
- 31) The operator shall notify the regulator without delay if the result from any monitoring or tests mentioned in Conditions 27, or 28 or 29 identifies adverse results, vapour recovery equipment failure or leaks if there is likely to be an effect on the local community, the operator shall also advise the regulator of the corrective measures to be taken and the timescales over which they will be implemented.
- 32) Effective preventative maintenance shall be employed on all aspects of the installation including all plant, buildings and the equipment concerned with the control of emissions to air. Preventative maintenance for all vapour recovery systems shall be carried out in accordance with the manufacturer's instructions
- 33) Spares and consumables needed shall be held on site, or should be available at short notice from guaranteed suppliers, so that plant breakdowns can be rectified rapidly.
- 34) The operator shall maintain a log book at the authorised premises incorporating details of all maintenance, examination and testing, inventory checking, installation and repair work carried out, along with details of training given to operating staff at the service station.
- The log book shall also detail any suspected vapour leak together with action taken to deal with any leak, in accordance with Conditions 3, 4 and 5.
- The operator shall record in the log book details of all maintenance; examination and testing; installation and repair work carried out on equipment for recovery of vapours during filling of vehicle petrol tanks. The operator shall also hold at the premises the certificate referred to in Condition 24 and the results of testing undertaken in accordance with Condition 27.
- 35) Venting of the petrol vapour shall be through the vent pipes marked in pink on the attached plan (**See Appendix 1**).
- 36) The vapour recovery effectiveness (V/P ratio) of the system shall be tested no later than 5<sup>th</sup> January 2011.





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- 37) The operator shall record in log book details of all maintenance, examination and testing, installation and repair work carried out for Stage II controls. Details of training given to operating staff at the service station shall also be recorded. Tesco shall maintain the log book at the permitted installation.
- 38) The operator shall undertake a weekly check to verify functionality of the vapour recovery system when an automatic monitoring system is not operational. Such checks shall include:
- A test of functionality of the vapour recovery system using appropriate equipment;
  - An inspection for torn, flattened or kinked hoses and damaged seals on vapour return lines;
  - An entry of the checks and findings in the station log book.
- 39) Where weekly functionality checks are required, the operator shall ensure that all relevant staff are trained to perform the checks in accordance with the manufacturer's instructions. In all cases, relevant staff shall be trained in the use of preventative maintenance for vapour recovery systems to the manufacturer's instructions.
- 40) Adverse results from **any** monitoring activity (both continuous and non-continuous) shall be investigated by the operator as soon as the monitoring data has been obtained/received. The operator shall:
- identify the cause and take corrective action
  - record as much detail as possible regarding the cause and extent of the problem, and the action taken by the operator to rectify the situation
  - re-test to demonstrate compliance as soon as possible; and
  - notify the regulator.
- 41) The operator shall inform the regulator four weeks in advance and no later than Wednesday 1<sup>st</sup> December 2010 of the date by when improvements to, or replacement of, the existing Petrotec automatic monitors are scheduled to be complete. That date shall be no later than Wednesday 5<sup>th</sup> January 2011.



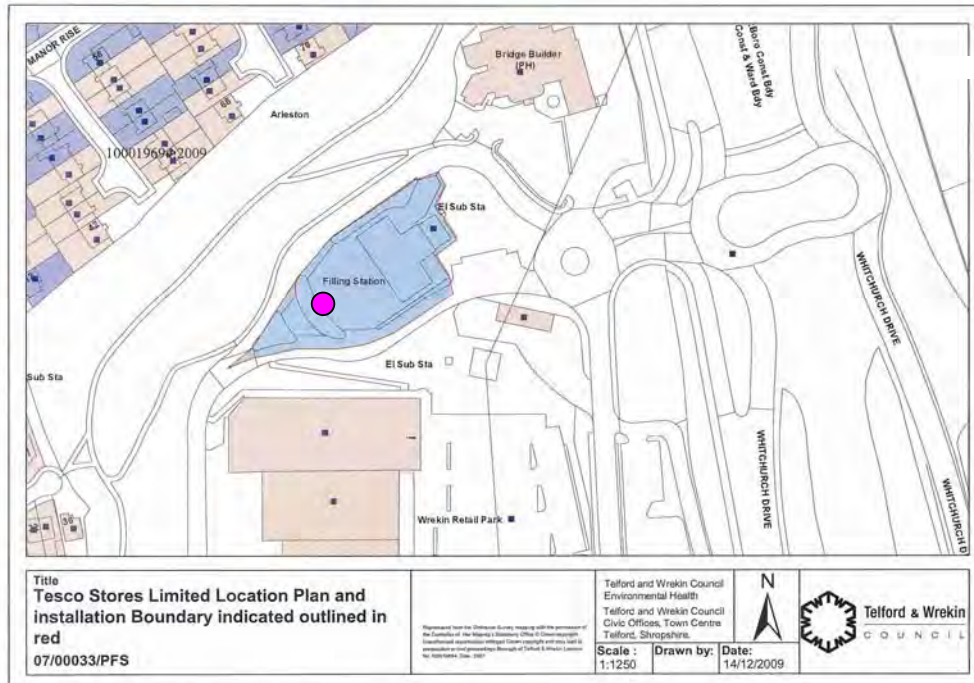
**In relation to this Permit any reference the local Authority or the Regulator shall mean the Borough of Telford and Wrekin. Any information required by this permit to be sent to the Local Authority shall be sent to:**

**Public Protection  
Telford & Wrekin Council,  
Darby House,  
PO Box 214  
Telford  
TF3 4LE**

**Signed..... Dated: 5<sup>th</sup> October 2010**

**Warren Dews  
Environmental Health Officer  
Officer authorised for that purpose**

**Appendix 1: Location Plan and Installation Boundary:**

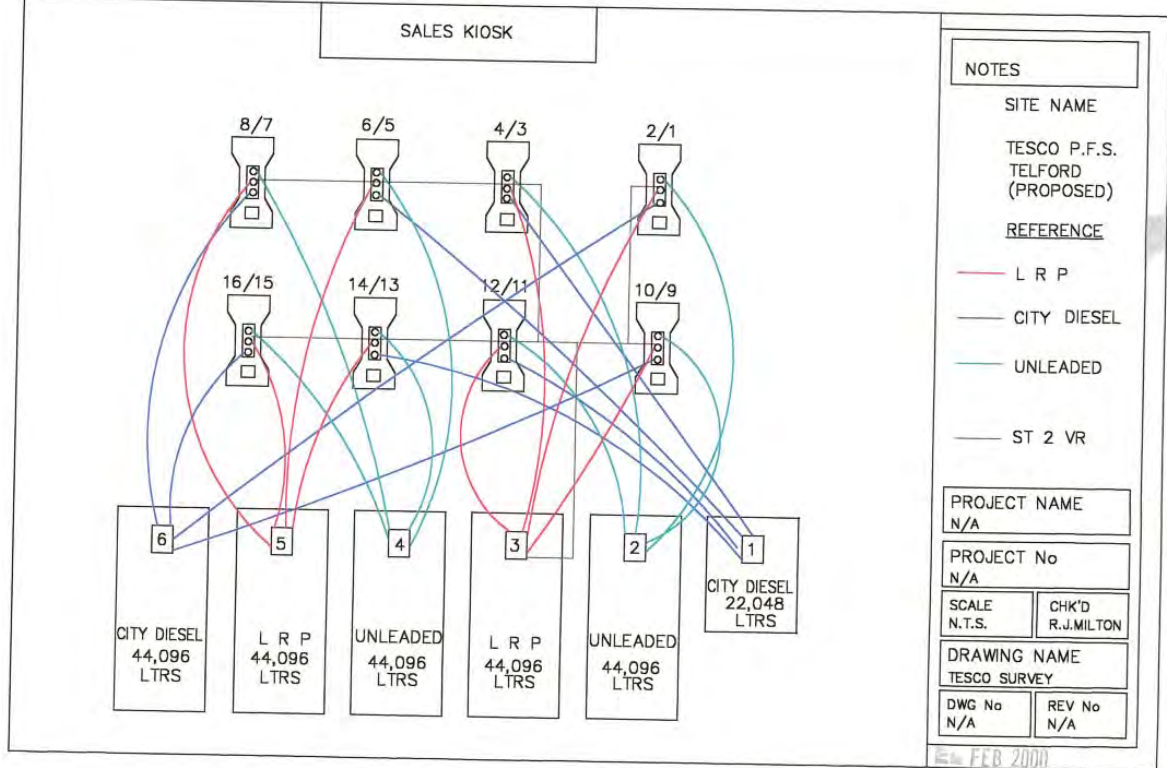


**Tesco Stores Limited 07/00033/PFS  
Location Plan and installation Boundary**

● Location of vent pipe



**Appendix 2: Site Layout plan**



**Tesco Stores Limited 07/00033/PFS**  
**Site Layout plan**



**Appendix 3: Schedule of maintenance and schedule of testing for petrol delivery/vapour return lines P12 – P20 of this permit**  
**Tesco Stores Limited 07/00033/PFS**

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B2.12 Schedule of maintenance of vapour collection control (Including the system for vapour recovery, during filling of vehicle petrol tanks for installations that are required to have a "Stage II" vapour recovery system in place). [Please attach]  
..... Appendix A "Petrotec, CleanAIR – Vapour Recovering System, Technical Manual" Page 17-24  
Page 17 Appendix A:

"The normal brief service of the CA-40/80 usually takes place twice a year, and a main service every 24 months. This may vary due to large volumes of petrol sales and local conditions. Service will be carried out by authorized personnel only, every 6 months.

This brief service includes a visual function control, leakage control, cleaning of condenser's fins (rear side of it), cleaning of suction filter and control of the electronic alarm functions.

Main service includes the brief service in addition to compressor control and component test.

**Cleaning:**

The condenser's fins on the rear side of the unit must be cleaned (brushed) regularly. The cleaning intervals will vary, but every 6 months should be sufficient for most operating conditions. The routine may be performed with the unit running, and by unauthorized personnel.

The suction filter inside the Suction Accumulator-pot (before the compressor) should be cleaned every 6 months by means of compressed air, or soaked in a suitable detergent. This filter is accessible through a service door at the front of the unit, by unscrewing the Suction Accumulator-pot from the device.

The filter gauze is made of stainless steel mesh, and may be re-used after cleaning.

B2.13 Schedule of examination and testing for vapour collection controls (Including the system for vapour recovery during filling of vehicle petrol tanks for installations that are required to have a "Stage II" vapour recovery system in place) [Please attach]  
..... Appendix A "Petrotec, CleanAIR – Vapour Recovering System, Technical Manual" Page 20-21  
Page 20 (6.4) – page 21 (.5) Gives directions to test the recovering rate

B2.14 Procedures or contingency measures in the event of vapour containment equipment failure (Including the system for vapour recovery during filling of vehicle petrol tanks for installations that are required to have a "Stage II" vapour recovery system in place). [Please attach]

Appendix A "Petrotec, CleanAIR – Vapour Recovering System, Technical Manual" Page 15  
Page 15 - table gives action to be taken in the event of equipment failure.

B2.15 For petrol stations that are required to have a "Stage II" vapour recovery system in place only, a certificate to confirm conformity with approval for use under the regulatory regimes of at least one European Union or European Free Trade Association country and to confirm that the hydrocarbon capture efficiency of the equipment is not less than 85% (i.e. that at least 85% of the displaced vapours are recovered, according to the relevant "type approval" test [see Section 5.16 of this note], expressed as the ratio of the volume of hydrocarbon vapours displaced to the volume of petrol discharged [Please attach].



## Schedule of maintenance and schedule of testing for petrol delivery/vapour return lines

Tesco Stores Limited 07/00033/PFS

	<b>PETROTEC</b> <i>CleanAIR – Vapour Recovering System</i>	Ref. 132.04.1
20-06-2008	Technical Manual	Edition A Revision 4

### 6.2 Maintenance instructions

#### Service

The CA-40/80 normal maintenance does not lead to any interruption of petrol tanking. In case of interrupted operation, petrol sales need not be interrupted, as the tanking can proceed without vapour recovery unless otherwise stated in national law or regulations.

The normal brief service of the CA-40/80 usually takes place twice a year, and a main service every 24 months. This may vary due to large volumes of petrol sales and local conditions. Service will be carried out by *authorized personnel only*, every 6 months.

The brief service includes a visual function control, leakage control, cleaning of condenser's fins (rear side of it), cleaning of suction filter and control of the electronic alarm functions.

Main Service includes the brief service in addition to compressor control and component test. Components exchange frequency depends on wear condition.

#### 6.2.1 Routine inspections

The operator must carry out a daily visual inspection of the unit in accordance with the operating instructions.

#### 6.2.2 Periodic maintenance

Authorized personnel should carry out all types of maintenance, except cleaning/exchanging the air inlet filter.

#### **WARNING**

The equipment must be installed, used and serviced as specified in this manual and in the installation manual only.

The equipment must not be modified or used for other purposes than specified without prior permission by the manufacturer and/or the Certifying Body.

No spare parts may be exchanged but those mentioned in the Maintenance section of this manual.

The power must be turned OFF before the service covers are removed. Otherwise, the unit will start automatically as soon as petrol filling starts. Operation without the covers properly mounted may cause serious injuries due to rotating parts inside the unit.

#### Cleaning

The condenser's fins on the rear side of the unit must be cleaned (brushed) regularly. The cleaning intervals will vary, but every 6 months should be sufficient for most operating conditions. This routine may be performed with the unit running, and by unauthorized personnel.

The suction filter inside the Suction Accumulator-pot (before the compressor) should be cleaned every 6 month by means of compressed air, or soaked in a suitable detergent. This filter is accessible through a service door at the front of the unit, by unscrewing the Suction Accumulator-pot from the device.

The filter gauze is made of stainless steel mesh, and may be re-used after cleaning.





## Schedule of maintenance and schedule of testing for petrol delivery/vapour return lines

Tesco Stores Limited 07/00033/PFS

 20-06-2008	<b>PETROTEC</b> <i>CleanAIR – Vapour Recovering System</i>  Technical Manual	Ref. 132.04.1  Edition A Revision 4
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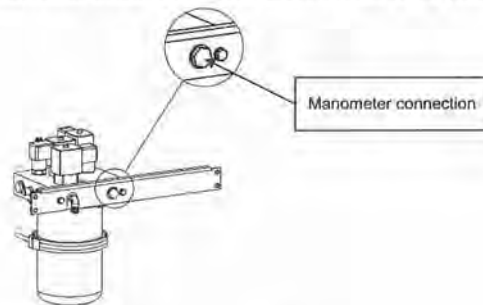
### Adjustment

Adjustment of the operating pressure will normally not be necessary unless unauthorized personnel have misaligned the pressure regulator(s) no. 1, 2. The adjustment should only be executed by authorized personnel.

Each 6 months the system pressure should be checked connecting a manometer to the MFT and verify if the pressure is between the following values:

$$4,4 \text{ bar} < P < 4,6 \text{ bar}$$

The manometer should be connected where it shows on the picture below:



### Replacements

The suction filter will only be exchanged if necessary.

The petrol filter, in the Pressure and Capacity Control-pot, must be exchanged every 6– 12 months.

The petrol filter is located inside the MFT-pot. The bottom part to the MFT-pot must be removed to access the filter.

#### **Procedure for opening the Multi Function Tank pot and removing the basic part**

- Access by service doors on the front and left hand side of the unit.
- Before opening the Multi Function Tank pot, the pressure in the Multi Function Tank must be released by unscrewing the blind plug on the top of the MFT block.
- When all the excess pressure has bled off, carefully loosen the tension ring and remove it.
- Carefully remove the lower part of the Multi Function Tank pot that contains the recovered petrol (app. 1 litre).



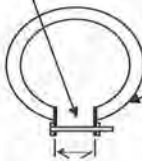


**Schedule of maintenance and schedule of testing for petrol delivery/vapour return lines**

**Tesco Stores Limited 07/00033/PFS**

 Petrotec	<b>PETROTEC</b> <i>CleanAIR – Vapour Recovering System</i>	Ref. 132.04.1
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- Check that the gasket (O-ring between lower and upper MFT-pot) is in good order and properly in place before re-tightening the tension ring → ID =18 mm.



Calibration

Control and, if necessary, calibration of vapour suction volume from the filling nozzle will be performed every 12 months.

**6.3 Corrections and minor repairs**

**WARNING**

The equipment must be installed, used and serviced as specified in this manual and in the installation manual only.

The equipment must not be modified or used for other purposes than specified without prior permission by the manufacturer and/or the Certifying Body.

No spare parts may be exchanged but those mentioned in the Maintenance section of this manual.

The power must be turned OFF before the service covers are removed. Otherwise, the unit will start automatically as soon as petrol filling starts. Operation without the covers properly mounted may cause serious injuries due to rotating parts inside the unit.



Repairs that can be performed locally:

1. The solenoid valves for petrol drain and water drain may be exchanged or cleaned. The solenoid valves coil may also be replaced.

To replace the coil, switch off the power supply to the unit. Disconnect the cable for the coil from the terminals in the electronic card.

After loosening the nut on top of the coil, the coil may be pulled straight loose.

Replace the coil and reassemble in reverse order.

If the solenoid valve is to be exchanged or cleaned, before the valve is opened, the system pressure must be released by cautiously opening the blind plug on top of the Multi Function Tank-block. Remove the coil and disassemble the valve by loosening the 2 fixing screws. In case the complete valve housing is to be replaced, make sure that the valve is assembled correctly.

2. The fan motor can be exchanged. In addition to electrical disconnection, the motor needs to be disassembled from the brackets. After removing the electromotor from the unit, the fan blade is still fastened to the motor.

The fan blade may be refit to a new motor before installation in the unit.



**Schedule of maintenance and schedule of testing for petrol delivery/vapour return lines**

**Tesco Stores Limited 07/00033/PFS**

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3. Electrical components like relay, etc may be replaced by competent personnel (electricians).
4. Before exchange of piping /pipe fittings, the system pressure must be released by cautiously opening the blind plug on top of the Multi Function Tank-block.  
After exchange of piping or components in the pressurized system, we advise a pressure test up to 0,25 MPa (2,5 bar) and leak detection by means of soapy water. To perform the pressure test, use the unit's suction line coupling and test with compressed air or nitrogen.

Repairs that must be performed in a workshop:

Before starting the repairs, the system pressure must be released by cautiously opening the blind plug on top of the Multi Function Tank-block.

1. To overhaul the compressor according to the factory procedure, the compressor must be dismantled from the unit. First, the compressor's pressure connection and suction line connection are to be disconnected. Thereafter, all fixing bolts between the compressor and the bottom plate must be unscrewed.  
Then disconnect the electrical cable for the motor and slide the compressor to the left and out of the unit.  
*NOTE! Do not use any oil in the compressor's ball bearings or any other moving parts.*
2. The heat exchanger may be replaced by loosening the tube couplings (in/out), and the fixing screws to the rear side of the unit's body.  
Replacement heat exchangers are equipped with screw connections for the tubes.
3. To exchange the Multi Function Tank-block disconnect solenoid valves and pipe connections and if any heating cable is mounted on the pot, this must be removed before loosening the tank completely. Before installation, please make sure that the new MFT's pressure regulators are preset to correct values.

**6.4 Verification of the recovering rate instructions**

Below is described the procedure to verify and adjust the recovering rate of the CA-40/80 system.

*Note: this verification is only applicable to configuration with mechanical proportional valves*

**6.4.1 Material requested**

- Vessel – 20 L
- BURKERT volumetric meter (complete – 2 hoses)
- ELAFLEX EW-T key (to do the nozzle DRY-TEST)
- ELAFLEX EW-SK3 key ( to adjust the nozzle regulation screw)
- Chronometer

**6.4.2 Test procedure**

- 1- Attach the nozzle to the BURKERT volumetric meter adapter. Is very important that the connection to the meter is well done, once if there is any leakage on the circuit the measuring result will not be correct.



**Schedule of maintenance and schedule of testing for petrol delivery/vapour return lines**

**Tesco Stores Limited 07/00033/PFS**

 <b>Petrotec</b>	<b>PETROTEC</b> <i>CleanAIR – Vapour Recovering System</i>	<b>Ref. 132.04.1</b>
<b>20-06-2008</b>	<b>Technical Manual</b>	<b>Edition A Revision 4</b>

- 2- Fill the vessel with more or less 2 litres of fuel that is used.
- 3- Shake the vessel during at least 2 minutes, to create a saturated fuel vapour atmosphere (the 2 min. were estimated for a temperature of 15°C, if the ambient temperature is lower, it should be increased the shaking time). This procedure is crucial to a correct test, once the CA-40/80 system only adjust the suction flow rate when the system is sucking fuel vapour. If inside the vessel there isn't enough fuel vapour, the system will recover mainly air, and the proportional regulation system will not increase the suction flow rate, which will lead to a test with a recovering rate below the desired value.
- 4- Make a reset on the meter console and select the absolute volume measuring mode (in litres) (see manual).
- 5- Fill the vessel with 15 litres of fuel (don't use pre-setting and keep the nozzle always completely open). Mark down the value of delivered fuel (value marked on the calculator display), and the volume value of the recovered vapour (meter console). The recovering vapour rate should be between 95 and 105%.

*Note: Due the VR system characteristics, the recovering rate only achieve the required values if inside the vessel and the pump piping system is saturated with fuel vapour. If the pump is without working for some time, or if it was made a Dry test in one of the nozzles, is possible that the VR piping system is full of air. Due this fact, is possible that the value obtained on the first test is below 95% even if the vessel is saturated with fuel vapour, because initially the system has to drain the air inside the pipes, and the proportional adjustment will only work after the fuel vapour reach the MFT. Therefore, if on the first test the recovering rate is slightly below 95%, the test should be repeated to verify if the first result was due the air inside of the pipes. If after the second test, the values still out of the required values, the system should be adjusted.*

**6.4.3 RV system Adjustment**

*Important: Before start any adjustment; assure that the nozzle to the BURKERT volumetric meter is well done, once if there is any leakage on the circuit the measuring result will not correct.*

**6.4.3.1 Nozzle valve adjustment**

If difference to the required value is below 5%, is possible to make a small adjustment of recovering rate on the nozzle proportional valve.

Using the ELAFLEX EW-SK3 key, is possible adjust the regulation screw, that changes the suction value recovering value.

**6.5 CA-40/80 suction adjustment**

*Note: this procedure is applied to all types of configuration*

If the adjustment described on the point above isn't sufficient, is necessary readjust the suction value of VR system. First place nozzle valve on the position "T" (make a bypass to the proportional valve), using the ELAFLEX EW-T key. Next put the meter console on the instantaneous flow rate measuring menu and verify what is the flow rate sucked by the system (wait until the suction value stabilize). On normal conditions, the suction value should be between 31 and 33 l/min.

If the obtained value isn't between the values, check the pressures of the VR system. For that remove, the plugs on the MFT side face and assemble a manometer with a 0 to 6 bar scale.



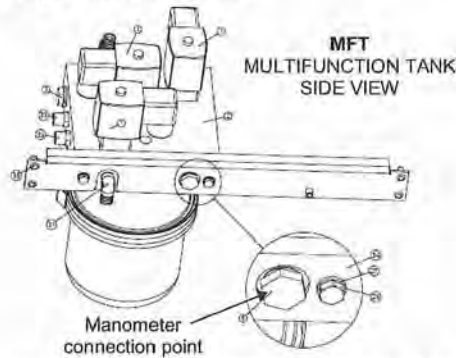


**Schedule of maintenance and schedule of testing for petrol delivery/vapour return lines**

**Tesco Stores Limited 07/00033/PFS**

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**Attention:** the MFT is under pressure; therefore remove slowly the MFT plug to release the pressure.



Put the system working (always with the nozzle valve on the position "T") and wait until the MFT pressure stabilize. Verify if the pressure is between 4,0 and 4,8 bar. With values of the suction flow rate and the pressure of the MFT is now possible to do a diagnostic of the system.

**A – Suction flow rate < 31 l/min & MFT Pressure < 4,8 bar**

Before proceed with the bypass valve adjustment, first check if the filter on the entry is cleaned. A dirty filter will lead to a huge reduction of the suction capacity, therefore is indispensable a periodical cleaning.

Other possibility is the obstruction of the flame arrester placed on the suction line before the entry filter, which divides the two suction lines coming from each side of the pump. A quick way to verify the flame arrester, is measuring the suction flow rate on both nozzles for the same product, one on each side of the pump. If the suction flow rate of both nozzles is considerable different, is because one of the flame arresters is obstructed, because only one suction line goes by the same flame arrester.

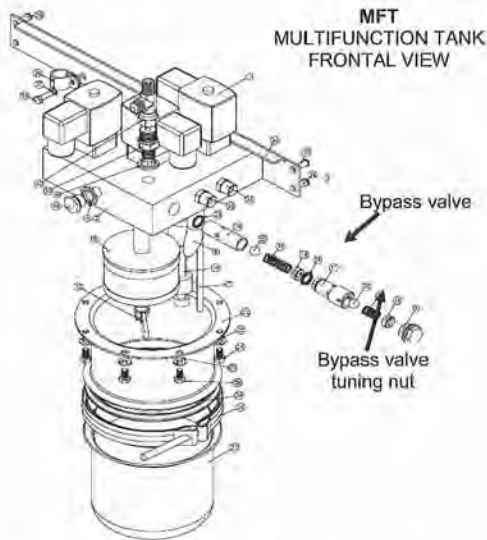
If none of these two possibilities is verified, then, is probably due a bad adjustment of the bypass valve. To readjust the bypass valve remove the plug on the MFT front side and with a screwdriver turn the tuning nut about ¼ of turn on the clockwise direction, to close the valve and increase nozzle suction ( the measuring of the new suction value has to be done with the plug assembled). Closing the valve will also increase the MFT pressure, which can't be higher than 4,8 bar.



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**B – Suction flow rate < 31 l/min & MFT Pressure > 4,8 bar**

If the bypass valve adjustment is unable to increase the suction flow rate is because there is a leak on the suction pipes or the compressor is losing efficiency.

Retighten all the pipes fittings, from the nozzle to compressor inlet. From the MFT until filter entry can be linked a compressed air line to one of the filter entries and check if there is any leak using a soapy solution.

To verify if the problem is on the compressor, disconnect the hose that links the entry filter to the compressor and links the flow rate meter to the compressor entry. If the compressor is working properly then the suction value should be higher than 75 l/min for a pressure of 4,2 bar on the MFT.

**C – Suction flow rate > 33 l/min & MFT Pressure < 4,8 bar**

On this case, release the MFT bypass valve. For that remove the plug from the MFT frontal side and with a screwdriver turn the tuning nut ¼ of turn on the counter clockwise direction, to open the valve and decrease the nozzle suction flow rate (the measuring of the new suction value has to be done with the plug assembled). Opening the valve also decrease the MFT pressure, which shouldn't be lower than 4,2 bar.

If for some reason, opening the bypass valve doesn't decrease the nozzle flow rate suction is because there is a leakage on the pipes from the compressor until the MFT. For that remove, the plugs on the MFT side face and assemble a manometer with a 0 to 6 bar scale. Put the system working (always with the nozzle valve on the position "T") and wait until the MFT pressure stabilize. Stop the system and check if the pressure at the manometer is stable during



## Schedule of maintenance and schedule of testing for petrol delivery/vapour return lines

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one minute. If is observed a gradual decrease on the pressure that means there is a leakage, which can be located between the anti return valve (placed immediately after the compressor) and the MFT. To detect the leakage put a soapy solution in all fittings and search the leakage point.

### **D – Suction capacity OK and pressure stabile but low recovery rate**

If suction capacity is found to be good, and operation pressure stabile during stop period, but recovery rate is low (petrol drain counting shows low numbers compared with others), there may be a leak in the solenoid valve for petrol drain, located on the top of the MFT. Specially, after initial start up this may happen. The reason is small particles of dirt residues. Any minor leak in this solenoid valve will not drop the recovery amount of petrol, but the counting / drains will drop. To disconnect a solenoid valve is simple. Remove the coil to got access to the screws for the valve body. Only the tower and top plate have to be removed to clean the valve inside. The valve body may still stay in position. Do not turn the valve body in another position, and check that the two O-rings are in good order and position if the body is removed.

## 7. Annex

- Connection electrical scheme – Three-Phase
- Connection electrical scheme – Single-Phase



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**Schedule of maintenance and schedule of testing for petrol delivery/vapour return lines**

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**Glossary of Terms/Definitions:**

Activity	One or more stationary technical units falling within the defined sections of the Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2007
Installation	One or more stationary technical units comprising at least one activity or activities falling within the description of Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2007 within a defined area.
EPR	Environmental Permitting Regulations, the new pollution control regime replacing that under PPC.
Regulator	Means the Pollution Control Section of the Telford & Wrekin Council. When contacting the regulator it is not sufficient to contact any other part of the council other than the Pollution Control Section at the address specified in the additional notes or at the telephone numbers provided.
Petrol	is defined in Directive 94/63/EC as any petroleum derivative with or without additives, having a Reid vapour pressure of 27.6kPa or more, which is intended for use as a fuel for motor vehicles, except liquefied petroleum gas (LPG). In addition the Government's view is that the definition of petrol includes leaded, unleaded and lead replacement gasoline and excludes diesel motor fuel, kerosene and aviation fuels (some aviation fuels exceed the vapour pressure but aircraft are not motor vehicles for the purposes of the definition) The Government's view is not definitive as it is ultimately the courts that interpret legislation
Vapours means	any gaseous compound which evaporates from petrol.
Mobile container	means any tank, transported by road, rail or waterways used for the transfer of petrol from one terminal to another or from a terminal to a service station.



**Service station** means any installation where petrol is dispensed to motor vehicle fuel tanks from stationary storage tanks. This includes both retail and non-retail sites.

**Target reference value** means the guideline given for the overall assessment of the adequacy of technical measures in the note and is not a limit value against which the performance of individual installations at service stations would be measured.

**Vapour collection system** includes a system of delivery of petrol whereby the vapours displaced from the storage tank are returned to the road tanker by a vapour balance pipe.

**Hydrocarbon capture efficiency of vapour recovery system** Equipment for vapour recovery should be designed to ensure a vapour recovery efficiency of 85% measured during an appropriate type approval test.

The efficiency is defined as:

$$\text{Eff (\%)} = ((\text{BE} - \text{RE}) / \text{BE}) \times 100$$

(Where Eff is efficiency; BE is base emissions of petrol vapours to atmosphere without Stage II petrol vapour recovery in place; RE is the residual emissions of petrol vapours to atmosphere with Stage II measures in place).

For vapour recovery systems with type approval from another European Union, European Economic Area or European Free Trade Association country, the hydrocarbon capture efficiency required by that country should be taken as being equivalent to the above.

**Type approval test** A test undertaken to gain approval for use. In the context of this note, this term is used in relation to approval for use of a vapour recovery system in petrol dispensers for compliance with national regulations. The test will typically include leakage tests and metrology tests as well as tests on hydrocarbon capture efficiency and volumetric efficiency (P/V ratio).

Vapour/Petrol  
(V/P) ratio

The ratio between the vapour volume at atmospheric pressure passing through the vapour recovery system and the volume of petrol dispensed.

Vapour lock

is a phenomenon that can occur during a road tanker delivery and is identified by a stoppage in the flow of product before the road tanker's compartment is fully discharged. There are two possible causes of vapour lock:

- i) Where there is an insufficient head of product in the road tanker compartment to force the air/vapour mixture in the delivery hose and fill pipe through the residual product in the storage tank. This cause of vapour lock can affect both atmospheric (free venting) and vapour balanced deliveries.
- ii) Where there is a back flow of vapour into the delivery hose from a leak in the storage tank's internal fill pipe. This cause will only arise during vapour balanced deliveries.

## **ADDITIONAL NOTES**

**These notes do not comprise part of the permit, but contain guidance relevant to it.**

### **Inspections**

Regular inspections will be made by officers of Telford & Wrekin Council (without prior notice), in order to check and ensure full compliance with this permit.

### **BAT (Best Available Techniques)**

Article 2(11) of the IPPC Directive defines “best available techniques” as follows:

*“the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent, and where that is not practicable, generally to reduce emissions and the impact on the environment as a whole”.*

- “techniques” shall include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned,
- “available” techniques shall mean those developed on a scale which allows implementation in the relevant industrial sector , under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator,
- “best” shall mean most effective in achieving a high general level of protection if the environment as a whole.

In determining the best available techniques, special consideration should be given to the items listed in Annex IV of the Directive.

### **Health and Safety at Work and Other Statutory Requirements**

Compliance with this permit does not necessarily infer compliance with any other legislation.

### **Other Statutory requirements**

This permit, in that it regulated only air pollution matters, does not absolve you of the responsibility of any other statutory requirement, such as any need to obtain planning permission, hazardous substances consent or Building Regulations approval from the Council. Discharge consents from the local sewerage undertaker or a waste disposal licence from the Environment Agency may still be required as will compliance with health and safety legislation.

### **Notification of Operation Changes**

The operator may be liable to prosecution if they operate otherwise than in accordance with the conditions and plant described in this permit.

The operator should contact the regulator to discuss any proposed changes.

### **Enforcement**

The operator will be liable to enforcement action where: -

1. the operator fails to comply with or contravenes any permit condition;
2. a change is made to the installation operation without prior notification of the change to the regulator;
3. intentional false entries are made in any record required to be kept under the conditions of the permit;
4. a false or misleading statement is made.

Any enforcement action is taken in accordance with the regulator's enforcement policy.

<http://www.telford.gov.uk/NR/rdonlyres/240C3F4A-8E36-4C12-8311-E4E57A3DF8CC/26214/MicrosoftWordEnvironmentalHealthandWellbeingEnf orc.pdf>

### **Annual Subsistence Charge**

A subsistence charge is payable on the 1<sup>st</sup> April each year. An invoice will be issued by the regulator providing further details of how to pay. The charges are based on a risk based system. Details of the risk assessment can be found at <http://www.defra.gov.uk/environment/ppc/localauth/fees-risk/risk.htm>

## **Appeal against Regulatory Action**

The operator can appeal against regulatory action by the regulator to the Secretary of State for Environment, Food & Rural Affairs. Appeals must be sent to the Secretary of State on a form found at

[http://www.planning-inspectorate.gov.uk/pins/environment/environment/environmental\\_appeals/environmental\\_permitting\\_appeal\\_form.pdf](http://www.planning-inspectorate.gov.uk/pins/environment/environment/environmental_appeals/environmental_permitting_appeal_form.pdf)

Guidance on the appeal procedure can be found at

[http://www.planning-inspectorate.gov.uk/pins/environment/environment/environmental\\_appeals/environmental\\_permitting\\_guidance\\_notes.pdf](http://www.planning-inspectorate.gov.uk/pins/environment/environment/environmental_appeals/environmental_permitting_guidance_notes.pdf)

There are time limits for making an appeal as follows:

- a) in relation to an appeal against a revocation notice, before the notice takes effect;
- b) in relation to the withdrawal of a duly-made application under paragraph 4(2) of Schedule 5, not later than 15 working days from the date of the notice served under that paragraph;
- c) in relation to a variation notification, a suspension notice, an enforcement notice or a landfill closure notice, not later than 2 months from the date of the notification or notice;
- d) in any other case not later than 6 months from the date of the decision or deemed decision.

Please note:

**An appeal will not suspend the effect of the conditions appealed against;** the conditions must still be complied with.

In determining an appeal against one or more conditions, the Act allows the Secretary of State in addition to quash any of the other conditions not subject to the appeal and to direct the local authority either to vary any of these other conditions or to add new conditions.

### **Contact Numbers for the Regulator**

The Regulator is the Pollution Control Section of Telford & Wrekin Council. They can be contacted on 01952 381818. You may also contact them by email at any time. [Environmental.health@telford.gov.uk](mailto:Environmental.health@telford.gov.uk)

### **Correspondence Address**

All correspondence to Telford & Wrekin Council relating to this information shall be addressed to:

**Environment Team,  
Public Protection,  
Telford & Wrekin Council,  
Darby House,  
P.O. Box 214,  
Telford,  
TF3 4LE.**